Department of Architecture and
Built Environment

Towards Conflict Resolution and

Collaborative Consensus-making:

a participatory approach to architecture design in the

Nottingham Natural History Museum, Wollaton Hall

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Abstract

Public engagement in museum design has been widely discussed and practiced. Public engagement not only inspires the participants' interests and creativity, but also significantly increases the communication between the museum and participants. To date, however, most museum engagement projects have only focused on the exhibition design, while very few projects try to discuss public participation in the architecture design of museum. Therefore, this thesis sets out to find the most appropriate way that members of the public can participate in the architecture design of a museum.

To answer this question, the thesis firstly reviews the history of museums, which explains that the purposes of museums have been extended from collection and preservation to exhibition, education and communication. What is more important, public participation in museum exhibition has become a new form of communication that remarkably improves the visitors' experience. However, there is no doubt that the design of the museum building also plays a vital role in communicating with the local residents. The relationship between the museum building and society is intimate. The focus of the thesis then shifts to the theories of participatory architecture design that normally consists of architects, museum staff and members of the public. The professionals and laypeople normally have quite different knowledge and experience of architecture design. Therefore, a typical difficulty in processing the participatory architecture design is judging and structuring the different ideas. More specifically, one of the key issues of this thesis is how to deal with the power dominance and conflicts in participation that exists in this area.

Following this issue, the thesis deduces the relationship between control and communication. On the one hand, the participation should minimise the control that exists in order to offer an open atmosphere for communication; on the other hand, communication should take place under a form/type of control that restricts the powerful or talkative participants from dominating any discussion. Furthermore, the conflict-resolving and collaborative consensus-making activities are two further essential aspects in participation. By comparing many different participation methods, Idea Rating Sheets (IRSs) and Consensus Mapping (CM) are considered as the two most appropriate methods in the architecture design of the museum. Idea Rating Sheets (IRSs) were created by Jason Diceman who is an expert on facilitation and public participation. Diceman has been the Senior Public Consultation Coordinator for the City of Toronto since 2010. Consensus Mapping (CM) is created by Stuart L. Hart, professor emeritus in the Johnson School of Management, Cornell University. He is one of the world's top authorities on the implications of environment and poverty for business strategy. Therefore, the main research question of this thesis is; "*What is the performance of IRSs (Idea Rating Sheets) and CM (Consensus Mapping) in resolving conflicts and reaching collaborative consensus in the participatory architecture design of the museum?*"

It is difficult to describe the performance generally, so the thesis divides the main question into eight sub-questions. Regarding the eight sub-questions, a mixed methods research approach has been adopted: questionnaires, interviews and observations. Meanwhile, there are two pilot studies: 1) the testing of IRSs performance in judgment-making; and 2) the testing of questionnaires and

interviews. Based on the two pilot studies, the author set up a participation workshop, specifically using the IRSs and CM in the architecture design of Nottingham Natural History Museum, Wollaton Hall. The workshop consists of *Phase One* (Group A) and *Phase Two* (Group B). The two phases have slightly different features in order to test the performance of IRSs and CM in different situations. Each group consists of an architect, a member of the museum staff, several local residents, a facilitator and an observer. Although this thesis mainly studies the participatory architecture design, the participants in the workshop actually discussed both architecture and exhibition design.

By analysing the large amount of data collected, it can be argued that: 1) IRSs quantitatively and qualitatively support the production of options and judgments; 2) IRSs benefit the equal chance of expression, but the facilitator should also ask the participants individually for their responses; and 3) IRSs encourage the participants to express in-depth ideas and transfer any conflicts that emerge to achieve consensus. In addition to these points, the thesis also discussed the advantages and disadvantages of using the workshop and mixed research methods in the participation study. The conclusion of this thesis not only offers practical suggestions for participatory architecture design, but also informs potential future research topics.

Acknowledgment

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Chapter 1. Introduction

1.1 Background and Initial Research Question

Having evolved and developed for hundreds of years, museums now exist all over the world in a diversity of types, for example, natural history museum, war history museum, science museum, art gallery, and others. The current situation of the museum however differs greatly to how it existed in previous centuries. The historical approach to display in museums was unilateral, not active as it is today. For instance, to present the mechanism of a steam engine, a long text description is not as vivid as animation, or a simulation model that can be played with by the visitors. Meanwhile, by using computers and televisions, the public can access much more information than ever before. Due to the threats posed by these innovations, along with other reasons, many museums started to change themselves, not only in their functions but in the ways they represented their contents [see Hooper-Greenhill (1999), Cuno (2007), Dudley (2010a), and MacLeod et al. (2012)]. Many museums are increasing the communication with visitors. The "communication" here means a two-sided talk that allows the visitors to give feedback to the exhibition, and the exhibition responds to the visitors' feedback in a range of ways. *Participation* is a further type of communication that invites the visitors or other public members to join in the museum exhibitions, for example, designing, managing, setting up, or providing related exhibits, and so on (Simon, 2010).

Most of the participation happened in the museum exhibitions, while not many researchers have focused on the participation in museum's building design. It is assumed that there may be a *gap* between the museum participation and

architecture design. The *gap* is that there is very few participatory architecture designs of museums. It is important to fill the gap, as architecture has significant meanings and impacts in the place and society around. Architecture may also have an intrinsic relevance to the museum's purpose and function. Compared with the participatory exhibition, the topic "public participate in the architectural design of museum" has its own uniqueness and complexity: 1) Multiple groups. Although exhibition events usually include different professionals, architecture design draws the architects and engineers into the conversation. 2) Wide impact. Normally, an exhibition is small and temporary, but a building stays much longer in its area and, over time, the building influences the local community by its size, colour and shape. 3) Relevance. When designing an exhibition, the participants usually just need to consider the exhibition itself; but when designing a building of a museum, the participants should not only think about the building, but also have a general idea of the possible exhibitions inside.

To fill this gap, the thesis explores a new emerging discourse in the field – that is the participatory architecture design of museum. There are several potential research directions in this field: 1) Policy. This explains the phenomenon of current administrative regulations. Its aim is to promote the rationality and efficiency of these regulations. The possible research areas are participation strategy, organisation form, and management framework, and the potential related groups are government, planning department, and planner. 2) Method. This looks for the specific participation methods that are more effective and productive than the other methods. For instance, an architect provides the optional schemes, and the public

participants give comments and suggestions; or, the architect designs modules regarding the room functions, and the public participants lay out the modules; or, the architect cooperates with the public participants to design the building from the very beginning. 3) Education. This reflects the proportion of participation awareness in the academic education system. It aims to figure out the different knowledge background between the architects and laypeople, and recognises which knowledge plays the central role in shaping the final design. Therefore, the possible research objects can be architecture academies and students, architects, and the non-architecture background public. 4) Third party. This extends the study beyond the participants. It discusses the definitions, purposes and abilities of the third party. The "third party" here includes mediator, neutral people, arbitrator, facilitator, and so on. The author is curious to see the specific participation methods or "mechanism" that benefits the architecture design, so the initial research question of this thesis is "*how members of the public participate in the architectural design of the museum*".

1.2 Methodology of the Thesis

As Dunleavy (2003) claims, PhD research is a journey of defining the question, and delivering the answer. Meanwhile, the researcher should be aware which questions or concerns are not going to be discussed (Oliver, 2010). Based on the introduction above, the research topic of this thesis is wide and interdisciplinary. It needs to define a clearer research question of the topic. To fully unfold this topic, the methodology of thesis is divided into two main parts – literature review and workshop. Literature review enables the researcher to explore the related areas in a broad context, which even inspires the researcher to broadly discuss the topic in the end of thesis [Flick (2009) and Oliver (2012)]. The topic of this thesis consists of three

main parts: museum, architecture and participation. Therefore, the literature review will look through the theories of these three fields, in order to find out the previous researches on them. Based on those previous researches, it is then able to construct the key research question of this thesis [Bryman (1989) and Grix (2010)]. The literature review starts with an overview of the museums' history and development, in order to clarify the communication and participation in museums. Then it explores the relationship between museum and architecture, which enables the thesis to graft the architecture practice on to museum participation. The next step is to find out what the key problems in participation are, and what are the principles and methods of dealing with these problems. However, there may be very little literature on the specific research topic. So exploring other disciplines would be possible if little literature can be found on museums and architecture (Oliver, 2012). In the end of literature review, it aims to develop the research topic to certain detailed research questions for the later study. It is possible to answer these questions purely by theoretical discussion. However, a case study research provides more first-hand data that sustain a comprehensive analysis of methods. Although the cases chosen may be different from the cultures, countries, genders, and so on, it does not mean the case studies are only useful in their own situations. A much deeper and wider analysis and discussion can be done upon the case studies [Gillham (2000) and Yin (2003)]. So the thesis then looks how to process the case study. Depends on the real situation, it could be either "doing" a case study, or "reading" a case study (Oliver, 2010, p. 11). And the data collection methods depend on the specific cases chosen in this thesis, such as quantitative, qualitative or mixed methods [Newman and Benz (1998), Franklin (2012), and Creswell (2013b)]. By analysing the collected data from

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the cases, it wishes to conclude a few guidelines of participatory architecture design in museums, and a few suggestions for the study of participation.

1.3 Mapping of the Thesis

To answer the question of "*how members of the public participate in the architectural design of the museum*", the literature review should be built upon the theories of museums, architecture and participation. Therefore, Chapter 2 firstly introduces the history and current situation of the museum, which represents the development of the museum's functions from collection to communication. It aims to explain the reason(s) for why participation is important in museums. However, most of the participation practices are about the museum exhibitions, while few of them address participation in architecture design of the museum. Next, Chapter 2 reviews the participation theory of architecture from a philosophical perspective. The philosophy of Heidegger (1971a) raises the issue of a building's meaning, and he argues that the users of a building should have the opportunity and authority to design this building, rather than just the architects. Therefore, we can assert that the user's opinions are valuable, and should be considered seriously when designing the building, and the benefits of participatory architecture design are obvious. However, the architects, who spend years in practicing design, have the professional knowledge that also needs to be listened to carefully. Scruton (1979) then claims that the order of architecture comes from the experts and laypeople. More widely, the participation in architecture has been discussed and practiced for many years [see Alexander (1975), Lawrence (1981), Sanoff (2000),[1] Alfasi (2003), Lee (2008),[2]

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[1] Henry Sanoff, AIA, is Distinguished Professor of Architecture in the School of Design at North Carolina State University. He has won numerous awards for his designs, research, and achievements

and Greenbaum and Loi (2012)].[3] However, the participation in building design is not easy to process, the participation also stimulates the conflicts and debates between the architects and public (Lawrence, 1981).[4] In a collaborative project, everyone is expressing different options depending on the knowledge background. It is a complex process to synthesise these different opinions and perspectives. The conflicts usually emerge from the different opinions so there is a need to discover new methodology for collecting and digesting information from the experts and users (Jenkins and Forsyth, 2010, p. 166).[5] By studying the participation theory in a broader sociology terrain, it can be claimed that the knowledge of professionals and laypeople are both important and valuable. Both groups should receive equal attention and respect. So the following question is *"how to make the final decisions when both professionals and laymen hold equal power status?"*

Following these important issues of participation in Chapter 2, Chapter 3 discusses the relationship between power and knowledge, conflicts and communication. Firstly, Chapter 3 refers to Foucault's and Habermas's discussion of control and

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as an educator, and several progressive architecture design awards. He is one of the founders of the Environmental Design Research Association (EDRA).

[2] Dr Yanki Lee is the director of HKDI DESIS Lab for Social Design Research where she continues her research on new design practice in addressing social issues and aims to create societal changes through social design research projects.

[3] Also see Cross (1972), Fiorino (1990), Al-Kodmany (1999), Corburn (2003), Leadbeater (2003), Zeisel (2006), Ensici et al. (2008), Sanders and Stappers (2008), Brabham (2009), Jenkins and Forsyth (2010a), and Awan et al. (2011).

[4] R. J. Lawrence is a scholar whose focus is on architecture, psychology and participation research.

[5] Paul Jenkins is an architect by initial training, expanding this to work in urban planning, housing policy and a wide range of social research related to the built environment. His career has included extensive experience working with communities in the UK and overseas in Sub-Saharan Africa. He directs the Centre for Environment and Human Settlements (CEHS) research group at the School of the Built Environment, Heriot-Watt University and is Research Professor at the School of Architecture at Edinburgh College of Art. Leslie Forsyth is an architect, planner and urban designer with experience in practice, consultancy, education and research in the UK and Germany. He currently is Head of the School of Architecture at Edinburgh College of Art where he also coordinates the postgraduate programmes in Urban Design.

communication. In a participatory architecture design, rather than offering the freedom of speaking to the participants, the organiser should be given a certain level of control over the conversation to avoid the dominance of talkative or knowledgeable participants. Meanwhile, the participation should include multi groups from the society, for instance, women, the poor and those low social strata. Furthermore, Chapter 3 describes the features of power and conflict [see Strauss (1963), Mulder (1971), Abdelhalim (1980), Brown (1983), De Bono (1985)[6] and Lozare (1994)]. Objectively, participation is not always suitable for all projects – it has different pros and cons depending on the specific situation. Meanwhile, power and conflicts also have the advantages that promote the workshop, and the disadvantages that impede the workshop. In this thesis, the researcher has explored the way of maximising the advantages and minimising the disadvantages of power and conflicts. There are many ways of managing power and resolving conflicts. "Consensus" is the way that offers equal attention to every participant, and tries to satisfy most of the concerns. The relationship among the participants is not competitive but collaborative. In consensus, the participants disclose the conflicts or disagreements not for the purpose of forcing others to agree, but for the purpose of sharing information, and achieving win-win agreements. Chapter 3 then discusses the stages and principles of collaborative consensus-making from existing theories published by Avery (1981), Warner (2001),[7] Fisher et al. (2012),[8] and Wates and

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[6] Edward de Bono is a Maltese physician, psychologist, author, inventor and consultant.
[7] Michael Warner has worked as a Research Fellow with the Overseas Development Institute, developing consensus-building tools and managing a programme of natural resource-based conflict resolution in Papua New Guinea and the Fiji Islands.
[8] Roger Fisher is Williston Professor of Law Emeritus at Harvard Law School and Director of the Harvard Negotiation Project; William Ury co-founded Harvard's Program on Negotiation and is

Brook (2014).[9] The abstracted principles are used to compare the mostly used participation methods. Idea Rating Sheets (IRSs) and Consensus Mapping (CM) are chosen as the most appropriate methods, while more studies and practices should be done with them. The main research question of this thesis becomes *"How do IRSs and CM perform in conflict-resolving and collaborative consensus-making in the participatory architecture design of the museum?"*

To answer this complex question, Chapter 4 firstly divides the main question into eight sub-questions. Regarding each sub-question, Chapter 4 then compares the potential research methods that can answer those questions. It plans to set up a participatory design workshop that consists of professionals and laypeople; and the participants have to use IRSs and CM to generate and structure their ideas. Meanwhile, questionnaires, interviews and observation are used to collect the data from the participants. Because the IRS is a new method used in participation, there is a pilot study of comparing the performance of IRSs and PVSs (Plurality Voting Sheets) in generating in-depth conflicts and revealing conflicts. This pilot study benefits from a great deal of experience and data that are valuable and directive in running the final workshop. Chapter 4 also describes another pilot study of testing the questionnaires and interviews. The second pilot study makes a few modifications, for instance by improving the scales of questionnaire answers, and clarifying the interview questions.

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currently a Senior Fellow of the Harvard Negotiation Project; and Bruce Patton is a Distinguished Fellow of the Harvard Negotiation Project.
[9] Nick Wates is a leading specialist on community planning and design; and Jeremy Brook is a graphic designer specialising in exhibition catalogues.

After the two pilot studies, a more comprehensive workshop is described in Chapter 5. It firstly introduces the background and context of the workshop that is based on the Feathered Dinosaurs' exhibition in the Nottingham Natural History Museum, Wollaton Hall. The participants are architects, museum staff and local residents. Meanwhile, to test the performance of IRSs and CM in different situations, the workshop sets up two phases: *Phase One* (loose design) and *Phase Two* (constrained design). In *Phase One*, the Group A participants have few preconditions to follow, and they have many choices of discussion among six design topics. In *Phase Two*, though, the Group B participants have three preconditions to follow, and they only have three design topics to discuss. Finally, Chapter 5 reports the actual processes of Groups A and B, and the results of the workshop, questionnaires, interviews and observation.

Chapter 6 firstly compares the similar and different features of Groups A and B. It indicates the main conflict resolutions used in Groups A and B. The results of the questionnaire and interview reflect that "consensus" is the main resolution used in both groups, while Group B seems better than Group A. Chapter 6 analyses the results regarding the eight sub-questions, in order to find out, whether IRSs and CM had achieved a positive performance in the two groups. For example, whether IRSs and CM had increased the production of options and judgments, or encouraged the expression of conflicts. Apart from IRSs and CM, Chapter 6 expands the discussion to a more general situation of running a participatory workshop through IRSs and CM; it also lists the benefits and problems of the research methods used in this thesis.

Last but not least, it has to be admitted that the thesis inevitably bears a certain subjective interpretation and judgment of participation methods, but it aims to offer an insight of the advantages and problems of participation, and to explore more potential methods of conflict-resolving and collaborative consensus-making. Meanwhile, although the IRSs and CM positively support the participatory architecture design in this thesis, this does not mean that the IRSs and CM could be applied to any other participation event without modification. Every participation event has its own background and context; the most appropriate methods depend on the specific budget, project scale, time, popularity, and so on, and the IRSs and CM are just the optional methods for small group size. The validity of this study lies in its endeavour to encourage the public members to collaborate with the professionals in social affairs (also see section 2.4, pp. 45-50); the ingenuity of this study lies in the combination of architecture design and museum participation, and the theoretical and practical analysis of the two new participation methods – IRSs and CM. The former provides one of the directions for social participation. It presents the advantages and current problems of participation in museum, architecture and other social events; and the latter explains the coherent relationship between user and building, architecture and museum. Finally, it tests the different features of methods in a workshop to avoid the arbitrary theory deduction.

Chapter 2. Literature Review

To investigate the initial research question: "how members of the public participate in the architectural design of the museum", section 2.1 will firstly introduce the history and theories of communication and participation in museums. It also describes the relationship between museum and architecture. In section 2.2, Heidegger's thoughts of "*Thing*", "building and dwelling" are introduced, in order to prove the importance and meaningfulness of public participation in architecture design. Section 2.3 not only extends Heidegger's theory of house design to public building design, but also discusses more details and problems of participation in architecture. To find how the opinions of architects and members of the public can be balanced, section 2.4 will explore the much wider public engagement research studies in sociology.

2.1 Museums, Participation and Architecture

2.1.1 Brief history of Communication in Museums

2.1.1.1 Communication

The history of museums can be traced back to hundred years ago. By passing through pre-Renaissance, Renaissance, and the Age of Enlightenment, the functions and purposes of museums were developed from collection and storage, to education and inspiration (see *Figure 2-1*) [see Impey and MacGregor (2001), Olmi (2001, pp. 1-15), and Alexander and Alexander (2007)]. So far, there is a wider family of museums than before. These museums include art, natural history and anthropology, science and technology, history, botanical gardens and children's museums, among others. Except schools, museums become another source of education and study [Paula (2004), Alexander and Alexander (2007), and ICOM (2007)].

Figure 2-1 Cabinet of Curiosities
Source: Imperato (1599)

Museums try to increase the communication in many different disciplines. The present concept of museum has moved from *objects* to *information,* within which the exhibition is considered as just a part of the overall experience package (Dudley, 2010b, pp. 2-3), and there is a growing idea that 'experience' is at the centre of visiting a museum rather than the 'object' (Parry, 2007, p. 81). In order to develop the levels of understanding, culture and enlightenment of citizens, the new representations have to define and reveal objects' reality rather than merely showing them in an amazing and curious way. Instead of simply keeping the items behind a glass showcase, many museums are looking for a more interactive exhibition type that "communicates" with the visitors.

> Museums must communicate or die. For communication to occur both the sender and the receiver of the message must share the same concepts, even the same passions. The task for museums and galleries is to find ways of arousing and instilling passions and ways of exploring ideas that people will find illuminating, using the collections of the museum, and the curiosity and experience of actual and potential visitors.
>
> Hooper-Greenhill (1994, p. 34)

The authority of museum is corroded by the uncontrollable expansion of internet and other "mass media", for instance, internet. As Habermas (1989, p. 172) claims, "the mass media recommend themselves as addressees of personal needs and difficulties, as authorities for advice on the problems of life. They offer abundant opportunity for identification for a kind of regeneration of the private realm out of the readily available pool of public support and counselling services". From the late 1960s to the 1970s, there was a significant movement that focused on civil rights, minority liberty, and community identity in order to encourage public engagement. The movement encouraged new theories and practices of museums and galleries in many different countries; for instance, the *integrated* museum in Latin America, the *ecomuseum* in France, and the *neighbourhood* museum in the USA. This museum revolution - often named as "new museology" - worked closely with local communities towards social development and change [see van Mensch (1995) and de Varine (2005)]. The new museums were considered not merely educational institutions, but also tools for empowering the community. The idea of the new museums was to focus on the surrounding environments, trying to address the complex problems of local areas (Silverman, 2010).

The role of the museum has changed from private collection to public education, and is now aiming to make more connections and interactions with the public. As Hodge and Dsouza (1979, p. 146) claim: "Museums are not only protectors but also communicators.… A museum display is an exercise in one branch of the mass media, requiring a special kind of understanding of the processes of communication, namely the nature of mass communication systems." The communication between the

visitors and the exhibitions in the museums can be classified as "mass communication" and "natural communication" (Hooper-Greenhill, 1994, p.35). As shown in *Figure 2-2*, the "mass communication" between the visitors and the museum is weak, one-sided and discontinuous, even with the absence of one party, the sender or receiver. For example, conventionally, the museum sets up an exhibition. Then the visitors come and look around. If the visitors feel confused or excited in some parts of the exhibition, they probably do not get the feedback from the current exhibits. This ineffective communication reduces the effects of education in museum.

Figure 2-2 A Simple Communications Model
Source: Hooper-Greenhill (1994, p. 40)
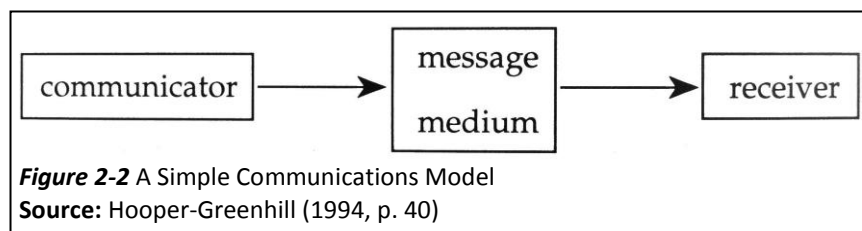
On the other hand, "natural communication" seems more efficient in transiting information in a responsive conversation (see *Figure 2-3*). The utilising of gesture, facial expression, and emphasis also can support communication. An example of this is of a volunteer working in the Natural History Museum in London (see *Figure 2-4*). This volunteer, wearing vintage clothes, introduced herself to the visitors: "Welcome to the museum, I'm Mary Anning. I am 24 years old in 1823". After this short self-introduction, some visitors stopped in front of her, and listened to her interesting story of the exhibit: a giant fossil of *Plesiosaurus dolichodeirus*. The visitors asked questions such as "what's this", "why did it happen", "where did you find it". All the questions were answered and discussed in a face-to-face, natural form of communication.

Figure 2-3 Successive feedback loops progressively alter the original message, and eventually change the process from linear to circular
Source: Hooper-Greenhill (1994, p. 45)

Figure 2-4 "Mary Anning": a volunteer in Natural History Museum in London
Source: Photographed by the author, 2013
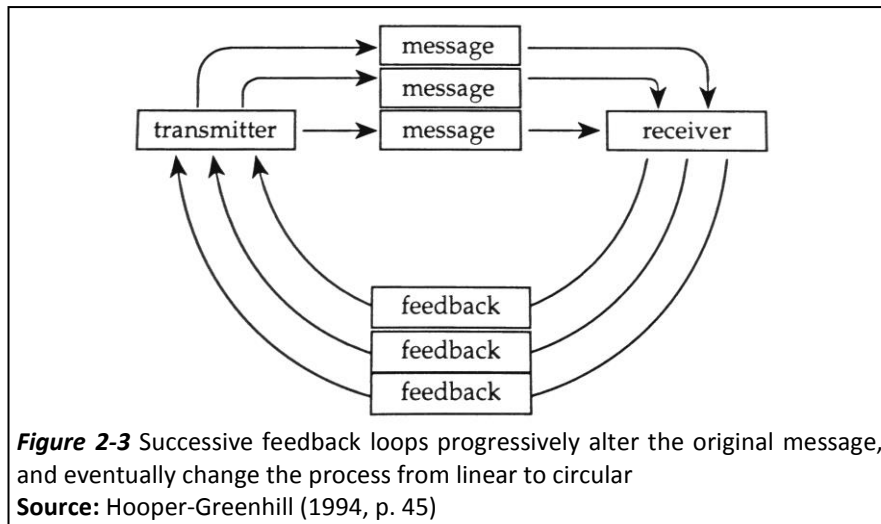
2.1.1.2 Narrativity

The benefit of taking the view that all environments tell stories is that it opens up the whole world to interpretation, it dissolves the museum walls, it extends the museum and the gallery into the living, changing world and produces an array of fascinating challenges for the museum.

Austin (2012, p. 110)

The dialogue between the museum and public should be direct, responsive and equal. In order to offer more informative and effective communication to the visitors, the museum begins to increase the "narrativity" of communication. Generally,

"narrative is the representation of an event or a series of events" (Abbott, 2002, p. 12). The ideal of the narrative exhibition focuses not only on exhibits, but also the methods employed to describe things effectively and poetically. The key way to achieve narrative is through "Narrativity" – the degree of *storyness* of a narrative. It is nothing about the devices used in the representation (Abbott, 2002, p. 22). The devices here can be understood as words, photos, cameras, computer, and so on. The level of storyness is the key points that help the visitors to engage in the exhibition. The higher level of storyness represents a more attractive exhibition. There are four elements of narrative: author, story, telling and audiences (Austin, 2012).

Simon (2010) indicates that designers go to great efforts to construct content, together with guaranteed quality. Therefore, no matter what background or personal interests the visitors have, the visitors probably will receive a reliably good experience. However, the single designer of an exhibition may sometimes fail in this "gambling game". Nic Coetzer (2012) compared and summarised the narrative of three museums that are all about the history of apartheid in South Africa. The first one is *Apartheid Museum* (see *Figure 2-5*); although it offered a group of phenomenological experiences to the visitors, it only has a "singular narrative space" with iconic pillars in its building design. One of the reasons is that the *Apartheid Museum* was the result of a competition held by the government. In order to win the competition, the professional designers had to express their strong architectural knowledge and language, which created a few uncomfortable spaces for the visitors. The narrativity of the museum is simple and not vivid (Coetzer, 2012).

Figure 2-5 The Apartheid Museum's pre-colonial open-air niches (left) and the 'mirror-people' ramp showing the pillars of the constitution
Source: Coetzer (2012, p. 67)

The second example is the *Red Location Museum of Struggle* (see *Figure 2-6*). It was designed by architects too, but its spatial layout seems to be more dynamic than that of the Apartheid Museum. To create a "random narrative space", the architects inserted 12 isolated boxes into the museum space. Each box, with the same external look, represents a totally different inner life of individuals. It indicates that the architects tried to create narrativity in the museum regarding the visitors' experience (Coetzer, 2012).

Figure 2-6 Outside and inside the 'memory boxes' in the Red Location Museum of Struggle
Source: Coetzer (2012, p. 69)
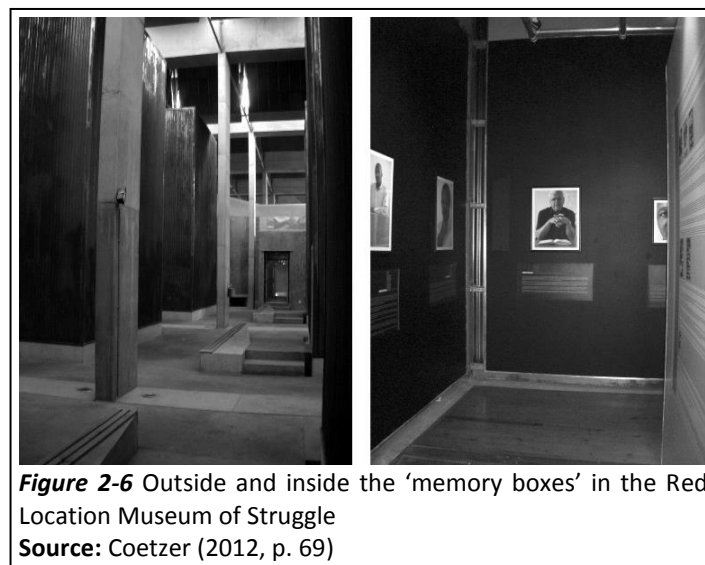
The third example -- *District Six Museum* – proves that working with the local community, the museum may achieve a higher narrative (see *Figure 2-7*). Built in 1994 as a proxy house for former residents, the museum had acted not only as a cluster of memories, but also as a community centre of District Six. Without the specific architectural guides, the community and individuals organised the museum altogether. In the museum, the original content was arranged randomly in the space. The lack of overwriting and symbolic design allows the visitors to travel around the museum without following a previously set route. Its limited scale did not block its function as a community-based museum. In contrast with the other two museums (Apartheid Museum and Red Location Museum of Struggle), it possesses much stronger narrative and diversity in the exhibition and space, considered as "multivalent narrative space" (Coetzer, 2012). The "multivalent narrative space" was a success based on the collaboration of the institution and the local community, which means that the author of the exhibition is not merely a single curator or designer, but rather a group of visitors or local residents.

Figure 2-7 The converted District Six Museum and its main double-volume space showing the street-sign totem on axis and the giant map on the floor
Source: Coetzer (2012, p. 65)
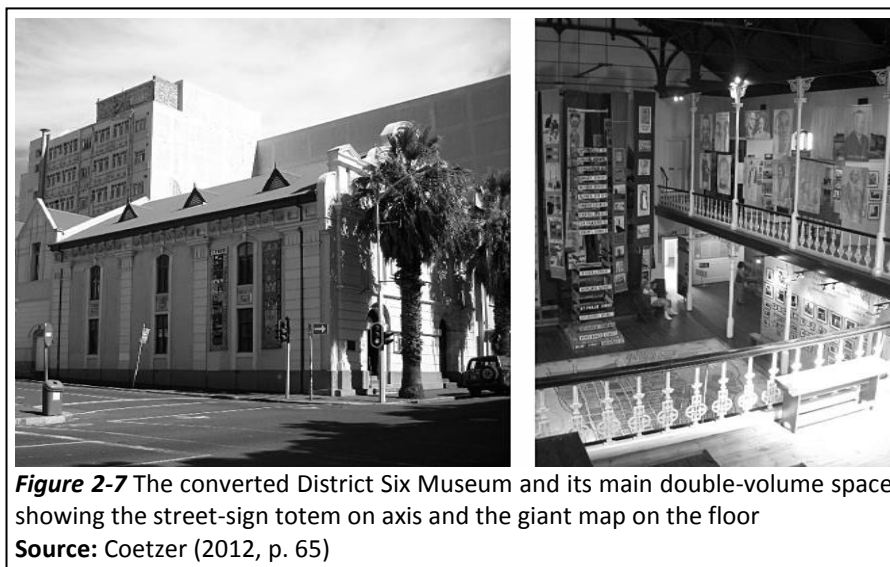
Designing an exhibition or museum is telling a story (or "storytelling"), which tries to create a new world or context (or "narrative environments") by integrating objects, space, people and time. By implication, the concept of single author of this story is fading. Bakhtin (1981, pp. 30-37) de-emphasises the importance of original author while claiming that "the author and readers, are intimately participating". He further asserts: "Reality that we have it in the novel is only one of many possible realities; It is not inevitable, not arbitrary, it bears within itself other possibilities." (also see Roland Barthes's *The Eiffel Tower, and Other Mythologies*). Foucault (1977a) even claims the death of "author" (also see Roland Barthes's *Image, Music, Text*). "Where a work had the duty of creating immortality, it now attains the right to kill, to become the murderer of its author" (Foucault, 1977a, p. 117). He further claims that "Author" becomes a function of contributing the possibility and rules of formation of texts (Foucault, 1977a, p. 125). And asks, "How, then, can several texts be attributed to an individual author? What norms, related to the function of the author, will disclose the involvement of several authors?" (Foucault, 1977a, p. 128) The concept of multiple authorship has also been mentioned by other experts, for instance, Kukulska-Hulme et al. (2007) referred to the multiple authorship and user-generated content combined with new media. It seems that user-generated mobile activity will influence the ways in which designed activity develops. The designers will be more aware of how users might wish to interact with it in different usages. Lozano (2013) even compares the single and multiple authorship in scientific research papers. In the field of museum study, multi-authorship normally means the cooperation between the museum and members of public in accomplishing an exhibition, event, or something else.

2.1.2 Participation in Museums

The chief difference between traditional and participatory design techniques is the way that information flows between institutions and users. In traditional exhibits and programs, the institution provides content for visitors to consume. Designers focus on making the content consistent.

In contrast, in participatory projects, the institution supports multi-directional content experiences. The institution serves as a "platform" that connects different users who act as content creators, distributors, consumers, critics, and collaborators. This means the institution cannot guarantee the consistency of visitor experiences. Instead, the institution provides opportunities for diverse visitor co-produced experiences.

Simon (2010, p. 2)

The original meaning of "participation" is cooperation between institutions, communities or individuals (Runnel and Pruulmann-Vengerfeldt, 2012). Peter Dahlgren (2006) claimed that participation was related to a practical way in which citizens could acquire their power. In *The Participatory Museum*, Nina Simon (2010)[10] extended this notion of "participation" to the way in which the institution supports multidirectional content experience. Based on the "platform" established by the museum, different candidates can act as content creators, distributors, consumers, critics, or collaborators in an exhibition. The "participatory" work, claims Kidd (2012), strikes a good balance and interaction between a visitor's subjective 'dream space' (Kavanagh, 2000) and constraint of the institution. The feature of collaborative,

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[10] Nina Simon is the leading voice of her generation of museum professionals. She is currently the Executive Director of the Santa Cruz Museum of Art & History in Santa Cruz, California. She is working with her team to build a stronger, more connected community around art, history, ideas, and culture – a "museum 2.0". She has worked as the researcher in NASA Goddard Space Flight Centre, the educator in Capital Children's Museum, the design consultant at The Electric Sheep Company, and so on. From 2008-2011, she also ran a design firm called Museum 2.0 that worked with cultural institutions worldwide on audience participation.

fluent, responsive narrative helps "participatory" work enhance the self-ness, the museum, legitimacy, authority and 'truth'. Museums should encourage more people to join in the activities and events, through which the candidates can reinforce their skills and confidence, and become more integrated into the community. Meanwhile, the museum can be aware of the local concerns and problems, and give feedback or ideas on these issues. The museum is a bridge between the residents and the wider community (Nyangila, 2006).

By doing participations in museums, the participants may develop their abilities to: 1) Collaborate and interact with people from diverse backgrounds; 2) Generate creative ideas both alone and with others; 3) Access, evaluate, and interpret different information sources; 4) Analyse, adapt, and create media products; 5) Be self-directed learners; 6) Adapt to varied roles, job responsibilities, schedules, and contexts; 7) Act responsibly with the interests of the larger community in mind (Simon, 2010, pp. 193-194). Meanwhile, not providing the skills, the participatory projects also enhance three values: "1) learning value. Visitors learn research or creative skills; 2) Social value. Visitors feel more connected to the institution and more confident of their ability to contribute to the institution (or project); 3) Work value. Visitors produce work that is useful to the institution (Simon, 2010, p. 195).

In different forms of participation, the museum and public both have different degrees of control and engagement. Depending on the characteristics of each engagement, Simon (2010, p. 183-202) defines four models of public participation: Contribution, Collaboration, Co-creation, and Hosted. To be more specific, the different features of each type of participation model are listed in *Table 2-1*. There

are no progressive steps from one model to another. Each model has its own unique advantages and disadvantages in every case; and "no one model is better than the others" (Simon, 2010, p. 188).

Table 2-1 Different features of four models of participation

	Contributory	Collaborative	Co-Creative	Hosted
What kind of <u>commitment</u> does your institution have to community engagement?	We're committed to helping our visitors and members feel like participants with the institution.	We're committed to deep partnerships with some target communities.	We're committed to supporting the needs of target communities whose goals align with the institutional mission.	We're committed to inviting community members to feel comfortable using the institution for their own purposes.
How much <u>control</u> do you want over the participatory process and product?	A lot – we want participants to follow our rules of engagement and give us what we request.	Staff will control the process, but participants' actions will steer the direction and content of the final product.	Some, but participants' goals and preferred working styles are just as important as those of the staff.	Not much – as long as participants follow our rules, they can produce what they want.
How do you see the institution's <u>relationship</u> with participants during the project?	The institution requests content and the participants supply it, subject to institutional rules.	The institution sets the project concept and plan, and then staff members work closely with participants to make it happen.	The institution gives participants the tools to lead the project and then supports their activities and helps them move forward successfully.	The institution gives the participants rules and resources and then lets the participants do their own thing.
<u>Who</u> do you want to participate and what kind of commitment will you seek from participants?	We want to engage as many visitors as possible, engaging them briefly in the context of a museum or online visit.	We expect some people will opt in casually, but most will come with the explicit intention to participate.	We seek participants who are intentionally engaged and are dedicated to seeing the project all the way through.	We'd like to empower people who are ready to manage and implement their project on their own.
How much staff <u>time</u> will you commit to managing the project and working with participants?	We can manage it lightly, the way we'd maintain an interactive exhibit. But we ideally want to set it up and let it run.	We will manage the process, but we're going to set the rules of engagement based on our goals and capacity.	We will give as much time as it takes to make sure participants are able to accomplish their goals.	As little as possible – we want to set it up and let it run on its own.
What kinds of <u>skill</u> do you want participants to gain from their activities during the project?	Creation of content, collection of data, or sharing of personal expression. Use of technological tools to support content creation and sharing.	Everything supported by contributory projects, plus the ability to analyse, curate, design, and deliver completed products.	Everything supported by collaborative projects, plus project conceptualisation, goal-setting, and evaluation skills.	None that the institution will specifically impart, except perhaps around programme promotion and audience engagement.
What goals do you have for how non-participating visitors will perceive the project?	The project will help visitors see themselves as potential participants and see the institution as interested in their active involvement.	The project will help visitors see the institution as a place dedicated to supporting and connecting with community.	The project will help visitors see the institution as a community-driven place. It will also bring in new audiences connected to the participants.	The project will attract new audiences who might not see the institution as a comfortable or appealing place for them.

Source: Simon (2010, pp. 190-191)

Contributory participation, means the museum has most control, while the visitors should follow rules to create the content. The visitors produce verbal or written feedback, personal items, stories/memories or photos to add to the museum's exhibitions. Contributory projects do not limit in a small or pre-chosen group of visitors, but welcome all types visitors without much training or preparation. For instance, the exhibition *Bottle UP!* in Denver Community Museum (see *Figure 2-8*). It was a temporary exhibition that asked the local residents to contribute bottles filled with any materials and memories from life. The exhibition finally ended with many bottles of perfume, pill, wine, toys, images, and so on. All the visitors can open the bottles and smell them, or read the secrets inside. This project produced an exhibition that could not be done by staff alone. Although the visitor-contributed content is not intrinsically better than the museum-designed content, the visitor-contributed content is more personal, more diverse and rawer (Simon, 2010, pp. 203-230).

Figure 2-8 Exhibition *Bottle UP!*, Denver Community Museum
Source: Simon (2010, p. 205)

Collaborative participation, means the museum has part control, while the public has more freedom regarding the content and final decision. Based on personal features, knowledge or skills, the participants act as advisors, consultants or employees. There are four main benefits of collaborative participation: 1) increase the authenticity of exhibitions or programmes; 2) increase the successful feeling of participants; 3) participants learn the skills of designing, creating and producing content; 4) increase the feeling of partnership or co-ownership of the content or programmes. An instance is, the long term museum project *Investing Where We Live* in the National Building Museum (see *Figure 2-9*). It is an annual program that collected photos and writings of neighbourhood. Different local young people were selected by staff every year, and they joined a series of training. The museum only provided space and trainings, while the young participants designed the exhibition theme, created the content, and accomplished the exhibition. It is a self-directed exhibition that included educational experience, leadership training and community enhancement. Meanwhile, by facilitating the participants, the staff also learned new skills and attitudes to communicating with the participants (Simon, 2010, pp. 231-262).

Figure 2-9 Project *Investing Where We Live*, the National Building Museum
Source: Simon (2010, p. 234)

Co-creative participation, means both the museum and public has part control, and they create the content together. The museum and community both have their own targets or purposes. The running of co-creative participatory projects provides the opportunities for mutual gains. Either the museum or the community can be the initiator of exhibitions or events. Therefore, the voice of local residents could be represented in the museum; the own goals of community could be supported or achieved by the museum. The museum here serves what the participants need, rather than what the staff perceives as valuable. Co-creative participation gives more power and freedom to the participants than collaborative participation does. A good example of this is, the exhibition *If Tired Hands Could Talk: Stories of Asian Pacific American Garment Workers* in Wing Luke Asian Museum in Seattle (see *Figure 2-10*). In this long standing exhibition, the local residents shared their most meaningful and memorable stories. Wing Luke Asian Museum has been used as the hub of community. Anyone can advise an exhibition or event that would be reviewed by the museum staff and community advisors. The project team consists of advisory community members, museum staff and informally engaged community members. Co-creative participation positively supports the partnership between the cultural institutions and the surrounding communities (Simon, 2010, pp. 263-280).

Figure 2-10 Exhibition *If Tired Hands Could Talk: Stories of Asian Pacific American Garment Workers*, Wing Luke Asian Museum
Source: Simon (2010, p. 265)

Hosted participation, means the public has most control, and the museum supports the public to achieve the community targets. The host museum encourages the local community to use the institution for various reasons. Different from other participation models, hosted participation does not "motivate and convince visitors to participate", but only provides "an open platform in which visitors can do what they like". For example, the artist Alison Reimus's blog *Jumping in Art Museums* showed a group of photos of visitors jumping in museums and galleries (see *Figure 2-11*). In this blog, "jumping" was used as a funny movement to interact with the artistic items. The photos came from lots of "art jumpers" around the world. The impact was double sided, for instance, Belgian Foto Museum was inspired to offer professional shots to the art jumpers, while the staff or security of some other institutions have been annoyed by the jumpers. The host participation usually provides different perspectives and exhibits that museum staff may not have in mind. So the result sometimes may negatively impact on the institutions. Therefore, the

institution should clearly estimate the benefits and shortcomings of hosted participation (Simon, 2010, pp. 281-300).

Figure 2-11 *Jumping in Art Museums*, Alison Reimus's blog
Source: Simon (2010, p. 285)

Generally, based on the introduction and features of four participation models above, the research topic "public participation in the architectural design of the museum" belongs to the category of collaboration. Firstly, the architecture design programme originally comes from the museum's requirement, for instance, extension or new building. So, co-creative and hosted participation are not the matching models in this research. Secondly, the participatory architecture design includes many complex issues of design, budget, time, profits, and so on. Therefore, it needs deeper partnerships with the candidates than the contributed participation needs. Thirdly, the museum will set up the rules, processes and goals for this design project. Then the participants collaborate with the museum to achieve these goals by combining the participants' own concerns. Over all, the "public participation in architecture design of the museum" should provide a final design proposal that is targeted by the

museum, and satisfies the concerns of participants as well; and the process of participation should enhance the relationship between the museum and participants.

More and more practices have been applied to the public participation across a wider range of social affairs. The decision made by a crowd is smarter than the one made by a single visitor (Surowiecki, 2005). However, not many museums have organised the collaboration in management and decision-making projects. One of the reasons is that the local people do not have the required skills for certain management works (Thorpe and Gamman, 2011); and there could be a wide gap of understanding between the laypeople and professionals, which reduces the effectiveness of project (Hovland and Weiss, 1951). Although the success of participation is conditional, there is no doubt that the museum should offer more opportunities of engagement to the public, such as exhibitions and management [see Rivard (1984) and Davis (2011)]. The participations discussed by Simon are mainly about the exhibitions. The author here would extend the discussion of participation to the architectural design of the museum.

Through time, museums have evolved into many different types. Silverman (2010, p. 5) summarises five major museum forms: "1) mouseions; 2) cabinets of curiosities; 3) public museums and settlement house museums; 4) traveling exhibits; and 5) integrated museums, ecomuseums, and neighborhood museums". It can be seen from these five types that museums always keep services to society as one essential tradition, no matter how much and in what ways the society changes. The relationship between museum and public, though, is no longer subordinate, but equivalent. Macdonald (2007b, pp. 150-151) even claims that participatory design is

a necessary part of exhibition interpreting, which significantly affects the structure of visiting experience. The process of participation renders the visitors as the "constructivist" rather than "behaviourist". The following section 2.1.3 will explain the reasons why the architecture design of museum is important, and why the design needs public participation.

2.1.3 Museums and Architecture

From the late eighteenth century, the museum has been both praised and criticised. In the poem *Le Problème des musées*, the French poet Paul Valéry described the exhibition in Louvre as a "cold confusion" – in the words of Theodor Adorno (1981, pp. 173-185), "dead visions are entombed" and "Venus becomes a document". Even after Valéry left the galleries, the 'magnificent chaos of the museum' still occupied his mind for a long time. However, from the perspectives of other scholars, the museum possesses "cultural significance" and "genuine seismographic quality" (Giebelhausen, 2003, p. 2). For instance, Michael Levin (1983, p. 1) points out that "the museum, almost by definition, does more than express current social values and tastes; it also makes a cultural statement which goes beyond its own place in history." Similarly, Douglas Davis (1990, pp. 12-14) also agrees that the "symbolic or architectural importance" of museums is much higher than other building types. The museum is "nearly always redefining its capacity and expanding its audience."

Museums are important architecture in cities. As Aldo Rossi (1982, p. 165) defines that the importance of architecture does not lie on its own scale, but depends on the "individual project and the way it is structured as an urban artefact". We should "recognise the importance of architecture as a discipline that has a self-determined

autonomy ..., constitutes the major urban artifact within the city, and ... links the past to the present". Rossi's opinion also can be applied to understand the importance of "museum as architecture" (Giebelhausen, 2003, p. 3). The museum can be endowed with more symbolic function and meaning in the city context, which extends the visiting experience to urban area. As Lewis Mumford (1995, p. 22) describes, "Layer upon layer, past times preserve themselves in the city until life itself is finally threatened with suffocation: then, in sheer defence, modern man invents the museum." The museums became a reservoir of a city's history and culture. Beyond their basic function of store and display, the museums began to connect with the metropolises as an invention of the Enlightenment. A museum in the city can unfold the urban memories, secrets, and questions (Giebelhausen, 2003).

An example of "museum as architecture" is Karl Friedrich Schinkel's Altes Museum that was inaugurated in 1830 in Berlin (see *Figure 2-12*). On the one side, the scholars just wanted to repeat the traditional viewing matched with the academy and the studio; on the other side, Schinkel, as the architect, persuasively suggested a new type of visiting experience. Schinkel firmly believed the role architecture was to play in the museum. He designed a decorative scheme to frame the exhibits, which represents the beginning of the modern museum to the "general" visitors. The Altes Museum was a combination of traditional civic building style with a "reconfigured geography of power". The museum became "a formidable model of civic membership, a ritual of social identification, in short, a technology of the subject" (Maleuvre, 1999, p. 3). The statement of the museum in an urban context is clear and significant, as it enriches the city syntax. It is a civic building type that can be

used for 'civilising rituals'. Started from Schinkel's endeavour in 1820s, the museum is now an "innate beauty and an ornament to the city" (Giebelhausen, 2003, p. 4).

Figure 2-12 Entrance and staircase of Altes Museum, Berlin
Source: Watkin (2011, p. 479)
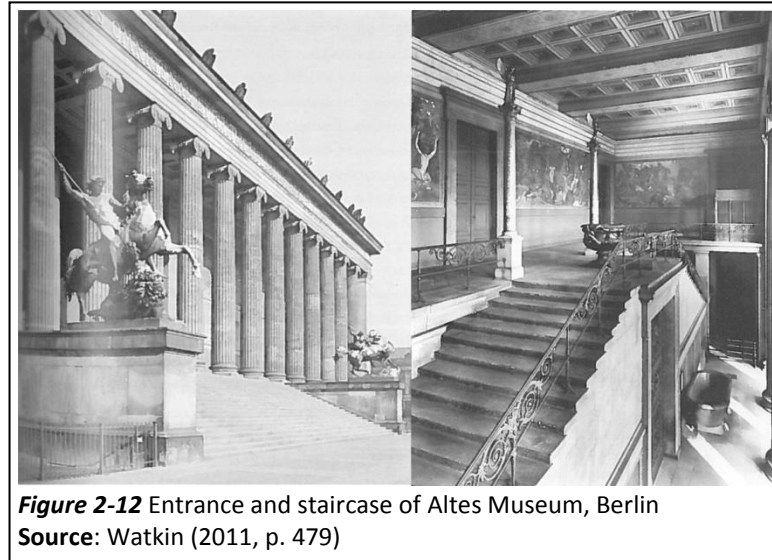
A few scholars also state another concept – the city as museum. "[…] while to conceive the entire city as museum was a logical extension of the museum's potential for resonance and meaning, it required an unprecedented degree of interpretation that conflicted with the fragmented perception of the built environment […]" (Bennett, 1995, pp. 8-9). To be a museum, the city's context should become more readable to the citizens and visitors through the exhibits it offers. Rowe and Koetter (1978, pp. 121-127) claimed that the city should be explored and scanned by walking the streets or from on high. By contrast, Michel de Certeau (1984) provides another view of "the city as museum" – *panoramic*. He established a long and picturesque perspective that changes the city itself into an exhibit to be experienced visually and remotely. However, as de Certeau (1984) notes, the vantage point of viewing a city's panorama also made the public become transparent and visible in the control mechanism. The crystal palace in 1851 and the

Eiffel Tower in 1889 are the most famous examples of the 'panoramic'. When the visitors stood on the vantage point, on the one hand, they were enjoying the panoramic view; on the other hand, they were observed by the others (Bennett, 1995). Another example is Camera Obscura in Edinburgh (see *Figure 2-13*). It was founded by entrepreneur Maria Theresa Short in 1835; and it was renamed by Patrick Geddes[11] as "Outlook Tower" in 1892. In a renewal project of Edinburgh's Old Town, this building was rearranged by Geddes to offer "an interactive and experimental educational experience" (Burton and Fraser, 2006, pp. 145-146). The building has five floors with the Camera Obscura on the top. To visit the building, Geddes wished the visitors to quickly climb the original turnpike stair to the top level of building firstly. Looking through the "camera", the visitors could experience the moving life in the city, and the relationship between the town and countryside. Then the trip would descend through the five floors, each floor having an exhibition that represents a broader domain: Edinburgh, Scotland, Britain (or language), Europe and World (see *Figure 2-14*). After the trip, Geddes hoped the visitors would understand the surroundings with a global perspective, and treasure life in the world (Jarron, 2006). The role of the Outlook Tower here is to inherit the memory, converge the current world, and point a direction towards the future (Bennett, 2004). The tower subtly includes the whole city as part of the exhibitions, which increases the deep engagement feeling during visiting.

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[11] Patrick Geddes (1854-1932) was "maverick Professor of Botany at Dundee, University, anarchist sympathizer, town planner, and founder of the regional survey movement, as well as founder of the Sociological Society of Great Britain" (Burton and Fraser, 2006, pp. 145-146). Geddes showed large interests in city planning, museums, education, and so on (Jarron, 2006).

Figure 2-13 Outlook Tower, Edinburgh
Source: Traynor (2013)
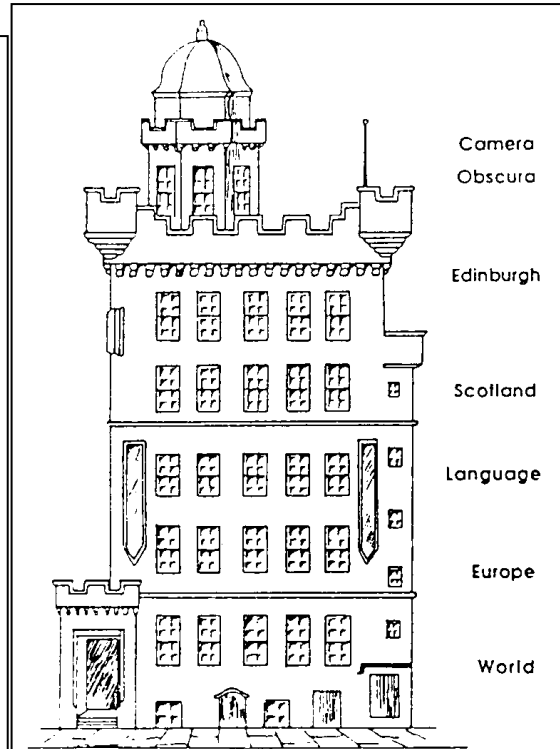
Figure 2-14 Patrick Geddes's Diagrammatic Elevation of the Outlook Tower, Edinburgh, 1915
Source: Geddes (1915, p. 324)

Although there is no conclusive discussion among museums, architecture and city, it is obvious that the museum's formation also has certain relationships with other subordinate cultural institutions (Bennett, 1995). The narrativity, space, exhibition and architecture all interact with each other via different aspects (Austin, 2012). It can be argued that the architecture of the museum has intimate relationship with society. Combined with the participation theory of the museum, it is necessary to explore the participation in architecture design of the museum. Therefore, to explore the key problems in participatory architecture design, the following section will then discuss more participation theories in the architecture field.

2.2 Building and User

2.2.1 Building, Dwelling and User

> But what is a thing? Man has so far given no more thought to the thing as a thing than he has to nearness. The jug is a thing. What is the jug? We say: a vessel, something of the kind that holds something else within it. The jug's holding is done by its base and sides. This container itself can again be held by the handle. As a vessel the jug is something self-sustained, something that stands on its own. This standing on its own characterises the jug as something that is self-supporting, or independent. As the self-supporting independence of something independent, the jug differs from an object.
>
> Heidegger (1971c, p. 164)

Starting with the 'jug', the German philosopher Heidegger arouses the arguments of authority, power, religion and truth. After 1950, Heidegger published three key essays about architecture - *Building Dwelling Thinking* (Heidegger, 1971a), *Poetry, Language, Thought* (Heidegger, 1971b), and *The Thing* (Heidegger, 1971c). At that moment, a building was usually defined by architectural historians as a decorated object or visual art (Arnold, 2002). Meanwhile, Germany was encountering massive political and social reform after World War Two. The dwelling issue was not only a philosophical question to Heidegger, but also his personal experience of his house. Due to the demand for accommodation in 1945, Heidegger's house was commandeered to be a 'party residence'. He and his family had to share the house with one or two further families for a few years (Ott, 1993, p. 312); this was one of the reasons why Heidegger was concerned about the authority of land.

In a lecture which he was invited to deliver on 6th June 1950, Heidegger (1971c, p. 174) explains that '*The Thing*' ('*Das Ding*' in Old High German) "[…] means a

gathering, and specifically a gathering to deliberate on a matter under discussion, a contested matter". Heidegger (1968) also gives several features of the 'Thing': 1) The 'present-at-hand' (or 'ready-to-hand' in *Being and Time*), for instance, a block timber, a piece of leather, a rock; 2) A wider sense that includes events, which means the interaction with the 'thing'; and 3) The widest sense which also includes anything that is 'a something not a nothing'. Continuing with the issue of sense, Heidegger introduces the 'building' and 'dwelling' into a human inhabitation experience. He thought that the user's experience is more important than the visual impact of a building (Sharr, 2007). He questioned the concept that architecture should merely focus on the visual appearance (Arnold, 2002, pp. 83-126). The new perspectives of "building" and "dwelling" gave Heidegger more space to highlight the inhabitation and experience of architecture, rather than its aesthetics (Sharr, 2007). Heidegger (1971a, p. 146) claims that "1. Building is really dwelling; 2. Dwelling is the manner in which mortals are on the earth; 3. Building as dwelling unfolds into the building that cultivates growing things and the building that erects buildings".

The interaction between the user and the building is primary and essential. The way of building and dwelling mirrors the user's existence on the earth, under the sky [see Heidegger (1971c) and Sharr (2007)]. An 'object' is abstract, hypocritical, and far from everyday experience. The building should not be a blank object, but a close, interactive and meaningful "*Thing*" to its user (Heidegger, 1968). To be a 'thing', the building should gather the user's interactions via daily life, and reflect the user. Sharr (2007) gives an example of extending the house for a new-born baby, which describes how the inhabitants are distracted by the professionals:

Inhabitants will need to work within organisational structures established by professionals. They will have to work with contractors, planners, building control officers; and perhaps with mortgage lenders, surveyors, architects, engineers and quantity surveyors. Statutory permissions will be needed. An architect may be engaged. She or he might advise the employment of other consultants. Contracts will be signed. The unexpected, which inevitably accompanies building work, will have to be negotiated and paid for according to the terms of the contract. Professionals will speak an unfamiliar specialised vocabulary.

Sharr (2007, p. 42)

In Heidegger's view, the relationship between the users and building is passively skewed by the priorities of professionals. As the architects, contractors and planners implant the unfamiliar vocabulary and figures, they begin to 'occupy' the power and authority of this house. By stating their suggestions as logical, scientific, and knowledgeable, the professionals can subtly influence the inhabitants to make an unwilling decision. The architect may successfully design a comfortable extra room; however, it is still not a dwelling in Heidegger's view (Sharr, 2007).

The user's engagement in the building also triggers the discussion of authority and control in decision making – "who is given the authority to determine what is authentic, why and how" (Sharr, 2007, p. 89). Adorno (1973) criticises Heidegger's model as easy to articulate, while hard to practice. It is an ideal daily life, but is incapable of dealing with poverty, inequity and conflict. Neil Leach criticised Heidegger's theories of 'dwelling' and 'place' as being used to emphasise the identity of territory and majority. The majority with the same 'blood' can dislodge and persecute strangers or foreigners. It then raises the discussion of identity and authority of buildings (Leach, 1998, pp. 31-32, 36-38, 39-40).In a private house, the

owner of the house is the main user. Therefore the owner has the essential authority to design what the house should look like. However, the issue becomes complex if the building is for public use. A public building may have quite different uses and users: as an example, the museum has staff, visitors and the community in its environment. The museum is used by various groups, and its affect can extend out to an even broader areas. Before asking all the people to design a building together, first we should find out how they understand a building.

2.2.2 Everyone has different reading of buildings

Bertrand Russell (1971) has introduced the way that knowledge is acquired from a fundamental level. For instance, a table has its own size, colour, surface, even smell. To inform other people about this table, we may then describe these feelings and physical conditions to them. It is difficult to depict the table without using the human senses. The table is a combination of "sense-data" and "reality" (Russell, 1971, pp. 1-6), and the appearance and reality are different. What we see and feel is not the 'reality', but merely 'appearance'. The sensation of human can be defined as 'sense-data': such as the smells, sounds, softness, hardness, and so on. Based on each person's own perspectives and physical condition, every one may get different 'sense-data' that form a temporary 'appearance'. For instance, the colour of a 'table' can looks different in different lights. It also slightly changes year by year, so it is difficult to give a categorical definition of this table (Russell, 1971).

The different 'sense-data' result in different perceptions and judgments. What we firmly believe is called *knowledge*; what we firmly do not believe is called *error*. However, there are numerous objects that we cannot be totally sure whether they

are true or false, and these opinions are called "probable opinion". Although the "probable opinion" is not truth, we can still use it as a criterion (Russell, 1971, p. 81). Russell's (1971) theory has been proved in many areas; one of these is Gestalt psychology. Gestalt theory is the psychology that explains how forms of perception follow certain structure. Its philosophical root can be found from the works of David Hume, Johann Wolfgang von Goethe, Immanuel Kant, David Hartley, and Ernst Mach. More related theories of gestalt can be seen with Ehrenfels and Smith (1988)'s *Foundations of Gestalt Theory*. Gestalt theory was developed by Max Wertheimer (1880-1943), Kurt Koffka (1886-1941), and Wolfgang Köhler (1897-1967) in the early of 20th century (Honderich, 1995).

The observation of a table is simple to describe, while the reading of art and design is much more complex and multi-perspectives. There is an interesting controversy between Heidegger and the art historian Meyer Schapiro over Van Gogh's famous painting – *A Pair of Shoes* (see *Figure 2-15*). After visiting an exhibition of Van Gogh's work in Amsterdam in 1930, Heidegger (1971b, p. 33) depicts his subjective reading of this great artwork in *The Origin of the Work of Art* (1935):

> From the dark opening of the worn insides of the shoes the toilsome tread of the worker stares forth. In the stiffly rugged heaviness of the shoes there is the accumulated tenacity of her slow trudge through the far-spreading and ever-uniform furrows of the field swept by a raw wind. On the leather lie the dampness and richness of the soil. Under the soles slides the loneliness of the field-path as evening falls.

Figure 2-15 A Pair of Shoes
Source: Gogh (1886)

From the philosopher's perspective, this pair of shoes is nothing more than the peasant's shoes (Thomson, 2011). However, in the 1960s, the art historian Meyer Schapiro undertook serious research on Van Gogh's painting; he rejected Heidegger's unique interpretation of this artwork. In *The Still Life as a Personal Object*, Schapiro (1968) firstly claimed that Heidegger wrongly mixed several paintings together. Heidegger wrongly thought the owner of the shoes was female according to their wrinkled and muddy surface. Following on from this then, Schapiro estimated the painter himself was in fact the owner of the shoes:

> Alas for him, the philosopher has deceived himself. He has retained from his encounter with Van Gogh's canvas a moving set of associations with peasants and the soil, which are not sustained by the picture itself. They are grounded rather in his own social outlook with its heavy pathos of the primordial and earthy. He has indeed "imagined everything and projected it into the painting."

> Schapiro (1968, p. 138)

There were numerous debates around these two different judgments of one painting. For example, Dreyfus and Wrathall (2005, p. 409) pointed out that the discussion of the shoes' owner was "irrelevant to how the picture works". However, this comment may terminate the discussion too quickly as it significantly missed Heidegger's real point of argument (Thomson, 2011). A more valuable summary was contained in Derrida's *The Truth in Painting*. Derrida said that, "For what is inside and outside a picture is undecidable and no amount of ingenuity can make the frame impermeable" (Jay, 1993, p. 516). In Derrida's view, there is no way to judge who are right; instead, any comments of this painting are "equivocal" truth. There is an incessant movement between "internal border" and "external border" (Derrida, 1987, p. 303).

Although there may be no specific reason for the artist, Van Gogh, to paint the shoes, the philosophers and historians expressed their different ideas around this painting in ways that are much more than about the artwork itself. The readers actually make an infinite series of stories that are constantly repeated and reproduced, because "the author is dead" (Barthes, 1977, pp. 142-148). Although architecture has an inherent relationship with art, the reading of a building is slightly different from the reading of an artwork. An artwork is a personal "expression" (Collingwood, 1938), while "architecture is always dream and function, expression of a utopia and instrument of a convenience" (Barthes, 1979, p. 6). The reading of architecture requires more knowledge from personal sense, experiences, practicability, team management, and so on (Scruton, 1979).

A related case of architectural reading is the world-famous building in Paris – the Eiffel Tower, which attracts uncountable readings from writers, artists, engineers,

visitors, and so on (Barthes, 1979). The Eiffel Tower is a project that was constructed in 1889. Gustave Eiffel (1832-1923) was the major designer in the project, who made most of the decisions. On the one hand, the designer, Eiffel designed this tower as a serious object, rational and useful for scientific research; on the other hand, the public read the structure as "a great baroque dream which quite naturally touches on the borders of the irrational" (Barthes, 1979, p. 6). The definition of the Eiffel Tower was changed from the designer's original concept; actually the definition is still, and will be, changing forever. The 'original' became an 'optional'. Everyone can be the 'designer' of the Eiffel Tower, and 'construct' it together.[12] However, the reading and controversy of the Eiffel Tower came out after the tower's erection, but no matter how distinct those judgments are, they cannot directly affect the Eiffel Tower's appearance. For instance, the tower will not be lowered if a citizen thinks it is too high. The tower is there already, like Van Gogh's shoes. People can feel free to read it in the mind, yet it – like the shoes – would not change.

2.2.3 Designing is different from reading

Regarding the research topic of this thesis, public participation requires the ability of reading and designing architecture. As discussed in last section, reading a building cannot directly affect the building, because the building has already been constructed. However, in designing a building, every judgment or decision made by the designers or clients would influence the building's appearance after construction. Therefore, how the participants make the final decisions is significant. A case of

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[12] See other literatures, such as Lucien Herve and Barry Bergdoll's *The Eiffel Tower* (2003), Olivier Bleys' *The Ghost in the Eiffel Tower* (2004), Judy A. Johnson's *Iron Beauties: The Statue of Liberty and The Eiffel Tower* (2009), Carole Marsh's *The Mystery at the Eiffel Tower (Paris, France)* (2010), Elen Caldecott's *Operation Eiffel Tower* (2011), and Elizabeth Hein's *How to Climb the Eiffel Tower* (2014).

architectural designing is Eishin Campus designed by Christopher Alexander in the 1980s (see *Figure 2-16*). Different from the Eiffel Tower, Eishin Campus was an actual project designed by "multi-authors". Guided by the architects, the users of this campus participated deeply in the design process. So the difficulty in participation was that the people had multiple views, but they needed to collaborate in decision-making. They had to discuss and decide which way to go, otherwise, the campus would never have been finished. Alexander et al. (1977) systematically elaborated the use of pattern language in architecture design. And Alexander et al. (2012) concluded 110 essential patterns before designing the Eishin Campus. The way he created the pattern language was:

Step 1: By conducting numerous personal interviews among the teachers and students, and administrators. Each interview was about one hour long, so that he could find out the essential pattern that the users wanted.

Step 2: All the interview records were collected and discussed by the committees, in order to extract and summarise the pattern language.

Step 3: During the final meeting, the whole school voted for all the patterns. After the meeting, the final pattern language was used as the principle of campus design.
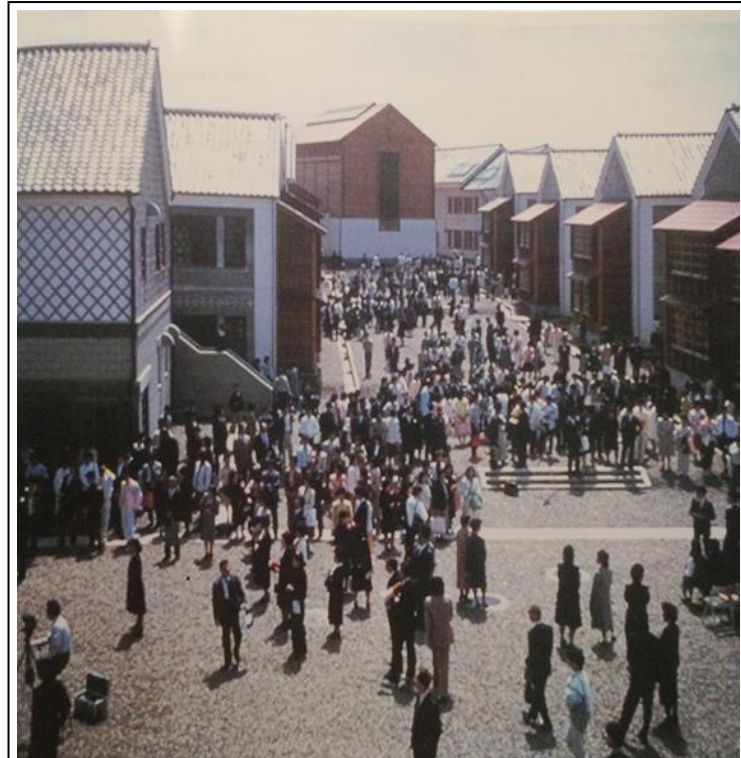
Figure 2-16 Eishin Campus, Japan
Source: Alexander et al. (2012, p.459)

This process of filtering ideas seems very open and fair to the users' suggestions; however, it still increases the controversy between the different users and the designers. There is an interesting discussion to be had in step 2. After the conclusion of user interviews, Alexander made a first draft of pattern language but a few teachers did not agree with one of the patterns – the "gorgeous colors". They thought the use of colour in Japan was uncomfortable and un-neutral. The Japanese-style building should have grey or white walls with neutral colours. To refute the teachers' arguments, Alexander et al. (2012, pp. 160-161) explained that the neutral style from the early twentieth century is not a Japanese style; in fact the use of colourful design has occupied a much longer history in traditional Japanese buildings, crafts and arts. Furthermore, he claimed that colour was a living thing rather than a thing from history. The "gorgeous colors" should be applied to the campus design.

To defend his rejection of the users' judgments, Alexander et al. (2012) explained his decision was different from the fascist and totalitarian approach that desires to possess power and control. Instead, the architecture design should deal with "[…] the well-being of the land, its integrity, the well-being of the people and plants and animals who inhabit the land" (Alexander et al., 2012, p. 11). However, it does not mean the design should satisfy all the people's wishes or opinions. In fact "to make a balanced judgment, we felt it must always be reality which governs" (Alexander et al., 2012, pp. 161-162). Although what Alexander said was theoretically right, it is actually difficult to define what "reality" is. Also not every architect keeps the same definition of "reality" as Alexander's. The way of digesting the different opinions should rely on a more objective method, rather than relying on a dominant person's subjective judgment.

The example of Eishin Campus also triggers the discussion of how to judge the different opinions, especially when architects have opposite opinions with the users. Many theorists struggle to classify architecture as art or craft; however, "to maintain this sharp distinction between art and craft is simply to ignore the reality of architecture – not because architecture is a mixture of art and craft … but because architecture presents an almost indescribable synthesis of the two" (Scruton, 1979, p. 6). Scruton (1979, pp. 259-263)[13] has fundamentally claimed that architecture is a combination of art and craft, which by implication indicates that architecture is an "everyday preoccupation with getting things right". "The architect must be constrained by a rule of obedience. He must translate his intuition into terms that

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[13] Also see the Arts and Crafts movement happened in Europe and North America (1880-1910); Bauhaus, the art school in Germany, operated from 1919 to 1933; and the ideas of John Ruskin (1819-1900) about arts and crafts.

are publicly intelligible, unite his building with an order that is recognizable not only to the expert but also to the ordinary uneducated man" (Scruton, 1979, p. 250). The designers have certain objectives and real moral order in architecture design, rather than total freedom.

"How then can we speak of objectivity?" (Scruton, 1979, p. 238). Everyone can read the Eiffel Tower freely; but when talking about the public engagement within building design, Alexander et al. (2012) indicate that neither the users nor the architects can govern the judgment of a design project -- this can only be achieved by the "reality" of the wholes. This claim asserts the equal importance of architects and users. Both have the right to create and judge a building, while neither should dominate the other. In a real situation, different people have different views on the same fact. The reasons for these differences can be cultural background, social factors, or economic conditions. The reasons can also be due to minorities, disabilities, or non-native speakers of the official language. To work with the different "competence" (Silverman, 2010, p. 48), a person should hold "social consciousness", that is be aware of the concerns and values of other people and society and try to uphold the others' concerns and values (Barker, 2003, p. 402).

2.3 Participation in Architecture

2.3.1 General Introduction of Participation in Architecture

Professional designers in every field have failed in their assumed responsibility to predict and to design-out the adverse effects of their products. These harmful side effects can no longer be tolerated and regarded as inevitable if we are to survive the future … There is certainly a need for new approaches to design if we are to arrest the escalating problems of the man-made world and citizen participation in decision making could possibly provide a necessary reorientation.

In the architectural design field, the design process has been dominated by architects for quite a long time. Associated with the modernity and rationality, the profession of design achieved a huge growth within the institutions of control and training. Inspired by John Ruskin and William Morris, the English Arts and Crafts movement encouraged amateur practice of design (Beegan and Atkinson, 2008). Responding to the professional standards set by the RIBA (Royal Institute of British Architects), the architect Edward S. Awan et al. (2011) worried that the profession movement would negatively impact the creativity of architecture design. Prior had closely worked with Norman Shaw's practice for six years before initiating his own firm in 1880. Awan et al. (2011) observed that, on the one hand, the professional practice of architecture was far from human needs; and the architects only concern the architecture itself rather than the users. On the other hand, the amateur designed building expressed the strong beauty and functionality that fitted with the specific users and place.

In the 1960s and 1970s, the emphasis on the user's involvement in buildings inspired many architects and critics to rethink the urban plan and architecture design, such as Jane Jacobs (1961), Bernard Rudofsky (1964), and Christopher Alexander et al. (1977), among others. Since the 1970s, more and more public participation has been introduced to the design process [see Alexander (1975), Richter and Tjosvold (1980), Zeisel (1984), Lawrence (1987), Sanoff (2000), Lee (2008), Sanders and Stappers

(2008), Greenbaum and Loi (2012), and Alexander et al. (2012)].[14] Even though in the beginning of 21st century, the architect-dominated buildings design may succeed in fulfilling users various requirements, it happens rarely, and is "not even the probable outcome" (Day and Parnell, 2003, p. 17).[15] Much larger evidence shows that the architect-dominated designs do not have enough communication with users, which results in the "frustration for both parties" (Lawson and Pilling, 1996, p. 89).

In the same period, the architects and urban planners began to increase the engagement of the community in the design process. Thus, the term "collective design" was born, and focused on community involvement in participatory design. It is different from "collected design" and "collaborative design". "Collected design" means encouraging people to submit solutions independently. However, in collective design, members collaborate to produce a solution that is a consensus of many ideas. Collaborative design only works with a pre-selected team of individuals (Paulini et al., 2013). After the 1980s, other terms like 'interaction design', 'service design' and 'transformation design' emerged within the architectural terminology. More details can be observed from Sanders and Stappers's (2008) paper. Lee (2008) even distinguishes the meaning of "Design Participatory" and "Participatory Design".

2.3.1.1 The field of research

A detailed participation framework was created by Paul Jenkins who concludes that the participants in architecture include the clients, users and general public (Jenkins,

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[14] More related researches can be seen in page 4.

[15] Christopher Day is trained as an architect and sculptor. In addition to designing buildings in accordance with his ecological principles, he offers worldwide consultancy on the development and - perhaps more importantly - the rescue of places both indoor and outdoor. His projects have won several awards, including a Prince of Wales award. Dr Rosie Parnell's research, practice and teaching combine interests in design participation, architecture education and children's spaces.

2010, p. 13). In this thesis, the clients are the museum managers that plan to extend the museum or build new structure. The users would be the museum staff and potential visitors. The general public means the local communities and residents who live close to the museum. This thesis aims to reach the widest participation that includes clients, users and the wide public. Furthermore, there are three ways of participation: 1) Providing information. The professional (for example, architect) gives information to the client, users or wider public in a one-way direction; 2) Consultation. The professionals and clients, users and the wider public have two-way communication; and 3) Collaborated decision-making. The professionals and clients, users and the wider public are sharing information, making decisions together (Jenkins, 2010, p. 13). The thesis has just argued that many architect-dominated designs result in the failure to satisfy the designers and users. Therefore, this thesis mainly focuses on collaborated decision-making. Meanwhile, Jenkins also concludes three stages that can be participated in: 1) Design stage; 2) Construction stage; and 3) Post-completion stage (Jenkins, 2010, p. 13). Although each stage is essential to the building, this thesis aims to explore the design stage that requires much discussion of functional and aesthetic issues. Concluding from the three categories above, the research focus is on the wider public's collaborative decision-making in the design stage: see the grey cube located in *Figure 2-17*.

Figure 2-17 Framework for the Participation Study
Source: Adapted from Jenkins (2010, pp. 13-14)
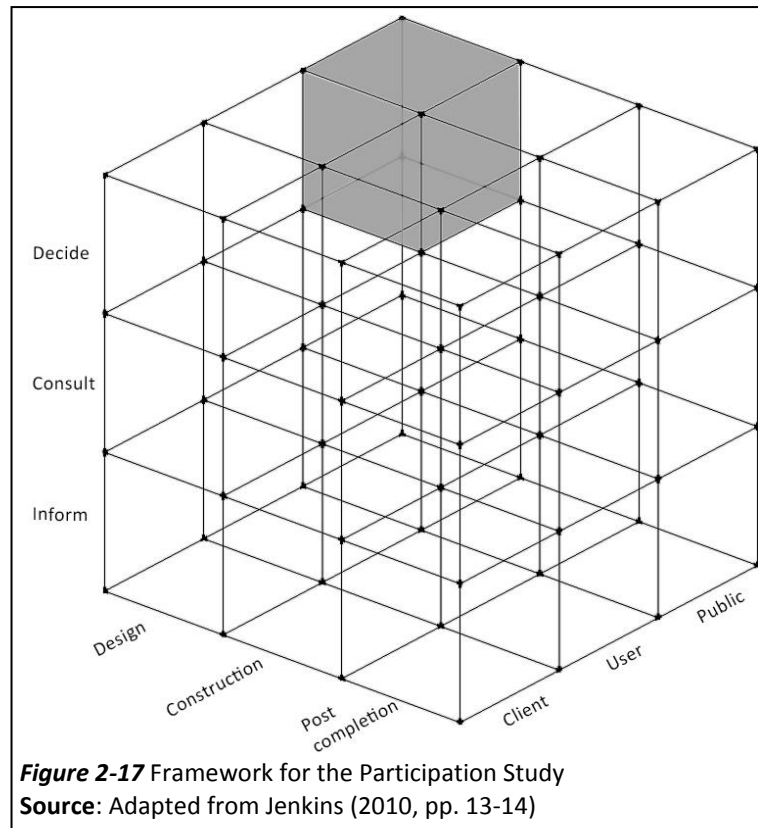
2.3.2 Current problems in architecture participation

Public engagement in architecture design is not easy to be properly practiced. This is a complex process which contains a series of decisions; inevitably, the participants with different opinions and perspectives will dispute and discuss a range of issues during the process. For instance, a museum is usually funded by the government or some foundations. The curators and staff are in charge of the research, exhibitions, and administration while the public are the visitors or volunteers in the museum. So, the museum is a space for many groups, each of which has its own roles and purposes. On the one hand, the experts act as the dominant power in many participation projects, while the users are the subsidiary power. In this case, the experts are merely asking the participants to act as the consultants rather than as the designers. Once the experts get the feedback from the participants, they will pursue the design taking into account the users' opinions; but the judgment of the

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users' opinions is based on the experts' perspectives, usually just one lead expert. "In every built case of participation the results actually have been what the designer wanted […] People were used as 'tools' to help the designer achieve what he wanted" (Broadbent, 1981, p. 321). This one-way 'communication' actually betrayed the original concept of public participation. The same controversy is also found between architects and laypeople. As Jenkins and Forsyth (2010) critiqued, the architects should not see themselves as the avant-garde specialists, who resist collaboration with the public.

On the other hand, the public opinions may be over-valued. The laymen are not always in the best position to make the right informed suggestions, particularly when involved with grand projects rather than private properties. Generally not every member of the public is familiar with the professional design process. Becker (1990) even suggests that not every employee should be involved at the technical stage as their technical knowledge is not good enough. After finishing the plan and design of Oregon Campus, Alexander (1975, p. 65) concluded that, due to the limited ability and knowledge of participants, they cannot deal with the large-scale or complex issues:

> The members of the committee can feel personally related to the building of a garden fence, so they have intelligent and reliable intuitions about it and can talk about it. When it comes to the gigantic project, they cannot see themselves personally related to it, so they discuss it very abstractly, and make quick decisions. In short, even at the highest levels of decision-making, people feel remote from the design of huge ventures. It is the small projects which capture their imagination, and emotion, and involvement.

An over-emphasis on public collaboration in the design process also leads to "negative outcomes" (Jenkins et al., 2010, p. 72). Although the benefit of collaborating with crowds is obvious, it is also risky and difficult to assemble the wisdom from crowds. "We generally have less information than we'd like. We have limited foresight into the future. Most of us lack the ability – and the desire – to make sophisticated cost-benefit calculations" (Surowiecki, 2005, p. xiv). In public-dominated participation, the architects' suggestions are only taken on board sometimes, which tends to *exclude* rather than *include* the professionals (Lawrence, 1982). The laymen's dominance in public participation not only reduces the meaning of participation, but also leads to a unilateral outcome that only reflects the dominator's mind. Additionally the participants' performance may strongly depend on their verbal/graphic expression abilities and knowledge background. Such kinds of hurdles could result in ineffective communication, which may further create a wide gap of understanding, even conflicts of interest, between the laypeople and the architects (Lawrence, 1981).

Winnicott (1953, p. 93) suggests that the professional needs to be a "good enough mother". In his analogy, the mother (professional) "[…] starts off with an almost complete adaptation to her infant's needs, and as time proceeds she adapts less and less completely, gradually, according to the infant's growing ability to deal with her failure." It means the infant (the public) should not be hastily pushed into too high a level that is beyond his limited capacity. Otherwise, the baby may feel overwhelmed and abandoned. Thorpe and Gamman (2011, p. 221) utilised the "good enough mother" in co-design; they termed this as the "maternalistic approach" of co-design.

The "good enough designer" neither does the entire job for participants, nor drops all the responsibility on them; instead the designer should help the participants to build and develop their own ability and knowledge through the co-design process.

2.3.3 Architects and laypeople are both important

The knowledge of architects and users is different at a fundamental level (*Table 2-2*), but both kinds of knowledge are equally essential to the architecture design. As Day and Parnell (2003) summarised, the users have day-to-day experience while the professionals have the experience of overview and large-scale issues. Often, however, these groups cannot see each other's perspectives (*Figure 2-18*).

Table 2-2 Differences between local knowledge and professional knowledge

	Local knowledge	Professional knowledge
Holders	Held by members of a community that can be both geographically located and contextual to specific identity groups.	Held by members of a profession, discipline, university, government agency, or industrial association.
Sources	From life experience and cultural tradition.	From experimental methods and disciplinary tools.
How to test	Be tested in public narratives, community stories, street theatre, and other public forums	Be tested through peer review, in the courts or through the media.

Source: Adapted from Corburn (2003, p. 421)
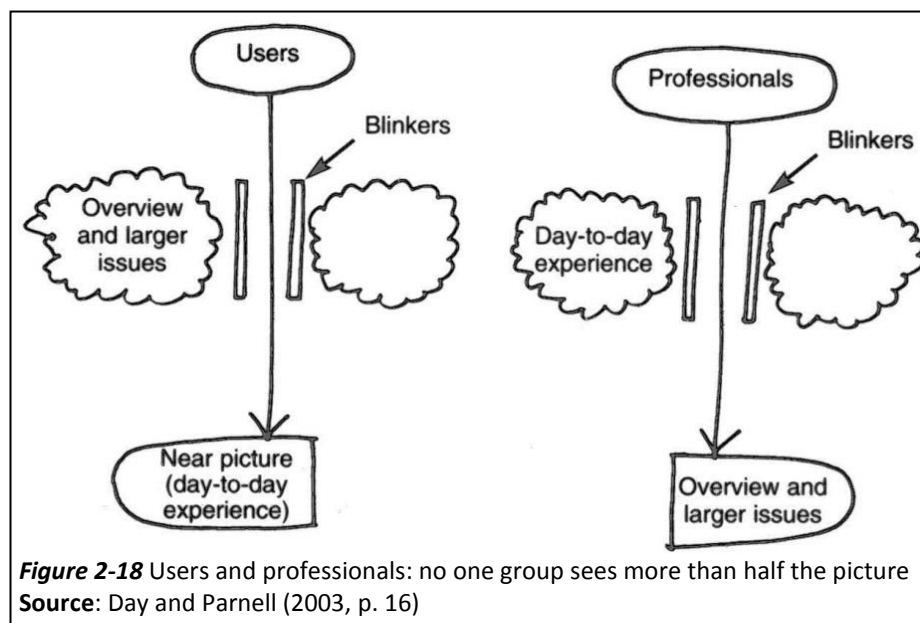
Figure 2-18 Users and professionals: no one group sees more than half the picture
Source: Day and Parnell (2003, p. 16)

In a design project, an architect definitely has more relative professional knowledge and design skills than a layman. The world of experts' work is called "Abstract Space". On the other hand, the knowledge of a layman comes from people's daily lives – "Concrete Space" (Lefebvre, 2003, pp. 181-188). As shown in *Figure 2-19*, the middle part, where the two worlds encounter one another, is the realm of collaboration between experts and public (Lee, 2008). Only the equal combination of users and professionals can render the whole picture of a participatory project (*Figure 2-20*). "The more socially inclusive this team, the better the chances of satisfying all parties. Meaningful design depends upon synthesised outlooks and inputs from both professionals and community" (Day and Parnell, 2003, p. 18). As Jenkins and Forsyth (2010, p. 166) suggest, future research on participation can focus on the new project type via new "mechanisms" for collecting information from users and the general public. At least,

> [...] architects should be encouraged to see value in forms of knowledge which lie outside their core professional competences as currently prescribed – and that this should be highlighted more clearly in architectural education, without necessarily diluting these competences but instead reinforcing them.
>
> Jenkins et al. (2010, p. 78)

Figure 2-19 Three modes of participation
Source: Lee (2008, p. 33)

Figure 2-20 Users and professionals: local experience and overview
Source: Day and Parnell (2003, p. 18)
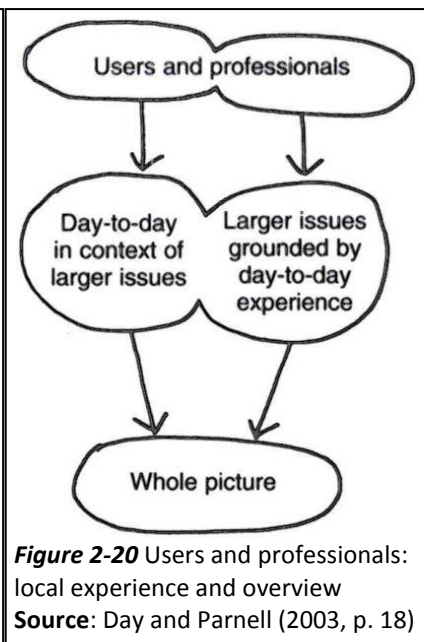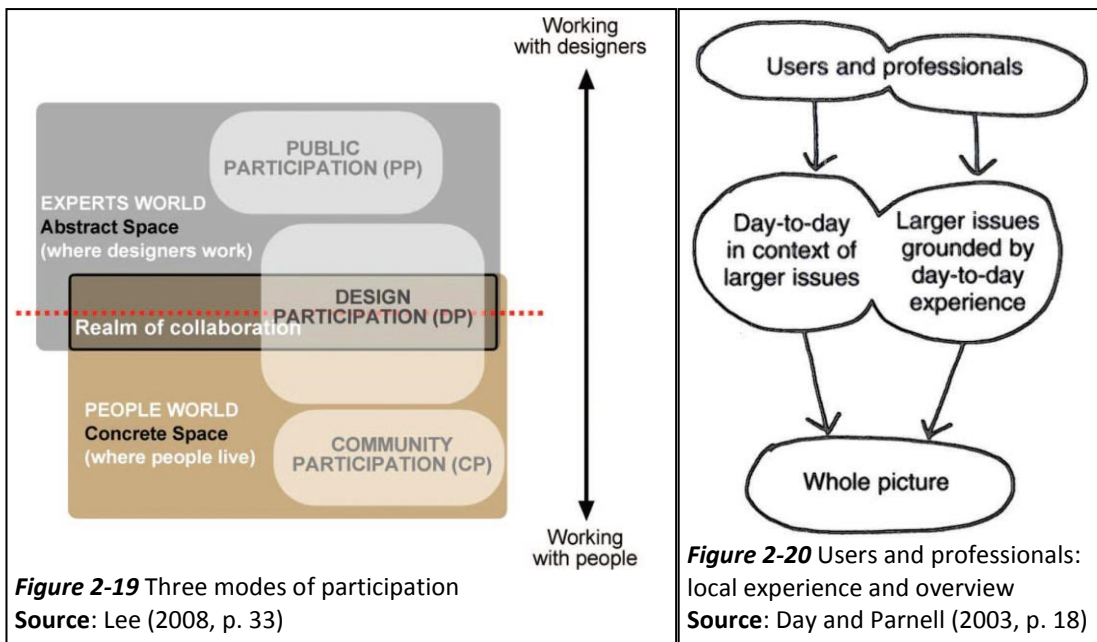
Based on the literature review above, we can say that in participatory architecture design, both the architects and participants should have equal power status while working together. Both sets of their knowledge and skills should be valued and respected rather than inclining to a single side. However, the equal power of laymen and architects cannot avoid conflicts in participation. This then raises the following concern: *how to make the final decisions when both professionals and laymen hold equal power status?* Not many architecture researches or practices focus on the different opinions or conflicts in participation, while most of them merely concentrate on the final results. To find the way of defusing the opposite opinions, a further literature review should be done on a wider research field: sociology.

2.4 Researches of Participation in Sociology

2.4.1 General Introduction of Participation in Sociology

Whiteley (1993) concluded that 'design' has been divided into two distinct paradigms over last 200 years. The first one is called *aesthetic* or *market-driven*

design that always tries to increase customer's wish of possessing more things; that is, "[c]onsumer led design [that] in a market economy goes far beyond the idea of meeting human needs; it seeks to create and constantly to stimulate human desires" (Whiteley, 1993, p. 3). Another one is *socially useful* design. The original concept is producing responsive design for social needs or the economy (Whiteley, 1993, pp. 107-110). The idea of thinking for users is not new. Mainly emerging from the United States in the 1950s, designers started to pay more attention to what people really need. The 'user-centred design' encouraged researchers to perceive and investigate alongside the product users. Starting to some extent from Scandinavia in the 1970s, a labour movement emerged, led by the Northern Europeans. In order to obtain more rights, the workers and theorists practiced public engagement in many areas, from factory management to product design, from policy making to scientific research [see Campbell (1968), Vroom et al. (1969), Papanek (1971), Hammer and Stern (1980), Al-Kodmany (1999), Corburn (2003), Ensici et al. (2008), Beegan and Atkinson (2008), and Shirk et al. (2012)]. During the participatory processes, the public can express their ideas, vote, or even make final decisions with agency and government.

According to Creighton (2005, p. 7), "public participation is the process by which public concerns, needs, and values are incorporated into governmental and corporate decision making. It is two-way communication and interaction, with the overall goal of better decisions that are supported by the public." The scholars emphasised the 'user' as a partner (Sanders and Stappers, 2008). Participation extends the democratic practice to a more local and detailed level (Brabham, 2009).

A few principles were applied to the participatory design (Greenbaum and Loi, 2012, p. 82): 1) Equalising power relations; 2) Situation-based actions; 3) Mutual learning; 4) Tools and techniques; 5) Alternative visions about technology; and 6) Democratic practices.

There are many different ways of classifying participation. For example, French (1964) suggested three types: *no participation* (only good information is given to the workers), *participation through representation* (good information plus the engagement of worker representatives), and *total participation* (good information plus the engagement of all workers). French's experiment found that the more participation results there were, the greater worker satisfaction was. Also, the greater participation of workers can create higher productivity (French, 1964).

2.4.2 Benefits and Pitfalls of Participation

The public participatory project is more sustainable and meaningful than the one dominated by designers [see Ellis and Disinger (1981), Isham et al. (1995), and Stiglitz (2002)]. Public engagement supports the idea of democracy, freedom and autonomy. As Fiorino (1990, p. 239) pointed out, "the case for participation should begin with a normative argument—that a purely technocratic orientation is incompatible with democratic ideals." Public participation is an inherent part of democratic governance (Dietz and Stern, 2008, pp. 50-74). Susskind and Elliott (1983, p. 3) claimed that participation encourages the 1) democratisation of choices involving resource allocation; 2) decentralisation of service systems management; 3) deprofessionalisation of bureaucratic judgments that affect the lives of residents, and 4) demystification of design and investment decisions. More examples of the

writings with similar opinions include Saul's Alinsky, *Reveille for Radicals* (1946); Milton Kotler's *Neighborhood Government* (1969); and Ivan Illich's *Deschooling Society* (1970).

More benefits of participation can be found in the society and community. Instead of working alone, the designers had to think about what the 'user' really needs. The designers started to work with the partner – 'user' – to perceive and investigate production (Sanders and Stappers, 2008). Dietz and Stern (2008) listed many research studies to support the fact that participation can 1) Improve the quality of project; 2) Enhance the legitimacy of a project, and 3) Build the capacity of the public. More benefits of participation described in the literature are summarised by Yukl (2013):

1. Higher decision quality and acceptance (Coch and French, 1948);
2. Better knowledge of objectives (Lawler and Hackman, 1969);
3. Higher fulfilment and satisfaction (Locke and Schweiger, 1979);
4. Higher personal and team identity (Davis, 1963);
5. Developing the means of conflicts resolving (Strauss, 1963).

Public participation, however, also has its pitfalls that should be avoided. "The general principle now is no longer that participation is a good thing and has invariably favourable effects. Rather, the effects of participation may be large or small, favourable or unfavourable, […]" (French, 1964, p. 43). It is actually a warning that participation also has drawbacks which are unexpected. For instance, the organiser can manipulate the public decisions, or not take their suggestions seriously (Dietz and Stern, 2008, p. 50-74); the speed and scale of a participatory project is usually slower and smaller than that of a professional-only project [see Friedman

(2010) and Campanella (2011)]; and lacking the necessary knowledge and skills, the participants may produce a trivial and undesirable result for a project (Thorpe and Gamman, 2011). The knowledge and skills of a person can affect the others in a participatory group significantly. There are many aspects that can influence the acceptance and effectiveness of participation.

A common phenomenon in participation is the domination by the powerful or more talkative side in the conversation, which may lead to an unfair result. Normally, in group work, people persuade each other in order to propagate their ideas and a high level of talkativeness is related to the acceptance of opinions. Riecken (1958, p. 320) concluded from his study that 1) The most talkative man in a group can have a greater influence on decision making; 2) The acceptance of this man's solution was based on the attention and support from other members; 3) The intelligence and skill of persuasion both fail to affect the facts-holder's influence; 4) A highly talkative man may fail to get the idea accepted when the idea is doubtful, and 5) The silent member's suggestion may be accepted if one or more talkative members support him. This means that the most appropriate suggestion can be rejected just because its speaker is the least talkative person in the group.

Hoffman and Maier (1961) compare the performance of homogeneous and heterotopia groups. A homogeneous group consists of people with similar personalities and knowledge, while a heterotopia group consists of people with different personalities and knowledge. According to the results, the *heterotopia* groups performed at a higher quality in establishing solutions than the homogeneous groups did. Meanwhile, mixed genders and personalities also promote the

production of solutions, and cooperation between different social groups can offer a greater chance of mutual understanding (Hoffman and Maier, 1961). The diversity of participants is a valuable character in participatory projects. The more "directions" offered by the group, the more possibilities of arriving at the most acceptable solution (Maier, 1930). Hong and Page (2001) also found similar experiment results: 1) The mixed group of smart agents and less smart agents performed better than the group that only had smart agents and 2) The people with different levels of knowledge can promote the team's outcome, though they may know less than the intelligent team members.

Participation has been denounced by the critics at the policy, economy, and quality levels. These difficulties are described more fully in the Advisory Commission on Intergovernment Relations' *Citizen Participation in the American Federal System* (1979); and Daniel Moynihan's *Maximum Feasible Misunderstanding* (1969). Also a general summary can be seen in Stuart Langton's *Citizen Participation in America* (1979). Regarding the benefits and pitfalls mentioned above, the thesis here mainly focuses on the most appropriate methods or guidelines used in participation.

2.4.3 The Key issues in Participation

Social work is a practice-based profession and an academic discipline that promotes social change and development, social cohesion, and the empowerment and liberation of people. Principles of social justice, human rights, collective responsibility and respect for diversities are central to social work. Underpinned by theories of social work, social sciences, humanities and indigenous knowledge, social work engages people and structures to address life challenges and enhance wellbeing.

IFSW (2014)

The definition of social work, proposed by the International Federation of Social Workers (IFSW), indicates that relationships are the primary and chief concerns in participation. Relationships help the participants to solve social problems and transform cultures (Jordan, 2007), and effective relationships support the realisation of human rights, equality, and social justice (Kirst-Ashman, 2003). The 'social justice' here means "an ideal condition in which all members of a society have the same basic rights, protection, opportunities, obligations, and social benefits" (Barker, 2003, p. 404).

Returning to the research of museums, museums should support the social work in three ways: 1) Offer the chances of connecting for potentially like-minded strangers; 2) Offer relaxed events and stimulate conversation and 3) Maintain the relationship on a common ground, and also act against the prejudice and discrimination (Silverman, 2010). Prejudice and discrimination are not only actions, but also the sources of inequality. They passively affect the relationship in various ways. It is the museum's responsibility to fight prejudice and discrimination in the community. Museums should retain a healthy and positive contact among the people (Sandell, 2007). Furthermore, the museums should empower the weak group by redistributing power and access (Gutierrez et al., 1995). The "weak group" can be poor, a racial or ethnic minority, or female, among others. To foster such group empowerment, the museum can either ask the group to be museum consultants, or ask the group to arrange exhibitions. The museum should be the hub within which groups can be themselves (Silverman, 2010).

Participation research has explored many sub-areas of social justice. For instance, either the majority or the experts in participation can use their power to affect the decision making (Moore, 1921),[16] the satisfaction level in participation (Mulder, 1959), the quality and acceptance of the solution (Hoffman and Maier, 1961),[17] the distance of power (Mulder et al., 1973), the equalization of power [see Mulder and Wilke (1970), Mulder (1971), and Abdelhalim (1980)], the project's ownership (Hammer and Stern, 1980), and the controversy and conflict in participation [see Tjosvold (1987) and Tjosvold (1988)].[18] One of the key issues is fairness and effectiveness in participation (Dietz and Stern, 2008). Usually, many participants will try to persuade the others to accept their own ideas. It is usual to find a few participants who are competent at speaking and expressing. The talkative people may even dominate the conversation. Skills and knowledge play a significant role in affecting the acceptance and effectiveness of participation.

Also, Hovland and Weiss (1951) found that there is a gap between learning and acceptance. The credibility of the information and of the speaker is very important. It is easy for a talkative participant to earn the trust and support of other members. A high level of talkativeness is related to the acceptance of opinion, but only to a certain degree. An experiment by Riecken (1958, p. 320) found that 1) The most talkative man in a group can have a greater influence on decision making; 2) The

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[16] Henry T. Moore was the social psychologist specialising in power equalisation.
[17] L. Richard Hoffman researches cognitive psychology, social psychology and organisational psychology; and Norman R. F. Maier was an American experimental psychologist who worked at the University of Michigan.
[18] Prof. Dean Tjosvold was Henry Y. W. Fong's Chair Professor of Management at Lingnan University. Simon Fraser University awarded him a University Professorship for his research contributions. He has published over 200 articles and 20 books on cooperation and competition, managing conflict, leadership and power.

acceptance of this man's solution was based on the attention and support from other members; 3) The intelligence and skill of persuasion both fail to affect the fact-holder's influentiality; 4) The highly talkative man may fail to have his idea accepted when the idea is questionable; and 5) The silent member's suggestion may be accepted if one or more talkative members support him. This means that if the least talkative person cannot attain support from others, his advice would be rejected, even though the solution is the most appropriate. Following Riecken, Shaw and Penrod (1962) explained that the effectiveness of information is conditional.

The different interests and perspectives are unavoidable in group discussion. On the one hand, these differences can be seen as the problems of participation. On the other hand, the diversity of taste, values and personal characteristics also contribute to the organisational decision-making (Tjosvold, 1988). Therefore, Tjosvold (1988) suggests the following: 1) Encourage everyone to contribute their own perspectives; 2) The management should ensure that everyone has an equal chance to express their views, and 3) Ensure that any controversy between different groups is well controlled [also see Bragg and Andrews (1973a), George (1974), and Richter and Tjosvold (1980)].

2.5 Summary

Section 2.1 first introduced the history and current situation of the 'museum'. Secondly, it described the definitions and values of participation in museums, followed by the detailed explanations of four participation modes in museums: *contributory* participation, *collaborative* participation, *co-creative* participation, and *hosted* participation. Regarding the four modes, we can locate the initial research

question, "how members of the public participate in the architectural design of the museum", in the category of collaborative participation. Next, along with the exhibition design, the author argues that participation in museum architecture design is a meaningful research area that needs to be explored, especially when there is a new building or extension of a museum needs to be constructed.

To discuss the participatory architecture design, section 2.2 reviewed Heidegger's philosophy of building and dwelling. He claims that the meaning of building comes from its users, not the architects. The users should have the power to design the building with architects. The section then explained the reasons and examples of different understanding of art and architecture, for instance, Van Gogh's painting – *A Pair of Shoes*, and the *Eiffel Tower* in Paris. As it can be seen, no matter how distinct those readings of the Eiffel Tower are, the readers' judgments cannot directly affect the Eiffel Tower's appearance. The reading of building is an independent behaviour. However, designing a building requires the architects and users to transfer their ideas and judgments to a final agreement; otherwise no actual construction action will take place, for example, Eishin Campus.

Following this, a general introduction to participation in architecture was given in section 2.3. Usually in a project, either the professionals or the public has dominated power in the workshop, which devalues the knowledge and skills of the subordinated groups. Many projects have proved that the dominance of either experts or laypeople usually produces a result that does not deal with the concerns of another side. It was argued that both architects and the public should have equal power

status in workshops. The initial research question was then improved: *how to make the final decisions when both professionals and laymen hold equal power status?*

A wider literature review of participation in sociology was carried out in section 2.4, followed by a discussion of the pros and cons of participation. Many researchers have emphasised the contradictory and multiple interests in participation. The ways conflicts and power are dealt with can affect the satisfaction, acceptance, and productivity in participation, among other factors. Then the thesis narrowed down the question to the *resolution of conflicts* and *making decisions* in participatory architecture design of museum.

The literature review of the next chapter focuses more on power and control, and conflicts and agreements; the researcher's aim is to find the possible methods that can be used in participation regarding the benefits and shortcomings of participation.

Chapter 3. Theories of Power, Conflict and Consensus

Following the key issues explored in the last chapter, this chapter mainly explains the theories of power control, conflict and consensus. Firstly, section 3.1 introduces Foucault's and Habermas's discussion of control and communication. It aims to find a direction in dealing with control and communication in participation. Following the philosophical theories, section 3.2 explains the definitions and features of power and conflict in more recent sociological theories. It tries to discover a detailed view of resolving conflicts. Section 3.3 abstracts the principles and stages of reducing control and increasing communication in participation. Based on these principles, it analyses the methods used in participation to find out which methods are better than the rest.

3.1 Control and Communication

3.1.1 Governmentality

> We should admit rather that power produces knowledge (and not simply by encouraging it because it serves power or by applying it because it is useful); that power and knowledge directly imply one another; that there is no power relation without the correlative constitution of a field of knowledge, nor any knowledge that does not presuppose and constitute at the same time power relations.
>
> Foucault (1977b, p. 27)

Significantly affected by Heidegger and Nietzsche, the issues of 'authority' and 'power' have been investigated by Michel Foucault from a broader angle (Ijsseling, 1986). In Foucault's late life, he firstly developed the idea of "*governmentality*" in his lectures of 1978 and 1979 at the Collège de France. In this lecture, Foucault gave the following definition of "*governmentality*":

1. The ensemble formed by the institutions, procedures, analyses and reflections, the calculations and tactics that allow the exercise of this very specific albeit

complex form of power, which has as its target population, as its principal form of knowledge political economy, and as its essential technical means apparatuses of security.

2. The tendency which, over a long period and throughout the West, has steadily led towards the pre-eminence over all other forms (sovereignty, discipline, etc) of this type of power which may be termed government, resulting, on the one hand, in formation of a whole series of specific governmental apparatuses, and, on the other, in the development of a whole complex of savoirs.

3. The process, or rather the result of the process, through which the state of justice of the Middle Ages, transformed into the administrative state during the fifteenth and sixteenth centuries, gradually becomes 'governmentalized'.

Foucault (1991, p. 102-103)

The *governmentality* defined by Foucault is very broad. As Foucault (1991) claims, 'power' not only has hierarchical, top-down direction, but also permeates the social control in disciplinary institutions (such as schools, hospitals, psychiatric institutions), especially the forms of "knowledge" (also named as *savoir*). As Foucault (1977b) claims, power is not simply a means of governing people by force, which seems cruel and violent. The instrument of governing can also be self-regulation, discipline and punishment; for instance, the "Panopticon" designed by the English philosopher and social theorist Jeremy Bentham in the late 18th century (see *Figure 3-1*). The concept of this prison is to allow a watchman to control all prisoners in this building without the prisoners being able to tell whether or not they are under surveillance, with the intention that they will become self-regulating.

The design consists of a circular structure with an "inspection house" at its centre, from which the watchmen of the building are able to watch the prisoners, who are living around the "inspection house". This prison Panopticon idea can be equally

applied to hospitals, schools, sanatoriums, and museums [see Hooper-Greenhill (1989) and Bennett (1995)]. Bentham (1787, p. 31) describes the influence of the Panopticon as, "[m]orals reformed – health preserved – industry invigorated – instruction diffused – public burthens lightened – Economy seated, as it were, upon a rock – the gordian knot of the poor-law not cut, but untied – all by a simple idea in Architecture". His prison was most widely understood by the above description. It is "a new mode of obtaining power of mind over mind, in a quantity hitherto without example" (Bentham, 1787, p. 31).
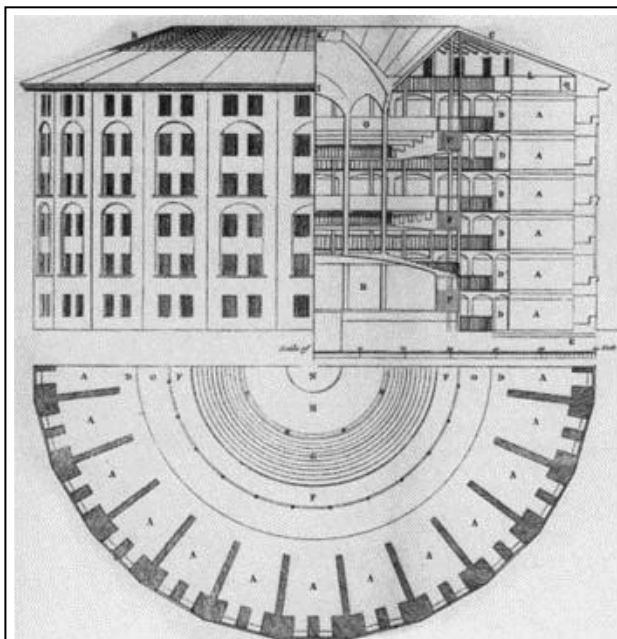
Figure 3-1 Plan of the Panopticon
Source: Bentham (1843, p. 172)
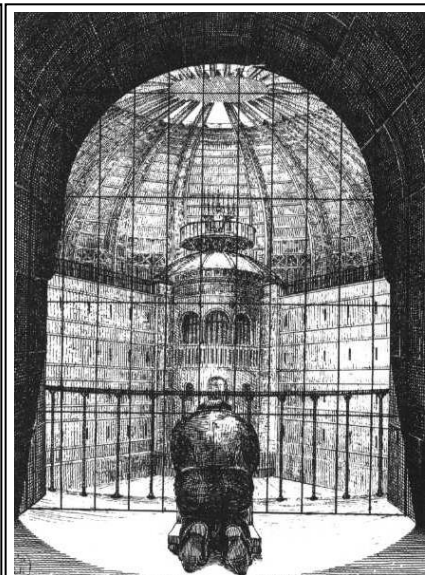
Figure 3-2 A prisoner, in his cell, kneeling as prayer before the central inspection tower
Source: Bentham (1843, p. 250)

As shown in *Figure 3-2*, the prisoner is kneeling down to the central tower without any verbal or text commands. "Each individual, in his place, is securely confined to a cell from which he is seen from the front by the supervisor; but the side walls prevent him from coming into contact with his companions. He is seen, but he does not see; he is the object of information, never a subject in communication."

(Foucault, 1977b, p. 200) In this one-direction communication, the man had established self-discipline under the central tower monitoring system. Violent control is not the only way to govern the society; modest strategies can achieve the governing purpose more efficiently and silently. The notion of governmentality has permeated through the different levels of society. In Foucault's mind, the traditional discussion of government and power was either about the forms of power with a single centre, or focused on the mechanism of power to influence the whole. On the contrary, Foucault aims to

> […] understand power by looking at its extremities, at its outer limits at the point where it becomes capillary; in other words, to understand power in its most regional forms and institutions, and especially at the points where this power transgresses the rules of right that organise and delineate it, oversteps those rules and is invested in institutions, is embodied in techniques and acquires the material means to intervene, sometimes in violent ways.
>
> <div align="right">Foucault et al. (2003, pp. 27-28)</div>

"Knowledge" is always utilised in "power exertion" (Foucault, 1972). Foucault (1977b) claims that power can produce knowledge; then the performance of knowledge would reinforce the power. The aspiration of power and knowledge is "knowing we control and in controlling we know" (Gutting, 2013).[19] Foucault expands his analysis from hospitals to some state apparatus, such as prisons, barracks, or asylums. As Foucault (2003) claimed, from the Age of Enlightenment, the education was offered a much higher position than before. The public was trained to discover, and was endowed an 'ambiguous power'.

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[19] See Foucault's *Governmentality* in section 7.2, p. 326.

> The eye becomes the depositary and source of clarity; it has the power to bring a truth to light that it receives only to the extent that it has brought it to light; as it opens, the eye first opens the truth: a flexion that marks the transition from the world of classical clarity—from the 'enlightenment'—to the nineteenth century.
>
> Foucault (2003, p. 64)

By using Foucault's theories, Tony Bennett (1995) has analysed how museums used knowledge and authority to educate the public and guide their behaviour [also see Bennett (1995) and Bennett (2004)]. Museums have being affecting the public's thinking and values along with the exhibitions. Especially in the era of Enlightenment, the schools, libraries and museums became strong labels to the society. Therefore, museums were criticised by many thinkers as an accomplice of the Enlightenment. The same theory can be applied to the public participation in museums. For instance, as a source of knowledge, the archaeology, anthropology and natural history museums have significantly shaped the public knowledge, manners and discipline. Mitchell Dean (1999) also applied the "analytics of government" to museum research, in contrast to the old museums which were based on earlier theories of the state and ideology. The differences between the old and new museums can be simply explained as the perspective of the ideology of museums, and how they reproduce and legitimate forms of power. In the eighteenth century, the association of self-autonomy and development of market and civil society required new forms of self-regulation:

> The role of museums, or that of other cultural institutions, is then viewed as secondary – as a role of relay and reinforcement – in relation to these relations of power. An analytics of government, by contrast, focuses on how distinctive relations of power are constituted in and by the exercise of specific forms of knowledge and expertise, and on the ways in which these give rise to specific mechanisms,

techniques and technologies for shaping thought, feelings, perceptions and behaviour.

<div align="right">Bennett (2004, p. 5)</div>

The new theory decides the new practices of classification and exhibition in which the fossils and extinct species of natural history museums were represented in new and progressively complex arrangements (Bennett, 2004). For instance, the style of the Baroque had also been characterised by this principle of cabinets of curiosities. A Baroque cabinet of curiosities was a collection of natural objects as well as works of art. Termed "Artificialia" (artificial) and "naturalia" (natural), the former represents the work of man while the latter represents the work of God. *Figure 3-3* depicts what a Baroque cabinet of curiosity looked like. The taller man on the right corner of *Figure 3-3* was Marchese Ferdinando Cospi (1606-1686). He was the owner of these collections which were given to the city of Bologna in 1657 for the use of scholars. In his collections, there were stuffed animals, fossils, scientific equipment, works of cut rock crystal and ivory, and even a living collection – the dwarf Sebastiano Biavati (Yamada, 2006). All the pieces were not organised by scientific perspective but rather regarding the material and functions. The owner tried to use the precious collections to paint a picture of the whole universe.

Figure 3-3 Baroque Cabinet of Curiosities
Source: Legati (1677, front page, between index and text)
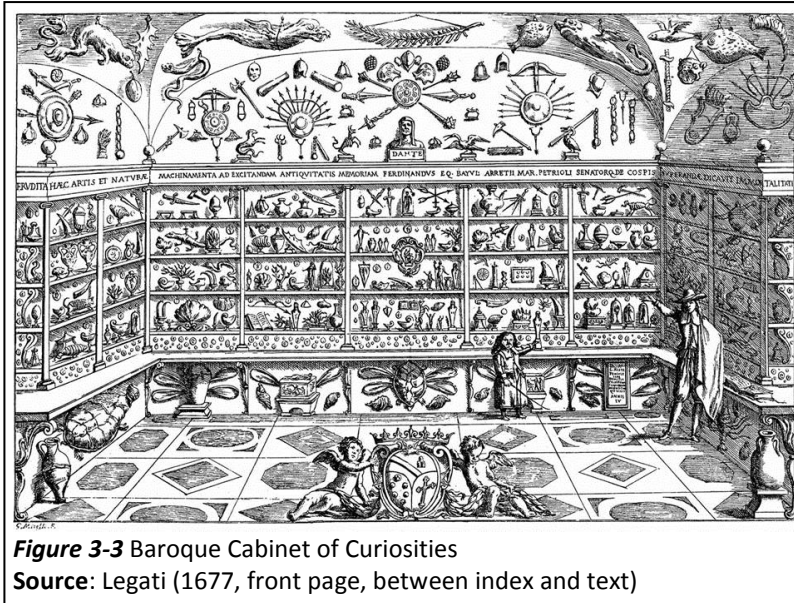
After the publication of "*On the Origin of Species*" in 1859, Darwin's theories of evolution had a significant and enduring effect on the exhibition of museum. A kind of museum came out defined as the *evolutionary* museum, in which the skulls and skeletons were arranged visually from left to right, by the unstated but connoted influence of time. In Anthony Ashley Cooper's (the Earl of Shaftesbury's) view, this form of moral government supplied the chance to the visitor to behave surgically on himself or herself through, as expressed by Poovey, 'a kind of introspection that "multiplies" the self by dividing it into segments that can act independently' (Poovey, 1998, p. 177). The linear sequence can be seen from *Figure 3-4* and *Figure 3-5*. Thomas Henry Huxley (1896) applied Darwin's ideas to the exhibition of humans' skulls and skeletons. He used comparative anatomy to show that humans and apes had a common ancestor, which challenged the theologically important idea that humans held a unique place in the universe (Bowler and Morus, 2005, pp. 154-155).

Figure 3-4 Sections of the skulls of man and various apes
Source: Huxley (1896, p. 74)

Figure 3-5 Drawing by Waterhouse Hawkins reduced and arranged in sequence
Source: Huxley (1896, p. xvii)
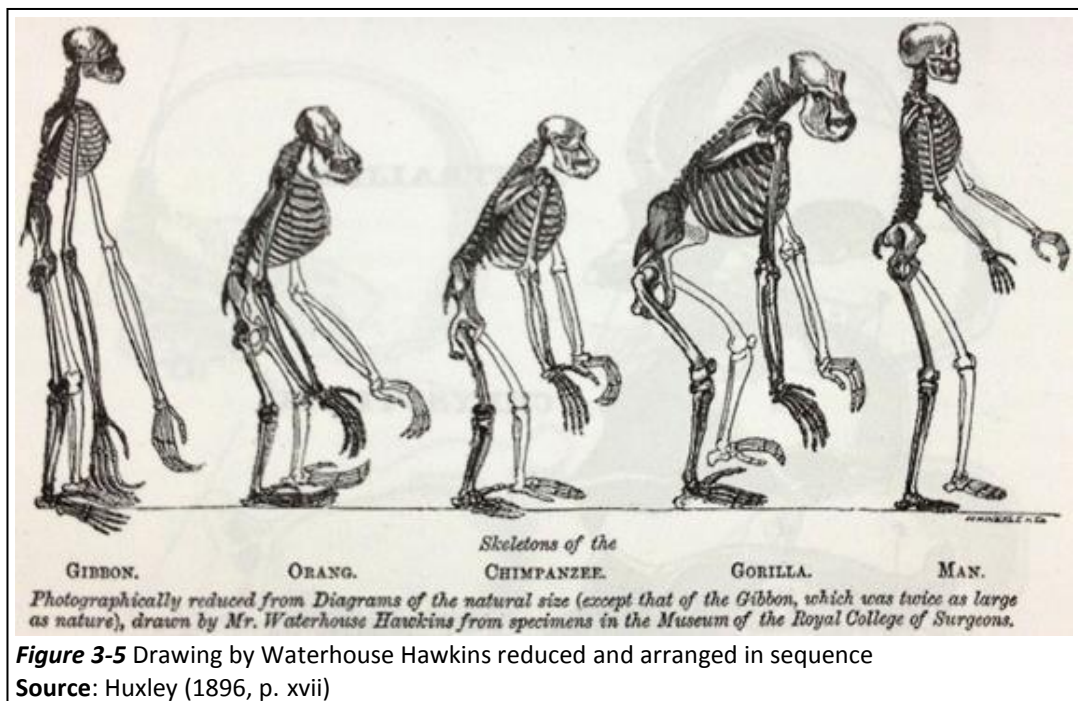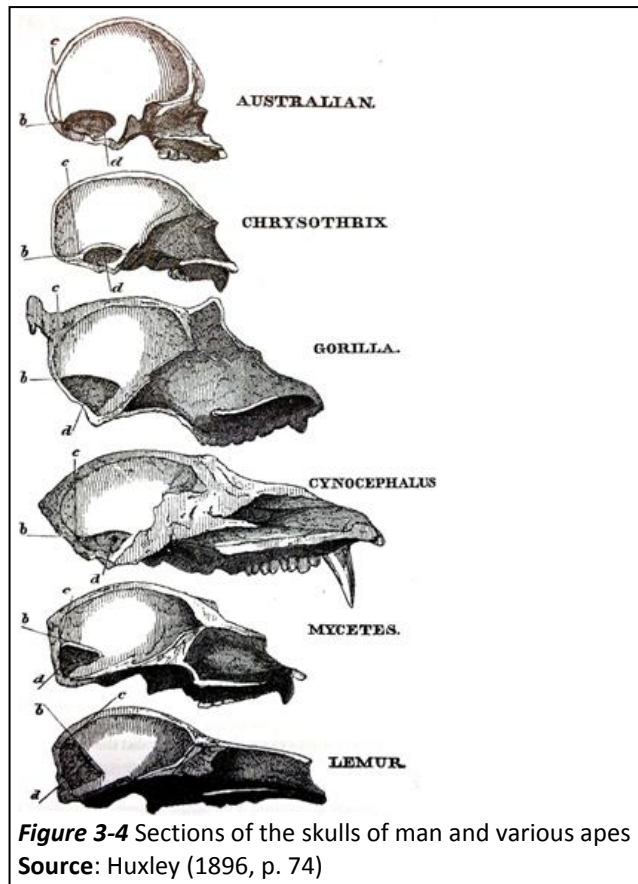
In opposition to this, we can also see how some institutions went against Darwin's theories of evolution by not exhibiting items differently, but also by building the

museum cryptically. Here are two examples of the museum that use different architectural designs to express their disagreement with Darwin's theories of evolution. The first example is the Oxford University Museum of Natural History (OUMNH) (see *Figure 3-6*). It is Victorian neo-Gothic architecture built between 1855 and 1860, and opened on 1860. Second example is the Natural History Museum (NHM), London (see *Figure 3-7*). It is a Victorian architecture built on 1880, and opened its door to public on 1881 (Bullen, 2006). These two natural history museums both have numerous items ranging from entomology, mineralogy, palaeontology to zoology, and so on. Although both museums embodied the same purpose of representing their "knowledge" of nature history, the two museums ended with quite different architecture design.

Figure 3-6 Exterior and interior of Oxford University Museum of Natural History
Source: Photographed by the author

Figure 3-7 Exterior and interior of Natural History Museum, London
Source: Photographed by the author

The construction budget of OUMNH came from the sales of Bibles (Taunton, 2011), so its understanding of nature and science was closer to religion rather than the evolution theory. For instance, the objects of natural history were considered to be made by the hand of God, while the objects of anthropology were considered to be made by the hand of man (Yanni, 2005). By holding this idea, all the natural items, from the giant dinosaur fossil to the small piece of wood, were exhibited in the central display square (see *Figures 3-8 and 3-9*); while all the ethnological collections were shown in the east side of museum – in the Pitt Rivers Museum. Therefore, when strolling through the natural history square, a visitor may not get a "clue", but wonder where these creatures came from, and how they live in the world. Under the same glass roof with all the distinctive specimens and fossils, a man may get the "*Knowledge of the great material design of which the Supreme Master-Worker has made us a constituent part*" (Acland and Ruskin, 1859, p. 14). It is the architecture of OUMNH that creates the enclosed atmosphere and veiled meaning.
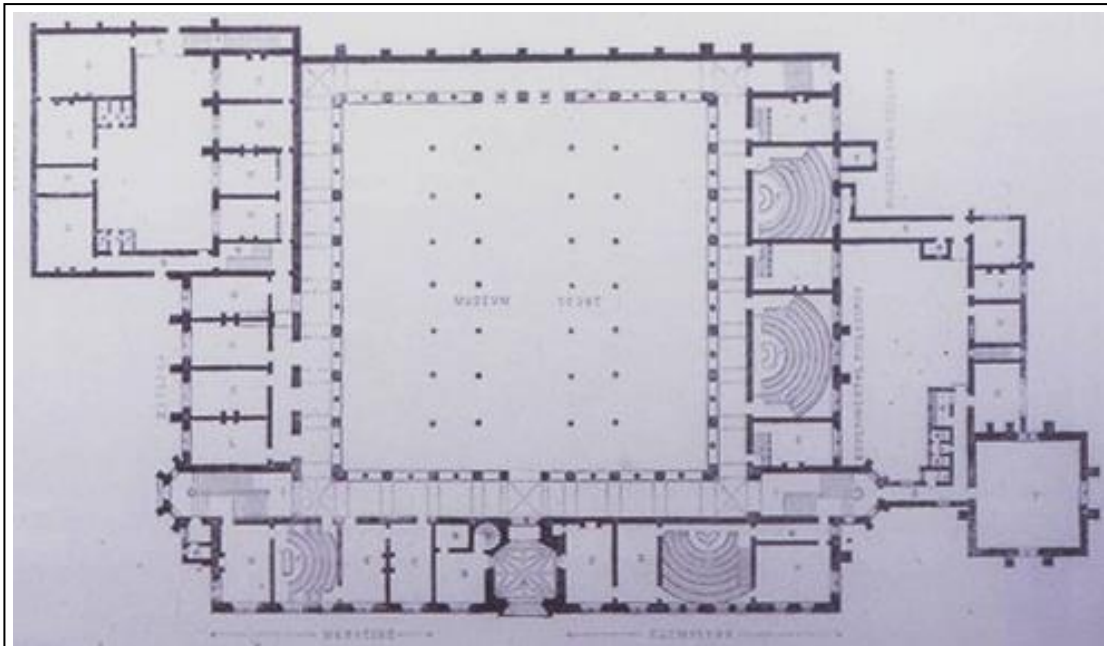
Figure 3-8 Floor plan of Oxford University Museum of Natural History
Source: Deane and Woodward (1855-1860)
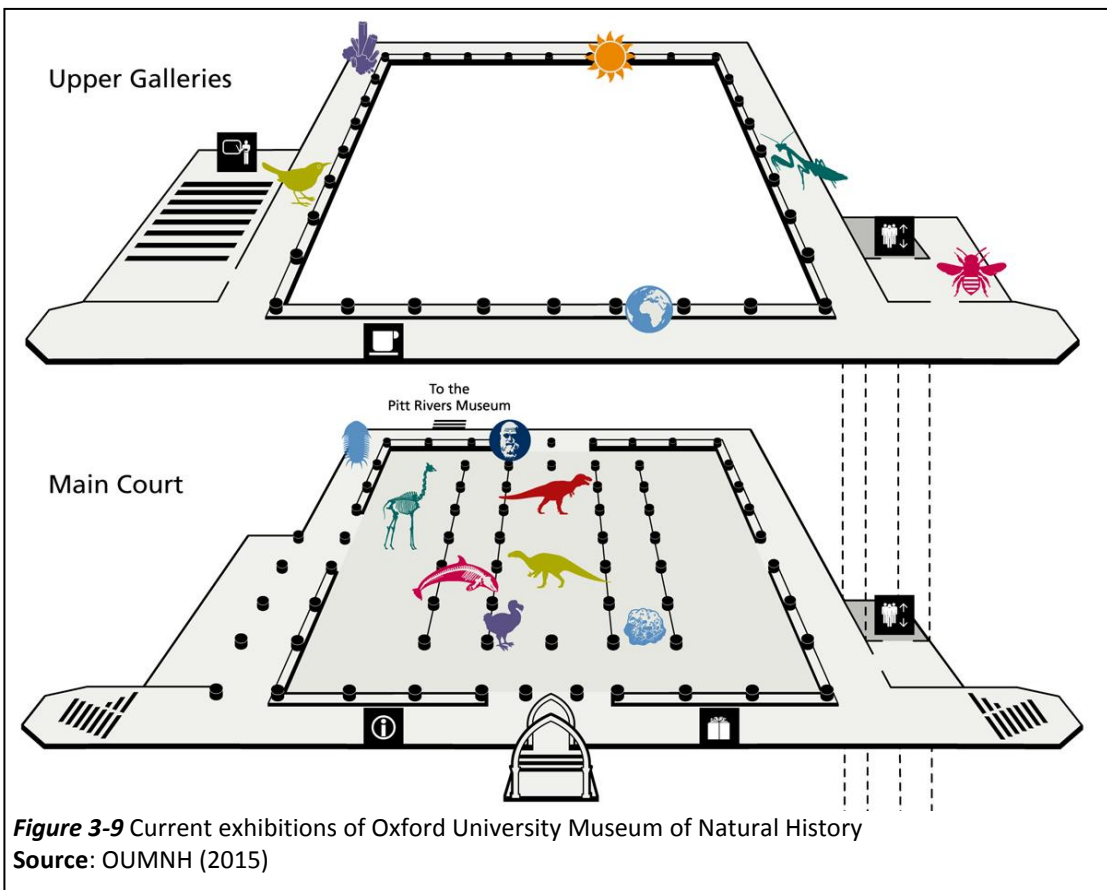
Figure 3-9 Current exhibitions of Oxford University Museum of Natural History
Source: OUMNH (2015)

The construction of NHM was significantly influenced by the palaeontologist Richard

Owen who was a famous English biologist, anatomist and palaeontologist. Owen

showed an ambiguous position between Darwin's theories of evolution and the belief in God (Rupke, 1994). Therefore, being the appointed Superintendent of the natural history departments of the British Museum in 1856, Owen separated living and extinct natural items into the west and east wings of the central hall, for the purpose of cutting the link of present species and those from the past, in defiance of Darwin's theories. Meanwhile, instead of using a roof to cover all the galleries, Owen put the same type of fossils or specimens into the same aisle of the wings (Sheppard, 1975). For instance, the west wing had bird, shell, star fish, reptile, insect and fish galleries; and the east wing had fossil fishes, geographical collections, fossil gasteropoda and conchifera, fossil corals, and stratigraphical series (see *Figures 3-10 and 3-11*). Corresponding to Owen's idea, the architectural design of NHM was quite different from OUMNH's. The long narrow aisles and roofs divided the space into several isolated zones. By passing through the different zones, and comparing with all the other creatures, a visitor may get the "new knowledge" of human and nature. The animals, plants and minerals were no longer converged under the single power, but belonged to artificial divisions. As one of these divisions, humans were not as unique as before. The building was a "cathedral to God's wonders of the natural world" (Bullen, 2006, p. 271), or a "cathedral of science" (Bennett, 2004, p. 73), but left the space for the visitor to explore more possibilities beyond evolution (Evans, 2012).

Figure 3-10 Floor plan of Natural History Museum, London
Source: Bullen (2006, p. 270)

Figure 3-11 Current exhibitions of Natural History Museum, London
Source: NHM (2015)
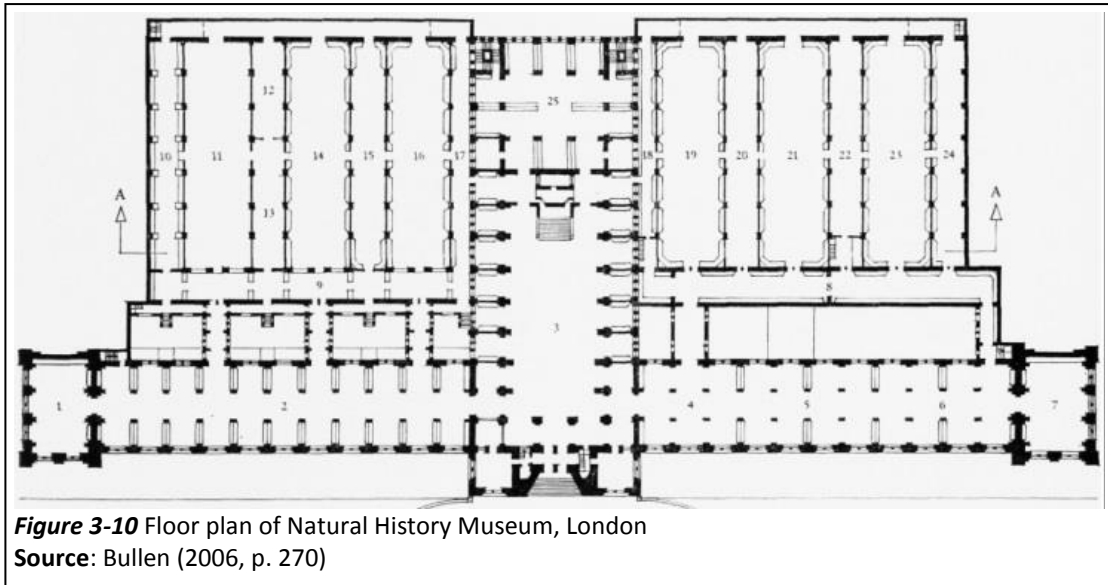
"Here, as in natural history museums, the artefactual domain was rearranged as objects were located in new relations of space and time and, in the process, connected to new practices of government and self-government" (Bennett, 2004, p. 19). In the eighteenth and nineteenth centuries, the public gained more access to, and freedom in, the natural history museum, science museum, and art gallery. However, while receiving the exhibited 'knowledge', the visitor's ideology was actually being "shaped" by the institutions or government of the day (Bennett, 1995). The freedom, enterprise and autonomy are embodied in the behaviour of going to

the museum. It is the visitors' choice to go the museum; their choice of which museum to go to. By going to the museum, they are walking around driven by their personal interest and knowledge. In the evolutionary museum, their introspection emerged while looking at the linear exhibition. They go through their own discipline, and modify it. It is themselves that makes this possible. Through Foucauldian discourse, Bennett (1995) views the museum as a monument, which can be used as the nation state's ideal tool of civilisation and paternalistic concerns. "They stood as embodiments, both material and symbolic, of a power to 'show and tell' which, in being developed in a newly constituted open and public space, sought rhetorically to incorporate the people within the processes of the state." (Bennett, 1995, p. 87)

The examples above demonstrate the utilisation of power and knowledge in museum's exhibition and building to influence the visitors. These strategies used in museums inevitably involved the purpose of control in a certain degree, which is also the reason why we need public participation in museums. Public participation offers the expression chances to the members of public. In a certain degree, the ideas and values of the public can be reflected in the cooperative projects or exhibitions. Then the follow question arises is how to balance the power between the museums and public, experts and laypeople.

3.1.2 Public Sphere

In *Governmentality*, Foucault (1991) claims that with power, a person can decide the knowledge and make judgments while others cannot. To deal with power and control, Jürgen Habermas (1989, p. 27-57) suggests a communication sphere – 'bourgeois public sphere' that developed in the eighteenth and early nineteenth

centuries, then diminished subsequently (see *Figure 3-12*). The "bourgeois public sphere" was a space where bourgeois can have rational-critical debate and discussion, such as the *Tischgesellschaften* in Germany, *salons* in France, and coffee houses in Britain. In these open commercial places, any news and cases could be freely shared and debated. Supported by the growing rates of literacy and a new form of literary journalism, the rising bourgeoisie began to form another realm in which the government power was speciously represented in front of the people. The authority of the "bourgeois public sphere" was owned by the public, particularly the bourgeois, which was independent of the church and the government's power, even against the publicity governed by the state. The "public sphere" is in the middle of the "sphere of public authority" and "private sphere". The "sphere of public authority" deals with the nation and ruling system. The "public sphere" was considered as the realm that can oppose the control of state (Habermas, 1989, pp. 27-57).[20]

Figure 3-12 The Salon of Madame Geoffrin in 1755
Source: Lemonnier (1812)

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[20] See Habermas's *Public Sphere* in section 7.2, pp. 326-327.

There are three "institutional criteria" for the public sphere (Habermas, 1989, pp. 36-37): 1) Disregard of status. In the public sphere, the different social rank here was neglected, which is different from the conception of equal status. Based on the "common humanity", everyone is seen as a common human whose authority can act against the social hierarchy. Due to this, the idea of public sphere became a concept among society. 2) Domain of 'common concern'. The 'common concern' which had been monopolized by the church and state for a long time is now being commercialized. The tendency of [a] commercial and profane product[s] of culture allows private people to depict it, which offers the authority to the public. 3) Inclusivity. The commercialization of culture can make sure it is accessible to all private people. The issues became 'general' rather than significant. Any private people that are interested in the topic can easily join in the public sphere.

There are also several controversial points in Habermas's theory. Summarised by Simon Susen (2011), Habermas's "public sphere" has three obvious shortcomings: 1. It emphasises the bourgeois, while neglecting the lower strata, for example, women, children, poor; 2. It overvalues the role of communicative rationality in controlling power. In fact, not everyone can be self-disciplined in the conversation; 3. It supports only one universal conception, while it neglects other social concepts. By disregarding the female, the poor and other low strata groups, the 'bourgeois' consider themselves as the "universal class" in the public sphere. Although the "public sphere" kept away from the government power, it was under the control of bourgeois' ideology - a replacement of domination [see Fraser (1992), Ryan (1992), and Eley (1992)].

Besides these flaws, Habermas's theory actually inspired many following discussions and practices. Friedmann (1987) claims that a non-authoritarian, non-hierarchical manner supports the sharing of knowledge, and learning of knowledge through success and failure. Paulo Friere (1990) also suggests that an equal communication platform encourages the citizens to exchange ideas and knowledge. Learned from Habermas, Sanoff (2000, p. 15) abstracts four features of participation design: 1) no constraints or domination in discussion; 2) everyone is free to speak, and has the equal chance to speak; 3) no political hierarchies, or unequal influence owned by someone; and 4) the process is rational, even persuasion should go with good reasons not threats. There needs to be more literature review and discussion to find out the detailed problems in participation, for instance, to find out a mechanism that can avoid the dominance of a single group. The dominant group can be the professional architects, or it can be the talkative or respectable person among the public. They all can stealthily affect the others' judgements. Once the communication is dominated, the freedom of expressing ideas is lost. The following question is how to encourage a free communication while avoiding the power control.

3.1.3 The Balance between Control and Communication

Regarding the design of the museum, an exhibition is usually designed and organised by the curator or the experts. They have the experience and knowledge to show the items, and guide the visitors' behaviour in the exhibition. Visitors have to accept the completed design. Visitors are guided by the experts, which is defined as "paternalism" (Dworkin, 2010). Paternalism can be found in many museums' exhibitions to certain degrees. In participation, paternalism usually means the local

government or institutions highly centralises the decision making; and the local government or institutions either discourages or closely manages the citizens to make decisions (Susskind and Elliott, 1983, p. 6). As the antonym of paternalism, autonomy leaves the right of making decisions to the person him or herself. For instance, the encouragement of public participation in the museum can cultivate the autonomy of the public. The contradictions between the paternalism and autonomy are obvious (Husak, 1981).

Autonomy is seen as a fundamental value of ethics and politics from the modern movement. "Putting moral weight on an individual's ability to govern herself, independent of her place in a metaphysical order or her role in social structures and political institutions is very much the product of the Enlightenment humanism of which contemporary liberal political philosophy is an offshoot." (Christman, 2011) Autonomy is a self-governing that is different from freedom. Freedom is a man who can act or not act without others' constraints and interferences (Berlin et al., 2002, p. 166-217), as Berlin described that: "I wish to be the instrument of my own, not of other men's, acts of will. I wish to be a subject, not an object; to be moved by reasons, by conscious purposes, which are my own, not by causes which affect me, as it were, from outside" (Berlin et al., 2002, p. 178). Freedom concerns the "first-order preferences", like desires, wishes. While, the autonomy is the "second-order capacity" belongs to the human to act over the first-order. Autonomy is the authenticity of someone's self. It has an "irrefutable value" (Dworkin, 1988, p. 12-20).

The self-supervision over oneself is one significant feature of autonomy structured by the society and time (Christman, 2011).[21]

Paternalism and autonomy closely link with the concept of governmentality and the public sphere. On the one hand, rather than using force or punishment, governmentality utilises paternalism to stealthily influence the knowledge and behaviours of people; on the other hand, the person who is in the public sphere, has the autonomy to break the shackles of other's control, and decide the knowledge by the person themselves. The discussion between governmentality and public sphere is wide and unfinished. Ingram (2006) concludes that Foucault mainly claimed that strategic action is conditioned by power, while Habermas considered that consensus-oriented communicative action is unconstrained by power. Foucault and Habermas seem to hold the two sides of one issue. However,

> What Habermas means by "communicative action" must incorporate something like "strategic action" in Foucault's sense of term; conversely, what Foucault means by "strategic action" must incorporate something like what Habermas means by "communicative interaction." I conclude my commentary by arguing that the two sorts of critical theories/practice put forward by Habermas and Foucault are complementary rather than antagonistic.
>
> Ingram (2006, pp. 241-242)

If Foucault and Habermas are "complementary", the combination of Foucault's "strategic action" and Habermas's "communicative action" can be a potential direction of balancing control and communication. In *The Meaning of Life*, Terry Eagleton (2007) even gives a vivid example of getting freedom and achievement while working with each other:

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[21] See paternalism and autonomy in section 7.2, p. 327.

A jazz group which is improvising obviously differs from a symphony orchestra, since to a large extent each member is free to express herself as she likes. But she does so with a receptive sensitivity to the self-expressive performances of the other musicians. The complex harmony they fashion comes not from playing from a collective score, but from the free musical expression of each member acting as the basis for the free expression of the others. As each player grows more musically eloquent, the others draw inspiration from this and are spurred to greater heights. There is no conflict here between freedom and the 'good of the whole', yet the image is the reverse of totalitarian. Though each performer contributes to 'the greater good of the whole', she does so not by some grim-lipped self-sacrifice but simply by expressing herself. There is self-realization, but only through a loss of self in the music as a whole. There is achievement, but it is not a question of self-aggrandizing success. Instead, the achievement – the music itself – acts as a medium of relationship among the performers.

Eagleton (2007, pp. 98-100)

Figure 3-13 shows an example of jazz, in which it can be seen that every musician is equal and respects each other. They seamlessly cooperate to perform a song without being dominated by a certain musician. However, there are a few preconditions of jazz: 1) every musician is professional rather than layperson who knows nothing about music or instruments; 2) the musicians may have played music together for a long time, which fosters the tacit style or understanding of music; and 3) jazz does not guarantee the chance of expressing, but relies more on the autonomy and respect of each musician; while in a concert, every musician knows what and when to express by following the same music score. Although Eagleton (2007, p. 100) admits the example of jazz is "a utopian aspiration" of communication, we still can grab an ideal format of communication that is minimising the power control but maximising the chance of expression. Although the philosophical discussion of power

and knowledge, control and communication is metaphysical and unfinished; the above discussion inspires the author to rethink the authority of the museum and the knowledge of experts. The following sections would like to investigate more key issues of control and communication by referring to recent sociological research.

Figure 3-13 The Buena Vista Social Club
Source: Eagleton (2007, p. 99)

3.2 Power, Conflict and Consensus

3.2.1 Power's Features and Impacts

Kaplan (1964, p. 12)[22] defines that, "the most general sense which can be attached to the notion of power is that it marks the ability of one person or group of persons to influence the behaviour of others, that is, to change the probabilities that others will respond in certain ways to specified stimuli." In a project, the participants' interests can be different or contradictory. When there is a dispute one party may utilise the power to decrease the difference or contradiction. Therefore, Brown

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[22] Abraham Kaplan was an American philosopher, known best for being the first philosopher to systematically examine the behavioural sciences.

(1983, p. 118)[23] defines power as "the ability of one party to get another to behave in ways incompatible with the latter's immediate interests".

There are certain distinctions on the effects of power. Firstly, power has weight. When A is implementing power on B, we use "weight" to refer to the specification of how much A can influence B. If the weight of power is maximal, it allows A to control B's behaviour in the maximum range (Kaplan, 1964). For instance, A can slightly influence B's speaking habits, while C can fully control B's speaking habits. Secondly, power has domain. Domains represent the range of persons or groups can be influenced, for example, A can only influence B's speaking habits, while C can influence a group of people's speaking habits. Also, domains can overlap or exclude one another. Finally, power has scope. The scope of power means "the range of stimuli and the range of the corresponding responses whose probabilities are affected by the person exercising the power" (Kaplan, 1964, p. 14). For instance, A can exercise a considerable degree of influence over B's speaking habits, but A may have little influence on B's eating habits.

There are five bases where the power comes from. The first base is named the "carrot". It means that A can affect B when there are certain things B regards as important. The second one is the "stick" that A can withhold or impose on B when certain thing B disvalues. "Identification", the third base of power, allows A to influence B because B values the relationship with A. This kind of power is different from the carrot or stick. "Legitimacy" is the fourth base where B thinks it is right and

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[23] L. David Brown is the President of the Institute for Development Research, Boston, and Professor and Chairman of Organizational Behavior, Boston University School of Management.

legal that A can influence B's behaviours. Legitimacy may have the root as carrot or stick; for instance, when a person has a big stick that is itself transformed into a source of legitimacy. The base of power is transformed into another base. The last base of power is "expertness". In this situation, B thinks A knows more facts, and has greater skills of making judgments than that of B. It is such a special type of legitimacy that it is worth being singled out (Kaplan, 1964, pp. 15-16).

Returning to the thesis research, it is obvious that the architects may use their "expertness" to influence the public. Also the identification may influence both the architects and public because they may want to keep a good relationship with each other. To describe the power used by architects and the public, we should indicate what base this power comes from, and what are the scope, domain and weight of this power when it is exercised. It is then easier to find out who has the higher or wider power in certain aspects.

The utilisation of power may have positive or passive impacts, depending on how it is applied [see Moore (1921), Hoffman and Maier (1961), Mulder and Wilke (1970), Mulder (1971), Hammer and Stern (1980), and Abdelhalim (1980)]. Normally, the abuse of power leads to doubt, resistance, block, and even violence among disputants. Even the increase of communication may give the chance to "those with more expert power" to greater influence "the persons with limited expert power" (Mulder and Wilke, 1970, p.434). The social psychologists Mulder and Wilke (1970, p. 443) also mention that if the experts have higher power status than that of the laypeople, the experts can therefore offer greater influence on the non-professionals in decision-making. The greater participation not only reduces the gap between the

public and professionals, but exposes the non-professionals to the stronger influence of experts. In this situation, Mulder and Wilke (1970) denote that if the experts have greater specialised power than that of the laypeople, the participation cannot equalise the power distance, but only enhance it. However, if organised properly, the power can also produce positive impacts, such as stimulating energy, cooperation and effectiveness (McClelland, 1975). Returning to the public participation in design, the influence of power depends on how to control the communication between the local people and professionals. Neither the local residents nor the professionals should be overlooked or privileged. The communication should be properly controlled to make sure every participant has an equal chance for expression, and the equal right to make decisions (Lovell, 1952).

3.2.2 Conflicts' Features and Resolutions

Conflicts are inevitable during the participation [see Gobar (1968), Lawrence (1987), and Lozare (1994)]. Conflicts are unsuitable behaviour among parties whose interests, values and directions differ [see Brown (1983) and De Bono (1985)]. Usually, conflicts can be a debate, a disagreement, a struggle, or a state of unrest (Warner, 2001). This is why they are normally considered as dangerous and disturbing. Most of the time, the conflict behaviour reduces positive suggestions while increasing aggression in the groups. The redundant conflict cannot generate useful information, but fosters the oppositional attitudes, blocks the information flows, and undermines the relationships among members (Brown, 1983). If the conflicts could not be resolved properly, then the participants will feel unsatisfied, and decrease their involvement [see Hoffman and Maier (1961) and Mulder (1971)].

Believing conflicts are passive and unhelpful is a one-dimensional and useless prejudice. In fact, conflicts can be creative and active in group work [see Walton (1969) and Tjosvold (1993)]. As Brown (1983, p. 7) sums up, conflicts can encourage "expanded understanding of the issues, mobilization of party resources and energies, clarification of competing solutions and creative searchers for alternatives, and enhanced ability to work together in the future." Without conflicts, the participation is less likely to discover the shortcomings and prejudices of an idea. Although conflicts are disagreements, they can disclose the strengths and weaknesses of an idea, solution or schemes. The task of participation is to generate a most preferred decision that regards all members' concerns. Therefore, the person who produces conflicts should not be blamed. Blaming the different interests will reduce the empowerment of participants, which makes the disputants feel ashamed, abandoned, and isolated. Then the participants will start to adapt themselves to avoid being accused (Butler and Rothstein, 1991).

The process of judging opinions is more vital than its result. Of course, not everyone wants to express opinions in all the steps of discussion (Hoffman and Maier, 1961), but it is important to make sure that every participant has the equal chance to speak out independently. Considering the decision-making as a process rather than a direct way to achieve a final result, Ensici et al. (2008) claim that "rejected decisions" make more influence on the product design than that of "accepted decisions". Normally, the "accepted decisions" only showed the final result that did not contribute too much to a certain degree. However, the "rejected decisions" in fact usually made real change in design direction, and shaped the "design solution space". Therefore,

the way of dealing with disagreements not only affects the participants' satisfaction of solutions (Hoffman, 1959), but also improves the quality of final decisions [see Tjosvold and Deemer (1980), and Tjosvold (1982)].

3.2.2.1 Reasons for conflicts

Whether conflicts are beneficial or harmful mainly will depend on the way of resolving the conflicts. It is then important to figure out the reasons, and the types of conflicts. The conflicts come out due to limited resources, different perspectives and feelings, or physical behaviours [see Pondy (1967), Schmidt and Kochan (1972), and Katz and Kahn (1978)]. When one interest or behaviour is against another, here conflict emerges (see *Table 3-1*). This thesis focuses on the "conflict" which is the combination of conflicting interests and incompatible behaviour. The problems of "latent conflict" and "false conflict" are also of concern as they may transfer to real conflicts.

Table 3-1 Interests and behaviour as elements of conflict

| | Interests | |
	CONFLICTING	COMMON
INCOMPATIBLE Behavior	CONFLICT (e.g., Cleveland banks and Mayor)	FALSE CONFLICT (e.g., between Mayor and Council President)
COMPATIBLE	LATENT CONFLICT (e.g., Cleveland Mayor and unions)	NO CONFLICT (e.g., among Cleveland banks)

Source: Brown (1983, p. 6)

The "incompatible behaviour" represents the actions done by one party in order to go against or defeat another party. It can be purposeful or purposeless. The "interests" here means the realised and unrealised stakes that must be got by a party, or the actual conditions that will influence the party [see Brown (1983) and

Moore (1986)]. However, not everyone can recognise his or her own interests specifically. They may only recognise either short-term or long-term interests; sometimes even wrongly mixing their interests with the others. The participants cannot get the same perceptions as the neutral outsider, which makes it difficult to establish the real interests [see Tilly (1978) and Brown (1983)]. More detailed conflict types and reasons have been summarised by Christopher W. Moore (1986) (see *Table 3-2*).

Table 3-2 Five reasons of conflicts

Conflict Types	Reasons
Data conflict	Lack of information, Misinformation, Different views on what is relevant, Different interpretations of data, Different assessment procedures.
Interest conflicts	Perceived or actual competitive: Substantive (content) interests, Procedural interests, Psychological interests.
Structural conflicts	Destructive patterns of behaviour or interaction, Unequal control, ownership, or distribution of resources, Unequal power and authority, Geographic, physical, or environmental factors that hinder cooperation, Time constraints.
Value conflicts	Different criteria for evaluating ideas or behaviour, Exclusive intrinsically valuable goals, different ways of life, ideology, and religion.
Relationship conflicts	Strong emotions, Misperceptions or stereotypes, Poor communication or miscommunication, Repetitive negative behaviour.

Source: Adapted from Moore (1986, p. 27)

Figure 3-14 shows the relationship between conflict outcomes and conflict intensity. No matter what kind of conflict it is, too much or too little conflict both generates negative outcomes of participation. Only when the conflicts are at a moderate level would the outcomes be positive. There are various levels and forms of conflict that require the appropriate responses respectively [see Walton (1969), Deutsch (1973), Filley (1975), Tjosvold (1993), and Margerum (2011)]. In fact, similar to the influence of power, the impacts of conflict depend on the methods of resolving conflict. Too little conflict should be enlarged, while too much conflict should be withdrawn or

held down. The appropriate conflict (also named as productive conflict) is suitable for bargaining or problem-solving (Brown, 1983, pp. 40-42).

Figure 3-14 Conflict intensity and conflict outcomes
Source: Brown (1983, p. 8)
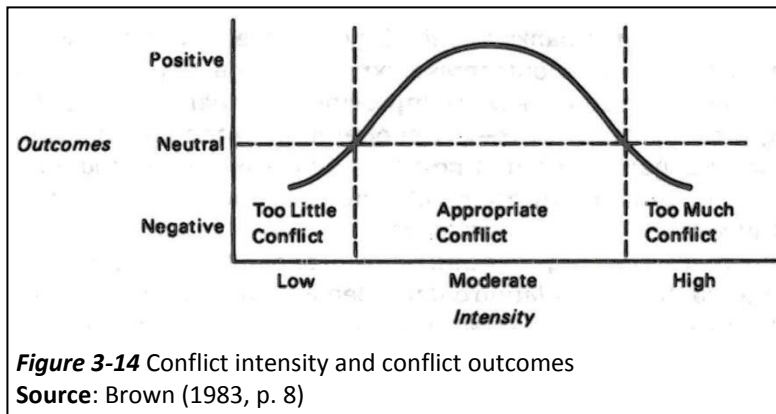
3.2.2.2 Conflict Management and Resolution

Conflicts need to be managed in order to resolve them later. Conflict management is defined as "behavior oriented toward the intensification, reduction, and resolution of the tension" (De Dreu et al., 1999, p. 371). There are three levels in conflict management: individual, intragroup, and intergroup (Rahim and Bonoma, 1979).[24] The conflict management is a long-term strategy with the purpose of holding the conflicts on the creative and beneficial side (Boulding, 1964). The management asks for dissociation strategies which do not build anything new, but just relieve the tension of conflict (Ryan, 1990). There are three main benefits of conflict management. First of all, the management of conflict enables us to organise the conflicts effectively [see Filley (1975) and Robbins (1974)]; secondly, the management increases the abilities of learning and creation in the group (Argyris and Schön, 1978); meanwhile, the management of conflict enhances the social justice

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[24] M. Afzalur Rahim is a university distinguished professor of Management and Hays Watkins Research Fellow at Western Kentucky University. He is the founder of the International Journal of Organizational Analysis and the International Journal of Conflict Management, as well as the editor of Transaction's annual Current Topics in Management.

and influence by all stakeholders [see Crowfoot and Chesler (1974), and Laue and Cormick (1978)].

To reduce or eliminate the conflict, it needs further processing – conflict resolution (Rahim and Bonoma, 1979). Conflict resolution is the "process of not only modifying and eventually ending a contentious struggle but also removing its sources such as alienation from a political process" (Jeong, 2010, pp. 10-20). It aims to recognise the continuous problems, disclose the reasons behind and use the strategies to sort out the problems. Conflict resolution requires association strategies which try to change the disputants' perspectives and mediate their different interests (Ryan, 1990). There are several formal and informal ways of resolving the conflicts between parties (Margerum, 2011).[25] As shown in *Figure 3-15*, based on the formality of the process, the continuum's left side represents the informal and private methods that can be used between arguers. The middle part of continuum is the methods that a private or authoritative third-party relies on. The continuum's right end shows the use of coercion to force the opponent to agree or to indicate submission.

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[25] Professor Richard D. Margerum is the Director of Community and Regional Planning Program, Director of Undergraduate Program, University of Oregon; and a member of the JAPA editorial board.

Figure 3-15 Continuum of conflict management and resolutions approaches
Source: Moore (1986, p. 5)

Although the conflicts in participatory architecture design may have intense arguments about land, budget or property, and so on, most of the disagreements are subtle and quiet among the participants. The "avoidance" and "informal discussion and problem solving" are "[…]probably where the majority of disagreements end in daily life" (Moore, 1986, p. 4). The situation in participatory architecture design is similar. Many conflicts in architecture design can be detailed, temporary, and even emotional. Those hidden conflicts are difficult to be spotlighted by the private and authoritative third party, "extralegal coerced decision making" are too formal and tardy to deal with the conflicts immediately. Therefore, most disagreements are sorted out by avoidance or informal disputation, and it is in this situation that knowledge and power can subtly affect the decision-making. The following paragraphs zoom in on the conflict resolutions between avoidance and informal discussion.

3.2.2.3 Two Dimensions and Five Ways of Conflict Resolution

The management theorists Blake and Mouton (1964) concluded two dimensions of conflict resolution. As shown in *Figure 3-16*, one dimension is the "concern for self" that represents "the degree to which a person attempts to satisfy (within situational constraints) his own concern" (Rahim and Bonoma, 1979, p. 1326), while another dimension is the "concern for others" which represents "the degree to which a person wants to satisfy the concern of others" (ibid, p. 1326).

Figure 3-16 Interpersonal styles of handling conflict
Source: Rahim and Bonama (1979, p. 1327)
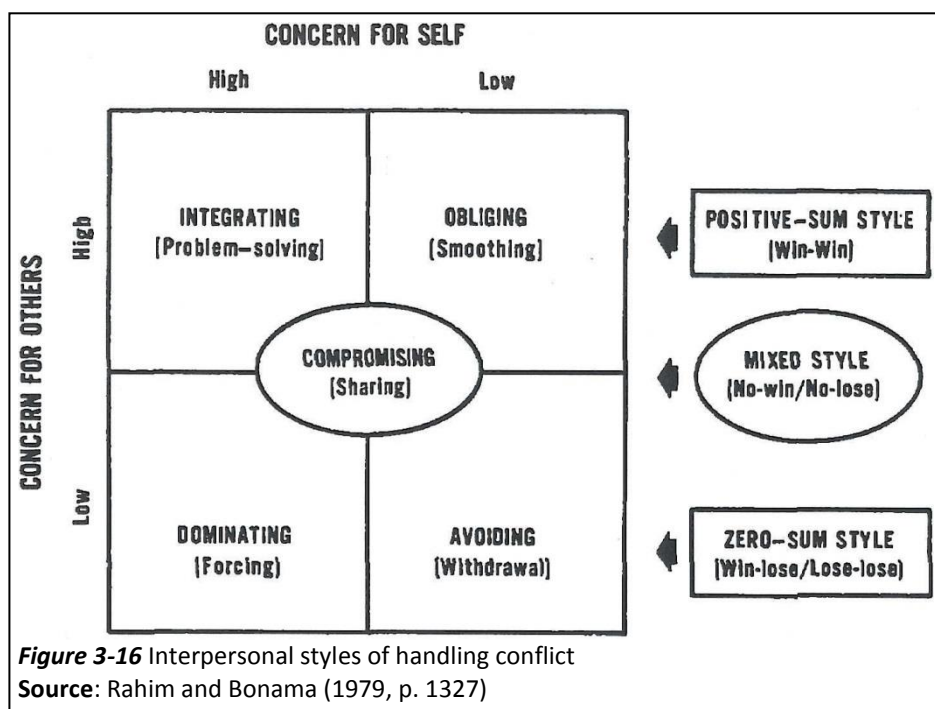
Concluded from *Table 3-3*, there are five ways of resolving conflicts: force (forcing or competing), avoidance (avoiding or withdrawal), accommodation (accommodating, smoothing or yielding), compromise (compromising or sharing), and collaboration (collaborating or problem-solving). When using "force", the party only pursues its own position while neglecting its opponent's losses or relationships. It is very assertive rather than cooperative. It saves time in making decisions although the result is usually win-lose. However, only the party that holds power over another can

use force. "Avoidance" means withdrawal of confrontation with opposite parties. The threat of avoiding or withdrawal can sometimes persuade the powerful parties to negotiate with weak parties. It is an easy and natural reaction to conflict, while it does not offer effective solutions. "Accommodation" emphasises the common interests while minimising the differences. When using accommodation, the party A usually cares more about the relationship with another party B than the party A's own goals. The party A tires to maintain the good relations by giving up some goals. Accommodation encourages cooperation, but still covers the confrontation under the surface. "Compromise" explores the objectives of the counter parties, and locates the point of keeping harmony between the counter parties. It requires each party to give up some interests in order to reach a fundamental agreement for all. It is not a win-win method as at least one party has to give up some goals. Compromise matches with democratic values, but relies heavily on parties' power. A win-win choice is "collaboration" that discloses the confrontations, and looks for the mutual problem definition, analysis and solution. Although collaboration has a few similar features to compromise, collaboration avoids trade-offs altogether, and effectively reduces the misunderstandings and blocks. However, it is a time-consuming process that tries to satisfy everyone's interests [see Blake and Mouton (1964), Thomas and Kilmann (1974),[26] Putnam and Wilson (1982),[27] Rahim (1983a), Van de Vliert (1997),[28] and Warner (2001)].

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[26] Kenneth W. Thomas has been a tenure-track Professor of Management at UCLA, Temple University, the University of Pittsburgh, where he was also director of the PhD programme, and the Naval Postgraduate School in Monterey, California. He is a member of the Academy of Management, International Association for Conflict Management, American Psychological Association, Association for Psychological Science, and the International Association for Applied Psychology.

Table 3-3 List of conflict resolutions

Types	Conflict Resolutions				
Blake & Mouton (1964)	Forcing	Withdrawal	Smoothing	Sharing	Problem-solving
Thomas & Kilmann (1974)	Competing	Avoiding	Accommodating	Compromising	Collaborating
Putnam (1982)	Control strategies	Non-confrontation strategies		Solution-oriented strategies	
Rahim (1983a)	Competing	Avoiding	Accommodating	Compromising	Collaborating
Van de Vliert (1997)	Forcing	Avoiding	Yielding	Compromising	Problem-solving

Source: Adapted from Blake and Mouton (1964), Thomas and Kilmann (1974), Putnam and Wilson (1982), Rahim (1983a), and Van de Vliert (1997)

3.2.3 Consensus is a Win-win Conflict Resolution

Referring to the dictionary of Gove and Merriam-Webster (1986), Sanoff (2000) claims that the idea of consensus comes from the ancient *Latin* word *consensus gentium* – agreement of people. There are many similar definitions of consensus. The online Cambridge Dictionary defined "consensus" as "a generally accepted opinion or decision among a group of people" (Cambridge Dictionary, 2015). Armstrong (2001, p. 773) defined "consensus" as "[a]greement of opinions; the collective unanimous opinion of a number of persons. A feeling that the group's conclusion represents a fair summary of the conclusions reached by the individual members." von der Gracht (2012) also mentioned that "consensus" was rather the decision-making process than the final result. In this participatory workshop, firstly, the "consensus" is the direction that tries to achieve every participant's interests. To make the final decision, the individuals should share information, communicate effectively, and make sure everyone agrees with the outcomes. The way of getting final agreement does not use the simple majority rule (Margerum, 2011). Secondly, "consensus" is also the win-win outcome for most, if not all, participants (Moore,

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[27] Linda Putnam's research focuses on negotiation and conflict management in organisations, organisational discourse studies, groups and teams, and gender studies in organisations.
[28] Professor Evert Van de Vliert is an expert on organisational and applied social psychology, cross-cultural theories and research.

1986). However, it does not mean all the ideas are accepted without change – a few modifications of opinion are needed in the process [see Day and Parnell (2003), and Emwanu and Snaddon (2012)].

Nicholas Rescher (1993) devalues the benefits of consensus by stating that one's goals and interests are more valid than compromising those goals and interests to satisfy the larger group. In Rescher's view, one's goals and interests cannot coexist with others'. However, Sanoff (2000, p. 15) argues that "individual interests can coexist without any agreement between them", which means that consensus "is not necessarily a decision-making tool, but the foundation from which cooperation is possible". And the more people who join in the process of decision-making, the higher feeling of teamwork and motivation, and the greater the possibilities of cooperating. The danger of making consensus is limiting the access to potential discussions or interested people. Consensus only comes out when everyone has had the chance to speak, and shared their ideas and judgments. The final result may be exactly the same as everyone wished, but it should be supported by everyone (Brody, 1982).

Regarding the conflict resolutions summarised above, the thesis plans to replace the "collaboration" with "consensus". "Collaboration" is the process whereby "parties who see different aspects of a problem can constructively explore their differences and search for solutions that go beyond their own limited vision of what is possible" (Gray, 1989, p. 5). "Consensus" means the "series of steps through which individuals come together, share information, and reach a mutual agreement about problems, goals, and actions" (Margerum, 2011, p. 8). Both "collaboration" and "consensus" try

to encourage the differences, and collect broad ideas from every group to construct the final agreements [see Sanoff (2000), Margerum (2011), and Williams (2012)]. There is one difference between these two words. "Collaboration" means the whole process, while "consensus" represents the final agreement (Ibarra and Hansen, 2011). Because the intent is to argue how the participants with equal authority in a small group can achieve the final agreements together, the decision was taken to use "consensus" rather than "collaboration" in the list of conflict resolutions (also see *Table 3-3*). Therefore, this thesis concludes the conflict resolution list as: *force, avoidance, accommodation, compromise, and consensus*. The "consensus" here can also be understood as *collaborative consensus-making*.

Consensus is not easy to achieve. Floyd and Wooldridge (1992) claim that normally what we see is the surface of the problem, while the important reasons were hidden behind. To achieve the consensus, there should be a deep exploration about the true thoughts of participants. In an architecture project, the participants may start from a few agreed aspects; for instance, we need a show room, reception and toilets, but it becomes difficult to judge in terms of the details of size, shape, materials, and colours. The architects and public may have opposite design expectations, but to achieve the consensus, they have to look forward with potential flexibility, rather than stick to rigid past positions. It is a transition from personal-gain to the best for all (Day and Parnell, 2003).

On the one hand, the public have gained the day-to-day experience from their living place for years. They identify the area by their feelings, memories, and history. The public knowledge can make the decisions that are related to their community. On

the other hand, the architects have learned their professional knowledge over years within their academies. They are good at recognising the overview of large issues that can bring valuable contributions to the project. Both kinds of knowledge are important to the architecture design. "The more socially inclusive this team, the better the chances of satisfying all parties. Meaningful design depends upon synthesised outlooks and inputs from both professionals and community" (Day and Parnell, 2003, p. 18).

Consensus-making requires an effective and practical process in participation. Although there are various ways of processing public participation, they can be integrated into three general stages: Generating Ideas, Structuring Ideas, and Implementing Ideas (see *Table 3-4*). In the "generating ideas" stage, the "ideas" here means the original options set out by the participants of the problems. Also, "ideas" means the judgements made by one participant of other participants' ideas. In the "structuring ideas" stage, all options and judgments will be synthesised into a holistic structure. It is the stage during which the participants can clarify and explain the in-depth reasons for their options and judgements. It is the stage that transfers conflicts into consensus. Because this structure may need further modifications when new inputs are added, the first two stages could be repeated several times. Once the holistic structure is agreed by the participants, the last stage will be operationalised to put those collected ideas into practice. The thesis focuses on the collaborative consensus-making in the stages of generating ideas and structuring ideas.

Table 3-4 The general stages of participation

Burns (1979)	Awareness	Perception	Decision making	Implementation	
Lee (2008)	Preference stage		Planning stage	Processing stage	
Margerum (2011)	Information	Consultation	Developing	Implementation	
Wates and Brook (2014)	Initiate		Plan	Implement	Maintain
Stages concluded by author	**Generating Ideas**		**Structuring Ideas**	**Implementing Ideas**	

Source: Adapted from Burns (1979), Lee (2008), Margerum (2011), and Wates and Brook (2014)

3.2.3.1 Nominal group and interacting group

The three stages do not require the same skills and framework from the participants. Generally, there can be two ways of communication in a group – nominal group and interacting group. "Nominal group" means "individuals work in the presence of one another but do not interact verbally", while "interacting group" means "individuals communicate verbally with minimal controls or structure" (Hart et al., 1985, p. 587).[29] The two opposite communication types have different characteristics that are suitable for different stages. In the beginning of a project, the participants learn the current situation and problems of the project. Then the participants start to think about the advice and solutions of problems. The purpose of "generating ideas" is producing as many opportunities and concerns as possible. The skills then needed concern the critical elements and discovering the dimensions of the problem. Many experiments have proved that the nominal group can produce more dimensions and options than those of the interacting group [see Bouchard (1972), Gustafson et al. (1973), and Hill (1982)]. As the stage moves to "structuring ideas", the required skills are changed to synthesising all the elements into agreed solutions. It was found that the interacting group produces better final choices by discussion rather than simply by pooling individual judgements together (Hall et al., 1963). The interacting group

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[29] Stuart L. Hart is the Professor Emeritus at Johnson School of Management, Cornell University. He is one of the world's top authorities on the implications of environment and poverty for business strategy.

seems more effective than the nominal group in elaborating, adapting, analysing, and collaborating toward a consensus [see Van de Ven and Delbecq (1971), and Miner (1984)]. However, the increasing communication also offers the chance to the strong personality to dominate the discussion, which exerts the pressure on low-status participants to adapt themselves to the high-status participants' desires (Van de Ven and Delbecq, 1971). The following section looks for the detailed principles and methods used in each stage of participation.

3.3 Choosing Methods for Collaborative Consensus-making

3.3.1 Principles and Methods of Achieving Consensus

There are many principles and suggestions of each stage in participation can be found in the existing research of Avery (1981), Warner (2001), Fisher et al. (2012), and Wates and Brook (2014). *Table 3-5* shows the principles and suggestions made by previous researchers regarding different stages and aspects; however, many of them have to be modified in three ways: 1) Synthesise the phrases that have similar meanings. For instance, in the row of "Option", phrases No. 4 "Accept different agendas, cultural differences and varied commitment" and No. 5 "Consider disabilities" have similar meanings. The essential principle behind these two phrases is to accept as many related people as possible (also see phrase No. 3 in the row of "Option" in *Table 3-6*). 2) Abstract the key meaning from the phrases. For example, in the row of "Group work", phrase No. 12 "Use facilitators, use local talent" is more like a suggestion than a principle. "Use facilitators" means the participation should be guided by a neutral person rather than the stakeholders (also see phrase No. 6 in the row of "Group work" in *Table 3-6*). Additionally, "use local talent" has the similar

meaning as "accept as many related people as possible" (also see phrase No. 3 in the row of "Option" in *Table 3-6*). 3) Develop the meaning to a further level. For instance, in the row of "Conflicts & interests", phrase No. 5 "Focus on existing interests" is correct, it means every participant's interests should be recognised. However, it could be misunderstood as "stay on the existing interests", which prevents the participants adapting their personal "interests" to shared interests. In fact, many consensus research studies emphasise that disclosing the in-depth reasons behind existing interests is more important in making consensus [see Avery (1981), Day and Parnell (2003), and Schönwandt (2013)] (also see phrases No. 1 and No. 2 in the row of "Conflicts & interests" in *Table 3-6*).

Table 3-5 The principles and suggestions of each stage from existing literature

Aspects of Stages		Principles and Suggestions from Existing Literature	
Generating Ideas	Options	1. Acknowledge perceptions 2. Widen the options 3. Clarify motivations and options	4. Accept different agendas, cultural differences and varied commitment 5. Consider disabilities
Structuring Ideas	Group work	1. Learn from others 2. Flexibility 3. Integrate with decision making 4. Encourage collaboration 5. Cooperation, not competition 6. Be creative and honest 7. Trust in others' honesty 8. Personal initiative	9. Plan your own process carefully 10. An emphasis on mutual trust, don't lack of interest in others 11. Making an effort to equalize power, don't reply on authority, and no social prejudices 12. Use facilitators, use local talent
	Conflicts & interests	1. Focus on attitudes 2. Valuing feelings and conflicts, don't suppress feelings and conflicts 3. Don't polarise the conflicting positions 4. When defining an issue or problem, always define it as shared 5. Focus on existing interests 6. Identify and focus on the most important, central issues to the conflict 7. Disagree with ideas, not with people 8. Consider disabilities 9. Respect cultural context and local knowledge	10. If you aren't centrally involved in a conflict, don't take sides too quickly 11. Focus on interests rather than positions 12. Separate the people from the problem 13. Try to be aware of your own feelings and opinions during a conflict 14. Remember that at times, the best tool for constructive conflict is a little quiet time 15. Common ownership of ideas, don't owning ideas 16. Bring hidden conflicts out in the open 17. Accept conflict as natural
	Agreements	1. Make a difference 2. Don't compromise too quickly 3. Achieve mutual gains 4. Invent options for mutual gain	5. Focus on satisfying underlying motivations 6. Finally, when normal meeting discussion doesn't seem sufficient to work out a conflict, you may want to set up a special, structured process to deal with it
Implementing Ideas		1. Agree on objective criteria for assessing outcomes 2. Test the agreement for feasibility 3. Accept limitations 4. Go to the people	5. Make sure everyone understands what has been agreed to 6. Valuing the contributions of all members 7. Go for it

Source: Adapted from Avery (1981, p. 77-80), Warner (2001, p. 38-51), Fisher et al. (2012, p. 13-48), and Wates and Brook (2014, p. 12-25)

By modifying the principles in *Table 3-5*, *Table 3-6* shows the first draft principles of each stage. However, the first draft is a summary for the general participation. It still needs to be improved to a more specific degree that is appropriate for the study of this thesis. As introduced in section 1.1, the author wants to explore the most appropriate methods used in (a) participation project(s); therefore, the abstracted principles should match with methods, rather than policy, participants, or something

else. The principles should be used as the standards of choosing methods. Starting from the first row "Options", it seems that phrase No. 3 does not apply to methods. A method can support a large group people, but not "accept as many related people as possible", as that is up to the organiser or policy. On the second row "Group work", phrase No. 1 is redundant. All the principles talked about here are for collaboration, so there is no need to repeat. Phrases No. 2, 4 and 5 are referring to the attitude and skill of participants and organiser, rather than the methods. Phrase No. 6 is not about the method, but the workshop composition. On the third row "Conflicts & interests", phrases No. 1 and 4 are about the attitudes of participants or groups. A method may have benefits in these two phrases, but not directly. On the fourth row "Agreements", phrase No. 2 is correct, but the thesis here mainly focuses on the methods that are good at collaborative consensus-making. Last but not least, the main row "Implementing Ideas" is omitted as well, as the thesis just focuses on the first two stages: generating and structuring ideas.

Table 3-6 First draft principles of each stage abstracted from existing literature

Aspects of Stages		Principles Abstracted by Author
Generating Ideas	Options	1. *Broaden the options* 2. *Clarify motivations and options* 3. *Accept as many related people as possible*
Structuring Ideas	Group work	1. *Collaboration, not competition* 2. *Be creative and learn from others* 3. *Equalize power, and no social prejudices* 4. *Mutual trust* 5. *Plan the process carefully* 6. *Use neutral person/party to guide the group*
	Conflicts & interests	1. *Not owning, but sharing ideas and problems* 2. *Find the in-depth reasons behind the surficial ideas* 3. *Separate the participants from the conflicts* 4. *Accept conflict as natural*
	Agreements	1. *Achieve consensus* 2. *If consensus failed, using other methods to deal with conflicts.*

		1. *Assessing the agreement by objective criteria*
Implementing Ideas		2. *Communicate with the public about the agreement*
		3. *Clarify the feasibility and limitations*

Source: Adapted from Avery (1981, p. 77-80), Warner (2001, p. 38-51), Fisher et al. (2012, p. 13-48), and Wates and Brook (2014, p. 12-25)

Regarding the research question of this thesis, *Table 3-7* shows the final abstracted principles of each aspect in the 'Generating Ideas' and 'Structuring Ideas'. Except the modification of principles described in the last paragraph, there are a few new principles and aspects added in *Table 3-7*. Firstly, the row "judgments" is added in the table. Here, "options" means the original schemes and interests made by participants; "judgments" means the "suggestions" and "comments" made by the other participants upon the "options". And "ideas" represents both "options" and "judgments". Making judgments is an important process in communication, and it offers the chance to explore further meaning of the original schemes/interests. Secondly, both rows "Options" and "Judgments" emphasise the independency of participants. As discussed in section 3.2.3, "generating ideas" needs (the) nominal group(s) to produce more potential options and judgments. And the independency of participants is a key feature in the nominal group. The participants have many chances to express judgments in the stage of structuring ideas, in which they are not independent of the others. Therefore, the participants should have the independent chance of expressing judgments in the stage of generating ideas; and based on the options and judgments made by independent participants, the workshop may get a much broad perspective of problems. Therefore, the method used in the participatory workshop should be able to provide or support this independency (also see sections 3.1 and 3.2).

Table 3-7 Abstracted principles of generating and structuring ideas

Principles of Each Stage		
Stages		**Principles**
Generating Ideas	**Options**	1. Participants generate the options independently 2. Broaden the options
	Judgments	3. Participants make the judgments independently 4. Broaden the judgments
Structuring Ideas	**Group work**	5. Equalise power
	Conflicts & interests	6. Find the in-depth reasons behind the superficial comments 7. Separate the participants from the conflicts
	Agreements	8. Achieve mutual gains

Source: Adapted from Avery (1981, pp. 77-80), Warner (2001, pp. 38-51), Fisher et al. (2012, pp. 13-48), and Wates and Brook (2014, pp. 12-25)

The following step is to compare the advantages and disadvantages of frequently used methods regarding the concentrated principles in *Table 3-7*. *Table 3-8* lists a large amount of methods used in (a) participatory workshop(s). The left column describes the general process of each method. The middle and right columns show the pros and cons of each method in generating and structuring ideas. Starts from the mark "#", the description means the shortcoming of each related method. While reading the analysis, it should always be kept in mind that the standards of analysing these methods are the principles in *Table 3-7*. Meanwhile, the analysis also takes into account the method's link between the two stages, rather than separating the two stages. The outcome of "Generating Ideas" should be easily used in "Structuring Ideas".

Here are the detailed shortcomings of methods in the middle column, "Generating Ideas": 1) a few methods do not offer the chance of making options independently, for instance, Carousel, Fishbowl Planning, and Traditional Brainstorming. 2) A few methods do not offer the chance of making judgments, for example, Gallery, Nominal Group Technique, Cranford Slip Writing, Traditional Brainstorming, Interactive Brainstorming, and Snow Card. 3) A few methods allow the participants

to make judgments, but not independently, for instance, Carousel, and Fishbowl Planning. 4) A few methods are time-consuming, which is not practical in architecture workshop, for example, Pin Card, Delphi Method and Interview. 5) A few methods are good at judgment-making, while they do not clarify how the "options" are generated by the participants, for instance, SWOT Analysis, PNI, Traffic Lights, and Pros and Cons. 6) Participation games increase the public members' interest in participation; but the games also stimulate competitive feelings, which does not "separate the participants from the conflicts".

Here are the detailed shortcomings of methods in the right column, "Structuring Ideas": 1) A few methods do not mention how the participants analyse the ideas, for example, Traditional Brainstorming, Snow Card, Interview, SWOT Analysis, PNI, Traffic Lights, and Pros and Cons. 2) A few methods only allow the participants to analyse the ideas individually, but no discussion with others, for instance, Gallery, Nominal Group Technique, Delphi Method, Interactive Brainstorming. 3) A few methods offer the chance of discussion to another team, rather than the participants who generate the options and judgments, for example, Pin card, Carousel, Cranford Slip Writing, It is a good strategy to separate the participants from the conflicts. However, it is not easy to find the in-depth reasons held by the participants. 4) Many methods are fast to achieve a final decision, but they fail to disclose the conflicts and reveal the interests of participants, for instance, Plurality Voting, Rank Voting, Limited Voting, and Multi-voting. 5) Fishbowl planning is not good at generating ideas.

Table 3-8 The comparison of different methods in "generating ideas" and "structuring ideas"

Methods and Description	Pros and cons of each method in Generating Ideas	Pros and cons of each method in Structuring Ideas
Gallery: Everyone writes the options on their own easel. Then they walk around to see the others' options. When finish the walking, they modified their own options.	Everyone can write down the options at the same time. # No independent judgments are allowed.	Independent analysis of ideas. # No discussion or group work.
Nominal Group Technique: People write options on note cards, no discussion. Options are then pooled, discussed, voted and ranked.	Everyone can write down the options at the same time. # No independent judgments are allowed.	The ranking and voting show the preference of ideas. # It is difficult to find the in-depth reasons.
Pin card: People write options on note cards. Then the cards are passed around, others can add their ideas and improvements to the original idea. All the cards are organised and analysed by another team.	Everyone makes the judgments independently. # It is time-consuming when the cards are passed around.	# Analysing the ideas within another team may not reflect the interests of the participants who make these ideas.
Delphi Method: Anonymous brainstorming, no direct interaction. Ideas are collected through many questionnaires. All the ideas are listed for ranking. Then the participants fill the questionnaires again, and rank again until reaching the consensus.	Everyone can write down the idea at the same time. No direct interaction in the beginning. # It costs long time to prepare next questionnaire and ranking. Not practical in architecture design.	# No discussion among the participants. It is difficult to find the in-depth reasons of the options and judgments.
Carousel: The meeting room is divided into a number of 'sites' where groups can sit and discuss. Each site is devoted to a particular topic and has a notice board or chalkboard. The participants are divided into small groups, and they brainstorm on the topics, and review other groups' work in turn. Each site has a facilitator to explain the ideas.	# The participants are not independent when doing brainstorm and reviewing ideas.	# Analysing the ideas within another team may not reflect the interests of the participants who make these ideas.
Cranford Slip Writing: Each participant writes down 20 ideas, each on a separate paper. All those ideas are organised and analysed by another team.	Good at collecting ideas from a large group of people. # No independent judgments are allowed.	# Analysing the ideas within another team may not reflect the interests of the participants who make these ideas.
Fishbowl planning: A smaller group (ideally 3 – 6 people) is isolated to discuss while the rest of the participants (maximum of 50 people) sit around the outside and observe without interrupting. A person who wants to express ideas must sit on the chair.	# The participants cannot generate options and judgments independently.	Everyone can fully express by sitting on the "chair", which supports the equal chance in structuring ideas.
Traditional brainstorming: All the participants sit together, and freely explore any possible options, no judgments.	Encouraging the new ideas # The verbal communication decreases the independency of participants.	
Interactive Brainstorming (Idea Trigger, Panel format): Each participant writes down the idea. Then they read the ideas in turn. Other participants note any new or hitchhiking ideas. This takes twice cycle. The ideas are collected for later evaluation	Good at generating ideas without the affect from others. # The feedbacks and ideas are separated, which is difficult in later discussion.	Independent analysis of ideas, but not a proper analysis.
Snow card (Briefing workshop): Everyone writes the idea on a "snow card". All the cards are fastened to a wall according to common themes.	Anonymous brainstorming, and synthesize ideas on an early stage. # No independent judgments are allowed.	
Interview (Door Knocking): look for the participants one-by-one, and interview them one-by-one.	Face-to-face, deep thinking get from the participants. # Time-consuming, heavily depends on the interviewer's ability.	
SWOT analysis: the participants write down the "Strengths, Weakness, Opportunities and Threats" of each option. All the reviews will be put in the matrix of SWOT.	Clear judgments of the ideas. # It does not explain how to make the options firstly.	
PNI: the participants write down the "Positive, negative and interesting" of each option. The positive ones can be taken forward and the negative ones rejected or modified.	Similar as SWOT, but a bit less detailed judgments of the ideas. # It does not explain how to make the options firstly.	
Traffic lights: Coloured stickers are given to each participants: red for negative, green for positive, and orange for undecided	Easy to find out the preference of each option # It does not explain how to make the options firstly.	
Pros and cons: the participants write down the "pros and cons" of each option.	# It does not explain how to make the options firstly.	
Plurality voting (Choice catalogue, block vote, multiple non-transferable vote,)		Fast to make decisions. # But it fail to find out the preference of minority.
Rank voting (direct ranking, pair-wise ranking)		# Difficult to find out the reasons behind each option.
Limited voting: The participants are given three stickers. They choose the three most-favoured options. It is not the normal voting, but simply a way of finding those options where some of the parties share a positive interest.		Easy to find out the positive interests # Difficult to find out the reasons behind each option.
Multi-voting: Similar as limited voting, but the participants are allowed to put more than one sticker on one option.		# There is no place for new ideas. It is a closed voting. The participants have to read all the options before voting. No records of comments
Participation Games (Role play, Theatre, Picture analysis, play zones, game board)	Games can trigger the interests, and makes fun of the participation through many stages. It sharpens the participants' ideas. # Games have a natural feeling of winner and loser, which may increase the tense and conflicts among the participants.	

Note: the sentences start with "#" means the shortcoming of methods.

Source: Adapted from Hart et al. (1985), New Economics Foundation (1998), Sanoff (2000), Diceman (2014), Wates and Brook (2014)

Based on the analysis of frequently used methods above, it can be summarised that the methods are good at either generating ideas or structuring ideas. Very few of them are good at both stages. Therefore, it is more practical to apply two different methods in these two stages. In an ideal situation, the method used in "generating ideas", should be able to allow the participants to generate "ideas" (options and judgments) effectively and independently. Furthermore, the judgments (suggestions and comments) should be written in the category of pros and cons, which is easier to analyse in "structuring ideas". Meanwhile, it will be better if the method can reveal the participants' general preference of options, which is easier to grasp the main trend of ideas. And the method used in "structuring ideas" should be able to allow the participants to have more freedom of discussion that is under the coordination of facilitator. Furthermore, the method should also use visualised tools to support "structuring ideas", especially in the participatory architecture design workshop.

3.3.2 Idea Rating Sheets for Generating Ideas

The thesis here would like to explore the potential methods that work in concert with the discussion above. A recently introduced method in the stage of generating ideas – Idea Rating Sheets – was created by Jason Diceman (2014). Jason Diceman is an expert on facilitation and public participation. He has led planning and implementation of many large multi-stakeholder collaborative workshops with clear outputs. He has also been the Senior Public Consultation Coordinator for the City of Toronto since 2010 and has led public consultations for some of the City's most controversial and high-profile infrastructure studies, including downtown separate bike lane installations, the redesign of Front Street at Union Station, new roads and bridges in Liberty Village, contentious multi-use trails, and the Gardiner Expressway

financing. In 2004, Diceman invented Idea Rating Sheets (originally called "Dotmocracy Sheets") that are now used in many countries and in different languages (see *Figure 3-17* for more examples). Idea Rating Sheets (IRSs) (see *Figure 3-18*) can record the levels of participants' agreement as well as their comments. A typical idea rating sheet requires three main steps in the participation (see *Table 3-9*). Firstly, the participant needs to create his or her original options on the sheets. It works by one option one sheet; secondly, the participants cross-review each other's sheets; and finally every participant can fill in only one dot per sheet to record the levels of agreement. Meanwhile, they can write comments based on their holistic understanding and judgments about the other's ideas (Diceman, 2014, p. 4).

Youth contribute their ideas and opinions at an idea rating station on a wall during a conference in Toronto.

Amnesty International staff in a planning workshop (Facilitation & photo: Rob Purdie, London).

A Hong Kong construction company asks its staff to dot their opinions as part of a risk assessment process.

Celebrating the results of an idea rating workshop at the Bolivarian University of Venezuela.

Figure 3-17 Examples of IRS in different countries
Source: Diceman (2014a)

Figure 3-18 Idea Rating Sheet
Source: Diceman (2014a)

Table 3-9 Process of Idea Rating Sheets

1.	**Learn about the issue** Informing the participants about the background and issues.
2.	**Present the issue and question(s)** Introducing the key questions to participants.
3.	**Discuss potential answers** Participants independently draft potential ideas.
4.	**Write ideas on rating sheets** Participants write their ideas on sheets, using one idea per sheet.
5.	**Fill in dots to record opinions & write comments** Participants fill dots and write comments on the sheets.
Repeat steps 3 through 5.	
6.	**Report the results** The collected sheets can be sorted by topic or level of agreement. All results will be announced.
7.	**Formulate and announce a decision** The hosting group decides a final consensus with minimal disagreement, and publish the decision.

Source: Adapted from Diceman (2014, pp. 15-16)

Idea Rating Sheets (IRSs) have a few advantages in generating ideas. The reason why

Diceman changed "Dotmocracy Sheets" to "Idea Rating Sheets" has indicated these

advantages. Diceman used dot stickers on a rating scale, so from its introduction in

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2004, this upgrade method was called "Dotmocracy Sheets". However, the term was easily misunderstood as Dot (sticker) Voting, which cost much time in explaining the difference. Dot voting is in fact quite different from Dotmocracy Sheets (named Idea Rating Sheets in the following paragraphs) (Diceman, 2014). In dot voting, there is only one question with restricted options. You can vote for one option (plurality voting, single-choice voting or simple plurality) or multiple options (cumulative voting, accumulation voting or weighted voting) (van Erp et al., 2002). For example in *Table 3-8*, plurality voting is a simple majority voting method. Due to its simplicity, this voting method is widely used to select an option. Normally, it only requires each participant to have just one vote, and the option that receives the most votes is the winner. However, plurality voting only allows the participants to vote for one scheme each time, and no comment is allowed to be made. Plurality voting goes against the principles of collaborative consensus-making, and it does not offer the opportunities of expressing any in-depth reasons to the participants (Diceman, 2014). Compared with plurality voting, the IRSs have several advantages: 1. It allows the participants to add new or hybrid ideas at any time freely; 2. Because each participant only dots once on each idea, it is possible to disclose the subtle differences between similar ideas as well as avoid overlaying evaluations from the same one; 3. Every idea will finally have a level of agreement, disagreement, or confusion; 4. The participants can express more reasons and suggestions in the 'comments' area (Diceman, 2014, pp. 50-51). However, as very few cases can be found about the application of IRSs in participatory architecture design; there comes the need to test IRSs performance in more researches, particularly in the

architecture design process (Zhang et al., 2015b). The thesis also does a pilot study of IRSs in chapter 4.

In the author's interview with Christopher Day, Day (2014) estimates that IRSs are good in many aspects, but a little strict in verbal communication. In a participation project, collecting every participant's ideas is not enough. If person A says "I want blue in the living room" and person B says "I want yellow in the living room", it is wrong to combine blue and yellow into green. Both A and B will be disappointed. Day (2014) recommends that in order to achieve the consensus of colours, the participant needs to clarify what kind of colour it is. In this situation, Day would then ask A and B to explain what kind of blue and yellow they want. A may say "I want quiet blue" and B may say "I want quiet yellow"[30]. In fact, both A and B are concerned with the same issue – quiet. The next question is not "blue or yellow", but which colour best represents "quiet". Although IRSs ask the participants to write down options and judgments independently, there is a lack of verbal communication to clearly clarify and explain each idea. Therefore, another method should be introduced to the second stage - "structuring ideas".

3.3.3 Consensus Mapping for Structuring Ideas

Based on his previous workshops, Hart et al. (1985) suggest that participants need a new technique – consensus mapping – to visualise, review and organise the ideas in hand. "Consensus mapping" (CM) is a technique that can draw a graphic map of the interrelationships among the ideas from the generating stage. In this map, the participants are able to modify and rearrange the ideas structure as long as the

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[30] In the interview, "quiet blue" generally means the colour "blue" does not stand out from the background. Day (2014) also used "cold", "hard", "warm" and "gentle" to describe colours.

group discussion goes on (Hart et al., 1985). Hart's Consensus Mapping inspires the related studies of the problem-structuring process, cognitive psychology, policy making, information management, and the business and educational practice domains [see Sawy and Pauchant (1988), Couger (1990), Hart (1995), Brophy (1998), Gottschalk (2000), Brophy (2006), Taggar (2001), Damart (2010), and Emwanu and Snaddon (2012)]. Generally, the process of CM involves generating individual idea classifications, and discussing and generating the interrelationships and sequential dependencies among those ideas towards the achievement of a workshop consensus map. More details can be found in *Table 3-10*.

Table 3-10 Process of consensus mapping

1.	**Learn about the issue** Inform the participants about the background and issues.
2.	**Structuring ideas silently** Every participant independently jots down their own ideas about categories.
3.	**Intragroup discussion** Every participant represents their idea framework within the group. Each framework will be discussed and evaluated.
4.	**Development of each group scheme** The project staffs combine all the group schemes into the first approximation which can be used as a springboard for further discussion and revision.
5.	**Map reconfiguration** Based on the first approximation, each group works to reach a mutual acceptable structure of solution.
6.	**Presentation in plenary** The representative of each group presents the work to other group members.
7.	**Map consolidation** The consolidation team (consisted of representatives) work to reach a single consensus map of all the ideas.

Source: Adapted from Hart et al. (1985, pp. 589-591)

CM is not the method of generating ideas, so Hart et al. (1985) mention a few preconditions for utilising CM: 1) the participants have already generated a list of ideas; 2) they have clarified the meaning of each idea; and 3) they have judged the ideas preliminarily. These preconditions actually match with the functions of IRSs in generating ideas. So IRSs and CM would be a good combination in generating and

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structuring ideas. CM allows the participants to contribute the ideas from different aspects (Hart et al., 1985). Furthermore, the map classifies and relocates every idea. As CM places great importance on every participant's ideas and perspectives, the final decision usually achieves high acceptance. It is important that the participants have equal chance of expression and that their opinions are treated as relevant and useful by others. The more positive impact they put on the discussion, the higher acceptance will be attained. For instance, Yoshida et al. (1978) argued that the different levels of participation are positively related to the feeling of satisfaction. His experiment found that personnel (school psychologist, school social worker, and school counsellor) and administrators showed higher participation levels than medical personnel or special and regular education teachers did. The regular education teachers felt dissatisfied as they only had few opportunities in the final decision making. Hoffman and Maier (1961) also claim that the participants are satisfied due to the level of their influence over the final decision. The use of CM increases the equal chance of contributing ideas in participation.

The thesis has generally introduced the benefits and shortcoming of IRSs and CM in sections 3.3.2 and 3.3.3. The features of the two methods seem to satisfy the principles of conflict-resolving and collaborative consensus-making. Regarding the initial research question "how members of the public participate in the architectural design of the museum", the thesis initially suggests that a potential participatory workshop can apply the IRSs firstly to generate ideas, and then apply the CM to structure ideas. However, not many examples of using IRSs and CM could be found in architecture design. A further study of the performance of IRSs and CM is

necessary, and the detailed research question becomes, "*How do IRSs and CM perform in conflict-resolving and collaborative consensus-making in the participatory architecture design of the museum?*" By investigating this question, the thesis firstly aims to discuss the actual performance of IRSs and CM in conflict-resolving and collaborative consensus-making. Secondly, the thesis wants to find out a few suggestions for organising participatory design workshops in museums. Last but not least, the thesis tries to explore more fundamental guidelines that could be applied to the broader museum practices and studies.

3.4 Summary

To sum up, section 3.1 has discussed Foucault's *Governmentality* and Habermas's *Public Sphere*. Foucault sparked an interesting relationship between power and knowledge. He first explained how power controls people by producing the knowledge in disciplinary institutions. Meanwhile, Foucault claims that power and knowledge directly imply one another. In order to describe how knowledge produces power, two examples have been listed in this section. The first one is the prison "*Panopticon*" designed by Jeremy Bentham. Second is the comparison between the Baroque cabinet of curiosity and the *evolutionary* museum. To equalise the "power", Habermas introduced the *bourgeois public sphere* in communication. However, his theory of public sphere is also criticised for neglecting the lower strata, while supporting only one universal concept. Meanwhile, it was too ideal to hope that everyone would be self-disciplined in a total free conversation. Based on the discussion above, the thesis would argue that an ideal communication should minimise the power control, and maximise the chance of expression; furthermore, everyone should be equal in this conversation.

Then section 3.2 generally introduced the definition and characteristics of power, conflict and consensus. Different from the conventional conception, in fact, both power and conflict have advantages and disadvantages in participation. Their impacts are actually dependent on the ways of applying power and resolving conflicts. There are several ways of resolving conflicts: force, avoidance, accommodation, compromise and consensus. Although each conflict resolution is suitable for different situations, consensus is considered to be the most appropriate method of achieving a win-win result. Regarding the previous publications of consensus-making, the thesis summarised three stages of collaborative consensus-making: generating ideas, structuring ideas and implementing ideas. A big difference between generating and structuring ideas is the requirement of skills. "Generating ideas" requires (a) nominal group(s) that explores as many opportunities and concerns as possible; while "structuring ideas" requires (an) interacting group(s) that is good at elaborating, adapting, analysing, and collaborating toward a consensus.

Based on the concluded stages and principles, section 3.3 compared many principles and methods of generating ideas and structuring ideas. Based on the abstracted principles, there is no single method that is good at both generating and structuring ideas. Among these methods, it argues that the new created method – IRSs (Idea Rating Sheets) – is good at generating ideas, because IRSs not only allow the participants to generate ideas independently, but also allow them to make the judgments independently. The thesis also finds that the CM (Consensus Mapping) is good at structuring ideas, because CM explores the interrelationships among the ideas and judgments. In this map, the participants are able to modify and rearrange

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the ideas structure as long as the group discussion goes on. The IRSs and CM have not been widely used in architecture design projects. At least, no specific or related information could be found from other literature. Then the specific research question of this thesis becomes, "*How do IRSs and CM perform in conflict-resolving and collaborative consensus-making in the participatory architecture design of the museum?*"

Figure 3-19 summarises the theory framework explained by this thesis so far. The route starts from the initial research question, and then it goes through the three main categories: museum, architecture and sociology. It ends at Idea Rating Sheets and Consensus Mapping, which becomes the general answer that turns back to the initial question. And finally, the framework formulates the main research question of the thesis. The main question is a combination of the key words highlighted in the literature review.[31] The following chapter will discuss how to test both methods' performance of conflict-resolving and collaborative consensus-making in participatory architecture design of museum.

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[31] Main Research Question: *How do IRSs and CM perform in conflict-resolving and consensus-making in the participatory architecture design of the museum?*

Background: the growth of participation in museums' exhibitions and events; possible research topics.

Gap and initial research question: *how members of the public participate in the architectural design of the museum?*

Museum
- History of visitors' involvement in museums.

Communication in Museum
- Museums must have a more natural and effective communication with visitors.

Narrativity in Museum
- Increasing the degree of narrative in exhibition.
- Narrativity arises the topic of multi-authorship

Participation in Museum
- Four types participation in museums.
- Museums and architecture are closely linked.
- Participatory architecture design of museum.

Architecture
- Heidegger's *building, dwelling* and *users.*

Users read a Building
- Everyone reads a building differently.
- No matter how different the readings are, they do not affect the building itself.

Users design a Building
- The group has to find an agreement to handle different ideas; and the agreement significantly affects the building design.

Participation in Architecture
- Introduction and current problems.
- Architects and public members are both important.

Sociology
- Wider introduction of participation.

Control and Communication
- Balance between Foucault's *governmentality* and Habermas's *public sphere.*
- Minimise the control and maximise the communication

Power, Conflict and Consensus
- The pros and cons of power and conflicts.
- Consensus is a win-win resolution of conflicts.
- Principles and methods of consensus-making

Idea Rating Sheets (IRSs) and Consensus Mapping (CM)
- IRSs are suitable in generating ideas.
- CM is suitable in structuring ideas.

Main Research Question:
How do IRSs and CM perform in conflict-resolving and collaborative consensus-making in the participatory architecture design of the museum?

Figure 3-19 Theory framework of the thesis, first part
Source: Drawn by the author

Chapter 4 Methodology of the Workshop

Starting from the initial research question "*how members of the public participate in the architectural design of the museum*", the last two chapters have narrowed it down to the main research question "*How do IRSs and CM perform in conflict-resolving and collaborative consensus-making in the participatory architecture design of the museum?*" To answer this main question, section 4.1 firstly divides the question into different sub-questions. The answer of each sub-question partly supports the answering of the main research question above. More reviews are then done to identify the most appropriate research methods of getting data for the sub-questions. Section 4.2 describes a pilot study of IRSs. From this pilot study, the actual performance of IRSs is analysed and discussed. To find more clues for how to better design the workshop, the second pilot study in section 4.3 tests the questionnaires and interviews in a real participatory design project. More detailed discussion of the running survey and interviews are provided at the conclusion of the chapter.

4.1 Research Planning

4.1.1 Eight Sub-questions

Based on the literature review of the last two chapters, the research question is "How do IRSs (Idea Rating Sheets) and CM (Consensus Mapping) perform in conflict-resolving and collaborative consensus-making in the participatory architecture design of the museum?" Detailed records of participants' conflict resolution through the use of IRSs and CM are required to answer this question. This research plans to find out the advantages and disadvantages of using IRSs and CM in resolving conflicts and reaching consensus. A few guidelines of participation in architecture design are concluded at the end of research. Although the research question focuses on

museums, the concluding guidelines or suggestions actually can assist the future participation in other public architecture designs, for instance, hospitals, libraries, and schools.

The "performance" here means how well the IRSs and CM can satisfy the eight abstracted principles shown in *Table 3-7* in section 3.3.1. *Table 4-1* shows the sub-questions that match with the eight principles. Each question focuses on a different aspect of conflict and consensus. To answer these questions, we should know more about the features of conflict research. First of all, the conflict resolutions (see section 3.2.2) are key factors in research although they are also the most difficult features to measure in research. Conflict is the experience of being obstructed or disappointed by others. However, the participants may not admit to the existence of conflicts due to the social desirability biases, or due to their concerns over relationships. To avoid these biases, the individual's self-reports, opponents' reports and neutral observers' reports are all necessary to attain a balanced understanding of underlying intentions (Nauta and Kluwer, 2004). Furthermore, sometimes the conflicts are subtle and evanescent. The participants cannot remember all the details of the process, or they are just not consciously aware of the conflicts. The memory traces fade little by little as time passes. Therefore, it is not reliable to ask the participants to remember the details about "either highly salient events that occurred more than a year ago or events of low salience that occurred more than thirty days ago" (Foddy, 1993, p. 100). Regarding these concerns, the following step is to choose a research type that can generate the answers to the eight sub-questions.

Table 4-1 The sub-questions of eight principles

The Principles and Sub-question of Each Stage		
Stages		**Principles and Sub-questions**
Generating Ideas	**Options**	1. Participants generate the options independently Q: in generating options, are the participants affected by others? 2. Broaden the options Q: do the IRSs increase the quantity and quality of options?
	Judgments	3. Participants make the judgments independently Q: in generating judgments, are the participants affected by others? 4. Broaden the judgments Q: do the IRSs increase the quantity and quality of judgments?
Structuring Ideas	**Group work**	5. Equalise power Q: are the participants equal in the discussion?
	Conflicts & interests	6. Find the in-depth reasons behind the superficial comments Q: do the participants prefer expressing the in-depth reasons or superficial comments? 7. Separate the participants from the conflicts Q: do the participants prefer to remain in conflicts, or make the consensus?
	Agreements	8. Achieve mutual gains Q: does the agreement include all the ideas?

Source: Compiled by the author

4.1.2 Design of Data Collection Methods and Workshop

4.1.2.1 Mixed Methods Research

Generally, there are three directions of collecting and analysing data: quantitative, qualitative and mixed methods [see Gillham (2000), Flick (2009), Franklin (2012), Creswell (2013b), and Yin (2014)]. "Quantitative research is an approach for testing objective theories by examining the relationship among variables." (Creswell, 2013b, p. 4) It consists of counting, measuring, and statistic subject. Quantitative research is widely used under a controlled situation to test the hypotheses. It is a standardised and replicable way that can be applied in both large-scale and small-scale investigation [see Gillham (2000) and Franklin (2012)]. Bryman (1988) describes Hirschi's (1969) quantitative research of delinquency as an example. In order to test the validity of theories, Hirschi (1969) carefully pre-defined the samples for research. All the children he chose had to fill the same questionnaires that related to his pre-set concerns. The form of the results was mainly tables. The analysis and conclusion

only reflected the issues that he thought would be important to the study of delinquency. However, as the traditional deductive methodology, quantitative research methods have a few limitations in the rapidly changing society. The way in which quantitative research methods are "deriving research questions and hypotheses from theoretical models and testing them against empirical evidence – are failing due to the differentiation of objects" (Flick, 2009, p. 12).

Regarding the complex social contexts and phenomenon, the social researchers tend to use more "qualitative research methods" that are "[…] an approach for exploring and understanding the meaning individuals or groups ascribe to a social or human problem" (Creswell, 2013b, p. 4). Qualitative research encompasses meanings, concepts, and description of things (Franklin, 2012). It is a logical model of social science (Creswell, 2013a). Bryman (1988) also describes Adler's (1985) qualitative research of upper-level drug dealers as an example. With the literature on deviance and drug use, Adler (1985) met the subjects randomly as her "sample". Meanwhile, the sample and the degree of association with the sample kept shifting at each step. The approach was not standardised, but dependent on observations, conversations, and a few informal interviews. The result was full of quotations and detailed descriptions that reflected what her sample considered to be important and meaningful.

The third type – "mixed methods research" is "an approach to inquiry involving collecting both quantitative and qualitative data, integrating the two forms of data" (Creswell, 2013b, p. 4). The features of quantitative and qualitative methods do not mean the two methods are opposite and incompatible; in fact, much research tends

to be more quantitative than qualitative, or vice versa (Newman and Benz, 1998). Therefore, "mixed methods research" is also named as a "holistic approach" or "multi-method approach" (Oliver, 2010, p. 26), or "convergence, integrated, and combined" methods (Creswell, 2009, p. 14). The mixed methods consist of different ways of collection and analysis. All the methods aim to examine the different aspects of the question, and the relationships among those aspects. For instance, qualitative methods can be used after quantitative methods to explain the mechanism or links in temporary theories or systems (Creswell, 2013a). Rather than sticking to a single biased method, mixed research methods not only provide a more relevant methodology to the needs of the specific research question, but also help to attain greater validity and reliability of the results and analysis [see Zeisel (2006), Oliver (2010) and Creswell (2013b)]. For example, in the study of parental involvement in Federal Educational Programs, Smith and Robbins (1982) firstly collected the questionnaire data from 1,155 samples in a nationwide study. Then they used a combination of interview, observation, and document-collecting in 57 selected local projects. Regarding the various features of the projects, they even designed three types of "analysis packets": highly specific ones, general ones, and exploratory ones (Bryman, 1988, p. 128).

Table 4-2 Quantitative, mixed and qualitative methods

Quantitative Methods →	Mixed Methods	← Qualitative Methods
Pre-determined	Both pre-determined and emerging methods	Emerging methods
Instrument based questions	Both open- and closed-ended questions	Open-ended questions
Performance data, attitude data, observational data, and census data	Multiple forms of data drawing on all possibilities	Interview data, observation data, document data, and audio-visual data
Statistical analysis	Statistical and text analysis	Text and image analysis
Statistical interpretation	Across databases interpretation	Themes, patterns interpretation

Source: Creswell (2009, p. 15)

Table 4-2 shows the concluded differences among quantitative, mixed and qualitative methods. Based on the review above, this thesis plans to use mixed methods research; firstly, because the whole research has a general theory that IRSs and CM are good at conflict-resolving and collaborative consensus-making. However, the research question is too complex to figure out the independent variable or variables. A few sub-questions are close-ended while the whole research question is open-ended, which increases the complexity as well. Secondly, returning to *Table 4-1*, all eight sub-questions focus on different aspects that require statistical and text data for the answers. For instance, Q2 (Q2 means Question No. 2) and Q4 need numerical data to see the growing of options and judgments, while Q1, Q3, and Q5-Q8 require not only the self-description of participants, but also the objective observation from the neutral person. So, there is a need to collect all the data from different angles but at the same time.

4.1.2.2 Workshop

Franklin (2012, pp. 87-90) listed five core methodological approaches: *ethnographic*, *surveying* and *interviewing*, *archival-textual*, *experimental,* and *alternative*. "Ethnographic" is a full participation-observation of the field and its residents. The used methods are note-taking, interviews, photographs, or diagrams. There is an involvement in the others' lives. The relationship and trust between researchers and researched are integral. In "surveying and interviews", a group of selected human subjects are asked a set of questions that respond to a hypothesis or a topic. The questions are open-ended or closed-ended. "Archival-textual" looks for original documents to approach discourse or framing analysis. "Experimental" is running a controlled or semi-controlled setting to test the behaviour of selected subjects. The

setting includes the experiment process, physical and psychological parameters, ethical issues, and elimination of bias. "Alternatives" are the combination of the four types above. Normally used settings are virtual (web-based), semi-virtual (online/offline), action research, or virtual ethnography. Due to the fact that the learning of IRSs and CM is very specific, very few fields, documents or cases could be found. For the experiment, although it is good at disentangling cause and effect, it is also criticised for lacking the external validity in real situation [see Nauta and Kluwer (2004) and Webster and Sell (2007)]. The following paragraphs will describe the literature review of these approaches, in order to find an appropriate approach for the main research.

The case study aims to collect different evidence to answer the questions of human activities in a real situation. The evidence can only be collected in that specific case and moment. The "case" can be an individual, a group, an institution or a community. It also can be "multiple cases" – a group of families, schools – which all depends on the specific research questions. Due to the complexity of each case, no one kind or source of evidence is likely to be sufficient (or sufficiently valid) on its own (Gillham, 2000, pp. 1-2). For example, "fieldwork" is gathering the data from the place that the group works and lives in. In ethnography, the research may be sustained for a prolonged time of collecting information from the site, the daily lives of individuals, and a variety of other materials [see Sanjek (1990), Wolcott (2008), and Creswell (2013a)].

Similar to qualitative research, a typical case study does not start with an *a priori* theory notion. The theories come after the analysis of data and context. Case study

is an in-depth research of a system bounded by time and activity. This use of multiple sources of evidence, each with its strengths and weaknesses, is a key characteristic of case study research [see Gillham (2000), Creswell (2013b), and Creswell (2013a)]. Returning to the research of this thesis, the author agrees that multiple data are necessary to study the questions; however, it is difficult to find the specific "case" that used either IRSs or CM in architecture design. Regarding the characteristics of conflict, it seems a necessity to *set up* a case rather than *finding* a case.

Setting a case is the strategy used in laboratory experiments. In the laboratory experiment, a work setting is specifically created for the independent variable and dependent variable. In the experiments, many features from the real situation will be simplified or deleted if they are not closely linked with the research question, while only the significant factors are kept. The research objects are usually volunteers selected randomly (Bryman, 1989). Laboratory experiments have high "internal validity" – "the extent to which the presumed cause really does have an impact on the presumed effect". In contrast, the non-experimental research is criticised for being inadequate and unable to manipulate aspects of the social environment and observe the effects of such intervention (Bryman, 1988, p. 31).

Laboratory experiments also have a few shortcomings. The experiments generally use voluntary students as the research objects. Although the students have the similar education level and age, they cannot totally represent the common people in a real situation (Rosenthal and Rosnow, 1969). Furthermore, the setting of the laboratory may be quite different from the context to which the research is meant to

apply. The external validity of a laboratory is criticised as relatively low by the commentators. Therefore, the social psychologists prefer to use field experiments that have natural settings (Bryman, 1988). In the field experiment, "the researcher intervenes in the life of an organization by manipulating the presumed independent variable and observing the effects on the dependent variable" (Bryman, 1989, p. 15). Although field experiments reduce the problems that may take place in the laboratory, field experiments have a low internal validity due to the compromise in random allocation to groups (Bryman, 1988). Bryman (1989) claims that many field experiments introduce two or more organisational changes in the field. As a result, they fail to figure out which specific change causes the increase or decrease of the dependent variable.

Regarding the advantages and disadvantages of all the methods, Oppenheim (2000) suggests that no single method should always be the first choice. The choosing of the most appropriate method all depends on what the research questions and answers are. Usually, the case study and experiments may be used at different stages. The results of one method can be used in another method. The combination of methods can produce a precise and representative conclusion in the end. Here, the combination of case study and experiment is more like a workshop. This workshop is organised by the researcher, so it is an "experiment"; meanwhile, the researcher will use the workshop as a "case" that offers many different sources of information. The workshop should be designed in a practical situation. The participants in the workshop have to use IRSs to generate ideas, and use CM to structure ideas. Then

the researcher can observe the whole process at the same time, and collect the expected evidence.

4.1.2.3 Types of evidence

Gillham (2000, pp. 21-22) lists six types of evidence: documents, records, interviews, 'detached' observation, participant observation, and physical artefacts (see *Table 4-3*). Regarding the immediacy of the workshop, there are not many documents or records that can be collected from a workshop that has just taken place. However, the physical artefacts are easy to collect, for instance, the written ideas, drawings, or audio material. These materials can be the additional evidence for the existence of conflicts and consensus. Also, anonymous questionnaires are a good way of avoiding disingenuous answers (Nauta and Kluwer, 2004), and interviews can offer a great richness of open-ended material for an in-depth analysis (Crouch and McKenzie, 2006). However, questionnaires and interviews both collect the data from the participants themselves, so there is a risk that the participants may not reveal the situation truthfully. They may want to misrepresent the truth in order to present a good self-image (Webster and Sell, 2007). Therefore, Nauta and Kluwer (2004) suggest that a series of combined data from the self, the opponent and observer's responses would be much more reliable. Also, an outside person's observation allows the researchers to gain knowledge of conflicts from a neutral point of view (Gillham, 2000). Emwanu and Snaddon (2012) also agree that the facilitator has a better position to contact with the participants than that of the researcher. Instead of running the workshop directly, the researcher can observe the workshop aside.

Table 4-3 Six types of evidence and their description

Type of Evidence	Description

Documents	These can be letters, policy statements, regulations, and guidelines. They provide a formal framework to which you may have to relate the informal reality.
Records	These are the things that go back in time but may provide a useful longitudinal fix on the present situation, for example, the number and kinds of accidents reported in the workplace; time off work as a result of injury.
Interviews/ Questionnaires	This may be more informal than an interview, for example an off-the-cuff spontaneous discussion. Or more formal, such as a brief questionnaire.
'Detached' observation	Its main use is where you need to be more systematic in how you observe. Watching from 'outside' in a carefully timed and specified way - counting and classifying what you see.
Participant observation	This is the more usual sort in a case study - where you are 'in' the setting in some active sense - perhaps even working there (and there is nothing to stop you doing a case study of where you work) but keeping your ears and eyes open, noticing things that you might normally overlook.
Physical artefacts	These are things made or produced, for example, samples of children's academic work. If you were doing a multiple case study of dyslexic students, then samples of their written work could be an important part of your data collection.

Source: Adapted from Gillham (2000, pp. 21-22)

So far, the design of the workshop is still at a general level. More details of the workshop have to be discussed. To get the sense of using IRSs, there should be a pilot study testing IRSs in architecture design. The analysis of this pilot study may be able to guide the design of the workshop. Furthermore, another pilot study of questionnaire and interview about participatory architecture design would be helpful as well. Then, a detailed workshop design would be possible after the convergence of these two pilot studies and reviews.

4.1.3 Facilitators in a Workshop

Due to the persistence of disputants, both IRSs and CM need a neutral/third party to run through the whole workshop. The role of the third party is significant in conflict-resolving [see Brown (1983), Lawrence (1987), and Kressel and Pruitt (1989)]. "Third parties are social units interested in, but not directly involved in, interface events. The adjective 'third' implies that they differ from the two primary parties, though the distinction may be blurred as parties recruit allies and supporters" (Brown, 1983, p. 35). It is the responsibility of the third party to turn the two-dimensional war into a

three-dimensional exploration, and make sure that the conflict thinking is negotiated by all the participants rather than by a dictator [see De Bono (1985) and Lawrence (1987)].

Moore (1986, pp. 6-8) introduces several different kinds of neutral/third party in resolving the conflicts: negotiator, mediator, administrator, arbitrator, and so on. *Negotiator* tries to maintain the bargaining relationship between the disputants by educating the each other's needs and interests. Negotiation is a more intentional process than informal discussion. Extending the roles of negotiator, *mediator* has no authoritative decision-making power but leaves the decision-making power to the disputants. Mediation is the primary method when the disputants are unable to solve the problems by themselves. And mediation is a voluntary method that the disputants are willing to accept the mediator's assistance. Different from mediator, *administrator* does not need to be impartial. The task of administrator is finding a resolution that balances the needs of the whole group and the interests of the individual. For instance, in a public conflict, the administrator can be a mayor, county commissioner, or planner; in a private conflict, the administrator can be a boss, director, or team manager. Meanwhile, the disputants can request an *arbitrator* to make an impartial decision for them regarding the conflicts. The arbitrator has to be neutral to either side; but the disputants can select their own arbitrator, which means the disputants still have certain control over the process. The more formal methods are judicial approach and legislative approach that introduce the social recognised authority into private conflicts. The disputants may hire their own

lawyers to defend for them. Based on the laws, the judge makes the final judgment that is usually a win-lose decision.

Among the administration, arbitration and mediation, the first two methods cost inappropriate time and money on the procedure that is not able to immediately solve the temporary conflicts in architecture design [see Cooley (1986), Moore (1986), Dukes (1993), Goltsman et al. (2009)]. Mediation, as the extension of negotiation, "is the intervention into a dispute or negotiation by an acceptable, impartial, and neutral third party who has no authoritative decision-making power to assist disputing parties in voluntarily reaching their own mutually acceptable settlement of issues in dispute" (Moore, 1986, p. 14). Meanwhile, the mediator establishes a mutual trust atmosphere, and allows more original ideas from the disputants, and directs the conflict into a consensus of opinions (Kressel and Pruitt, 1989). Furthermore, mediation is more flexible to reach the agreement. The agreement is a syndrome of disputant parties, not the mediators' (Sander, 1983).

However, there are a few pitfalls of mediation: 1) the less-powerful person/group is in a risk of being exploited. The more-powerful person/group can frighten the lower party into unfair agreement (Kressel and Pruitt, 1989); 2) parties may be forced to communicate or make decisions. McEwen and Maiman (1981) claimed that a few disputants accept the settlements in an early stage while they later felt unfair. The disputants sometimes cannot express their ideas clearly, or do not know what their original purposes are, or even lack the opportunity to discuss. Once feeling the pressure from mediator, the disputants may start to make the agreements that do

not reflect their real minds. 3) the mediator mainly focuses on the conflict resolving, which may increase the tension between the disputants.

In a participation workshop, many conflicts may not be revealed or unfolded due to the scales, importance or fear of power. Therefore, the workshop needs a neutral person who not only assists the participants to resolve conflicts, but also assists the participants to identify conflicts. And most of the time, this neutral person is processing the workshop as its plan. In this situation, a facilitator's job is a bit wider than the mediator. "Facilitation is a means of bringing people together to determine what they wish to do and helping them find ways to work together in deciding how to do it" (Sanoff, 2000, p. 38). The facilitator has to make sure the whole process runs well, and helps the participants to achieve the targets. If there is a conflict, the facilitator can use the prepared method to solve the conflict. Mediator only focuses on the conflict resolving, while facilitator can be seen as a mediator with other organisation skills. To be more specific, the roles of facilitator are: 1) making sure the participants understand the tasks and issues, and keeping the whole process on track. 2) assisting the participants to produce more ideas. The participants should interact freely under the facilitation. 3) listening and repeating to what is said, also named as the language of acceptance. It means that participant A accepts participant B for what B is and how B feels, although A may not agree with B's opinions (Sanoff, 2000). 4) minimising any counterproductive behaviours or dominance by members or groups. 5) being neutral when helping the participants to make decisions, rather than forcing the disputants to make agreements.

Moore (1986, p. 169) lists a few facilitating techniques: restatement, paraphrase, active listening, summarization, expansion, ordering, grouping, structuring, separation/fractionating, generalization, probing questions, and questions of clarification. Referencing the suggestions from IUCN (1995), Warner (2001, p. 102) also summarises a series of guidelines for the facilitator: 1) explaining each step and used techniques clearly; 2) keeping your ego away from the discussion; 3) facilitating not dominate; 4) instead of asking the details, asking the reason of the participants' position or demands; 5) do not advocate or ally of any individual or group; 6) do not tempt to be a psychotherapist; and 7) keeping the workshop in a suitable pace to make sure every participant understands what is going on and what agreements are. There are numerous examples of using facilitation in resolving conflicts [see Hart et al. (1985), Sanoff (2000)]. Regarding these concerns above, it argues that facilitator is the appropriate role in running a participation workshop, but the specific performance of facilitator should be tested and analysed in the later study.

4.2 Pilot Study of Idea Rating Sheets

4.2.1 Aims and Background

As discussed in section 3.3.2, Idea Rating Sheets (IRSs) are better than plurality voting in making judgments. However, there are few practices of the use of IRSs in the field of architecture design, particularly in making judgments. A small pilot study has been run in order to observe the general performance of plurality voting and Idea Rating Sheets in making judgments. The following results and analysis of this pilot study can be helpful in designing the whole research.

Zhang et al. (2015a) has concluded three principles of making judgments: 1) participants make the judgments independently. In PVSs, every participant votes the option without any communication, so the participants are independent of each other. In IRSs, every participant writes the comments on the sheets. Because their writing behaviours could be seen by the other participants, it cannot say that the participants make the judgments independently. To reduce this impact, this pilot study offers each participant the separate PVSs and IRSs. So the participants all fill their own PVSs and IRSs independently. It is then possible to compare the PVSs and IRSs filled in by the same person. 2) Broaden the judgments. Generally, there are two kinds of judgments: *superficial judgments* and *in-depth judgments*. "Superficial judgment" means the simple and direct opinions, for instance, "I don't like it", "Agree with you", or "not sure". Superficial judgments do not offer enough information for the collaborative consensus-making. Instead, "in-depth judgment" represents the participants' concerns and thoughts, for example, "the budget is tight to afford this design", or "how about the security of kids". In-depth judgments offer the specific opinions to be discussed in the collaborative consensus-making. Therefore, the amount of in-depth judgments should be an important figure to compare the performance of PVSs and IRSs. 3) disclose the conflicts. The "conflict" here means the two opinions that are clear mutual denials. For instance, "A likes dinosaurs exhibition because it can attract children, while B doesn't like dinosaurs exhibition because it disturb the local community". Although A and B have opposite opinions towards the dinosaurs exhibition, A and B actually concern different issue of the exhibition. There is no clear mutual denial between A and B's opinions. Another instance, "C likes dinosaurs exhibition because it can attract children, while

D doesn't like dinosaurs exhibition because it scares children". There is clear mutual denial between C and D's opinions. So this instance is a "conflict".

To sum up, the more in-depth judgments are generated by the participants, the more conflicts may be disclosed, which offers a better situation to find out the reasons behind the conflicts. Then it is easier to reach a consensus. Therefore, this pilot study aims to test the ability of Plurality Voting Sheets and Idea Rating Sheets: 1) Which method can generate more in-depth judgments? 2) Which method can disclose more conflicts?

The selected project in this research is Nottingham Natural History Museum in Wollaton Hall. Wollaton Hall was built between 1580 and 1588; and it has been used as a natural history museum since 1926. The museum contains a large collection of zoology, geology, and botany exhibits (see *Figure 4-1*). From 2013, to encourage community participation within scientific research, the museum planned to organise a new 'feathered dinosaurs' show of the most special and important paleontological discoveries from China. This long distance transportation of knowledge aims to introduce the theory of evolution from dinosaurs to birds by the newly discovered fossil in China, which would set up a closer relationship between the Nottingham local communities and the Nottingham Natural History Museum. The co-organisers are the DABE (Department of Architecture and Built Environment, University of Nottingham), and the PMC (Paleozoological Museum of China). To stimulate an array of exhibition-narrative design schemes for this project, DABE had run a specific postgraduate design studio in the autumn semester of 2013. At the end, the best four schemes had been selected and exhibited in Wollaton Hall during the summer

of 2014. This exhibition of students' works was a practical context that could be used

as the case to test the use of PVSs and IRSs in making judgments.

Figure 4-1 Nottingham Natural History Museum
Source: Photographed by the author

4.2.2 Process and Results

In the exhibition, the students' design schemes were printed on four foam boards,

each board measuring 2m*1m (see *Figure 4-2*). *Table 4-4* shows the process of the

pilot study regarding the stages introduced in section 3.2.3. The research had been

repeated with three different groups, each comprising ten widely selected participants. All the participants were volunteers from the University of Nottingham and Nottingham local communities. None of them have an architectural background, which means they can represent the public or "laypeople". To simplify the pilot study, the study did not ask the participants to draw ideas from blank papers. Instead, the stage of "generating options" was omitted. The students' design schemes were imitated as the "options". All the participants just needed to listen to a general introduction to each scheme, and then make their judgments via PVSs and IRSs separately.

Figure 4-2 The exhibition of student design works
Sources: Photographed by the author

Table 4-4 Process of IRSs pilot study
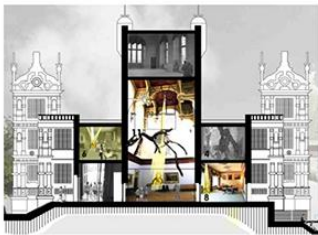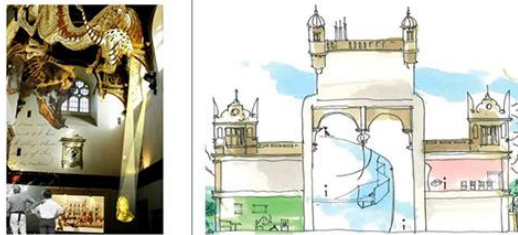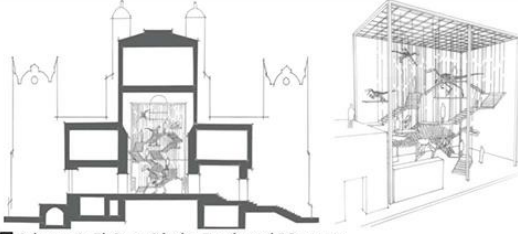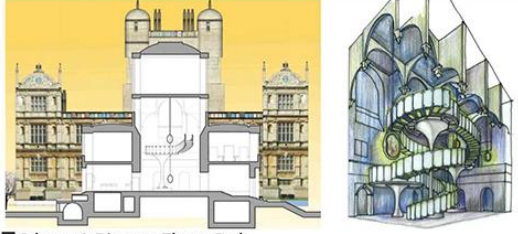
Time	Process
15mins	**1. Welcome** • Introduction of the whole project
40mins	**2. Introduction of four schemes** • Generally introduce each project to the public; each scheme takes eight to ten minutes.
20mins	**3. Tea break**

10mins	4. **Plurality Voting Sheets** • Give the Plurality Voting Sheets to the participants, and ask them select the best scheme in their views. Comments are optional.
15mins	5. **Idea Rating Sheets** • After collecting the PVSs, giving the Idea Rating Sheets to the participants, and ask them to choose the level of agreement with each scheme. Comments are optional.
5mins	6. **Finish** • Thank volunteers for their participation, and offer gifts to them.

Source: Designed by the author

Figures 4-3 and *4-4* show the modified PVSs and IRSs used in the pilot study. The same images of four schemes were used in both sheets in order to transmit the same information to participants. Also, different from conventional plurality votes that only allow the people to choose only one preferred scheme, the PVSs used here enable the participants to write additional suggestions and comments in a large square blank. Rather than giving the two sheets to participants at the same time, the research has another exquisitely designed process. First of all, all the participants are asked to fill the PVSs without knowing the IRSs at all. It is assumed that the participants will make all their votes and judgments via PVSs. After they have finished the PVSs, they will be asked, unexpectedly, to fill the IRSs. In order to compare the sheets filled in by the same participant, a serial number (1 to 10) was lightly printed on the right corners of both PVSs and IRSs. For instance, participant A fills in PVSs No. 1 sheet; then A will be given IRSs No. 1 sheet as well. However, A would not notice the light, small numbers on the right corner. By doing this, the PVSs and IRSs filled in by the same participant can then be identified and compared in the analysis stage.

Which scheme is the best in your personal view? Please tick the little square in front. ☑

☐ Scheme 1: Dream of A Dead Man

☐ Scheme 2: The Hope of A Family

☐ Scheme 3: Flying with the Feathered Dinosaurs

☐ Scheme 4: Dinosaur Theme Park

1. Any suggestions or comments?

Title: The Public Opinions of Design Schemes   Place: Wollaton Hall   Organization: UoN   1

Figure 4-3 Example of modified Plurality Voting Sheets
Source: Compiled by the author

What is your personal view of this scheme?

Scheme 1: Dream of A Dead Man

A. Strong agreement	B. Agreement	C. Neutral	D. Disagreement	E. Strong disagreement	F. Confusion
Strengths and opportunities			Concerns and weakness		

Title: The Public Opinions of Design Schemes   Place: Wollaton Hall   Organization: UoN   1

Figure 4-4 Example of modified Idea Rating Sheets
Source: Compiled by the author

On different days, all the three groups had gone through the same steps smoothly with similar time consumed. During the introduction, every participant stood in different positions, and heard different sound volumes from the introducer (see *Figure 4-5*). From an overall perspective, although the introducer spoke out the same information, ultimately, each participant received different information; but from a personal perspective, it is considered that these differences would not have much influence on the filling in of the PVSs and IRSs (see *Figure 4-6*). Also, the participants were not allowed to make any verbal communication in order to avoid influence from others. Enquiries on how to fill out the forms were addressed only to the author, and no questions were allowed/asked about the specific opinions of schemes. Therefore, we can say that all the participants made their judgments independently. It can then be assumed that the data collected from PVSs and IRSs is reliable and valid. The next paragraphs and tables show the statistical results of the three groups.
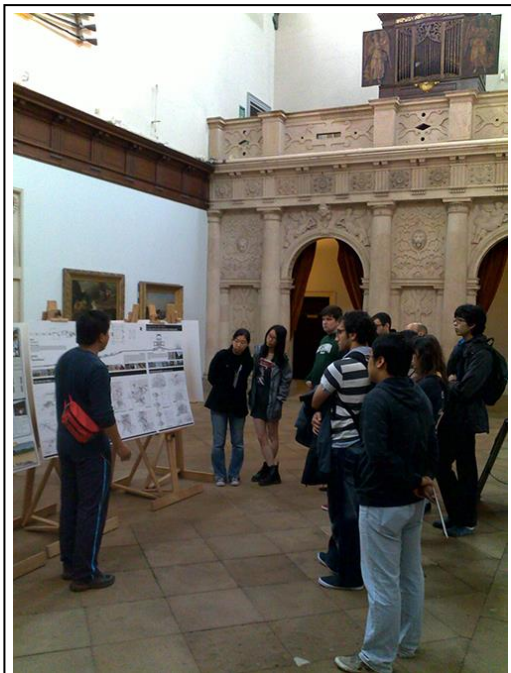
Figure 4-5 Introduction of four schemes
Source: Photographed by the author

Figure 4-6 Participants made judgments
Source: Photographed by the author

4.2.2.1 Results of Three Groups

Table 4-5 assembles the total result of all three groups that were run following the same procedures. The numbers in the table refer to the quantity of votes. In the column of PVSs, the most popular scheme is "S1" that got 13 votes, while the least popular scheme is "S2" that only received 3 votes. The medium schemes are "S3" (7 votes) and "S4" (6 votes). Although "S2" seems not a popular scheme in the PVSs, a significantly different result is shown in the IRSs. In the "Strong agreement" column of IRSs, "S1" is still the most popular scheme that received 8 "Strong agreement" votes, while "S2" got 1 vote, "S3" got 2 votes, and "S4" got 4 votes. However, the sequence of votes is reverse in the column of "Agreement". "S3" became the scheme that received the highest votes – 13, and "S4" received the second highest votes – 11, while "S1" only had 5 votes, and "S2" had 9 votes. The column of "Neutral" also reveals different sequence of votes. "S1" and "S2" both got over 10 votes, while "S3" only received 1 "Neutral" vote. Although "S3" received highest votes of "Agreement", "S3" also got the highest votes of "Disagreement" (8 votes) and the highest votes of "Strong disagreement" (2 votes). Only "S4" got 1 vote of "Confusion".

Table 4-5 Combined voting results of all three groups

Scheme	Plurality Votes Sheets	Idea Rating Sheets					
		A: Strong agreement	B: Agreement	C: Neutral	D: Disagreement	E: Strong disagreement	F: Confusion
S1	13	8	5	11	3	0	0
S2	3	1	9	12	5	0	0
S3	7	2	13	1	8	2	0
S4	6	4	11	7	3	0	1

Note: PVSs had one invalid vote; IRSs had three invalid votes.
Source Compiled by the author

Obviously, the rank of four schemes in PVSs is: S1 (13), S3 (7), S4 (6), and S2 (3). To rank the schemes in IRSs, Diceman (2015) designed a formula to calculate the score

of agreements.[32] Therefore, the rank of four schemes in IRSs is: S1 (3.33), S4 (3.20), S2 (1.11), and S3 (0.96). However, the rank of IRSs only provides a general picture of the agreement regarding each scheme. Based on the rank, it is difficult to confirm which scheme is the best without any further discussion. For instance, although the final score of "S3" is extremely low (0.96), "S3" in fact had 13 "agreement"; and these 13 "agreement" had the chance to be "Strong agreement", which can support "S3" to be the most popular scheme. The same situation is found in "S4" that had a large amount of agreement – 4 "Strong agreement" votes and 11 "Agreement" votes. There needs more information to find out why the participants like this scheme, and why they do not like that scheme. Finding out the suggestions and comments of each scheme is more important in collaborative consensus-making (Diceman, 2014).

Figure 4-7 shows the quantity and scales of judgments compiled from the PVSs and IRSs. On both pie charts of *Figure 4-7*, the total amount of judgments in IRS (315 judgments) is nearly four times higher than that of the PVS (83 judgments). Meanwhile, in PVSs, "S1" received the largest amount of judgments, 33, while "S4" received the smallest amount, 12. The difference is big. But in IRSs, the four schemes got very close amount of judgments; "S1" got the largest amount, 82, and "S4" got the smallest amount, 76. It indicates that IRSs encourage the participants to review every scheme equally. The following analysis tries to figure out the in-depth judgments and conflicts.

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[32] (Strong Agreement Dots * 10 + Agreement Dots * 5 + Disagreement Dots * -5 + Strong Disagreement Dots * -10) / (Strong Agreement Dots + Agreement Dots + Neutral Dots + Disagreement Dots + Strong Disagreement Dots) = AGREEMENT SCORE
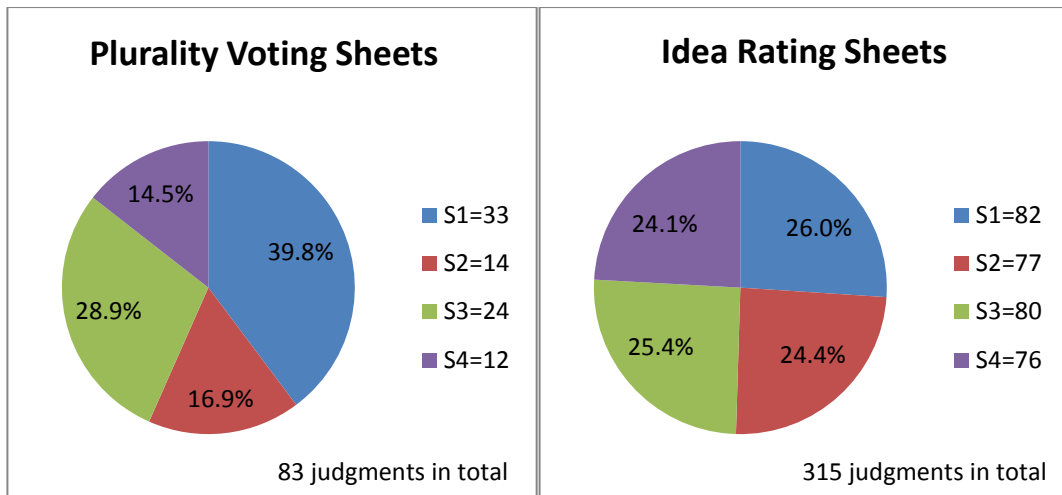
Figure 4-7 Quantity and scales of judgments in PVSs and IRSs
Note: "S1" means Scheme 1, the same is applied to S2, S3 and S4.
Source: Compiled by the author

4.2.3 Analysis and Discussion

4.2.3.1 In-depth judgments and conflicts

From the results above, it can be stated that IRSs collected more details of the opinions from the participants than the PVSs did. By recognising the light numerical number on the right corner of sheets, we can match the PVS and IRS filled in by the same participant. Taking the participant No.1 in Group One as an example (see *Table 4-6*, Appendix 4-1): in PVS, "P1" (participant No.1) had chosen the Scheme 1 as the best one, and "P1" gave the comments on Schemes 1 and 4. In IRS, "P1" still gave the "Strong agreement" to "S1", but "P1" did not comment on "S1". Although "P1" less preferred the other three schemes, "P1" explained the reasons of why "P1" did not like them.

Table 4-6 The PVS and IRS results of participant No.1 in Group One

Plurality Voting Sheets		Idea Rating Sheets		
Schemes	**Suggestions or comments**	**Schemes**	**Strengths and opportunities**	**Concerns and weakness**
S1	Scheme 1 is my favourite. However, I think (the) Scheme 4 will be the best choice for a family with children. I think maybe you can make a perfect combination of these two schemes and find balance for adults and children.	S1-A	*(Blank)*	*(Blank)*
		S2-C	It's too emotive	*(Blank)*

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			and not good for relax (sic). <u>But the story is a lovely one.</u>	
		S3-D	*(Blank)*	It's too concentrate (sic). Maybe too crowd (sic).
		S4-B	It's funny and helps people relax themselves. What's more, it takes (the) advantage of Wollaton Park mostly.	*(Blank)*

Source: Compiled by the author

The first research question of this pilot study is "*Which method can generate more in-depth judgments*", therefore, it should distinguish the superficial judgments and in-depth judgments. For instance, in *Table 4-6*, the sentences with underlines are superficial judgments, while the rest sentences are in-depth judgments. Based on these standards, *Figure 4-8* shows the amount of superficial judgments and in-depth judgments calculated from the PVSs and IRSs in all three groups: 1) no matter in PVS or IRS, the amount of in-depth judgments of each scheme is higher than that of superficial judgments. 2) no matter in PVS or IRS, "S1" both got the largest difference between the superficial and in-depth judgments, for example, 10 (superficial) and 23 (in-depth), 24 (superficial) and 58 (in-depth). 3) the differences of superficial and in-depth judgments in IRSs are much higher than that of PVSs. 4) the total amount of in-depth judgments in IRSs is nearly four times higher than those of the PVSs. Therefore, we can argue that the IRSs can generate more in-depth judgments than the PVSs (Zhang et al., 2015a).

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Total superficial judgments of PVSs=27, total in-depth judgments of PVSs=56;
Total superficial judgments of IRSs=121, total in-depth judgments of IRSs=193
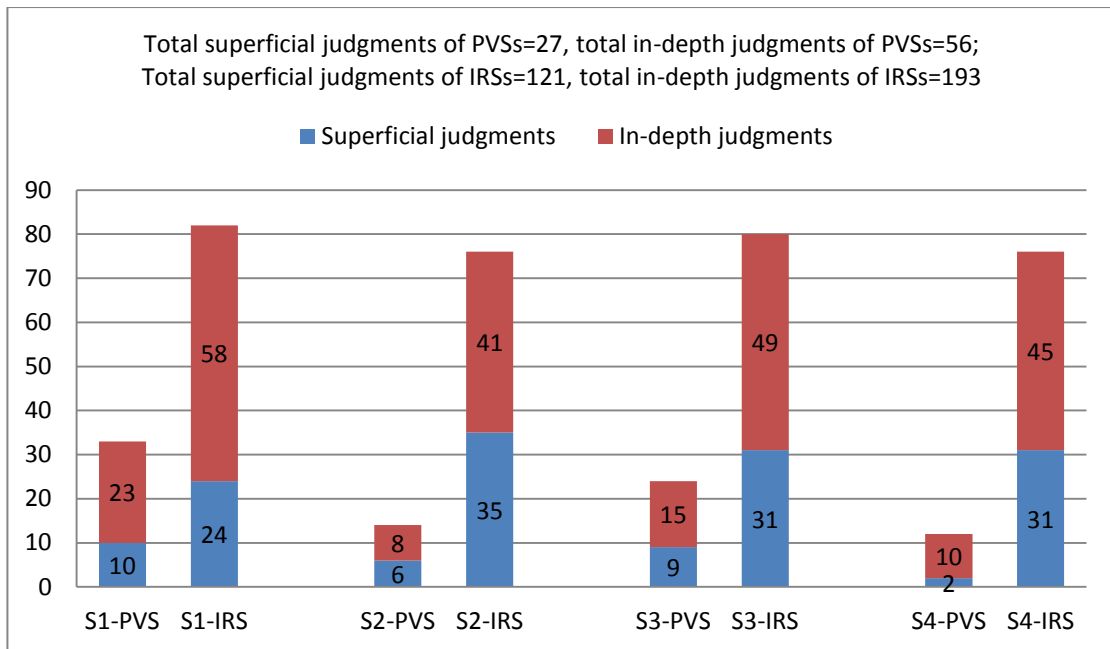
Figure 4-8 Quantity of superficial and in-depth judgments in PVSs and IRSs
Note: "S1-PVS" means all the Plurality Voting Sheets of Scheme 1, "S1-IRS" means all the Idea Rating Sheets of Scheme 1, the same is applied to S2, S3 and S4.
Source: Compiled by the author

The second question of the pilot study is "*Which method can discover more conflicts*". Based on the definition of conflicts in 4.2.1, *Figure 4-9* lists the possible conflicts identified from the participants' original comments regarding the four schemes (also see all the original comments in Appendix 4-2). In the main rows of the PVSs, PVSs disclosed 4 conflicts in total. To be more specific, "S1" has two conflicts about the hologram and buried structure, "S2" has one conflict about the story, "S3" has no conflict being found, and "S4" has one conflict about the nature cycle. For instance, on the row "S4", G1P1 (Participant No.1 in Group One) commented the scheme 4 was good for "a family with children", while G1P7 (Participant No.7 in Group One) thought the cycle part of scheme 4 may "frighten kids". In the main rows of the IRSs, IRSs disclosed 11 conflicts in total. To be more specific, "S1" has two conflicts about the controversial topics pertain to the visitors and hologram, "S2" has three conflicts about the story and outdoor activities, "S3"

has three conflicts about the extension and stairs, and "S4" has three conflicts about the visitors and outside exhibition. Therefore, it can be argued that the IRSs disclose more conflicts than the PVSs do (Zhang et al., 2015a).

	PVSs		
S1	G3P5: Holograms are a great idea.		G1P7: Dream of A Dead Man is a bit horrible with a dead man around all the time.
	G3P5: The buried structure would be a great centrepiece spectacle.		G3P6: The extension is ambitious but simple in impact. It may need to be concealed to limit perception of a modern intrusion in the historical environment (with planting?).
S2	G3P7: Nice story to go alongside information.		G1P7: The Hope of A Family is based on such a sad story. G2P6: The story of the Hope of A Family is a kind of invented story. [...]This story may misguide the children.
S4	G1P1: I think the 4 will be the best choice for a family with children.		G1P7: the nature cycle part might frighten kids.
	IRSs		
S1	G1P6: I think it is a good idea that provides attractive environment for both adults and children.		G1P9: not use the whole park, not attractive for children
	G2P1: I like the idea of Willoughby's Hologram that follows you inside the building.		G1P7: The intact man sounds a bit horrible. G2P10: Use of hologram could be better used on the dinosaur not family.
S2	G1P1: But the story is a lovely one. G1P5: A good story for everyone from the start till the end.		G1P7: The story is sad. G1P9: Story is not interesting.
	G2P4: Clear timeline to tell the story about the extinction of dinosaurs and the rise of birds. G2P6: Good exhibition arrangement.		G2P3: Not very clear telling the beautiful story from the design.
	G3P6: Good use of external areas/landscape.		G3P7: A lot of outdoors activities. Not suitable for rainy days!
S3	G1P8: Nice design for great hall with small impact.		G1P8: The gardens & window of the hall will be changed significantly with the extension building and portable stairs.
	G2P7: Moving stairs are interesting; people can see stone in any degree and close. G2P8: Tourist attractive		G2P6: Even if the flexible stairs are strong enough. The visitors may be not daring to walk on them. So the design may not be visitor friendly.
	G3P9: Well connected and not too ambitious in terms of scale.		G3P4: Big work, in particular, the structure of moving stairs and the roof.
S4	G1P1: It's funny and helps people relax themselves. G1P6: Attractive for young persons and children.		G1P7: However, the nature cycle part might frighten some little kids.
	G1P9: The whole concept is good, suitable for visitors in different age groups.		G1P5: I am not sure about the capabilities of attracting people and promoting the park to get people to visit it.
	G3P9: Really liked the spiral structure showing fossils in hanging eggs and the different zones for showing lots of dinosaur artefacts.		G3P9: Concerned that the plan is to turn the majority of the park into a dinosaur themed park. That the local history of the hall + park would be taken over by the dinosaur exhibits. Better to localise it to one area.

Figure 4-9 Summarised conflicts of three groups
Source: Compiled by the author

There are also two interesting points found in *Figure 4-9*: 1) the public participants

offered many reasonable opinions regarding different issues, for example, exhibition,

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architecture, environment, budget, and so on. Although the members of public do not have the professional knowledge of architecture, the participants are able to think about the design from different angles at the same time, which is the advantage of public participation. 2) the same participant may express the "controversial opinions" regarding the same scheme. For instance, in the row of "S4" in the IRSs, G3P9 liked the design of spiral structure and dinosaur zones. However, G3P9 also expressed the concerns of keeping the Wollaton hall and park as the original. The similar opposite opinions can be found in G1P8's comments of "S3" in the IRSs. In a real workshop, it is actually normal that a person thinks the advantages and disadvantages of an idea. The conventional plurality voting method only asks the participants to vote one choice with neglecting any concerns behind the votes. However, the IRSs not only allow the participants to choose a detailed level of agreement, but also give the participants the chance to express more opinions that increase the possible directions of final consensus (Zhang et al., 2015a).

4.2.3.2 Discussion

Based on the analysis above, it can be argued that the performance of IRSs in judgment-making is better than that of PVSs. IRSs generate more in-depth judgments and reveal more conflicts than PVSs do. As Zhang et al. (2015a) explains, there are three reasons why IRSs are better than PVSs: 1) IRSs offer the opportunity of judging the schemes one by one rather than all together. IRSs offer longer time to the participants to consider each scheme clearly; 2) IRSs require the participants to vote on each scheme in a detailed level of agreement from "strong agreement" to "confusion". And it is interesting that most of the comments made in "Concerns and weakness" were more useful than the comments in "Strengths and opportunities". If

a participant does not like a scheme, so normally he or she has the specific reasons for this disagreement. IRSs can record these reasons that are important to optimise the scheme later; and 3) IRSs allow the participants to express more opinions that support the idea structuring in the later stage. Though PVSs can reach the final choice in a short time, this does not mean that the final choice actually satisfies the participants' concerns.

In this study, there are also two drawbacks of the analysis methods that need to be improved. Firstly, the distinction between "superficial judgment" and "in-depth judgment" is not clear. Therefore, the total amount of superficial and in-depth judgments is not so accurate. Despite the counting is based on the author's subjective judgment, the large difference of judgments generated by the PVSs and IRSs is still obvious. Secondly, the identification of conflicts is also not totally reliable. There are a few comments that need more explanation of the real meaning. It depends on how the participants understand the words they wrote. Overall, although the conflicts are difficult to recognise, the analysis still indicates the IRSs had revealed much more conflicts than the PVSs did (Zhang et al., 2015a).

This pilot study also reveals the shortcoming of IRSs in structuring ideas, which proves the necessity to combine IRSs with other methods, for instance, Consensus Mapping. The IRSs are a recently created method in social science, and its performance still needs to be discussed. As the "Feathered Dinosaurs Exhibition" in Nottingham Natural History Museum is in the process of project application and fund raising, there is a large opportunity to build up this exhibition in the future; this would, however, necessitate a great deal of research, consultancy, and discussion.

Therefore, this project becomes the ideal context to run a workshop of IRSs and CM, however, a few tests of the data collecting methods, particularly the questionnaires and interviews are needed.

4.3 Pilot Study of Derby Manufacturing University Technical College

4.3.1 Aims and Background

The second pilot study aims to test the use of questionnaires and interviews in data collection. The location for the pilot study is the Derby Manufacturing University Technical College (DM UTC). This college wants to build up a new school that can offer a different educational route to 14-19 year olds. The students here can study and learn while keeping a close link with the industry, for example, using the equipment, and learning the high standards. DM UTC started from 2013, and it has run a participation workshop since January 2014. This design team combined the managers from DM UTC, lecturers from University of Derby, apprentices and experts from Toyota and Rolls-Royce, structural engineers from BAM (a construction company), designers from Maber and Race-Cottam (two architecture design companies), consultants from Mott MacDonald (an architecture consultancy company), and designers from 360Degrees (a furniture design company). The workshop had weekly meetings from January 2014. In the workshop, the design team had multi-tasks, such as visit the site, consult the students, choose the preferred schemes done by the designers, verbally discuss with each other, and so on.

At the present time, no more meetings are required. Most of the decisions have already been taken, and the college had finished the construction and opened to the

public since September 2015, so direct observation of design meeting is impossible in this case study. With the permission of DM UTC, the author can access many aspirations studies, reports, meeting minutes, and design figures in this project.[33] In these documents, it can be seen what concerns the experts had, which issues were discussed, and what the final decisions were, and so on. For instance, in the aspirations study (see *Figure 4-10*), the designer emailed a list of finished exterior and interior design photos, and asked the non-architectural background participants to comment on each photo. As shown in *Figure 4-10*, the photos on the main part are the options listed by the designers, while the non-architectural background participants' comments have been grouped on the right column. Taking the picture 2 of *Figure 4-10* (lower left corner) as an example: it was praised as "bright & light", while it was also criticised as "furnishings awful; 'dead' space".

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[33] "*Aspirations studies*" are the studies taken by the architects who emailed different finished cases of architecture design to the participants individually. So the participants either gave tick or cross to the each scheme, and commented the schemes. The results were anonymously assembled for the discussion in next meeting. "*Reports*" are the schemes designed by the architects, consultation reports, and so on. "*Meeting minutes*" are the general meeting records of workshop which include the participants of meeting, discussed issues, unsolved problems, and so on. "*Design figures*" are the actual design figures drawn by the architects or interior designers. These figures were discussed by the participants in the meeting, and were revised several times regarding the summarised suggestions and comments.

Figure 4-10 A sample of aspirations studies
Source: DM UTC (2014)
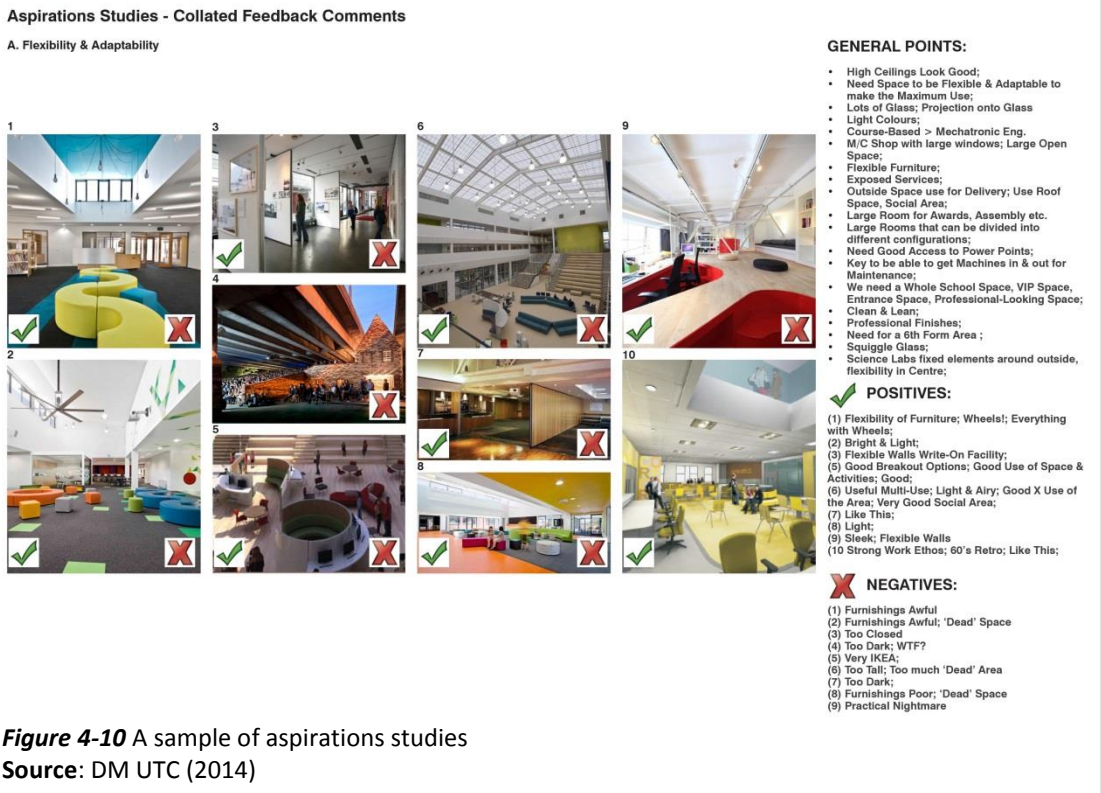
It can be seen that the participants had different perspectives on each photo. In the meeting records, it also shows that the participants encountered quite a few conflicts regarding the design, budget and project time. However, there were very few clues to show how the team members expressed opinions, how they discussed these, what their strategies were when facing a conflict, and how they narrowed down their options to a final decision. As explained in Chapter 2, not many architecture design projects record the details of conflicts and disputations. Many practices want to encourage the public participation in the design process or management. Therefore, the recorded data are usually the bare results and a few photos of the workshop, while hiding the "negative" issues, for instance, conflicts or disagreements, under the table. Meanwhile, quite many conflicts or disagreements are too small or subtle to be noticed. A participant may not even show his or her disagreement to the others. Based on the collected documents of DM UTC, it is

difficult to find out the specific conflict resolutions used by the participants, which increases the necessity of using mix research methods in conflict study.

4.3.2 Design of Questionnaires and Interviews

4.3.2.1 Design of Questionnaires

Questionnaires are a useful tool in studying conflicts. The aim of using questionnaires is to figure out a general view of conflict resolution used by each participant. As section 3.2.2 introduced, there are five conflict resolutions which can be used by the participants: force, avoidance, accommodation, compromise and consensus. Although the thesis is talking about conflict resolving and collaborative consensus-making, it does not mean that the questionnaire should only focus on consensus while ignoring other conflict resolutions. It would be better if we can generally figure out which conflict resolution has been used by each participant in the workshop. To design the questionnaire, instead of designing a totally new questionnaire from scratch, Nauta and Kluwer (2004) advise the researchers to use existing conflict questionnaires regarding the validity issue of questions.

There are a few widely used tools of measuring conflict resolutions: TKI – Thomas-Kilmann Conflict Mode Instrument (Thomas and Kilmann, 1974), OCCI – Organizational Communication Conflict Instrument (Putnam and Wilson, 1982), ROCI-II – Rahim Organizational Conflict Inventory-II (Rahim, 1983a), and DUTCH – Dutch Test for Conflict Handling (Van de Vliert, 1997). All these measurements have reliable validity in specific aspects. To choose the right measurement for this pilot study, we need to compare all the measurements' background and characteristics. TKI aims to test the combined effect of predispositions and the requirement of real

situations. It asks 30 questions – each question only has options A and B, and then the result has to be compared to its US database (Nauta and Kluwer, 2004). Therefore it is not suitable for a research study in the UK. Also, all the questions are pre-set scenarios that are not about any specific real cases. OCCI also tests the combined effect of predispositions and the requirement of real situations. However, it is not detailed enough with only three types of conflict resolution (see *Table 3-3*), which makes it difficult to distinguish the avoidance and accommodation, compromise and consensus. DUTCH has been widely used in the Netherlands since 1990. It shows a high correlation between self-rating and observer rating while the correlation for avoiding behaviour is comparatively low (De Dreu et al., 2001).

There is a common issue in most of the measurements described above. The measurements are normally used to "measure a general intention to certain conflict behaviour or even a general style, instead of actual behaviour" (Nauta and Kluwer, 2004, p. 462). But in the pilot study, we are looking for the actual conflict resolutions used by the participants. In research, there are two ways to measure the temporary actions of facing conflicts. The first way is asking the participants to remember a recent conflict situation, and fill in the questionnaire regarding this conflict (Kluwer, 2000). The second way is setting up a few scenarios, and asking the participants' tactics in this conflict (Kluwer et al., 1998). Recalling a recent conflict situation is more appropriate in this pilot study that was just finished recently. The participants may remember the general impression or a few details of the workshop.

Compared to the three measurements above, ROCI-II is more suitable for the thesis research project. ROCI-II is "designed on the basis of lengthy and repeated feedback

from the subjects and factor analyses of various sets of items. Each item was cast on a 5-point Likert scale (a higher value represented greater use of a conflict style)" (Rahim, 1983a, p. 370). A unique feature of ROCI-II is that it has three separate forms – A, B, and C (see *Figure 4-11)*. The three forms make several references to the respondent's superiors, subordinates, or peers, severally. Every respondent has to fill the three forms one by one. Each question matches with one of the conflict resolution styles. When the respondent finishes all the three forms, the number chosen in each form can be summed and averaged in a scoring key (see *Figure 4-12*). The higher score of a resolution means the respondent tends to use that resolution more than other resolutions. For example, by comparing the scores of each resolution in Form A (superior), we may find that the respondent mainly used "avoidance" to the superior, while rarely used "force" to the superior; but by comparing the scores of Form B (subordinates), we may find that the respondent mainly used "force", while rarely used "avoidance" to the subordinates.

Rahim Organizational Conflict Inventory–II, Form A

Strictly Confidential

Please check the appropriate box after each statement, to indicate *how you handle your disagreement or conflict with your* <mark>*supervisor*</mark>. Try to recall as many recent conflict situations as possible in ranking these statements.

	Strongly Disagree			Strongly Agree	
	1	2	3	4	5
1. I try to investigate an issue with my supervisor to find a solution acceptable to us.	❏	❏	❏	❏	❏
2. I generally try to satisfy the needs of my supervisor.	❏	❏	❏	❏	❏
3. I attempt to avoid being "put on the spot" and try to keep my conflict with my supervisor to myself.	❏	❏	❏	❏	❏
4. I try to integrate my ideas with those of my supervisor to come up with a decision jointly.	❏	❏	❏	❏	❏
5. I try to work with my supervisor to find solution to a problem that satisfies our expectations.	❏	❏	❏	❏	❏
6. I usually avoid open discussion of my differences with my supervisor.	❏	❏	❏	❏	❏
7. I try to find a middle course to resolve an impasse.	❏	❏	❏	❏	❏
8. I use my influence to get my ideas accepted.	❏	❏	❏	❏	❏
9. I use my authority to make a decision in my favor.	❏	❏	❏	❏	❏
10. I usually accommodate the wishes of my supervisor.	❏	❏	❏	❏	❏
11. I give in to the wishes of my supervisor.	❏	❏	❏	❏	❏
12. I exchange accurate information with my supervisor to solve a problem together.	❏	❏	❏	❏	❏
13. I usually allow concessions to my supervisor.	❏	❏	❏	❏	❏
14. I usually propose a middle ground for breaking deadlocks.	❏	❏	❏	❏	❏
15. I negotiate with my supervisor so that a compromise can be reached.	❏	❏	❏	❏	❏
16. I try to stay away from disagreement with my supervisor.	❏	❏	❏	❏	❏
17. I avoid an encounter with my supervisor.	❏	❏	❏	❏	❏
18. I use my expertise to make a decision in my favor.	❏	❏	❏	❏	❏
19. I often go along with the suggestions of my supervisor.	❏	❏	❏	❏	❏
20. I use "give and take" so that a compromise can be made.	❏	❏	❏	❏	❏
21. I am generally firm in pursuing my side of the issue.	❏	❏	❏	❏	❏
22. I try to bring all our concerns out in the open so that the issues can be resolved in the best possible way.	❏	❏	❏	❏	❏
23. I collaborate with my supervisor to come up with decisions acceptable to us.	❏	❏	❏	❏	❏
24. I try to satisfy the expectations of my supervisor.	❏	❏	❏	❏	❏
25. I sometimes use my power to win a competitive situation.	❏	❏	❏	❏	❏
26. I try to keep my disagreement with my supervisor to myself in order to avoid hard feelings.	❏	❏	❏	❏	❏
27. I try to avoid unpleasant exchanges with my supervisor.	❏	❏	❏	❏	❏
28. I try to work with my supervisor for a proper understanding of a problem.	❏	❏	❏	❏	❏

Figure 4-11 ROCI-II form A
Source: Rahim (1983b)

Scoring Key *

Rating Scale: Strongly Agree = 5
                     Strongly Disagree = 1

1. Collaborating Style
(Average your responses to Items)

1	4	5	12	22	23	28

= | **Total** | Total/ # of responses   = | **Average Score** |

2. Accommodating Style
(Average your responses to Items)

2	10	11	13	19	24

= | **Total** | Total/ # of responses   = | **Average Score** |

3. Competing Style
(Average your responses to Items)

8	9	18	21	25

= | **Total** | Total/ # of responses   = | **Average Score** |

4. Avoiding style
(Average your responses to Items)

3	6	16	17	26	27

= | **Total** | Total/ # of responses   = | **Average Score** |

5. Compromising style
(Average your responses to Items)

7	14	15	20

= | **Total** | Total/ # of responses   = | **Average Score** |

Figure 4-12 Scoring key of ROCI-II
Source: Rahim (1983b)

By using the three forms, ROCI-II can effectively recognise the subject and object of conflict resolution (Weider-Hatfield, 1988). However, ROCI-II also has its shortcomings. Firstly, its US English has to be converted to UK English. Secondly, it has 28 questions in each form, which is too many for the participants to respond to. Thirdly, a few questions in ROCI-II seem ambiguous, which may create misunderstanding; for instance, Question 8: "I use my influence to get my ideas accepted". This question wants to disclose the "force" behaviour from the respondent. However, from a participant's perspective, he or she may agree with this phrase. Because everyone expresses the ideas with the aim of being accepted, it is easy to be recognised as using influence to get ideas accepted. Based on this logic, the respondent may tick agree or strongly agree although he or she does not actually force anyone. Another example is Question 25: "I sometimes use my power to win a competitive situation". "Sometimes" is an unclear word to be used in survey. Different people have different feelings of frequency (Brace, 2008). Therefore, mainly based on ROCI-II, the author compared the features and questions of each conflict resolution measurement (see Appendix 4-3). A list of summarised features and survey questions is shown in *Table 4-7*.

Table 4-7 Summarised features and survey questions of each conflict resolution

Resolution Types	Summarised Features	Summarised Questions
Force	1. Arguing persistently for their positions. 2. Using nonverbal messages to emphasise demands. 3. Only pursuing their own goals while ignoring the needs of the other party.	1. I am usually firm in pursuing my goals. 2. In order to win my position, I usually ignore the needs of A. 3. I use my influence, authority, or expertise to achieve a decision in my favour.
Avoidance	1. Withdrawing from the conflict, either temporarily or definitely. 2. Unconcerned attitude toward the issues or parties involved in conflict. 3. Fails to satisfy own concern as well as the concern of the other party.	1. I usually avoid discussion of my differences with A. 2. I try to stay away from disagreement with A. 3. I avoid an encounter with A.

Accommodation	1. Play down the differences and emphasising commonalities. 2. Attempts to meet the needs of others by neglecting own needs or interests.	1. Rather than negotiate the things on which we disagree, I try to stress those things upon which A and me both agree. 2. I sacrifice my own wishes to satisfy the wishes of A. 3. I usually make concessions to satisfy the wishes of A.
Compromise	1. Splitting the difference, exchanging concession, or seeking a quick, middle-ground position. 2. Both parties give up something to make a mutually acceptable decision.	1. I try to find a fair combination of gains and losses for A and me. 2. I try to find a middle ground to resolve conflicts with A. 3. I strive whenever possible towards a fifty-fifty compromise to A.
Consensus	1. Face the real issue, uncover the conflict. 2. Clearing up misunderstanding, and analysing the underlying causes of conflict. 3. Meet needs of both sides.	1. To uncover the conflict, I attempt to get all concerns and issues out in the open. 2. I try to integrate my ideas with those of A to find a solution that really satisfies A and me. 3. I try to exchange accurate information with A for a proper understanding of a problem.

Source: Summarised from Thomas and Kilmann (1974), Putnam and Wilson (1982), Rahim (1983a), Van de Vliert (1997).

Figures 4-13 to 4-16 show a sample of the questionnaire used in DM UTC. Like the ROCI-II, the formal questionnaire randomly arranges the questions. The questionnaires in DM UTC also have three forms regarding different participant groups: UPO, ESG and DBG. "UPO" means the UTC project owner. It represents the persons from Derby Manufacturing University Technical College (see *Figure 4-14*). "ESG" means the educational support group. It here represents the persons from University of Derby, Toyota, and Rolls-Royce (see *Figure 4-15*). "DBG" means the design and build experts. It here represents the persons from BAM, Maber, 360°, Race Cottam, and Mott MacDonald (see *Figure 4-16*).

All the questionnaires ask as few demographic questions as possible to retain the anonymity of participants (Nauta and Kluwer, 2004) (see *Figure 4-13*). Conflict is a highly sensitive topic that can cause a passive effect in the research. The use of the questionnaire is a comfortable way to study sensitive topics, for instance, sex,

conflict, or relationship problems (Nauta and Kluwer, 2004). However, improper setting out of the questionnaire may affect the participants' responses, for example, they may not share the conflicts due to the fear of opening up their answers to the public or a related person. In a survey run by Nauta (2003), the participants were asked to fill the biographic variables, such as gender, age, education, and organisation unit. A few participants were worried that their anonymity could not be kept by asking so much personal information, and a few participants did not even return the questionnaires. Therefore, maintaining anonymity is very important in conflict research, and it can increase the validity of answers as well (Nauta and Kluwer, 2004). The survey in *Figure 4-13* only asks the age and educational background from the respondents.

Survey of DM UTC

Introduction

Thank you for participating in our survey. Your feedback is important.

Later, you will be asked to choose your age range, educational background, form A, form B and form C. Each form has 15 questions. Please carefully read the short introduction of each form, and fill it independently.

Please be aware that as an online participant in this research, there is always the risk of intrusion by outside agents, i.e., hacking, and therefore the possibility of being identified.

Before you start, if you have any questions, please contact the researcher Licheng Zhang by email: laxlz24@nottingham.ac.uk

Thank you very much.

Personal Information

1. What is your age?

- 18 to 24
- 25 to 34
- 35 to 44
- 45 to 54
- 55 to 64
- 65 to 74
- 75 or older
- Prefer not to say.
- I don't know.

2. What is the highest degree or level of school you have completed?

- No schooling completed
- Nursery school to 8th grade
- Some high school, no diploma
- High school graduate, diploma or the equivalent (for example: GED)
- Some college credit, no degree
- Trade/technical/vocational training
- Associate degree
- Bachelor's degree
- Master's degree
- Doctorate degree
- Professional degree
- Prefer not to say.
- I don't know.

Figure 4-13 First page of DM UTC questionnaires
Source: Designed by the author

Survey of DM UTC – Form A				
Strictly Confidential				
Please check the appropriate box after each statement, to indicate how you handle your disagreement or conflict with *UTC Project Owners (UPO)*. *"UPO" here represents the persons from DM UTC*. Try to recall as many recent conflict situations as possible in ranking these statements.				
Questions	*Disagree*	*Tend to Disagree*	*Tend to Agree*	*Agree*
1. To uncover the conflict with **UPO**, I attempt to get all concerns and issues out in the open…………………………	☐	☐	☐	☐
2. Rather than negotiate the things on which we disagree, I try to stress those things upon which **UPO** and me both agree. ……………………………………………………………	☐	☐	☐	☐
3. I usually avoid discussion of my differences with **UPO**. ……	☐	☐	☐	☐
4. I am usually firm in pursuing my goals. …………………………	☐	☐	☐	☐
5. I try to find a fair combination of gains and losses for **UPO** and me. ………………………………………………………………	☐	☐	☐	☐
6. I try to stay away from disagreement with **UPO**. ……………	☐	☐	☐	☐
7. I sacrifice my own wishes to satisfy the wishes of **UPO**. ….	☐	☐	☐	☐
8. In order to win my position, I usually ignore the needs of **UPO**. ……………………………………………………………	☐	☐	☐	☐
9. I use my influence, authority, or expertise to achieve a decision in my favour. ………………………………………………	☐	☐	☐	☐
10. I usually make concessions to satisfy the wishes of **UPO**. ..	☐	☐	☐	☐
11. I avoid an encounter with **UPO**. ………………………………	☐	☐	☐	☐
12. I try to integrate my ideas with those of A to find a solution that really satisfies **UPO** and me. ………………	☐	☐	☐	☐
13. I strive whenever possible towards a fifty-fifty compromise to **UPO**. ……………………………………………	☐	☐	☐	☐
14. I try to exchange accurate information with **UPO** for a proper understanding of a problem. ………………………………	☐	☐	☐	☐
15. I try to find a middle ground to resolve conflicts with **UPO**. ……………………………………………………………	☐	☐	☐	☐

Figure 4-14 Form A of DM UTC questionnaires
Source: Designed by the author

Survey of DM UTC – Form B

Strictly Confidential

Please check the appropriate box after each statement, to indicate how you handle your disagreement or conflict with *Educational Support Group (ESG). "ESG" here represents the persons from University of Derby, Toyota, Rolls-Royce*. Try to recall as many recent conflict situations as possible in ranking these statements.

Questions	Disagree	Tend to Disagree	Tend to Agree	Agree
1. To uncover the conflict with **ESG**, I attempt to get all concerns and issues out in the open…………………………….	☐	☐	☐	☐
2. Rather than negotiate the things on which we disagree, I try to stress those things upon which **ESG** and me both agree. ……………………………………………………	☐	☐	☐	☐
3. I usually avoid discussion of my differences with **ESG**. ……	☐	☐	☐	☐
4. I am usually firm in pursuing my goals. …………………………	☐	☐	☐	☐
5. I try to find a fair combination of gains and losses for **ESG** and me. ………………………………………………	☐	☐	☐	☐
6. I try to stay away from disagreement with **ESG**. ……………	☐	☐	☐	☐
7. I sacrifice my own wishes to satisfy the wishes of **ESG**. ….	☐	☐	☐	☐
8. In order to win my position, I usually ignore the needs of **ESG**. …………………………………………………	☐	☐	☐	☐
9. I use my influence, authority, or expertise to achieve a decision in my favour. ……………………………………	☐	☐	☐	☐
10. I usually make concessions to satisfy the wishes of **ESG**. ..	☐	☐	☐	☐
11. I avoid an encounter with **ESG**. ………………………………	☐	☐	☐	☐
12. I try to integrate my ideas with those of A to find a solution that really satisfies **ESG** and me. ………………	☐	☐	☐	☐
13. I strive whenever possible towards a fifty-fifty compromise to **ESG**. ………………………………………	☐	☐	☐	☐
14. I try to exchange accurate information with **ESG** for a proper understanding of a problem. ………………………	☐	☐	☐	☐
15. I try to find a middle ground to resolve conflicts with **ESG**. ………………………………………………	☐	☐	☐	☐

Figure 4-15 Form B of DM UTC questionnaires
Source: Designed by the author

<table>
<tr><td colspan="5" align="center">**Survey of DM UTC – Form C**</td></tr>
<tr><td colspan="5">

Strictly Confidential

Please check the appropriate box after each statement, to indicate how you handle your disagreement or conflict with *Design and Build Group (DBG). "DBG" here represents the persons from BAM, Maber, 360o, Race Cottam, Mott MacDonald*. Try to recall as many recent conflict situations as possible in ranking these statements.

</td></tr>
</table>

Questions	Disagree	Tend to Disagree	Tend to Agree	Agree
1. To uncover the conflict with **DBG**, I attempt to get all concerns and issues out in the open……………………………	☐	☐	☐	☐
2. Rather than negotiate the things on which we disagree, I try to stress those things upon which **DBG** and me both agree. ……………………………………………………	☐	☐	☐	☐
3. I usually avoid discussion of my differences with **DBG**. ……	☐	☐	☐	☐
4. I am usually firm in pursuing my goals. …………………………	☐	☐	☐	☐
5. I try to find a fair combination of gains and losses for **DBG** and me. ………………………………………………………	☐	☐	☐	☐
6. I try to stay away from disagreement with **DBG**. ……………	☐	☐	☐	☐
7. I sacrifice my own wishes to satisfy the wishes of **DBG**. ….	☐	☐	☐	☐
8. In order to win my position, I usually ignore the needs of **DBG**. ………………………………………………………	☐	☐	☐	☐
9. I use my influence, authority, or expertise to achieve a decision in my favour. ……………………………………	☐	☐	☐	☐
10. I usually make concessions to satisfy the wishes of **DBG**. ..	☐	☐	☐	☐
11. I avoid an encounter with **DBG**. ……………………………	☐	☐	☐	☐
12. I try to integrate my ideas with those of A to find a solution that really satisfies **DBG** and me. ………………………	☐	☐	☐	☐
13. I strive whenever possible towards a fifty-fifty compromise to **DBG**. ……………………………………	☐	☐	☐	☐
14. I try to exchange accurate information with **DBG** for a proper understanding of a problem. …………………………	☐	☐	☐	☐
15. I try to find a middle ground to resolve conflicts with **DBG**. ……………………………………………………	☐	☐	☐	☐

Figure 4-16 Form C of DM UTC questionnaires
Source: Designed by the author

In *Figures 4-14 to 4-16*, like ROCI-II, none of the questions offers the "Don't know" (DK) or "No opinions" (NO) options. Feick (1989) claimed that the respondents will need "DK/NO" options if they do not understand the meaning of questions. Foddy (1993) suggested that using "DK/NO" can avoid forcing the respondents to answer

the questions that are uncomfortable or inappropriate; but Oppenheim (2000) indicates that the respondents may select "DK/NO" just because they do not want to think or commit themselves although they actually know the answer. Krosnick et al. (2002) even criticised that the use of "DK/NO" could not offer a reliable quality of data as expected. In fact, the use of "DK/NO" depends on the type of questions. If it is a factual question, then "DK/NO" would be appropriate in case the respondents really do not have the answers. If it is an attitudinal question, then "DK/NO" should be omitted. Attitudinal questions require the cognitive work for the respondents. The respondents have to think about it, and set up the judgment or attitude. If the cognitive work is beyond the respondents' motivation or ability, they tend to select "DK/NO" to reduce the work (Schwarz and Bohner, 2001). In this research, the survey questions are all about the respondents' attitudes to conflicts, so it is better to omit "DK/NO" options here.

Different from ROCI-II, the questionnaire only offers four options in the Likert scale: disagree, tend to disagree, tend to agree, and agree. In ROCI-II, it has 1-5 different scales, but it only writes down "strongly disagree" on the left side and "strongly agree" on the right side. In a normal sense, the Likert scale in ROCI-II can be understood as strongly disagree, disagree, neutral, agree, and strongly agree. However, it becomes difficult to explain the meaning of "neutral". It does not necessarily mean the middle point of two ends. It can also mean the lack of attitude or knowledge. The "neutral" point makes it difficult to analyse (Oppenheim, 2000). Back to *Figures 4-14 to 4-16*, again, all the questions are attitude questions. In order to find out a clear answer, the options try to "force" the respondents to make a

choice among strongly disagree, disagree, agree, and strongly agree. From the results, it is then easy and clear to find out whether the respondent agrees or disagrees. Sudman and Bradburn (1982) prove that the forced-choice type survey generates more reliable data, although it is still necessary to check the external validity of data in future research (Smyth et al., 2006). With carefully worded questions, this kind of forced choice survey can produce relatively stable responses (Gendall et al., 1991). The reason is that forced choice questions require a deep thinking process from the respondents, who may spend a longer time in judging [see Sudman and Bradburn (1982), and Smyth et al. (2006)]. Another problem of the Likert scale –strong disagree, disagree, agree, and strongly agree – is that of redundancy. For some persons, "agree" is "a very strong word" while "strongly agree" just repeats the same meaning of "agree", and that leaves little space for the person with some uncertainty (Frary, 1996). So, the DM UTC questionnaire uses: disagree, tend to disagree, tend to agree, agree.

Adapted from *Figure 4-12*, *Table 4-8* shows the way of calculating the scores of questionnaires in the study of DM UTC. This "scoring key" summarises the information from filled questionnaires. Firstly, it records the basic information of a respondent. Then in the following part, it records the respondent's results in separate tables. To be more clear, the three tables are all named "Score Results of (   ) – (   )". The first bracket should be filled with the respondent's ID. For instance, if the respondent belongs to UPO group, then it fills "UPO1" in the first bracket. Then the second bracket should be filled with the group's ID. If it is the result of UPO1's conflict resolution to ESG, then it fills "ESG" in the second bracket. So in a fully filled-

in score result form, there are three tables: (UPO1) – (UPO), (UPO1) – (ESG), and

(UPO1) – (DBG).

Table 4-8 Scoring key of DM UTC questionnaires

Respondent: Age: Date:

Highest degree:

Rating Scale: Disagree = 1; Tend to Disagree = 2; Tend to Agree = 3; Agree = 4

Score Results of ( ) - ( )					
Conflict Resolution Styles	**Question Numbers and Scores**			**Total**	**Average Score**
Force	(4)	(8)	(9)		
Avoidance	(3)	(6)	(11)		
Accommodation	(2)	(7)	(10)		
Compromise	(5)	(15)	(13)		
Consensus	(1)	(12)	(14)		

Score Results of ( ) - ( )					
Conflict Resolution Styles	**Question Numbers and Scores**			**Total**	**Average Score**
Force	(4)	(8)	(9)		
Avoidance	(3)	(6)	(11)		
Accommodation	(2)	(7)	(10)		
Compromise	(5)	(15)	(13)		
Consensus	(1)	(12)	(14)		

Score Results of ( ) - ( )					
Conflict Resolution Styles	**Question Numbers and Scores**			**Total**	**Average Score**
Force	(4)	(8)	(9)		
Avoidance	(3)	(6)	(11)		
Accommodation	(2)	(7)	(10)		
Compromise	(5)	(15)	(13)		
Consensus	(1)	(12)	(14)		

Source: Designed by the author

4.3.2.2 Design of Interviews

A single source of conflict research is not enough, or reliable enough. To compare the data collected from questionnaires, the interviews then become a possible choice. Although the interviewer's bias is a critical issue, more researchers agree that interviews produce abundant material for research. The quantitative data collected from questionnaires could be compared with the answers collected from the interview [see Yin (2003), Crouch and McKenzie (2006), and Minichiello et al. (2008)]. In *Table 4-9*, Gillham (2000, pp. 60-65) lists a series of survey methods from structured to unstructured. Among those methods, semi-structured interviews are remarked on as the most important form that can offer the richest source of data. The interview questions can also be sorted into three main types: unstructured questions, semi-structured questions, and structured questions (Flick, 2009, pp. 150-151). An unstructured question normally uses "what" for a broad area, for example, "What do you like most in this design?" "Which aspect do you care the most?" A semi-structured question likes starting with "how" or "what" for a further step, for instance, "How did you feel about the conversation with the designer?" "What did you learn from the conflict with your boss?" Finally, a structured question requires the Yes/No answers, for example, "Did you feel uncomfortable in the workshop?" "Have you finished the drawing in the workshop?" Flick (2009) suggests that an interview can start from the unstructured questions, and increase the structure in later questions.

Table 4-9 The verbal data dimension

Unstructured ↕	Listening to other people's conversation; a kind of verbal conversation
	Using 'natural' conversation to ask research questions
	'Open-ended' interviews; just a few key open questions, for example, 'elite interviewing'
	Semi-structured interviews, i.e. open and closed questions
	Recording schedules: in effect, verbally administered questionnaire

| | Semi-structured questionnaires: multiple choice and open questions |
| Structured | Structured questionnaires: simple, specific, closed questions |

Source: Adapted from Gillham (2000, p. 60)

There are a few pitfalls that should be avoided in interviews. First of all, what the respondents say they do can be different from what they actually do. Due to many reasons, the respondents want to hide or change something that they do not want to share. A side observation would be useful to give another perspective of the same respondent. Secondly, the respondents may not remember all the details about the topic. Therefore, it is necessary to help the respondents' memory recall by the order that the questions are set. Asking the most recent events and going back through time is one application of remembering. A few cross-cutting questions are good at restructuring the events as well. For instance, rather than asking one standard question of conflicts, the interviewer can ask whether the interviewee had disagreed with something, hidden some feelings, kept silent, and so on. Furthermore, too fast questioning or too complex questions can cause comprehension failure in interviewees. Due to the short-term memory of human, it would be better if the questions can be delivered slowly, or the respondent can read the text while the interviewer is reading it aloud. Last but not least, the questions should avoid slang, abstract words, and negative questions (Foddy, 1993).

Regarding all the concerns above, the first interview question protocol is mapped out in *Figure 4-17*. The protocol has three parts: the first part tries to find the conflicts in the design, the second part tries to find the conflicts in the relationship, and the last part asks for feedback about this interview. To help the participants recall the memory, it starts from two unstructured question by asking the

respondent's general feeling of the final design. The two questions try to tease out some hidden disagreements or conflicts from the respondent. If there are some details of the design that the respondent does not like, then it is reasonable to ask why this part of the design is decided while it is disagreed with by the respondent. The following questions ask whether the disagreements had been discussed or not; whether the respondents agreed their rejection or not; and were the respondent's concerns rejected often in the workshop? These three questions try to figure out what happened with this disagreement or conflict; however, there can be a situation in which the respondent has absolutely no problem with the design after being asked Questions 1 and 2, then he or she will be guided to Questions 6, 7 and 8 that are about the relationship in the workshop. Finally, in Questions 9 and 10, the respondent can give the feedback about the workshop and this interview. It aims to explore more unexpected aspects or ideas in their participation in the workshop, and through the interviews.

Interview Protocol of DM UTC

Participation in this study is voluntary and you are free to stop the study at any time. If you choose to withdraw, all your data will be erased from our records.

Main Questions	Additional Questions
1. How do you like the final scheme? Do you think the final scheme is satisfactory?	Which part of design do you like most?
2. Which part of design you think is not good enough?	*(if there was)* Why?
	(if there was not) Go to Question 6.
3. Have you discussed it in the meeting?	*(Yes)* What's the reason it was rejected?
	(No) Why you didn't discuss it?
4. Do you accept their reasons?	Why?
5. Did this kind of situation happen a few times?	
6. How do you feel in the workshop? Relax or tense?	Which part of workshop you really enjoyed? E.g. Discussion? Site visiting? Or something else?
7. Which situation that you feel not proper?	*(if there was)* Could you describe some details of it?
	(if there was not) Go to Question 9.
8. Did this kind of situation happen a few times?	
9. Do you have any comments about the workshop?	
10. Do you have any comments about my case study?	

Figure 4-17 DM UTC interview protocol
Source: Designed by the author

4.3.3 Analysis and Modification of Questionnaires and Interviews

4.3.3.1 Questionnaires

After setting up the questionnaires (*Figures 4-13* to *4-16*) and interview protocol (*Figure 4-17*), an invitation email has been sent to all the participants in the DM UTC project. Most of the respondents live far away from Nottingham. In order to save the time consumed in travelling, an online survey, exactly the same *Figures 4-13* to *4-16,* had been attached in the email. Once they finished the online survey, the face-to-

face interviews would be organised. Finally, due to the personal reasons, only three persons filled in the survey online, and two of them took the interviews.

The three respondents of the questionnaire are named UPO1, ESG1 and DBG1, respectively. The "Score results of UPO1" of Appendix 4-4 shows the score result calculated from UPO1's (a manager of UTC project) questionnaires. Generally, it shows that UPO1 mainly used "consensus" to reach agreements with UPO, ESG and DBG, while UPO1 rarely used "avoidance" to resolve the conflicts with the three groups. And due to the different status of each group in the workshop, UPO1 applied increasing "force" to UPO (2.00), ESG (2.33) and DBG (3.00). The "Score results of ESG1" of Appendix 4-4 shows the score result calculated from ESG1's (an expert from Toyota) questionnaires. Generally, when facing the persons from UPO and ESG, ESG1 preferred to use "consensus" and "compromise", while "force" and "avoidance" are the two less used resolutions. Remarkably, ESG1 shows a very strong "force" style to DBG that is the same level as "consensus". The "Score results of DBG1" of Appendix 4-4 shows the score result calculated from DBG1's (a designer from Maber) questionnaires. DBG1's score results show a much more different trend than those of UPO1 and ESG1. First of all, although "consensus" still has the highest degree in all three tables, the differences between "consensus" and other conflict resolutions are much smaller than that of UPO1 and ESG1. A relatively high degree, 2.67, can be found in the row of "avoidance" of the second table, while the lowest degree, 2.00, is found for "force". This indicates that DBG1 was a bit fearful of encountering conflict with ESG.

A cross comparison can be seen from *Table 4-10* that shows the average scores of each style used by UPO1, ESG1 and DBG1. There are five small tables that represent five conflict resolutions. On the left column of each table is the respondents' name. The number in each cell means the average score summarised from the tables in Appendix 4-4. In *Table 4-10*, take the first table "Force Style" as an example, UPO1 used a degree of 2.00 "force" to UPO, 2.33 degree to ESG, and 2.00 degree to DBG. The same applies to other respondents and tables here. This synthesised figure allows us to analyse the validity of questionnaires. First of all, marked by the red squares, ESG1 used the highest "force" to DBG, while DBG1 used the highest "avoidance" to ESG. ESG1 also used the lowest "accommodation" to DBG. Secondly, if we see all the rows of UPO1 and ESG1, we can find that the scores of UPO1 and ESG1 are much more similar than that of DBG1. This is probably because ESG1 is invited to the workshop as an outside consultant; then it is understandable that ESG1 may have a similar status to UPO1, or a slightly lower position. Both UPO1 and ESG are quite sure of what they want, and try to achieve what they want while still caring for others' concerns to a certain degree. However, DBG1 is paid to offer the design service; therefore, DBG1 is in a position of serving the others rather than really arguing with them. The analysis proves that the results of questionnaires can mutually support each other. The validity of the questionnaire is acceptable.

Table 4-10 Cross comparison of score results

Force Style – Average Score			
	UPO	ESG	DBG
UPO1	2.00	2.33	2.00
ESG1	2.33	2.33	3.67
DBG1	2.33	2.00	2.33

Avoidance Style – Average Score			
	UPO	ESG	DBG

UPO1	1.33	1.33	1.00
ESG1	1.33	1.00	1.00
DBG1	2.00	2.67	1.33

Accommodation Style – Average Score			
	UPO	ESG	DBG
UPO1	2.67	2.00	2.00
ESG1	2.33	3.00	1.67
DBG1	3.00	2.67	2.33

Compromise Style – Average Score			
	UPO	ESG	DBG
UPO1	3.33	3.00	2.67
ESG1	2.67	3.00	2.67
DBG1	3.00	2.67	2.33

Consensus Style – Average Score			
	UPO	ESG	DBG
UPO1	4.00	3.67	4.00
ESG1	4.00	4.00	3.67
DBG1	3.33	3.33	3.67

Source: Compiled by the author

4.3.3.2 Interview of ESG1

The author sent interview invitations to many of the participants in DM UTC; however, only two participants who filled in the online questionnaires accepted the interviews. The first interview was undertaken with ESG1, and the second with UPO1. Despite only two interviews had been carried out in this pilot study, many modifications of the interview protocol have been made (see *Figure 4-17*). The two interview transcripts of ESG1 and UPO1 can be seen in Appendix 4-5. There was an interview protocol, but the interviewer actually asked a few slightly different questions rather than strictly following the protocol (see *Table 4-11*). In *Table 4-12*, it summarises the key meanings from ESG1's interview. Despite ESG1 thinks the final architecture design has many good aspects, ESG1 actually made a few compromises on the budgets, area size, height and equipment, and so on. The way of dealing with these issues is by analysing each problem in depth, which can be proved by the examples given by ESG1. To find a solution that everyone agrees with, the workshop

considers all the related factors together. If there are a few options that are difficult

to select, the chair of the workshop would try to find a synthesised decision that

meets most of the concerns. In the end, ESG1 also gives a few valuable suggestions

for public participation in architecture design.

Table 4-11 Actual questions asked in ESG1's interview

1.	How do you feel the UTC project regarding to the architecture design?
2.	How about the architecture design? Do you feel happy for that?
3.	Which part you like most about the architecture design?
4.	How about any part that you don't like, or not happy for that?
5.	In the meeting, have you guys talked about this issue about the outdoor space?
6.	For the reasons of limiting the height of building, do you think it makes sense?
7.	Is there any other kind of problem with the similar situation?
8.	How about any other kinds of concern, they rejected it by the reason you don't understand?
9.	How about the furniture? Like how do you guys choose the furniture, like what colour, what furniture to use in the classroom?
10.	Do you have any comments about the workshop? OR about the meeting group? Is there anything that they can promote?
11.	Do you any comments about my case study?

Source: Summarised by the author

Table 4-12 Summary of ESG1's interview

Whole Feeling	The workshop is good involvement. We started from basic principles, and finished at complex school.
Architecture	It is a good design with big sign, visual impact. It sticks to budget. We had to compromise in a few designs, due to the budget, area size, and height limitation.
Different Opinions	We analysed each opinion in depth. (there are many examples)
Final Decision	The chair of the workshop tried to find a decision that met everything.
Suggestions & Comments	Set a visible plan for the project. Offer a clear budget, and stick to the budget. Need an experienced leader to offer democracy and control to the workshop.

Source: Summarised by the author

ESG1's answers contain a great deal of information; however, not much of the

information answers the details of resolving conflicts, such as what were the ESG1's

feelings of working with others, did ESG1 express all the concerns or comments, and

what to do if no decision could be made by the workshop. One possible reason is

that ESG1 understands the questions differently from the interviewer's perspective.

Another reason is that the interview questions are not specific enough. Although the indirect questions could avoid the interviewees' embarrassment and bias, the indirect questions should not be too obscure or ambiguous. The questions from 5 to 8 in Table *4-11* are not too close to conflict and consensus. For instance, in question 6, "for the reasons of limiting the height of building, do you think it makes sense", it is predictable that the interviewee would answer "yes, it makes sense", because the limitation of height is something that has to be accepted. With question 7, "is there any other kind of problem with the similar situation", by asking this question, the interviewer aimed to know other examples that ESG1's ideas were rejected. In fact, ESG1 understood the question as other limitations they had on the site.

4.3.3.3 Interview of UPO1

To test another possible interview protocol, the author changed the interview questions into more straightforward types (see *Figure 4-18*), and the actual questions asked in the UPO1's interview are much close to the protocol with a small change in question 7 (see *Table 4-13*). The collected data are richer and more valuable than those from the last interview (see *Table 4-14*).

Interview Protocol of DM UTC

Participation in this study is voluntary and you are free to stop the study at any time. If you choose to withdraw, all your data will be erased from our records.

Main Questions	Additional Questions
1. How do you feel about the final architecture design of UTC project?	
2. Which part of architecture design you like most?	
3. Is there any part you don't like?	
4. When discussing the architecture issues with others, did you express all of your ideas to others?	(*Yes*) what is the reason that allows you to express all the ideas?
	(*No*) do you remember what idea you didn't say? What was the reason that you didn't say it?
5. Did you express all of your comments on the other members' ideas?	(*Yes*) was there anyone hold the opposite comments to yours?
	(*No*) do you remember what comment you didn't say? What was the reason that you didn't say it?
6. Did you explain all the reasons for your comments?	(*Yes*) do you think the other members really understand your reasons?
	(*No*) do you remember what reason you didn't say? What was the reason that you didn't say it?
7. If there are different options, what would the workshop do next?	
8. And how did the workshop choose the final option? E.g. voting or verbal discussing?	
9. Do you feel difficult to make a final decision? Could you give me an example? (furniture)	
10. Do you think that all of your concerns have been realized?	(*Yes*) do you think the other members' concerns have been realized?
	(*No*) what concern wasn't realized? What was the reason that your concern was ignored?
11. Do you have any suggestions about the UTC workshop?	
12. Do you have any suggestions about my case study?	

Figure 4-18 DM UTC interview protocol for UOP1
Source: Designed by the author

Table 4-13 Actual questions asked in UPO1's interview

1.	How do you feel about the final architecture design of UTC project?
2.	Which part of architecture design you like most?
3.	Is there any part you don't like?
4.	When discussing the architecture issues with others, did you express all of your ideas to others?
5.	What is the reason that supports you to express all the ideas?

6.	Do you think you express all the reasons for your comments?
7.	Do you think the other members they also express the reasons about comments?
8.	If there are different options, what would the workshop do next?
9.	How did the workshop make the final decision, like you make a voting or you do some verbal discussing?
10.	Do you feel difficult to achieve the final decision?
11.	Could you give me an example? Like I saw here that the scheme for the furniture. Like how did you guys choose the colours or styles?
12.	Do you think all of your concerns have been realized?
13.	Do you have any suggestions or comments about the UTC workshop?
14.	Do you have any suggestions or comments about my case study?

Source: Summarised by the author

Table 4-14 Summary of UPO1's interview

Whole Feeling	It represents the school well. Positive team work.
Architecture	The design was managed well. It has good identities and rendering. There is nothing offensive at all.
Different Opinions	We had open dialogues to discuss any points. Good relationship with architects. And good team atmosphere. I expressed all reasons and comments. I think others expressed all reasons and comments as well. Looked at the pros and cons of each idea, analyse it as much as possible. Offered space and time for analysis. Encouraged the reasons behind the comments.
Final Decision	It was not difficult to reach the final decision. If there were different options, the principle made the decision.
Suggestions & Comments	The workshop needs more authority to make decisions. The participants should be able to understand architecture design. The workshop should be open to challenges and questions.

Source: Summarised by the author

In *Table 4-14*, firstly, it can be seen that from UPO1's perspective, the whole workshop is positive and open to any opinions. Once there are different opinions, the workshop would analyse the issues in as detailed a manner as possible. The discussion of problems generates more ideas and restrictions of the design. It also increases the possibility of reaching agreements, even consensus. This kind of open and democratic atmosphere is why the participants mainly try to use consensus when facing conflicts. Secondly, if no final decision can be made, the workshop would then leave the issues to the principle. The principle is not in the workshop, but has the authority to make the final decision or choose the options made by the

workshop. This kind of workshop is defined as "collaboration" rather than "consensus". It leaves the unsolvable contradiction to one authoritative head, and reduces the intense relationship among the participants. What is more remarkable, in the interview, UPO1 thinks all the people in the workshop had expressed their ideas and comments in a good atmosphere. However, this response is actually opposite to the summarised results of ESG1's and DBG1's questionnaires. When facing the conflict, ESG1 uses a higher level of force than DBG, while DBG1 uses a high level of avoidance. There are a few reasons that UPO1 thought other participants had expressed their ideas and comments. Firstly, it is difficult for UPO1 to notice DBG1's "avoidance" resolution that is hard to observe and judge (Nauta and Kluwer, 2004). Secondly, being a manager of the project, UPO1 tries to show a successful and democratic workshop. Therefore, the question "Do you think the other members also express the reasons about comments?" should be removed.

Based on the analysis of interviews above, the new interview guidance has been concluded in *Figure 4-19*. It slightly changes the structure of the last interview protocol (see *Figure 4-18*). In *Figure 4-19*, questions 1 and 2 draw a general picture of the whole project, which helps the interviewees to recall their behaviours in the workshop. Questions 3, 4 and 5 are about the interviewee's expression of ideas, comments and reasons. Next, questions 6, 7, 8 and 9 are about the group work of reaching the final decision. Finally, questions 10 and 11 ask the interviewee's suggestions and comments. In *Figure 4-19*, the new interview protocol cares more about the use of accurate words in questions. Instead of asking "how do you feel about the final architecture design of UTC project?", question 1 asks "what is your

opinion about the workshop?". The answer of "how do you feel something" does not really force the interviewees to think, but "what is your opinion about something" requires more commitment to answer.

Interviewer: _____   Interviewee: _____ (ID only)   Date & Time: _____

Interview of the Participant

Hello, I am your interviewer, name (optional). The interview questions are mainly about the expression of ideas in the workshop. I will give you 2 minutes to remember the details of it. A few questions are about the conflicts of ideas, but please answer candidly. All the data are anonymous and strictly confidential. You can refuse to answer certain questions, or quit the interview at any time. The following questions may sound similar, but please be patient, and answer them as separated questions.

Main Questions	Additional Questions
1. What is your opinion about the workshop?	
2. Which part of the workshop did you like the most?	Which part of the workshop did you like the least?
3. When discussing in the group, did you express all of your ideas to them?	*(Yes)* What were the reasons you were able to express all of your ideas? Examples?
	(No) What were the reasons you were not able to express all of your ideas? Examples?
4. Did you express all of your thoughts regarding the other members' ideas?	*(Yes)* What were the reasons you were able to express all of your comments? Examples?
	(No) What were the reasons you were not able to express all of your comments? Examples?
5. Did you explain all the reasons for your comments regarding your own or others' ideas?	*(Yes)* What were the reasons you were able to express all of your reasons? Examples?
	(No) What were the reasons you were not able to express all of your reasons? Examples?
6. If there were differing opinions, how did you reach a decision as a group? E.g. voting or verbal discussing	
7. Were you able to reach a final decision as a group regarding all of the design elements?	*(Yes)* What were the reasons you were able to reach a final decision? Examples?
	(No) What were the reasons you were not able to reach a final decision? Examples?
8. How easy or difficult was it to reach a final decision as a group?	Why? Examples?
9. Do you feel that all of your opinions were treated fairly?	*(Yes)* How were your opinions treated fairly? Examples?
	(No) How were your opinions treated unfairly? Examples?
10. Is there a way the process of the workshop could be changed to enable the group to develop a finalised design?	
11. Do you have any suggestions or comments about the workshop?	

Figure 4-19 Workshop interview protocol for the participants
Source: Designed by the author

In *Figure 4-18*, by asking "when discussing the architecture issues with others, did you express all of your ideas to others?", "what is the reason that supports you to express all the ideas?", and "do you think you express all the reasons for your comments?", the interviewer aimed to know whether there was anyone who was quiet or dominant in the group, and what the reasons were for this phenomenon. However, these questions did not separate the meanings of ideas, comments and reasons clearly enough. In fact, in sequence, there are the interviewee's ideas, the others' ideas, the interviewee's comments on others' ideas, the others' comments on the interviewee's ideas, the interviewee's reasons for his or her own comments, and the others' reasons for their own comments. The interviewee should be asked questions in this sequence; a much more structured question series can be seen in *Table 4-15*. In the "additional questions" part, instead of asking "what is the reason that supports you to express all the ideas?", *Table 4-15* asks "what were the reasons you were/weren't able to express all of your ideas?".

Table 4-15 Interview questions of ideas, comments and reasons

Main Questions	Additional Questions
When discussing in the group, did you express all of your ideas to them?	(*Yes*) What were the reasons you were able to express all of your ideas? Examples?
	(*No*) What were the reasons you were not able to express all of your ideas? Examples?
Did you express all of your thoughts regarding the other members' ideas?	(*Yes*) What were the reasons you were able to express all of your comments? Examples?
	(*No*) What were the reasons you were not able to express all of your comments? Examples?
Did you explain all the reasons for your comments regarding your own or others' ideas?	(*Yes*) What were the reasons you were able to express all of your reasons? Examples?
	(*No*) What were the reasons you were not able to express all of your reasons? Examples?

Source: Summarised by the author

In *Figure 4-18*, by asking "if there are different options, what would the workshop do next?" and "how did the workshop make the final decision, like did you take a vote or did you do some verbal discussing?", the interviewer hoped to know what the group did in order to transfer the different opinions into a final decision. However, these two questions are actually similar. In *Figure 4-19*, question 6 mixes the two questions into one – "if there were differing opinions, how did you reach a decision as a group? For instance, voting or verbal discussing". Furthermore, the question "do you find it difficult to achieve the final decision?" is considered a little bias; instead, question 8 asks "how easy or difficult was it to reach a final decision as a group?"

In *Figure 4-18*, by asking "do you think all of your concerns have been realised?" the interviewer wanted to know the interviewee's feelings relating to workshop fairness. However, a person feeling that the process was fair does not mean his or her ideas must have been achieved. The feeling of fairness is related to the evaluation process. If his or her viewpoints are judged fairly, even though rejected, the person still thinks it is fair (Hoffman and Maier, 1965). Therefore, in *Figure 4-19*, question 9 asks "do you feel that all of your opinions were treated fairly?" and "could you give any examples?" Last but not least, in *Figure 4-18*, the question "do you have any suggestions or comments about the UTC workshop?" has achieved its targets. Both ESG1 and UPO1 offered valuable suggestions. The question "do you have any suggestions or comments about my case study?" is not necessary. Both interviewees gave very general responses to it. In order to get more suggestions and comments to develop the workshop, the concluding interview questions in *Figure 4-19* are question 10 – "is there a way the process of the workshop could be changed to

enable the group to develop a finalised design?", and question 11 – "do you have any suggestions or comments about the workshop?"

The pilot study of DM UTC generally tested the feasibility of questionnaires and interviews in revealing the conflicts or tension between the participants. However, because the case had been finished long ago, the study objects may not remember the details of workshop clearly. The collected data may not reflect the truth hundred per cent. In the later workshop, ideally, the questionnaires should be given to the participants immediately after the workshop. Meanwhile, it has to admit the sample size in this pilot study is relatively small, which may not provide large amount of data to describe what happened in the workshop, what conflicts resolutions they used, and what the feedback of each participant was. However, it also has to remind that the purpose of this pilot study is not to give detailed survey of the case DM UTC, but test the performance and feasibility of the designed questionnaires and interviews. If the collected data of questionnaires could generally indicate the conflict resolution used by the one who filled in the questionnaire, and the records of interviews could describe the interviewee's feelings and behaviours, it means this pilot study has successfully tested the performance of data collection methods. But in the later workshop of IRSs and CM, the questionnaires and interviews will be taken by all the participants.

4.4 Summary

This chapter has firstly analysed the main research question "*how do IRSs and CM perform in conflict-resolving and collaborative consensus-making in the participatory architecture design of the museum?*" in section 4.1. Then this question has been

separated into eight sub-questions in the first two participation stages: generating ideas and structuring ideas. The literature review of research methods indicated that using mixed methods could avoid the weakness of single method. Comparing with case study and laboratory, it argues that a newly set up workshop could be more specific to this research. The methods can be observation, questionnaires, interviews, and the written manuscripts in the workshop. Last but not least, the thesis introduces the definition of workshop facilitators. Different from other third parties or neutral person, facilitators not only deal with the conflicts and disagreements, but also process the workshop in the most appropriate direction.

In order to get more sense of using IRSs, section 4.2 compared the performance of Ideas Rating Sheets and Plurality Voting Sheets in an architecture design exhibition. The results not only proved that IRSs can collect more judgments than that of PVSs, but also disclose more conflicts than that of PVSs. However, IRSs are rigid in communication. It suggests that more verbal discussion is necessary in order to find the reasons behind the judgments. Section 4.3 ran a pilot study of Derby Manufacturing University Technical College. It was a participation design workshop that included college staffs, industrial experts, and designers. Although the number of completed questionnaires and interviews is relatively small, it should be noticed that the purpose of the second pilot study is to test and revise the questionnaires and interviews, not to survey the case in detailed. Based on the results of pilot study, it modified the questionnaire and interview protocol into more appropriate forms for the later workshop.

In the following chapter 5, it will describe how to design the participatory design workshop, and the actual process of workshop. A series of results will be illustrated as well.

Chapter 5. Workshop and Results

Firstly, section 5.1 introduces the background, elements and procedures of the workshop. It also describes the questionnaires and interview protocols related to the workshop. Meanwhile, the workshop also set two phases: loose design and constrained design, in order to test the performance of IRSs and CM in different situations. Then section 5.2 describes the performance of Group A in doing the loose design, for instance, the participants can discuss the optional sites, materials, colours, building size and shape, and the desired atmosphere. And section 5.2 lists a series of results regarding each step of the workshop. Follow the results concluded from Group A, section 5.3 sets up a few constraints in Group B, for example, the participants have to use the specific site, colour and atmosphere in the design; and they should only discuss the materials, building size and shape in Group B. Section 5.3 then describes the actual procedures and results of Group B in doing the constrained design. Finally, chapter 5 is summarised in the last section.

5.1 Design of Workshop

5.1.1 Elements

To run a workshop, there are a number of features need to be considered: place, workshop background, group size, participants, steps, and timing. Rather than creating a workshop conceptually, it would be better if the participation workshop takes place in a real-life context, where participants can learn skills, experience more connections with the museum, and contribute ideas that are of value to the museum (Simon, 2010). Therefore, the chosen project is based on the Feathered Dinosaurs' exhibition in the Nottingham Natural History Museum, Wollaton Hall. Because of the originality of Wollaton Hall (see its background in section 4.2.1), its limited space

cannot exhibit all the specimens and models to the public. Therefore, a large number of items have to be stored in tens of rooms that cannot be accessed by the public. To resolve the issue, an option is to construct a new building, either permanent or temporary, that can be used for dinosaur exhibits and other natural history exhibitions, which would leave Wollaton Hall as it was originally meant to be. It is a good opportunity for the public to participate in the affairs of the Museum. To increase the members of public, a special workshop poster (see Appendix 5-1) is designed and advertised widely through Nottingham university engagement programmes and Wollaton Hall's social media. Meanwhile, because the workshop is specifically designed for the engagement of local community in a kind of real context, the University of Nottingham provided the "Nottingham Catalyst Partnership Fund" twice for the studies in Wollaton Hall, which enabled the workshop to be completed smoothly. Table 5-1 shows the background of workshop.

Table 5-1 General background of Feathered Dinosaurs' Exhibition

Background	Contents
Organisations	Nottingham Natural History Museum, Wollaton Hall; Department of Architecture and Built Environment, University of Nottingham (DABE); Palaeonzoological Museum of China (PMC); Institute of Vertebrate Palaeontology and Paleoanthropology (IVPP); China Academy of Science
Dinosaur specimens	7
Dinosaur models	9
Budget	There is about 300,000-400,000 GBP in total. It includes 120,000-180,000 GBP for the rent, transportation and installation fees of exhibits.
Design issues	Potential sites, building size, colours, materials, shape and form, and the desired atmosphere
Areas	Wollaton Hall and Park

Source: Written by the author

Regarding the group size, five participants would be a suitable size in a design group. In the Oregon experiment, Alexander (1975) suggests that a group can work comfortably with no more than 10 people. Sanoff (2000) also claims that five to nine participants is the ideal group size. The knowledge or critical thought that exists may

not be enough when there are fewer than five people; however, the opportunities for participation may decrease when there are more than nine people. In the participation project of the Lee Valley Millennium Centre, Forsyth et al. (2010) also describes an ideal group that is consisted of five local residents and an architect. Rogers (2007, p. 100) summarises the relationship between group size and communication level (see *Table 5-2*). Therefore, a group with five participants would be effective and doable in this study. Rather than inviting five members of the public, a mixed participation group would prove more realistic and useful (Forsyth et al., 2010). So, this five-person group can be a mix of one member of the museum staff, one architect, and three local residents. To run this workshop in a series of steps, an experienced facilitator would be beneficial. The facilitator should be neutral and equal, and ensure that each participant's ideas can be heard by the others (Sanoff, 2000) (also see section 4.1.3). Warner (2001) sets out the roles of a facilitator: 1) direct the questions when the group wants to move forward; 2) good at listening and clarifying; 3) reflect the hard questions to the participants; and 4) be aware of distorted information and meaningless communication.

Table 5-2 Group size and communication level

3–6 people	Everyone speaks.
7–10 people	Almost everyone speaks. Quieter people say less. One or two may not speak at all.
11–18 people	5 or 6 people speak a lot, 3 or 4 others join in occasionally.
19–30 people	3 or 4 people dominate.
30+ people	Little participation is possible.

Source: Rogers (2007, p. 100)

5.1.2 Steps

Normally, in the laboratory, there are two groups: a control group and an experimental group. A control group does not participate in the actual exercise, while the experimental group is subjected to the factors to be involved in the study.

However, a control group is not always helpful in a study: an example of such a case can be found in Jenkins and Lawler (1981)'s research of small manufacturers in Ohio (Bryman, 1988). Jenkins and Lawler agreed to help the company to develop a compensation scheme by using the participative approach, but did not use a control group for the comparison. Although the researchers were aware that the lack of a control group would limit the research results, they were concerned that the control group would be upset or jealous about being excluded from the proposed new pay scheme. This passive emotion is inevitable, and it can reduce the validity of research result [see Bragg and Andrews (1973b), and Bryman (1988)].

The workshop in Wollaton Hall is subject to the same concerns. Putting the control group and the experimental group in one room may produce unexpected effects on the two groups, for instance, one group is silent thinking, while the other group is loudly discussing. Also, due to its limited space, Wollaton Hall does not have a big room that can be used by two groups at the same time. Meanwhile, the purpose of this study is to test the performance of IRSs and CM in resolving conflicts and reaching collaborative consensus. Therefore, rather than running two different groups at the same time, running one group with the limited budget and space is more practical in the current situation. Furthermore, instead of exactly repeating the group with the same design content, different phases can be set up in order to test the performance of IRSs and CM in different situation, for example, *Phase One* and *Phase Two*. For instance, *Phase One* is "loose design" that means the participants have no preconditions to follow, and the discussion has many design topics to choose; *Phase Two* is "constrained design" that means the participants have a few

preconditions to follow, and the discussion should focus on the limited design topics. Design is not an easy task to complete; even professional architects may spend many long hours in creating a concept or general shape of the building. So, in order to help the participants understand the background and context of this workshop, several documents were emailed to them many days before the workshop. These documents introduced the general history and current situation of Nottingham Natural History Museum in Wollaton Hall, explained the reasons for and purposes of this participatory workshop, presented the potential sites and the workshop process, and introduced the exhibition and items that would be used. Based on these documents, the participants may create some interesting ideas beforehand, or have good mental preparation of what to do in the workshop.

5.1.3 Data Collection

The detailed steps of the workshop are shown in *Table 5-3*. As summarised in Chapter 4, the data collection methods in the workshop are the written manuscripts, filled-in Idea Rating Sheets, Consensus Mapping, questionnaires, interviews, and observation. At the beginning of the workshop, the participants have to visit the optional sites, and write down their thoughts on blank sheets of paper. The written manuscripts here are the texts, drawings, or marks produced by the participants; they reflect the aspects that are considered by the participants. The second step is filling in the IRSs independently. The IRS used in the workshop is of A3 size with large areas for writing ideas and comments (see *Figure 5-1*). The participants are informed that they are to write only one idea on one sheet, but they can write on as many sheets as they want. After writing ideas on IRSs, all the participants independently judge the others' ideas. They can use the adhesive tack to stick the comments notes

on IRSs. In the "structuring ideas", the facilitator helps the participants in discussing the different ideas and comments. If possible, a list of agreements or consensus maps can be summarised at the end. The final consensus map or agreements can be compared with the participants' written manuscripts and IRSs, to see whether their ideas have been expressed and realised.

Table 5-3 Steps of the workshop

Time	Steps
13:45--14:00 15mins	**1. Welcome the Participants** • The participants come and sign the consent forms.
14:00--14:15 15mins	**2. Introduction of the Workshop** • Introduction of this project. • Today's task and procedure. • Question time.
14:15--14:35 20mins	**3. Silent Site Tour** • The participants are guided by the facilitator to walk around the site. • The participants are observing the site independently. They can take notes, but no discussion.
14:35--14:50 15mins	**4. Generating Options** • The participants should individually write down the ideas on the given papers. • The facilitator can help the participants to clarify their ideas.
14:50--15:05 15mins	**5. Making Judgments** • The participants start to write down their judgments on the sticky notes, and stick them on the idea papers; there is still no discussion with others.
15:05--15:40 35mins	**6. Structuring Ideas** • Verbal discussion of the options and judgments. • Facilitator takes notes of participants' suggestions.
15:40--15:55 15mins	**7. Questionnaires** • The participants have to fill in a short questionnaire about their experience of the workshop.
15:55--16:00 5mins	**8. Conclusion** • Thanks for the participation, and offer rewards to the participants.
16:00--16:15	**9. Interviews** • A face-to-face interview about the experience of the workshop.

Source: Designed by the author

Figure 5-1 Idea Rating Sheets used in the workshop
Source: Designed by the author

The questionnaires of this workshop are similar to the one used in the UTC case study. *Figures 5-2* to *5-4* shows the questionnaire pack for the public participants.

Taking *Figures 5-2* as an instance, it asks the public participant to evaluate his or her

strategies for the conflicts with designer. Similarly, *Figure 5-3* asks this public

participant's strategies for the conflicts with the museum staff, and *Figure 5-4* is

corresponding to the other public participants. Appendix 5-2 is the questionnaire

pack for the designer, and Appendix 5-3 is for the museum staff. As explained in

section 4.3.1, maintaining the participants' anonymity can increase the validity of

answers in conflict research (Nauta and Kluwer, 2004). Therefore, these

questionnaires only ask for the participants' ID on the top left corner of the form.

The IDs of all the participants and facilitator are coded as AF (Group A Facilitator), AD

(Group A Designer), AS (Group A Staff), AP1 (Group A Public 1), AP2 (Group A Public

2) and AP3 (Group A Public 3). And the observer of Group A is coded as AO. The

same coding way is applied to Group B.

Respondent's ID: _____ (ID only)

Survey of the Public – Designer

Strictly Confidential

Please tick (☑) the appropriate box after each statement, to indicate *how you handle your disagreement or conflict with* **designer**. *"Designer" here represents the design expert in the workshop.* Try to recall as many recent conflict situations as possible in ranking these statements.

Questions	Disagree	Tend to Disagree	Tend to Agree	Agree
1. To uncover the conflict with **designer**, I attempt to get all concerns and issues out in the open………………………………..	☐	☐	☐	☐
2. Rather than negotiate the things on which we disagree, I try to stress those things upon which **designer** and me both agree. ………………………………..	☐	☐	☐	☐
3. I usually avoid discussion of my differences with **designer**. ………………………………..	☐	☐	☐	☐
4. I am usually firm in pursuing my goals. …………………………	☐	☐	☐	☐
5. I try to find a fair combination of gains and losses for **designer** and me. …………………………………..	☐	☐	☐	☐
6. I try to stay away from disagreement with **designer**. ……..	☐	☐	☐	☐
7. I sacrifice my own wishes to satisfy the wishes of **designer**. ………………………………..	☐	☐	☐	☐
8. In order to win my position, I usually ignore the needs of **designer**. ………………………………..	☐	☐	☐	☐
9. I use my influence, authority, or expertise to achieve a decision in my favour. ………………………………..	☐	☐	☐	☐
10. I usually make concessions to satisfy the wishes of **designer**. ………………………………..	☐	☐	☐	☐
11. I avoid an encounter with **designer**. ………………………..	☐	☐	☐	☐
12. I try to integrate my ideas with those of A to find a solution that really satisfies **designer** and me. …………………	☐	☐	☐	☐
13. I strive whenever possible towards a fifty-fifty compromise to **designer**. ………………………………..	☐	☐	☐	☐
14. I try to exchange accurate information with **designer** for a proper understanding of a problem. ………………………….	☐	☐	☐	☐
15. I try to find a middle ground to resolve conflicts with **designer**. ………………………………..	☐	☐	☐	☐

Figure 5-2 Survey of the public, page 1
Source: Designed by the author

Respondent's ID: _____ (ID only)

Survey of the Public – Staff

Strictly Confidential

Please tick (☑) the appropriate box after each statement, to indicate *how you handle your disagreement or conflict with **staff**. "**Staff**" here represents the museum worker in workshop.* Try to recall as many recent conflict situations as possible in ranking these statements.

Questions	Disagree	Tend to Disagree	Tend to Agree	Agree
1. To uncover the conflict with **staff**, I attempt to get all concerns and issues out in the open………………………………	☐	☐	☐	☐
2. Rather than negotiate the things on which we disagree, I try to stress those things upon which **staff** and me both agree. ……………………………………………………	☐	☐	☐	☐
3. I usually avoid discussion of my differences with **staff**. …..	☐	☐	☐	☐
4. I am usually firm in pursuing my goals. …………………………	☐	☐	☐	☐
5. I try to find a fair combination of gains and losses for **staff** and me. ……………………………………………………	☐	☐	☐	☐
6. I try to stay away from disagreement with **staff**. ……………	☐	☐	☐	☐
7. I sacrifice my own wishes to satisfy the wishes of **staff**. …	☐	☐	☐	☐
8. In order to win my position, I usually ignore the needs of **staff**. ……………………………………………………	☐	☐	☐	☐
9. I use my influence, authority, or expertise to achieve a decision in my favour. …………………………………………	☐	☐	☐	☐
10. I usually make concessions to satisfy the wishes of **staff**.	☐	☐	☐	☐
11. I avoid an encounter with **staff**. ………………………………	☐	☐	☐	☐
12. I try to integrate my ideas with those of A to find a solution that really satisfies **staff** and me. ………………	☐	☐	☐	☐
13. I strive whenever possible towards a fifty-fifty compromise to **staff**. …………………………………………	☐	☐	☐	☐
14. I try to exchange accurate information with **staff** for a proper understanding of a problem. ………………………	☐	☐	☐	☐
15. I try to find a middle ground to resolve conflicts with **staff**	☐	☐	☐	☐

Figure 5-3 Survey of the public, page 2
Source: Designed by the author

Respondent's ID: _____ (ID only)

Survey of the Public – Public

Strictly Confidential

Please tick (☑) the appropriate box after each statement, to indicate *how you handle your disagreement or conflict with* **public**. *"***Public***" here represents the local residents in the workshop.* Try to recall as many recent conflict situations as possible in ranking these statements.

Questions	Disagree	Tend to Disagree	Tend to Agree	Agree
1. To uncover the conflict with **public**, I attempt to get all concerns and issues out in the open……………………………….	☐	☐	☐	☐
2. Rather than negotiate the things on which we disagree, I try to stress those things upon which **public** and me both agree. ……………………………………………………	☐	☐	☐	☐
3. I usually avoid discussion of my differences with **public**.	☐	☐	☐	☐
4. I am usually firm in pursuing my goals. ……………………..	☐	☐	☐	☐
5. I try to find a fair combination of gains and losses for **public** and me. …………………………………………………	☐	☐	☐	☐
6. I try to stay away from disagreement with **public**. …………	☐	☐	☐	☐
7. I sacrifice my own wishes to satisfy the wishes of **public**.	☐	☐	☐	☐
8. In order to win my position, I usually ignore the needs of **public**. ………………………………………………………	☐	☐	☐	☐
9. I use my influence, authority, or expertise to achieve a decision in my favour. ……………………………………………	☐	☐	☐	☐
10. I usually make concessions to satisfy the wishes of **public**.	☐	☐	☐	☐
11. I avoid an encounter with **public**. ……………………………	☐	☐	☐	☐
12. I try to integrate my ideas with those of A to find a solution that really satisfies **public** and me. ……………………	☐	☐	☐	☐
13. I strive whenever possible towards a fifty-fifty compromise to **public**. ………………………………………	☐	☐	☐	☐
14. I try to exchange accurate information with **public** for a proper understanding of a problem. …………………………	☐	☐	☐	☐
15. I try to find a middle ground to resolve conflicts with **public**. ………………………………………………………	☐	☐	☐	☐

Figure 5-4 Survey of the public, page 3
Source: Designed by the author

The questionnaires used for the facilitator and observer are different from the one used for the participants. Firstly, it is difficult to ask the facilitator or observer to observe the behaviour of every designer, staff and public member in the workshop. Instead, the facilitator and observer have a broader perspective of the whole

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workshop. Rather than asking the facilitator and observer to recognise the specific participant's behaviours, it is more practical to ask the facilitator and observer to count the amount participants in each situation. Secondly, the facilitator and observer are not the people who actually express the opinions; so the facilitator and observer do not know what the participants' real motivations are. For instance, the first question in *Figure 5-2* is "1. To uncover the conflict with **designer**, I attempt to get all concerns and issues out in the open". If we ask the facilitator to think: "1. To uncover the conflict with **designer**, the Public 1 attempts to get all concerns and issues out in the open", it would be difficult for the facilitator to judge whether 'Public 1 gets all concerns and issues out' is for the purpose of uncovering the conflict with the designer, or for some other purposes. However, the facilitator is able to observe which participants try to address all the concerns and issues. Therefore, the first question to the facilitator can be, "1. How many participants attempted to get all concerns and issues out in the open?" The same idea can be applied to the observer's survey.

Figure 5-5 shows the questionnaire used for the facilitator; and the same questionnaire is also used for the observer. By asking similar questions, it aims to know the general level of the use of conflict resolution in the workshop. Corresponding to the four options in the participant's questionnaire, the options in the facilitator's questionnaire would be "0, 1~2, 3~4, and 5", which represents the number of participants: "0" means that no participant is suitable for this question, while "5" means all the participants are suitable for this question. The related score

of each option is: 0 = 1; 1~2 = 2; 3~4 = 3; 5 = 4. The score of the facilitator's

questionnaire would reflect the broad view of all the participants as one group.

Respondent's ID: _____ (ID only)

Survey of the Facilitator

Strictly Confidential

Please tick (☑) the appropriate box after each statement, to indicate *how the* **participants** *handle the disagreement or conflict with* **disputant***. The* "**participants**" *here represents one or more participants from designer, staff and public in the workshop.* "**Disputants**" *represents* the ones who had conflicts with the "**participants**". "**Both**" represents the "**participants**" *and* "**disputants**". Try to recall as many recent conflict situations as possible in ranking these statements.

Questions	*0*	*1~2*	*3~4*	*5*
1. How many **participants** attempted to get all concerns and issues out in the open? …………………………………………..	☐	☐	☐	☐
2. How many **participants** tried to stress those things upon which **both** agree? …………………………………………..	☐	☐	☐	☐
3. How many **participants** usually avoided discussion of the differences with the **disputants**? ………………………………	☐	☐	☐	☐
4. How many **participants** were usually firm in pursuing the own goals? …………………………………………………………	☐	☐	☐	☐
5. How many **participants** tried to find a fair combination of gains and losses for **both**? ………………………………………	☐	☐	☐	☐
6. How many **participants** tried to stay away from disagreement with the **disputants**? ………………………	☐	☐	☐	☐
7. How many **participants** sacrificed the own wishes to satisfy the wishes of **disputants**. ……………………………	☐	☐	☐	☐
8. How many **participants** usually ignored the needs of **disputants**? ………………………………………………………	☐	☐	☐	☐
9. How many **participants** used the influence, authority, or expertise to achieve a decision in own favour? ……………	☐	☐	☐	☐
10. How many **participants** usually made concessions to satisfy the wishes of **disputants**? ………………………………	☐	☐	☐	☐
11. How many **participants** avoided an encounter with the **disputants**? …………………………………………………….	☐	☐	☐	☐
12. How many **participants** tried to integrate the own ideas with those of **disputants** to find a solution that really satisfies **both**? ……………………………………………….	☐	☐	☐	☐
13. How many **participants** strived whenever possible towards a fifty-fifty compromise to the **disputants**? ……..	☐	☐	☐	☐
14. How many **participants** tried to exchange accurate information with the **disputants**? …………………………	☐	☐	☐	☐
15. How many **participants** tried to find a middle ground to resolve conflicts with the **disputants**? …………………	☐	☐	☐	☐

Figure 5-5 Survey of the facilitator
Source: Designed by the author

The interview protocol for the participants is the same as that presented in *Figure 4-19* in section 4.3.3. The interview protocol of the facilitator is shown in *Figure 5-6*. Similar to the design of survey for the facilitator, the same concerns and changes have been applied to the facilitator's interview. For instance, question 3 in *Figure 4-19* asks: "When discussing in the group, did you express all of your ideas to them?" If we ask the facilitator to think, "When discussing in the group, did the participants express all their ideas to the others?", it is difficult for the facilitator to judge whether the participants had expressed all the ideas or not. However, the facilitator is able to figure out who dominates the communication by having an overview of the whole group. The question can then be asked as: "Was there anyone who dominated the conversation?" If one or two participants dominate the workshop, it means the others may not express all their ideas. These similar changes can also be applied to other questions. Meanwhile, the additional questions can ask the possible reasons for the answers. Moreover, the observer can write a report regarding the same interview questions for the facilitator.

Interviewer: _____ Interviewee: _____ (ID only) Date & Time: _____

Interview of the Facilitator

Hello, I am your interviewer, name (optional). The interview questions are mainly about the expression of ideas in the workshop. I will give you 2 minutes to remember the details of it. A few questions are about the conflicts of ideas, but please answer candidly. All the data are anonymous and strictly confidential. You can refuse to answer certain questions, or quit the interview at any time. The following questions may sound similar, but please be patient, and answer them as separated questions.

Main Questions	Additional Questions
1. What's your opinion about the workshop?	
2. Which part of the workshop did you like the most?	Which part of the workshop did you like the least?
3. Was there anyone dominated the conversation?	*(Yes)* What were the reasons s/he can dominate the conversation? Examples?
	(No) What were the reasons nobody can dominate the conversation? Examples?
4. Was there anyone kept quiet in the conversation?	*(Yes)* What were the reasons s/he kept quiet in the conversation? Examples?
	(No) What were the reasons nobody kept quiet in the conversation? Examples?
5. Did they prefer expressing the reasons or comments?	*(Reasons)* What were the reasons they prefer reasons? Examples?
	(Comments) What were the reasons they prefer comments? Examples?
6. If there were differing opinions, how did the group reach a decision? E.g. voting or verbal discussing	
7. Were they able to reach a final decision as a group regarding all of the design elements?	*(Yes)* What were the reasons they were able to reach a final decision? Examples?
	(No) What were the reasons they were not able to reach a final decision? Examples?
8. How easy or difficult was it to reach a final decision as a group?	Why? Examples?
9. Do you feel that all of their opinions were treated fairly?	*(Yes)* How were their opinions treated fairly? Examples?
	(No) How were their opinions treated unfairly? Examples?
10. Is there a way the process of the workshop could be changed to enable the group to develop a finalised design?	
11. Do you have any suggestions or comments about the workshop?	

Figure 5-6 Interview protocol for the facilitator
Source: Designed by the author

5.2 Results of Group A

5.2.1 General Process and Notes

Group A was designed to be the *Phase One* that offered "loose design" in the workshop. *Figure 5-7* shows the six optional sites for the new building proposed in

Group A. In fact, Group A was organised on 16th August, 2015; and it mostly followed the procedure shown in *Table 5-3*. AF, AD, AS and AP2 are native English speakers, while AP1 and AP3 are not. Only one public participant – AP1 (participation No. 1 of Group A) - arrived 10 minutes late when the workshop had already started. At the beginning, AF (the facilitator of Group A) briefly introduced the background and purpose of this workshop; then AF took all the participants to visit the six optional sites one by one. The participants communicated with each other when walking among the sites, but they stopped talking once they started to observe each site. The participants spent about three to five minutes in taking notes of each site. *Figure 5-8* shows the general view of the workshop. *Table 5-4* shows the transcription of all the participants' notes (also see the original notes in Appendix 5-4). Due to arriving late, AP1 spent time in calming down and did not make notes of the sites. Although AP1 visited the last two sites after arriving, AP1 still found it a bit difficult to discuss about the sites that she had not seen. Except for AP1, the other participants all observed the sites carefully by writing down the features of each site, such as visibility, size, accessibility, tree and heritage preservation, circulation, and so on.
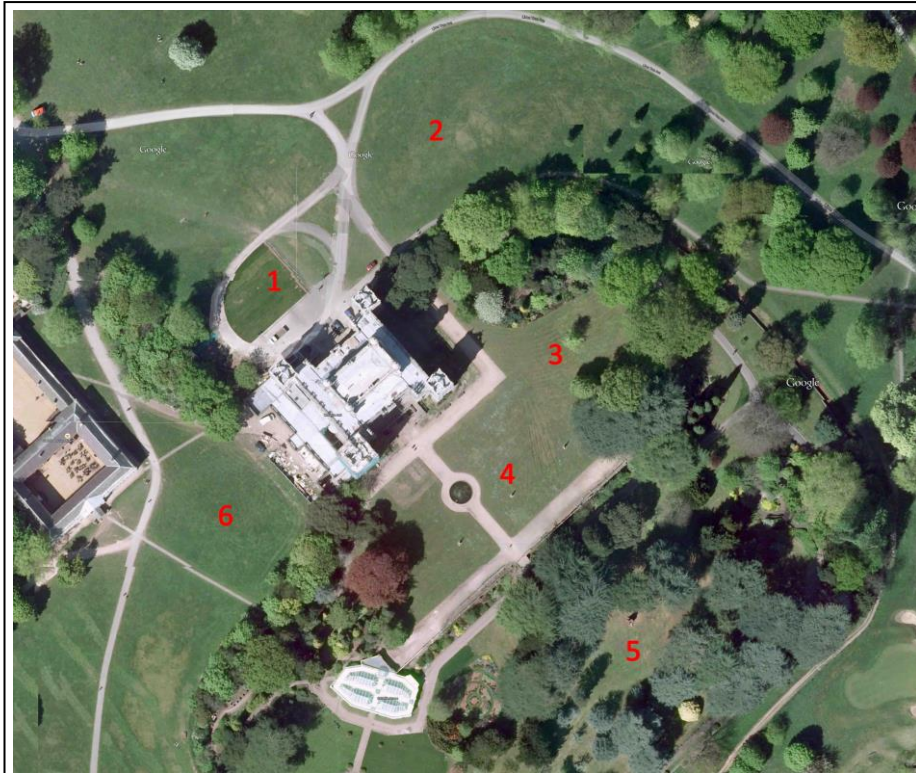
Figure 5-7 Six optional sites of new building in Group A
Source: Drawn by the author

Silent Site Tour

Generating Options

Making Judgments

Structuring Ideas

Figure 5-8 Photos of Group A
Source: Photographed by the author

Table 5-4 Participants' notes of Group A

Notes of AD	
Site 1 (40m*30m) - In front of main entrance, 'fracture elevation'. - Cut off one of the main axis of the space/lights - Public - Basement extent?	Site 2 - Off axis - More secluded - Not interrupting the main building - Issue with proximity of trees

Site 3
- Away from building ✓
- Issue of trees
    o   possible TPO
    o   listed building
	Site 4
	- In view of main elevation
	- Issue of pool
	- Central axis ✘

Site 5 (main issue of trees) - Off axis ✓ - Issue of light - TPO? - Good change in elevation - Issue of golf court proximity	Site 6 - Good link to existing buildings - Good change in elevation o Link to basement? - Link to the existing building? - Good pedestrian access across site
Notes of AS	
Site 1 - In front of the entrance - Too small area?	Site 2 - Large area, more open - Too open, does this replicate dinosaurs in nature?
Site 3 - Are these areas systematically linked?	Site 4 - How were site three and four made to be independent from each other?
Site 5 - Stimulates mystery and complexity within site via use of tree cover	Site 6 - Make use of the footpaths
Notes of AP2	
Site 1 - Good visibility - Easily accessible from car park - Limited space - Blocks the view from the steps - Blocks the view of the house from the approach - Impact on access during build - Correct styling could enhance vision (i.e. pyramid at Louvre)	Site 2 - Close to the house - Visible but not intrusive to the house - Lots of room - Still retains good car park access - More space to make a more versatile building of future use - Again styling could compliant the building (The hall) - Less used space currently
Site 3 - Trees very close maybe constant pruning or removal required - Allows the building to blend in a 'hide' little impact on visible of the hall - No visibility from car park	Site 4 - As No. 1 constricts views - Garden compromised - Nice flat area close to house - No visibility from car park
Site 5 - Quiet location - Hidden – low impact on the hall - Lots of trees difficult access during build (large trees!!) - Impact on or from golf course - Quiet shaded area for families	Site 6 - Different site? Slope - Quiet site of building - Less impact on the visible aspects - Possible direct link to main building - Almost dead ground!
Notes of AP3	
Site 1 - More people can see it	Site 2 - People can see it easily

- Good view itself for the extension, but obstructing the view of main hall	- Good view for the extension itself without obstructing the view of main hall - Good circulation - Good size of site - No issues of trees - Open space with good light
Site 3 - Quiet - Space is limited with preserved trees - Here is not the good choice	Site 4 - Site - 300 – 400K - Archaeology survey underground

Source: Compiled by the author

5.2.2 Idea Rating Sheets

After the site tour, the next step was "generating options", the participants started to fill out the IRSs regarding the design issues: position of site, building size, colours, materials, shape and forms, and the overall atmosphere. *Figures 5-9* to *5-14* show the IRSs filled out by all the participants of Group A (also see the original IRSs of Group A in Appendix 5-5). There was no discussion among the participants, which allowed them to generate ideas independently. Instead of choosing one specific site, most of the participants listed all the aspects of different sites on one idea sheet. Again, no discussion or communication was allowed in this step, so the participants can make judgments independently. By matching the manuscript style, we can also recognise the suggestions and concerns raised by the specific participants. For instance, in *Figure 5-9*, AP3 wrote one comment in "Strengths & Opportunities".

In *Figure 5-9*, AD listed a number of different perspectives of designing a building. However, AD did not point out the specific content of each perspective. For instance, AD wrote "English weather", but we do not know what AD's resolution was. Except for AP3, there were no other specific comments given by other participants.

Participant ID: **AD**   **Write** or **draw** one <u>idea</u> here in large letters:

- Construction area
- English weather
- Listed building consent
- TPO (Tree Preservation Orders)
- Light – internal feeling of space
- Materiality – as existing on site
- Purporting of new building to existing
- Daylight – sun path analysis
- User experience
- Not interrupting main central axis of building and site
- Same extend elevation purporting
- 1 storey/2 storeys? Basement? – size of dinosaurs
- Link to existing buildings
- Budget?
- View of Wollaton Hall and new building?
- Curating issues
  - Noise
  - Visual effect
  - Storage of materials
- Programme?
- People who need to be involved?
  - Client
  - Planner
  - Curator?

Do you agree?
Please fill your one dot below. And stick your comment slips if you want.

😊	😊	😐	☹️	🙁	❓
Strong Agreement	**Agreement**	**Neutral**	**Disagreement**	**Strong Disagreement**	*Confusion*
OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO

Strengths & Opportunities	**Concerns & Weaknesses**
(**AP3**): Good consideration & thinking about the new extension	(Blank)

Figure 5-9 The IRS filled out by AD
Source: Compiled by the author

In *Figure 5-10*, AS asked the purpose of site selecting. Then AS separated the sites 3

and 5 from the rest of the site options, particularly site 5. Also, AS suggested drawing

a relationship between the physical and psychological aspects. There were no other

specific comments were given by other participants.

Participant ID: **AS**		**Write** or **draw** one __idea__ here in large letters:			
In general, each independent site – in some sense – looks different from each other (i.e. in terms of area, terrain type, tree cover, etc.). Was the purpose of site selecting purely based on these characteristics or rather based on visitor experience? For me, sites 1, 2, 4 & 6 all to trigger the same perceived reaction, whereas, 3 & 5 – especially site 5 – gave a much different reaction (i.e. a sense of mystery and complexity), which evokes an almost analogue reaction to an environment where dinosaurs would roam in nature. It may be better to design (or select) site location based on drawing a relationship between physical site parameters and environmental psychology.					
Do you agree? *Please fill your one dot below. And stick your comment slips if you want.*					
☺ **Strong Agreement**	☺ **Agreement**	😐 **Neutral**	☹ **Disagreement**	☹ **Strong Disagreement**	❓ *Confusion*
OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO
Strengths & Opportunities (Blank)			**Concerns & Weaknesses** (Blank)		

Figure 5-10 The IRS filled out by AS
Source: Compiled by the author

In *Figure 5-11*, AP1 wrote a few principles of building design. Also, AP1 suggested the materials and shapes should integrate with the yellow stones used in Wollaton Hall.

Except for AP3, no other specific comments were given by other participants.

Participant ID: **AP1**		**Write** or **draw** one __idea__ here in large letters:			
Due to the advantage of the place, the building should take into account the surrounding environment as a prime design guideline; integrating the natural context with the possible new building can also be developed through the visitors' observation. All sites have remarkable features in terms of view and context with the existing building (Wollaton Hall) and the construction gives an insight of the possible materials that can be used. For instance, reassembling or integrating yellowstone in parts of the facade, could be integrating if equally some contemporary materials as well as shapes are used in the scheme. For instance, enhancing the conceptual idea of mixing the historical value of the building (done through the use of either similar materials, such as brick or stones, or using colours).					
Do you agree? *Please fill your one dot below. And stick your comment slips if you want.*					
☺ **Strong Agreement**	☺ **Agreement**	😐 **Neutral**	☹ **Disagreement**	☹ **Strong Disagreement**	❓ *Confusion*
OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO
Strengths & Opportunities (**AP3**): Agree with the factors that the new extension needs to pay attention.			**Concerns & Weaknesses** (Blank)		

Figure 5-11 The IRS filled out by AP1
Source: Compiled by the author

In *Figures 5-12* and *5-13*, AP2 listed the advantages and disadvantages of each site.

AP2 also showed the possibilities of sites 2, 3, 5 and 6. Due to AP2's clear explanation,

AD and AP3 both gave clear comments as well.

Participant ID: **AP2**	**Write** or **draw** one **idea** here in large letters:
Wollaton Hall is iconic and can be seen from mils away – do we want to maintain this? Site 1 would have a major impact on the main front aspect. Therefore, I would propose sites 2, 3, 5 or 6. Site 2 would allow for an impact style building. Site 3 & 5 would be better to blend in with the wooded surrounds – could the building or exhibits blend with the trees?	

Do you agree?
Please fill your one dot below. And stick your comment slips if you want.

Strong Agreement	Agreement	Neutral	Disagreement	Strong Disagreement	*Confusion*
OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO

Strengths & Opportunities	**Concerns & Weaknesses**
(**AD**): Agree with first main part.	(Blank)

Figure 5-12 The IRS filled out by AP2, sheet 1
Source: Compiled by the author

Participant ID: **AP2**	**Write** or **draw** one **idea** here in large letters:
Site 6 is on quite a steep slope which may have an impact on the build design. But would allow connection to the main building - permit a high-level viewing gallery? Concerns would be access for less mobile.	

Do you agree?
Please fill your one dot below. And stick your comment slips if you want.

Strong Agreement	Agreement	Neutral	Disagreement	Strong Disagreement	*Confusion*
OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO

Strengths & Opportunities	**Concerns & Weaknesses**
(**AD**): Agree with connection idea. (**AP3**): Site 2 – requirement of outstanding architecture style; Site 6 – connecting the main hall & gallery, cafe, somehow; Sites 3 & 5 quiet	(**AP3**): Site 5 – isolated from main hall Site 3 – enclosed by preserved trees with limited space

Figure 5-13 The IRS filled out by AP2, sheet 2
Source: Compiled by the author

In *Figure 5-14*, AP3 clearly listed the advantages and disadvantages of each site. Due

to AP3's clear explanation, AD, AP1 and AP2 all gave clear comments as well.

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Participant ID: **AP3**   **Write** or **draw** one **idea** here in large letters:

Site 1
- More people can see it.
- Good view itself for the extension, but obstructing the view of main hall

Site 2
- People can see it easily
- Good view itself without obstructing the view of main hall
- Good circulation
- Good size of site
- No issues of trees
- Open space with good light

Site 3
- Very quiet
- Limited space surrounded by preserved trees
- The one is not a good choice

Site 4
- The extension would obstruct the view of main hall
- And also obstruct the entrance space in front of main hall
- The one is not a good choice

Site 5
- Very quiet
- Very limited space
- A bit isolated from main hall
- Enclosed by big trees

Site 6
- No big influence on the view of main hall as lower than main hall
- The site has a good size

This site can connect the main hall and gallery, cafe, somehow.

Do you agree?
Please fill your one dot below. And stick your comment slips if you want.

Strong Agreement	Agreement	Neutral	Disagreement	Strong Disagreement	*Confusion*
OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO

Strengths & Opportunities	**Concerns & Weaknesses**
(**AP1**): Agree with site 2.	(**AP1**): Site 6 - concern about obstructing the view
(**AP2**): Agree with the thoughts about site 6. It allows more flexibility with the design options with less impact on house or grounds.	and relevance of the buildings.
(**AD**): Agree with points about sites 2 & 6	

Figure 5-14 The IRS filled out by AP3
Source: Compiled by the author

5.2.3 Consensus Mapping

In the 40 minutes "structuring ideas" step, the participants started to verbally

explain their ideas to others. Firstly, AF rephrased the "options" and "judgments" on

one sheet; secondly, AF asked the participants to add any new thoughts. Due to

shyness, the participants spoke less than AF in the beginning; however, as the

workshop progressed, AD, AS and AP2 started to discuss more with each other. Due

to their professional background, AD listed a few regulations that need to be found out first, such as tree preservation order and heritage conservation rule. As the curator of Nottingham Natural History Museum, AS explained more concerns of the exhibition, and the limitations of Wollaton Hall. AP2 had joined in a participatory architecture design before; therefore, AP2 was used to holding open discussion with the experts. AP2 clearly compared the different visual impacts of each site. AP1 and AP3 also shared their concerns sometimes, but the extent of their expressions was much less than those of AD, AS and AP2.

By participating in the discussion, the participants found every site has its own advantages and disadvantages. There could be numerous possibilities of the design. The participants then realised that, first of all, they need to choose the site of the exhibition; and to choose the site, they needed to figure out the regulations and permissions relating to heritage and trees. Once the specific site is confirmed, it is then possible to talk about the colours, materials and other aspects of design. In the end, due to the limited time available, AF was in a bit of a hurry to summarise everyone's thoughts, which in fact reduced the participants' opportunities to speak. *Table 5-5* shows the final conclusions summarised by AF (also see Appendix 5-6). The italic texts in brackets were the annotations added by AF when the author was doing the transcript. Rather than giving a few confirmed agreements, AF listed the possible directions for the next discussion, such as materials, building styles, and future usage. Also, AF pointed out a few advantages of site 5.

Table 5-5 Final conclusion summarised by AF

Design for the (*This was underlined to emphasise the importance of giving full consideration to the public's needs*)   Public

> Public consultation
> Post-event use? (*How will the site be used once the exhibition is over?*)
> Large dinosaur another side
> > Different location
> **Design**: harmony or futuristic
> **Site 5**: surrounded by trees, which results in:
> > Different user experience
> > Dinosaurs surround you
> > Wooden frame building
> > Budget – better to build further from the house?
> > Less constraints
> **Materials**
> Glass + chrome
> Wood – blend with trees
> Yellow stone
> English heritage/conservation/listed building consent – determine building materials used (*Without seeking all of the permissions first it will not be possible to determine any design aspects*)

Source: Compiled by the author

5.2.4 Questionnaires

The participants and facilitator were asked to fill out the questionnaires immediately after the workshop finished. There was no communication when they were filling in the questionnaires. They were also told to be aware that each page aimed at different participants, although the questions described similar situations. *Tables 5-6* to *5-10* show the summarised scores of the participants' questionnaires in Group A (also see Appendix 5-7 for the filled-in questionnaires in Group A). From a general view, on the one hand, "consensus" and "compromise" are the two most preferred resolutions among the participants. Although "consensus" and "compromise" achieved varied scores from the participants, both resolutions are almost the top two highest scores in their own sub-tables. On the other hand, "avoidance" and "force" received the lowest two scores from the participants most of the time. The following paragraphs show more detailed description of the results.

In *Table 5-6*, AD mainly used "consensus" relating to the museum staff (AS), while AD mainly used "compromise" relating to the public (AP). Meanwhile, AD applied equal

weights, 2.00, on "force" and "avoidance" to AS; but when facing AP, AD applied more "force", 3.33 than "avoidance", 2.33. An interesting point is found in question No. 9: "I use my influence, authority, or expertise to achieve a decision in my favour". AD chose "tend to disagree" when facing AS, while AD chose "Agree" when facing AP. The "force" AD used over AP is more than AD used on AS. However, another interesting point is found in question No. 3: "I usually avoid discussion of my differences with staff/public". AD chose "tend to disagree" when facing AS, while AD chose "Agree" when facing AP. AD also used more "avoidance" to AP, and less to AS.

Table 5-6 Score results of AD

Score Results of (AD) - (AS)					
Conflict Resolution Styles	Question Numbers and Scores			Total	Average Score
Force	(4)	(8)	(9)	6	2.00
	3	1	2		
Avoidance	(3)	(6)	(11)	6	2.00
	2	2	2		
Accommodation	(2)	(7)	(10)	8	2.67
	3	2	3		
Compromise	(5)	(15)	(13)	10	3.33
	4	3	3		
Consensus	(1)	(12)	(14)	11	3.67
	3	4	4		

Score Results of (AD) - (AP)					
Conflict Resolution Styles	Question Numbers and Scores			Total	Average Score
Force	(4)	(8)	(9)	10	3.33
	4	2	4		
Avoidance	(3)	(6)	(11)	7	2.33
	4	1	2		
Accommodation	(2)	(7)	(10)	7	2.33
	3	1	3		
Compromise	(5)	(15)	(13)	11	3.67
	4	4	3		
Consensus	(1)	(12)	(14)	10	3.33
	3	3	4		

Source: Compiled by the author

In *Table 5-7*, AS mainly used "consensus" and "compromise" to AD; but AS mainly used "consensus" to AP, while using the other four resolutions less frequently.

Meanwhile, AS applied slightly more "force" than "avoidance" to AD; but when facing AP, AS applied more "avoidance", 2.33 than "force", 2.00. The scores of question Nos. 10 and 11 indicate AS's different attitude to AD and AP. In question No. 10, "I usually make concessions to satisfy the wishes of designer/public", AS chose "disagree" when facing AD, while AS chose "tend to agree" when facing AP. Meanwhile, in question No. 11, "I avoid an encounter with designer/public", AS chose "tend to disagree" when facing AD, while AS chose "Agree" when facing AP. AS' choices of question Nos. 10 and 11 illustrate that AS cared about the relationship with AP more than AS with AD.

Table 5-7 Score results of AS

Score Results of (AS) - (AD)					
Conflict Resolution Styles	**Question Numbers and Scores**			**Total**	**Average Score**
Force	(4)	(8)	(9)	6	2.00
	4	1	1		
Avoidance	(3)	(6)	(11)	5	1.67
	1	2	2		
Accommodation	(2)	(7)	(10)	6	2.00
	3	2	1		
Compromise	(5)	(15)	(13)	9	3.00
	3	4	2		
Consensus	(1)	(12)	(14)	11	3.67
	4	3	4		

Score Results of (AS) - (AP)					
Conflict Resolution Styles	**Question Numbers and Scores**			**Total**	**Average Score**
Force	(4)	(8)	(9)	6	2.00
	4	1	1		
Avoidance	(3)	(6)	(11)	7	2.33
	1	2	4		
Accommodation	(2)	(7)	(10)	8	2.67
	3	2	3		
Compromise	(5)	(15)	(13)	8	2.67
	3	4	1		
Consensus	(1)	(12)	(14)	12	4.00
	4	4	4		

Source: Compiled by the author

In the row of "consensus" in *Table 5-8*, AP1 shows higher scores to AD and AP, while a quite low score, 2.67, than to AS, because in question No. 1, "To uncover the conflict with staff, I attempt to get all concerns and issues out in the open", AP1 chose "tend to disagree". There could be a reason that AP1 did not get all concerns and issues out with staff. More analyses can be seen in chapter 6. Remarkably, AP1 also shows a high "avoidance", 2.67, when concerning AD. The relatively high use of "avoidance" is also found when AP1 encountered AS (2.00) and AP (2.33). Meanwhile, AP1 applied quite different attitudes to AD, AD and AP regarding questions 6 and 11. When facing AD, AP1 stated "tend to agree" to question No. 6, "I try to stay away from disagreement with designer", while reporting "strongly disagree" to question No. 11: "I avoid an encounter with designer". However, when facing AS, AP1 cited "strongly disagree" to question No. 6, while citing "tend to agree" to question No. 11. Further analysis of these controversies is undertaken in chapter 6.

Table 5-8 Score results of AP1

Score Results of (AP1) - (AD)					
Conflict Resolution Styles	**Question Numbers and Scores**			**Total**	**Average Score**
Force	(4)	(8)	(9)	5	1.67
	3	1	1		
Avoidance	(3)	(6)	(11)	8	2.67
	4	3	1		
Accommodation	(2)	(7)	(10)	7	2.33
	4	1	2		
Compromise	(5)	(15)	(13)	12	4.00
	4	4	4		
Consensus	(1)	(12)	(14)	11	3.67
	3	4	4		

Score Results of (AP1) - (AS)					
Conflict Resolution Styles	**Question Numbers and Scores**			**Total**	**Average Score**
Force	(4)	(8)	(9)	5	1.67
	3	1	1		
Avoidance	(3)	(6)	(11)	6	2.00
	2	1	3		
Accommodation	(2)	(7)	(10)	6	2.00

	4	1	1		
Compromise	(5)	(15)	(13)	11	3.67
	4	4	3		
Consensus	(1)	(12)	(14)	8	2.67
	2	3	3		

Score Results of (AP1) - (AP)					
Conflict Resolution Styles	**Question Numbers and Scores**			**Total**	**Average Score**
Force	(4)	(8)	(9)	4	1.33
	1	2	1		
Avoidance	(3)	(6)	(11)	7	2.33
	3	3	1		
Accommodation	(2)	(7)	(10)	7	2.33
	4	1	2		
Compromise	(5)	(15)	(13)	12	4.00
	4	4	4		
Consensus	(1)	(12)	(14)	12	4.00
	4	4	4		

Source: Compiled by the author

Compared with AP1, AP2 shows much similar attitudes to each group in *Table 5-9*. In three sub-tables, "consensus" is always AP2's primary resolution, while "avoidance" is the last choice. There is one little difference in "force" and "accommodation". In "accommodation", AP2 preferred to satisfy the wishes of AP, rather than AD and AS, which caused AP2 used more "force" to AD and AS than to AP. However, these differences are not very obvious.

Table 5-9 Score results of AP2

Score Results of (AP2) - (AD)					
Conflict Resolution Styles	**Question Numbers and Scores**			**Total**	**Average Score**
Force	(4)	(8)	(9)	8	2.67
	3	3	2		
Avoidance	(3)	(6)	(11)	3	1.00
	1	1	1		
Accommodation	(2)	(7)	(10)	5	1.67
	3	1	1		
Compromise	(5)	(15)	(13)	9	3.00
	3	3	3		
Consensus	(1)	(12)	(14)	12	4.00
	4	4	4		

Score Results of (AP2) - (AS)					
Conflict Resolution Styles	**Question Numbers and Scores**			**Total**	**Average Score**

Force	(4)	(8)	(9)	7	2.33
	3	2	2		
Avoidance	(3)	(6)	(11)	3	1.00
	1	1	1		
Accommodation	(2)	(7)	(10)	6	2.00
	3	1	2		
Compromise	(5)	(15)	(13)	9	3.00
	3	3	3		
Consensus	(1)	(12)	(14)	12	4.00
	4	4	4		

Score Results of (AP2) - (AP)					
Conflict Resolution Styles	**Question Numbers and Scores**			**Total**	**Average Score**
Force	(4)	(8)	(9)	7	2.33
	3	1	3		
Avoidance	(3)	(6)	(11)	3	1.00
	1	1	1		
Accommodation	(2)	(7)	(10)	7	2.33
	1	3	3		
Compromise	(5)	(15)	(13)	9	3.00
	3	3	3		
Consensus	(1)	(12)	(14)	11	3.67
	4	4	3		

Source: Compiled by the author

In *Table 5-10*, AP3 also shows a similar serious of scores in three sub-tables. Again, "consensus" is AP3's first choice of conflict resolution, while "avoidance" is the last one. There is one exception that the "accommodation" in the third sub-table gets much higher score than the other two sub-table's "accommodation". The "accommodation" in the third sub-table get 3.00 score that is even higher than "compromise", 2.67. In other participants' score results, there was no any "accommodation" gets higher score than "compromise".

Table 5-10 Score results of AP3

Score Results of (AP3) - (AD)					
Conflict Resolution Styles	**Question Numbers and Scores**			**Total**	**Average Score**
Force	(4)	(8)	(9)	7	2.33
	2	1	4		
Avoidance	(3)	(6)	(11)	5	1.67
	2	1	2		
Accommodation	(2)	(7)	(10)	7	2.33
	4	1	2		
Compromise	(5)	(15)	(13)	8	2.67

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				Total	Average Score
	3	3	2		
Consensus	(1)	(12)	(14)	12	4.00
	4	4	4		

Score Results of (AP3) - (AS)					
Conflict Resolution Styles	Question Numbers and Scores			Total	Average Score
Force	(4)	(8)	(9)	6	2.00
	1	2	3		
Avoidance	(3)	(6)	(11)	6	2.00
	2	2	2		
Accommodation	(2)	(7)	(10)	7	2.33
	3	2	2		
Compromise	(5)	(15)	(13)	8	2.67
	3	3	2		
Consensus	(1)	(12)	(14)	10	3.33
	3	4	3		

Score Results of (AP3) - (AP)					
Conflict Resolution Styles	Question Numbers and Scores			Total	Average Score
Force	(4)	(8)	(9)	7	2.33
	2	1	4		
Avoidance	(3)	(6)	(11)	5	1.67
	1	1	3		
Accommodation	(2)	(7)	(10)	9	3.00
	4	2	3		
Compromise	(5)	(15)	(13)	8	2.67
	3	3	2		
Consensus	(1)	(12)	(14)	12	4.00
	4	4	4		

Source: Compiled by the author

Different from the tables above, *Tables 5-11* and *5-12* show the facilitator and observer's overview of Group A (also see Appendix 5-7). As explained in section 5.1.3, the facilitator and observer's questionnaires indicate the approximate quantity of participants regarding each question. And the quantity is converted to the same level of conflict resolutions, for instance, 0 person equals to 1 score, 1-2 persons equal to 2 score, 3-4 persons equals to 3 score, and 5 persons equals to 4 score. In *Table 5-11*, AF thought that more than three participants used "consensus" and "compromise", and one to two participants used "accommodation". Although one to two participants used "force" and "avoidance" in Group A overall, the specific amounts of

participants are different regarding each question of "force" and "avoidance". For instance, in question No. 4, "How many participants were usually firm in pursuing the own goals?", AF chose "3-4" participants. However, in question No. 8, "How many participants usually ignored the needs of disputants?", AF chose "0" participants. Another example is, in question No. 6, "How many participants tried to stay away from disagreement with the disputants?", AF chose "3-4" participants; while in question No. 11, "How many participants avoided an encounter with the disputants?", AF chose "0". *Table 5-12* shows the AO's perspective of the workshop. Compared with AF, AO thought the participants tend to use a bit more "force" and "accommodation", although AO gave the same scores as AF in other conflict resolutions. More analysis and discussions of these data can be seen in chapter 6.

Table 5-11 Score results of AF

Score Results of (AF) - (workshop)					
Conflict Resolution Styles	**Question Numbers and Scores**			**Total**	**Average Score**
Force	(4)	(8)	(9)	6	2.00
	3	1	2		
Avoidance	(3)	(6)	(11)	6	2.00
	2	3	1		
Accommodation	(2)	(7)	(10)	6	2.00
	2	2	2		
Compromise	(5)	(15)	(13)	9	3.00
	3	3	3		
Consensus	(1)	(12)	(14)	10	3.33
	3	3	4		

Source: Compiled by the author

Table 5-12 Score results of AO

Score Results of (AO) - (workshop)					
Conflict Resolution Styles	**Question Numbers and Scores**			**Total**	**Average Score**
Force	(4)	(8)	(9)	7	2.33
	3	2	2		
Avoidance	(3)	(6)	(11)	7	2.33
	2	3	2		
Accommodation	(2)	(7)	(10)	8	2.67
	3	2	3		
Compromise	(5)	(15)	(13)	9	3.00

		3	3	3		
Consensus		(1)	(12)	(14)	10	3.33
		3	3	4		

Source: Compiled by the author

5.2.5 Interview and Observation Report

After the questionnaires, the participants and facilitator were interviewed one by one. To reduce the waiting time, three interviewees attended the interviews in three separate rooms. Each interviewer had two interviewees in total. Although every interviewer replied to the interviewees differently, the interviewers all followed the questions in the interview protocols (see *Figures 4-20* and *5-7*). *Tables 5-13* to *5-16* summarise the main ideas of all the interview transcripts (see Appendix 5-8 for the original transcripts of Group A).

Table 5-13 shows all the interviewees' and observer's replies on general feeling about the workshop A. For question 1, most of them thought the workshop was well organised with a range of people in discussing ideas: but AP1 and AO also thought the workshop was somewhat rushed, and the female participants were not vocal in discussions. For question 2, the silent sites tour and discussions were the parts they liked the most. For question 2+, most of the interviewees gave much wider criticisms regarding several aspects, except for AS and AP2 who did not mention the aspects they enjoyed the least.

Table 5-13 Interview summaries of Group A, questions 1 to 2+

	1. What is your opinion about the workshop?
AD	Good range of people. More emphasis on public. AP2 had very good opinions.
AS	Good opportunity to get opinions from the public.
AP1	Interesting, but quite rushed. I enjoyed the site tour. It was a short time to observe the environment. I know this place, so I have a broad picture. If it was my first time to this place, my responses would be completely different.
AP2	Well organised. Good ideas from people.
AP3	Quite good. It rolled very smoothly. Everybody is very passionate.
AF	The workshop went very well. Despite the fact we had a very quiet group which partly was down

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	to its size, everyone contributed the ideas. Everyone was fairly represented.
AO	The workshop was slightly rushed, and the facilitator was the dominant voice in the discussions. Participants were not vocal, particularly the female participants.
	2. Which part of the workshop did you like the most?
AD	The discussion went into details. Open discussion.
AS	Walking around the sites.
AP1	Definitely site visiting. We were able to share the opinions that were well kept in the end. The interaction tried to gather the ideas from all of us.
AP2	Site tour. Being able to have opinions independently, rather than being swayed by others. We put our ideas on board, and reflected on others' ideas. It is nice to see that lots of people had the same ideas.
AP3	I enjoyed every part. I enjoyed the silent site look and the discussion.
AF	Everyone contributed to discussion. In the end, we opened up with the discussion of ideas, suggestions, and improvements. When everyone gets the chance to speak, it makes the workshop worthwhile doing.
AO	The site tour was very engaging and helpful.
	2+. Which part of the workshop did you like the least?
AD	Hard to write down the ideas without talking about them.
AS	It is difficult to say as I was only half involved.
AP1	I was a bit confused. I do not understand what the dinosaurs' images were used for. I could not use them. I did not how to use them. The time was so limited. My contribution could be better.
AP2	No. It was a good approach. The weather was great. If it was rainy, the people may have different feeling of the sites. Also the disabled people's opinions are valuable in a public consensus meeting too.
AP3	The time was limited. There were lots of opinions during the discussion. People could not express all of them due to the limited time. But that is normal in a workshop.
AF	The hardest was actually the idea sheets. I should have explained clearly that each participant must write only one idea on a sheet. Someone wrote lots of things on one idea sheet.
AO	The idea discussions seemed to fail in some sense because people were not vocal enough.

Source: Summarised by the author

Table 5-14 shows all the interviewees' and observer's replies of expression in Group A. Generally, the workshop had benefits from the idea rating sheets and open discussion. AF spoke the most while the participants were relatively quiet, and AP1 was the quietest participant for a few reasons. More analysis and discussion can be seen in chapter 6.

Table 5-14 Interview summaries of Group A, questions 3 to 5+

	3. When discussing in the group, did you express all of your ideas to them?
AD	Yes.
AS	Yes. Not immediately, but eventually I did.
AP1	No.
AP2	Yes.
AP3	Most of that.
	3. Was there anyone who dominated the conversation?
AF	No.
AO	No individual dominated the conversation, although because they were all quite quiet, the

	facilitator did seem the dominating voice.
	3+. (Yes) What were the reasons you were able to express all of your ideas? Examples? **(No) What were the reasons you were not able to express all of your ideas? Examples?**
AD	My background is architecture. I have knowledge in understanding buildings and processes.
AS	Open discussion.
AP1	I could not finish my writing. I spent a few minutes in thinking. The time was limited.
AP2	It was well organised, well controlled. The facilitator opened the questions to the participants. And the facilitator controlled how the meeting went, and made sure the people had reasonable views. If someone is harder, maybe more forceful.
AP3	We got the ideas to write, which is very important. Then you put them on to the board where everyone can see them. This is non-verbal communication. You know how everyone thinks. After that, we can express more, and share more ideas in more depth.
	3+. (Yes) What were the reasons s/he can dominate the conversation? Examples? **(No) What were the reasons nobody can dominate the conversation? Examples?**
AF	Even though we had at least two experts, they did not steer or dominate the conversation. And the one member the public was able to voice their opinions without judgments or prejudice. Everyone worked really well.
AO	The facilitator did well in re-phrasing people's ideas to help in understanding. However, I felt at times she was bringing her own thoughts into the discussion.
	4. Did you express all of your thoughts regarding the other members' ideas?
AD	Yes.
AS	Yes.
AP1	I did not. Because somebody else did it for me for some reasons. I expressed my ideas regarding one point. I could have been more interactive. But I was quite shy. I was not sure whether I was doing it right or wrong. I was rushing into it.
AP2	(*this question hadn't been asked*)
AP3	I think so.
	4. Was there anyone who kept quiet in the conversation?
AF	Yes.
AO	Most all of the participants kept quiet during the discussions.
	4+. (Yes) What were the reasons you were able to express all of your comments? Examples? **(No) What were the reasons you were not able to express all of your comments? Examples?**
AD	Open and diplomatic discussion.
AS	Being invited to.
AP1	They pointed out at least one of my ideas, although not exactly what I wanted. I was a bit shy and lost until I started writing up. I was waiting until other people gave their opinions. If I felt comfortable enough, I would express the views that I thought was right, for example, materials and colours.
AP2	(*this question hadn't been asked*)
AP3	Somebody got different perspectives. They expressed their idea before me. I disagreed with some of them, but I cannot express that totally during that time. The reason was that the facilitator needed to process the workshop step by step.
	4+. (Yes) What were the reasons s/he kept quiet in the conversation? Examples? **(No) What were the reasons nobody kept quiet in the conversation? Examples?**
AF	Only because they were thinking about what was being talked about. So there were quiet moments when everyone was just processing what was being asked, and gave consideration to what I had already discussed. It was not the chattiest group of people. But I think they were the most thoughtful people.
AO	One member of the public spoke up the most. It should be noted also that the staff member was frequently distracted by his communication device, and left the room at a point during the discussions, so he was not as engaged as the others for that reason.
	5. Did you explain all the reasons for your comments regarding your own or others' ideas?
AD	Yes.
AS	Yes.
AP1	No.

AP2	Yeah, definitely.
AP3	Yes. I wrote them with reasons. Everybody can know them clearly.
	5. Did they prefer expressing the reasons or comments?
AF	Yes. They all justified their comments. Not one person said "I like", or "I dislike". They always made the points with fact or reasons. The comments were written down, so they were able to explain the reasons.
AO	Yes.
	5+. (Yes) What were the reasons you were able to express all of your reasons? Examples? **(No) What were the reasons you were not able to express all of your reasons? Examples?**
AD	Open discussion. You are to say what you think.
AS	Open discussion. And being asked to contribute.
AP1	The time was limited. I could not finish my ideas. I run out of idea paper when I finished the first piece of writing. Everybody finished. And I was asked to introduce the site selection.
AP2	Because the ideas were on the board and there was anonymity. You were not actually picking on a particular person. No specific name was mentioned; it was purely a thought. You had your own idea, and others could question it. Their feedback gave more information regarding your idea. Then you could have another thought. The meeting was well controlled.
AP3	The workshop was well prepared, well structured, and the facilitator controlled the time well, which ensured that we could finish the task in two hours.
	5+. (Reasons) What were the reasons they prefer reasons? Examples? **(Comments) What were the reasons they prefer comments? Examples?**
AF	In terms of sites 2 and 6, they explained why they chose them. They also expressed the virtues of site 5. They could fully justify why they had favoured certain sites.
AO	Most of them explained the reasons of their comments.

Source: Summarised by the author

Table 5-15 shows all the interviewees' and observer's replies on reaching a decision in Group A. Most of them thought there was not actual disagreement, so they thought it was easy to reach a decision. AP1 did have a disagreement with comments on site 6; but AP1 did not express this idea for a few reasons, for instance, not been asked by the AF; did not want to block the discussion. However, all the interviewees and observer believed that the participants' opinions had been treated fairly. One reason is that AF gave equal attention to each written idea and comment.

Table 5-15 Interview summaries of Group A, questions 6 to 9+

	6. If there were differing opinions, how did you reach a decision as a group? E.g. voting or verbal discussing
AD	Diplomatic way, and appreciate everyone's opinions. An eclectic group.
AS	There was no disagreement.
AP1	I did have a disagreement with site 6. However, I understand that the facilitator tried to sum up all the ideas in such a limited time. So I did not express this disagreement of site 6. The facilitator should encourage people to give more ideas. I agreed with site 2. But because I thought this workshop was not real, I did not express my disagreement that may block the discussion. But I pinned the idea up, as the researcher can see

	from the results.
AP2	There was to a certain degree, but that was not down to disagreements over people's thoughts. It was on how we could go with budgets, and what people thought felt better. There were a few aspects to think about, for example, you try to touch or hide the new building, the new building does not have an impact on the visualisation, but with the same effect. It was not so much disagreement as giving the actual exhibits hall the right kind of profile.
AP3	On the sheet, everybody can write something regarding the strengths and concerns. It was very helpful in reaching the final agreement.
	6. If there were differing opinions, how did the group reach a decision? E.g. voting or verbal discussing
AF	Verbal discussion. And I do not think there was any conflict. There may have been preferences over one site to another, but they could understand the merits of each person's argument. There were no disputes, no disagreements. They actually reached the same conclusions, and could accept the pros and cons without disagreeing with that person.
AO	The only method of discussion was verbal; however there was not an obvious difference in opinion regarding any design elements, besides the site, which individuals reached consensus without much verbal discussion.
	7. Were you able to reach a final decision as a group regarding all of the design elements?
AD	Yes. We discussed two main sites that were viable for this workshop.
AS	Yes.
AP1	Yes, it was kind of reached. The facilitator tried to gather the most important ideas. Everyone seemed comfortable with the final bullet points.
AP2	Not a final decision.
AP3	Yes.
	7. Were they able to reach a final decision as a group regarding all of the design elements?
AF	Pretty much, yes. The key thing was the gaining of permission for all manner of things, for instance, where is the ground, the buildings, the land and the heritage. As soon as that got mentioned, everyone agreed that everything would rely on getting such permission. Then everyone kind of agreed with what needed to be done.
AO	Yes, the group made a final design for all elements.
	7+. (Yes) What were the reasons you were able to reach a final decision? Examples? **(No) What were the reasons you were not able to reach a final decision? Examples?**
AD	Open discussion.
AS	We just reached an agreement that we happened to all agree in the first place.
AP1	The facilitator helped a lot. It was a really interesting coincidence that most of the people agreed with the site. We had the interaction of the site, so we just focused on the site. Everything else was hypothetical besides seeing. The facilitator helped conclude an agreement regarding the site 6.
AP2	Because we did not have enough information regarding the budget, the type of building, and the constraints, we all agreed on a couple of sites we thought were best. We did not come to an agreement completely, because we did not have enough information at this stage, so we could not decide what kind of materials to use. We finally chose two sites to work with. The next meeting can expand on that based on constraints, materials, and costing.
AP3	We got different ideas about the sites, for instance, I prefer sites 2 and 6, while others prefer sites 3 or 5: but based on the verbal discussion and analysis of the sites, we finally agreed with sites 2 and 6.
	7+. (Yes) What were the reasons they were able to reach a final decision? Examples? **(No) What were the reasons they were not able to reach a final decision? Examples?**
AF	They could all understand the need to gain planning permission for all manner and all aspects regarding the creation of a temporary building.
AO	This is particularly due to their lack of discussion and consideration of those elements. If they had seen the design elements at the beginning of idea generation, they may have had better, more specific ideas that may have differed.
	8. How easy or difficult was it to reach a final decision as a group?
AD	Quite easy.
AS	Very easy.

AP1	Quite easy.
AP2	Very good, very easy.
AP3	To some extent maybe it was not that easy. Not everybody agreed with the final decision one hundred per cent.
AF	So straightforward. It was one easiest group to work with in terms of reaching a resolution.
AO	It seemed easy to reach a final decision as a group.
	8+. Why? Examples?
AD	It was a quite small group; that is why we were able to come up with similar ideas.
AS	Because we agreed in the first place.
AP1	Everybody had the similar ideas, same impressions.
AP2	Because people could see both aspects. And the organiser could take back and expand on the questions raised, to decide the information for the next meeting. It is a general process of how you expand, how you go forward and how you take forward the information. Each meeting would be more and more detailed, more and more focused. That will end with what we need to do. In this early stage, people were discussing things in an easy way because there is no decision to make. You could not get much conflict until it comes down to the opinions of what people think looks nicer.
AP3	Basically most of the people pointed out the same things, which was not very difficult; because the discussion is very open. Everybody expressed their own ideas, the pros and cons. Based on the analysis of the pros and cons, everybody finally reached agreement.
AF	The discussion covered every single facet, for instance, different sites, the theme, the content. Once they had discussed that, the architect could actually say: until we get the permission from English heritage and other organisations, the discussion was a moot point. We could have plenty of discussion and ideas. Once the permissions have or have not been granted, we can take these ideas into account. Then everyone was satisfied with that.
AO	Because most people agreed (indicated by nodding of the head) with the few individuals who spoke.
	9. Do you feel that all of your opinions were treated fairly?
AD	Yes.
AS	Yes.
AP1	Yes.
AP2	Yes.
AP3	Yes.
	9. Do you feel that all of their opinions were treated fairly?
AF	I tried to facilitate it fairly.
AO	Yes.
	9+. (Yes) How were your opinions treated fairly? Examples? **(No) How were your opinions treated unfairly? Examples?**
AD	We were able to write down all the opinions on the board.
AS	I was allowed to speak, and I was listened to. And other people can disagree if they want.
AP1	The facilitator read my points out loudly. Everyone was able to contribute ideas. It was fair.
AP2	People listened to you. Whether they agreed was a whole different matter, but you at least have the chance to express. Although the organiser was the lead, the facilitator actually runs the workshop on an open basis.
AP3	We got the sheets, and stuck them on the board. And everybody can express their own ideas by the separate sheet. It was very clear. And the facilitator encouraged the discussion that structured the ideas clearly. Then everybody can spend more time on discussion.
	9+. (Yes) How were their opinions treated fairly? Examples? **(No) How were their opinions treated unfairly? Examples?**
AF	I am sure that every single idea and paper was covered in the time we had. We may have used more time in discussing sites than the other topics. But I guess that is because we had a site tour. There discussion around the table was fair. I repeated the points: "right, has anyone else gets anything to add? Does anyone want to comment on this particular aspect?" So they were given the time, but it was a quiet group.
AO	I feel the facilitator did a great job of giving equal attention to all comments and concerns.

Table 5-16 shows all the interviewees' and observer's suggestions of developing the workshop A. For instance, inviting other stake holders and professionals to the group; clarifying the topics clearly; offering more information of sites and regulations; longer time for the workshop; and the facilitator could have explicitly asked each individual to speak up.

Table 5-16 Interview summaries of Group A, questions 10 to 11

	10. Is there a way the process of the workshop could be changed to enable the group to develop a finalised design?
AD	Get the correct people involved, such as the clients and architects, and other people who are partly involved.
AS	I think there are too many aspects in this project, for instance, logistical problems. We need professional help in a real world. This workshop is a basic overview of the concept in an ideal world. I don't think the real decision can be made by such a group in the real world.
AP1	I was not really involved at the beginning. The facilitator had explained everything at the beginning. But I just arrived. As you see, all the ideas were really random and spread. If the topics could be pointed out to the participants before they were writing down ideas, they would have more specific agreements.
AP2	I think so. Either bring more information to the meeting, or have initial meetings to get more information based on how he wants to build it. The ideas depend on whether we could afford them, and where they fit. A small brick building does not fit an open location. Where you put it affects what it looks like. How the design process goes through is important to understand whether you can agree on the final design quickly.
AP3	It would be very helpful from a different perspective, for example, somebody can talk about the heritage. Wollaton Hall is a listed building in the UK. It would be very helpful to check what kind of rules we need to pay attention to relating to the new extension building. Based on the discussion of sites, we should have more ideas of the sites, shapes, colours, materials and figures. All these topics are helpful, even in the conceptual stage.
AF	I chose pretty well constructed. Maybe they had had a discussion earlier, then it would not be quite so much a duplication of effort, for instance, the same ideas in different people's minds. But it is a good way of finding out the ideas independently. They thoughts can feed into the discussion and suggestions. It works really well in this particular group. It would the same with different group of people.
AO	The process seemed sufficient; however by providing written feedback on other people's ideas, some of the individuals may not have felt the need to verbally discuss them, as they had been presented on the paper. If the only possible way to feedback on ideas was verbally, the discussion may have been better.
	11. Do you have any suggestions or comments about the workshop?
AD	No.
AS	No.
AP1	The time was too short. Asking each participant. Sometimes you are shy, and you do not feel completely comfortable, because you are afraid of being wrong. The facilitator should encourage more communication by asking the participants.
AP2	No. It was very well organised. I enjoyed the discussion, and it is nice to see how other people think from a different point of view. As a layman, I just basically want ideas about what the hall looks like and the two marry quite well. Because you can express your own opinions, you can

	have an expert who can give you a reason why that does not work. And this is great, because you can explore the current options to another alternative.
AP3	The time plan should be adjusted to allow more discussion, otherwise somebody cannot finish their opinions. But maybe if we had a longer time, we may have event more ideas to express, so the time may be limited again.
AF	Given the time constraint, we tried to find as many people as we could. It would be better if we have a larger group that produces greater discussion and more ideas.
AO	The stage of "generation options" could be better if the design elements were shown to the participants earlier. The facilitator could have explicitly asked individuals to speak up, opposed to strictly reiterating ideas and moving on from the subject at hand. It may be better to ask the entire group each time if everyone was in agreement, to provide the opportunity for people to speak up about each idea. I also recommend that next time, the model on the table, the diagrams of the dinosaurs, etc. be explained to the participants prior to idea generation to help them. I did not witness any participants engaging with the provided resources.

Source: Summarised by the author

5.3 Results of Group B

5.3.1 General Process and Notes

Group B was designed to be the *Phase Two* that offered "constrained design" in the workshop. Group B was organised on 14th September, 2015; and it also followed the procedure shown in *Table 5-2*; but Group B, as the "constrained design", offered more preconditions and limitations to the participants. Only site 5 is available for the participants (see *Figure 5-15*). In the beginning, the organiser came late due a traffic issue, so the workshop was delayed by about 15 minutes. The BF had to introduce the workshop and project when the organiser was setting up the table. Another unexpected problems happened in Group B was the absence of the museum curator – BS. Before the workshop started, BS had to leave the workshop to deal with an unexpected problem in the museum. The absence of BS partly affected the workshop performance and result. Without BS, there were four participants at that moment, which was a bit small in size. However, there was a spare person from the local who agreed to join in the workshop as a participant. So we coded this person as BP4. To sum up, Group B consisted of BF, BD, BP1, BP2, BP3 and BP4; only BD and BP4 were non-native English speakers.

Figure 5-15 One optional site of new building in Group B
Source: Drawn by the author

A few questions were asked by the participants to clarify certain aspects of the background of this project. For example, in the start of the Group B session, the participants only visited site 5 as the building site. No other sites were shown, though two participants asked why they did not have the opportunity to visit other sites. It was explained that, due to the limited time, this workshop was only going to discuss site 5 while leaving the other sites for future sessions. During the site visits, it rained a little, which slightly affected the observation of site. The participants did not communicate with each other but just observed the site and took notes. The site visiting took about 15 minutes. *Figure 5-16* shows the general views of the workshop. *Table 5-17* shows the transcription of all the participants' notes of Group B (also see Appendix 5-9). Compared with Group A, the participants in Group B did not take

many notes. However, the participants in Group B observed site 5 carefully. Each

person expressed a strong connection with the site.

Silent Site Tour

Generating Options

Making Judgments

Structuring Ideas

Figure 5-16 Photos of Group B
Source: Photographed by the author
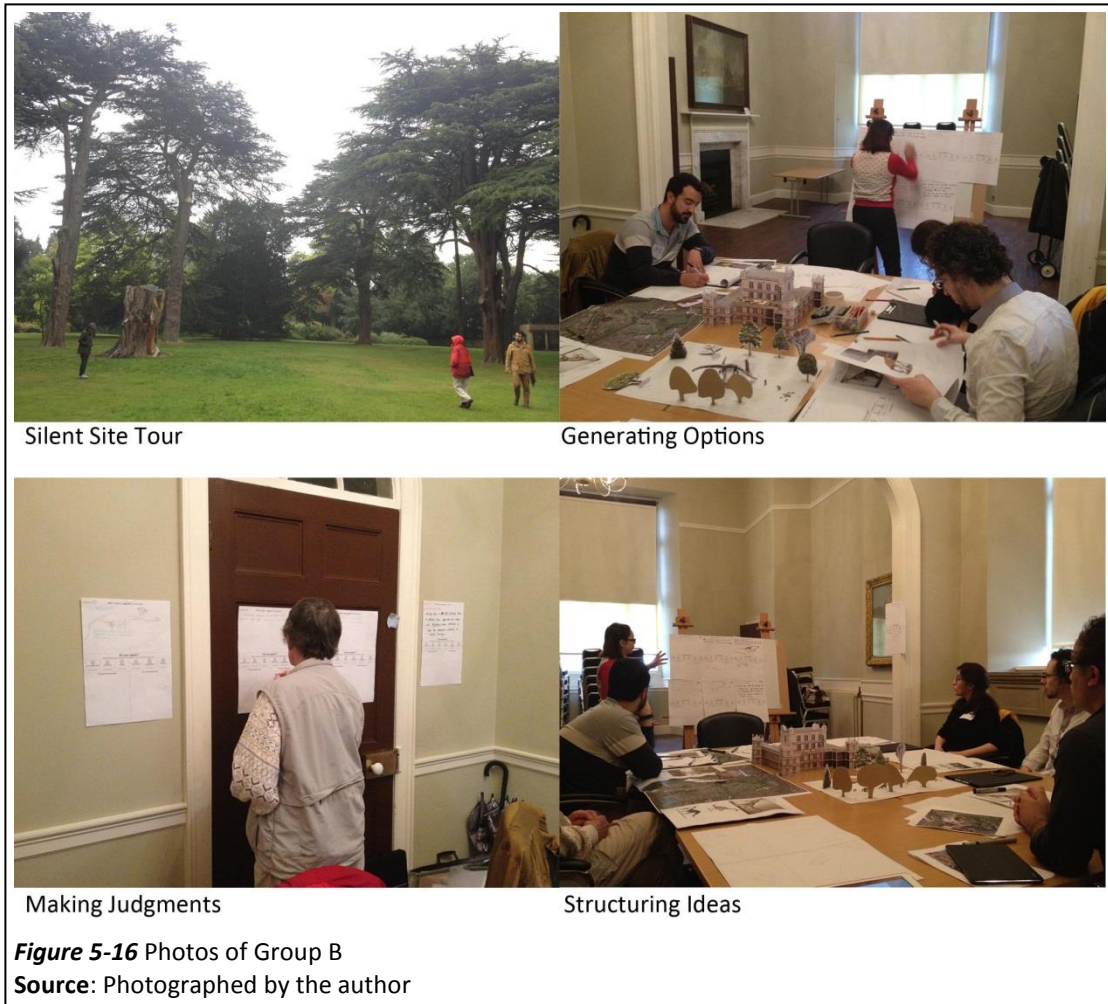
Table 5-17 Participants' notes of Group B

Notes of BD
- Tree
- Natural space
- Space
- Dominance of original building
Notes of BP1

Pram park	Two small buildings, not one big building
Enclosed exhibition	
Ramps	
Dog park	

Notes of BP2
- All the trees to be preserved.
- Feathered evoke, naturally, birds. Trees should be preserved, including the small one.
- Predominately wood/ natural resources/cork.
- Minimal change.
- Possibilities for archaeology.
Notes of BP4

Potentially the site itself

C.Y.

Court Yard
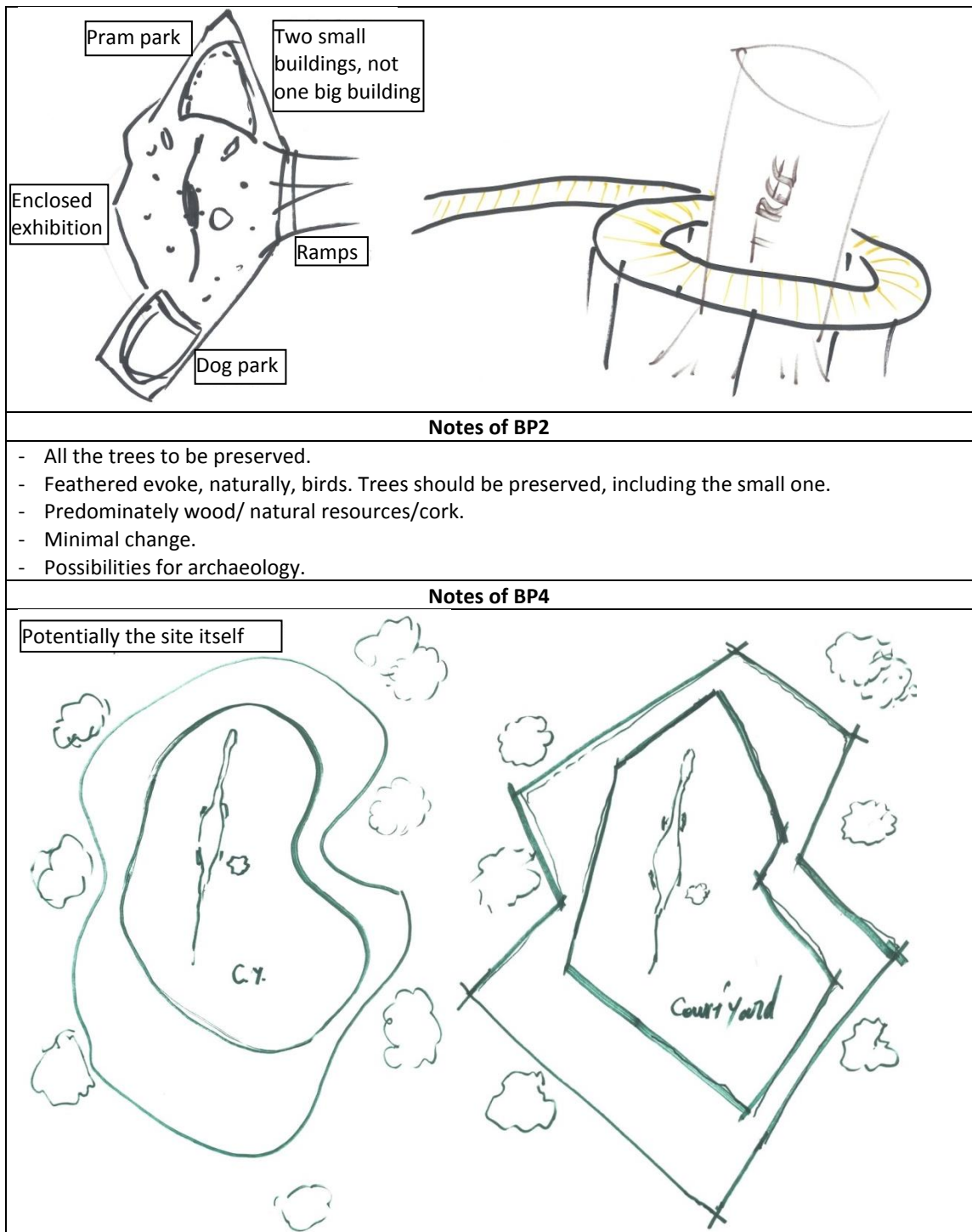
Source: Compiled by the author

5.3.2 Idea Rating Sheets

After the site tour, the participants were asked to write only one idea on each Idea

Rating Sheet regarding the three topics – materials, building size and shapes. *Figures*

5-17 to *5-34* show the IRSs filled in by all the participants of Group B (also see

232

Appendix 5-10). Each participant filled in three or four idea sheets independently without any discussions. The participants were also told to dot the level of agreement on the sheet they wanted. Their comments were also recognised and matched with the specific participant.

From *Figures 5-17* to *5-19* (BD's sheets 1 to 3), BD wrote down a few specific ideas regarding building size, materials and shapes. For instance, "sheet 1" suggested the building should have only one floor. There was one "confusion", one concern of financial constraints made by BP3. "Sheet 2" suggested free-flowing shape and transparent material, which got many agreements and no comments. "Sheet 3" got three "strong agreement" by proposing that the building and exhibition should interact with the trees outside; and BP1 also suggested positioning the small dinosaurs around the trees.

Participant ID: **BD**		Write or draw one idea here in large letters:			
		(Building size)			
- The building size = one floor and extend over the site into trees, somehow integrate with trees.					
- In this case even the trees become natural specimens alongside the Dinosaurs.					
Do you agree?					
Please fill your one dot below. And stick your comment slips if you want.					
😊	🙂	😐	🙁	😟	❓
Strong Agreement	**Agreement**	**Neutral**	**Disagreement**	**Strong Disagreement**	*Confusion*
●OOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	●OOOOOOOOO
Strengths & Opportunities			**Concerns & Weaknesses**		
(**BP3**): Good ideas but don't know how it could be done within the financial constraints.			(Blank)		

Figure 5-17 The IRS filled out by BD, sheet 1
Source: Compiled by the author

Participant ID: **BD**	Write or draw one idea here in large letters:
	(Material + Shape)
Materials + Shape:	
Building takes a free-flowing shape or natural shape within the trees with transparent/glass material to keep the dominance + stability of original building.	
Do you agree?	
Please fill your one dot below. And stick your comment slips if you want.	

☺ Strong Agreement	☺ Agreement	😐 Neutral	☹ Disagreement	☹ Strong Disagreement	❓ Confusion
●●00000000	●●00000000	0000000000	0000000000	0000000000	0000000000
Strengths & Opportunities (Blank)			**Concerns & Weaknesses** (Blank)		

Figure 5-18 The IRS filled out by BD, sheet 2
Source: Compiled by the author

Participant ID: **BD** **Write** or **draw** one **idea** here in large letters: The site is ideal for the museum extension. The most important reason is the availability of trees that can create in its own right, a natural history museum.					
Do you agree? *Please fill your one dot below. And stick your comment slips if you want.*					
☺ Strong Agreement	☺ Agreement	😐 Neutral	☹ Disagreement	☹ Strong Disagreement	❓ Confusion
●●●0000000	●000000000	0000000000	0000000000	0000000000	0000000000
Strengths & Opportunities (**BP1**): Put smaller dinosaurs in the trees, and sculpt the bigger ones. So then interact with the trees.			**Concerns & Weaknesses** (Blank)		

Figure 5-19 The IRS filled out by BD, sheet 3
Source: Compiled by the author

From *Figures 5-20* to *5-23* (BP1's sheets 1 to 4), BP1 listed a few interesting ideas about the exhibition and building. For instance, attracting the birds to fly around the feathered dinosaurs (sheet 1); wooden ramp around the exhibits (sheet 2); and Dino portholes with engraved glass (sheet 3). In the "dotting" area, the other participants generally agreed with BP1's ideas, while sheet 3 got one "disagreement". BP1 even proposed an open-air dinosaur park without structure (sheet 4). Although "sheet 4" got three "agreement", BD and BP3 both wrote down their worries of putting the exhibits outside.

Participant ID: **BP1**	**Write** or **draw** one **idea** here in large letters:

Put bird-feeders in the feathered Dinosaurs to attract birds & visually demonstrate the evolutionary link.
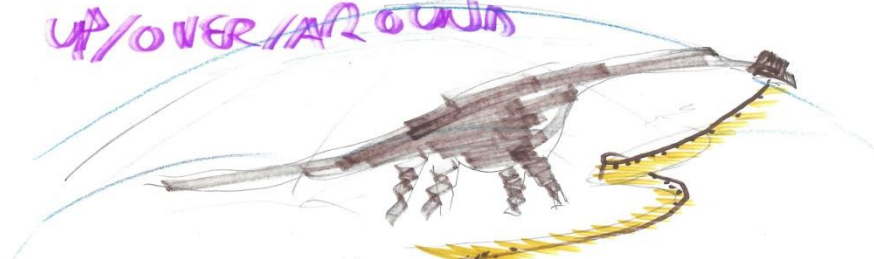
Do you agree?

Please fill your one dot below. And stick your comment slips if you want.

😃 Strong Agreement	🙂 Agreement	😐 Neutral	🙁 Disagreement	☹️ Strong Disagreement	❓ Confusion
●OOOOOOOOO	●OOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO

Strengths & Opportunities	**Concerns & Weaknesses**
(Blank)	(Blank)

Figure 5-20 The IRS filled out by BP1, sheet 1
Source: Compiled by the author

Participant ID: **BP1**	**Write** or **draw** one **idea** here in large letters:

(Materials)

Dino-Pavilion with wooden ramps/walkways taking you up/over/around the exhibits

Do you agree?

Please fill your one dot below. And stick your comment slips if you want.

😃 Strong Agreement	🙂 Agreement	😐 Neutral	🙁 Disagreement	☹️ Strong Disagreement	❓ Confusion
●OOOOOOOOO	●●OOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO
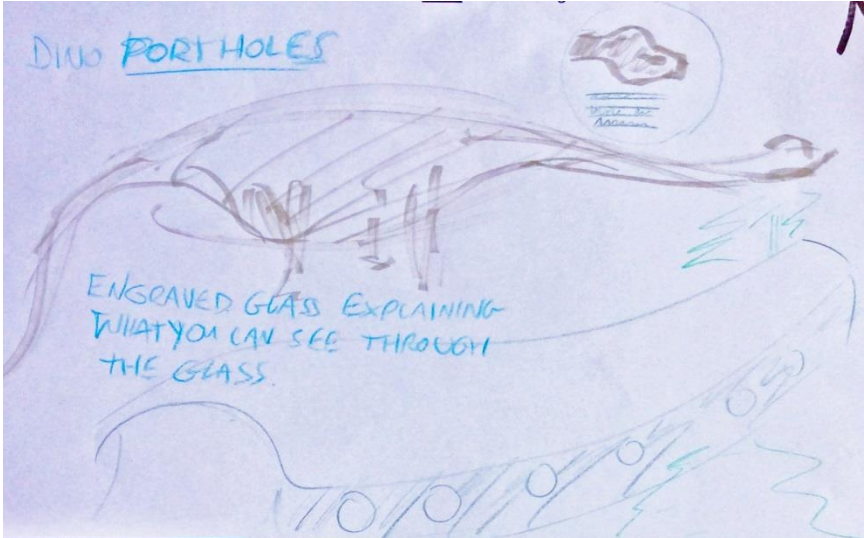
Strengths & Opportunities	**Concerns & Weaknesses**
(**BP4**): Just the wood material can be a more transparent material.	(Blank)

Figure 5-21 The IRS filled out by BP1, sheet 2
Source: Compiled by the author

Participant ID: **BP1**	**Write** or **draw** one <u>idea</u> here in large letters:
	(Materials)

Dino portholes
Engraved glass explaining what you can see through the glass
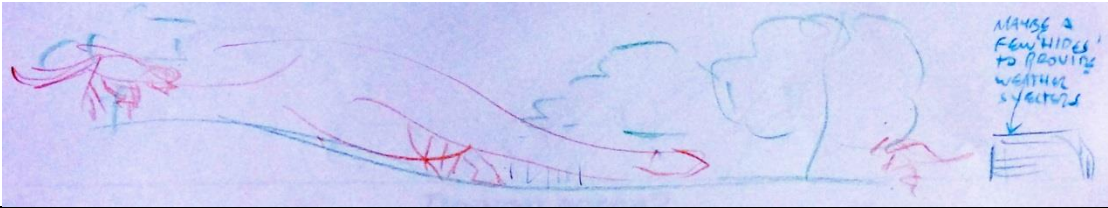
Do you agree?
Please fill your one dot below. And stick your comment slips if you want.

☺ Strong Agreement	☺ Agreement	😐 Neutral	☹ Disagreement	☹ Strong Disagreement	❓ *Confusion*
●OOOOOOOOO	●OOOOOOOOO	OOOOOOOOOO	●OOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO

Strengths & Opportunities	**Concerns & Weaknesses**
(**BP3**): Good idea if dinosaurs behind a structure.	(Blank)

Figure 5-22 The IRS filled out by BP1, sheet 3
Source: Compiled by the author

Participant ID: **BP1**	**Write** or **draw** one <u>idea</u> here in large letters:
	(Materials)

No structure, just an open-air dinosaur park
- Save money (invest in better models)
- Like crystal palace/ only modern and better!
Maybe a few 'hides' to provide weather shelters

Do you agree?
Please fill your one dot below. And stick your comment slips if you want.

☺ Strong Agreement	☺ Agreement	😐 Neutral	☹ Disagreement	☹ Strong Disagreement	❓ *Confusion*
OOOOOOOOOO	●●●OOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	●OOOOOOOOO

Strengths & Opportunities	**Concerns & Weaknesses**
(**BD**): It is a really nice idea – but a pavilion-like structure can preserve the specimens from weather conditions.	(**BP3**): Can the exhibits be exposed to the environment? Security?

From *Figures 5-24* to *5-27* (BP2's sheets 1 to 4), BP2 also listed a few interesting ideas about the exhibition and building. "Sheet 1" suggested preserving all the trees as their branches can house small species. This idea got one "disagreement" concerning the limited space that could be used; "sheet 2" suggested using technology to enhance the narrativity; and "sheet 3" suggested building a minimal structure, which received four "strongly agreement". However, when "sheet 4" proposed to mainly use wood, it got one "strong disagreement" from BP3 who preferred an all-glass/perspex structure.

Participant ID: **BP2**			**Write** or **draw** one **idea** here in large letters:		
All trees to be preserved. The small one can house smaller species on its branches. Seeing "Dinos" on tree branches would have a nice impact.					
Do you agree? *Please fill your one dot below. And stick your comment slips if you want.*					
😃 **Strong Agreement**	🙂 **Agreement**	😐 **Neutral**	🙁 **Disagreement**	☹️ **Strong Disagreement**	❓ *Confusion*
●OOOOOOOOO	●●OOOOOOOO	OOOOOOOOOO	●OOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO
Strengths & Opportunities (Blank)			**Concerns & Weaknesses** (**BP3**): Too limited f overall space available.		

Figure 5-24 The IRS filled out by BP2, sheet 1
Source: Compiled by the author

Participant ID: **BP2**			**Write** or **draw** one **idea** here in large letters:		
Looking into the possibility of using technology to enhance the interactivity of the site. EX: speakers, light, video, projectors, audio, guides that should be more of a "mood" or "ambience" nature and less descriptive or narrative. Perhaps emulating some of the sounds and sights of the period.					
Do you agree? *Please fill your one dot below. And stick your comment slips if you want.*					
😃 **Strong Agreement**	🙂 **Agreement**	😐 **Neutral**	🙁 **Disagreement**	☹️ **Strong Disagreement**	❓ *Confusion*
OOOOOOOOOO	●●OOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO
Strengths & Opportunities (**BP1**): Good idea reminds me of the 'sound & light' living archaeology they have for Egyptian temples. (Enhanced value over disinter?)			**Concerns & Weaknesses** (Blank)		

Figure 5-25 The IRS filled out by BP2, sheet 2
Source: Compiled by the author

Participant ID: **BP2**	**Write** or **draw** one <u>**idea**</u> here in large letters:

(Building size)

Minimal structures. The structures should not overpower the natural environment of the site.

Do you agree?
Please fill your one dot below. And stick your comment slips if you want.

🙂	🙂	😐	🙁	🙁	❓
Strong Agreement	**Agreement**	**Neutral**	**Disagreement**	**Strong Disagreement**	***Confusion***
●●●●○○○○○○	○○○○○○○○○○	○○○○○○○○○○	○○○○○○○○○○	○○○○○○○○○○	○○○○○○○○○○

Strengths & Opportunities	**Concerns & Weaknesses**
(Blank)	(Blank)

Figure 5-26 The IRS filled out by BP2, sheet 3
Source: Compiled by the author

Participant ID: **BP2**	**Write** or **draw** one <u>**idea**</u> here in large letters:

(Material)

Predominant materials to be used: wood, other sustainable materials, like cork. Minimal use of metal.

Do you agree?
Please fill your one dot below. And stick your comment slips if you want.

🙂	🙂	😐	🙁	🙁	❓
Strong Agreement	**Agreement**	**Neutral**	**Disagreement**	**Strong Disagreement**	***Confusion***
○○○○○○○○○○	●●●○○○○○○○	○○○○○○○○○○	○○○○○○○○○○	●○○○○○○○○○	○○○○○○○○○○

Strengths & Opportunities	**Concerns & Weaknesses**
(Blank)	(**BP3**): I visualise an all-glass/perspex structure to give impression of light, open space.

Figure 5-27 The IRS filled out by BP2, sheet 4
Source: Compiled by the author

From *Figures 5-28* to *5-30* (BP3's sheets 1 to 3), BP3 listed a few interesting ideas about the building size and shapes. For instance, all the participants gave "strong agreement" to "sheet 1" that proposed using the stump as a part of the exhibition; "sheet 2" talked about the issues of dog pound and pram park; and "sheet 3" proposed building a rectangular building in order to use as much space as available. Although there was no disagreement about "sheet 3", BP1 advised that the relationship between building and environment should be better.

Participant ID: **BP3**	**Write** or **draw** one <u>**idea**</u> here in large letters:

(Shape)

Stump to be included as part of display – possibly a mount for 1 or 2 of the skeletons.

Do you agree?
Please fill your one dot below. And stick your comment slips if you want.
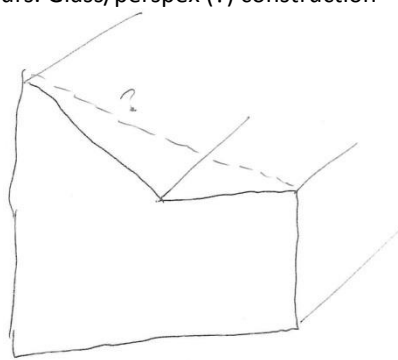
Strong Agreement	Agreement	Neutral	Disagreement	Strong Disagreement	Confusion
●●●●oooooo	oooooooooo	oooooooooo	oooooooooo	oooooooooo	oooooooooo
Strengths & Opportunities (Blank)			**Concerns & Weaknesses** (Blank)		

Figure 5-28 The IRS filled out by BP3, sheet 1
Source: Compiled by the author

Participant ID: **BP3**		**Write** or **draw** one **idea** here in large letters:			
		(Building size)			
Assume dogs not allowed (prams?) so must have a secure "dog pound" … …? Pram park.					

Do you agree?
Please fill your one dot below. And stick your comment slips if you want.

Strong Agreement	Agreement	Neutral	Disagreement	Strong Disagreement	Confusion
oooooooooo	●ooooooooo	●oooooooo	oooooooooo	oooooooooo	oooooooooo
Strengths & Opportunities (**BP1**): Good point. Make dog pram parks introduction spaces for exhibit?			**Concerns & Weaknesses** (**BP1**): Does the hall already do this?		

Figure 5-29 The IRS filled out by BP3, sheet 2
Source: Compiled by the author

Participant ID: **BP3**		**Write** or **draw** one **idea** here in large letters:			
		(Building size)			
Rectangular building to use as much space as available. One long side much higher than the other to accommodate the tallest dinosaurs. Glass/perspex (?) construction					

Do you agree?
Please fill your one dot below. And stick your comment slips if you want.

Strong Agreement	Agreement	Neutral	Disagreement	Strong Disagreement	Confusion
●ooooooooo	●●oooooooo	●oooooooo	oooooooooo	oooooooooo	oooooooooo
Strengths & Opportunities (**BP1**): Would rather have something that work with natural environment better.			**Concerns & Weaknesses** (Blank)		

Figure 5-30 The IRS filled out by BP3, sheet 3
Source: Compiled by the author

From *Figures 5-31* to *5-34* (BP4's sheets 1 to 4), BP4 covered all the three topics about the building size, shapes and materials. However, BP4 did not give very specific suggestions for each topic, but described the more general concepts. For example, the site is suitable to exhibit the components (sheet 1); the site has a natural structure that can be integrated with the new building (sheet 2); the size of building should be appropriate (sheet 3); and the chosen materials should be as transparent as possible (sheet 4). Most of BP4's ideas were accepted by the participants; sheets 2 and 4 even got three "strong agreement", respectively.

Participant ID: **BP4**	**Write** or **draw** one <u>idea</u> here in large letters: (Building size)
Site: Potentially the site is completely suitable to accept its new guests. Site ←→ Components	

Do you agree?					
Please fill your one dot below. And stick your comment slips if you want.					
☺ Strong Agreement	☺ Agreement	😐 Neutral	☹ Disagreement	😟 Strong Disagreement	? *Confusion*
●●OOOOOOOO	OOOOOOOOOO	OOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	●OOOOOOOOO
Strengths & Opportunities (Blank)			**Concerns & Weaknesses** (Blank)		

Figure 5-31 The IRS filled out by BP4, sheet 1
Source: Compiled by the author

Participant ID: **BP4**	**Write** or **draw** one <u>idea</u> here in large letters: (Shape)
Structure: It seems that the site itself plays the role of a very appropriate structure (natural structure). The existence of old, odd-shaped trees in the site has increased this function of the site, as a natural structure which is more relevant to its new integration (components)	

Do you agree?					
Please fill your one dot below. And stick your comment slips if you want.					
☺ Strong Agreement	☺ Agreement	😐 Neutral	☹ Disagreement	😟 Strong Disagreement	? *Confusion*
●●●OOOOOOO	●OOOOOOOOO	OOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO
Strengths & Opportunities (Blank)			**Concerns & Weaknesses** (Blank)		

Figure 5-32 The IRS filled out by BP4, sheet 2
Source: Compiled by the author

Participant ID: **BP4**	**Write** or **draw** one <u>idea</u> here in large letters: (Building size)

Size of structure: (If it is essential) As much as possible in a proper size, not to disturb the relation between site and its new components. It can be considered more dependent on the size of its components.

Do you agree?
Please fill your one dot below. And stick your comment slips if you want.

Strong Agreement	Agreement	Neutral	Disagreement	Strong Disagreement	*Confusion*
●●OOOOOOOO	OOOOOOOOOO	OOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO

Strengths & Opportunities (Blank)	**Concerns & Weaknesses** (Blank)

Figure 5-33 The IRS filled out by BP4, sheet 3
Source: Compiled by the author

Participant ID: **BP4**	**Write** or **draw** one <u>idea</u> here in large letters: (Materials)

Material: As much as possible transparent:
- More integration of site, and
- Do not affect the dominance of historical building and do not disconnect inside and outside of new building (pavilion)

Do you agree?
Please fill your one dot below. And stick your comment slips if you want.

Strong Agreement	Agreement	Neutral	Disagreement	Strong Disagreement	*Confusion*
●●●OOOOOOO	●OOOOOOOOO	OOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO

Strengths & Opportunities (Blank)	**Concerns & Weaknesses** (Blank)

Figure 5-34 The IRS filled out by BP4, sheet 4
Source: Compiled by the author

5.3.3 Consensus Mapping

In the "structuring ideas" step, BF firstly marked each sheet with "M (material), BS (building size) and S (shape); then BF collected the same topic sheets into a cluster. Secondly, BF rephrased the "options" and "judgments" on one sheet, and asked the participants to express their suggestions and comments. As BP1, BP2 and BP3 are all native English speakers, they contributed many ideas to the discussion. Most of the time, they explained the clear reasons of comments. BD and BP4 are non-native English speakers; therefore, they did not speak too much. However, on the occasions they did speak, BD and BP4 gave clear reasons as well. None of the participants said

"I just like it. It's my taste." or "I don't like it, no reason". On each topic, instead of reaching a final agreement, the participants figured out the different options available.

Table 5-18 shows the final conclusion summarised by BF (also see Appendix 5-11). For the "materials", BF only listed the possible options and arguments; for instance, should the materials be reflective or transparent? Is it possible to have an open air exhibition, but how would you deal with the vandalism? The points in "building size" are the agreements reached by the participants - no specific conflicts can be found. For the "building shape", the points show a combination of the possible options and the final agreements. For instance, the participants agreed that visitor experience is the most important issue. The building should have a courtyard and a large area for gathering visitors. But the participants were not able to figure out whether the shape of building should be changeable or not. They were not sure whether the building should be temporary or permanent, although the introduction of task mentioned that the building aimed to permanent.

Table 5-18 Final conclusion summarised by BF

Materials
Reflective/camouflage materials
Transparent – maintenance + cleaning!
Do we need a building?
Open air – security? Vandalism/theft

Building size
- No current provision for dogs/prams
- Accessibility
- Harmony with trees and surroundings
- Provision for audiences that travel further/attract and accommodate new audiences
- Staffing of building

Shape
- Visitor experience most important
- Transparent building with courtyard
- Temporary VS permanent?

| Both – flexible structure, changeable shape? |
| - Large regional catchment of visitors |
| - Use of AV (Audio visual) – augmented reality? Improved user experience |

Source: Compiled by the author

5.3.4 Questionnaires

When the workshop was finished, the participants and facilitator filled out the questionnaires. *Tables 5-19* to *5-23* show the summarised scores of the participants' questionnaires in Group B (see Appendix 5-12 for the filled-in questionnaires in Group B). Because BS was absent, the score results only show the conflict resolutions among the designer and public. Firstly, "consensus" is still the most-used resolution among the participants. Secondly, "avoidance" gets almost the lowest scores from the participants. The following paragraphs show more detailed description of the results. "Force", "accommodation" and "compromise" sequence differently in each survey result. The scores vary with the participants. For example, when facing BD, BP1 shows a slightly higher preference for using "force" (2.33) and "accommodation" (2.33) than "compromise" (2.00); but when facing BP, BP1 shows a much higher preference for using "accommodation" (3.33) and "compromise" (3.33) than "force" (1.67).

In *Table 5-19*, BD mainly used "consensus" and "compromise" to the public, and BD tired not to use "force" and "avoidance" to the public. An interesting point is found in question No. 1 – "To uncover the conflict with public, I attempt to get all concerns and issues out in the open" – to which BD chose "tend to disagree". More analysis of this choice can be seen in chapter 6.

Table 5-19 Score results of BD

Score Results of (BD) - (BP)			
Conflict Resolution Styles	**Question Numbers and**	**Total**	**Average**

	Scores				Score
Force	(4)	(8)	(9)	5	1.67
	3	1	1		
Avoidance	(3)	(6)	(11)	6	2.00
	2	2	2		
Accommodation	(2)	(7)	(10)	7	2.33
	3	2	2		
Compromise	(5)	(15)	(13)	9	3.00
	3	3	3		
Consensus	(1)	(12)	(14)	10	3.33
	2	4	4		

Source: Compiled by the author

In *Table 5-20*, BP1 mainly used "consensus" to the designer, while BP1 mainly used "consensus", "compromise" and "accommodation" to the public. Meanwhile, BP1 cared about the relation with the public more than with the designer, which can be seen from BP1's high score in "force" when facing BD, and BP1's high score in "avoidance" when facing the public. No many unusual choices can be found in BP1's survey.

Table 5-20 Score results of BP1

Score Results of (BP1) - (BD)					
Conflict Resolution Styles	Question Numbers and Scores			Total	Average Score
Force	(4)	(8)	(9)	7	2.33
	3	2	2		
Avoidance	(3)	(6)	(11)	6	2.00
	2	2	2		
Accommodation	(2)	(7)	(10)	8	2.67
	3	2	3		
Compromise	(5)	(15)	(13)	6	2.00
	2	2	2		
Consensus	(1)	(12)	(14)	12	4.00
	4	4	4		

Score Results of (BP1) - (BP)					
Conflict Resolution Styles	Question Numbers and Scores			Total	Average Score
Force	(4)	(8)	(9)	5	1.67
	2	1	2		
Avoidance	(3)	(6)	(11)	9	3.00
	3	3	3		
Accommodation	(2)	(7)	(10)	10	3.33
	4	3	3		
Compromise	(5)	(15)	(13)	10	3.33
	3	4	3		

Consensus	(1)	(12)	(14)	10	3.33
	3	3	4		

In *Table 5-21*, BP2 mainly used "consensus" and "compromise" to BD and the public. Compared with other participants, BP2 showed very high "force" (2.67 and 3.00) and very low "avoidance" (1.00 and 1.00) when facing BD and the public.

Table 5-21 Score results of BP2

Score Results of (BP2) - (BD)					
Conflict Resolution Styles	**Question Numbers and Scores**			**Total**	**Average Score**
Force	(4)	(8)	(9)	8	2.67
	4	1	3		
Avoidance	(3)	(6)	(11)	3	1.00
	1	1	1		
Accommodation	(2)	(7)	(10)	7	2.33
	2	2	3		
Compromise	(5)	(15)	(13)	9	3.00
	3	3	3		
Consensus	(1)	(12)	(14)	10	3.33
	3	3	4		

Score Results of (BP2) - (BP)					
Conflict Resolution Styles	**Question Numbers and Scores**			**Total**	**Average Score**
Force	(4)	(8)	(9)	9	3.00
	4	2	3		
Avoidance	(3)	(6)	(11)	3	1.00
	1	1	1		
Accommodation	(2)	(7)	(10)	8	2.67
	2	3	3		
Compromise	(5)	(15)	(13)	9	3.00
	3	3	3		
Consensus	(1)	(12)	(14)	12	4.00
	4	4	4		

In *Table 5-22*, BP3 gave exactly the same choices when facing BD and the public. BP3 put the same weight on "consensus" and "compromise", while using "avoidance" the least.

Table 5-22 Score results of BP3

Score Results of (BP3) - (BD)			
Conflict Resolution Styles	**Question Numbers and**	**Total**	**Average**

	Scores				Score
Force	(4)	(8)	(9)	7	2.33
	3	1	3		
Avoidance	(3)	(6)	(11)	3	1.00
	1	1	1		
Accommodation	(2)	(7)	(10)	5	1.67
	1	1	3		
Compromise	(5)	(15)	(13)	12	4.00
	4	4	4		
Consensus	(1)	(12)	(14)	12	4.00
	4	4	4		

Score Results of (BP3) - (BP)					
Conflict Resolution Styles	Question Numbers and Scores			Total	Average Score
Force	(4)	(8)	(9)	7	2.33
	3	1	3		
Avoidance	(3)	(6)	(11)	3	1.00
	1	1	1		
Accommodation	(2)	(7)	(10)	5	1.67
	1	1	3		
Compromise	(5)	(15)	(13)	12	4.00
	4	4	4		
Consensus	(1)	(12)	(14)	12	4.00
	4	4	4		

Source: Compiled by the author

In *Table 5-23*, although BP4 also mainly used "consensus" and "compromise" to BD and the public, BP4 tended to use more "avoidance" than "force" when facing the other participants.

Table 5-23 Score results of BP4

Score Results of (BP4) - (BD)					
Conflict Resolution Styles	Question Numbers and Scores			Total	Average Score
Force	(4)	(8)	(9)	5	1.67
	3	1	1		
Avoidance	(3)	(6)	(11)	7	2.33
	3	2	2		
Accommodation	(2)	(7)	(10)	8	2.67
	4	2	2		
Compromise	(5)	(15)	(13)	9	3.00
	3	3	3		
Consensus	(1)	(12)	(14)	12	4.00
	4	4	4		

Score Results of (BP4) - (BP)					
Conflict Resolution Styles	Question Numbers and Scores			Total	Average Score
Force	(4)	(8)	(9)	5	1.67

	3	1	1		
Avoidance	(3)	(6)	(11)	7	2.33
	2	3	2		
Accommodation	(2)	(7)	(10)	8	2.67
	4	2	2		
Compromise	(5)	(15)	(13)	10	3.33
	4	3	3		
Consensus	(1)	(12)	(14)	12	4.00
	4	4	4		

Source: Compiled by the author

Different from the tables above, *Tables 5-24* and *5-25* show the facilitator's and observer's overview of Group B. In *Table 5-24*, BF thought more than three participants used "consensus", while about one to two participants preferred used "accommodation" and "compromise". However, regarding each question of "accommodation", the specific amounts of participants selected are different. Take the questions of "accommodation" as an example, in question No. 2: "How many participants tried to stress those things upon which both agree?" BF chose "3-4" participants; but in question No. 7, "How many participants sacrificed the own wishes to satisfy the wishes of disputants," BF chose "1-2" participants; while in question No. 10, "How many participants usually made concessions to satisfy the wishes of disputants?", BF chose "0" participants. In *Table 5-25*, BO shows similar observations to those of BF, while BO thought there should be more participants used "compromise" than BF did. More analysis and discussion of the data can be seen in chapter 6.

Table 5-24 Score results of BF

Score Results of (BF) - (workshop)					
Conflict Resolution Styles	**Question Numbers and Scores**			**Total**	**Average Score**
Force	(4)	(8)	(9)	5	1.67
	2	1	2		
Avoidance	(3)	(6)	(11)	4	1.33
	1	2	1		
Accommodation	(2)	(7)	(10)	6	2.00

	3	2	1		
Compromise	(5)	(15)	(13)	6	2.00
	2	2	2		
Consensus	(1)	(12)	(14)	10	3.33
	4	3	3		

Source: Compiled by the author

Table 5-25 Score results of BO

Score Results of (BO) - (workshop)					
Conflict Resolution Styles	**Question Numbers and Scores**			**Total**	**Average Score**
Force	(4)	(8)	(9)	5	1.67
	3	1	1		
Avoidance	(3)	(6)	(11)	6	2.00
	2	2	2		
Accommodation	(2)	(7)	(10)	7	2.33
	3	2	2		
Compromise	(5)	(15)	(13)	9	3.00
	3	3	3		
Consensus	(1)	(12)	(14)	10	3.33
	3	3	4		

Source: Compiled by the author

5.3.5 Interview and Observation Report

Tables 5-26 to *5-29* summarise the main ideas of all the interview transcripts (see Appendix 5-13 for the original transcripts of Group B). *Table 5-26* shows all the interviewees' and observer's replies of general feeling about workshop B. For question 1, all of the participants and the facilitator thought the workshop went very well by organising the different ideas in a short time. Only BP1 complained about the weather and BO criticised the delay starting the workshop. For question 2, all gave positive appraisal to the verbal discussion part. BD also liked the site visit; BP1 and BO also referred to the filling in and rating of ideas. For question 2+, most of the interviewees expressed much wider criticism regarding several aspects: for instance, the delay of the workshop, no drinks in the workshop, silent tour needs communication, hard to write ideas down without communication, and the non-native English speakers need more chance to speak.

Table 5-26 Interview summaries of Group B, questions 1 to 2+

	1. What is your opinion about the workshop?
BD	Interesting. There are different people with different points of view about an architectural work. As an architect, it was very interesting to hear other people. There was an interesting point that many of the ideas was similar to what we think. And other parties may see those angles of the whole project that maybe we do not see.
BP1	It went very well. We have addressed lots of ideas in a short time. There were lots of candid, open and friendly discussions. I was interested in what we were talking about. There were not many conflicts between ideas, and no real disagreements between the participants. The workshop was really well organised, except for the weather.
BP2	It was a very useful exercise to consult the public when setting up an exhibition. It shows concerns about the public needs. The format of the workshop was very enjoyable.
BP3	It was very good. Hope it is useful.
BP4	I heard about this project and saw some drawings of it before. Today, after I saw this site, I am sure it will be a very appropriate idea.
BF	The workshop went very well. Although not all of them were vocal, they all gave opinions. And we produced many good ideas.
BO	- The workshop started a bit late, which postponed each step by about 15 minutes. - It was a shame that the curator could not join in the workshop. - Good models of Wollaton Hall, trees and dinosaurs.
	2. Which part of the workshop did you like the most?
BD	The discussion part gave us the opportunity to know other people's opinions and express our opinions. And the site visiting was interesting.
BP1	The ideas discussion was quite enjoyable and profitable. We discussed lots of important topics in detail. And the filling in and rating of ideas sheets was well organised.
BP2	The discussion and changing of ideas among different people with different backgrounds. I enjoyed talking to the others.
BP3	The discussion with others. I found that my ideas were very similar to theirs.
BP4	I like the second part that was taking ideas from different experts and communicating with different people. It is useful for my future work, which sparks new ideas.
BF	Best bit was they gave their own ideas, and wrote them down on the idea paper. Before any discussion, they can judge everyone's ideas. And it's interesting that many people had the same opinion. There was not too much disagreement.
BO	- The "generating options" step was very productive. - The "structuring ideas" step was quite an open discussion.
	2+. Which part of the workshop did you like the least?
BD	The preparation at the beginning. The workshop had not been set up when we arrived. We spent a long time by watching the organiser preparing it.
BP1	There was no tea or coffee. I had just come from work and had a horrible time on the bus. I expected to have a coffee and a biscuit. However, I was not offered anything.
BP2	I did not enjoy the silent site visiting. I believe that the communication on the actual site could be useful.
BP3	Writing your ideas down at the beginning.
BP4	I have no idea about which part I like the least.
BF	It is a bit difficult to explain that the project is just a conceptual idea; instead the participants tended to think it is a real project that is going to happen.
BO	There were two non-native English participants; they seemed a bit shy, and the facilitator did not positively ask them to speak.

Source: Summarised by the author

Table 5-27 shows all the interviewees' and observer's replies of expression in the

Group B. Compared with Group A, this workshop had a more open discussion, while

BF thought that BP2 had slightly dominated the conversation. Many of the participants had expressed their opinions, while they all had different reasons for being able or unable to express all the ideas. More analysis and discussion can be seen in chapter 6.

Table 5-27 Interview summaries of Group B, questions 3 to 5+

	3. When discussing in the group, did you express all of your ideas to them?
BD	Yes.
BP1	Yes. There is a tacit acknowledgment of what everybody else wants to be able to say, and letting other people have their say as well. So you often choose to wait until there's an appropriate time for your idea. Outside of that convention, I don't think I held back on any ideas. I don't feel that anybody else did. Because we wrote all our ideas on paper and put them on the wall, it means we had already expressed our ideas. It was quite useful actually. Lots of us had the same ideas; I didn't have to say all my ideas as others said them for me. In my experience with other workshops, I cannot put forward certain ideas that I am quite interested in, because it would derail the conversation and not progress the ideas overall. However, I didn't get the feeling in this particular workshop, possibly because we got all out ideas out before the discussion.
BP2	Yes, most of them.
BP3	Yes.
BP4	Yes.
	3. Was there anyone dominated the conversation?
BF	I think BP2 was a little bit, mainly. A couple of participants yes, but not negatively.
BO	Compared with last workshop, the facilitator had a much less dominative voice in B group; and the facilitator offered more speaking opportunities to the participants.
	3+. (Yes) What were the reasons you were able to express all of your ideas? Examples? (No) What were the reasons you were not able to express all of your ideas? Examples?
BD	Because we had many common ideas, for instance, we expressed the same view of material. But the other points that we didn't mention, we actually expressed our ideas about them.
BP1	We had a really safe and reassuring structure. Not having our names on our ideas was very good because you didn't have to own up the ideas. If you have second thoughts, you can just write it down and put it on the wall. And everybody has the equal chance to say what they thought. There wasn't any conflict that people cannot get their point express. The structure and method was very successful in this way.
BP2	Some of my opinions coincided with the other participants', which means that my ideas were being expressed. So I don't have to express again; for example, I was suggesting the building should surround a courtyard, and that the exhibit itself could be put on in this open air space. My idea was met by someone who actually drew the similar idea on paper.
BP3	Because I had the ideas that were relevant. And I am not inhibited about expressing my opinions even if they are different from everybody else's.
BP4	The topics were limited, so we had enough time to express ideas. I said what I really wanted to say.
	3+. (Yes) What were the reasons s/he can dominate the conversation? Examples? (No) What were the reasons nobody can dominate the conversation? Examples?
BF	It was good that they had opinions. You can know the reasons behind these ideas. It can promote the discussion, and encourage others to join in the conversation. Neither of them was an architect. It is good that we had BP3 – a genuine member from the public.
BO	For most of the participants, it was the first time they had taken part in a design workshop. Generally, they just did what the facilitator told them to do.
	4. Did you express all of your thoughts regarding the other members' ideas?
BD	No 100%, but I tried to do it.

BP1	Yes. We all have similar ideas. We came up with lots of concepts that didn't attract much disagreement. In this kind of workshop, people don't want to disagree with or offend each other, because we are all strangers. We don't want to be critical of other's input; we don't want to discourage people from having their say either. It would be very rude and unpleasant for everyone. So in this particular workshop, the ideas were put out there and allowed us to talk about them. Then we could find the good points and build on them. The only mild notion of disagreement was over the concept of building shape – that it had to be an enclosed building. The reasons are security and accessibility, providing facilities like pram parks or dog pounds. The opposite concept was to have a completely open air exhibition. The people who disagreed with the open air exhibition, said that, "well, it's not useful because you need to have this" when the more design-oriented approach would be okay - "we need to have this, what's the way to have this thing in that context where it's open air, or there's a minimal structure or temporary prefabricated". With open mind and not squashing anyone's topic, we were able to come to one interesting, novel solution, which was to have a temporary, reusable structure in different configurations. I was very pleased to see that came out very naturally from the people's original ideas. We had an architect, a chemist and a graphic designer who put forth ideas in an appropriate and professional way. You are expected to speak up and not keep quiet in those professions.
BP2	When asked to, yes.
BP3	Yes.
BP4	Not all of them.
	4. Was there anyone who kept quiet in the conversation?
BF	I think BP1 was quite quiet. But BP1 had really good ideas for the exhibition.
BO	Most all of the participants were active, while BP4 was a bit silent in the discussion. But BP4 contributed lots of information in the "generating options" step.
	4+. (Yes) What were the reasons you were able to express all of your comments? Examples?
	(No) What were the reasons you were not able to express all of your comments? Examples?
BD	Because we are non-native English speakers. When the natives are speaking, we don't understand some of the parts, which make the participation a bit difficult.
BP1	The facilitator was very good at making sure that everything was brought up, put on the board and talked about. Fully half of the sheets for putting our ideas down were room for feedback. There was a challenge in putting feedback on the idea sheets that were flimsy to write on. We attached the comments slips to the sheets, and went through everything. It firstly allows people in a really anonymous, safe way to submit feedback. People would be embarrassed or reticent to speak out about someone's idea in a manner which seems rude or unfair.
BP2	I tried to consider other participants' backgrounds, for instance, age, gender, beliefs. When an opinion or personal statement was necessary, I did do so.
BP3	Because I am old enough to have experienced a lot of different exhibitions. I could visualise similar exhibitions or similar things that I was happy to try, and contribute things I had experienced in the past.
BP4	Because I was not sure about all of my thoughts. I need to study more about it. I expressed some of my thoughts that I was eager and more confident about.
	4+. (Yes) What were the reasons s/he kept quiet in the conversation? Examples?
	(No) What were the reasons nobody kept quiet in the conversation? Examples?
BF	(*this question hadn't been asked*)
BO	- One reason is that BP4 and BD were not native English speakers.
	- The facilitator did not ask BP4's opinions individually.
	5. Did you explain all the reasons for your comments regarding your own or others' ideas?
BD	Yes.
BP1	Yes. Sometimes, the other participants may have articulated the same ideas earlier than me, but I was pleased to see that.
BP2	Yes.
BP3	Yes.
BP4	Yes.
	5. Did they prefer expressing the reasons or comments?
BF	Yes. Some of them are a lot more vocal than the others. But the vocal participants were happy

	to talk about the others' ideas too. I think it was very fair and balanced. Everyone discussed different parts of the exhibition.
BO	Most of the expressions came up with reasons.
	5+. (Yes) What were the reasons you were able to express all of your reasons? Examples? **(No) What were the reasons you were not able to express all of your reasons? Examples?**
BD	I prefer the transparent over the other materials, and I talked about the shape of the building. Before visiting the site, I liked the idea of a cubic transparent box. But after seeing the site and trees, I prefer a free organic shape to accommodate the trees within the space.
BP1	Everybody seemed to be in a really good mood. In spite of the weather, people seemed friendly, and cheerful and there didn't seem to be any kind of aggression or anybody trying to put their ideas over somebody else. The atmosphere really helped.
BP2	For instance, I preferred using as minimal structures and materials as possible. Considering the sustainable and ecological aspects, I was very against the using of metal or any other kinds of material. All my concerns manifested in my expression of opinions.
BP3	Because we had the opportunity to express opinions for as long as we wanted.
BP4	Because the facilitator gave us the chance to express the ideas. And we could put our ideas on the board.
	5+. (Reasons) What were the reasons they prefer reasons? Examples? **(Comments) What were the reasons they prefer comments? Examples?**
BF	(*this question hadn't been asked*)
BO	Probably because it was a quite open discussion, and every participant is adult. So, they all spoke up with a few concerns or thoughts, rather than just saying "I like it" or "I don't like it".

Source: Summarised by the author

Table 5-28 shows all the interviewees' and observer's replies concerning reaching a decision in Group B. Although there was not a confirmed final agreement due to the lack of information and time, the workshop still summarised a list of agreed options. Due to the democratic communication, every participant had an equal chance to speak, and they had similar common sense in most of the topics, so no obvious conflicts or disagreements came out. All the interviewees thought the participants' opinions were treated fairly.

Table 5-28 Interview summaries of Group B, questions 6 to 9+

	6. If there were differing opinions, how did you reach a decision as a group? E.g. voting or verbal discussing
BD	Verbal discussion. We did not have disagreements about the materials, shape and trees. We agreed to keep the trees and accommodate the trees as part of the exhibition. There was an idea of leaving the space without structure. It was nice, but I and others argued the problems of protecting the specimen from the natural conditions, like rain and cold weather. You cannot just put them in open space.
BP1	Verbal discussion. We kept talking about what we would like to see until one person came up with an idea which was incorporating what was the best of both worlds. Not compromise, but the best of both worlds which is a very important thing to hold on to as a designer, because a compromise design is usually a bad design. Taking strands from two things and combining them into a new thing is usually a very good design.

BP2	Verbally. We reached compromises by simply accommodating each other's ideas. We discussed further details sometimes. Everyone more or less had the same ideas, so there was no sharp contrast. Every different opinion had a good justification behind it. We took it into consideration, and moved the debate naturally into a consensus.
BP3	The consensus was fairly easy to come to. There was no real argument. One or two people put forward ideas, while I did not accept the security reasons. They accepted that something should have considered.
BP4	I think there was a kind of voting on the board. We gave points to agree or disagree with the ideas. We could see how many people agreed with this idea. After this written voting, we explained why we agreed or disagreed with these ideas.
	6. If there were differing opinions, how did the group reach a decision? E.g. voting or verbal discussing
BF	Verbal discussion. For instance, some people wanted a transparent building, while some people did not want a building at all. To reach an agreement, they raised concerns about one and the other. People were willing to see the positive and negative; no one was biased towards one view. They were open to different aspects of the design. They could feel comfortable in expressing opinions, but accept constructive criticism.
BO	Verbal discussion. Compared with last workshop, this workshop had a few different opinions regarding the materials and building shape. So the facilitator let the participants express their ideas and reasons, and the facilitator summarised their speaking.
	7. Were you able to reach a final decision as a group regarding all of the design elements?
BD	I think we agreed on not too small or huge a building, but a modest building. Flooring on the ground. Keep the elements of the original Wollaton Halls. We reached three main points of agreement about the material, shape and size.
BP1	The workshop was not intended to bring us to a final decision. We came up with a good idea near the end of the workshop, which was to have a refabricatible building. It is semi-permanent, but a permanent addition to the assets of Wollaton Park. The building can be taken down and built into something different in the next year. It was a firm stepping-stone to moving the project forward. There were some things that we did not know but that we needed to know. There was not much clarity on the nature of the exhibit, while the organiser did not have the answers. Also, we do not know what the budget should be used for. I think the architect kept quiet so as not to inhibit others' ideas, but we did not really know what we could do with that money; and it hindered the discussion by minutes of time, And the discussion period only had minutes left. It took a couple more minutes of time: so either deal with that topic or move on from it.
BP2	I believe we did.
BP3	I am sure we did not, but we certainly covered a lot of ground.
BP4	The general ideas are saving and preserving the area, the site and the nature; and caring about the dominance of Wollaton Hall.
	7. Were they able to reach a final decision as a group regarding all of the design elements?
BF	No.
BO	In most of the cases, yes. A general final agreement of selected elements had been listed by the facilitator.
	7+. (Yes) What were the reasons you were able to reach a final decision? Examples? **(No) What were the reasons you were not able to reach a final decision? Examples?**
BD	(*this question hadn't been asked*)
BP1	There was a sense that came out of the discussion. Somebody came up with a really great idea and somebody else helped visualise it. Everyone felt satisfied with it; nobody was left out of it.
BP2	We all thought the natural history museum needed a natural component in it. Therefore, we agreed that the natural environment of the site should be respected, for instance, the trees. It is the connectedness between inside and outside. As a group, we moved this discussion towards the same direction.
BP3	Partly because they do not know enough about the Chinese requirements for whether the dinosaurs could be left in the open air; how much security is required; whether they can be

	touched. Because some of these basic questions were not very clear.
BP4	I understand that most of the participants have the same ideas. There was not a very obvious difference between the ideas.
	7+. (Yes) What were the reasons they were able to reach a final decision? Examples? **(No) What were the reasons they were not able to reach a final decision? Examples?**
BF	There was a range of ideas, but nothing was decided; for instance, they have not finally agreed on a transparent building or an open air building.
BO	- The participants had much longer time in discussion than the time taken in the last workshop. - The selected elements were specific. - But some points of the agreement were not clear enough, which needs further discussion actually.
	8. How easy or difficult was it to reach a final decision as a group?
BD	It was not very difficult.
BP1	Very easy.
BP2	It was not that difficult.
BP3	Very easy.
BP4	Not difficult.
BF	I didn't make them decide 100%.
BO	Compared with last workshop, it requires more effort to make a final decision.
	8+. Why? Examples?
BD	We discussed and shared the ideas. The conclusions came out. We exercised common sense over the issues. There was not anyone to say, "no, okay I don't agree with this". When someone expressed their views, the others tried to give more comments. It enhanced the discussion.
BP1	Because it was easy going. We were conscious of time.
BP2	Because we had more or less the same vision and ideas. The only difficult was to discuss, for instance, the use of certain materials, the use of certain aspects that other people had not considered. At the end, it was a good exercise.
BP3	Everybody considered that to have a glass or Perspex building is something transparent, so that we could include the external environment with all the trees but have it enclosed. Everybody thought it was the best option for the site.
BP4	Because there were not very big conflicts between the participants, most of them agreed with some general ideas.
BF	I did not say, "Oh you must decide whether it's one or the other". I was happy to see them express the positive and negative sides of ideas. I was happy to see a range of ideas. Some ideas were discounted, because people raised the positives of the others. So it made their ideas better than some of the others. People explored two or three ideas rather than sticking with one view. So, we could reach the good and easy decisions.
BO	Again, the open discussion stimulated much more conflicts that took time to sort out.
	9. Do you feel that all of your opinions were treated fairly?
BD	Yes.
BP1	Yes, everyone's was. I hope opinions were treated fairly. It was a nice and open discussion.
BP2	Yes.
BP3	Yes.
BP4	Maybe, yeah.
	9. Do you feel that all of their opinions were treated fairly?
BF	Yes.
BO	I think so.
	9+. (Yes) How were your opinions treated fairly? Examples? **(No) How were your opinions treated unfairly? Examples?**
BD	I mentioned one of my ideas about the site itself. It was not the topic they asked about. But they still mentioned this idea and discussed it.
BP1	Nobody said anything discouraging. Nobody tried to lead the discussion which was paramount in a group like this. Nothing was said explicitly yes or no - everything was kept as a possibility, so nobody felt that their ideas were discarded.

BP2	My opinions were fairly criticised and fairly taken into account; for instance, when talking about the materials of building, the people, who had different opinions from me, also agreed that the sustainability of material was important.
BP3	I was given the opportunity to express whenever I want. And my opinions were written down, which was a good point.
BP4	Because it was in the beginning stage with the general ideas, we did not go through the details. We did not have problems in discussing.
	9+. (Yes) How were their opinions treated fairly? Examples? **(No) How were their opinions treated unfairly? Examples?**
BF	We had plenty of discussion, and some had the same ideas. And they had plenty of opportunities to express disagreements if they had them.
BO	As long as there was a person speaking, all the others would listen to this person, and the facilitator also reviewed every comment one by one.

Source: Summarised by the author

Table 5-29 shows all the interviewees' and observer's suggestions for developing workshop B. For instance, inviting more public, setting up the workshop earlier, having someone to make a final decision, giving each participant the chance to speak, respectively, more aids in visualising the design, and so on.

Table 5-29 Interview summaries of Group B, questions 10 to 11

	10. Is there a way the process of the workshop could be changed to enable the group to develop a finalised design?
BD	There can be more public to give you more details of the topic and exhibition. Do not organise things just before the event starts.
BP1	I suggest that someone else makes a final design, and then gives the design to a focus group to essentially discuss it and give feedback. I am not sure about the feasibility of expecting the public to design a building. By putting all the weight on to the public, you may miss valuable opinions from the experts. And the design won't be democratic. The great ideas that would benefit everybody are lost because they don't benefit a minority who feel their voice must always be democratically represented. For instance, in a design consultation on some new social housing in East London, there was a lady who said: "Well I like my flat. I don't want to move. I want a flat that's exactly the same as my flat." Opposing this, there were about 300 residents who wanted to move; nobody wanted to stay in the old flat. However, as the organiser decided to have a democratic consultation, everybody who was involved could be considered as a stakeholder. And this lady nearly completely derailed the whole project, because instead of saying: "Well, okay, we'll build one flat for her", the other residents refused to push on the design for the whole project overall. So that great idea or great vision can be lost. I suggest asking the public to give feedback to the thing that was pre-designed. In the workshop, the public can modify and discuss with the experts. It is difficult for the public to design something from a blank paper.
BP2	There were too many elements in the workshop. The booklet with images and the other sites' options were not useful. They influenced the way you look at things. We do not need these two elements.
BP3	I don't really know about that.
BP4	The workshop can be run a few more times with a better and clearer process. It can be useful if we can meet the other participants next time.
BF	The group size was quite small. If it had been a bit bigger, we could have had more in-depth discussion. If we have more genuine members from the public, this sort of consultation would

	be much more valuable.
	The time was okay. If it had been longer I would have struggled to fill that time. And people are busy - not many of them can join in a workshop that is longer than two hours. And if the time is shorter, there would be no value to the discussion. I think two hours is a good time.
BO	- For each idea or comment, the facilitator should ask the participants one by one, so they have an equal chance to speak, even though some are non-native English speakers. - If the discussion goes into specific building details, it becomes difficult for the laymen to imagine the physical appearance, and it may block the making of agreement. Need more aids in visualisation.
	11. Do you have any suggestions or comments about the workshop?
BD	It is my first time of joining the participation workshop. The time was enough, but if you want more details, the time needs to be longer.
BP1	Offering tea or coffee would be good, and preparing the factual information and answers for the asked questions in the workshop. Also, decide how open the discussion and ideas should be. The more specific information is given, the more a confined feeling is created in the workshop. Regarding the exhibition, the participants may want to know what you would imagine a dinosaur exhibit to look like or what would you want it to look like if it could be anything.
BP2	The site visiting could involve more communication between the participants. More focus on one site and less influencing objects. It might help someone. But for me, it would be more helpful if I did not have anything to start with; just an idea to build on.
BP3	The workshop should start earlier, and be a little more organised.
BP4	The beginning needs more discipline to save time. Prepare everything before the workshop starts. Time management.
BF	Not really. It was a good discussion with many different ideas that had not been discussed in the first workshop. By modifying the workshop and restricting the site, we got so many different and valuable ideas.
BO	- Setting up the workshop much earlier next time. Bigger and brighter room would allow more sheets and comments. - Although it was a study, setting up more confirmed information beforehand could guide the discussion to a more specific result. - Give longer time to the workshop. Two hours is a bit short to digest such a complex project. - For the productivity of ideas, I recommend inviting more participants to the workshop.

Source: Summarised by the author

5.4 Summary

This chapter has firstly introduced the Feathered Dinosaurs' exhibition at the Nottingham Natural History Museum in Wollaton Hall. To enlarge the exhibition space in Wollaton Hall, there was a concept of a new building that could be used for the dinosaurs' exhibitions and other future exhibitions. Based on this concept, a small participation workshop has been set up, aiming to discuss a few topics of this new extension: sites, building size, colours, materials, shape and forms, and the overall atmosphere. The general steps of workshop are silent site tour, generating options, making judgments, and structuring ideas. Apart from offering the

questionnaires and interviews to the participants, the study also acquired the questionnaire and report from the facilitator and observer.

To test the performance of IRSs and CM in "loose design" and "constrained design", there are two phases of workshop. The *Phase One* was "loose design" that allowed the participants in Group A to discuss many different topics. Section 5.2 has described the procedure and results of *Phase One* (Group A). From the filled-in idea rating sheets and written text, it can be seen that the participants observed each site in detail. During the discussion, the facilitator guided the participants to judge each option and comment. However, not every participant was vocal in the discussion part, for instance, AP1 and AP3. From the questionnaires and interviews, it shows that although each participant applied different conflict resolutions, they mainly preferred reaching "consensus". Finally, Group A made a conclusion that site 5 was one suitable option; and the colour should be harmony with the colour of Wollaton Hall.

Section 5.3 has described the procedure and results in *Phase Two* (Group B) that only focused on three topics: material, building shape and size. Meanwhile, regarding the conclusion of Group A, Group B was set up with a few preconditions; for example, the design should use *site 5*, and the colour *yellow*. During the "constrained design", except that the museum curator was temporarily absent for reasons that could not be avoided, all the other participants in Group B generated many more ideas with clearer phrases than those generated by Group A. Furthermore, the clear phrases of ideas supported the participants to concentrate on the topics, rather than rushing to a final agreement.

In the following chapter 6, the two groups' sets of data collected from the questionnaires and interviews are compared. Also the results derived from a review of the formal literature are discussed.

Chapter 6. Analysis and Discussion

To analyse the collected data in chapter 5, section 6.1 first explains the different setting of *Phases One* (Group A) and *Two* (Group B). By comparing the questionnaires and interviews, section 6.1 also indicates the main conflict resolutions used in the two groups, and why these are selected. To answer the main research question: "*How do IRSs (Idea Rating Sheets) and CM (Consensus Mapping) perform in conflict-resolving and collaborative consensus-making in the participatory architecture design of the museum?*" section 6.2 answers eight sub-questions from different angles, in order to paint a broad picture of the performance of IRSs and CM in Groups A and B. Furthermore, section 6.3 discusses the advantages and disadvantages of the participatory architecture design through IRSs and CM, and it offers detailed suggestions for organising and studying the participatory workshop. The last section makes a summary for this chapter.

6.1 Comparison of Phases One and Two

6.1.1 Design of Phases One and Two

Tunstall (2006, pp. 25-26) summarises four general design actions: 1) Analysis. It means dividing the whole project into several sub-topics or elements, for instance, function, appearance, cost, image and so on. Each topic or element is analysed and discussed in detail. 2) Synthesis. It assembles all the parts into a whole project, which is defined as a design proposal. 3) Appraisal. It offers the chance to the related parties to critically assess the design proposal regarding the previous analysis. 4) Feedback. It decides either the proposal is accepted or needs further modifications. And it leads to the new route of analysis, synthesis, appraisal and more precise feedback. This general design process refines the design proposal towards a more

practicable, economical or attractive project. Therefore, by referring to the four design actions, the workshop of this thesis was mainly the actions "analysis" and "synthesis", not the other two actions. The participants in the workshop were asked to give options and judgments regarding the given design elements, and they also needed to synthesise the options and judgments into an agreement if possible. Tunstall (2006, p. 26) also admits that the projects in the real world, may not have a linear process line from start, analysis, synthesis, appraisal, feedback, finish, but a circular process that is "repeatedly rotating through each stage". However, this circular process would not have too much impact on this workshop, because the final conclusion or agreement of this workshop would not be given to any parties for the "appraisal" or "feedback". Most of the assessments were given by the participants in the workshop, which was recognised as the actions "analysis" and "synthesis".

To record the performance of participants in different settings, the whole study centred on two phases that had different constraints: *Phase One* (Group A) – loose design, and *Phase Two* (Group B) – constrained design. At the beginning of *Phase One*, Group A had a wide range of six discussion topics: potential sites, building size, colours, materials, shape and form, and the desired atmosphere. However, these topics were not exposed to the participants until they finished the silent site tour. Therefore, the participants undertook independent consideration and observation of the sites. The notes made by Group A participants also proved that they had plenty of ideas regarding each topic. However, the idea sheets and comments they made were general and broad (see *Figures 5-9* to *5-14*; Appendix 5-5). During the "structuring ideas" step, the participants undertook careful comparison of the sites,

but the participants of Group A did not experience many conflicts during the verbal discussion. Meanwhile, they all considered that the choice of site was more important than the decisions relating to other topics. Finally, Group A reached a few conclusions that showed a clearer direction of the next step – *Phase Two* (see *Table 5-5*).

Based on the conclusion of *Phase One* (Group A) (see *Table 5-5*), a few preconditions were given in *Phase Two* (Group B): the design should use site 5, and use the materials that belong to the yellow colour system; and the design should have an eco-friendly, interesting, and welcoming atmosphere. The preconditions seem a bit ambiguous and broad, but they leave the space of imagination and creation to the participants. By setting these preconditions, there were three design topics left in *Phase Two* - materials, building size and shape, and these three topics were given to the participants before they visited site 5. Therefore, the participants mainly focused on the three given topics. During the site visit, the Group B participants took far fewer notes than those taken in Group A. A possible reason was the slightly rainy weather that prevented the writing on paper; it does not mean that the Group B participants had fewer ideas than the Group A participants. In the "generating options" step, the Group B participants created more detailed IRSs and comments than Group A participants did. Before the step of "structuring ideas", the facilitator marked each idea sheet with capital "B" (building size), "M" (materials), and "S" (building shape) in order to classify the ideas (see *Figures 5-17* to *5-34*; Appendix 5-10). In the discussion stage, the participants mainly talked about the given topics and the related aspects, which increased the possibility of conflicts. The disclosed

conflicts also supported the mutual understanding of the participants, which benefited collaborative consensus-making. Finally, Group B in *Phase Two* reached more detailed conclusions regarding materials, building size and shapes (see *Table 5-18*).

In both *Phases One* and *Two*, the same facilitator from Groups A and B was present. The facilitator was asked to allow the participants to discuss freely, rather than asking the participants to express opinions one by one. Although this setting could not guarantee equal speaking chances to every participant, this setting could test the performance of IRSs (Idea Rating Sheets) and CM (Consensus Mapping) in offering equal speaking chances. The results of both groups proved that IRSs support equal speaking chances to a certain degree; while CM needs more facilitation offering the equal speaking chances to every participant. Groups A and B also have the same number of non-native English speakers: AP1, AP3, BD and BP4. Although all of them seemed a bit quiet in the step of "structuring ideas", they created many useful IRSs in the beginning.

Generally, it can be argued that IRSs and CM are good at revealing the potential conflicts. Although *Phase One* generated fewer conflicts than was the case of *Phase Two*, it should not deny the ability of IRSs and CM in revealing the conflicts. The setting of design topics and preconditions is one reason why *Phase One* generated fewer conflicts than *Phase Two* did. *Phase One* – "loose design" had six topics but no preconditions or constraints, while *Phase Two* – "constrained design" had three topics and three preconditions. Compared with Group A, these pre-set conditions in

Group B actually confined the discussion in a more pointed way that generated more conflicts.

6.1.2 Questionnaires and Interviews

The differences between Groups A and B could also be seen from the questionnaires. *Table 6-1* shows the compiled score results of Group A regarding different conflict resolutions (also see *Tables 5-6* to *5-10*). For example, in the first sub-table of *Table 6-1*, the far left column represents the persons who *applied* the conflict resolution, for instance, AD (Group A designer), AS (Group A staff) and AP1 (Group A public No.1). The top row represents the groups who *received* the conflict resolution, for example, AD (Group A designer), AS (Group A staff) and AP (Group A public). For instance, AD applied "2.00" "force" to AS, and "3.33" "force" to AP (marked by the red square). AS applied "2.00" "force" both to AD and AP (marked by the blue square). Here, the score of each conflict resolution does not mean the participants would use the highest resolution first, then the second highest resolution. The score of each conflict resolution just represents the probability of using the resolution to sort out the conflicts.

Table 6-1 Cross comparison of score results, Group A

Force Style – Average Score			
	AD	AS	AP
AD	-	2.00	3.33
AS	2.00	-	2.00
AP1	1.67	1.67	1.33
AP2	2.67	2.33	2.33
AP3	2.33	2.00	2.33

Avoidance Style – Average Score			
	AD	AS	AP
AD	-	2.00	2.33
AS	1.67	-	2.33
AP1	2.67	2.00	2.33
AP2	1.00	1.00	1.00
AP3	1.67	2.00	1.67

Accommodation Style – Average Score			
	AD	AS	AP
AD	-	2.67	2.33
AS	2.00	-	2.67
AP1	2.33	2.00	2.33
AP2	1.67	2.00	2.33
AP3	2.33	2.33	3.00

Compromise Style – Average Score			
	AD	AS	AP
AD	-	3.33	3.67
AS	3.00	-	2.67
AP1	4.00	3.67	4.00
AP2	3.00	3.00	3.00
AP3	2.67	2.67	2.67

Consensus Style – Average Score			
	AD	AS	AP
AD	-	3.67	3.33
AS	3.67	-	4.00
AP1	3.67	2.67	4.00
AP2	4.00	4.00	3.67
AP3	4.00	3.33	4.00

Source: Compiled by the author

Generally, in the sub-table "Force Style", AD gave the highest pressure to the public, 3.33, while the other participants tended not to achieve their own ideas by using "force". On the other hand, AP1 always gave the lowest "force" to others. In the sub-table "Avoidance Style", AP1 was the participant who had relatively high scores, particularly when facing AD, 2.67. The high "force" and "avoidance" of AD and AP1 indicate a tension between them. AP2 did not worry about having conflicts with the other participants, 1.00. Two possible reasons are: 1) AP2 is a native English speaker; or 2) AP2 has much more experience of participating in building design. In the sub-table "Accommodation Style", all the participants cared more about the public's needs, while they cared less about the needs of the AD and AS. In the sub-table "Compromise Style", most of the participants showed relatively high scores in finding a middle-ground position that was mutually accepted, except for AP3 who only

tended to look for a fifty-fifty compromise. However, this does not mean that AP3 played a passive role in the workshop; in fact, AP3 and all the other participants showed the highest score in the sub-table "Consensus Style".

Table 6-2 shows the rearranged score results of Group B regarding different conflict resolutions (also see *Tables 5-19* to *5-23*). The column of BS was omitted because the museum staff member temporarily could not join in the workshop due to his work in the museum. Generally, in the sub-table "Force Style", BP2 showed a somewhat forceful manner of pursuing his own goals, while the other participants showed much less "force". In the sub-table "Avoidance Style", BP2 did not avoid the encounters with other participants with the lowest score, 1.00. On the other hand, BP1 showed a high score of "avoidance" when facing the public, 3.00. In the sub-table "Accommodation Style", BP1 normally sacrificed his own needs while meeting the public interests, and BP4 also tended to accommodate his own needs to satisfy the public interests. In the sub-tables "Compromise Style" and "Consensus Style", every participant showed high preference for achieving mutual gains of both sides, except for BP1 who preferred "consensus" (4.00) much more than "compromise" (2.00).

Table 6-2 Cross comparison of score results, Group B

Force Style – Average Score		
	BD	BP
BD	-	1.67
BP1	2.33	1.67
BP2	2.67	3.00
BP3	2.33	2.33
BP4	1.67	1.67

Avoidance Style – Average Score		
	BD	BP
BD	-	2.00
BP1	2.00	3.00

BP2	1.00	1.00
BP3	1.00	1.00
BP4	2.33	2.33

Accommodation Style – Average Score		
	BD	BP
BD	-	2.33
BP1	2.67	3.33
BP2	2.33	2.67
BP3	1.67	1.67
BP4	2.67	2.67

Compromise Style – Average Score		
	BD	BP
BD	-	3.00
BP1	2.00	3.33
BP2	3.00	3.00
BP3	4.00	4.00
BP4	3.00	3.33

Consensus Style – Average Score		
	BD	BP
BD	-	3.33
BP1	4.00	3.33
BP2	3.33	4.00
BP3	4.00	4.00
BP4	4.00	4.00

Source: Compiled by the author

Tables 6-1 and *6-2* represent the participants' subjective assessment of themselves.

If we sum and average the scores of every sub-table, we can get a series of

subjective scores of the whole group's conflict resolution; for example, the average

score of "force" in Group A means the average of all the participants' score in "force".

Furthermore, the facilitators and observers of Group A (AF and AO) and Group B (BF

and BO) also filled out their own questionnaires, which represented the objective

assessments (see *Tables 5-11, 5-12, 5-24* and *5-25*). If we sum and average the scores

of AF and AO regarding each conflict resolution, we can get a series of objective

scores of the whole group's conflict resolution. *Figure 6-1* compares the subjective

and objective average scores regarding each conflict resolution. For instance, in the

sub-table "Force Style" of *Table 6-1*, we can calculate that the sum of all the scores is

27.99[34]. So the average score of "Force Style" is 2.15[35] (Bold and Italic font, marked by the red square in *Figure 6-1*). "2.15" here means the PA (the participants in Group A) tended not to use "force". The same calculation can be applied to the sum of AF and AO (also named as "FOA" below). For example, if we sum the scores of "force" in *Tables 5-11* and *5-12*, the result is 4.33[36]. Then the average score is 2.17[37] (Italic font, marked by the red square in *Figure 6-1*). The calculation of Group A can be applied to the PB (the participants in Group B). For instance, in the sub-table "Avoidance Style" of *Table 6-2*, we can calculate that the sum of all the scores is 15.66[38]. Therefore, the average score of "Avoidance Style" is 1.74[39] (Regular font, marked by the yellow square in *Figure 6-1*). The same calculation can be applied to the sum of BF and BO (also named as "FOB" below). For example, if we sum the scores of "avoidance" in *Tables 5-24* and *5-25*, the result is 3.33[40]. Then the average score is 1.67[41] (Bold font, marked by the yellow square in *Figure 6-1*).

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[34] 27.99 = (2.00 + 3.33) + (2.00 + 2.00) + (1.67 + 1.67 + 1.33) + (2.67 + 2.33 + 2.33) + (2.33 + 2.00 + 2.33)
[35] 2.15 = 27.99 / 13
[36] 4.33 = 2.00 + 2.33
[37] 2.17 = 4.33 / 2
[38] 15.66 = 2.00 + (2.00 + 3.00) + (1.00 + 1.00) + (1.00 + 1.00) + (2.33 + 2.33)
[39] 1.74 = 15.66 / 9
[40] 3.33 = 1.33 + 2.00
[41] 1.67 = 3.33 / 2
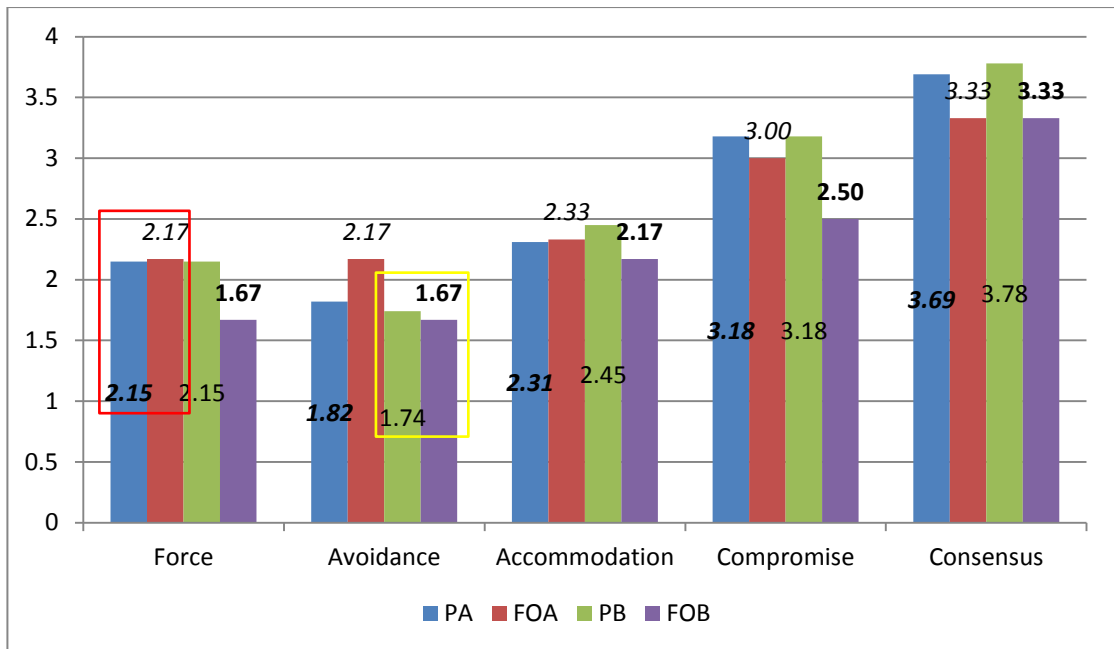
Figure 6-1 Average scores of Groups A and B
Note: PA = the average score of all participants in Group A; FOA = the average score of the facilitator and observer in Group A; PB = the average score of all participants in Group B; FOB = the average score of the facilitator and observer in Group B.
Source: Compiled by the author

In *Figure 6-1*, firstly, we can argue that "consensus" was the main conflict resolution used in the workshop. No matter what scores are given by the participants, facilitator or observer, both groups A and B have an overall increasing score from the left column of "force" to the right column of "consensus". The whole atmosphere of the workshop is sharing the facts and finding a solution that serves every participant's goals. Meanwhile, the score of "avoidance" is always the lowest score in groups A and B, while the score of "force" is either a bit higher or the same as "avoidance". This means the whole workshop did not worry too much about confrontation with others; rather than avoiding, the participants were firm in pursuing their own goals.

The second finding in *Figure 6-1* is that the participants in Group B (PB) preferred "consensus" slightly more than those in Group A (PA). By comparing the bars of PA

(blue bar) and PB (green bar), it can be seen that the participants in both groups had very similar scores. To be more specific, both groups had the same scores of "force" (2.15) and "compromise" (3.18), while Group B got slightly lower "avoidance" (1.74), and slightly higher "accommodation" (2.45) and "consensus" (3.78). By comparing the bar of FOA (dark red bar) and FOB (purple bar), it shows that the facilitators and observers of Groups A and B had slightly different perspectives. The FOB thought that Group B had much lower scores of "force" (1.67), "avoidance" (1.67), "accommodation" (2.17) and "compromise" (2.50). Due to this decrease, even though Group B attained the same score of "consensus" (3.33) as Group A, the "consensus" of Group B actually occupies a larger proportion among all the conflict resolutions. Therefore, it can be argued that the participants of Group B applied more "consensus" than those of Group A.

By compiling the answers from the interviews, we can also identify the difference between Groups A and B – the participants of Group B preferred verbal discussion more than the participants of Group A. When being asked "Which part of the workshop did you like the most?", the participants, facilitator and observer of Group B all enjoyed the discussion part, which was a good chance for them to know each other's opinions (see all the answers to question 2 in *Table 5-24*). Meanwhile, they also mentioned the site visits and the IRSs. However, in Group A, just AD, AP3 and AF mentioned the discussion, while AS, AP1, AP2 and AO enjoyed the site visiting more than the discussion (see all the answers to question 2 in *Table 5-13*).

To sum up, *Phases One* and *Two* mostly ran according to the workshop plan. The use of IRSs and CM supported both Groups A and B to have an open discussion of the

design, and to reach a final conclusion that was accepted by the participants. Most of the participants were satisfied with the workshop; the reasons for this are 1) the participants had the same information and chances to express their opinions; 2) they had a certain influence on decision-making (Hoffman and Maier, 1961); 3) the different opinions were treated fairly and democratically (Hoffman, 1959); and 4) this self-realisation led to satisfaction (Mulder, 1959). There was also a different setting between the two groups: Group A (*Phase One*) was "loose design" that had more freedom while Group B (*Phase Two*) was "constrained design" that had more constraints. As a result, Group B stimulated more conflicts than Group A did. However, the revealed conflicts did not block the discussion in Group B, but supported the sharing and understanding of the ideas of each participant, and the results of the questionnaire also reflect that the participants in Group B used more "consensus" than those in Group A. In the following sections 6.2 and 6.3, there are a few more detailed discussions about the results and settings of the workshop.

6.2 Performance of Idea Rating Sheets and Consensus Mapping

The main research question of this study is "How do IRSs (Idea Rating Sheets) and CM (Consensus Mapping) perform in conflict-resolving and collaborative consensus-making in the participatory architecture design of the museum?" Due to the complexities involved in answering this main research question, *Table 4-1* in section 4.1.1 divided the main question into eight sub-research questions. The following paragraphs answer the eight sub-research questions from different angles, which broadly describe the IRSs and the CM used in the two groups.

6.2.1 Options

The first sub-question is: *in generating options, are the participants affected by others*? The answer is: no participants were affected by others in generating options. The reasons are: 1) the participants in Groups A and B all observed the sites independently; and 2) there was no communication before the participants filled in the IRSs, so they did not know the other participants' ideas. AP2 wrote that he was able to write ideas independently rather than being affected by others (see question 2 in *Table 5-13*); 3) as there was no communication when the participants were filling out the IRSs. The participants mostly concentrated on filling in the sheets, so they did not know what ideas had already been written down by other participants. That is why there are a few similar idea sheets had been created in Group A; for instance, AF claimed that a few participants had spent the time in writing the similar ideas (see question 10 in *Table 5-16*). However, there were not many similar idea sheets found in Group B, even though Group B had fewer design topics than Group A. A possible reason for this could be that Group A had six sites visits, while Group B only had one site visit. The physical and visual impressions encouraged the participants of Group A to mainly focus on the choosing of sites. The participants of Group A wrote down neutral comments about each site, rather than giving a final site choice; while the participants of Group B wrote more specific ideas regarding materials, building size and shapes.

There can be a possible impact on the participants – the short time they had available to fill out the sheets. In just 15 minutes, a few participants may feel pressured by realising that the other participants had filled out the sheets faster. For example, AP1 replied in the interview that she could not finish her writing due to the

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limited time available (see question 3+ in *Table 5-14*). With the exception of this issue, we can summarise that *the participants generate the options independently* by using the IRSs.

The second sub-question is: *do the IRSs increase the quantity and quality of options*? The answer is: IRSs benefit the options generation both in quantity and quality. For the quantity, Group A only collected 6 idea sheets (see *Figures 5-9 to 5-14*), while Group B collected 18 idea sheets from the participants (see *Figures 5-17 to 5-34*). However, this does not mean that IRSs have an uncertain impact on generating options. In Group A, each sheet was full of ideas and concerns. AF said that she "could have explained clearly that each participant must write only one idea on a sheet" (see question 2+ in *Table 5-13*). Therefore, if the participants in Group A could have spread their ideas out on different sheets, it can be argued that the participants in Group A could have generated more ideas than was the case. Compared with Group A, Group B participants wrote down more specific options regarding each design topic.

For the quality of options, the IRSs offered enough time and space to the participants in both Groups A and B. Each participant had finished at least one IRS with a clear description. By judging each idea respectively, it can be seen that each idea on the sheets was explained with reasonable thinking, even though Group A participants put several ideas on one sheet. The written options showed clearer and more thoughtful meaning than the verbal speech did; and the written options were easier to manage in the judgment-making and discussion stages.

An interesting outcome was found between the IRSs of both groups. On the one hand, the options listed by the Group B participants were creative, colourful and specific, even though Group B had more limitations and fewer topics. BP1, BF and BO all agreed that the filling in and rating of IRSs was a productive process (see question 2 in *Table 5-24*). On the other hand, the options created by the Group A participants were based on the actual conditions and regulations, although Group A offered much more freedom to the participants. The reasons could be: 1) the participants were aware of in which stage they should think logically, and in which stage they should think creatively; and 2) the IRSs offered equal chance of expression to every participant; then every participant can decide what options to select.

Because the study only tested the IRSs in the options generating step, it is difficult to state that the IRSs are better at broadening the options than the other participation methods are, for instance, brainstorming. However, it is clear that the anonymity of IRSs encourages the participants to express their ideas without being personally identified or affected by the others [see Bouchard (1972), Gustafson et al. (1973), and Hill (1982)]. In both Groups A and B, every participant needed to write down the ID as the author of each sheet, but it is only for the purpose of later analysis. No specific names were recorded. The advantage is, as mentioned by AP2, that the anonymous ideas on board were purely just the thoughts (see question 5+ in *Table 5-14*); no particular person was picked out. Also, BP1 said that the IRSs are a "reassuring structure" that kept the anonymity of participants (see question 3+ in *Table 5-25*). So the participants have more freedom and less fear to write down their options. In addition, in a typical brainstorming session, the participants get the direct

impacts from the others during the verbal communication. There is no criticism in brainstorming; however, the participants may hesitate to express the ideas that differ from those of the other participants'.

6.2.2 Judgments

The third sub-question is: *in generating judgments, are the participants affected by others*? The answer is: the participants were affected by others in generating judgments, but the impact was not too much. Firstly, there was no communication when the participants were making judgments. Everyone had an equal chance to judge the others' idea sheets. Secondly, the participants just wrote down the comments even without ID, which protected the participants from being identified. However, due to the limited room space, the participants stood very close to each other. When participant A was writing a comment on participant B's idea sheet, it is possible that A's action was seen by B. Therefore, the participants were not totally independent during the judgment-making. However, as there was no ID recorded on the judgment slips, the fear of being identified was low. Furthermore, all the participants met each other for the first time; so the impact of any relationships was also negligible. In general, the participants felt relaxed in judgment-making. As BP1 said, the comments slip was an anonymous and safe way to get feedback (see question 4+ in *Table 5-25*).

The fourth sub-question is: *do the IRSs increase the quantity and quality of judgments*? The answer is: IRSs benefit the judgment-making both in quantity and quality. For the quantity of judgments, 10 comments slips were found in the IRSs of Group A, and 12 comments slips found in Group B. This is not a big difference. For

the dots, none of the participants inserted dots on the IRSs of Group A. One possible

reason for this was that the participants were not clear about how to fill out the IRSs.

Instead of writing down one idea on one sheet, most of the participants wrote all the

advantages and disadvantages of each site on one sheet. Therefore, it was difficult

for other participants to dot the idea sheet for a specific level of agreement. In

Group B, due to the fewer discussion topics and clearer explanations, the

participants had produced short and clear IRSs. It was then easy for the other

participants to dot the level of agreement. Based on the formula[42] given by Diceman

(2015), *Table 6-3* calculates the dots and scores of each idea sheet in Group B. Of the

18 idea sheets produced by Group B participants, five sheets (BD-1, BP2-3, BP3-1,

BP4-1 and BP4-3) got the highest score, 10.00, while one sheet (BP2-4) got the

lowest score, 1.25.

Table 6-3 Scores of IRSs in Group B

Schemes	A: Strong agreement	B: Agreement	C: Neutral	D: Disagreement	E: Strong disagreement	F: Confusion	Score
BD-1	1	0	0	0	0	1	10.00
BD-2	2	2	0	0	0	0	7.50
BD-3	3	1	0	0	0	0	8.75
BP1-1	1	1	0	0	0	0	7.50
BP1-2	1	2	0	0	0	0	6.67
BP1-3	1	1	0	1	0	0	3.33
BP1-4	0	3	0	0	0	1	5.00
BP2-1	1	2	0	1	0	0	3.75
BP2-2	0	2	0	0	0	0	5.00
BP2-3	4	0	0	0	0	0	10.00
BP2-4	0	3	0	0	1	0	1.25
BP3-1	4	0	0	0	0	0	10.00
BP3-2	0	1	1	0	0	0	2.50
BP3-3	1	2	1	0	0	0	5.00
BP4-1	2	0	0	0	0	1	10.00
BP4-2	3	1	0	0	0	0	8.75
BP4-3	2	0	0	0	0	0	10.00
BP4-4	3	1	0	0	0	0	8.75

Source: Compiled by the author

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[42] AGREEMENT SCORE = (Strong Agreement Dots * 10 + Agreement Dots * 5 + Disagreement Dots * -5 + Strong Disagreement Dots * -10) / (Strong Agreement Dots + Agreement Dots + Neutral Dots + Disagreement Dots + Strong Disagreement Dots)

Table 6-3 also reveals a few interesting points in Group B: firstly, both the native English speakers and non-native English speakers had at least one scheme that achieved the highest score, except BP1. This proves that IRSs guarantee that all the participants were able to submit a basic expression of ideas, no matter what language skills they had. Secondly, the scheme with the higher score is not necessarily better than the scheme with the lower score. For example, BD-1 (10.00) seems higher than BP4-4 (8.75). However, the details indicate that BD-1 only scored one "Strong agreement" and one "Confusion", while BP4-4 scored three "Strong agreement" and one "Agreement". It is easy to see that, in fact, BP4-4 got more dots and higher agreement than BD-1 did. Thirdly, the scheme (BP2-4) with the lowest score did not necessarily mean that most of the participants were against it. In fact, BP2-4 was one of the two schemes that scored three "Agreement", and only one "Strong disagreement". In *Figure 5-27*, scheme BP2-4 recommended the use of wood or other sustainable material, while BP3 commented a glass building with bright and open space. Based on common sense, the idea of scheme BP2-4 – predominantly to use sustainable materials – is not so bad that it deserves the lowest score. In fact, three participants agreed with the idea of BP2-4. Fourthly, the scheme (BD-1) with the highest score did not necessarily mean that most of the participants agreed with it. BD-1 only got 1 "Strong agreement" and 1 "Confusion". There is no way to find out why the other two participants did not dot the level of agreement; it could be that they were not interested in scheme BD-1, or that they both missed or skipped the scheme. By looking at *Figure 5-17*, there was one comment made by BP3 which is that the limited budget cannot afford the idea of scheme BD-1. As long as there was a disagreement, it can be argued that the agreement level of scheme BD-1 was

not really equal to the highest score, 10.00. To sum up, the dotting of IRSs only shows the general level of agreement of each sheet: no actual decisions can be taken based on the scores. To really achieve consensus, more judgments and discussions should be made by the participants in the later steps (Zhang et al., 2015a).

For the quality of judgments, it can be seen that all the 12 comments slips in Group B were in-depth judgments; Group A had four slips that were superficial judgments, while the rest six slips were in-depth judgments. The "superficial judgments" represents the opinions that have simple and direct meaning; the "superficial judgments" does not offer enough information to support the collaborative consensus-making in the later steps (Zhang et al., 2015a). In Group A, the four superficial judgments were: "Good consideration & thinking about the new extension" (see AP3's comments in *Figure 5-9*), "Agree with first main part" (see AD's comments in *Figure 5-12*), "Agree with points about sites 2 & 6" (see AD's comments in *Figure 5-14*), and "Agree with site 2" (see AP1's comments in *Figure 5-14*). These four comments slips did not give specific meaning to the design, but merely an agreement. The possible reason could be the same – that the Group A participants wrote unclear IRSs that increased the difficulty in making specific judgments regarding the specific ideas. As a result, instead of ignoring the whole idea sheet, many participants only commented on which part of writing they agreed or disagreed with. The ambiguous idea sheets negatively impacted on the judgment-making. Different from "superficial judgments", "in-depth judgments" indicates more reasoning and thoughts of the participants, which are useful in the collaborative consensus-making (Zhang et al., 2015a), for instance, "Put smaller

dinosaurs in the trees, & sculpt the bigger ones. So they interact with the trees" (see BP1 comments in *Figure 5-19*); "Just the wood material could be a more transparent material" (see BP4's comments in *Figure 5-21*); "It is a really nice idea – but a pavilion-like structure can preserve the specimens from weather conditions" (see BD's comments in *Figure 5-23*), and "Can the exhibits be exposed to the environment? Security?" (see BP3's comments in *Figure 5-23*). The judgments made in Group B are more specific, and such in-depth judgments benefit the achieving of consensus.

Based on the analysis above, it can be argued that the IRSs are good at encouraging and organising the judgments. The quantity and quality of judgments depend on the quality of written idea sheets. If the written idea is clear, then it is easy for other participants to respond with in-depth judgments. Also, regarding the options and judgments made by Groups A and B, it proves that architecture design is a complex issue that combines craft and art [see Scruton (1979) and Arnold (2002)]. The participants mainly focused on the functional aspects, and partly focused on the visual aspects. Although Day and Parnell (2003) claimed that the professionals and laypeople had quite different knowledge and experience, in Groups A and B, it is difficult to say that the designers and museum staff only focused on the technical and visualisation aspects, while the public participants only focused on the functional aspects. In fact, both professionals and public looked at visual and function aspects together.

6.2.3 Group Works

The fifth sub-question is: *are the participants equal in the discussion*? The answer is: the participants were encouraged to speak freely, but they did not really have an

equal chance to speak. In both Groups A and B, the participants subjectively considered that they had expressed most of their ideas in the workshop (see all the answers to question 3 in *Tables 5-14* and *5-25*). Secondly, they also expressed most of their thoughts regarding the other's ideas (see all the answers to question 4 in *Tables 5-14* and *5-25*). One of the main reasons is "the facilitator opened up the questions to the participants" (see AP2's answer to question 3+ in *Table 5-14*). Then the participants explained the reasons for the ideas. Everyone fully judged the reasons (see AF's example in question 5+ in *Table 5-14*). Therefore, many participants answered that the open and democratic discussion allowed them to express the ideas. The chance of speaking is equal to everyone. There was not much use of consensus mapping (CM). Although the facilitator had learned the general process of using CM, the facilitator actually found that discussing ideas was more effective than drawing/ mapping ideas on the board. The reasons are: 1) the participants are not introduced to CM beforehand, so they are not familiar with of its use; 2) the time for workshops A and B was limited, while there were many idea rating sheets to complete. So the participants and facilitator chose oral discussion that is considered a natural skill.

From an objective view, the AF and AO thought most of the participants were not vocal in the workshop, and the BF and BO considered the BP1 and BP4 were a bit silent (see question 4 in *Tables 5-14* and *5-25*). Meanwhile, there were also dominant and quiet voices in the discussion. In Group A, the AO reported that AF seems to be the dominating voice (see question 3 in *Table 5-14*). The reasons for this were given as: 1) AF had to speak more to encourage the quiet participants in Group

A; and 2) AF had to rephrase the participants' ideas most of the time. In Group B, the BF thought the BP2 was the dominating voice, but just a little (see question 3 in *Table 5-25*); but BF also thought it was good to have talkative participants who can "encourage others to join in the conversation" (see question 3+ in *Table 5-25*). The issue of silent participants was pointed out by Bavelas et al. (1965), that the silent members would not increase output when the other members were not engaged in the discussion. The silent members need more support than merely encouragement, if a strong personality tries to dominate the discussion in the interacting group (Van de Ven and Delbecq, 1971). Therefore, the support from the facilitator is important to the silent participants.

Generally, the quiet voices in Groups A and B were the non-native English speakers, for instance, AP1, AP3, BD and BP4. As a kind of knowledge or skill, the language surely affects the speakers' performance and communication, even though the communication is open and democratic (Lawrence, 1981). As BD explained, she did not understand some of the conversation as a non-native English speaker, and this caused difficulties for her in participating (see question 4+ in *Table 5-25*). BO's report also proved this issue (see question 4+ in *Table 5-25*). The vocal participants were able to dominate the opportunities to speak because of their language abilities, while the other participants either kept silent or only spoke when asked to by the facilitator. Therefore, a few participants and the observer suggested that the facilitator should ask the participants one by one in order to make sure they all have an equal chance to speak, for example, AP1's answer to question 11 in *Table 5-16*, and BO's answer to question 10 in *Table 5-27*. At the same time, however, AP3, BD

and BP4 also claimed that they expressed most of their ideas, because they wrote down the ideas on the IRSs before the discussion. Therefore, quite a few of them believed the organiser could see their written texts, even though they did not mention it in the discussion. For instance, AP3 thought that everyone was able to see her explanation clearly (see question 5 in *Table 5-14*). Only AP1 said that she could not express all her ideas because of the limited time and her shyness (see questions 1 and 2+ in *Table 5-13*, and question 4+ in *Table 5-14*). Another reason for AP1's quietness was that she thought the researcher could see her disagreements from her written IRSs (see question 6 in *Table 5-15*).

A few participants were silent not because they did not have the chance of expressing their thoughts but because of their personal consideration and abilities. For instance, although disagreeing with some ideas, AP3 did not express her objections because she did not want to impede the workshop (see question 4+ in *Table 5-14*). Meanwhile, even the native English speakers did not express all their ideas. For instance, BP1 and BP2 explained that some of their opinions were being expressed by the other participants, so they did not have to express again (see questions 3+ and 5 in *Table 5-25*). The same thing happened to the non-native English speakers as well, for example, AP1 (see question 4 in *Table 5-14*). Furthermore, the participants also claimed that the IRSs were the backup for their concealed ideas or disagreements. One reason given in this regard for the non-verbal participants, as AO explained, is that some of the participants might think there is no need to express ideas that had already been written on the IRSs (see question 10 in *Table 5-16*), and BP1 assessed that the use of IRSs was just to supplement the

discussion. In the discussion, the participants had to wait for the appropriate time before speaking. However, even though some participants missed chances to speak, the IRSs offered equal chances of expression to them. By comparing this workshop with the other workshops that he had previously taken part in, BP1 thought this workshop was better at encouraging him to express ideas. Even though sometimes he chose to be silent as he did not want to derail the conversation, his interests had already been written down on the IRSs (see BP1's answer to question 3 in *Table 5-25*).

There is another interesting point found in the answers given by AS and BP2. When asked the question: "5+. What were the reasons you were able to express all of your reasons? Examples?", AS answered: "Open discussion. And being asked to contribute" (see AS's answer to question 5+ in *Table 5-14*). When asked the question: "4. Did you express all of your thoughts regarding the other members' ideas?", BP2 answered: "When asked to, yes" (see BP2's answer to question 4 in *Table 5-25*). Initially, these two answers may have been misunderstood if AS and BP2 had not had the chance to speak if they were not asked to. However, in fact, based on the observations of AS and BP2, they were the talkative native English speakers during the workshop discussion. They positively contributed their ideas rather than being asked to.

6.2.4 Conflicts and Interests

The sixth sub-question is: *do they prefer expressing in-depth reasons or superficial comments*? The answer is: almost all of the participants expressed more in-depth reasons than superficial comments. Firstly, most of the participants answered that they had explained almost of the reasons for their comments regarding their own or

others' ideas (see all the answers to questions 5 and 5+ in *Tables 5-14* and *5-25*). The participants all tried to discuss the issues in details. Only AP1 misunderstood the meaning of question 5+, so her answer did not match with the issue of reasons and comments; however, based on AP1's other answers, we know that she arrived late to the workshop, and missed the introduction to the project, so she was slightly less confident in the conversation. Secondly, from the facilitator's and observer's perspectives, the participants preferred expressing reasons. For instance, AF pointed out that no participant said "I like" or "I dislike". The participants gave facts and reasons after their comments (see question 5 in *Table 5-14*). BO also indicated that the participants did not say "I like it" or "I don't like it"; the participants mostly explained their thoughts and concerns (see question 5+ in *Table 5-25*). As long as more in-depth reasons are revealed, the collaborative consensus-achieving becomes easier [see Avery (1981), Floyd and Wooldridge (1992), and Zhang et al. (2015b)].

There are a few reasons why the participants expressed more reasons than comments: 1) the main reason was still that the participants were encouraged to express their opinions and thoughts in an open discussion (see AD, AS and AP3's answers to question 5+ in *Table 5-14*; see BP3, BP4 and BO's answers to question 5+ in *Table 5-25*); 2) and rather than staying at a superficial level, the IRSs pushed the discussion towards a detailed level. As AP2 said, the IRSs allowed everyone to see the others' ideas on the board; then the participants were able to share more ideas in greater depth (see question 3+ in *Table 5-14*); and 3) the participants were thoughtful. AP1 explained that her reason for being silent was that she was not sure about whether she was "doing it right or wrong" (see question 4 in *Table 5-14*); as AF

claimed, although the group was not talkative, they were thoughtful participants (see question 4+ in *Table 5-14*). BP4 also said that he was not sure about his thoughts. He needed to do further investigation before expressing the ideas (see question 4+ in *Table 5-25*). Even though BP1 was a bit silent in the discussion, BF thought BP1 gave interesting ideas regarding the exhibition (see question 4 in *Table 5-25*), which can be proved by BP1's notes and IRSs as well. Meanwhile, BP1 was talkative during the face-to-face interview, and he offered many specific examples regarding each interview question.

The seventh sub-question is: *do the participants prefer to remain in conflict, or do they prefer to move towards a consensus*? The answer is: the participants in both groups respected the conflicts or differences, and they tried to share the facts to arrive at a better decision. However, a few participants of Group A tended to avoid the conflicts while most participants of Group B tended to reveal the conflicts. During the discussion, most of the participants in Group A showed similar values and design preferences. For instance, AP1 and AS mentioned that the participants agreed with most of the ideas at the beginning of discussion (see questions 7+ and 8+ in *Table 5-15*). As a result, there was no obvious conflict or disagreement revealed in Group A (see AS, AP2, AF and AO's answers to question 6 in *Table 5-15*). The participants in Group B also had similar values and design preferences. BP2 and BP4 considered that the participants had similar ideas of design in the beginning (see questions 7+ and 8+ in *Table 5-26*). For instance, they all agreed on the use of natural components in the museum and on the need to protect the trees (see BP2's answers to question 7+ in *Table 5-26*).

Compared with Group A, the participants in Group B expressed slightly more disagreements with the other participants. For instance, BP1 explained how they combined different ideas into the agreement of building a temporary and reusable structure (see question 4 in *Table 5-25*). Also, BP2 mentioned that they had difficulty in agreeing on what materials to choose for the extension (see question 8+ in *Table 5-26*). However, Group B did not reveal many disagreements either; the participants had similar ideas of design (see BF's answer to question 2 in *Table 5-24*, BD's answers to question 6 in *Table 5-24*, and BP4's answer to question 8+ in *Table 5-24*).

In fact, although there were a few disagreements among the participants, but the participants did not express their disagreements due to personal considerations. For instance, AP1 did not speak out her disagreement with site 6 (see question 6 in *Table 5-15*), not only because she did not want to block the discussion, but also because the facilitator tried to summarize the ideas in a limited time (see question 6 and in *Table 5-15*). AP3 did not show her disagreement as she did not want to disrupt the smooth running of the workshop (see question 4+ in *Table 5-14*). However, none of the participants in Group B said that he or she hid their differing opinions. BP1 felt that the workshop was run in a relaxing and collaborative atmosphere (see question 5+ in *Table 5-25*). This is probably because Group B had longer to talk over different ideas of only three main design topics, and so the participants had less pressure to reach an agreement.

The participants in both Groups A and B tried to make a decision with fewer conflicts. In Group A, AO reported that most of the participants were a bit quiet while only a few participants were vocal (see question 8+ in *Table 5-15*). And AP2 claimed that in

the early stages, the participants explored the potential ideas rather than reaching a final decision. Therefore, there were few conflicts to be found. AP2 assumed that the conflicts or disagreements may increase when the discussion goes to detail (see question 8+ in *Table 5-15*), which was proved in Group B. As a further stage of design, the participants in Group B had fewer but clearer discussion topics; the participants actually expressed more disagreements with the design ideas. However, no matter what the results of the two groups were, the participants in both Groups A and Group B all preferred to state the advantages and disadvantages of each potential option, even looking forward to a better combination of different ideas (see BP1's answer to question 7+ in *Table 5-26*). Having equal chances to express ideas, and the similar impact on decision-making (Lovell, 1952), the participants in both groups actually cooperated with each other rather than competing; the participants in fact tried to transform the conflicts into consensus (McClelland, 1975).

6.2.5 Agreements

The eighth sub-question is: *does the agreement include all the ideas*? The answer is: the final conclusions in the two groups were not a single agreement but the list that included most of the ideas and concerns. Due to the limited time and information, the participants in both Groups A and B did not really achieve a final agreement of the design; but they all agreed with the idea list made in the workshop (see all the answers to the question 7 in *Tables 5-15* and *5-26*). Again, as consensus mapping was not used in the discussion, the ideas were shown in a list rather than on a map. In Group A, the participants mainly talked about the choices of sites and materials. Since they needed more conditions and regulations to choose the best option, AF just wrote down all the preferred sites and materials that could be discussed next

time (see *Table 5-5*). Therefore, every participant of Group A could find his or her contribution in this idea list. Despite Group B drew up a similar idea list at the end, Group B explored more options of materials, building size, and building shape (see *Table 5-18*). The participants analysed the positive and passive sides of every idea; and they encouraged constructive criticism (see BF's answer to question 6 in *Table 5-26*).

It was assumed that if there are several continual workshops for the discussion of design, the participants will be able to reach certain agreements that response to most of the concerns. Not every participant has the correct ideas in the beginning; and the mutual gains are not necessary to cover the original ideas, but should look for the internal reasons of the ideas. As AP2 explained, they could not decide what materials to use due to the lack of information available. They could discuss more details of the materials, constraints and budget in the next meeting (see question 7+ in *Table 5-15*), which supports the transferring of design issues into certain agreements [see Day and Parnell (2003), and Schönwandt (2013)].

To support the mutual gains, all the opinions should be treated fairly. In both Groups A and B, all the participants, facilitators and observers claimed that the participants' opinions were treated fairly (see all the answers to question 9 in *Tables 5-15* and *5-26*). Further, the participants summarised the features of being treated fairly: 1) the participants were allowed to write down the ideas (see AD and AP3's answers to question 9+ in *Table 5-15*); 2) the facilitator read out every idea respectively (see AP1 and AF's answers to question 9+ in *Table 5-15*; see BD's answer to question 9+ in *Table 5-26*); 3) the participants were allowed to voice their opinions (see AS, AP2 and

AF's answers to question 9+ in *Table 5-15*; see BD's answer to question 8+ in *Table 5-26*; see BP3 and BF's answers to question 9+ in *Table 5-26*); 4) the participants were respected and listened to (see AP2's answer to question 9+ in *Table 5-15*; see BP1, BP2 and BO's answers to question 9+ in *Table 5-26*); and 5) the facilitator gave "equal attention" to every opinion (see AO's answer to question 9+ in *Table 5-15*; see BP3 and BO's answers to question 9+ in *Table 5-26*).

6.2.6 Conclusion of Research Questions

Based on the analysis in this section, it could be argued that the performance of IRSs and CM in both Groups A and B are generally positive and beneficial for the conflict-resolving and collaborative consensus-making processes. In more detail, 1) IRSs give every participant the equal chance to independently write down the options. Although there were a few quiet participants, IRSs strongly encourage the quiet participants to write ideas. 2) IRSs benefit the options generation both in quantity and quality. To increase this benefit of IRSs, the facilitator should make sure the participants write only one option on one sheet. 3) IRSs give every participant the equal chance to independently write down the judgments regarding the options. However, due to the limited space in the room, the participants' action of writing comments was visible to the others, which may impact the independence of making judgments. 4) IRSs benefit the judgment-making both in quantity and quality. Also, the clearer the options were on the idea sheet, the easier it was for the other participants to make judgments of the options. 5) In the structuring ideas step, the participants were encouraged to speak freely, but because the facilitator did not ask the participants to speak one by one, the participants did not really have equal chances to speak due to a few reasons. By showing the participants' original options

in the very beginning, IRSs positively encourage the explanation and discussion of these original options, but IRSs could not guarantee that every participant has the equal chance to speak. 6) Almost all of the participants preferred to express in-depth reasons than superficial comments. In the beginning, IRSs had already recorded many comments, which pushed the discussion toward a further level. 7) The participants in both groups respected the conflicts or differences, and they tried to share the facts to reach a better decision. A few participants of Group A tended to avoid the conflicts while most participants of Group B tended to reveal the conflicts. Regarding this research question, the impact of IRSs in transferring conflicts to consensus was only limited; the participants' personal features had more influence in the discussion. 8) The final conclusions of the two groups were mainly based on the IRSs and the verbal discussion. Each conclusion was not a confirmed agreement of design, but a list that included most of the ideas and concerns.

6.3 Discussion of the Participatory Architecture Design through IRSs and CM and the Data Collection Methods

6.3.1 Discussion of the Participatory Architecture Design through IRSs and CM

Except for the performance of IRSs and CM in both Groups A and B, the analysis also figures out the other features of the workshop. First of all, the workshop was a good practice for public participation in architecture design. In this participatory workshop, rather than being a hegemonic organisation, the museum was more like a communication hub that allowed the designers, museum staff and local residents to share ideas of the museum design. The museum curator played the role of an assistant who catalysed the self-discovery of all the other participants (Witcomb,

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2007). The workshop not only produced creative and practical suggestions for the design, but also enhanced the relationship between the museum and communities [see Hooper-Greenhill (1994) and Simon (2010)]. The designers, museum staff and local residents all enjoyed the communication with different knowledge background people in the workshop (see AD, AS, AP2's answers to question 1 in *Table 5-13*; see BP2 and BP3's answers to questions 1 and 2 in *Table 5-24*). The public participants also contributed the different "angles" that the designer did not see (see BD's answer to questions 1 and 2 in *Table 5-24*). In *Tables 5-4* and *5-18*, the final conclusion of Groups A and B proved that the decision made by a crowd is smarter than the one made by a single person (Surowiecki, 2005).

In the workshop, due to the different areas and levels of knowledge and skills, the participants in both groups inevitably produced opposite ideas (Lawrence, 1981). Although the staff and designers had more professional knowledge of exhibition and design, it does not mean the staff and designers achieved their ideas by using the "power" defined by Brown (1983). As the observer and author observed, the knowledge of every participant was respected as the "expertness" that was the base of power to influence the decision-making; no "carrot" or "stick" was used in the workshop (Kaplan, 1964, pp. 15-16). Probable reasons are that the time allocated for the workshop was not long enough, and the participants did not know each other well, which left little domain and scope to apply power and influence. If the same participants could have taken part in a few more workshops together, it could be assumed that the participants would know better when and how to use power to achieve the targets. Most of the conflicts or different opinions were "interest

conflicts" that mainly focused on the substantive and psychological ideas, while there were few conflicts of data, structural, value, or relationship (Moore, 1986, p. 27). Meanwhile, even though the participants had opposing viewpoints, they all had the opportunity to express the ideas. Based on the ideas written on the IRSs, the equal chance of expression explored more potential alternatives (see AP2's answer to question 11 in *Table 5-16*).

AF and AD also thought it was because of the small size of the group that the discussion was less vocal than it could have been (see AF's answer to question 1 in *Table 5-13*; see AD's answers to question 8+ in *Table 5-15*). Therefore, a few interviewees considered the size of workshop should be larger to increase the communication of ideas and concerns (see AF's answer to question 11 in *Table 5-16*; see BD and BF's answers to question 10 in *Table 5-27*; see BO's answers to question 11 in *Table 5-27*). The participants also suggested the invitation of more related stakeholders, for instance, clients, architects and disabled people (see AP2's answer to question 2+ in *Table 5-13*; see AD's answer to question 10 in *Table 5-16*). Meanwhile, BP4 recommended more workshops with better processes and larger groups of participants (see question 10 in *Table 5-27*). These positive answers from the interview reflect that the local residents have enthusiasm in the co-design events and the collaboration can enhance the relationship and communication between the museum and local communities (Silverman, 2010).

Second, both Groups A and B were organised well, except that the workshop in Group B started a bit late. In question 1 in *Table 5-13*, AP2, AP3 and AF all agreed that the workshop ran smoothly with a prepared structure. AF even believed this

well-organised workshop could get the same achievement with other participants (see question 10 in *Table 5-16*). In question 1 in *Table 5-24*, BP1, BP2 and BP3 also thought the workshop was enjoyable and useful. However, there are a few flaws that should be avoided in a future study instance, AP1 and AO suggested that the discussion topics should be handed out before the workshop to take place so the participants could generate more specific ideas regarding the topics (see question 10 in *Table 5-16*). More important, offering more related heritage information and building regulations could significantly improve the discussion of design, particularly the choice of sites (see AP2 and AP3's answers to question 10 in *Table 5-16*). Compared with Group A, one of the reasons that Group B had more detailed opinions was that Group B had a few preconditions, although a few preconditions were ambiguous, for example, eco-friendly, interesting and welcoming. Group B, the participants suggested that the organiser could offer more information about the exhibition, budget, and condition of dinosaur items (see BP1's answer to question 7 in *Table 5-26*; see BP3's answer to question 7+ in *Table 5-26*; see BO's answer to question 11 in *Table 5-27*).

Third, two hours is a good time for this workshop, but the time allocated in a real project could be longer. A few participants in Group A claimed that the workshop was a bit rushed to finish in two hours (see AP1 AO's answers to question 1 in *Table 5-13*). Due to an unexpected traffic issue, Group B started late by about 15 minutes. Therefore, many participants suggested that, next time, the organiser set up the workshop before they arrived (see BD's answer to question 2+ and 10 in *Tables 5-24* and *5-27*; BP3, BP4 and BO's answers to question 11 in *Table 5-27*). In a practical

project, there is no doubt that a longer time for discussion can increase the ideas production. However, it also should be noted that, even with longer time, the participants might still have many ideas that could not be expressed (see AP3 and BD's answers to question 11 in *Tables 5-16* and *5-27*). BF also said that two hours was a good time for busy participants in this workshop (see question 10 in *Table 5-27*). Therefore, based on the discussion above, it could be argued that two hours is enough for a study of participation workshop, and a bit more time is needed for the running of a practical workshop.

Fourth, the site visiting was an enjoyable part of the workshop. Many of the participants in Group A preferred walking around the six sites to observe the physical conditions. Even during the discussion, the main point of contention was the choice of sites (see AS, AP1, AP2, AP3 and AO's answers to question 2 in *Table 5-13*). Compared with Group A, the participants in Group B mentioned the site visit a bit less. Only BD and BO said the site visit was interesting (see question 2 in *Table 5-24*). The possible reasons for this are: 1) there was only one site in Group B, which seems less interesting than the six sites in Group A; 2) the weather was sunny during the Group A site tour, while the weather was a bit rainy during the Group B site tour; and 3) the discussion in Group B was more open and well organised than that of Group A. So Group B participants had more impressions of the verbal discussion, which can be seen from BD, BP1, BP2 and BF's answers to question 1 in *Table 5-24*; it also can be seen from all the answers to question 2 in *Table 5-24*.

In Group B, only BP2 did not enjoy the site visit (see question 2+ in *Table 5-24*), while he preferred more communication during the site visit (see question 11 in *Table 5-*

27). However, the author did not agree with this suggestion, because 1) not everyone focuses on the same perspective of the site. The verbal communication affects their independent observation; and 2) the talkative participants may transfer their ideas to the quiet participants in the early stage, which negatively reduces the idea generation. In many real projects, Day and Parnell (2003) successfully applied the silent site tour to the public participation design workshops. During these workshops, the participants had a great deal of freedom to walk around the site and record the information they were concerned with, but they were not allowed to communicate. They only shared the impressions and information after they came back from the sites. Therefore, either in the academic studies or in the real projects, the author suggests that no communication takes place during site visits.

Fifth, design ideas are difficult to express in writing. Architecture design is a complex process that consists of analysing problems and creating solutions and the analysis and creation keeps repeating along the whole design process. It is difficult to write very specific ideas at the beginning of the workshop (see BP3's answer to question 2+ in *Table 5-24*). Even the designer in Group A found it a bit hard to write down an idea without discussion (see AD's answer to question 2+ in *Table 5-13*). In the real project, Day and Parnell (2003) asked the participants to describe the purely physical substances. The description should be "just unemotive, undisputed, physical observation", for instance, "a wall isn't 'about to fall down', it is 'leaning 15 degrees'" (Day and Parnell, 2003, p. 57). This physical description does not negatively affect the independent thinking of each participant, because no subjective judgments are allowed. In the workshop of this thesis, due to the limited time available, it is difficult

to insert the "physical description" step into the "generating options"; but the workshop had allocated 15 minutes for the "generating options" topic, which should have been enough for one to think of related ideas.

The workshop needs more models and tools to support the participants in creating and expressing ideas. In both Groups A and B, the workshop offered the images booklets of the chosen dinosaur specimens and models. There was a short introduction of the images and models, but the introduction did not seem to be detailed or long enough for the participants to understand the images or use the models. Although a few participants studied the images for a while, they still asked for more related information in order to make judgments (see AP1's answer to question 2+ in *Table 5-13*; see AO's answer to question 11 in *Table 5-16*; see BP2's answer to question 10 in *Table 5-27*). Another area where support is required is that the laypeople need help in visualising the design (see BO's answer to question 10 in *Table 5-27*). Normally, a designer has the professional training in imagining the design ideas, while a layperson lacks the skill of visualising the design ideas. As a common language to all participants, the visualisation increases the effectiveness of co-design [see Rogers (2007) and Al-Kodmany (1999)]. By analysing a participatory planning workshop of Chicago's Pilsen neighbourhood, Al-Kodmany (1999) concludes that the GIS (Geographic Information System) is good at providing abundant information and identifying problems in the early planning and design stages; after GIS, the artist's hand drawings and notes are good at figuring out the constraints and opportunities of the community in the early planning and design stages as well; in

the advanced or final stage, the computer-aided photo-manipulation becomes the appropriate tool that offers more realistic and precise representation of design ideas.

Sixth, the facilitator played an important role in the workshop. Participation extends the democracy to the local communities (Brabham, 2009). Holding a neutral position, the facilitator should offer a democratic workshop to the participants, which improves the conflict-resolving and collaborative consensus-making processes [see Brown (1983), Lawrence (1987), and Kressel and Pruitt (1989)]. To a certain degree, the quality of final result relies on the style and skill of facilitator (Hart et al., 1985). In this study, even though the facilitator had predefined tasks and a neutral attitude toward the participants, it is understandable that the facilitator had some influences on processing the workshop: 1) the facilitator encouraged the participants to express ideas (see AP2's answer to question 3+ in *Table 5-14*; see BP1's answer to question 4+ in *Table 5-25*; see BF's answer to question 8+ in *Table 5-26*); 2) the facilitator rephrased well the participants' ideas when writing the conclusion of the workshop, although the facilitator added his own thoughts into the discussion a few times (see AO's answer to question 3+ in *Table 5-14*; see AP1's answer to question 7+ in *Table 5-15*); 3), and the facilitator controlled the time of each step well (see AP3's answer to question 5+ in *Table 5-14*).

In order to test the performance of IRSs and CM in offering the participants equal chance of expressing their ideas and comments, the facilitator was told not to explicitly ask the individuals to speak up. As a result, a few participants, particularly the non-native English speakers, were silent in the discussion (see BO's answer to question 2+ in Table *5-24*). This shows the IRSs do not guarantee that each

participant has an equal speaking chance; it also indicates that the discussion in CM needs more control from the facilitator. To ensure a discussion is open and productive, the facilitator should not only be neutral and democratic, but also ask the participants respectively for their feedback (see AO's answer to question 11 in *Table 5-16*). Meanwhile, the facilitator should offer a few strategies to the difficult participants. The "difficult participants" here represents the persons who are over-critical, refusing to cooperate, obstructing the negotiation, showing off knowledge, dominating discussions, and so on. Accordingly, Warner (2001) suggests a few strategies that can be applied by the facilitator: 1) the facilitator should regain his or her mental balance before reacting to the difficult participants; 2) the facilitator helps the difficult participants to regain their mental balance; and 3) the facilitator helps the difficult participants to stop bargaining but exploring consensus.

The participants and facilitator need more introduction to and training in to the use of CM. In a general CM process, the participants should map the ideas first; and then combine their own map with those of others. However, this was not achieved due to the volume and complexity of the idea sheets. Even though the facilitator was experienced, it proved difficult to manage the different ideas in a short time. This workshop is actually a small workshop compared with other participatory workshops in social affairs. There could be tens of ideas created in the conversation. An experienced facilitator may be able to map out all these ideas, but this is not guaranteed, and not every facilitator is experienced or well trained. Therefore, to assist the structuring idea stage, a digital tool of consensus/ideas mapping may: 1) benefit the visualisation of idea relationships; 2) save the time in reviewing,

transferring and relocating different ideas among the participants and facilitator, which also protects the anonymity of participants; and 3) allow the sharing of the discussion results on social media for a wider community participation if possible. All these suggestions should be grounded in the principles and process of CM, and improves CM to be more practical.

Seventh, the roles of the designers, museum curator and members of the public were equal or similar. Although the designers and museum curator traditionally represented the professional knowledge (Harrison, 1993), they did not dominate the conversation in the workshop. The knowledge of public participants was also respected and valued by the others (Macdonald, 2007a). In particular, the museum curator, who only joined Group A, gave lots of freedom to the designer and the public participants. The reasons why the curator seems less powerful could be: 1) the curator was only half involved due to his duty in the museum sometimes (see AS's answer to question 2+ *Table 5-13*; see AO's answer to question 4+ in *Table 5-14*); and 2) the curator was not sure of the usefulness of this participatory workshop (see AS's answer to question 10 *Table 5-16*). Bennett (1998) argued that the institutions create the notion of community and culture, rather than actually representing the communities and cultures [also see Witcomb (2007)]. In this workshop, although there were not much data showed the dominance of the curator, it is still too early to argue that Bennett (1998)'s opinion is wrong. The impact of power and knowledge takes longer time to be detected. Therefore, more similar workshops should be organised, in order to observe the power and conflict resolutions used by different groups.

The experts' knowledge should not be denied or disvalued, although we try to emphasise the laypeople's knowledge. Scruton (1979) philosophically explicates that architecture is a combination of art and craft; and it combines the technology (professional) and daily experience (laypeople/user) (also see the thesis pp. 44-46). An imbalance in either side may cause problems. For instance, in the late 1960s and 1970s, the community activists reduced the experts' authority to being just technical advisers, while the architects became the assistants on the residents' behalf. Despite the fact that the users had been given respect and authority on the project, this imbalance of power actually blocked the transformation of experts' knowledge and skills. Architects failed to offer a new spatial vision due to the lack of power (Crawford, 1991). In this light, Till (2005, p. 28) contended that "This indicates that transformative participation cannot be achieved through the disavowal of expert knowledge". Participatory projects encourage laypeople or amateurs to contribute ideas from different perspectives; however, architecture design still demands much specialist knowledge and skills of creativity, perception, imagination, and so on, which is the experts' domain or "black box" (Banham, 1996). These forms of knowledge and skills cannot be learned in one day; long-term training is involved. An architect, no doubt, has been educated and trained in an academic system for many years, from an undergraduate to a certificated architect, both the hands and the brain.

In the field of architectural design, the architect's brain is different from that of the layperson. Based on the remarkable findings of neuroscience and the history of

architecture, Harry Francis Mallgrave (2010)[43] has classified the brains of a several famous architects and thinkers into different categories: *humanist* brain (Alberti, Vitruvius and Leonardo), *enlightened* brain (Perrault, Laugier and Le Roy), *sensational* brain (Burke, Price and Knight), *transcendental* brain (Kant and Schopenhauer), *animate* brain (Schinkel, Bötticher and Semper), *empathetic* brain (Vischer, Wölfflin and Göller), *neurological* brain (Hayek, Hebb and Neutra), and the *phenomenal* brain (Merleau-Ponty, Rasmussen and Pallasmaa). Mallgrave (2010) also mentions microneurologist Semir Zeki's map of the brain's visual processing; art historian John Onians's research in the biological foundation of artistic perception; and architect John P. Eberhard's Academy of Neuroscience for Architecture (ANFA). Mallgrave (2010) argues that the more training one architect undertakes, the more complexity can be added to the synaptic maps of brain, and then better design can be achieved.

The domain or foundation of architecture is a "black box", but this does not mean that the layperson cannot contribute ideas in the design process [also see Banham (1996) and Till (2005, p. 28)]. The more professional knowledge an architect has, the more connected the architect is with the underpinning knowledge base. Subsequently, what the architect thinks might be far from what the users actually need. The architect's brain has its own cycle of reaction, which needs new inputs to help him or her to "think outside of the box" (Mallgrave, 2010, p. 173). Therefore, this raises the need for participation that brings the possible solutions or suggestions

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[43] Harry Francis Mallgrave has enjoyed a career as an architect, scholar, translator, and editor, and is presently a Distinguished Professor of Architectural History and Theory at Illinois Institute of Technology. He won the prestigious Alice Davis Hitchcock Award for his intellectual biography *Gottfried Semper: Architect of the Nineteenth Century*.

to the discussion table for everyone to share and contribute to. In a fair process, this assumes that every participant, either architect or layperson, is able to discuss the ideas, and learn the knowledge from the participation.

In a practical project, the workshop needs more different professionals to participate. For the research purpose, this study had only organised a limited number of participants to discuss a few selected topics, which was slightly different from a real design workshop. In AS's perspective, this study only focused on the general concept of the museum and architecture design; the workshop needs more professional support to sort out the other complex problem – that is, logistics management (see question 10 in *Table 5-16*). BP1 also emphasised that the public participants lacked the abilities to come up with a final design, and the overvalued opinions of laypeople could not represent a democratic discussion. BP1 also gave an example to explain how a single female participant negatively blocked the whole project by insisting on her personal wish. Therefore, BP1 suggested that the organisers ask the laypeople to give comments on the pre-designed schemes, rather than asking the laypeople to design something from a blank sheet (see question 10 in *Table 5-27*). However, this kind of consultation was criticised by Broadbent (1981, p. 321), because the participants were used as "tools" to achieve what the architects wanted. Although laypeople are not skilled at dealing with large-scale or complex design issues [see Alexander (1975) and Becker (1990)], one should not deny the value of laypeople's knowledge (Day and Parnell, 2003). Instead of abandoning the public participants, the professional should actually support and guide them in the early stages of co-design [see Winnicott (1953), and Thorpe and Gamman (2011)]. More important,

finding a "mechanism" that is good at collecting and structuring the opinions of laypeople and professionals (Jenkins and Forsyth, 2010, p. 166) is recommended. Otherwise, the weakness of the participatory workshop will be that it is only able to resolve the easy problems, while the more difficult and complex problems are left unresolved (Margerum, 2011).

6.3.2 Discussion of the Data Collection Methods

To sum up, the study successfully explored a few features of IRSs and CM. The multiple research methods used in the workshop provided different perspectives of Groups A and B. Firstly, in answering the questionnaires and interviews, the participants showed they were aware of their own behaviours; it described how the workshop was run generally. Furthermore, the facilitator and observer provided another angle of the workshop that was a bit more objective and critical than that of the participants. Meanwhile, there are a few points that need more discussion.

First, in researching the participation performance, running a case study or running a workshop should depend on the actual situation of projects. As discussed in section 4.1.2, running a workshop in this study was appropriate to test the performance of the specific methods – IRSs and CM; otherwise, it was difficult to find a case that was using IRSs and CM to design a museum. However, setting up a workshop is also a time- and money-consuming research method. To organise the workshop, the author had to contact the local residents and designers who were willing to take part on a voluntary basis, chose the proper date and time that was good for everyone, confirm the attendance at the last minute, and so on. What is more, a large amount of money was spent on buying materials and paying the participants. The difficulty of

setting up a workshop also explains why there are not many public participatory projects in the museum and architecture design field. Also the effectiveness and productivity of participation are conditional (French, 1964). Therefore, to maximise the benefits, most of the designers and organisations still prefer the normal design process, or having a simple consultation with members of the public, rather than risking much money and time in a participatory workshop that may produce undesirable results (Thorpe and Gamman, 2011).

During the workshop, it became clear that the uncertainty of what a workshop entails affects the participants' involvement to a certain degree. In Group A, most of the participants believed that the Nottingham Natural History Museum actually planned to build an extension for the Feathered Dinosaurs' exhibition. To avoid the expected impacts on local communities, AS (the museum curator) had to explain that this project was still a conceptual plan that needs more public contribution of ideas. However, probably because of this explanation, AP1 doubted that the workshop was really a proper one; therefore, sometimes AP1 chose to keep her disagreement unexposed in order to process the dialogue, and be polite to the others (see question 6 in *Table 5-15*). Group B had the similar situation. A few participants tended to think this project would happen soon, so BF found it difficult to explain that the project was just a conceptual idea (see question 2+ in *Table 5-24*). It can be assumed that the uncertainty of the workshop affected the participants' involvement in the workshop, for instance, thinking and expressing of ideas, keeping quiet or avoiding conflicts. In future studies, there should be more clearly defined information provided in the workshop so that the participants know what the

museum or organisation expects from the workshop (see BP1's answer to question 11 in *Table 5-27*).

Second, the mixed research methods worked well in analysing the workshop from different angles. The "mixed" here not only means the source of data were the participants, facilitator and observer, but also means the collection of data was based on the written text, questionnaires and interviews; all the data rendered a clear overall picture of the workshop [see Zeisel (2006), Creswell (2009) and Oliver (2010)]. The participants' text and drawings firstly show the general performance of the participants in generating ideas; then the questionnaires measured the conflict resolutions used by each participants, and their anonymity also reduced the disingenuous answers (Nauta and Kluwer, 2004); and the interviews recovered more details of the workshop and each participant's experience (Crouch and McKenzie, 2006). Each role in the workshop – participants, facilitator and observer – had the unique and specific experience of the workshop. The participants knew clearly about their own behaviour and feelings, but the participants cannot see the workshop as a whole; while the facilitator saw the individual participants and the overall group, he nevertheless had biases due to his own direct involvement in the workshop; and the observer played a more neutral position to judge the workshop, participants and facilitator; so by pooling all the information, we can get a balanced database of the workshop (Nauta and Kluwer, 2004). For instance, AF said that the group was quiet due to the small size; and everyone's ideas were fairly represented. However, AF did not say who was quiet and why (see question 1 in *Table 5-13*). As a supplement, AO

pointed out that the female participants were not vocal; and the AF was somewhat dominant in the conversation (see question 1 in *Table 5-13*).

The interviewers in this research need more practice of interviewing. Foddy (1993) indicates that the memory traces fade as time passes. De Dreu et al. (2001) also point out the difficulty of measuring conflict resolutions, particularly "avoidance". Therefore, to avoid the participants forgetting what happened in the workshop, the author organised three interviewers to run the interviews at the same time. However, by looking at the interview records, we see that two interviewers forgot to pose a few questions to the participants. For example, AP2 had not been asked questions 4 and 4+ in *Table 5-14*; BF had not been asked questions 4+ and 5+ in *Table 5-25*; and BD had not been asked question 7+ in *Table 5-26*. Because BF and BD were interviewed by the same person, there were two of the three interviewers made errors. To increase the quality of the interview, Webster and Sell (2007) suggest that researchers should train the assistants to: 1) identify key terms and body language; 2) practice and check the interview periodically; and 3) identify the feeling of participation, for instance, satisfaction. However, in general, these omitted questions do not affect too much the overview of the whole workshop that is positive and productive by using the IRSs and CM.

Third, there should be a balance between recording the participants' personal information and ensuring their anonymity. The anonymity can encourage and protect the participants to express the ideas without the fear of being identified (Nauta and Kluwer, 2004). However, it also can be seen that the different personal features had certain impacts on the participation results: 1) the nervous person and

the relaxed person have different tolerances for different opinions. For example, AP1 considered the different opinions as conflicts a few times in questions 3+, 4 and 5+ in *Table 5-14*, and question 6 in *Table 5-15*; but AP2 thought there was not actual conflict but just different opinions (see question 6 in *Table 5-15*). 2) The genders, knowledge and experience of participants had an impact on communication. For instance, AO claimed that the female participants were quite quiet in the workshop (see question 1 in *Table 5-13*); AD believed that his architectural background enabled him to express the related concerns (see question 3+ in *Table 5-14*); BP3 also mentioned her age and experience that were the source of ideas and comments (see question 4+ in *Table 5-25*). However, in this study, in order to retain the anonymity of the participants, only the gender and general age of participants were recognised by the author.

The performance of participation depends on the participants' ethnicity, culture, knowledge and the project itself [see Alfasi (2003), Lane (2003), Abram and Cowell (2004), Beebeejaun (2006), and Nance and Ortolano (2007)]. To quantitatively analyse the personal information, there should be more participants and groups. This study only organised two independent groups with 10 participants. Group A had two female public participants, and Group B had one female designer and one senior lady; two groups both represented the well-mixed participation workshop. A remarkable amount of quantitative data had been compiled (see the data in *Tables 5-6* to *5-12*, *Tables 5-19* to *5-25*, *Tables 6-1 to 6-2*, and *Figure 6-1*). Based on these data, *Figures 6-2* to *6-4* conclude the average scores of conflict resolutions used by the females and males in Group A. Except the facilitator, AP1 and AP3 were the only

female participants in Group A. To calculate the average score of conflict resolutions in Group A (see the original data in *Table 6-1*), for instance, applying "force" to the designer (AD), the sum of the females' score is 4.00[44]. So the average score is 2.00[45] (marked by the red square in *Figure 6-2*). The sum of the males' score is 4.67[46], so the average score is 2.34[47] (marked by the red square in *Figure 6-2*). Therefore, it means that the female participants used lower "force" with the designer than the male participants did in Group A. The same calculation has been applied to the other conflict resolutions. From *Figures 6-2* to *6-4*, except for "force", the female participants (blue bar) achieved higher than or similar scores to the other conflict resolutions than the male participants (dark red bar) did in Group A. The same calculation formula is used in *Figures 6-3* and *6-4* to represent the average score of female and male participants when facing the staff and public in Group A. The figures of female participants (blue bar) and male participants (dark red bar) in *Figures 6-3* and *6-4* all follow a similar pattern to those in *Figure 6-2*. Generally, the male applied higher "force" to the staff and public than the female did, while the female applied the other conflict resolutions slightly more than the male did. There are two exceptions where the female achieved lower scores of "accommodation" and "consensus" than the male did.

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[44] 4.00 = 1.67 + 2.33
[45] 2.00 = 4.00 / 2
[46] 4.67 = 2.00 + 2.67
[47] 2.34 = 4.67 / 2
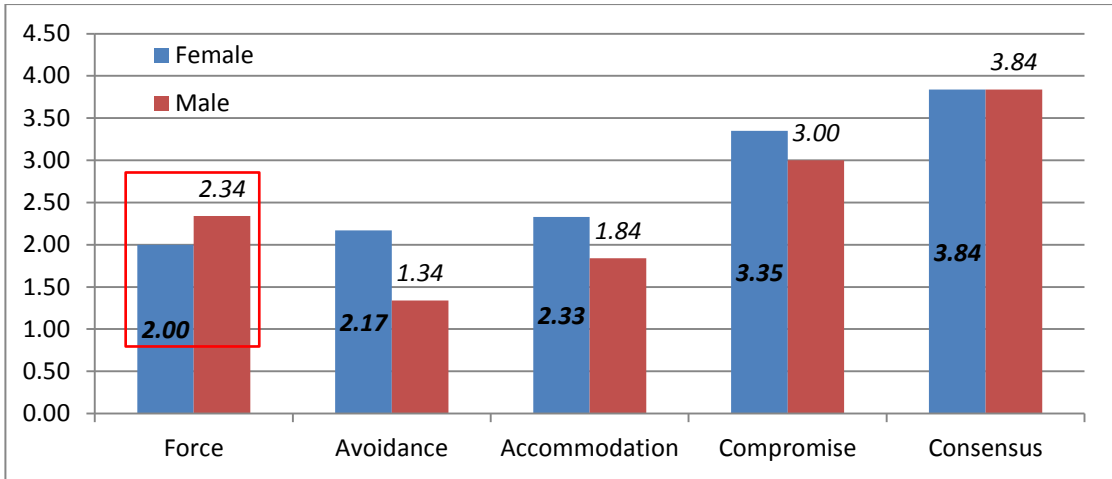
Figure 6-2 The average scores of female and male participants when having conflicts with the designer in Group A
Source: Compiled by the author
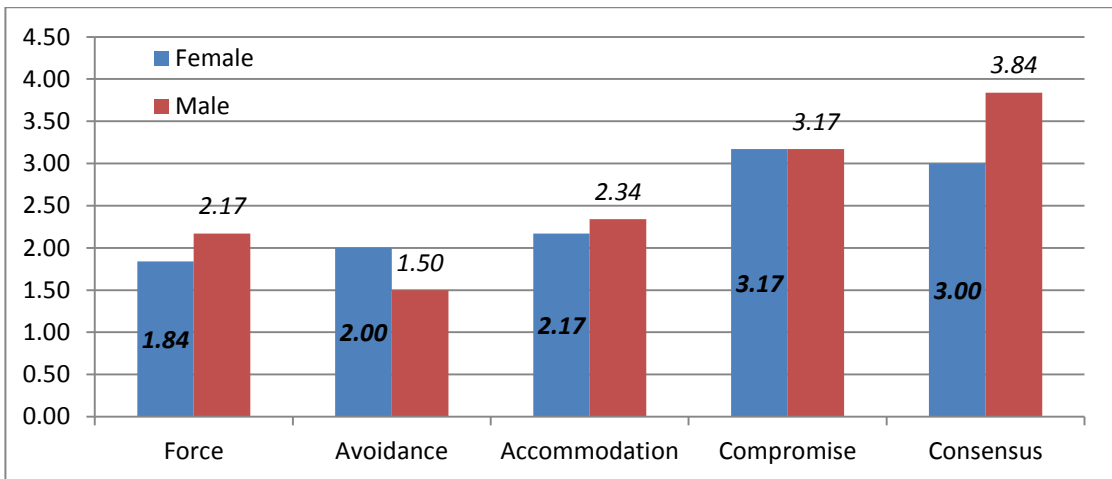
Figure 6-3 The average scores of female and male participants when having conflicts with the staff in Group A
Source: Compiled by the author
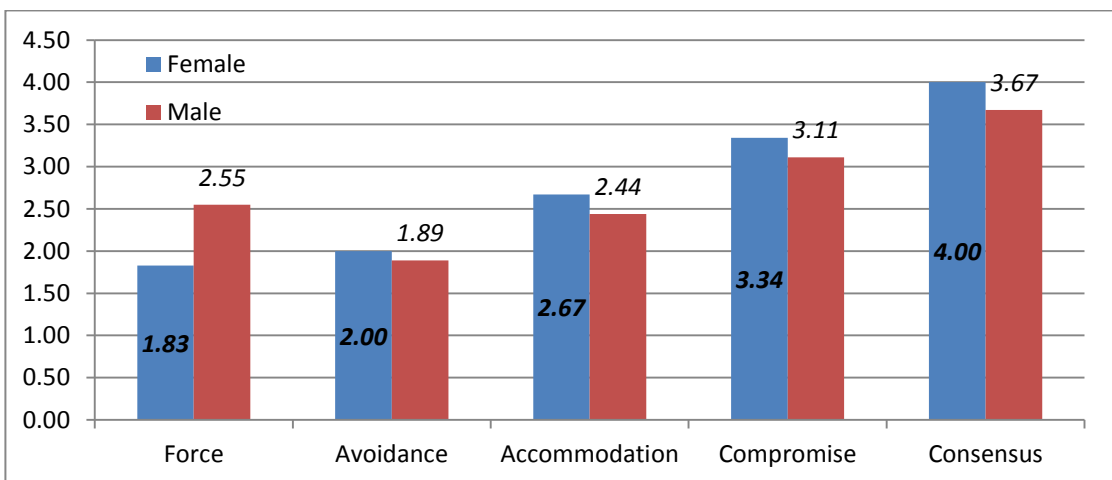
Figure 6-4 The average scores of female and male participants when having conflicts with the public in Group A
Source: Compiled by the author

Because there was no staff participant in Group B, *Figures 6-5* and *6-6* just show the average score of female participants (blue bar) and male participants (dark red bar) when facing the designer and the public in Group B. The calculation formula is the same as the one used in *Figure 6-2*, and the original data are based on the information in *Table 6-2*. In *Figures 6-5* and *6-6*, the female and male participants all applied similar "force" and "consensus" to designer and public participants. But the males applied higher "avoidance" and "accommodation" than the females did, while the females applied higher "compromise" than the males did. The two figures show a similar pattern for both genders with only little difference. However, the line pattern shown in *Figures 6-5* and *6-6* is significantly different from the bar pattern shown in *Figures 6-2* and *6-4*. One possible reason is that the two females in Group A are both adult public participants, while the two females in Group B are a senior public participant and an adult designer, respectively. These two differences among the two groups of female participants – age and knowledge background – may result in quite different conflict resolutions. In order to achieve a more valid analysis, more similar mixed-gender groups are needed.
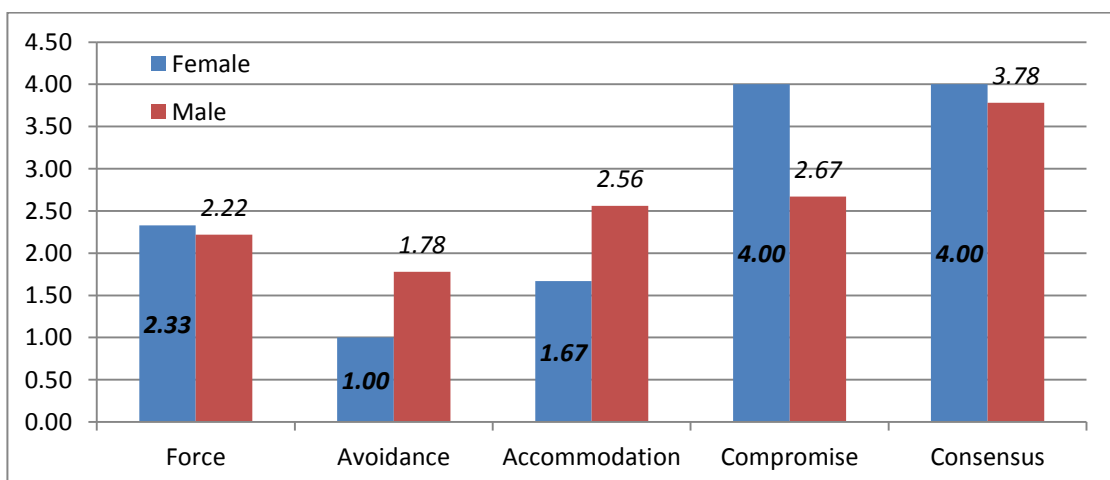
Figure 6-5 The average scores of female and male participants when having conflicts with the designer in Group B

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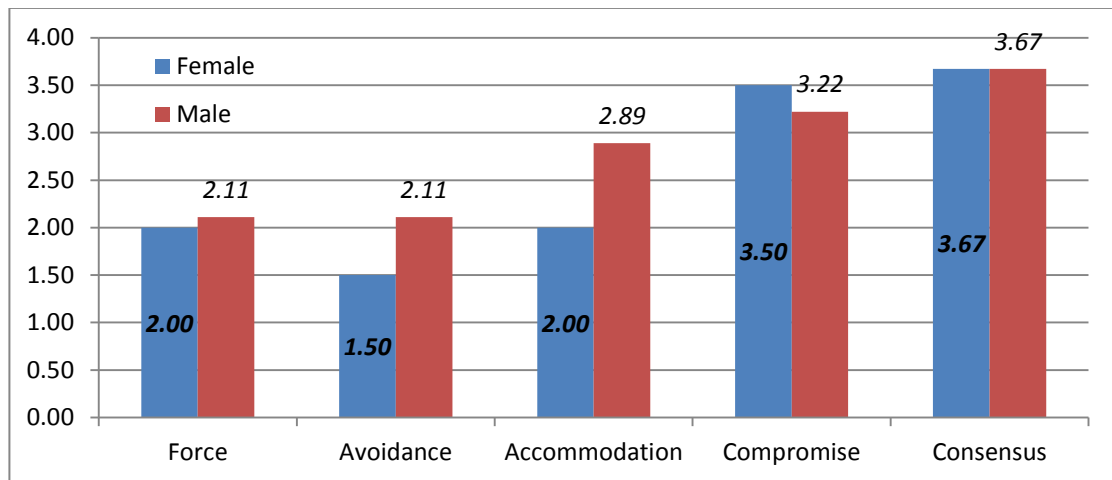
Figure 6-6 The average scores of female and male participants when having conflicts with the public in Group B

By using the same formula in *Figure 6-2*, *Figures 6-7* to *6-9* conclude the average scores of conflict resolutions used by the senior and the adult in Group A. AP2 was the only senior participant in Group A, so his average score is the same as his personal score in each conflict resolution (see the original data in *Table 6-1*). For example, AP2 applied the score "2.67" of "force" to the designer (marked by the red square in *Figure 6-7*), and the sum of other adult participants is 6.00[48]. So the average score is 2.00[49] (marked by the red square in *Figure 6-7*). The same calculation formula can be applied to other conflict resolutions as well. Again, when facing the designer, staff and public, the three scores of senior and adult participants all show a similar pattern; that is the senior applied lower "force" and "consensus" than the adults did, while the senior applied higher "avoidance", "accommodation" and "compromise" than the adults did.

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[48] 6.00 = 2.00 + 1.67 + 2.33
[49] 2.00 = 6.00 / 3
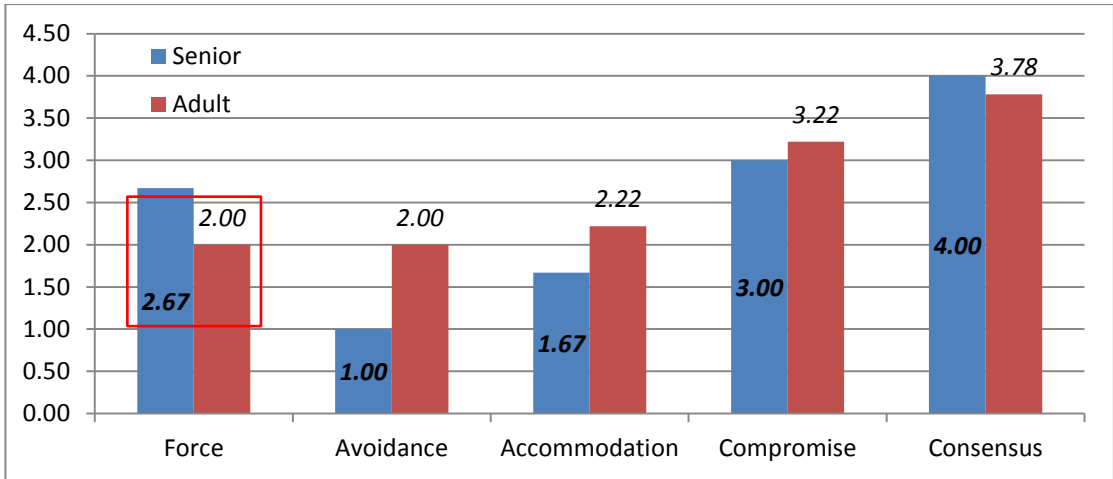
Figure 6-7 The average scores of senior and adult participants when having conflicts with the designer in Group A
Source: Compiled by the author
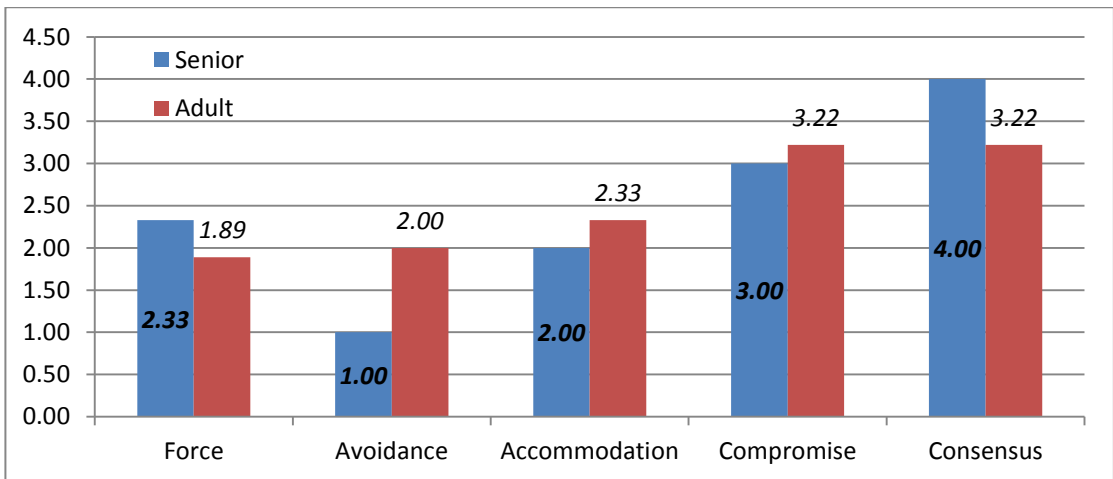
Figure 6-8 The average scores of senior and adult participants when having conflicts with the staff in Group A
Source: Compiled by the author
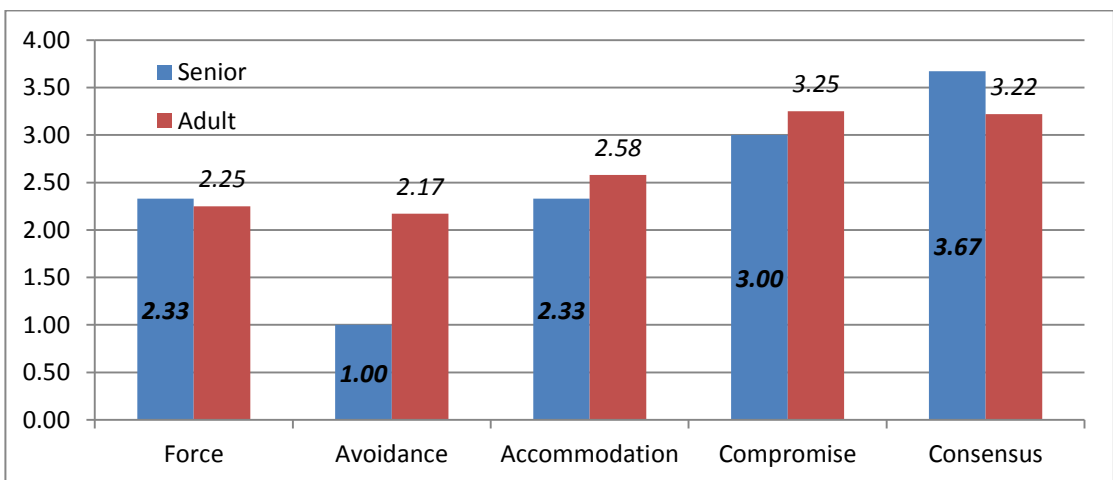
Figure 6-9 The average scores of senior and adult participants when having conflicts with the public in Group A
Source: Compiled by the author

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Figures 6-10 and *6-11* also show the score pattern of Group B that is similar as the one in *Figures 6-7* to *6-9*, while the senior applied quite lower "compromise" to the designer and public participants than the adults did. However, the numeral data of 10 samples is not enough to sum up a general rule to describe the relationship between personal features and conflict resolutions. For instance, the senior participants may prefer articulating their agreements not their disagreements; or the highly educated participants may use less force than the lower-educated participants; or the native English speakers may express more than the non-native English speakers did. In future studies, if we want to explore why and how the age and knowledge affected the result, then all these hypotheses should be summarised from a large amount of participants who have similar demographic features.
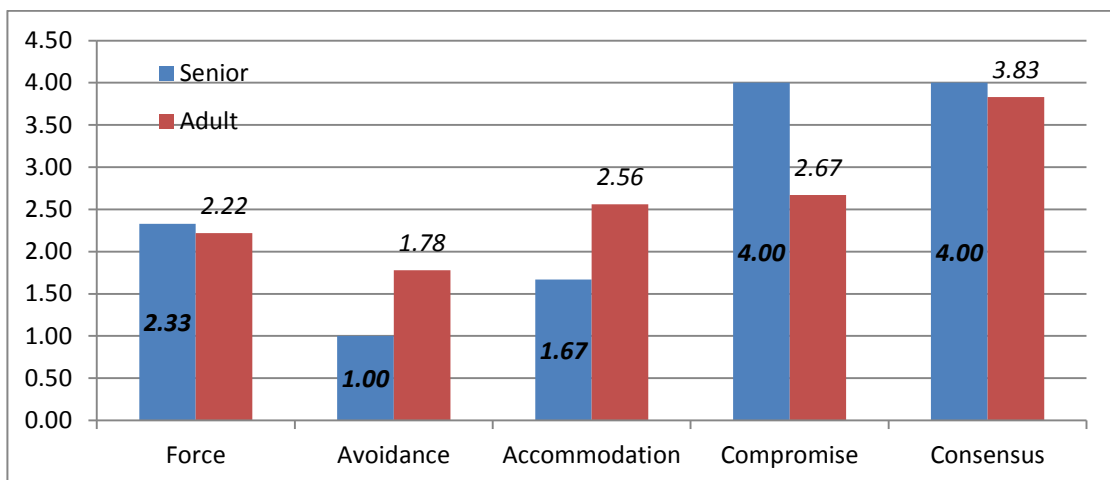
Figure 6-10 The average scores of senior and adult participants when having conflicts with the designer in Group B
Source: Compiled by the author
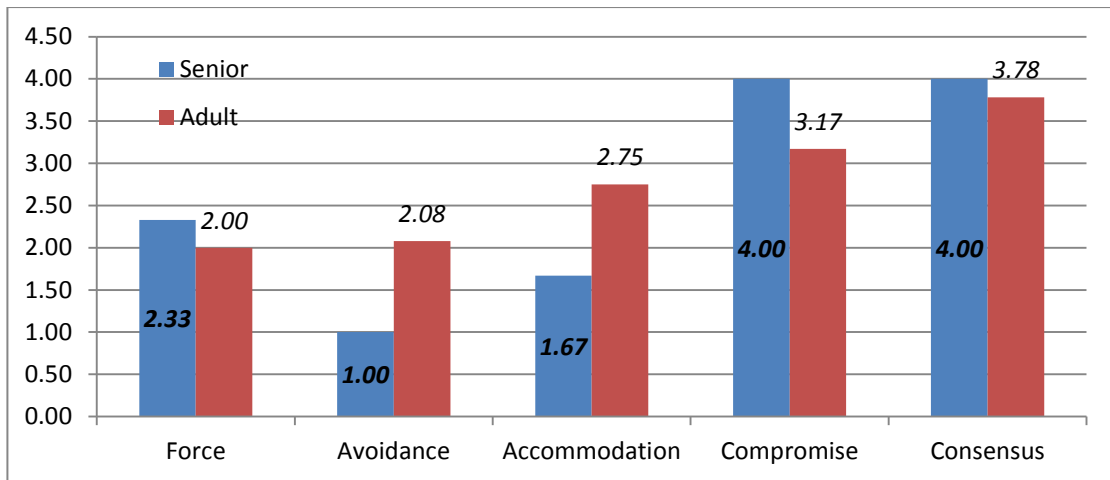
Figure 6-11 The average scores of senior and adult participants when having conflicts with the public in Group B
Source: Compiled by the author

To get more data from similar participants does not mean putting all the homogenous participants in one group, but running a similar heterogeneous group several times, because a heterogeneous group generates higher quality and more acceptance than a homogenous group does (Hoffman and Maier, 1961). Therefore, for future studies, a heterogeneous group should consist of a designer, a museum staff member, a male adult, a female adult, a senior, and a teenager. There can be 10 or more groups with the same composition. After running these groups following the same procedure and topics, we can then summarise the general conflict resolution used by each different member of the group (male, female, senior and teenager, and so on).

Fourth, the measurement of consensus in this study needs to be improved. The study had systematically measured the conflict resolutions. However, the consensus measurement mainly depended on the participants' writing and the author's statements. For instance, based on the filled-in IRSs (see *Figures 5-9* to *5-14*; *Figures 5-17* to *5-34*), it shows how the participants summarised their ideas in the final

conclusion of the consensus map (see *Table 5-5* and *Table 5-18*). However, the study just generally measured the consensus by reading through the final conclusion of ideas; and the study analysed the consensus just by qualitative description of interviews, for example, Group A participants narrowed down the option of sites into sites 2, 3, 5 and 6; Group B participants combined the ideas of an enclosed building and a completely open-air building into a temporary, reusable structure (see BP1's answer to question 4 in *Table 5-25*). The similar measuring method of stating consensus by words had also been used by many researchers, for instance, "individual perspectives that have moved closer together" (Dess and Origer, 1987, p. 318); "lower standard deviations represent more agreement" (Iaquinto and Fredrickson, 1997, p. 69); and "higher values indicate greater consensus" (Homburg et al., 1999, p. 348). However, Emwanu and Snaddon (2012) criticise the fact that simply describing a move towards the consensus is not enough in measuring the consensus. The traditional consensus measuring only generally indicates a move towards consensus, without demonstrating what and how the consensus has been achieved.

The measurement of consensus matches with the definition of consensus (Emwanu and Snaddon, 2012): for instance, as Emwanu and Snaddon (2012) summarised, the proportion of consensus in the final agreement [see Grinyer and Norburn (1975), Dess and Origer (1987), and Priem (1990)]; or the shared ideas with or without implementation [see Wooldridge and Floyd (1989), Floyd and Wooldridge (1992), and Knight et al. (1999)]. Following the consensus definition defined by Shanley and Correa (1992), Emwanu and Snaddon (2012, p. 19) understand consensus as a

convergence that includes most of the participants' ideas; the participants use the strategy to move toward a common focal point. The "focal point" means the direction and meeting point in this movement. Therefore, Emwanu and Snaddon (2012, pp. 19-21, 24-25) introduce four dimensions into the measuring instrument, for example, "time" dimension measures the consensus before and after the test; "convergence" that means the participants move or shift the ideas to the same point – focal point; "divergence" means the participants move the ideas to the opposite direction; and "no-change" means there is no shift in the ideas at all. The analysis of this consensus measurement proves the need to figure out whether there is a "true" or "pseudo" consensus; and the need to record consensus through multidimensional terms. Nevertheless, more studies should be done on the consensus measurement to test the robustness of each method (Emwanu and Snaddon, 2012, pp. 33-34).

6.4 Summary

This chapter first explained that *Phase One* (Group A) was a "loose design" that offered the participants much freedom in discussing the six design topics: potential sites, building size, colours, materials, shape and form, and the desired atmosphere; and *Phase Two* (Group B) was a "constrained design" that offered the participants more constraints of design, and three topics only: materials, building size and shape. The results from the questionnaires and interviews proved that the participants in both groups all prefer using "consensus" as the main conflict resolution, while the participants in Group B used more "consensus" than Group A did.

Section 6.2 has answered the eight sub-questions derived from the main research question (also see *Table 4-1*). Generally, we can postulate that: 1) IRSs enable the

participants to generate options independently; 2) IRSs support the generation of options in a larger amount and of a higher quality; 3) IRSs enable the participants to make judgments independently; 4) IRSs support the making of options in a larger amount and of a higher quality; 5) although the participants do not have equal chances to speak due to the language skills and personal consideration, IRSs increase the equal chance of expressing ideas by recording everyone's ideas on the sheets. However, as CM is not easy to use, the participants and facilitator all turned to verbal discussion. Therefore, it is suggested that the facilitator asks for the participants' ideas one by one; 6) the participants prefer expressing in-depth reasons rather than superficial comments. Because IRSs record all the options and judgments in the beginning, this moves the discussion forward to a more detailed level; 7) the participants do not stay on conflicts, but move toward the conclusion that has the greatest level of agreement. However, a few participants try to avoid conflicts by being not vocal. To reveal more conflicts, the facilitator should ask for the participants' ideas one by one; and 8) due to the limited time allocated to the workshop, the final conclusion is not an agreement that has the decision regarding each design topic, but instead is a list of ideas that are summarised from the IRSs and discussion. To sum up, the performances of IRSs and CM in both Groups A and B are generally positive and beneficial for conflict-resolving and collaborative consensus-making actions.

Section 6.3 has explored the advantages and disadvantages of the participatory architecture design through IRSs and CM. For the workshop itself, 1) the workshop is a good practice that organised the designers, museum staff and local residents to

think about the issue of design together. A future workshop can invite slightly more participants who may contribute more ideas to the design; 2) the steps of the workshop are successful and practical. To run the workshop better, however, one or two more assistants are needed to set up the workshop, and more related information of budget, exhibition and regulations are also required; 3) considering the availability of participants, two hours or a slightly longer time is a more appropriate length of time to run a public participatory workshop; 4) site visiting is a very important step of the workshop, and no communication should be allowed; 5) writing is a good way of expressing ideas; but the laypeople also need more models and tools to support the visualisation of ideas; 6) the facilitator plays a significant role in the workshop. Although IRSs support equal chances of everyone expressing, the facilitator still needs to be democratic and should ask the participants for their ideas, respectively. Meanwhile, the facilitator should be neutral when rephrasing and summarising the participants' ideas. Finally, the facilitator should be experienced in dealing with difficult participants by using specific strategies; and 7) due to the setting of the workshop, the roles and impacts of the designers, museum curator and members of public were equal or similar in this workshop. To run the workshop better, more professionals and laypeople are needed to offer their knowledge regarding different design aspects.

Section 6.3 also discussed the study of participation itself, 1) to study the participation methods, whether doing case studies or setting up workshops, one should depend on the actual situation or projects. Doing case studies is good at offering real information and saving the researcher's time in organising, but it is not

easy to find the specific case that matches with the research question. Setting up a

workshops is easy to control what to do in the workshop, but the weak reality of the

workshop may influence the participants' involvement in the workshop; 2) the mixed

research methods offers the data from different angles of the workshop, which

supports a comprehensive analysis of complex research question. The information

comes from the participants, and the facilitator and observer construct a balanced

picture of workshop. However, the interviewers in this study need more practice of

interviewing, which can increase the quality of interviews; 3) the recording of

participants' personal information should be kept to a minimum. For the purpose of

participation, anonymity encourages the participants to express ideas without being

identified. For the study of participation, if the researcher wants to understand the

relationship between personal performance and personal features, for instance,

gender, education, age, culture, and others, then more participants' personal

features should be recorded. Meanwhile, to mimic a real workshop, the participants

should be put in a heterogeneous group rather than homogeneous group; and finally

4) this study generally described a move towards consensus, which is the traditional

measurement of consensus that has to be improved. The more specific

measurement of consensus should be able to record the consensus through multiple

dimensions, and demonstrate what the consensus has achieved and how it has been

achieved.

Figure 6-12 represents the second part of theory framework completed in this

research. Firstly, the main research question is divided into eight sub-questions

regarding the abstracted principles. Then the study is divided into two directions:

workshop and data collection. However, instead of being isolated, the procedure design, analysis and discussion of the workshop and data collection methods are closely adhere to the eight sub-questions.

Main Research Question:

How do IRSs and CM perform in conflict-resolving and collaborative consensus-making in the participatory architecture design of the museum?

Principles and sub-questions

1. Participants generate the options independently
Q: in generating options, are the participants affected by others?

2. Broaden the options
Q: do the IRSs increase the quantity and quality of options?

3. Participants make the judgments independently
Q: in generating judgments, are the participants affected by others?

4. Broaden the judgments
Q: do the IRSs increase the quantity and quality of judgments?

5. Equalise power
Q: are the participants equal in the discussion?

6. Find the in-depth reasons behind the superficial comments
Q: do the participants prefer expressing the in-depth reasons or superficial comments?

7. Separate the participants from the conflicts
Q: do the participants prefer to remain in conflicts, or make the consensus?

8. Achieve mutual gains
Q: does the agreement include all the ideas?

Pilot Study of Data Collecting Methods
- Test of questionnaires and interviews in project DM UTC.
- Modification of questionnaires and interviews.

Process and Results of Data Collection Methods
- Observer and interviewers.
- Process: observing the workshop, offering questionnaires, and offering interviews.
- Results: filled questionnaires, interview and observation records.

Discussion of the Data Collection Methods
- 'Doing' a case or 'reading' a case for participation research.
- Mixed research methods work well in analysing the workshop from different angles.
- The balance of recording personal information.
- The measurement of consensus should be improved to a more specific level.

Pilot Study of IRSs
- A comparison of PVSs and IRSs.
- IRSs generate more in-depth judgments
- IRSs disclose more conflicts?

Process and Results of Workshop
- Participants (designer, museum staff, local residents) and facilitator.
- Process: silent site tour, generating options, making judgments, and structuring ideas.
- Results: written notes, filled IRSs, and final conclusion.

Discussion of the Participatory Architecture Design through IRSs and CM
- Size and participants of group.
- Offering more time and information.
- Two hours is good for participation.
- Site visiting is useful and interesting, but no discussion should be allowed.
- Expressing design is difficult, which needs the support of models and tools.
- Facilitator is important.
- More experts and public should be included.

Figure 6-12 Theory framework of the thesis, second part
Source: Drawn by the author

Chapter 7. Conclusion

7.1 Logic of the Research

In comparison with earlier museum practices which focused on storage, preservation, exhibition and education, current museums focus more on the experience of visitors. Instead of exhibiting the items behind the showcases, many museums try to instigate more direct communication with the visitors. Based on the growing attention to communication, 'Narrativity' is a further concept defined as the degree of storyness of a narrative. It cares more about the ways in which visitors' involvement can be increased, rather than the use of specific devices. The communication and narrativity then raised the issue of multi-authorship, which inspired another interaction – participation. *Participation* means the cooperation among institutions, communities and individuals. In the museum, participation means that the museum is offering multidirectional content experience to the participants (also see Nina Simon's theories of participation in section 2.1.2, pp. 19-29). The participants build up their skills, confidence and sense of belonging by contributing their ideas relating to content, arrangement, budget, and so on. Participation in museum events is currently a growing strategy for attracting and communicating with more local residents or visitors. However, most of the participatory practices in museums concentrate on exhibitions, while few of them study the participation in the architecture design of the museum. However, architecture and museums have an interlaced representation. Firstly, the museum is an important architecture that bears cultural and social significance in the city. For instance, Karl Friedrich Schinkel's Altes Museum successfully represents a formidable citizenship by its traditional civic building style. Secondly, the city can be seen as a part of museum that allows the

people to experience it both visually and remotely; and the museum also unfolds the memories and secrets of the city, for example, Patrick Geddes's Outlook Tower in Edinburgh. Therefore, to combine the museum participation with architecture design, it is meaningful to find out: "*how members of the public participate in the architectural design of the museum*".

The thesis expands the discussion to a much broader scope of practicing and studying participation in museum and other building design. Participation in architecture design is not only important for the museum and city, but also essential to the users of the building. Heidegger (1971a) significantly deducts the relationship among dwelling, building and user. The user acquires the *being* by dwelling in the building; the building is not an object but a *thing* due to the dwelling in it of the user. Therefore, Heidegger believed that the user of the building should have the authority to design a building, while the architects should assist the user to accomplish the building. Although Heidegger's theory is philosophically correct, it is actually difficult to be applied in a public project due to the various knowledge and experience of each participant. One of the reasons is that different people reads architecture differently, which results in various opinions and judgments. Furthermore, the whole participation group have to conclude a final agreement rather than leaving all the different ideas alone. And the more recent architecture practices also prove that it is difficult to balance the ideas of experts and laypeople. Even though the experts and laypeople's opinions are equalised in the participation, it still has the problem of structuring ideas and making decisions.

The thesis then moved to a more detailed literature review of power and knowledge, conflict and communication. On the one hand, by reviewing Foucault's *Governmentality* (1991), it indicates that knowledge can be the source of power and authority. For instance, the prisoner is kneeling as a prayer towards the central inspection tower in Panopticon; and the evolutionary museum visually arranging the skulls and skeletons from left to right by the unstated but connoted influence of time. Even the museum buildings were designed to deliver the scholar's own concept of the natural world. And the visitors were significantly influenced by those exhibitions and buildings. During the visiting, the public were subtly guided and "educated" by the scholar's concept. The same concerns can be applied to a participation workshop. The professionals - for instance, architects or curators - are good at dealing with the overview of a project and large issues. The professionals may easily dominate the conversation, and direct the opinions to the final decision that the professionals want. And the laypeople have to follow the professionals. On the other one hand, to argue against the power control, Habermas (1989) suggests that the communication should be progressed within the *public sphere* that encourages the freedom of expressing. However, the original concept of public sphere does not include other low social strata, for example, women, poor and the elderly. Meanwhile, the public sphere does not mention any control over individual expression, which means that the person with more knowledge can stealthily dominate the conversation. Ingram (2006) suggests a balance between Foucault and Habermas, which is giving minimum control over the conversation, while providing each person with the maximum opportunities to express their views; like a *jazz* band, in which every musical player has equal importance, and no certain musician dominates the song (Eagleton, 2007).

More specific research has been done in sociology that claims one of the core issues in participation is how to equalise the power, and transfer the conflicts into consensus. Power is the ability of one person/group to influence the behaviours of others. Power comes from one of the five bases - carrot, stick, identification, legitimacy, expertness - and exerts its influence by its weight, domain and scope. In participation, the abuse of power can lead to doubt, resistance and block, while the proper use of power can stimulate energy, cooperation and effectiveness. So the equalisation of power is important. Similar as in the case of power, conflicts also have positive and negative impacts on the participation. The impact of conflicts depends on the specific resolutions used by the participants - force, avoidance, accommodation, compromise and consensus. Although different resolutions are suitable for different situations, consensus is supposed to be the first choice that seeks win-win outcomes for most (if not all) participants.

Conflict-resolving and collaborative consensus-making are not easy to achieve. In a participatory workshop, there are three main stages: generating ideas, structuring ideas, and complementing ideas. This thesis only discussed the first two stages that are important in participation. Each stage requires different skills from the participants, for instance, nominal group and interacting group. In generating ideas, the nominal group performs better in generating options and judgments than the interacting group does; while in structuring ideas, the interacting group performs better in analysing ideas and structuring ideas than the nominal group does. Furthermore, based on the existing literatures, the thesis then abstracted eight principles of collaborative consensus-making regarding the first two stages: 1)

generate the options independently; 2) Broaden the options; 3) make the judgments independently; 4) Broaden the judgments; 5) Equalise power; 6) Find the in-depth reasons behind the superficial comments; 7) Separate the participants from the conflicts; and 8) Achieve mutual gains. These eight principles can be used as the standards to analyse participation methods.

Based on the eight summarised principles, the thesis then compared many participation methods that are frequently used. It is argued that, among these methods, Idea Rating Sheets (IRSs) and Consensus Mapping (CM) are considered to be the revealing methods that mostly satisfy the eight principles. IRSs, created by Jason Diceman (2014), not only ensure that the participants generate the ideas independently, but also allow the participants to vote the level of agreement regarding each option. What is more important, IRSs ensure that the participants independently generate the judgments regarding each option. Therefore, we can assume that IRSs may satisfy the principles 1 to 4. Meanwhile, CM, created by Stuart Hart et al. (1985), switches the independent creation to an interactive discussion of ideas. The collected ideas are mapped out regarding their interrelationships, which allows the participants to modify and rearrange the ideas map or structure. We then assume that CM may be good at identifying, discussing and structuring the ideas. However, the IRSs and CM are mainly applied in social affairs.[50] Therefore, to explore the performance of IRSs and CM in the architecture design of museums, the key

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[50] Please visit website: http://www.idearatingsheets.org/ for more practices of IRSs around the world. To see the related research of CM, for instance, Sébastien Damart's *A Cognitive Mapping Approach to Organizing the Participation of Multiple Actors in a Problem Structuring Process* (2008); Dennis R. Brophy's *A Comparison of Individual and Group Efforts to Creatively Solve Contrasting Types of Problems* (2010); and B. Emwanu and D.R. Snaddon's *Consensus Measurement in Setting Manufacturing Strategy* (2012).

research question of this thesis is "*how are the IRSs and CM's performance in conflict-resolving and collaborative consensus-making in the participatory architecture design of museum*".

The direct intention of the research question was to test the performance of IRSs and CM. And after the general literature review, the author decided to "do" a case, not "find" a case. It is because very few participatory architecture projects use IRSs or CM, and not many of the cases described the actual problems which happened during participation, for example, were there any conflicts or disagreements, how the participants resolved the conflicts and made decisions. Many participatory architecture projects only published their "success" to the public, while explained little about the conflicts or debates happened in the projects. There are a number of possible reasons for this; firstly, the organisers of many participatory architecture projects used "participation" as a slogan or logo, but the methods used did not concern the real expression of personal ideas. Secondly, to realise the positive outcome of participation, many publications only describe what the final results are, while unfolding very few conflicts to the readers. Thirdly, it is sometimes difficult for organisers or participants to notice conflicts of values and ideas. For certain reasons, the participants may not expose their disagreements or conflicts to the group. Therefore, it is better to "do" a participatory workshop that uses IRSs and CM, and collect the data from it.

The thesis then explored the study in two directions: how to set up the workshop and how to collect the data. The first pilot study was run to test the general performance of IRSs. It was based on an exhibition of four design schemes for the

Feathered Dinosaurs' exhibition. To choose the best scheme, each of the 30 participants had to fill in a plurality voting sheet and an ideas rating sheet, respectively. The results and analyses prove that the IRSs generate more in-depth judgments and disclose more conflicts than the plurality voting method does. Certain experience of using IRSs was gained from this pilot study, and more features of IRSs would be tested in the final workshop. In order to analyse the workshop from different perspectives, mixed research methods were used - i.e. questionnaires, interviews and observations. The second pilot study was run to modify the questionnaires and interviews. It was based on a real participation project in the Derby Manufacturing University Technical College (DM UTC). This project organised a diverse group that consisted of the managers of this project, technicians and engineers from car companies, lecturers from Derby University, and designers from architectural company; other related experts also showed up in turn. In the end, a manager, a technician and an architect filled out the questionnaires of pilot study; and the same manager and technician were also interviewed by the author. A few modifications to the questionnaires and interviews were done after the second pilot study.

Ideally, setting up workshops in different projects or countries could generate various forms of data to detect the advantages and problems of IRSs and CM from different aspects. However, the real situation is that not many projects want to involve public engagement in the process, and very few projects relate to the museum building design. This thesis focuses on the project in Wollaton Hall – the Feathered Dinosaurs' exhibition in the Nottingham Natural History Museum.

Although it is a single project, the workshop can be run twice or three times for the same project. The workshop series is based on the same project context, the same workshop process, and the similar cultural background. Further, it reduces the unwanted elements from the collected data; it is then easier to argue what results are influenced by the IRSs and CM, not by other factors. There were two groups (Groups A and B) that consisted of architect, museum staff and local residents. The data-collecting methods are questionnaires, interviews and observation. Each group followed similar steps over the course of two hours: 1) introduction to the workshop; 2) silent site tour; 3) generating options; 4) making judgments; 5) structuring ideas; 6) questionnaires; and 7) interviews. However, to test the performance of IRSs and CM in different workshop settings, the workshop was divided into *Phase One* and *Phase Two*. *Phase One* (Group A) consisted of one architect, one museum curator and three local residents. To offer a "loose design", *Phase One* had very few limitations, which allowed the participants to broadly discuss the issues of design: potential sites, building size, colours, materials, shape and form, and the desired atmosphere. To offer a "constrained design", *Phase Two* (Group B) consisted of one architect, and four local residents. *Phase Two* had a few preconditions that were concluded from *Phase One*: 1) the design should use site 5; 2) use the materials that belong to the yellow colour system; and 3) the design should have an eco-friendly, interesting, and welcoming atmosphere. Meanwhile, the participants in *Phase Two* only needed to discuss three design issues: materials, building size and shape.

Generally, both Groups A and B collected a large amount of data from the questionnaires, interviews and observations. In the step of the silent site tour, most

of the participants enjoyed the site visiting that offered a clear physical picture of the sites. The participants also had productive steps of making options and judgments. In the step of structuring ideas, most of the participants were talkative and thoughtful, while a few participants were a little quiet. The participants of both groups achieved a final list of ideas, although not a confirmed agreement. The results of the questionnaire indicated that the participants of both groups had a similar strategy of using conflict resolutions. They all preferred "avoidance" the least, and preferred "consensus" the most. Last but not least, most of the participants gave valuable answers in the interviews, which indicates what part of the exercise they liked the most and what they liked the least; did they express all the opinions or comments, and if not, why?

Due to the different settings of Groups A and B, a few differences can also be found in the results of Groups A and B. To be more specific: 1) In the step of generating options, the participants generated many interesting but reasonable ideas. Also, the participants of Group B filled out more idea sheets (18 sheets) than those of Group A (6 sheets). 2) In the step of making judgments, the participants of Group B wrote down slightly more judgments (12 judgements) than those of Group A, (10 judgments). Although the quantities of judgments in both groups are similar, the participants of Group B wrote double the in-depth judgments (12 in-depth judgements) than Group A did (6 in-depth judgements). 3) In the step of structuring ideas, the participants of Group B used more "consensus" resolutions to deal with conflicts than that of Group A. The participants of Group B expressed more different

ideas, and tried to transfer the conflicts into an agreement regarding every person's concerns.

Based on the analyses of Groups A and B, it can be argued that the IRSs and CM performed positively in resolving conflicts and making collaborative consensus in the architecture design of the museum. In greater detail: 1) IRSs enable the participants to generate options independently; 2) IRSs support the generation of options in a larger volume and of a higher quality; 3) IRSs enable the participants to make judgments independently; 4) IRSs support the making of options in a larger number and of a higher quality; 5) IRSs increase the equal chance of expressing ideas by recording everyone's ideas on the sheets. However, CM is not easy to apply without introduction or practise, so the participants and facilitator discussed the IRSs verbally rather than spending time drawing in squares and lines to represent idea relationships; 6) IRSs record all the options and judgments in the beginning, which moves the discussion forward to a more detailed level. The participants prefer expressing in-depth reasons rather than superficial comments; 7) the participants do not linger over conflict issues but move towards the conclusion that has the greatest level of agreement. However, the IRSs and CM do not offer every participant equal chances of expression. To ensure equal chances of speaking, the facilitator should ask for the participants' ideas one by one; and 8) due to the limited time allocated to the workshop, the final conclusion is not an agreement that has the decision regarding each design topic, but instead is a list of ideas that are summarised from the IRSs and discussion.

In addition to analysing the performance of the IRSs and CM, several guidelines have been concluded as well: 1) a participatory workshop is a good practice that collects the ideas from different groups and professions. To generate more ideas and discussions, more related persons should be invited to this workshop. Also, the workshop should run several times in order to discuss complex issues of design; 2) the workshop was organised well in this study, but longer hours could be applied to the real project. Meanwhile, the more information that is offered in the beginning, the better conclusion could be achieved at the end of the workshop; 3) site visiting is a good element of the process that enables the participants to observe the sites personally. The silent site visits could ensure that every participant acquires his or her own ideas independently; 4) the design ideas of architecture are difficult to express just by writing. More models and tools should be used in the workshop, for instance, artists, photo editing software, GIS (Geographic Information System), and so on; 5) the facilitator plays a significant role in the workshop. Although the facilitator does not express his or her own ideas or comments, the facilitator still has an influence on the participants, for example, giving them the chance of speaking, rephrasing and summarising the ideas into one agreement, dealing with the difficult or talkative participants, and so on; and finally 6) in this workshop, the designers, museum curator and members of the public had equal or similar positions in the discussion. Each participant's ideas were respected by others. It does have to be noted, however, that the members of public still need more practice and support from the professionals, as they are unable to complete a project by themselves.

7.2 Contributions, Shortcomings, Applications and future practices of Research

The study was not limited just to the testing of IRSs and CM, but filled the gap of the research topic: *public participation in the architectural design of museum*. It can be argued that public participation in the architectural design of museum is the correct direction that the research and practice should focus on,[51] but public participation is also a complex topic that may not be effective or productive in the very beginning.[52] The success of participation relies on the methods, sites, people, budget, and many other aspects. Despite there are a few criticisms of participation, the "failure" of participation is not the issue of public participation itself, but the issue of the mechanism and technologies that we used.[53] Overall, there are three main areas of contribution found in this thesis: 1) Theory development. The study investigates an interdisciplinary subject that combines museum studies, architecture and sociology. And the study indicates that the participation project significantly benefits the communication between the professionals and laypeople, particularly for the museum where the staff had candid communication with the local residents.[54] It encourages a more open and democratic communication between the professionals and laypeople.[55] The similar discussion can even be applied to communication regarding other museum events. 2) Principles and methods. The study systematically reviews many related literature and summarises a few key principles of conflict-

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[51] See Hooper-Greenhill's theories of museum and communication in section 2.1.2, pp. 12-15. See Austin's theories of narrativity and Kukulska-Hulme's multiple authorship in section 2.1.2, pp. 15-19. Also see Nina Simon's theories of participation in section 2.1.2, pp. 19-29.
[52] See the drawbacks of participation in section 2.1.2, p. 28.
[53] See the section 6.3.1, pp. 290-291.
[54] See the importance of participation in sections 2.1.2, 2.3.1 and 2.4.2.
[55] See the balance between architects and laypeople in section 2.3.3.

resolving and collaborative consensus-making.[56] Although this thesis only reveals the

shortcomings of other methods except IRSs and CM, it does not mean the other

methods are less useful. Every method is appropriate regarding its own situation,

and these methods can be improved regarding the abstracted principles. Meanwhile,

these guidelines are not just applicable to the museums; they could be applied to

other institutions or organisations such as libraries, schools, hospitals, local

communities, and so on. 3) Policy extension. The principles of participation

concluded in this thesis can be referred to by the organisations or institutions that

plan to collaborate with the members of the public.[57] The government can also

extract useful suggestions from the discussion chapter when setting out participation

rules or policies. 4) Tangible solution. The thesis does not float in the bare theories

discussion, but puts two specific methods into practice. Even though IRSs and CM are

not perfect methods for any participation project, the future workshop can utilise

the IRSs and CM, and modify the methods regarding the relevant situations.

To balance the control and communication in the participation, there are a few

aspects should be concerned. 1) Equalising the power of all the participants.

Foucault (1977b) claims that power can produce knowledge; then the performance

of knowledge would reinforce the power.[58] In this workshop, the museum curator

and the designers represent the professionals in exhibition and building design. To

avoid the professionals dominate the workshop by abusing knowledge, the

workshop had a facilitator to take charge of the whole process. So the curator and

designers have the professional knowledge, but not the power. Every time when

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[56] See the principles and suggestions in *Tables 3-5, 3-6* and *3-8*, pp. 103-108.
[57] See the abstracted principles of participation in *Table 3-7*, p. 106.
[58] See Foucault's *Governmentality* in section 3.1.1, pp. 65-78.

they were speaking, it was more like a sharing or contribution of knowledge, rather than an order. 2) Respecting each other, and revealing the truth. The workshop tried to form a public sphere as Habermas (1989) suggests, that has no constraints or domination in discussion; no political hierarchies, or unequal influence owned by someone.[59] Even though the professionals and laypeople were equal in the workshop, once the professionals were speaking, the other participants listened carefully and took it as "rules". However, it does not mean that the professionals should abuse their power and knowledge to achieve their targets. The reason that the laypeople listened carefully is they respected each other, and believed what the professionals said was true. The professionals can enhance their authority by contributing more knowledge, but once they are found lying, the trust will be broken and difficult to recover. As a result, the communication may become low efficient or totally blocked. 3) Guiding the laypeople, but leaving more autonomy to them. In the workshop, the facilitator and professionals all have many related experience of cooperation and design, while most of the public participants may have little. It is understandable that the more experienced participants offer guidance to the less experienced one, so the efficiency of workshop will not be affected seriously.[60] However, the redundant guidance or paternalism may lead the laypeople to produce a result expected by the professionals, rather than a result with different perspectives. Furthermore, a certain degree of power or force is suitable for processing the workshop,[61] but too haste may result in less progress.[62] Therefore, the facilitator has an important role in judging whether to push the workshop

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[59] See Habermas's *Public Sphere* in section 3.1.2, pp. 78-81.
[60] See paternalism and autonomy in section 3.1.3, pp. 81-85.
[61] See the features of power in section 3.2.1, pp. 85-88.
[62] See the actual agreements of Groups A and B in section 6.2.5, pp. 282-284.

moving forward or not. Last but not least, 4) being fair to every participant is an essential point in balancing control and communication. Everyone is free to speak, and has the equal chance to speak. Meanwhile, the workshop follows a rational process.[63] To insure the equal chance to everyone, the museum managers should firstly have this wish to talk with local public; then, the workshop not only desires an experienced facilitator, but also desires the most appropriate tools to assist the facilitator, such as IRSs, CM, or other participation methods. Everyone has limited memory; therefore, instead of relying on a single facilitator's abilities and judgments, recording all the opinions step by step is more reliable and fair. To sum up, the thesis only tests collaborative consensus-making in the workshop, therefore, the setting of workshop aims to give minimum control and maximum communication. But there are many other ways of conflict-resolving, such as avoidance, force, accommodation and compromise.[64] Each way requires different weights between control and communication, which is a metaphysical and unfinished practice that desires more endeavour.[65]

There are also a few shortcomings of this study, and some suggestions for future participation study: 1) the thesis spent lots of money and time in *doing* a workshop. Despite the workshop allows the researcher to set up the conditions and steps regarding the specific research question, the workshop also showed a slightly low reality to the participants. However, the overall involvements of participants are still remarkable. They engaged the workshop seriously, which can be seen from the

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[63] See Sanoff's suggestions of participation in section 3.1.2, p. 81.
[64] See conflict-resolution in section 3.2.2, pp. 92-96.
[65] See "a utopian aspiration" of communication in Eagleton's example of *Jazz* in section 3.1.3, pp. 83-84.

diverse IRSs generated by them. 2) Although the participants in the workshop mostly use Consensus Mapping, they discussed the design issues in a more direct way. It is mainly because of the limited time and group size that only allowed the facilitator to draw ideas map. 3) The museum curator did not join in the Group B due to an emergency affair, which decrease the variety and reality of data to a certain degree. However, the diversity of Group B was not affected too much. Every participant has different knowledge background. They focused on the thinking and discussion of IRSs, and tried to figure out a combined solution. Meanwhile, the absence of curator did not affect the analysis of IRSs and CM too much. 4) The thesis used the traditional measurements that only simply described the final consensus of ideas, while it did not clearly reflect the specific changes that happened in the participants' minds.[66]

The findings of this thesis may stimulate related practices and studies of social participation, museum theories, and rethinking of architecture design. Therefore, there are a few suggestions for future studies of participation. 1) Discussing the philosophy and theories of public communication is fundamental but important. The new ideology of communication encourages the criticisms and innovations in participation theories. 2) Discussing and updating the principles and tips of public participation regarding the participation steps. These principles and tips can be general and universal points of any participation type, or they can be specific points of architecture design, museum events, or something else. 3) Finding out the related standards of the performance analysis. The standards should match with the principles of public participation, for instance, the measurement of consensus. 4)

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[66] Also see the measurement of consensus in section 6.3.2, and B. Emwanu and D.R. Snaddon's *Consensus Measurement in Setting Manufacturing Strategy* (2012).

The mixed research methods are effective in offering a comprehensive perspective of the workshop. However, there needs new methods that can precisely measure the consensus, for example, what are the participants' ideas before and after the discussion, do the participants move the ideas to the same or opposite direction, or is there no change at all? The new measurements should be able to indicate what happened to the participants' ideas, and whether these were actions or not, as well as the reasons for this.

There are also several directions for future practices of participation. 1) Organising a real workshop or project could be better if it is able to find. A real workshop or project not only saves time and money on setting up, but also presents the authority and reality of a project, which would encourage the participants' involvement and production; 2) There should be more discussion about the record of the participants' personal information. The abundant records of personal information would increase the fear of being identified, while insufficient records of personal information increase the difficulty of categorising the participation by gender, age, or education background, and so on; 3) Based on the principles and standards of participation, testing the performance of new participation methods and theories either in real situations or in the lab environment; 4) Measuring the participants' degree of satisfaction with and acceptance of the final results. Moreover, publishing the final results to a broader society, and measuring the response from the wider public; 5) This thesis only tested the "generating ideas" and "structuring ideas", so future researchers can discuss and practice the methods of "implementing ideas". Although "implementing ideas" is the last stage of participation, it is still an important stage

that requires something to be done physically. There are many issues that can be explored, for instance, what are the pros and cons of participation in "implementing ideas"? What is the relationship between the professionals group and laypeople group in "implementing ideas"? Which group is the leader in "implementing ideas"?

6) Looking for assistance from new software or other new technologies. Take the participatory architecture or urban design as an example: A professional designer is actually better at imaging the design than a layperson is who has no prior experience of design. So to support the laypeople in participation, the ideal software or technology should not only match the real situation of the site with the new virtual design, but also immediately and correctly reflect the new modification of the virtual design. Meanwhile, this instant reflection promotes the discussion to a further, more detailed level. Another direction for the new software is assisting the generating and structuring of ideas. For instance, based on the similar principles and processes of IRS and CM, the software can help the participants identify options and make judgments independently, and then help the facilitator to manage the ideas while showing the process on a bigger screen that can be seen by every participant. This is just a general example; there are many other possible applications of the software.

7.3 Summary of the Research

To sum up, *Figure 7-1* reveals the complete theory framework of this thesis. Starting from the initial research question "how members of the public participate in the architectural design of the museum", the thesis has reviewed the history and current situations of museums, and discussed the theories of participation in architecture and social science. Related principles have been abstracted regarding the topic. Two participation methods – Idea Rating Sheets and Consensus Mapping – have been

chosen after comparison with other methods. The literature review narrowed down the research to a more detailed question: "*How do IRSs and CM perform in conflict-resolving and collaborative consensus-making in the participatory architecture design of the museum?*" And this main question has been divided into eight sub-questions. To answer these questions, two pilot studies and two participatory groups were run and the data analysed. Based on the analysis, it could be argued that the performance of IRSs and CM in both Groups A and B are generally positive and beneficial for the conflict-resolving and collaborative consensus-making processes. Furthermore, the thesis also discusses a few key points mentioned in the literature review, and it recommends potential research directions in the future. Last but not least, the thesis has to claim that participation is a new way of thinking, a new mechanism of solving problems; research into participation deserves more attention with regarding to its theory and practice; and the researchers should possess patience, critical thinking and the ability of working with dialectic viewpoints.
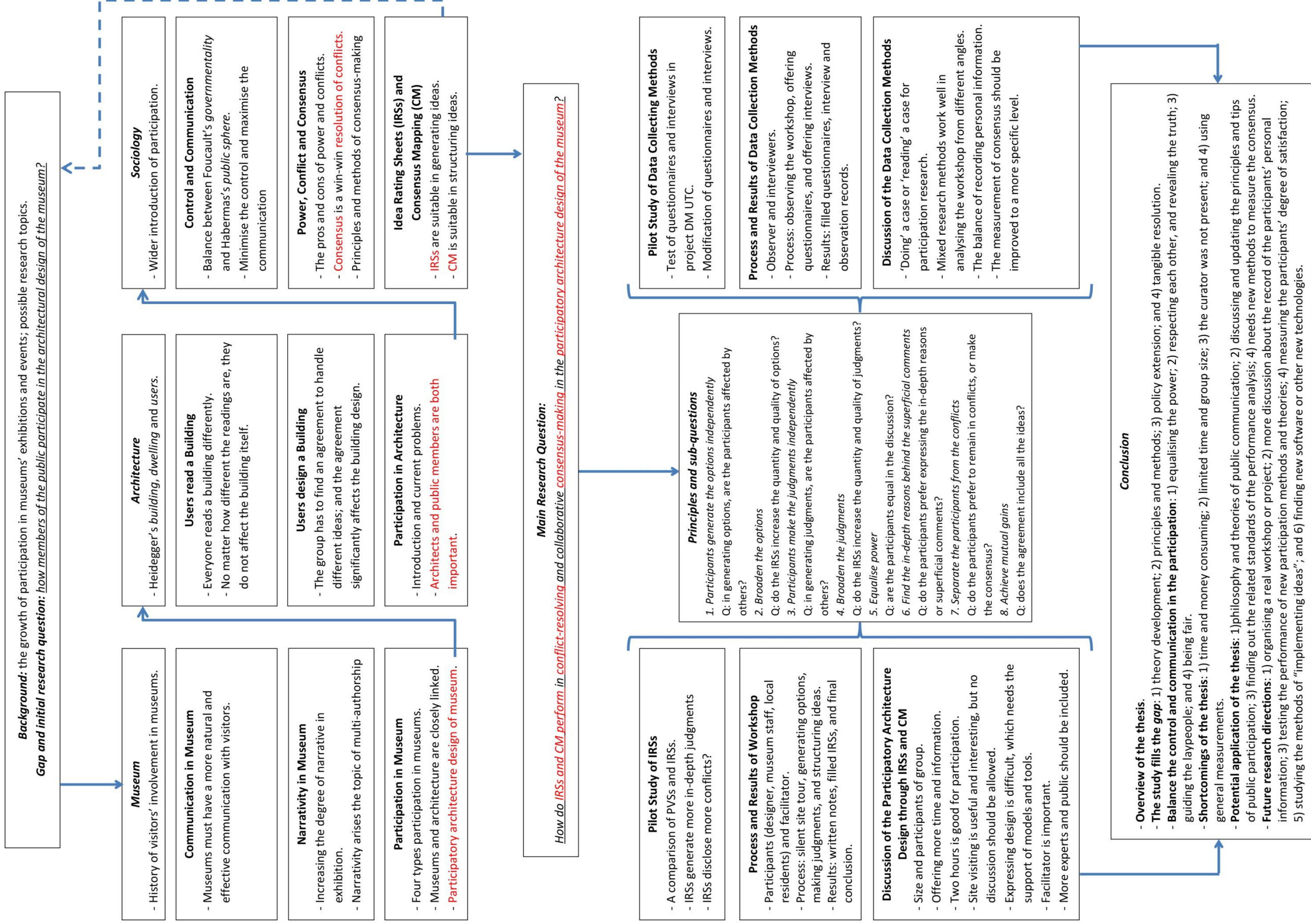
Figure 7-1 Theory framework of the thesis
Source: Drawn by the author

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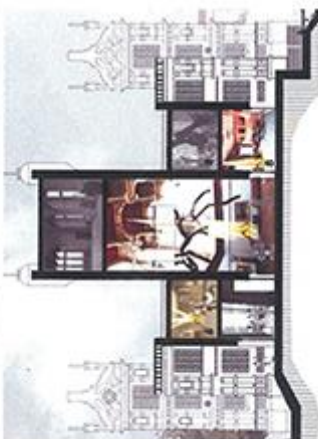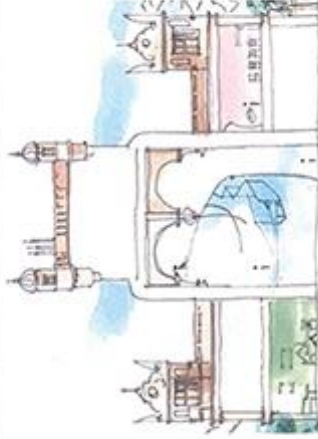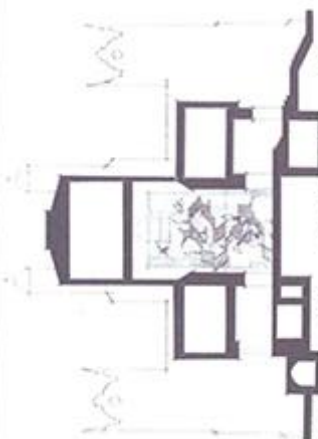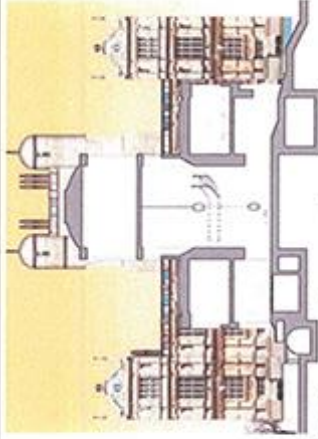
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Appendix 4-1 The PVS and IRS of participant No.1

The PVS of participant No.1

Which scheme is the best in your personal view? Please tick the little square in front. ☑

☒ Scheme 1: Dream of A Dead Man

☐ Scheme 2: The Hope of A Family

☐ Scheme 3: Flying with the Feathered Dinosaurs

☐ Scheme 4: Dinosaur Theme Park

1. Any suggestions or comments?

Scheme1 is my favorite. However, I think the 4 will be the best choice for a family with children.
I think may be you can make a perfect combination of these two schemes and find bestance for adults and children.

Title: The Public Opinions of Design Schemes   Place: Wollaton Hall   Organization: UoN

The IRS of participant No.1, Scheme 1

What is your personal view of this scheme?

Scheme 1: Dream of A Dead Man

A. Strong agreement ✓	B. Agreement	C. Neutral	D. Disagreement	E. Strong disagreement	F. Confusion
Strengths and opportunities			Concerns and weakness		

Title: The Public Opinions of Design Schemes

Place: Wollaton Hall

Organization: UoN

The IRS of participant No.1, Scheme 2

What is your personal view of this scheme?

Scheme 2: The Hope of A Family

A. Strong agreement	B. Agreement	Neutral ✓	D. Disagreement	E. Strong disagreement	F. Confusion
	Strengths and opportunities			Concerns and weakness	

It's too emotive and not good for relax, But the ~~a~~ Story is a lovely one.

Title: The Public Opinions of Design Schemes   Place: Wollaton Hall   Organization: UoN

The IRS of participant No.1, Scheme 3

What is your personal view of this scheme?

Scheme 3: Flying with the Feathered Dinosaurs

A. Strong agreement	B. Agreement	C. Neutral	Disagreement	E. Strong disagreement	F. Confusion
	Strengths and opportunities			Concerns and weakness	
			It is too concetrate. Maybe too crowd.		

Title: The Public Opinions of Design Schemes   Place: Wollaton Hall   Organization: UoN

The IRS of participant No.1, Scheme 4

What is your personal view of this scheme?
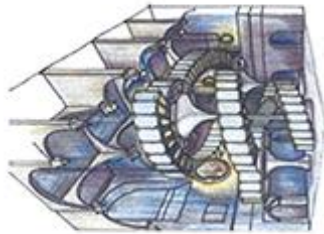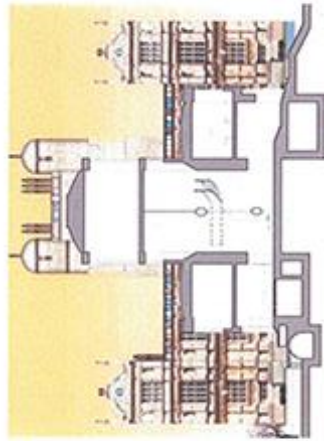
Scheme 4: Dinosaur Theme Park

A. Strong agreement	B. Agreement	C. Neutral	D. Disagreement	E. Strong disagreement	F. Confusion
Strengths and opportunities			Concerns and weakness		

It's funny and help people relax themselves. What's more, It takes the advantage of Wollaton Park mostly.

Title: The Public Opinions of Design Schemes   Place: Wollaton Hall   Organization: UoN

Appendix 4-2 The summary of PVSs and IRSs in Groups One, Two and Three

The summary of PVSs and IRSs in Group One

Plurality Voting Sheets			Idea Rating Sheets			
Votes	Schemes	Suggestions or comments	Votes	Schemes	Strengths and opportunities	Concerns and weakness
P1	S1	Scheme 1 is my favourite. However, I think the 4 will be the best choice for a family with children. I think maybe you can make a perfect combination of these two schemes and find balance for adults and children.	P1	S1-A	*(Blank)*	*(Blank)*
				S2-C	It's too emotive and not good for relax. But the story is a lovely one.	*(Blank)*
				S3-D	*(Blank)*	It's too concentrate. Maybe too crowd.
				S4-B	It's funny and helps people relax themselves. What's more, it takes the advantage of Wollaton Park mostly.	*(Blank)*
P2	S3	I like the design because it's not complicated and creative. It makes most of the hall and keeps the park untouched.	P2	S1-C	It takes advantages of the technology and looks cool.	It's too modern.
				S2-C	*(Blank)*	It's fine but this design does not stand out. I mean it's not as creative as the others.
				S3-A	I like the design. It's creative, simple, and beautiful.	*(Blank)*
				S4-B	It's interesting to have a theme park.	If it changes so many things in the park, will it disturb the animals (e.g. deer)?
P3	S3	I am happy with the 3rd scheme especially due to the hangers. In terms of aesthetic issues, this configuration stands out more preferable. Also, it might be easily offered or modifies at a later step.	P3	S1-B, D	**B**: The scheme looks fine but not creative enough with proper lighting its concept might be enhanced.	**D**: The vision and aesthetic issues are missing in this design.
				S2-A, E	**A**: There is not a big effect in this scheme.	**E**: I don't believe the environment is well-designed in this scheme.
				S3-A	**A**: it's very well-designed for demonstration. Especially hangers are excellent idea for exhibition the features of dinosaurs.	Only the part can be revised is the lack of lighting in the indoor environment.
				S4-B, D	**B**: The helix path is well designed and preferable. But fixing the dinosaurs should be done properly.	**D**: Fixing is the most challenging part for this scheme. Maybe it may not safe enough for children to experience the things.
P4	S4	Scheme 3 is also interesting. For all schemes a consideration in maintenance cost and preservation of Wollaton iconic features should be connected if the structure is going to be permanent, i.e. does not overwrite the fame of Wollaton to just Jurassic Park but its own old as well.	P4	S1-C	- Application of modern technology is preferred.	- Obstructing the popular photo shooting spot with its structure. - Only one whole concept which create a dark, desperate feeling.
				S2-C	- Nice main hall design, Ancient + Modern	- The story is nice, but when put into practice might be difficult to perceive where the public might not follows the chronological order of the design.
				S3-B	- Application of modern material - Stairs concept is nice	- Safety of the design, especially when non-invasive factor is concerned. The clamped cable might not be able to withstand the weight of crowd.
				S4-B	Nice main hall design.	*(Blank)*
P5	S4	The 4th scheme is a very interesting project. It allows gathering everyone to share the good experience, from children to adults and everyone in the society. It allows integrate this scientific form & amazing cultural architecture.	P5	S1-C	It is good to introduce the memory of the man who inspired the whole project.	I think it is not that innovative from the perspective of architecture design.
				S2-B	A good story for everyone from the start till the end.	I think it is a bit hard to be implemented.
				S3-D	More improvement should be included in the design, though it is a good idea.	It is more like an independent project rather than a project to integrate in Wollaton Hall.
				S4-A	Amazing project, allowing everybody to share the experience of Dinosaurs within a great architecture design prospective.	I am not sure about the capabilities of attracting people and promoting the park to get people to visit it.
P6	S1	*(Blank)*	P6	S1-B	I think it is a good idea that provides attractive environment for both adults and children.	Nothing.
				S2-C	It is a nice idea. The refurbishment of the hall entrance seems good.	It is a little lack of action.
				S3-D	Nothing.	It seems that it is suitable just for children.
				S4-B	The stairs are so nice.	Nothing.
P7	S3	Scheme 1: Dream of A Dead Man is a bit horrible with a dead man around all the time. Scheme 2: The Hope of A Family is based on such a sad story. Scheme 4: Dinosaur Theme Park: the nature cycle part might frighten kids.	P7	S1-C	*(Blank)*	The intact man sounds a bit horrible.
				S2-D	*(Blank)*	The story is sad. The idea doesn't cover all parts (有点单一).
				S3-B	It sounds funny, interesting, and creative with the structure changeable.	*(Blank)*

				S4-C	The project is for people ranging from different ages.	However, the nature cycle part might frighten some little kids.
P8	S1	Keep the impact of the new infrastructure to the Hall minimum. I think it is one of the best historical buildings I have seen in UK and I think it should be kept in its original plan.	**P8**	S1-B	Aligned with the history of the hall and family.	- Change of building plan. - Not as much as other projects, but the hall still loses its originality with the new building outside.
				S2-D	It is plain and gives a sense about the last time of dinosaurs.	Too emotional and holographic shows can be too much.
				S3-E	Nice design for great hall with small impact.	The gardens & window of the hall will be changed significantly with the extension building and portable stairs.
				S4-F	(Blank)	- Futuristic - Mushroom structures are not aligned with English or museum structure at all. - Will change the mood & aura of the hall & park completely.
P9			**P9**	S1-D	The concept of the dream of a dead man is good. Introduced the history of Willoughby family.	not use the whole park, not attractive for children
				S2-C	Use story to lead the exhibition. Dinosaurs dancing party is a good idea.	Story is not interesting. Not much information in Pandora's box.
				S3-E	(Blank)	New extension. The path of trees. Please keep the Wollaton as what it looks like now.
	S4	N/A		S4-B	The whole concept is good, suitable for visitors in different age groups.	(Blank)
P10	S1	I like the concept of combining the exhibit with the heritage of the hall. However, I'm not certain about the sunken extension. I question what it will be in keeping with the hall.	**P10**	S1-B	The concept of mixing the history of the hall with the exhibit.	I don't see the value of the sunken extension.
				S2-D	(Blank)	A bit morbid.
				S3-D	I like the magical moving stairs.	I'm not like as the path of trees as the extension building.
				S4-C	I like the use of the entire ground. I also like how it tries to fit in with the existing grounds. I also like the glass egg idea and the fashion show.	I don't understand the mushroom structures.
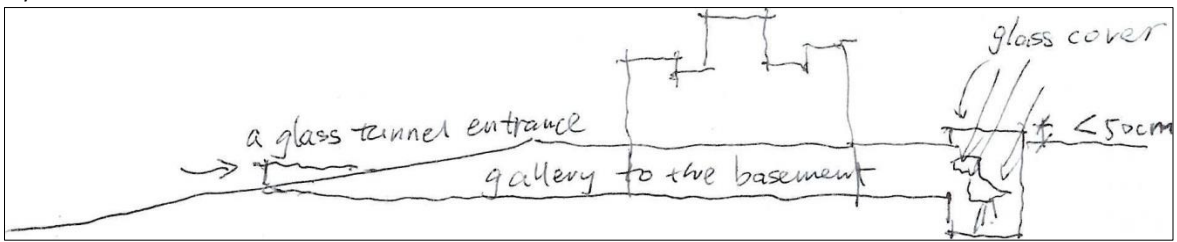
The summary of PVSs and IRSs in Group Two

Votes	Schemes	Suggestions or comments	Votes	Schemes	Strengths and opportunities	Concerns and weakness
		Plurality Voting Sheets			**Idea Rating Sheets**	
P1	S1	1. Strong talking + exhibition + digital presenting. 2. The exhibition outside Wollaton Hall is designed/constructed into earth, which keeps the hall as a whole virtually.	**P1**	S1-A	1. Story talking means connecting the history with the future exhibition. 2. The digital Francis Willoughby gives the explanation.	*(Blank)*
				S2-C	The use of Wollaton Park.	1. The line is too long to be followed. 2. The construction in the hall is too high-tech looking, which is not suitable for the exhibition.
				S3-B	1. The idea of moveable cables and staircases. 2. The structure/construction maximises the prevision of the hall inside.	1. The extension/exhibition place outside the hall is somehow disturbing the park/hall as a whole. 2. The man made stages in front of the hall decrease the feeling of green.
				S4-C	1. The use of Wollaton Park.	2. The exhibition line is too long to be followed.
P2	S3	– More interaction. – Is there consideration how existing architecture will compliment any designs retrofitted (i.e. daylight)? – Easy to guide visitors through design. – Easy to visualise how design would work. – Spacing issues? – Why has only the inside been considered? – Surely some design would be/or can be extended to the outside, without effecting building architecture.	**P2**	S1-C	- Good structure to design. - Divide building in compartments makes good use of the design of the building.	- Will the hologram system work? Skylights near the top of the main room and other dinosaur bones may influence the system.
				S2-B	- More dynamic than other designs - More thought and interaction with exhibits than get beyond the envelope of the building.	*(Blank)*
				S3-B	- Easy to grasp concept. - Maybe potentially beneficial to visitors, guide them through design. - More interaction than other design. - Daylight changes through day could create more interest and intrinsic qualities to design.	- Limited to single space. - Space issues – have they been addressed. - Not specified why only this room have been considered and not entire building.
				S4-D	- Different from previous designs. - Whole park is considered. - Maybe more suitable for large age range.	- Terminology is confusing. - Is Wollaton Hall really suitable for this type of design? - Similar designs – is this more innovative to other Dinosaur Theme Park?
P3	S3	I like the design for the flying Dinosaurs and the stair.	**P3**	S1-C	*(Blank)*	*(Blank)*
				S2-B	Nice structural design. Interesting story.	*(Blank)*
				S3-B	*(Blank)*	*(Blank)*
				S4-C	*(Blank)*	*(Blank)*
P4	S1	This scheme is more attraction. It shows better the scheme "the Dream of Dead Man". Moreover, it matches to the "Wollaton Hall" history. So, I prefer the scheme 1.	**P4**	S1-A	The design and style is more fit the scheme.	Need to strength the design of outside environment and provide to the "Tea break zone".
				S2-D	The scheme is able to employ the outside environment as well as "the park". It can connect with the "story".	It is not attraction to visitors. Besides, the "new structure" is needed to be considered. The structure is rather complexity.
				S3-B	1. The novel ideal "Magical Moving Stair". 2. Used fully "the Wollaton Hall" space.	Big work, in particular, the structure of moving stairs and the roof.
				S4-C	Strong scheme. More attraction the "Dinosaur Adventure Park". Big spacing for the "Past".	The stair needs to be considered the safety of the structure.
P5	S1	Holograms are a great idea. The link with Francis Willoughby gives a great local link. The buried structure would be a great centrepiece spectacle, and protects the people from English weather. Would be great to combine Scheme 1 (my favourite) with the flexible elements of 3, the story of 2 and the features of 2 and 3.	**P5**	S1-A	- The interaction, the local link, impressive centre piece. - Uses the entire hall. Opportunity to convey a lot of info. People will be curious about the dream room – great narrative.	Is there the budget? Is the technology reliable? (I hope so!) - Maybe not family friendly as the others.
				S2-B	Very artistic. The installations in the Hall and Bird forest seem visually shining. Great story running through. Will connect with families.	- Not enough scientific info/fossils. - Lacks variety
				S3-B	The flexibility of the Display area – scale for many exhibits. The changing stairs are a great interactive installations. Allowing you to imagine flying with dinosaurs. - Practical.	- Lack of cover from weather outside - Rely on outside sources for artistic/interactive element.
				S4-B	The physical landscape narrative. The free standing sculpture would be an attraction in itself. Young people would have an adventure.	Geared too heavily towards children + family.

Left panel

P#	Scheme	Comment
P6	S1	- This was my favourite for its imagination, narrative & historical connection. - I was more impressed by some of the structures in schemes 3 & 4 however. - The extension is ambitious but simple in impact. It may need to be concealed to limit perception of a modern intrusion in the historical environment (with planting?). - I loved the idea of the Dream Hall. - Could make more use of the landscape (- mobile technology?)
P7	S2	Nice story to go alongside information.
P8	S1	- Regarding to the hypothesis of dinosaur extinction, there are other hypothesis. Don't you consider to show others? - Regarding to the VDO of dinosaur family and the eggs, won't it make confusion that from dinosaur suddenly changes to a bird? - I am not sure how "Mushroom" will blend well with the Wollaton Hall. - Hope you have asked local people as well.
P9	S3	Really liked how the scheme had a continuous holistic feel and the changes it proposed to make to the park. Simplistic but effective, and not too ambitious.
P10	S3	The idea of Scheme 3 is completed novel and attractive, especially for children and students. However, the idea of Scheme 2 to give a emotional story is also interesting. The design of the stairs of Scheme 4 is creative, but I guess there are too many themes in Scheme 4, we should always focus on one. Scheme 1 is too traditional.

Right panel

P#	Scheme	Positive	Concerns
P6	S1-A	- Narrative - Imagination - Exciting use of technology - Historical links	- Hologram/extension very ambitious - Could use landscape more - Could refer to science of China more?
	S2-B	Potentially engaging story. Good use of external areas/landscape. Dancing party made me laugh.	Risk emotive connection won't be made. Pandora's box installation maybe too abstract/obscure.
	S3-B	Magic stairs structure visually presented very well. Multi-functional platforms. Biota – Interesting scientific link.	Platforms may be sensitive to rain. Extension ambitious. Access for people with disabilities!
	S4-C	Nice stair structure/eggs. Big mix of smaller ideas.	Lack of clear story. Theme park idea a little simple. Not so many strong links to palaeontology, history etc.
P7	S1-B	- Good use of space. Each room has a function. - Francis' hologram is a good idea. Linking the traditional history of Wollaton Hall with the new exhibition.	(Blank)
	S2-C	- "Hope of a family" story educational.	- A lot of outdoors activities. Not suitable for rainy days! - Evidence for behaviour of feathered dinosaurs?
	S3-B	- Good design in 3-dimensions. Creative use of space. - Like that you can observe the structures from different height. Gain new perspectives.	(Blank)
	S4-B	- Good learning opportunities in the Wollaton Hall "science" area. - Like the large scale dinosaurs around the lake etc.	- Confused by the mushroom concept.
P8	(Blank)	- Scheme display and theme can be changed easily. - Looks not boring. - Should be easy to maintain as the hologram machine should be kept away from visitors' hands. - Interior design may not be significantly changed. Keep original version is good.	- Cannot be touched. - If the machine or hologram machine is broken, nothing can be shown.
	(Blank)	- Like flying dinosaurs. It would blend well with the park. - Dinosaurs dancing party sounds like good indoor place for kids. - Dinosaurs maze sounds great as well.	- I don't think Pandora's box design will blend well and suitable with Wollaton Hall. - The big impact shows only one hypothesis. There are other ones. Don't you want to show others? - The VDO can make confusion. How dinosaur turns to bird this sudden?
	(Blank)	Sounds interesting	- Seems expensive in both installing and maintenance.
	(Blank)	(Blank)	- Not interesting - I am not sure why need new stair.
P9	S1-D	Good local connection, local history.	It felt a bit confused – the connections between Willoughby and dinosaurs was quite tenuous.
	S2-B	I like all the ideas for different exhibitions around the grounds of the hall.	Not sure that the story would be easy to follow – there would have to be a strong structure in place for telling the narrative – and in the right order!
	S3-A	Good overall vision, well connected and not too ambitious in terms of scale.	(Blank)
	S4-B	Really liked the spiral structure showing fossils in hanging eggs and the different zones for showing lots of dinosaur artefacts.	Concerned that the plan is to turn the majority of the park into a dinosaur themed park. That the local history of the hall + park would be taken over by the dinosaur exhibits. Better to localise it to one area.
P10	S1-C	Traditional exhibition style can give whatever knowledge and information the designer wants to deliver.	There is no significant relation between the dinosaur and Francis in my opinion.
	S2-B	Emotional story can attract families with young children. The use of the outside gardens is good.	There should always be a main part of the design, but I cannot find it in this one.
	S3-A	I like the "Harry Potter" design very much. Either adults or young children will definitely enjoy it.	Maybe take some of the exhibition outdoors (like Scheme 2 & 4). Take use of the garden.
	S4-C	Seems attractive and creative. The outdoor exhibition should be encouraged.	Too many themes in one design. Should always focus on one.

The summary of PVSs and IRSs in Group Three

Plurality Voting Sheets			Idea Rating Sheets			
Votes	Schemes	Suggestions or comments	Votes	Schemes	Strengths and opportunities	Concerns and weakness
P1	S1	*(Blank)*	P1	S1-A	I like the idea of Willoughby's Hologram that follows you inside the building.	*(Blank)*
				S2-C	*(Blank)*	*(Blank)*
				S3-D	*(Blank)*	Flying stairs for dinosaurs might be difficult to be explained. However, it might be something nice from a architecture's eyes. I'm slightly confused on here, but disagreement.
				S4-D	*(Blank)*	When I looked at the picture, it looks it is blocking the Willoughby hall's view.
P2	S1	*(Blank)*	P2	S1-A	Linking galleries and story.	*(Blank)*
				S2-C	*(Blank)*	*(Blank)*
				S3-C	*(Blank)*	*(Blank)*
				S4-A	*(Blank)*	*(Blank)*
P3	S1	My view: glass cover a glass tunnel entrance gallery to the basement < 50cm	P3	S1-A, D	**A:** - The point that combines Mr. Willoughby with the show. - Extension of the space is necessary and this will be a good method to let a talk between the old and new. - I like the idea that restrain the show within the hall rather than occupy everywhere in the Wollaton Park coz this show is "Mr. Willoughby's dream."	**D:** - I think the extension glass box should not occupy the whole courtyard at the back. Instead, I recommend making use of the underground space, such as a tunnel and the basement. And the glass roof should not extrude larger than 50cm above the ground.
				S2-B, D	**B:** - Very good story. - Make good use of the whole site.	**D:** - Not very clear telling the beautiful story from the design.
				S3-A, F	**A:** - strong flexibility of exhibition - I like the platforms, do helpful in topic shows.	**F:** - Difficult in structure, may need brace, but so that not good looking.
				S4-A, D	**A:** - Multiple activities created, such as T-show. - Personality like the way to decorate the central hall.	**D:** - Not much disagreement, however, not so innovative as other 3 designs.
P4			P4	S1-B	Exterior (the extension of the hall) is quite fascinating & attractive, as well as the idea of Francis' Hologram.	*(Blank)*
				S2-C	Clear timeline to tell the story about the extinction of dinosaurs and the rise of birds.	*(Blank)*
				S3-B	*(Blank)*	*(Blank)*
	S4	*(Blank)*		S4-A	Interesting & impressed to show the diversity of dinosaurs. Attempts to bring specific dinosaurs originated from 2 different large places (China & USA) are great.	*(Blank)*
P5	S2	The whole evolution process of dinosaurs is vivid in Scheme 2, and I like the idea of magical Moving Stairs in Scheme 3, too. If the two ideas can be integrated together, it would be wonderful.	P5	S1-C	The idea is unique and fantastic.	Lack in a holistic knowledge of the evolution of dinosaurs.
				S2-A	Provide a holistic knowledge of the evolution process and also enjoyable to walk around.	*(Blank)*
				S3-B	The idea of magical moving stairs is interesting. The extension building is useful in many ways.	*(Blank)*
				S4-B	The chances provided in this scheme seem more than the others.	*(Blank)*
P6			P6	S1-C	Makes a good link between the existing history of Wollaton Hall and the potential dinosaurs' exhibition. Nice idea about the new extension building.	May need a large amount of budget which may be not easy to obtain.
				S2-D	Good exhibition arrangement.	The survival of the bird-like dinosaurs needs more evidence from the scientific view. We need to open the mind about how the ancestors of birds survived and evolved during and after the comet explosion.
				S3-D	*(Blank)*	Is the moving staircase safe enough? Even if the flexible stairs are strong enough. The visitors may be not daring to walk on them. So the design may not be visitor friendly. Moreover, the budget may be not affordable.

	S4	For Scheme 4: More relevant exhibitions or information about the existing history of Wollaton Hall may be better. For Scheme 3: Is the flexible stairs safe enough for the visitors? The visitors may not feel safe enough to walk on the moving stairs even they are safe in theory. For Scheme 2: The story of the Hope of A Family is a kind of invented story. We need more scientific evidence to clarify how the survival of the bird-like dinosaurs is. This story may misguide the children. I suggest a open mind about how the ancestors of birds survived during the explosion of the comet.		S4-B	Very good idea about the dinosaurs models displayed outside the hall in the lakeside and forest. Attractive for young persons and children.	It may be better to have a linkage between the potential dinosaurs' exhibition and the current history of the Wollaton Hall.
P7	S1	For 1, customer can see a view clear, because all things were shown in the room, people see anything conveniently, and the design is easily to get attentions.	**P7**	S1-A	All things are shown in every room; customer can visit according their mind and see them easy.	*(Blank)*
				S2-C	A story of family can lead a topic.	Customer maybe cannot know a clear topic, such as: Pandora's box, it includes a temporal meaning.
				S3-B	Moving stairs are interesting; people can see stone in any degree and close.	Customer may cannot go to a place they want because stairs are moving.
				S4-D	Maybe it can abstract children.	Maybe this design hard to abstract adult, it is boring.
P8			**P8**	S1-C	- less expensive - eco-friendly - can maintain the heritage	- Less attractive for visitors.
				S2-C	- attractive architecture - clear definition of concept	- should be more interactive
	S3, S4	The scheme suggested should be more eco-friendly.		S3-B	- Tourist attractive - defines the concept	- can be less eco-friendly - health hazards
				S4-B	- Good concept of recycling - Outlines the architectural concept	- might alter the long history heritage
P9			**P9**	S1-C	I did like the extension (no. 9) and diagram (no. 3).	I am not really into other suggestions.
				S2-B	I did like the idea of family gathering and growing.	Dinosaur in dining room is not that good idea.
				S3-D	*(Blank)*	Not good idea, the moving stairs and extension building and other drawing not clear by hand, should by computer.
	S4	I did like the Theme Park more than others as it has some designs in the nature rather than just in buildings or around them because dinosaurs used to live in nature as I know.		S4-A	I did like the idea of fashion show and east meet west + adventure park	nothing
P10	S1-7	Tries to tie in old history of building & occupants with the subject & halls between both stools.	**P10**	S1-D	Tries to tie in the old house history & occupants with the dinosaur subject but fails to get together. Use of hologram could be better used on the dinosaur not family.
	S2-8	Over all votes form Scheme 2. Good use of the site and its route through the park but display in main hall could be less dramatic. P.T.O.		S2-B	Good use of the site and its route through the park from entrance with less reliance on technology. Display in the main hall will require revamping to flow through display as well as less dramatic.
	S3-4	Seems to be reliant on technology & staff input to change stair configuration. But good use of external space.		S3-D	Seems to be reliant on technology & the staff input to change the Hall display shows etc. configuration. Good trace through the park etc.
	S4-7	Good as scheme 2, but change the dinosaur approach to less models & more footprints.	*(Blank)*		Good as scheme 2 but should change the dinosaur models approach to be more footprints.

Appendix 4-3 Summary of previous conflict resolution measurements

Definitions of Each Conflict Resolution in Different Measurements

Note: The author lists the definitions of five conflict resolution made in different measurements.
Then the author summarises them into a few key points.

	Force/Dominating/Competing	Avoidance/Withdrawal	Accommodation/Yielding/Obligating	Compromise	Consensus/Collaborating/Problem-solving
TKI (Thomas & Kilmann, 1974)	Assertive and uncooperative. An individual is intent on pursuing their own goals at the expense of others.	Unassertive and uncooperative. A person pursuing this strategy will simply attempt to not deal with the conflict at hand.	Unassertive and cooperative. An individual described as accommodating attempts to meet the needs of others, sacrificing their own interests to satisfy those of others.	Some concession is made by one of the parties involved.	Assertive and cooperative. It describes the process of constructing a solution that meets the needs of both parties involved in the conflict.
Managing Organizational Conflict (1979)	It has been identified with win-lose orientation or with forcing behaviour to win one's position. A dominating or competing person goes all out to win his objective and, as a result, often ignores the needs and expectations of the other party.	It has been associated with withdrawal, buck-passing, or sidestepping situations. An avoiding person fails to satisfy his own concern as well as the concern of the other party.	It associated with attempting to play down the differences and emphasizing commonalities to satisfy the concern of the, other party.	It involves sharing whereby both parties give up something to make a mutually acceptable decision.	It exchange of information and examination of differences to reach a solution acceptable to both parties.
OCCI (Putnam, 1982)	**Control strategies** Manage conflict by arguing persistently for their positions and using nonverbal messages to emphasize demands.	**Non-confrontation strategies** Manage conflict indirectly, either by physically avoiding disagreements or by downplaying controversy and sidestepping volatile issues.		**Solution-oriented strategies** Manage conflict both by searching for creative, integrative solutions and by making compromises.	
The Use of Questionnaires in Conflict Research (2004)	Trying to force a solution upon the other party that meets own goals and interests, but not those of the other party.	Withdrawing from the conflict, either temporarily or definitely.	Accepting what the other wants and reaching a solution that meets other's but not own goals and interests.	Striving for an even distribution of the pie, without trying to enlarge it.	Actively searching for a solution that meets both own and other goals and interest.
ROCI-II, Managing Conflict in Organizations (Rahim, 4th ed. 2010)	Goes all out to win his or her objective and, as a result, often ignores the needs and expectations of the other party. Defending a position that the party believes to be correct. Wants to win at any cost. Likely to use his or her position power to impose his or her will on the subordinates. A person who does not possess formal position power may wield power by deceit, bluff, bringing in superiors, and so on.	Postponing an issue until a better time, or simply withdrawing from a threatening situation. An avoiding person fails to satisfy his or her own concern as well as the concern of the other party. An unconcerned attitude toward the issues or parties involved in conflict. Such a person may refuse to acknowledge in public that there is a conflict that should be dealt with.	Attempting to play down the differences and emphasizing commonalities to satisfy the concern of the other party. There is an element of self-sacrifice in this style. Neglects his or her own concern to satisfy the concern of the other party.	It involves give-and-take or sharing whereby both parties give up something to make a mutually acceptable decision. It may mean splitting the difference, exchanging concession, or seeking a quick, middle-ground position. A compromising party gives up more than a dominating party but less than an obliging party. Likewise, such a party addresses an issue more directly than an avoiding party but does not explore it in as much depth as an integrating party.	Collaboration between the parties (i.e., openness, exchange of information, and examination of differences to reach a solution acceptable to both parties). Face the real issue, uncover the conflict, bring the whole thing into the open. Open communication, clearing up misunderstanding, and analyzing the underlying causes of conflict. Identification of, and solution to, the real problem(s) to provide maximum satisfaction of concerns of both parties.
My Summarised Definitions	1. Arguing persistently for their positions. 2. Using nonverbal messages to emphasise demands. 3. Only pursuing their own goals while ignoring the needs of the other party.	1. Withdrawing from the conflict, either temporarily or definitely. 2. Unconcerned attitude toward the issues or parties involved in conflict. 3. Fails to satisfy own concern as well as the concern of other party.	1. Play down the differences and emphasizing commonalities. 2. Attempts to meet the needs of others by neglecting own needs or interests.	1. Splitting the difference, exchanging concession, or seeking a quick, middle-ground position. 2. Both parties give up something to make a mutually acceptable decision.	1. Face the real issue, uncover the conflict. 2. Clearing up misunderstanding, and analysing the underlying causes of conflict. 3. Meet needs of both sides.

Different Questions Used in Each Measurements

Note: Every measurement has its own question list to disclose the resolutions.

	Force/Dominating/Competing	Avoidance/Withdrawal	Accommodation/Yielding/Obligating	Compromise	Consensus/Collaborating/Problem-solving
TKI (Thomas & Kilmann, 1974)	3A. I am usually firm in pursuing my goals. 6B. I try to win my position. 8A. I am usually firm in pursuing my goals. 9B. I make some effort to get my way. 10A. I am firm in pursuing my goals. 13B. I press to get my points made. 14B. I try to show him the logic and benefits of my position. 16B. I try to convince the other person of the merits of my position. 17A. I am usually firm in pursuing my goals. 22B. I assert my wishes. 25A. I try to show him the logic and benefits of my position. 28A. I am usually firm in pursuing my goals.	1A. There are times when I let others take responsibility for solving the problem. 5B. I try to do what is necessary to avoid useless tensions. 6A. I try to avoid creating unpleasantness for myself. 7A. I try to postpone the issue until I have had some time to think it over. 9A. I feel that differences are not always worth worrying about. 12A. I sometimes avoid taking positions which would create controversy. 15B. I try to do what is necessary to avoid tensions. 17B. I will let him have some of his positions if he lets me have some of mine. 19B. I try to postpone the issue until I have had some time to think it over. 23B. There are times when I let others take responsibility for solving the problem. 27A. I sometimes avoid taking positions that would create controversy. 29B. I feel that differences are not always worth worrying about.	1B. Rather than negotiate the things on which we disagree, I try to stress those things upon which we both agree. 3B. I might try to soothe the other's feelings and preserve our relationship. 4B. I sometimes sacrifice my own wishes for the wishes of the other person. 11B. I might try to soothe the other's feelings and preserve our relationship. 15A. I might try to soothe the other's feelings and preserve our relationship. 16A. I try not to hurt the other's feelings. 18A. If it makes the other person happy, I might let him maintain his views. 21A. In approaching negotiations, I try to be considerate of the other person's wishes. 24A. If the other's position seems very important to him, I would try to meet his wishes. 25B. In approaching negotiations, I try to be considerate of the other person's wishes. 27B. If it makes the other person happy, I might let him maintain his views. 30A. I try not to hurt the other's feelings.	2A. I try to find a compromise solution. 4A. I try to find a compromise solution. 7B. I give up some points in exchange for others. 10B. I try to find a compromise solution. 12B. I will let him have some of his positions if he lets me have some of mine. 13A. I propose a middle ground. 18B. I will let him have some of his positions if he lets me have some of mine. 20B. I try to find a fair combination of gains and losses for everyone. 22A. I try to find a position that is intermediate between his and mine. 24B. I try to get him to settle for a compromise. 26A. I propose a middle ground. 29A. I propose a middle ground.	2B. I attempt to deal with all of his/her and my concerns. 5A. I consistently seek the other's help in working out a solution. 8B. I attempt to get all concerns and issues immediately out in the open. 11A. I attempt to get all concerns and issues immediately out in the open. 14A. I tell him my ideas and ask him for his. 19A. I attempt to get all concerns and issues immediately out in the open. 20A. I attempt to immediately work through our differences. 21B. I always lean toward a direct discussion of the problem. 23A. I am very often concerned with satisfying all our wishes. 26B. I am nearly always concerned with satisfying all our wishes. 28B. I usually seek the other's help in working out a solution. 30B. I always share the problem with the other person so that we can work it out.
ROCI-II (Rahim, 1983b)	8. I use my influence to get my ideas accepted. 9. I use my authority to make a decision in my favour. 18. I use my expertise to make a decision in my favour. 21. I am generally firm in pursuing my side of the issue. 25. I sometimes use my power to win a competitive situation.	3. I attempt to avoid being "put on the spot" and try to keep my conflict with A to myself. 6. I usually avoid open discussion of my differences with A. 16. I try to stay away from disagreement with A. 17. I avoid an encounter with A. 26. I try to keep my disagreement with A to myself in order to avoid hard feelings. 27. I try to avoid unpleasant exchanges with A.	2. I generally try to satisfy the needs of A. 10. I usually accommodate the wishes of A. 11. I give in to the wishes of A. 13. I usually make concessions to A. 19. I often go along with the suggestions of A. 24. I try to satisfy the expectations of A.	7. I try to find a middle course to resolve an impasse. 14. I usually propose a middle ground for breaking deadlocks. 15. I negotiate with A so that a compromise can be reached. 20. I use "give and take" so that a compromise can be made.	1. I try to investigate an issue with A to find a solution acceptable to us. 4. I try to integrate my ideas with those of A to come up with a decision jointly. 5. I try to work with A to find solution to a problem that satisfies our expectations. 12. I exchange accurate information with A to solve a problem together. 22. I try to bring all our concerns out in the open so that the issues can be resolved in the best possible way. 23. I collaborate with A to come up with decisions acceptable to us. 28. I try to work with A for a proper understanding of a problem.
DUTCH (Van de Vliert, 1997)	1. I push my own point of view. 2. I search for gains. 3. I fight for a good outcome for myself. 4. I do everything to win.	1. I avoid a confrontation about our differences. 2. I avoid differences of opinion as much as possible. 3. I try to make differences loom less severe. 4. I try to avoid a confrontation with the other.	1. I give in to the wishes of the other party. 2. I concur with the other party. 3. I try to accommodate the other party. 4. I adapt to the other parties' goals and interests.	1. I try to realize a middle-of-the-road solution. 2. I emphasize that we have to find a compromise solution. 3. I insist we both give in a little. 4. I strive whenever possible towards a fifty-fifty compromise.	1. I examine issues until I find a solution that really satisfies me and the other party. 2. I stand for my own and other's goals and interests. 3. I examine ideas from both sides to find a mutually optimal solution. 4. I work out a solution that serves my own as well as other's interests as good as possible.

Appendix 4-4 Score results of questionnaires in pilot study

Score results of UPO1

Respondent: UPO1   Age: 45-54   Date: 10th April, 2015

Highest degree: Bachelor's degree

Rating Scale: Disagree = 1; Tend to Disagree = 2; Tend to Agree = 3; Agree = 4

Score Results of (UPO1) - (UPO)				Total	Average Score
Conflict Resolution Styles	**Question Numbers and Scores**			**Total**	**Average Score**
Force	(4)	(8)	(9)	6	2.00
	3	1	2		
Avoidance	(3)	(6)	(11)	4	1.33
	1	2	1		
Accommodation	(2)	(7)	(10)	8	2.67
	2	3	3		
Compromise	(5)	(15)	(13)	10	3.33
	4	3	3		
Consensus	(1)	(12)	(14)	12	4.00
	4	4	4		

Score Results of (UPO1) - (ESG)				Total	Average Score
Conflict Resolution Styles	**Question Numbers and Scores**			**Total**	**Average Score**
Force	(4)	(8)	(9)	7	2.33
	3	1	3		
Avoidance	(3)	(6)	(11)	4	1.33
	1	2	1		
Accommodation	(2)	(7)	(10)	6	2.00
	2	2	2		
Compromise	(5)	(15)	(13)	9	3.00
	3	3	3		
Consensus	(1)	(12)	(14)	11	3.67
	4	3	4		

Score Results of (UPO1) - (DBG)				Total	Average Score
Conflict Resolution Styles	**Question Numbers and Scores**			**Total**	**Average Score**
Force	(4)	(8)	(9)	9	3.00
	3	3	3		
Avoidance	(3)	(6)	(11)	3	1.00
	1	1	1		
Accommodation	(2)	(7)	(10)	6	2.00
	2	1	3		
Compromise	(5)	(15)	(13)	8	2.67
	2	3	3		
Consensus	(1)	(12)	(14)	12	4.00
	4	4	4		

Source: Summarised by the author

Score results of ESG1

Respondent: ESG1   Age: 45-54   Date: 11th May, 2015
Highest degree: Trade/technical/vocational training
Rating Scale: Disagree = 1; Tend to Disagree = 2; Tend to Agree = 3; Agree = 4

Score Results of (ESG1) - (UPO)					
Conflict Resolution Styles	**Question Numbers and Scores**			**Total**	**Average Score**
Force	(4)	(8)	(9)	7	2.33
	3	1	3		
Avoidance	(3)	(6)	(11)	4	1.33
	1	2	1		
Accommodation	(2)	(7)	(10)	7	2.33
	2	3	2		
Compromise	(5)	(15)	(13)	8	2.67
	3	2	3		
Consensus	(1)	(12)	(14)	12	4.00
	4	4	4		

Score Results of (ESG1) - (ESG)					
Conflict Resolution Styles	**Question Numbers and Scores**			**Total**	**Average Score**
Force	(4)	(8)	(9)	7	2.33
	3	1	3		
Avoidance	(3)	(6)	(11)	3	1.00
	1	1	1		
Accommodation	(2)	(7)	(10)	9	3.00
	2	4	3		
Compromise	(5)	(15)	(13)	9	3.00
	3	3	3		
Consensus	(1)	(12)	(14)	12	4.00
	4	4	4		

Score Results of (ESG1) - (DBG)					
Conflict Resolution Styles	**Question Numbers and Scores**			**Total**	**Average Score**
Force	(4)	(8)	(9)	11	3.67
	4	3	4		
Avoidance	(3)	(6)	(11)	3	1.00
	1	1	1		
Accommodation	(2)	(7)	(10)	5	1.67
	2	1	2		
Compromise	(5)	(15)	(13)	8	2.67
	3	2	3		
Consensus	(1)	(12)	(14)	11	3.67
	4	3	4		

Source: Summarised by the author

Score results of DBG1

Respondent: DBG1   Age: 35-44   Date: 26th May, 2015
Highest degree: Professional Degree
Rating Scale: Disagree = 1; Tend to Disagree = 2; Tend to Agree = 3; Agree = 4

Score Results of (DBG1) - (UPO)				Total	Average Score
Conflict Resolution Styles	**Question Numbers and Scores**			**Total**	**Average Score**
Force	(4)	(8)	(9)	7	2.33
	3	2	2		
Avoidance	(3)	(6)	(11)	6	2.00
	2	3	1		
Accommodation	(2)	(7)	(10)	9	3.00
	2	4	3		
Compromise	(5)	(15)	(13)	9	3.00
	4	2	3		
Consensus	(1)	(12)	(14)	10	3.33
	3	3	4		

Score Results of (DBG1) - (ESG)				Total	Average Score
Conflict Resolution Styles	**Question Numbers and Scores**			**Total**	**Average Score**
Force	(4)	(8)	(9)	6	2.00
	3	1	2		
Avoidance	(3)	(6)	(11)	8	2.67
	2	2	4		
Accommodation	(2)	(7)	(10)	8	2.67
	2	3	3		
Compromise	(5)	(15)	(13)	8	2.67
	3	2	3		
Consensus	(1)	(12)	(14)	10	3.33
	3	3	4		

Score Results of (DBG1) - (DBG)				Total	Average Score
Conflict Resolution Styles	**Question Numbers and Scores**			**Total**	**Average Score**
Force	(4)	(8)	(9)	7	2.33
	3	1	3		
Avoidance	(3)	(6)	(11)	4	1.33
	1	2	1		
Accommodation	(2)	(7)	(10)	7	2.33
	2	2	3		
Compromise	(5)	(15)	(13)	7	2.33
	3	2	2		
Consensus	(1)	(12)	(14)	11	3.67
	4	3	4		

Source: Summarised by the author

Appendix 4-5 Interview transcripts of ESG1 and UPO1

Interview Transcripts of ESG1

Interviewer: How do you feel the UTC project regarding to the architecture design?

ESG1: Yeah, it is a good involvement. Because it is looking at very very basic, starting principles, understanding what we want from the school, involving the builders, and the architects design what are meeting for the school complex.

Interviewer: How about the architecture design? Do you feel happy for that?

ESG1: Yes, yes, it is very good. As you start to see the design turning to the real building, you get much more appreciation for the design. Or the actual elements you have to consider the impacts, how it looks, but also makes sure we can stay within the budget.

Interviewer: Which part you like most about the architecture design?

ESG1: The impact is that you can come around the building is a piece of wet ground where you can actually see the impact to the building. The plan has a big sign there, so you have a visual impact of the building you come around. Gives you a striking view which is what is the school wants to represent. It's that excellent of the event, back (1:30). You want to send your children. That's what the school wants to achieve.

Interviewer: How about any part that you don't like, or not happy for that?

ESG1: The big thing for me is that we have certain compromises about understanding the outdoor space. And we are limited to the land and footprint, and how much areas we could have. And that was the limitation between what was building and what was the outdoor space for students, for (2:06) purposes. And that's quite minimum. That was one of my … , It's quite a small amount of outdoor space. That was one of my concerns very early on. But we have to compromise because of budget, land and the requirements of school.

Interviewer: In the meeting, have you guys talked about this issue about the outdoor space?

ESG1: Yeah, it was a big issue. The only way to allow more space on the ground is to build more stories. So we have a short footprint, but higher. But the consequence then was planning permission, costing and it was a case of balancing what we could afford. So we could have more floor space and outdoor activities, but the additional cost for another floor would mean the project is over budget. So we have different options to select, different designs, different ideals. We pick the design we like within budget. And that means a limited outdoor space. We also have to change the building design slightly because one the building nearby had a portion of land that was go on to be used for maybe future expansion. So they didn't want us to block that of. So we have to put an angle design on the building. We had reservation causes it seems to build around another (3:30). But in fact, it was quite an impact

because you have a nice walk way diagonal lean (3:35) to the building which has good visibility of the whole building. So in the end, the design was very very good.

Interviewer: For the reasons of limiting the height of building, do you think it makes sense?

ESG1: Yeah, the area got certain height, and we are above it. There are three or four hotels in the area. We are aware that they could make issues with planning, e.g. project delayed or blocked. Just for delay, we had a problem wouldn't be done on time. So the idea was to understand what would be accepted by our planning and authority. So the aim with planning is just ask what they thought would pass. Another story would be something would have problem.

Interviewer: Is there any other kind of problem with the similar situation?

ESG1: With other companies around us? We had concerns with the hotel, because almost with the school you have in the future may be 600 students would arrive the school in the morning. And the consequence is the traffic, so that was the concern about too much traffic.

Interviewer: How about any other kinds of concern, they rejected it by the reason you don't understand?

ESG1: There were other issues with flood plan, because it was on the flood plan so we had certain conditions put in to the foot in, and how our water services run off. So that had caused environmental issues. The land next to us belongs to the railway. So even it's far, another thing with the height was how high it (05:41) and how far it could forward. And if it can forward on the trucks, then the railway behind us would likely to make more concerns and conditions. And drainage. And another thing was that the land was wasteland. The underneath was (6:00) with previous buildings, so we had concerns about maybe (6:03) stuff stores, maybe oil, ditto or fuels. So we had to consider how much costs we had to put into membrane, across the ground to prevent any poisons coming out to the school. And also understand how much piling we need to place to make sure the school almost float on the background. So all the things had to be considered. To the points we almost thought were what options we can do would be worth to the part of land, because there were so many conditions on this plot. We almost thought about what we could do together for the plan. And that was the discussion point we had.

Interviewer: How about the furniture? Like how do you guys choose the furniture, like what colour, what furniture to use in the classroom?

ESG1: It was quite democracy. So we had a lot of options given to us. So what kind of things do we want, what fits in the school. Basically there were a group of us around the room who were able to attend, because a lot of people have lots of jobs, and it's a support activities. I work for Toyota, a colleague works for Rolls-Royce, so we couldn't always attend the meetings. There will be different people at different time. We almost get concession the

more with different parties to see what people wanted. Once everything put together, the company that was looking after (7:31), would then give us a price, and would say what we could afford, and what options we have. So it based on showing what we could afford, what we would like, what was durable, and what fits in what we want for the school. And it was purely democracy that we pick what we thought, and we came to good agreements. There was always a chair – Louise Curd – would have to find a decision that meets everything we mentioned. But automolly (7:55) we came to a decision together. Some of the colours, we wanted it to be impactful. But we didn't want it looks like primary school. So we didn't want much bright colour, making it looks like nursery school. We want it to look professional, bright, and have a character. So the UTC symbol gets certain shade of blue. And we want it to have that blue throughout everything, so there will be a feel throughout the whole building. And that was another thing we looked at. But we still want that vibrancy, which look modern, new, durable, professional, flexible, so we could change things around, so we have a flexible learning area. We want things to be mobile, so chairs and tables on wheels could (8:45). So the area could be utilised for different reasons. We have a very small budget for such a big building. And we have to buy the building, the furniture, all the equipment. Everything meets the budget. So it's how we spend the budget. We learned from other UTC projects' mistakes. We reviewed with other UTC, discussed with the head teacher, principles to find out what was wrong. And we took all the findings back, we reviewed all the issues and make sure we could, try not to have any other same faults.

Interviewer: Do you have any comments about the workshop? OR about the meeting group? Is there anything that they can promote?

ESG1: The one thing throughout may be a visible plan of the project, timelines. So when should the furniture be decided for, that thing. When the thing should be done here. So sometimes we would, maybe talk too much, and little action. We may say next meeting we decide, next meeting we decide. And then all of a sudden, we have to decide. Also budget were not put aside clearly enough. So maybe they say now … because you build so much, you can't have the furniture you want unless you compromise your building. So when the timeline got to a position where we have to make a decision, suddenly we have no flexibility to change our minds because the building has to progress. The building has certain cost, so we have no free money and flexibility to have furniture and equipment. And this is the problem. When you have laymen running a project, and it's one project that they have no understanding of deadline, time, scales of big building project. And we need someone who maybe has very good building experience and background. So he could put a plan together, clearly deadline and timeline. So we could say: we must agree here, then we have a couple of weeks to review before this final deadline. So this will be a very option. But again, we only have one project, we would try to be democracy, try to work out together. Sometimes a bit more control from the chair would be better, I think.

Interviewer: Do you any comments about my case study?

ESG1: It's well managed. It's nice to see it. It's good that we could support things. It's nice to

work on education and educational building as well. And any learning can be taken from the project becomes a (11:35) to other schools to use as an abstract, a review project to help other companies when they start to look at it. It's advantage because it gives people data to take forward into their own planning procedures. Again as we learn from other UTCs, other UTCs have faults through the project. Take the learning from that kind of project, put in place early on, then hopefully that improves each time we go forward we get a better and better process. And it's an improvement of every project, which automatically saves the tax pay money. Because it's tax pay money to this school, but also saves the students a chance that the school is not ready in time. Another issue is going to happen.

Interviewer: Hello. Thank you for joining my interview. The questions are about the communication in UTC workshop. And you are free to quit at any time you want. First of all, generally, how do you feel about the final architecture design of UTC project?

UPO1: It's very pleased with that fact it fits in the surrounding architecture well. It represents an industrial building as a post school, quite apart too late. (00:43) I think we are very clear in terms of we want it to reflect more of the work place, then a school environment. And I think with a team field, we catch what has been designed. So, generally, we are very positive. And we have budget restriction. Because it is education funding agency funded it, the EFA funded it. And therefore, although we would like to build it that would probably something that would draw the eyes, we were very aware the budget constraints we had. We wouldn't necessarily be able to afford that.

Interviewer: Which part of architecture design you like most?

UPO1: I think it is the fact that it is like a workplace, I think so. From an architecture point of view, I think the fact that the architecture is managed to encapsulate the coo (1:38) colours and coo (1:40) identities within some of the renderings. And I think that will be a very nice way of ... It has been seen as the UTC building.

Interviewer: So that's what you like most?

UPO1: I think that's what I like most.

Interviewer: Is there any part you don't like?

UPO1: There is nothing I found offensive in the building at all. I find it very easy to look at. There is nothing in particular I find offensive at all.

Interviewer: When discussing the architecture issues with others, did you express all of your ideas to others?

UPO1: I think we had a very open dialogue with architects. There was quite a number of us were involved in what we called the design user group meetings. And we were able to discuss any points, as for qualifications. We had a good working relationship with our architects. So if we weren't happy for something he would go back, and he would bring suggestions to us. So I think in terms of being able to actually question, it was an easy process.

Interviewer: What is the reason that supports you to express all the ideas? You feel you are free to say.

UPO1: Yeah, I think we always felt that within those meetings, we built a good team atmosphere between us. And it was approached as a team. And if somebody has an opinion to express about it, we would always give a good reason, why we had that opinion to express? So people could either back up, or review the ideas. And we always give space and time to do that, because it was done through workshop with us.

Interviewer: That's actually very good for team work.

UPO1: Absolutely.

Interviewer: So, did you think you express all the reasons for your comments?

UPO1: Yeah, we were always encouraged to explain why we made a comment. So we were always given that time and space to say, well, I don't like this because are, or what may be better if we did. I think for me, particularly from an interior point of view, because my background is an interior architecture, I was able to question. That was a very long time ago. I was able to solve the question of flow, and the use of space. I think we also have good reference point as well. So we have buildings that we used as reference points so we are able to take the architect to say this is the type of thing that we are looking at. So particularly, the Rolls-Royce Learning and Developing Centre was the one we used for that. And our partner was very good at letting us exploring (5:00), to enable us to make really good judgment about how the architect should utilize the ideas within our design.

Interviewer: Do you think the other members they also express the reasons about comments?

UPO1: Yeah, I think so. Because we were very lucky, within a team, we had John's from Toyota, he had being involved the development of apprenticeship centre there. And we had Andy Davies from Rolls-Royce, who had being involved the whole development of their apprenticeship centre. So they had being through the process before. And we were very aware that you have to question because if you don't, you might get something you don't want at the end of process. So I think we were very very clear that say now, or don't say at all. So say now, because you can't change it once we start to build.

Interviewer: If there are different options, what would the workshop do next?

UPO1: There was variety of options. We looked at the pros and cons of each option. And we looked at how those options actually met our needs, what would people concerns over them. So we would analyse each of them. We also had a young man within the design user group, who was a student to UTC previously. So quite often, if we couldn't decide which would be the better option, we would ask him from a user's perspective.

Interviewer: That's actually a very useful strategy.

UPO1: Yeah. So we would always ask him from a user's perspective, actually how you think this would work in reality. So we knew we could do that from the education side, but we actually wanted to know the young people was really really response to the environment we will create.

Interviewer: as you said, if there are many different options, you analysed each option. But how did the workshop make the final decision, like you make a voting or you do some verbal discussing?

UPO1: it was always through significant amount of verbal discussion. In some cases, significant amount of drawing on our architects drawings, to investigate. Really use it as a workshop has to post. Just being in a meeting, it really was about workshopping and testing things out. It would come out as a consensus as an opinion, and bringing everybody together to go, yeah, actually that is a compromise I can make. But if somebody was really adamantly against it, we would ask the architect to go back and look up further design until we were all had that concerns and opinions that it would work.

Interviewer: So it's a kind of very smoothly movement forward.

UPO1: I think we were just lucky although we were all quite opinionated. We actually worked really well cohesively together. And we would give each other the space to express our opinions. I think there was lots of understanding within the group you wouldn't necessary always get. I think it was quite smooth that we understood what ... Yeah, I think that's something need to say, Mott MacDonald, who was working with us as our project development partner. They were very clear in with us to start about what our role was. And the fact we did need to challenge, and the fact we did need to make sure we got what we needed at the end of the process.

Interviewer: Do you feel difficult to achieve the final decision?

UPO1: No, I don't think so. I think we had a very open forum. I always felt like that everybody was able to put their opinions on the table, and nobody was holding anything back. So ...

Interviewer: Could you give me an example? Like I saw here that the scheme for the furniture. Like how do you guys chose the colours, or styles?

UPO1: What we did was, working with the furniture company. They actually came and spoke to us, so they gave us an original brief, they gave us an original presentation on the types of furnishing they could do. Within that presentation, they asked our opinions of certain things. And they initially came back with some physical samples, same sample board ideas, about the looking feel we might be looking for, challenges, we do like that or we don't like that, or not sure it was robust enough. They came back with a catalogue of things. And they actually went through that catalogue with us where we challenged things, and they came out with a solution. We also send that out via emails to people, because it was quite a big catalogue list. We could actually have a look at it in our own time to make a decision whether it was correct or not. We also did some fact (11:30). We also went out, looked some other university technical colleges. So what had worked, what hadn't worked in those environments? So that was really useful. And myself and colleagues bought that back to the meetings to say actually that piece of furniture we had seen it, and we talked to the people who said it actually breaks easily. So it still even in this point where we just get into the point now the furniture we bought were very thin, every single piece has been specified, had been bought to a meeting with the principle. He is being able to look at it, he is being able to check it out. He looked the colour. I have to say that he made lots of amazing destruction testing on it. Particularly with chairs, he pushed it everywhere which way possibly can think the student might push the chair, in order to make sure it's right. And if we were not happy with things, the furniture providers is gonna away and bought more samples back, more colour samples back. I mean automaliy (12:39), now, the principle in place, automally the principle had the final say on it. The principle was in place until the September this year. So the design and user group really put forward, this is the design we think is right, he has the final view on it.

Interviewer: So that's much easier for you guys.

UPO1: I think we were taking a little step back from it. But we will still question if we weren't sure about something. He is the final decision. He is quite happy with what we had done. Somebody told me.

Interviewer: I can see that you guys did lots of jobs to analyse the furniture and colours, everything. Do you think all of your concerns have been realized?

UPO1: I think, in majority of cases, we could say yes. I think the thing would like if the budget stretch too, so internally we would like to have a lovely glass wall, all the way long, it's a continuous conversation about a long glass wall for us to be able to see what the apprentices are doing. And we have to compromise on that. But we still have quite a large amount of glass within that particular wall. So compromise has to be made. They still been challenged, they had been challenged by project steering group as well. We were able to talk why the compromise had to be made that they accept it.

Interviewer: With a proper reason.

UPO1: Yes.

Interviewer: Do you have any suggestions or comments about the UTC workshop?

UPO1: I think if I was advising another UTC, I would make sure that you get a really good rep (14:43), representatives through the organization that are working on the project in the workshop. So you don't have the come back later on the people say we don't like that, we are not happy with that. Making sure the project steering group have automatically given that design and user group, that workshop group the jurisdictions to be able to make decisions. Because they get to trust in that group that they will make the right decision. Making sure that the people you select to be on there do understand architecture or build process, or involved in those things before. I think setting those ground rules is really important. So same as the outset, you must challenge, you must ask questions, because if you don't do it now, you won't be able to do it later, because once the budget is set, once the build program is set, unless there is something catastrophic, they can't source the product forever, then it is what it, you can't, it's not a movable beast.

Interviewer: Last question, do you have any suggestions or comments about my case study?

UPO1: I think we had a very good mixing and balancing of people on there. I think they were very open to suggestions. I think you picked a good one to use. I think because it gets a restraint budget it get a number of partners, so it has to be done by a consensus of opinions. I think it should be a good case study for you to be able to articulate your thought.

Appendix 5-1 Workshop Poster

Public consultation regarding a future exhibition at Wollaton Hall

Date: 14th (Monday) September, 2 to 4 pm
Place: South State Suite, Wollaton Hall

Event details: Members of the public who are familiar with Wollaton Hall & Park are required for this workshop. The participants will share their opinions to help design a temporary show room for the "Feathered Dinosaurs Exhibition" that may happen in the future. No professional knowledge is required but your passion and time are much appreciated! This is a great opportunity to get involved with a collaboration between Wollaton Hall and the University of Nottingham, and we need your help in shaping an exhibition for the public.

Spaces on this workshop are limited. To register your participation please contact *Licheng Zhang,* licheng.zhang@nottingham.ac.uk by **5th September**, 2015. You will receive £10 reward for this workshop.

Appendix 5-2 Questionnaires of the Designer

Respondent's ID: _____ (ID only)

Survey of the Designer – Staff

Strictly Confidential

Please tick (☑) the appropriate box after each statement, to indicate *how you handle your disagreement or conflict with staff. "Staff" here represents the museum worker in workshop.* Try to recall as many recent conflict situations as possible in ranking these statements.

Questions	Disagree	Tend to Disagree	Tend to Agree	Agree
1. To uncover the conflict with **staff**, I attempt to get all concerns and issues out in the open………………………………..	☐	☐	☐	☐
2. Rather than negotiate the things on which we disagree, I try to stress those things upon which **staff** and me both agree.	☐	☐	☐	☐
3. I usually avoid discussion of my differences with **staff**. …..	☐	☐	☐	☐
4. I am usually firm in pursuing my goals.	☐	☐	☐	☐
5. I try to find a fair combination of gains and losses for **staff** and me.	☐	☐	☐	☐
6. I try to stay away from disagreement with **staff**.	☐	☐	☐	☐
7. I sacrifice my own wishes to satisfy the wishes of **staff**. …	☐	☐	☐	☐
8. In order to win my position, I usually ignore the needs of **staff**.	☐	☐	☐	☐
9. I use my influence, authority, or expertise to achieve a decision in my favour.	☐	☐	☐	☐
10.I usually make concessions to satisfy the wishes of **staff**.	☐	☐	☐	☐
11.I avoid an encounter with **staff**.	☐	☐	☐	☐
12.I try to integrate my ideas with those of A to find a solution that really satisfies **staff** and me. ………..............	☐	☐	☐	☐
13.I strive whenever possible towards a fifty-fifty compromise to **staff**.	☐	☐	☐	☐
14.I try to exchange accurate information with **staff** for a proper understanding of a problem. …………………………….	☐	☐	☐	☐
15.I try to find a middle ground to resolve conflicts with **staff**	☐	☐	☐	☐

Respondent's ID: _____ (ID only)

Survey of the Designer – Public

Strictly Confidential

Please tick (☑) the appropriate box after each statement, to indicate *how you handle your disagreement or conflict with* **public**. *"Public" here represents the local residents in the workshop.* Try to recall as many recent conflict situations as possible in ranking these statements.

Questions	Disagree	Tend to Disagree	Tend to Agree	Agree
1. To uncover the conflict with **public**, I attempt to get all concerns and issues out in the open………………………….	☐	☐	☐	☐
2. Rather than negotiate the things on which we disagree, I try to stress those things upon which **public** and me both agree.	☐	☐	☐	☐
3. I usually avoid discussion of my differences with **public**.	☐	☐	☐	☐
4. I am usually firm in pursuing my goals.	☐	☐	☐	☐
5. I try to find a fair combination of gains and losses for **public** and me.	☐	☐	☐	☐
6. I try to stay away from disagreement with **public**.	☐	☐	☐	☐
7. I sacrifice my own wishes to satisfy the wishes of **public**.	☐	☐	☐	☐
8. In order to win my position, I usually ignore the needs of **public**.	☐	☐	☐	☐
9. I use my influence, authority, or expertise to achieve a decision in my favour.	☐	☐	☐	☐
10. I usually make concessions to satisfy the wishes of **public**.	☐	☐	☐	☐
11. I avoid an encounter with **public**.	☐	☐	☐	☐
12. I try to integrate my ideas with those of A to find a solution that really satisfies **public** and me. …………...........	☐	☐	☐	☐
13. I strive whenever possible towards a fifty-fifty compromise to **public**.	☐	☐	☐	☐
14. I try to exchange accurate information with **public** for a proper understanding of a problem. …………………………….	☐	☐	☐	☐
15. I try to find a middle ground to resolve conflicts with **public**.	☐	☐	☐	☐

Appendix 5-3 Questionnaires of the Staff

Respondent's ID: _____ (ID only)

Survey of the Staff – Designer

Strictly Confidential

Please tick (☑) the appropriate box after each statement, to indicate *how you handle your disagreement or conflict with* **designer**. *"***Designer***" here represents the design expert in the workshop.* Try to recall as many recent conflict situations as possible in ranking these statements.

Questions	Disagree	Tend to Disagree	Tend to Agree	Agree
1. To uncover the conflict with **designer**, I attempt to get all concerns and issues out in the open…………………………….	☐	☐	☐	☐
2. Rather than negotiate the things on which we disagree, I try to stress those things upon which **designer** and me both agree. ………………………………………………..	☐	☐	☐	☐
3. I usually avoid discussion of my differences with **designer**. ……………………………………………………	☐	☐	☐	☐
4. I am usually firm in pursuing my goals. ……………………	☐	☐	☐	☐
5. I try to find a fair combination of gains and losses for **designer** and me. …………………………………………….	☐	☐	☐	☐
6. I try to stay away from disagreement with **designer**. ……..	☐	☐	☐	☐
7. I sacrifice my own wishes to satisfy the wishes of **designer**. ……………………………………………………	☐	☐	☐	☐
8. In order to win my position, I usually ignore the needs of **designer**. ……………………………………………………	☐	☐	☐	☐
9. I use my influence, authority, or expertise to achieve a decision in my favour. ………………………………………	☐	☐	☐	☐
10. I usually make concessions to satisfy the wishes of **designer**. ……………………………………………………	☐	☐	☐	☐
11. I avoid an encounter with **designer**. ………………………	☐	☐	☐	☐
12. I try to integrate my ideas with those of A to find a solution that really satisfies **designer** and me. ………………	☐	☐	☐	☐
13. I strive whenever possible towards a fifty-fifty compromise to **designer**. …………………………………….	☐	☐	☐	☐
14. I try to exchange accurate information with **designer** for a proper understanding of a problem. ………………………	☐	☐	☐	☐
15. I try to find a middle ground to resolve conflicts with **designer**. ……………………………………………………	☐	☐	☐	☐

Respondent's ID: _____ (ID only)

Survey of the Staff – Public

Strictly Confidential

Please tick (☑) the appropriate box after each statement, to indicate *how you handle your disagreement or conflict with* **public**. *"Public" here represents the local residents in the workshop.* Try to recall as many recent conflict situations as possible in ranking these statements.

Questions	Disagree	Tend to Disagree	Tend to Agree	Agree
1. To uncover the conflict with **public**, I attempt to get all concerns and issues out in the open………………………….	☐	☐	☐	☐
2. Rather than negotiate the things on which we disagree, I try to stress those things upon which **public** and me both agree.	☐	☐	☐	☐
3. I usually avoid discussion of my differences with **public**.	☐	☐	☐	☐
4. I am usually firm in pursuing my goals.	☐	☐	☐	☐
5. I try to find a fair combination of gains and losses for **public** and me.	☐	☐	☐	☐
6. I try to stay away from disagreement with **public**.	☐	☐	☐	☐
7. I sacrifice my own wishes to satisfy the wishes of **public**.	☐	☐	☐	☐
8. In order to win my position, I usually ignore the needs of **public**.	☐	☐	☐	☐
9. I use my influence, authority, or expertise to achieve a decision in my favour.	☐	☐	☐	☐
10. I usually make concessions to satisfy the wishes of **public**.	☐	☐	☐	☐
11. I avoid an encounter with **public**.	☐	☐	☐	☐
12. I try to integrate my ideas with those of A to find a solution that really satisfies **public** and me. ………….……...	☐	☐	☐	☐
13. I strive whenever possible towards a fifty-fifty compromise to **public**.	☐	☐	☐	☐
14. I try to exchange accurate information with **public** for a proper understanding of a problem. …………………………….	☐	☐	☐	☐
15. I try to find a middle ground to resolve conflicts with **public**.	☐	☐	☐	☐

Appendix 5-4 Participants' notes of Group A

AD's notes, page 1

① 40m x 30m

→ infront on main entrance 'feature Elevation'.
→ cut of one of the main 'axis' of the space/lights.
→ public'
→ basement extent ?.

② → off 'axis'
→ more secluded.
→ not interrupting the main build.
→ issue with proximity of Trees.

③ → away from building ✓
→ Some of Trees → possible TPO.
→ Conservation Area.
→ listed building restriction in proximity ?.

④ → in view of main elevation.
→ Issue of pond.
→ central axis ✗

(5). Main issue of trees.

→ off axis ✓

→ issue of light.

→ TPO ?

→ good change in elevation.

→ issue to golf course proximity. (note).

(6).

→ good link to existing buildings.

→ good change in elevation.

⤷ link to basement. ?

→ link to other existing building ?

→ good pedestrian access across site.

Site one:
- In front of the enterance;
- Too small area?

Site Two:
- Larger area, more open;
- Too open, does this replicate dinosaurs in nature?

Site Three:
- Are these areas systematically linked;

Site Four:
- How was site three and four made to be independant from each other?

Site Five:
- Stimulates mystery and complexity within site via use of tree cover;

Site Six:
- Made use of the footpaths.

①

+ Good visibility.

+ Easily accessible from car parks

- Limited space
- Blocks the view from the steps
- Blocks the view of the house from the approach

- Impact on access during build

+ Correct styling could enhance vision (ie pyramid at Louvre)

- Limited space

②

+ Close to the house
+ Visible but not intrusive to the house
+ Lots of room
+ Still retains good car park access
+ More space to make a more versatile building for future use
+ Again styling could complement the building (The Hall)
+ Less used space currently

③

- Trees very close maybe constant pruning a removal required

+ Allows the building to blend in an 'hide' little impact on visuals of the hall.

∴ No visibility from carparkl

④

- As ~~the~~ (No 1) constricts views.

- Garden compromiced.

+ Nice flat area close to house

- No visibility from carparh.

Opportunity to create something that blends in (natural look) or something that is radically different but still fittier

⑤

+ Quiet location
+ Hidden – low impact on the hall
- Lots of trees difficult access during build (large trees!!)
- Impact on, or from, golf course
- Quiet shaded area for families

—

⑥

- Difficult site? Slope

+ Quiet side of building

+ Less impact on the visible aspects

+ Possible direct link to main building

+ Almost dead ground?

1. * More people can see it.
2. * Good view itself for the extension, but obstructing the view of main Hall.

2. + People can see it easily.
   * Good view for the extension itself without obstructing the view of main Hall.
   * Good Circulation
   * Good size of site.
   * No issues of trees.
   * Open space with good light.

3. *. Quiet.
   * Space is limited with preserved trees
   * Here is not the good choice.

4. * This site

   300 - 400 K.

Archaeology survey underground.

Appendix 5-5 Idea Rating Sheets of Group A

AD's IRS

Participant ID: AD.   *Write or draw one __idea__ here in large letters:*

→ Conservation Area.
→ English heritage.
→ listed building consent
→ TPO. (Tree Preservation Orders).
→ light → internal feeling of space.
→ materiality. → as existing on site.
→ proportions of new building to existing.
→ daylight – sun path analysis.
→ user experience.
→ not interrupting main central axis of building + site.
→ 'same extend elevation proportions.
→ 1 story / 2 story? basement? → size of dinosaurs.
→ link to existing buildings.
→ Budget?

→ views of from Wollaton Hall at new building. ?
→ Construction issues.
 ↳ noise
 ↳ visual. effect.
 ↳ storage of materials.
→ programme.?
→ people who need to be involved. ?
 ↳ client
 ↳ planners.
 ↳ curator?

Do you agree?
Please fill your one dot below. And stick your comment slips if you want.

😊 Strong Agreement	😊 Agreement	😐 Neutral	🙁 Disagreement	☹️ Strong Disagreement	❓ Confusion
OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO

Strengths & Opportunities

Good consideration & thinking about the new extension.

Concerns & Weaknesses

Participant ID: __AS__   *Write* or *draw* one *__idea__* here in large letters:

In general, each independent site - in some sense - look different from each other (i.e, in terms of area, terrain type, tree cover, etc.). Was the purpose of site selection purely based on these characteristics or rather, based on visitor experience? For me sites : 1, 2, 4, & 6 all to trigger the same perceived reaction. Whereas, 3 and 5 - especially site 5 - gave a much different reaction (i.e., a sense of mystery and complexity), which invokes an almost analogue reaction to feel an environment where dinosaurs would roam in nature. It may be better to design (or select) site location based on drawing a relationship between physical site parameters and environmental psychology.

Do you agree?

Please fill your one dot below. And stick your comment slips if you want.

🙂 Strong Agreement	🙂 Agreement	😐 Neutral	🙁 Disagreement	☹️ Strong Disagreement	❓ Confusion
OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO

Strengths & Opportunities   **Concerns & Weaknesses**

AP1's IRS

Participant ID: AP1.

Write or **draw** one **idea** here in large letters:

→ Due to the ~~advantage~~ of the advantage of the place, the building should take into account the surrounding environment as a prime ~~gold~~ design guideline, integrating the Natural context with the possible New building can to be developed ~~if the~~ through the ~~old~~ Visitors observation.

• All sites have ~~top~~ remarkable Features, in terms of view and contact with the existing building → this (Wimbledon Hall) construction gives an insight of the possible materials that can be used. For instance ~~or~~ Ressambling or integrating Yellowstone in Parts of the facade, ~~or in the~~ As well as shapes. doul be interesting if the used in the scheme. equally some ~~use~~ Contemporary Materials

For instance embracing a conceptual idea of ~~Keeping~~ Mixing the historical Value of the building (~~simily~~ done through the use of either ~~its~~ similar Materials, such as Bricks or Stones, OR using colors.) →

Do you agree?

Please fill your one dot below. And stick your comment slips if you want.

😀 Strong Agreement	🙂 Agreement	😐 Neutral	🙁 Disagreement	☹ Strong Disagreement	❓ Confusion
OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO

Strengths & Opportunities	Concerns & Weaknesses
Agree with the factors that the new extension needs to pay attention.	

Participant ID: AP2   *Write or draw one __idea__ here in large letters:*

WOLLATON HALL IS ICONIC AND CAN BE SEEN
FROM MILES AWAY — DO WE WANT TO MAINTAIN
THIS?
SITE 1 WOULD HAVE A MAJOR IMPACT ON THE MAIN
FRONTAL ASPECT. THEREFORE I WOULD PROPOSE SITES
2, 3, 5 or 6 — SITE 2 WOULD ALLOW FOR AN IMPACT
STYLE BUILDING SITES 3 & 5 WOULD BE BETTER TO
BLEND IN WITH THE WOODED SURROUNDS — COULD THE
BUILDING OR EXHIBITS BLEND WITH THE TREES?
SITE 6 IS THE QUIET SI,

Do you agree?
Please fill your one dot below. And stick your comment slips if you want.

☺ Strong Agreement	☺ Agreement	😐 Neutral	🙁 Disagreement	☹ Strong Disagreement	? Confusion
OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO

Strengths & Opportunities	Concerns & Weaknesses
agree with first main point.	

Participant ID: AP2   *Write* or *draw* one *__idea__* here in large letters:

SITE 6 IS ON QUITE A STEEP SLOPE WHICH
MAY HAVE AN IMPACT ON THE BUILD & DESIGN
BUT WOULD ALLOW CONNECTION TO THE MAIN
BUILDING & PERMIT A HIGH LEVEL VIEWING
GALLEY?
CONCERNS WOULD BE ACCESS FOR LESS MOBILE

Do you agree?
Please fill your one dot below. And stick your comment slips if you want.

☺ Strong Agreement	☺ Agreement	😐 Neutral	☹ Disagreement	☹☹ Strong Disagreement	？ Confusion
OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO

Strengths & Opportunities

agree with Connection Idea.

Concerns & Weaknesses

Site 5.
Isolated from Main Hall
Site 3.
Enclosed by preserved trees with limited space.

✴ Site 2 8 :
Requirement of outstanding architecture
style.
✴ Site 6:
Connecting the Main Hall &
Gallery, Cafe, somehow.

Site 3 & 5:
Quiet.

Participant ID: AP3   *Write* or *draw* one *idea* here in large letters:

Site 1 : * More people can see it.
        * Good view itself for the extension.
  but obstructing the view of Main Hall.

Site 2 : * People can see it easily.
        * Good view itself without obstructing
  the view of Main Hall.
        * Good circulation
        * Good size of site
        * No issues of trees
        * Open space with good light.

Site 3 : * Very quiet
        * limited space surrounded by
  Preserved trees.
        * This one is not a good choice.

Site 4 : * The extension would obstruct the view of
  Main Hall.
        * And also obstruct the entrance space in front
  of Main Hall
        * This one is not a good choice.

Site 5 : * Very quiet
        * Very limited space
        * A bit isolated from Main Hall.
        * Enclosed by big trees.

Site 6 : * No big influence on the view of Main Hall
  as lower than Main Hall.
        * The site has a good site size.
        * This site can connect the Main Hall
  and Gallery, Cafe, Somehow.

Do you agree?

Please fill your one dot below. And stick your comment slips if you want.

😊 Strong Agreement	🙂 Agreement	😐 Neutral	🙁 Disagreement	☹️ Strong Disagreement	❓ Confusion
OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO

Strengths & Opportunities   **Concerns & Weaknesses**

Site [6] to concern about obstructing the view and
Relevance of the other buildings.

Agree with site 2.

AGREE WITH THE THOUGHTS ABOUT [SITE 6]
IT ALLOWS MORE FLEXIBILITY WITH THE
DESIGN OPTIONS WITH LESS IMPACT ON HOUSE
OR GROUNDS

Agree with points about site ② + ⑥.

Appendix 5-6 Final conclusion of Group A

Design _for_ the
public –
public consultation

Post event use?

Lge dinosaur outside
– diff. loc.

Design: Harmony OR
"futuristic

Site 5: surrounded by trees ⇒
diff. user experience
dinosaurs surround you
Wooden framed bldg

Budget – better to build
further from the house?
less constraints

Materials:

Glass + chrome

Wood – blend with
trees

*Yellow stone

*English Heritage /
conservation / listed
bldg consent
⇒ determine bldg
mats. used

Appendix 5-7 Questionnaires of Group A

AD's questionnaires, page 1

Respondent's ID: __AD__. (ID only)

Survey of the Designer – Staff

Strictly Confidential

Please tick (☑) the appropriate box after each statement, to indicate *how you handle your disagreement or conflict with staff*. *"Staff"* here represents the museum worker in workshop. Try to recall as many recent conflict situations as possible in ranking these statements.

Questions	Disagree	Tend to Disagree	Tend to Agree	Agree
1. To uncover the conflict with **staff**, I attempt to get all concerns and issues out in the open………………………	☐	☐	☑	☐
2. Rather than negotiate the things on which we disagree, I try to stress those things upon which **staff** and me both agree. ……………………	☐	☐	☑	☐
3. I usually avoid discussion of my differences with **staff**. …..	☐	☑	☐	☐
4. I am usually firm in pursuing my goals. …………………..	☐	☐	☑	☐
5. I try to find a fair combination of gains and losses for **staff** and me. ……………………	☐	☐	☐	☑
6. I try to stay away from disagreement with **staff**. ……………	☐	☑	☐	☐
7. I sacrifice my own wishes to satisfy the wishes of **staff**. …	☐	☑	☐	☐
8. In order to win my position, I usually ignore the needs of **staff**. ……………………	☑	☐	☐	☐
9. I use my influence, authority, or expertise to achieve a decision in my favour. ……………………	☐	☑	☐	☐
10.I usually make concessions to satisfy the wishes of **staff**.	☐	☐	☑	☐
11.I avoid an encounter with **staff**. ……………………	☐	☑	☐	☐
12.I try to integrate my ideas with those of A to find a solution that really satisfies **staff** and me. ………………	☐	☐	☐	☑
13.I strive whenever possible towards a fifty-fifty compromise to **staff**. ……………………	☐	☐	☑	☐
14.I try to exchange accurate information with **staff** for a proper understanding of a problem. ……………………	☐	☐	☐	☑
15.I try to find a middle ground to resolve conflicts with **staff**	☐	☐	☑	☐

Respondent's ID: __AD.__ (ID only)

Survey of the Designer – Public

Strictly Confidential

Please tick (☑) the appropriate box after each statement, to indicate *how you handle your disagreement or conflict with **public**. "**Public**" here represents the local residents in the workshop.* Try to recall as many recent conflict situations as possible in ranking these statements.

Questions	Disagree	Tend to Disagree	Tend to Agree	Agree
1. To uncover the conflict with **public**, I attempt to get all concerns and issues out in the open……………………………	☐	☐	☑	☐
2. Rather than negotiate the things on which we disagree, I try to stress those things upon which **public** and me both agree. ……………………………………………………………	☐	☐	☑	☐
3. I usually avoid discussion of my differences with **public**.	☐	☐	☐	☑
4. I am usually firm in pursuing my goals. …………………	☐	☐	☐	☑
5. I try to find a fair combination of gains and losses for **public** and me. ……………………………………………	☐	☐	☐	☑
6. I try to stay away from disagreement with **public**. ………	☑	☐	☐	☐
7. I sacrifice my own wishes to satisfy the wishes of **public**.	☑	☐	☐	☐
8. In order to win my position, I usually ignore the needs of **public**. ……………………………………………………………	☐	☑	☐	☐
9. I use my influence, authority, or expertise to achieve a decision in my favour. …………………………………………	☐	☐	☐	☑
10. I usually make concessions to satisfy the wishes of **public**.	☐	☐	☑	☐
11. I avoid an encounter with **public**. ………………………	☐	☑	☐	☐
12. I try to integrate my ideas with those of A to find a solution that really satisfies **public** and me. ………………	☐	☐	☑	☐
13. I strive whenever possible towards a fifty-fifty compromise to **public**. …………………………………………	☐	☐	☑	☐
14. I try to exchange accurate information with **public** for a proper understanding of a problem. ………………………	☐	☐	☐	☑
15. I try to find a middle ground to resolve conflicts with **public**. ……………………………………………………………	☐	☐	☐	☑

Respondent's ID: _AS_ (ID only)

Survey of the Staff – Designer

Strictly Confidential

Please tick (☑) the appropriate box after each statement, to indicate *how you handle your disagreement or conflict with* **designer**. *"Designer" here represents the design expert in the workshop.* Try to recall as many recent conflict situations as possible in ranking these statements.

Questions	Disagree	Tend to Disagree	Tend to Agree	Agree
1. To uncover the conflict with **designer**, I attempt to get all concerns and issues out in the open………………………………..	☐	☐	☐	☑
2. Rather than negotiate the things on which we disagree, I try to stress those things upon which **designer** and me both agree. ……………………………………………………………	☐	☐	☑	☐
3. I usually avoid discussion of my differences with **designer**. …………………………………………………………	☑	☐	☐	☐
4. I am usually firm in pursuing my goals. ……………………	☐	☐	☐	☑
5. I try to find a fair combination of gains and losses for **designer** and me. ……………………………………………	☐	☐	☑	☐
6. I try to stay away from disagreement with **designer**. ……..	☐	☑	☐	☐
7. I sacrifice my own wishes to satisfy the wishes of **designer**. ………………………………………………………	☐	☑	☐	☐
8. In order to win my position, I usually ignore the needs of **designer**. ……………………………………………………	☑	☐	☐	☐
9. I use my influence, authority, or expertise to achieve a decision in my favour. ……………………………………	☑	☐	☐	☐
10. I usually make concessions to satisfy the wishes of **designer**. ………………………………………………………	☑	☐	☐	☐
11. I avoid an encounter with **designer**. ………………………	☐	☑	☐	☐
12. I try to integrate my ideas with those of A to find a solution that really satisfies **designer** and me. …………………	☐	☐	☑	☐
13. I strive whenever possible towards a fifty-fifty compromise to **designer**. ………………………………………	☐	☑	☐	☐
14. I try to exchange accurate information with **designer** for a proper understanding of a problem. ……………………………	☐	☐	☐	☑
15. I try to find a middle ground to resolve conflicts with **designer**. ………………………………………………………	☐	☐	☐	☑

Respondent's ID: _____ AS _____ (ID only)

Survey of the Staff – Public

Strictly Confidential

Please tick (☑) the appropriate box after each statement, to indicate *how you handle your disagreement or conflict with **public**. "**Public**" here represents the local residents in the workshop.* Try to recall as many recent conflict situations as possible in ranking these statements.

Questions	Disagree	Tend to Disagree	Tend to Agree	Agree
1. To uncover the conflict with **public**, I attempt to get all concerns and issues out in the open................................	☐	☐	☐	☑
2. Rather than negotiate the things on which we disagree, I try to stress those things upon which **public** and me both agree.	☐	☐	☑	☐
3. I usually avoid discussion of my differences with **public**.	☑	☐	☐	☐
4. I am usually firm in pursuing my goals.	☐	☐	☐	☑
5. I try to find a fair combination of gains and losses for **public** and me.	☐	☐	☑	☐
6. I try to stay away from disagreement with **public**.	☐	☑	☐	☐
7. I sacrifice my own wishes to satisfy the wishes of **public**.	☐	☑	☐	☐
8. In order to win my position, I usually ignore the needs of **public**.	☑	☐	☐	☐
9. I use my influence, authority, or expertise to achieve a decision in my favour.	☑	☐	☐	☐
10. I usually make concessions to satisfy the wishes of **public**.	☐	☐	☑	☐
11. I avoid an encounter with **public**.	☐	☐	☐	☑
12. I try to integrate my ideas with those of A to find a solution that really satisfies **public** and me.	☐	☐	☐	☑
13. I strive whenever possible towards a fifty-fifty compromise to **public**.	☑	☐	☐	☐
14. I try to exchange accurate information with **public** for a proper understanding of a problem.	☐	☐	☐	☑
15. I try to find a middle ground to resolve conflicts with **public**.	☐	☐	☐	☑

Respondent's ID: _AP1_ (ID only)

Survey of the Public – Designer

Strictly Confidential

Please tick (☑) the appropriate box after each statement, to indicate *how you handle your disagreement or conflict with* **designer**. *"Designer" here represents the design expert in the workshop.* Try to recall as many recent conflict situations as possible in ranking these statements.

Questions	Disagree	Tend to Disagree	Tend to Agree	Agree
1. To uncover the conflict with **designer**, I attempt to get all concerns and issues out in the open……………………	☐	☐	☑	☐
2. Rather than negotiate the things on which we disagree, I try to stress those things upon which **designer** and me both agree. ………………………………………	☐	☐	☐	☑
3. I usually avoid discussion of my differences with **designer**. ………………………………………………	☐	☐	☐	☑
4. I am usually firm in pursuing my goals. …………………	☐	☐	☑	☐
5. I try to find a fair combination of gains and losses for **designer** and me. ……………………………………	☐	☐	☐	☑
6. I try to stay away from disagreement with **designer**. ……	☐	☐	☑	☐
7. I sacrifice my own wishes to satisfy the wishes of **designer**. ………………………………………………	☑	☐	☐	☐
8. In order to win my position, I usually ignore the needs of **designer**. ……………………………………………	☑	☐	☐	☐
9. I use my influence, authority, or expertise to achieve a decision in my favour. ……………………………………	☑	☐	☐	☐
10. I usually make concessions to satisfy the wishes of **designer**. ………………………………………………	☐	☑	☐	☐
11. I avoid an encounter with **designer**. ………………………	☑	☐	☐	☐
12. I try to integrate my ideas with those of A to find a solution that really satisfies **designer** and me. ………………	☐	☐	☐	☑
13. I strive whenever possible towards a fifty-fifty compromise to **designer**. …………………………………	☐	☐	☒	☑
14. I try to exchange accurate information with **designer** for a proper understanding of a problem. …………………	☐	☐	☐	☑
15. I try to find a middle ground to resolve conflicts with **designer**. ………………………………………………	☐	☐	☐	☑

Respondent's ID: _APL_ (ID only)

Survey of the Public – Staff

Strictly Confidential

Please tick (☑) the appropriate box after each statement, to indicate *how you handle your disagreement or conflict with* **staff**. *"Staff"* here represents the museum worker in workshop. Try to recall as many recent conflict situations as possible in ranking these statements.

Questions	Disagree	Tend to Disagree	Tend to Agree	Agree
1. To uncover the conflict with **staff**, I attempt to get all concerns and issues out in the open......................................	☐	☑	☐	☐
2. Rather than negotiate the things on which we disagree, I try to stress those things upon which **staff** and me both agree.	☐	☐	☐	☑
3. I usually avoid discussion of my differences with **staff**.	☐	☑	☐	☐
4. I am usually firm in pursuing my goals.	☐	☐	☑	☑
5. I try to find a fair combination of gains and losses for **staff** and me.	☐	☐	☐	☑
6. I try to stay away from disagreement with **staff**.	☑	☐	☐	☐
7. I sacrifice my own wishes to satisfy the wishes of **staff**. ...	☑	☐	☐	☐
8. In order to win my position, I usually ignore the needs of **staff**.	☑	☐	☐	☐
9. I use my influence, authority, or expertise to achieve a decision in my favour.	☑	☐	☐	☐
10. I usually make concessions to satisfy the wishes of **staff**.	☑	☐	☐	☐
11. I avoid an encounter with **staff**.	☐	☐	☑	☐
12. I try to integrate my ideas with those of A to find a solution that really satisfies **staff** and me.	☐	☐	☑	☐
13. I strive whenever possible towards a fifty-fifty compromise to **staff**.	☐	☐	☑	☐
14. I try to exchange accurate information with **staff** for a proper understanding of a problem.	☐	☐	☑	☐
15. I try to find a middle ground to resolve conflicts with **staff**	☐	☐	☐	☑

Respondent's ID: A/1 (ID only)

Survey of the Public – Public

Strictly Confidential

Please tick (☑) the appropriate box after each statement, to indicate *how you handle your disagreement or conflict with* **public**. *"Public" here represents the local residents in the workshop. Try to recall as many recent conflict situations as possible in ranking these statements.*

Questions	Disagree	Tend to Disagree	Tend to Agree	Agree
1. To uncover the conflict with **public**, I attempt to get all concerns and issues out in the open.................................	☐	☐	☐	☑
2. Rather than negotiate the things on which we disagree, I try to stress those things upon which **public** and me both agree.	☐	☐	☐	☑
3. I usually avoid discussion of my differences with **public**.	☐	☐	☑	☐
4. I am usually firm in pursuing my goals.	☑	☐	☐	☐
5. I try to find a fair combination of gains and losses for **public** and me.	☐	☐	☐	☑
6. I try to stay away from disagreement with **public**.	☐	☑	☑	☐
7. I sacrifice my own wishes to satisfy the wishes of **public**.	☑	☐	☐	☐
8. In order to win my position, I usually ignore the needs of **public**.	☐	☑	☐	☐
9. I use my influence, authority, or expertise to achieve a decision in my favour.	☑	☐	☐	☐
10. I usually make concessions to satisfy the wishes of **public**.	☐	☑	☐	☐
11. I avoid an encounter with **public**.	☑	☐	☐	☐
12. I try to integrate my ideas with those of A to find a solution that really satisfies **public** and me.	☐	☐	☐	☑
13. I strive whenever possible towards a fifty-fifty compromise to **public**.	☐	☐	☐	☑
14. I try to exchange accurate information with **public** for a proper understanding of a problem.	☐	☐	☐	☑
15. I try to find a middle ground to resolve conflicts with **public**.	☐	☐	☐	☑

Respondent's ID: _AP2_ (ID only)

Survey of the Public – Designer

Strictly Confidential

Please tick (☑) the appropriate box after each statement, to indicate *how you handle your disagreement or conflict with* **designer**. *"Designer" here represents the design expert in the workshop.* Try to recall as many recent conflict situations as possible in ranking these statements.

Questions	Disagree	Tend to Disagree	Tend to Agree	Agree
1. To uncover the conflict with **designer**, I attempt to get all concerns and issues out in the open....................................	☐	☐	☐	☑
2. Rather than negotiate the things on which we disagree, I try to stress those things upon which **designer** and me both agree.	☐	☐	☑	☐
3. I usually avoid discussion of my differences with **designer**.	☑	☐	☐	☐
4. I am usually firm in pursuing my goals.	☐	☐	☑	☐
5. I try to find a fair combination of gains and losses for **designer** and me.	☐	☐	☑	☐
6. I try to stay away from disagreement with **designer**.	☑	☐	☐	☐
7. I sacrifice my own wishes to satisfy the wishes of **designer**.	☑	☐	☐	☐
8. In order to win my position, I usually ignore the needs of **designer**.	☐	☐	☑	☐
9. I use my influence, authority, or expertise to achieve a decision in my favour.	☐	☑	☐	☐
10. I usually make concessions to satisfy the wishes of **designer**.	☑	☐	☐	☐
11. I avoid an encounter with **designer**.	☑	☐	☐	☐
12. I try to integrate my ideas with those of A to find a solution that really satisfies **designer** and me.	☐	☐	☐	☑
13. I strive whenever possible towards a fifty-fifty compromise to **designer**.	☐	☐	☑	☐
14. I try to exchange accurate information with **designer** for a proper understanding of a problem.	☐	☐	☐	☑
15. I try to find a middle ground to resolve conflicts with **designer**.	☐	☐	☑	☐

AP2's questionnaires, page 2

Respondent's ID: _Ap2_ (ID only)

Survey of the Public – Staff

Strictly Confidential

Please tick (☑) the appropriate box after each statement, to indicate *how you handle your disagreement or conflict with staff. "Staff" here represents the museum worker in workshop.* Try to recall as many recent conflict situations as possible in ranking these statements.

Questions	Disagree	Tend to Disagree	Tend to Agree	Agree
1. To uncover the conflict with **staff**, I attempt to get all concerns and issues out in the open……………………………	☐	☐	☐	☑
2. Rather than negotiate the things on which we disagree, I try to stress those things upon which **staff** and me both agree. ……………………………………………………………	☐	☐	☑	☐
3. I usually avoid discussion of my differences with **staff**. …..	☑	☐	☐	☐
4. I am usually firm in pursuing my goals. …………………………	☐	☐	☑	☐
5. I try to find a fair combination of gains and losses for **staff** and me. …………………………………………………………	☐	☐	☑	☐
6. I try to stay away from disagreement with **staff**. ……………	☑	☐	☐	☐
7. I sacrifice my own wishes to satisfy the wishes of **staff**. …	☑	☐	☐	☐
8. In order to win my position, I usually ignore the needs of **staff**. …………………………………………………………………	☐	☑	☐	☐
9. I use my influence, authority, or expertise to achieve a decision in my favour. ……………………………………………	☐	☑	☐	☐
10. I usually make concessions to satisfy the wishes of **staff**.	☐	☑	☐	☐
11. I avoid an encounter with **staff**. ………………………………	☑	☐	☐	☐
12. I try to integrate my ideas with those of A to find a solution that really satisfies **staff** and me. ………………	☐	☐	☐	☑
13. I strive whenever possible towards a fifty-fifty compromise to **staff**. ……………………………………………	☐	☐	☑	☐
14. I try to exchange accurate information with **staff** for a proper understanding of a problem. ………………………………	☐	☐	☐	☑
15. I try to find a middle ground to resolve conflicts with **staff**	☐	☐	☑	☐

Respondent's ID: __AP2__ (ID only)

Survey of the Public – Public

Strictly Confidential

Please tick (☑) the appropriate box after each statement, to indicate *how you handle your disagreement or conflict with **public**. "Public" here represents the local residents in the workshop.* Try to recall as many recent conflict situations as possible in ranking these statements.

Questions	Disagree	Tend to Disagree	Tend to Agree	Agree
1. To uncover the conflict with **public**, I attempt to get all concerns and issues out in the open………………………………	☐	☐	☐	☑
2. Rather than negotiate the things on which we disagree, I try to stress those things upon which **public** and me both agree. ……………………………………………………………………	☑	☐	☐	☐
3. I usually avoid discussion of my differences with **public**.	☑	☐	☐	☐
4. I am usually firm in pursuing my goals. …………………	☐	☐	☑	☐
5. I try to find a fair combination of gains and losses for **public** and me. …………………………………………………	☐	☐	☑	☐
6. I try to stay away from disagreement with **public**. …………	☑	☐	☐	☐
7. I sacrifice my own wishes to satisfy the wishes of **public**.	☐	☐	☑	☐
8. In order to win my position, I usually ignore the needs of **public**. ………………………………………………………………	☑	☐	☐	☐
9. I use my influence, authority, or expertise to achieve a decision in my favour. ……………………………………………	☐	☐	☑	☐
10. I usually make concessions to satisfy the wishes of **public**.	☐	☐	☑	☐
11. I avoid an encounter with **public**. ……………………………	☑	☐	☐	☐
12. I try to integrate my ideas with those of A to find a solution that really satisfies **public** and me. …………………	☐	☐	☐	☑
13. I strive whenever possible towards a fifty-fifty compromise to **public**. ………………………………………	☐	☐	☑	☐
14. I try to exchange accurate information with **public** for a proper understanding of a problem. ………………………………	☐	☐	☑	☐
15. I try to find a middle ground to resolve conflicts with **public**. ………………………………………………………………	☐	☐	☑	☐

Respondent's ID: AP3 (ID only)

Survey of the Public – Designer

Strictly Confidential

Please tick (☑) the appropriate box after each statement, to indicate *how you handle your disagreement or conflict with **designer**. "Designer" here represents the design expert in the workshop.* Try to recall as many recent conflict situations as possible in ranking these statements.

Questions	Disagree	Tend to Disagree	Tend to Agree	Agree
1. To uncover the conflict with **designer**, I attempt to get all concerns and issues out in the open.............................	☐	☐	☐	☑
2. Rather than negotiate the things on which we disagree, I try to stress those things upon which **designer** and me both agree.	☐	☐	☐	☑
3. I usually avoid discussion of my differences with **designer**.	☐	☑	☐	☐
4. I am usually firm in pursuing my goals.	☐	☑	☐	☐
5. I try to find a fair combination of gains and losses for **designer** and me.	☐	☐	☑	☐
6. I try to stay away from disagreement with **designer**.	☑	☐	☐	☐
7. I sacrifice my own wishes to satisfy the wishes of **designer**.	☑	☐	☐	☐
8. In order to win my position, I usually ignore the needs of **designer**.	☑	☐	☐	☐
9. I use my influence, authority, or expertise to achieve a decision in my favour.	☐	☐	☐	☑
10. I usually make concessions to satisfy the wishes of **designer**.	☐	☑	☐	☐
11. I avoid an encounter with **designer**.	☐	☑	☐	☐
12. I try to integrate my ideas with those of A to find a solution that really satisfies **designer** and me.	☐	☐	☐	☑
13. I strive whenever possible towards a fifty-fifty compromise to **designer**.	☐	☑	☐	☐
14. I try to exchange accurate information with **designer** for a proper understanding of a problem.	☐	☐	☐	☑
15. I try to find a middle ground to resolve conflicts with **designer**.	☐	☐	☑	☐

Respondent's ID: _AP3_ (ID only)

Survey of the Public – Staff

Strictly Confidential

Please tick (☑) the appropriate box after each statement, to indicate *how you handle your disagreement or conflict with* **staff**. *"Staff"* *here represents the museum worker in workshop.* Try to recall as many recent conflict situations as possible in ranking these statements.

Questions	Disagree	Tend to Disagree	Tend to Agree	Agree
1. To uncover the conflict with **staff**, I attempt to get all concerns and issues out in the open…………………………	☐	☐	☑	☐
2. Rather than negotiate the things on which we disagree, I try to stress those things upon which **staff** and me both agree. …………………………………………………………	☐	☐	☑	☐
3. I usually avoid discussion of my differences with **staff**. …..	☐	☑	☐	☐
4. I am usually firm in pursuing my goals. …………………	☑	☐	☐	☐
5. I try to find a fair combination of gains and losses for **staff** and me. …………………………………………………………	☐	☐	☑	☐
6. I try to stay away from disagreement with **staff**. …………	☐	☑	☐	☐
7. I sacrifice my own wishes to satisfy the wishes of **staff**. …	☐	☑	☐	☐
8. In order to win my position, I usually ignore the needs of **staff**. …………………………………………………………………	☐	☑	☐	☐
9. I use my influence, authority, or expertise to achieve a decision in my favour. ………………………………………	☐	☐	☑	☑
10. I usually make concessions to satisfy the wishes of **staff**.	☐	☑	☑	☐
11. I avoid an encounter with **staff**. ………………………………	☐	☑	☐	☐
12. I try to integrate my ideas with those of A to find a solution that really satisfies **staff** and me. ………………	☐	☐	☐	☑
13. I strive whenever possible towards a fifty-fifty compromise to **staff**. …………………………………………	☐	☑	☐	☐
14. I try to exchange accurate information with **staff** for a proper understanding of a problem. ………………………	☐	☐	☑	☐
15. I try to find a middle ground to resolve conflicts with **staff**	☐	☐	☑	☐

Respondent's ID: __AP3__ (ID only)

Survey of the Public – Public

Strictly Confidential

Please tick (☑) the appropriate box after each statement, to indicate *how you handle your disagreement or conflict with* **public**. *"Public" here represents the local residents in the workshop.* Try to recall as many recent conflict situations as possible in ranking these statements.

Questions	Disagree	Tend to Disagree	Tend to Agree	Agree
1. To uncover the conflict with **public**, I attempt to get all concerns and issues out in the open……………………………	☐	☐	☐	☑
2. Rather than negotiate the things on which we disagree, I try to stress those things upon which **public** and me both agree. ……………………………………………………………	☐	☐	☐	☑
3. I usually avoid discussion of my differences with **public**.	☑	☑	☐	☐
4. I am usually firm in pursuing my goals. …………………	☐	☑	☐	☐
5. I try to find a fair combination of gains and losses for **public** and me. ……………………………………………………	☐	☐	☑	☐
6. I try to stay away from disagreement with **public**. …………	☑	☐	☐	☐
7. I sacrifice my own wishes to satisfy the wishes of **public**.	☑	☑	☐	☐
8. In order to win my position, I usually ignore the needs of **public**. ………………………………………………………………	☑	☐	☐	☐
9. I use my influence, authority, or expertise to achieve a decision in my favour. ………………………………………………	☐	☐	☐	☑
10. I usually make concessions to satisfy the wishes of **public**.	☑	☐	☑	☐
11. I avoid an encounter with **public**. ……………………………	☐	☑	☑	☐
12. I try to integrate my ideas with those of A to find a solution that really satisfies **public** and me. ……………………	☐	☑	☐	☑
13. I strive whenever possible towards a fifty-fifty compromise to **public**. ……………………………………………	☐	☑	☐	☐
14. I try to exchange accurate information with **public** for a proper understanding of a problem. ………………………………	☐	☐	☐	☑
15. I try to find a middle ground to resolve conflicts with **public**. ……………………………………………………………	☐	☐	☑	☐

AF's questionnaires

Respondent's ID: _AF_ (ID only)

Survey of the Facilitator

Strictly Confidential

Please tick (☑) the appropriate box after each statement, to indicate *how the **participants** handle the disagreement or conflict with **disputant***. The *"**participants**"* here represents one or more participants from designer, staff and public in the workshop. *"**Disputants**"* represents the ones who had conflicts with the *"**participants**"*. "**Both**" represents the *"**participants**" and "**disputants**"*. Try to recall as many recent conflict situations as possible in ranking these statements.

Questions	0	1~2	3~4	5
1. How many **participants** attempted to get all concerns and issues out in the open?	☐	☐	☑	☐
2. How many **participants** tried to stress those things upon which **both** agree?	☐	☑	☐	☐
3. How many **participants** usually avoided discussion of the differences with the **disputants**?	☐	☑	☐	☐
4. How many **participants** were usually firm in pursuing the own goals?	☐	☐	☑	☐
5. How many **participants** tried to find a fair combination of gains and losses for **both**?	☐	☐	☑	☐
6. How many **participants** tried to stay away from disagreement with the **disputants**?	☐	☐	☑	☐
7. How many **participants** sacrificed the own wishes to satisfy the wishes of **disputants**.	☐	☑	☐	☐
8. How many **participants** usually ignored the needs of **disputants**?	☑	☐	☐	☐
9. How many **participants** used the influence, authority, or expertise to achieve a decision in own favour?	☐	☑	☐	☐
10. How many **participants** usually made concessions to satisfy the wishes of **disputants**?	☐	☑	☐	☐
11. How many **participants** avoided an encounter with the **disputants**?	☑	☐	☐	☐
12. How many **participants** tried to integrate the own ideas with those of **disputants** to find a solution that really satisfies **both**?	☐	☐	☑	☐
13. How many **participants** strived whenever possible towards a fifty-fifty compromise to the **disputants**?	☐	☐	☑	☐
14. How many **participants** tried to exchange accurate information with the **disputants**?	☐	☐	☐	☑
15. How many **participants** tried to find a middle ground to resolve conflicts with the **disputants**?	☐	☐	☑	☐

AO's questionnaires

Respondent's ID: __AD__ (ID only)

Survey of the Observer

Strictly Confidential

Please tick (☑) the appropriate box after each statement, to indicate *how the **participants** handle the disagreement or conflict with **disputant**. The **"participants"** here represents one or more participants from designer, staff and public in the workshop. **"Disputants"** represents the ones who had conflicts with the **"participants"**. **"Both"** represents the **"participants"** and **"disputants"**. Try to recall as many recent conflict situations as possible in ranking these statements.*

Questions	0	1~2	3~4	5
1. How many **participants** attempted to get all concerns and issues out in the open?	☐	☐	☒	☐
2. How many **participants** tried to stress those things upon which **both** agree?	☐	☐	☒	☐
3. How many **participants** usually avoided discussion of the differences with the **disputants**?	☐	☒	☐	☐
4. How many **participants** were usually firm in pursuing the own goals?	☐	☐	☒	☐
5. How many **participants** tried to find a fair combination of gains and losses for **both**?	☐	☐	☒	☐
6. How many **participants** tried to stay away from disagreement with the **disputants**?	☐	☐	☒	☐
7. How many **participants** sacrificed the own wishes to satisfy the wishes of **disputants**.	☐	☒	☐	☐
8. How many **participants** usually ignored the needs of **disputants**?	☒	☒	☐	☐
9. How many **participants** used the influence, authority, or expertise to achieve a decision in own favour?	☐	☒	☐	☐
10. How many **participants** usually made concessions to satisfy the wishes of **disputants**?	☐	☐	☒	☐
11. How many **participants** avoided an encounter with the **disputants**?	☐	☒	☐	☐
12. How many **participants** tried to integrate the own ideas with those of **disputants** to find a solution that really satisfies **both**?	☐	☐	☒	☐
13. How many **participants** strived whenever possible towards a fifty-fifty compromise to the **disputants**?	☐	☐	☒	☐
14. How many **participants** tried to exchange accurate information with the **disputants**?	☐	☐	☐	☒
15. How many **participants** tried to find a middle ground to resolve conflicts with the **disputants**?	☐	☐	☒	☐

Appendix 5-8 Interview transcripts of Group A

Interview of AD

(1) INTERVIEWER: What is your opinion about the workshop?

AD: It is very good. I think today it was a good range of people here from different departments in the university. I think maybe there could've been more emphasis on more members of the public being there. I think we had a member being there his opinion was always quite well. I am hoping that members of the public could have similar opinions as he had.

(2) INTERVIEWER: Which part of the workshop did you like the most?

AD: I think it was going well, getting into details, really discussing the details of the ideas. So it was kind of an open discussion.

(2+) INTERVIEWER: Which part of the workshop did you like the least?

AD: I think it is hard to say. I think initially it was quite hard to write down your ideas, and not talk about them. I think I found that a bit challenging.

(3) INTERVIEWER: When discussing in the group, did you express all of your ideas to them?

AD: Yeah, I did. I got my main points across on that.

(3+) INTERVIEWER: What were the reasons you were able to express all of your ideas? Please give some examples.

AD: I think it's just my background of being an architect. I kind of got a bit of knowledge in understanding buildings and the process involved in putting a building on site.

(4) INTERVIEWER: Did you express all of your thoughts regarding the other members' ideas?

AD: Yeah, I believe so.

(4+) INTERVIEWER: What were the reasons you were able to express all of your comments? Please give some examples.

AD: I think the open discussion helped a lot and I think the person running the kind of discussion was able to do it in a diplomatic way.

(5) INTERVIEWER: Did you explain all the reasons for comments regarding your own or others' ideas?

AD: Yeah, I did.

(5+) INTERVIEWER: What were the reasons you were able to express all of your reasons? Please give some examples.

AD: Again, I think this relates back to the kind of open discussion. I think where it was conducted you were able to say what you think.

(6) INTERVIEWER: If there were differing opinions, how did you reach a decision as a group? E.g. voting or verbal discussion.

AD: I think it's just like most things, I think. You've got to kind of take a diplomatic stance and appreciate opinions of other people and yourself. It's not just your opinion that matters at the end of the day. It's an eclectic group.

(7) INTERVIEWER: Were you able to reach a final decision as a group regarding all of the design elements?

AD: Yeah. I think what we discussed today were able to limit some sites, that weren't kind of viable. We had discussed the main two sites that were viable for this workshop.

(7+) INTERVIEWER: What were the reasons you were able to reach a final decision?
AD: Again, I think it was just having a kind of open discussion about it.

(8) INTERVIEWER: How easy or difficult was it to reach a final decision as a group?
AD: I think it was quite easy. I think depends on the number of people being here today, I think it was a generally quite small group. So I think we were able to come up with similar ideas within small groups.

(9) INTERVIEWER: Do you feel that all of your opinions were treated fairly?
AD: Yeah, I think so.

(9+) INTERVIEWER: How were your opinions treated fairly? Please give some examples.
AD: I think we were able to, on the board, write our opinions whether we agreed or disagreed with people's opinions.

(10) INTERVIEWER: Is there a way the process of the workshop could be changed to enable the group to develop a finalised design?
AD: I think you need to get the correct people involved, to push forward, to get a design. So you need, technically your client, architect, other people partly involve to get a design, really.

(11) INTERVIEWER: Do you have any suggestions or comments about the workshop?
AD: Not really, no.

Interview of AS

(1) INTERVIEWER: What is your opinion about the workshop?
AS: I think it is a good opportunity to get opinions from other people who might not already know about it will be invested in it.

(2) INTERVIEWER: Which part of the workshop did you like the most?
AS: I suppose walking around the ground on my trip. I think that was nice to get out about and see the sites in person rather than just see pictures of them.

(2+) INTERVIEWER: Which part of the workshop did you like the least?
AS: It's difficult to answer really, because I was sort of half only half involved in it. So I suppose there really isn't an answer to that question for me.

(3) INTERVIEWER: When discussing in the group, did you express all of your ideas to them?
AS: Yeah, I did. I didn't necessary immediately, but eventually I did.

(3+) INTERVIEWER: What were the reasons you were able to express all of your ideas?
AS: The open environment.

(4) INTERVIEWER: Did you express all of your thoughts regarding the other members' ideas?
AS: Yes, if I had them.

(4+) INTERVIEWER: What were the reasons you were able to express all of your comments?
AS: being invited to as well.

(5) INTERVIEWER: Did you explain all the reasons for your comments regarding your own or others' ideas?
AS: As far as I am aware, yes.

(5+) INTERVIEWER: What were the reasons you were able to express all of your reasons?
AS: Very similar to previous question, isn't it? Open environment, and being asked.

(6) INTERVIEWER: If there were differing opinions, how did you reach a decision as a group? E.g. voting or verbal discussing.
AS: I don't think there was any disagreement in this particular workshop that needed resolving. So, yeah, no answer to that.

(7) INTERVIEWER: Were you able to reach a final decision as a group regarding all of the design elements?
AS: Yes.

(7+) INTERVIEWER: Please could you give a reason why you were able to reach a final decision?
AS: I don't know. I suppose we just reached an agreement that we happened to all agree in the first place, and there wasn't really too much to resolve.

(8) INTERVIEWER: How easy or difficult was it to reach a final decision as a group?
AS: It was very easy.

(8+) INTERVIEWER: Please could you give some reasons or examples why it was so easy?
AS: Because we agreed in the first place.

(9) INTERVIEWER: Do you feel that all of your opinions were treated fairly?
AS: Yes.

(9+) INTERVIEWER: How were your opinions treated fairly? Please give some examples.
AS: I was listened to whenever I raised, raised a comment, wasn't shut down. I was allowed to speak. And if anybody agreed, they were given the opportunity to disagree if they wanted to.

(10) INTERVIEWER: Is there a way the process of the workshop could be changed to enable the group to develop a finalised design?
AS: I don't think so. I think there is too many other aspects of such a project, some logistical problems and professional help needed to actually come to a conclusion in the real world. I think this was more a basic overview of the concept and what would be possible in an ideal world. But I don't think the real decision can be made by such a group in the real world.

(11) INTERVIEWER: Do you have any suggestions or comments about the workshop?
AS: No.

Interview of AP1

(1) INTERVIEWER: What is your opinion about the workshop?

AP1: The workshop, its main part was really interesting. However, it was quite rush as you might notice. I enjoy the part when you do the visit. You walked around the sites, however, as I said, it's still very rush. Cause it was very difficult when you are exposed so shortly to the environment, the site. And I am lucky cause I knew this place before, so I could have a broad picture when it was wanted. However, if I was just exposed at the very first time to this place, and I am just asked to visit the sites, I don't know, perhaps my responses would be completely different, or even out of context, which is, I don't know, in terms of research, that is going to influence the outcome of the workshop.

(2) INTERVIEWER: Which part of the workshop did you like the most?

AP1: I like the definitely as I said, the site visiting. I also enjoy when we were interacting and giving opinions regarding each, pointing out the main ideas that is well kept at the end. I really like it. Yeah, cause this part as I said, was really rush, the whole idea was really interesting. Because the interaction of the participation trying to gather ideas from all of us, from different backgrounds. So I found it really really interesting.

(2+) INTERVIEWER: Which part of the workshop did you like the least?

AP1: I was a bit confused. I reached the point, but I couldn't actually understand why the dinosaurs' images were for, I was confusing the point.

INTERVIEWER: Like this, the booklet on the table?

AP1: Yes, I couldn't use them. Probably, I don't know. If I had more kind of inside of what was the purpose of them would be different for me. I don't know. So that was basically what I found …

INTERVIEWER: So you found resources in front of you, that you didn't use, you didn't …

AP1: And I didn't know how … OK, this might be interesting, but then I don't know how to use. The time was so limited. So yeah, unfortunately, I think my contribution could be even better if I had been more kind of, I don't know, involved or integrated with what was happening, probably.

(3) INTERVIEWER: When discussing in the group, did you express all of your ideas to them?

AP1: No, to be one hundred percent honest. I couldn't when I was writing down even my ideas. I was cutting half of my description and my ideas. So then, OK, I am gonna just write it again, just rewrite it, just to reorganise the main points and this, but then suddenly everybody already did it. So maybe it was because when we are asked to start to write, I have to be honest, it spent probably, I don't know, a few minutes thinking like, how can I express and make the ideas like self-containing, at least cover a few of the main subjects they asked us to do. So that was what happened.

(4) INTERVIEWER: Did you express all of your thoughts regarding the other members' ideas?

AP1: Well, I didn't. Because for some reasons, somebody else did it for me. So I was like of yes they just expressed it. I did express my ideas regarding one point I guess. But yes, I could be more interactive. But I was quite shy cause I wasn't really sure whether I was doing it right or wrong. I was rushing into it.

INTERVIEWER: So you are talking about you expressing thoughts, so you had said that others had spoken up and they had said what you wanted to, is it clear?

AP1: Not exactly what I wanted to, but they pointed out at least one of my ideas. So I didn't express it as well. All of my ideas weren't expressed. First of all, I wrote them down, so okay, they are explicit there. And secondly, as I said, I was a bit shy in terms of how I was a bit lost until I started writing up. So, OK, I am just waiting until people started kind of giving their opinions. And afterwards, if I feel comfortable enough and if I see I am right with my thoughts, I will kind of give my points of view, which I did, like just write in the end regarding the materials and colours.

(5) INTERVIEWER: Did you explain all the reasons for your comments regarding your own or others' ideas?
AP1: No, as I said before. Even mine I couldn't finish. Cause right when I finished just the first part of writing, I run out of paper, then everybody finished, and I was about to talk about the site selection. OK, let's pin it up. What I had was …

INTERVIEWER: So you didn't feel you were able because of time to express all reasons behind everything?

AP1: Yeah, you just said it.

(6) INTERVIEWER: If there were differing opinions, how did you reach a decision as a group? E.g. voting or verbal discussing.
AP1: Well, I did have a disagreement with site 6. And I think I just also wrote it and pin it up. However, I just noticed something, the facilitator, she just, I understand it because of the time, and try to get more information. She just kind of sum up like the main points, and said 'OK, according to this, everybody agrees with site 6 and this and that' It was considered she said it. However, as I said like, maybe it was too rush to jump to conclusion afterwards. And, probably, I don't know, maybe I could've been more strong, I don't know. We could be …

INTERVIEWER: What did you feel about site 6 that you didn't express verbally?

AP1: Yeah, but she did it, she read it. Now I remember. She said like 'my interview with the views, the building, this and that. But when it comes to discussing the design idea, I truly believe that you need more time or least, kind of encourage people to give more ideas about something. But due to the time, you were just jumping into subjects. Just one subject we could spend one hour, so I also understand the lack of time. So if I just got stuck in one single thing, probably wouldn't be even worth it. So I was considering somebody else, even with the conflict with sites, site 5, we just found out that, OK, this site is unavailable, it's impossible to build something here due to the condition of the site. So then OK, maybe I shouldn't get into more.

INTERVIEWER: So you thought maybe site 5 would be OK. But it was kind of wiped of the table in the beginning?

AP1: No, actually I agreed with site 2. But what I am try to say is like, since I thought like, well, it is mainly for gathering ideas, it won't be like really, you know, I just kind of said OK, I am not going get stuck in a further the discussion, if you can keep moving towards the other topics. I pinned it up, so I said OK the researcher is going to know the result, the contradictions regarding the points. This is why I didn't express it.

(7) INTERVIEWER: Were you able to reach a final decision as a group regarding all of the design elements?
AP1: I think the facilitator tried, just to, honestly, gather the most important ideas. She did quite well. I found that she tried to pick up the main points. And everybody seemed comfortable with the final bullet points. So I think yes, it was kind of reach.

INTERVIEWER: So as far as, what were the reasons that you were able to reach the final decision? Did you say because the facilitator?

AP1: She helped a lot.

INTERVIEWER: Any other reasons why you think you were able to reach the decision as a group?

AP1: Well, no, I think it was a really interesting coincidence like most of the people agreed with specifically with the site. Unfortunately, we just focused on site, probably because we had the interaction. So there was the most kind of important part of the workshop. Because you felt you went there. You thought it was probably, the discussion, I mean the main conclusion was towards the site decision.

INTERVIEWER: Cause everything was hypothetical besides seeing.

AP1: Yeah, exactly. The other points were also kind of discussed. But, you could see, an over agreement just regarding the site 6. And, of course, the facilitator she helped just drew out the conclusion.

(8) INTERVIEWER: How easy or difficult was it to reach a final decision as a group?
AP1: It was quite easy. You know, I didn't find it like that complicated since everybody was kind of in the same wave length. Somehow, we got the same impression. It was interesting because there was one person didn't have any, two people they didn't have architecture, I don't know, there were a few people that didn't have architecture background. So we have kind of, sort of agreement.

(9) INTERVIEWER: Do you feel that all of your opinions were treated fairly?
AP1: Yeah. I think the facilitator she tried to just point out the main ideas I gave. Well, she just read it out loud, and everybody was just allowed to contribute. It was fine. I mean it was fair. She just bring to the table, what was written in my sheet, so I was like fine.

(10) INTERVIEWER: Is there a way the process of the workshop could be changed to enable the group to develop a finalised design?
AP1: Probably what I will suggest is like, explain, maybe it because in my case, but I wasn't really involved at the beginning. It's not their fault, the facilitator was explaining everything at the beginning. But I was actually just arrived. So in that case, I would say that in terms of the reach the design, perhaps, what I found, unfortunately, was the idea of main subject, she had a few materials and colours. Those weren't pointed out when we were kind of writing. You know, all the ideas were really random, and spread. So probably if we were kind of be given the ideas, OK, give your ideas regarding this and this, each subject. Probably you would reach really over an agreement, or even in each point we would have more specific agreements. So that would be like my main suggestion when the idea of design couldn't be reached, or developed.

(11) INTERVIEWER: Do you have any suggestions or comments about the workshop?

AP1: No, OK. The only thing was mainly the time, unfortunately. Well, I just already pointed out the subject that could be really nice. I think that something could have been done was just asking each participant instead of who wants to talk. Cause sometimes you are shy, and you feel not completely comfortable, cause you are afraid of being wrong, and nobody likes to be wrong. Nobody think this is OK, what she said is stupid. No, but maybe if you were asked like 'OK, you give this idea, what is your opinion?' Cause she read it, so what is your opinion, what do you think. So that could have created some sort of communication between, not only the facilitator, but the other people in the table. So I think that could be suggested.

Interview of AP2

(1) INTERVIEWER: What is your opinion about the workshop? What did you think?
AP2: Good, well organized, good ideas, good view of people.

(2) INTERVIEWER: Ok, and which part of it did you like the most?
AP2: I liked going around seeing the sights and having our own opinion and also being kept separately, so you made your own opinion rather than being swayed by others. Before we actually started you could look at the sights, get your own view, your own opinions, your own issues, go back and then again together looking in single at what the actual issues where, put them on a board and then reflecting on other people's ideas and you could actually agree with the ones you consent with, and you could see a lot of people have the same ideas, so it's nice to see that view.

(2+) INTERVIEWER: Ok, and was there anything that you didn't like about it?
AP2: No, I think it was a good approach. It would have been miserable if it was horrible and rainy, so luckily. It's a great idea in this kind of weather. If it would have been rainy maybe people would have been less likely and less prone to walk around so it depends as to whether it's a good option or not .

INTERVIEWER: Ok, so that's a factor you think?

AP2: And also whether the people are able, you got disabled people that would've struggle to walk around the sight doing the supervision but maybe their opinions are just as valuable in a public consensus meeting as opposed to what able body people think.

(3) INTERVIEWER: And were you able to discuss all of your ideas freely in the group?
AP2: Yes, yeah there was no problem, well organized, well controlled. Sam was very good at actually being a facilitator, having that personal charge, one to open the questions, one to control how the meeting went with the (inaudible) view the people around the table were reasonable, so that was easy to work with, but at other times you can get people who are harder, maybe more forceful. So it's nice to have someone in charge like Sam, who could actually watch people and make sure that everyone got an actual view of (inaudible).

(5) INTERVIEWER: And did you feel like you could explain, can you explain all the reasons that your comments regarding your own and others' ideas, were you able to express what you thought about other people's ideas?
AP2: Yeah definitely, because the ideas were on the board and there was anonymity. You weren't actually picking on a particular person. Everyone is aware of that so, there was only a few people in the room you could.., it could have been AP2, AP5 not John or Sam or anything like that, so that meant you weren't actually picking on a particular person it was purely a thought, and again it's not picking on it. It's having your own views and then having that gives the person a chance to question it and then feedback and maybe give more information so you get a clear view of what their thoughts were and they can expand on it. Then you can have another thought, and because the meeting was so well controlled you can build on ideas and expand what you thought.

(6) INTERVIEWER: Were there any differing opinions?
AP2: There was to a certain degree, and again some of that wasn't down to disagreements on people's thoughts, it was on how we could go with budgets, and what people thought felt better. So, with the building being so iconic there was the aspect of do you actually look to touch it or do you try and hide the new building to make sure it doesn't have an impact still

provides the same effect, but doesn't actually have an impact on what the building looks like, so it wasn't more disagreements as opposed to what's the best option to suit the building, but still give the actual exhibit hall the right kind of profile, that was it.

(7) INTERVIEWER: Where you able to reach a consensus, like a decision as a group? Everyone got along well enough that you could come up with a final decision?
AP2: Not a final decision, because we didn't have enough money (enough money?) enough information regarding the budget, the type of building, so literally and also the constraints so we all agreed on a couple of sites we thought were best. We quite easily got to that idea, but how it was built depended on how much money you had, what kind of materials you were allowed to use or and what materials you could use, you could afford to use, and so again we couldn't come to an agreement completely because we didn't have enough information at this stage. What we got is what we think, two good sites to work with. If then we had an extra meeting and said alright let's expand on that, on these two sites what would you choose. We could then decide how it worked based on constraints, materials, costing that kind of thing.

(8) INTERVIEWER: How easy or difficult was it to reach a final decision? Well, I know you didn't but...
AP2: It was very good and very easy because people who could see both aspects and there were questions brought up that the organiser can take back and actually expand on which means he can then say fine next meeting I can give you that information. And it's a general process of how you expand, how you go forward and how you take that information. Each meeting would get more and more and more detailed, more and more focused and that would be how we'd wind it down to what we need to do. By doing this initial approach at a very early stage you get people buying in, you get people discussing things in an easy way because there is no decision to make you haven't got that conflict as such yet, you will when it comes down to matters of opinions with what think people think looks nicer.

(9) INTERVIEWER: Do you think your opinions were treated fairly?
AP2: Yes, I think so yeah. People listened and people took on board. Whether they agreed was a whole different matter, but you at least have the chance, no one shot you down, again because you have a facilitator in place and again although the organiser was the lead Sam was the actual facilitator so he was basically, he couldn't even draw it his own way. He was drawing purely on an open basis.

(10) INTERVIEWER: Is there a way the process of the work shop could be changed to enable the group to develop a finalized design?
AP2: I think so, either you have more information at the one meeting and you could bring it through at each stage, or you have initial meetings as you start to get more information based on how he wants to build it. So whether this idea you would almost decide on whether you could afford, for me we could afford this. Now where does that fit. If you got a very small brick built building that's not going to fit an open location where you're going to be seen, it might sway people as to where you put it because of what it looks like, so maybe how the design process goes through is important to understand whether you can agree on the final design quickly.

(11) INTERVIEWER: Do you have any suggestions or any comments about the workshop?
AP2: No, it was very well organized. Time flew by, so I obviously enjoyed the discussion and it's nice to see how other people think from a professional point of view and also as a layman myself who just basically wants ideas about what the hall looks like and the two

marry quite well because you could put your own opinions, you can have a view from an expert who can give you a reason why that doesn't work and that's great cause then you have the option to say right let's have a look at another alternative so you got options you could explore.

Interview of AP3

(1) INTERVIEWER: What is your opinion about the workshop?
AP3: I think that it is quite good, and you know it rolls very smoothly and everybody is very passionate. And you know, how to say, that is more actively to attend that.

(1+) INTERVIEWER: So, you enjoyed it?
AP3: Yeah.

(2) INTERVIEWER: Which part did you like most about the workshop?
AP3: I think every part I enjoyed that. You know the sites, the silent site look, and also the discussion, and you know the judgment, and you know that would be very nice.

(2+) INTERVIEWER: Was there any part that you didn't like?
AP3: Maybe the time was a little bit limited, because I think there is lots of opinions during the discussion. People want to say something but just because the time is limited, but yeah that's normal. I think yeah, that's normal for a workshop.

(3) INTERVIEWER: When discussing in the group did you express all of your ideas to the group?
AP3: I think yeah, most of that.

(3+) INTERVIEWER: What were the reasons you were able to express your ideas? Can you give me an example of why you could express everything?
AP3: You know because we got the ideas to write, so I think this section is very important. So first thing you just express that by writing something. I think that is very important. And also put them to the board and, so anybody else can see that. So, we can… I think that's the very important. The first thing is to communicate without any verbal discussion, and then you know based on that kind of writings, and you know we think, and then we can express more, you know, and more deeply ideas, so yeah that would be nice.

(4) INTERVIEWER: Did you express all your thoughts about the other members' ideas?
AP3: I think yeah, this one is what I'm thinking currently. Because you know somebody, of course you know, they got different perspectives, and they've got their own ideas before me. Of course some of them I disagree with, but maybe during the time, so I cannot, you know, express that very totally, because the organizer needs every process to be moved on.

(5) INTERVIEWER: So, again the issue of time. Did you explain all the reasons for your comments about others' ideas and your own?
AP3: I think yeah.

(5+) INTERVIEWER: So you justified all the reasons?
AP3: Yeah, I write that with reasons. I think everybody can know that clearly.

(5++) INTERVIEWER: What were the reasons you were able to express all of your reasons?
AP3: I think the structure and organization of the workshop is very good. So well prepared, the well-structured and also the organizer can control the time very good to make sure in two hours we can finish this task.

(6) INTERVIEWER: If there were differing opinions, how did you reach a decision as a group?

AP3: I think we can. You know, on the sheet everybody can write something and also we got the strengths and also we got the concerns, so I think that part would be very nice to help to reach the final discussion of the final agreement with each other.

(7) INTERVIEWER: So you were able to reach a final discussion as a group?
AP3: Yeah

(7+) INTERVIEWER: About all the design elements?
AP3: Yeah, I think so.

(7++) INTERVIEWER: What were the reasons you were able to reach the final decision as a group?
AP3: What reasons?

(7+++) INTERVIEWER: Yeah. Like, do you have an example?
AP3: I think, you know, so based on the example of I think it's very clear. We got different ideas, but of course somebody will have their own idea based on, for example somebody said site 2,3,5,6 would be the preferable site, but for me personally I agree with site 2 and 6 and for somebody else maybe 2, or maybe 6, but based on the discussion of all of us, so finally we can reach the site 2 and site 6. So it's because of the analysis of the site, you know, look and based on the verbal discussion. I think these two reasons would be very important, yeah.

(8) INTERVIEWER: How easy or difficult was it to reach a final decision as a group?
AP3: To some extent maybe it's not that easy you know, one hundred percent, okay, everybody totally agree with the final decision, you know what I mean. But basically you know most of the people will pointed, you know, I think the same are so I think that's ok, not very difficult because the discussion is very open and everyone is expressing their own ideas and we got our, you know, the cons and the pros. So, based on the analysis of the cons and the pros, so I think maybe somebody else, even though they cannot agree with that, but after the analysis and I think they will agree with that.

(9) INTERVIEWER: Do you feel that all of your opinions were treated fairly?
AP3: Yeah, I think so. Yeah.

(9+) INTERVIEWER: How were they treated fairly? Can you give an example of how you think it was treated fairly? So people were able to listen to your opinions and discuss it? Or did that not happen?
AP3: Okay, I think we got the sheet, stick on the board and when you have your ideas on top, and everybody can express their own ideas by the separate sheet, and you know, on the bottom. So, I think that would be very clear. And also based on the organizers, the more discussion guided by her, and so you know, this kind of ideas would be treated more structured, and can spend more time to be discussed by everybody. So I think it can be treated properly.

(9++) INTERVIEWER: With your ideas was it treated properly?
AP3: Yeah it is.

(10) INTERVIEWER: Is there a way the process of the workshop could be changed to enable the group to develop a finalized idea/design?

AP3: Yeah, I think it would be very helpful from a different perspective, and you know, somebody can (inaudible) about the criteria off the heritage. For example, the Wollaton Hall has a long history, and so it's kind of listed buildings in the U.K. So for this kind of consideration I think that would be very helpful to check what kind of rules we need to pay more attention during the new extension design. Also you know, for the site selection, so based on the discussion of which site, you know, I think finally we know we can have more ideas of understanding about the different sites and also for the shape. Or I think there are different aspects based on the new extension discussion from the site, buildings, colours, material, shape and figure. All these kind of things would be helpful even during the process of the conceptual stage.

(10+) INTERVIEWER: And this could help come up with the final decision?
AP3: Yeah, sure yeah.

(11) INTERVIEWER: And do you have any suggestions or comments about the workshop?
AP3: I think maybe from the time plan, so it can be adjusted or improved a little bit because sometimes you need to express more discussions otherwise maybe somebody cannot finish their opinions but anyway you know sometime the workshop, is only a kind of experiment so even maybe its longer, but maybe we got more ideas, we got more to say so it still feel the time would be limited you know what I mean, but in general, the workshop is very nice, yeah its good.

Interview of AF

(1) INTERVIEWER: What is your opinion about the workshop?

AF: I thought the workshop went very well, and despite the fact we had a very quiet group which partly was down to its size, everyone contributed, everyone had their piece to say. I felt that everyone was fairly represented.

(2) INTERVIEWER: Which part of the workshop did you like the most?

AF: For me, the best is when everyone contributed to discussion. So, actually towards the end, when we opened up with the discussion of ideas and suggestions, and improvements. That's the best cause when everyone gets the chance to speak, it just makes the workshop worthwhile doing.

(2+) INTERVIEWER: Which part of the workshop did you like the least?

AF: Probably the hardest was actually the ideas bit I think I could've explained the whole you must write one idea, and one idea only on a sheet of paper. Because some people got carry away, just wrote lots of things on the one idea papers. So if I could do that again, that would be better.

(3) INTERVIEWER: Was there anyone dominated the conversation?

AF: No, not that I felt. Because even though we had at least two experts, they at no point steered the conversation or dominate it. And the general public we had, he was able to voice his opinions without judgment or prejudice. So, actually as a group, everyone worked really well.

(4) INTERVIEWER: Was there anyone that kept quiet in the conversation?

AF: Yes, but only because they were thinking what was being talked about. So there was quiet moments when everyone was just processing what was being asked, and gave consideration to what I had already discussed. So it wasn't the chattiest group of people. But I think they were the most thoughtful, thoughtful people.

(5) INTERVIEWER: Did they prefer expressing the reasons of comments?

AF: Yes, I think they all justified their comments. Not one person said 'I like', or 'I dislike'. And if they made a point, they always backed it up with fact or reason. So that was good.

(5) INTERVIEWER: Did they prefer expressing the reasons or comments?

AF: The comments were written down, so they were able to just say why they had written what they had written.

INTERVIEWER: OK, so you said reasons.

(5+) INTERVIEWER: What were the reasons they prefer reasons? Do you have any examples?

AF: Yes. So in terms of sites 2 and 6, they were able to say why they singled those two sites out. But then later on, they could also express the virtues of site 5. So that was interesting, they could fully justify why they'd favoured certain sites. So there was good reasoning there.

(6) INTERVIEWER: If there were differing opinions, how did the group reach a decision? E.g. voting or verbal discussing

AF: Verbal discussion. And there were, as far as I could hear, no real, there is no conflicts. And there may have been preferences over one site to another, but they could understand the merits of each person's argument for and against. So there were no dispute, no

disagreements, per say. They actually reached same conclusions, and could accept the pros and cons without disagreeing with that person.

(7) INTERVIEWER: Were they able to reach a final decision as a group regarding all of the design elements?
AF: Pretty much. Yes. Everything from … Well, the key thing was the gaining of permission for all manner of things, where is the ground, the buildings, the land, the heritage. And as soon as that got mentioned, everyone was in kind of agreement with. Well until that was resolved, the building and the site, and everything would rely on those permissions. So then everyone kind of agree with what needed to be done.

(7+) INTERVIEWER: What were the reasons they were able to reach a final decision?
AF: Yeah, again. They could all understand the need for, in this country, gain planning permission for all manner and all aspects regarding the creation of a temporary building.

(8) INTERVIEWER: How easy or difficult was it to reach a final decision as a group?
AF: So straight forward. It was one easiest group to work with in terms of reaching a resolution.

INTERVIEWER: Can you give an example?
AF: Yeah. Once we discussed the different sites, the theme, the content, every single facet given by the organiser of the workshop was covered. And then once they had discussed that, the architect could actually say: well, you know, until we establish with English heritage and all the other organizations, whether a building can be constructed, it is essentially a moot point. So we would have plenty of discussion, plenty of ideas. Once the permissions have or have not been granted, we can take these ideas into account. And everyone was satisfied with that.

(9) INTERVIEWER: Do you feel that all of their opinions were treated fairly?
AF: I tried to facilitate it so they were. I am sure that every single idea, paper was covered for the same time. We may have spent certainly more time discussing site locations than the other factors. But I guess that's kind of dependant on the fact that we had a site tour at the start. So I certainly felt it was fair in terms of the discussion around the table, there were repeated points where I said: 'right, has anyone else gets anything to add? Does anyone want to comment on this particular aspect?' So they were given the time, and whether they wanted to or not was down to them. But as I said, it was a quiet group.

(10) INTERVIEWER: Is there a way the process of the workshop could be changed to enable the group to develop a finalised design?
AF: I think I chose pretty well constructed. I think maybe, it's hard to say, maybe they'd had a discussion earlier, then it wouldn't be quite so much duplication of effort, i.e. the same ideas kept cropping up in different peoples' minds. But having said that, that's a good way of finding out, you know, from them independently, what conclusions they were all drawing themselves, which can then feed into the discussion, suggestions and the ideas. So, you know, hindsight now I say, you know, it works really well in this particular group. I could also say it would the same with different group of people. But for the people we had, this structure worked well.

(11) INTERVIEWER: Do you have any suggestions or comments about the workshop?

AF: Given the time constraint, we tried to find as many people as we could. But it would be better should there have been a larger group. Large group, great discussion, more ideas. But we work with the constraints we were given, a large group next would be beneficial.

Appendix 5-9 Notes of Group B

BD's notes

* tree
* Natural space
* Space down
* Dominace of
        original
        Bailng.

BP1's notes, page 1
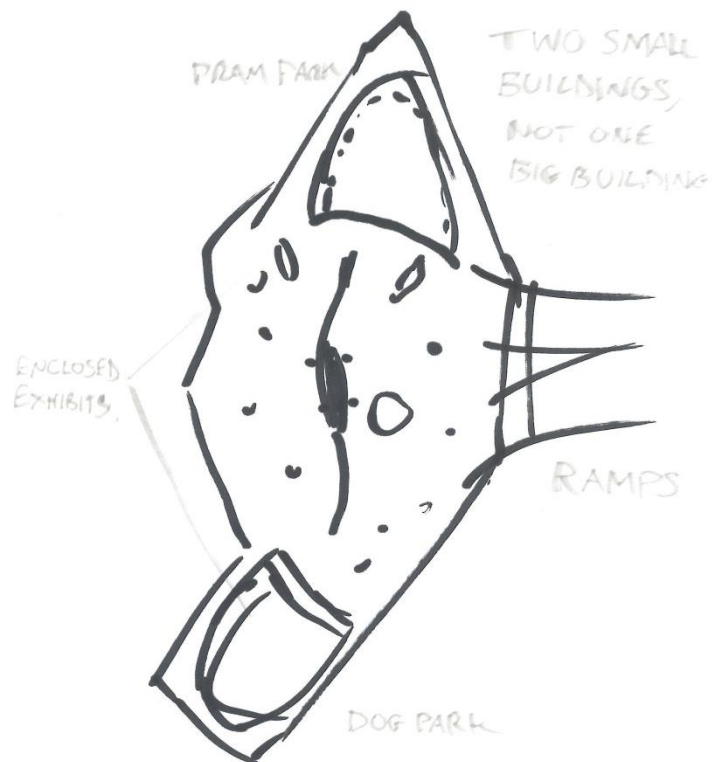
BP1's notes, page 2

BP2's notes

- ALL the trees to be preserved
- Feathers evokes; naturally, birds so trees should
  be incorporated (inc. the small one)
- Predominantly wood / natural resources / CORK
- Minimal change.
- Possibilities for technology.

BP4's notes, page 1

Potentially the Site itself

C.Y.

BP4's notes, page 2

Courtyard
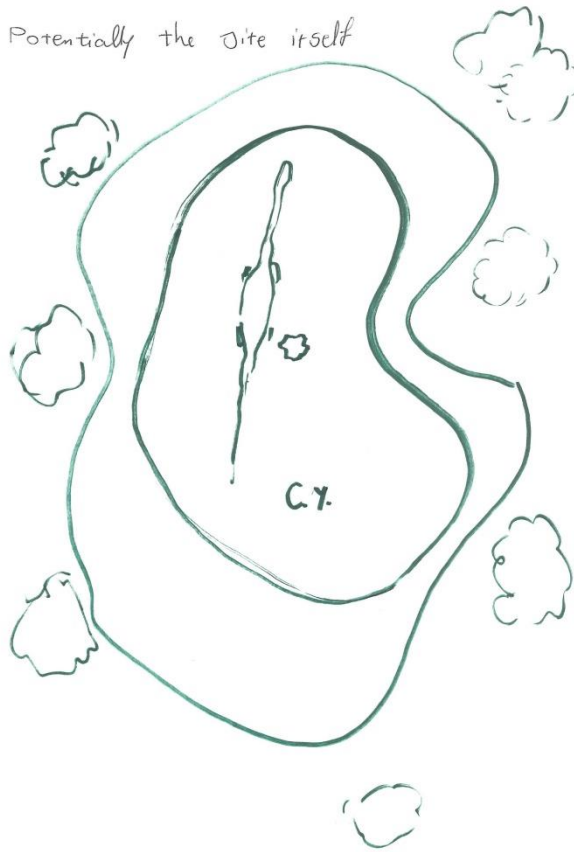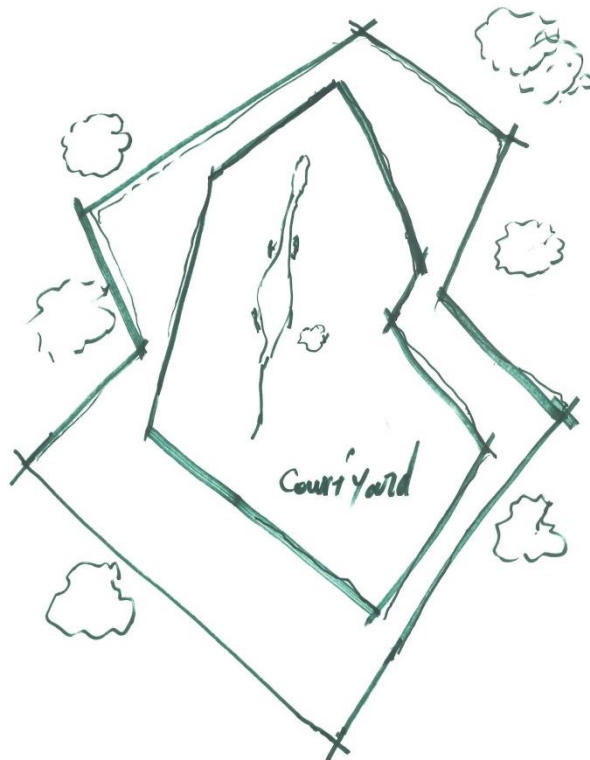
Appendix 5-10 Idea Rating Sheets of Group B

BD's IRS, sheet 1

Participant ID: BD   *Write* or *draw* one *idea* here in large letters: B

- THE BUILDING SIZE = One FLOOR and Extent over the site into trees – Somehowe INTEGRATE ~~the~~ with Trees.

– in this case even the trees become natural speciments alongside the Dinosaurs.

Do you agree?
Please fill your one dot below. And stick your comment slips if you want.

☺ Strong Agreement	☺ Agreement	😐 Neutral	☹ Disagreement	☹ Strong Disagreement	? Confusion
●OOOOOOOOO	○OOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	●OOOOOOOOO

Strengths & Opportunities

Concerns & Weaknesses

Good idea but don't know how it could be done within the ~~li~~ constraints

Participant ID: BD   *Write* or *draw* one *idea* here in large letters:

M s

● MATERIALS + SHARE :

Building takes a ### FREE-FLOWING ShapE

or NATURAL shape ~~~ within the trees

with TRASPARENT/GlAss MATERIAL to

keep the Dominance + Stability of

Original Building.

Do you agree?					
Please fill your one dot below. And stick your comment slips if you want.					
🙂 Strong Agreement	🙂 Agreement	😐 Neutral	🙁 Disagreement	☹ Strong Disagreement	❓ Confusion
○●○○○○○○○○	●○○○○○○○○○	○○○○○○○○○○	○○○○○○○○○○	○○○○○○○○○○	○○○○○○○○○○

Strengths & Opportunities   **Concerns & Weaknesses**

Participant ID: *BD*

Write or *draw* one *idea* here in large letters:

• THE SITE IS IDEAL FOR THE MUSEUM EXTENSION

⟶ The most important reason is the availability

of trees that can create in its own

a natural history Museum.

Do you agree?
Please fill your one dot below. And stick your comment slips if you want.

🙂 Strong Agreement	🙂 Agreement	😐 Neutral	🙁 Disagreement	😟 Strong Disagreement	❓ Confusion
●●●○○○○○○○○	○○○○○○○○○○	○○○○○○○○○○	○○○○○○○○○○	○○○○○○○○○○	○○○○○○○○○○

Strengths & Opportunities	Concerns & Weaknesses

PUT SMALLER DINOSAURS IN THE TREES, & SCULPT THE BIGGER ONES SO THEY INTERACT WITH THE TREES.

Participant ID: _BP1_   **_Write_** _or_ **_draw_** _one_ **_idea_** _here in large letters:_

PUT BIRD-FEEDERS
IN THE FEATHERED DINOSAURS
TO ATTRACT BIRDS & VISUALLY
DEMONSTRATE THE EVOLUTIN
-ARY LINK.

Do you agree?

Please fill your one dot below. And stick your comment slips if you want.

Strong Agreement	Agreement	Neutral	Disagreement	Strong Disagreement	Confusion
◉OOOOOOOOO	●OOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO

Strengths & Opportunities   Concerns & Weaknesses

Participant ID: _BP1_   *Write* or *draw* one **idea** here in large letters: M

DINO - PAVILION WITH WOODEN
RAMPS / WALKWAYS TAKING YOU
UP / OVER / AROUND

THE EXHIBITS.

Do you agree?
Please fill your one dot below. And stick your comment slips if you want.

🙂 Strong Agreement	🙂 Agreement	😐 Neutral	🙁 Disagreement	🙁 Strong Disagreement	❓ Confusion
OOOOOOOOO●	●OOOOOOOO●	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO

Strengths & Opportunities	Concerns & Weaknesses
Just the wood material can be a more transparent matial.	

Participant ID: BP1

Write or draw one idea here in large letters:

M

PORT HOLES

ENGRAVED GLASS EXPLAINING
WHAT YOU CAN SEE THROUGH
THE GLASS.

Do you agree?

Please fill your one dot below. And stick your comment slips if you want.

🙂 Strong Agreement	🙂 Agreement	😐 Neutral	🙁 Disagreement	☹ Strong Disagreement	❓ Confusion
●○○○○○○○○○	◉○○○○○○○○○	○○○○○○○○○○	●○○○○○○○○○	○○○○○○○○○○	○○○○○○○○○○

Strengths & Opportunities	Concerns & Weaknesses
Good idea if dinosaurs behind a structure	

Participant ID: _BP1_   *Write or draw one **idea** here in large letters:*

NO STRUCTURE, JUST AN OPEN-AIR DINOSAUR PARK

— SAVE MONEY (WINCH IN SCARCE BUDGET)
— LIKE CRYSTAL PALACE/COLWYN BAY ONLY MODERN & BETTER!

Do you agree?

Please fill your one dot below. And stick your comment slips if you want.

😊 Strong Agreement	😊 Agreement	😐 Neutral	🙁 Disagreement	☹ Strong Disagreement	? Confusion
OOOOOOOOOO	●●●OOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	●OOOOOOOOO

Strengths & Opportunities

It is really a nice idea — but a pavillion like structure can preserve the speciments from weather conditions.

Concerns & Weaknesses

. the exhibits be exposed to the ments? Security??

Participant ID: BP 2   *Write* or *draw* one *idea* here in large letters:

ALL TREES TO BE PRESERVED. THE SMALL ONE CAN HOUSE SMALLER SPECIES ON ITS BRANCHES. SEEING "DINOS" ON TREE BRANCHES WOULD HAVE A NICE IMPACT.

Do you agree?

Please fill your one dot below. And stick your comment slips if you want.

🙂 Strong Agreement	🙂 Agreement	😐 Neutral	🙁 Disagreement	☹ Strong Disagreement	❓ Confusion
●OOOOOOOOO	●OOOOOOOOO	OOOOOOOOOO	●OOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO

Strengths & Opportunities

Concerns & Weaknesses

Too limiting of over-all space available.

Participant ID: BP2   ***Write* or *draw* one *idea* here in large letters:**

— LOOKING INTO THE POSSIBILITY OF USING TECHNOLOGY TO
ENHANCE THE INTERACTIVITY OF THE SITE. EX: SPEAKERS, LIGHT,
VIDEO PROJECTORS, AUDIO GUIDES THAT SHOULD BE MORE OF ~~THE~~ A
"MOOD" OR "AMBIENCE" NATURE AND LESS DESCRIPTIVE OR NARRATIVE.
PERHAPS EMULATING SOME OF THE SOUNDS ~~AND~~ AND ~~~~ SIGHTS OF
THE PERIOD.

Do you agree?
Please fill your one dot below. And stick your comment slips if you want.

😊 Strong Agreement	😊 Agreement	😐 Neutral	🙁 Disagreement	☹️ Strong Disagreement	❓ Confusion
OOOOOOOOOO	●OOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO

Strengths & Opportunities   **Concerns & Weaknesses**

GOOD IDEA REMINDS ME OF
THE 'SOUND & LIGHT' LIVING ARCHAEOLOGY THEY
HAVE FOR EGYPTIAN TEMPLES. (ENHANCED VALUE OVER
                                    SIMILAR?)

Participant ID: BP2   *Write or draw one __idea__ here in large letters:*

ʙ

— MINIMAL STRUCTURES. THE STRUCTURES SHOULD NOT OVERPOWER THE NATURAL ENVIRONMENT OF THE SITE.

Do you agree?

Please fill your one dot below. And stick your comment slips if you want.

🙂 Strong Agreement	🙂 Agreement	😐 Neutral	🙁 Disagreement	🙁 Strong Disagreement	❓ Confusion
●●●●○○○○○○	○○○○○○○○○○	○○○○○○○○○○	○○○○○○○○○○	○○○○○○○○○○	○○○○○○○○○○

Strengths & Opportunities   **Concerns & Weaknesses**

Participant ID: BP_2

Write or **draw** one **_idea_** here in large letters:

M

— PREDOMINANT MATERIALS TO BE USED: WOOD, OTHER SUSTAINABLE
MATERIALS, LIKE CORK. MINIMAL USE OF METAL.

Do you agree?
Please fill your one dot below. And stick your comment slips if you want.

☺ Strong Agreement	☺ Agreement	😐 Neutral	☹ Disagreement	☹ Strong Disagreement	❓ Confusion
OOOOOOOOOO	●●●OOOOOOO	OOOOOOOOOO	OOOOOOOOOO	●OOOOOOOOO	OOOOOOOOOO

Strengths & Opportunities

Concerns & Weaknesses

I visualise an de-glass/perspex
structure to give impression of
light, open space.

Participant ID: BP3   *Write* or *draw* one *__idea__* here in large letters:

Stump to be included as part of display —
possible mount for 1 or 2 of the skeletons.

Do you agree?
Please fill your one dot below. And stick your comment slips if you want.

Strong Agreement	Agreement	Neutral	Disagreement	Strong Disagreement	Confusion
⦿⦿⦿⦿⦿000000	0000000000	0000000000	0000000000	0000000000	0000000000

Strengths & Opportunities   **Concerns & Weaknesses**

Participant ID: _BP3_   **Write** _or_ **draw** _one_ **_idea_** _here in large letters:_

Assume dogs not allowed (prams?) so must have
a secure "dog pound"....? Pram park.

Do you agree?
Please fill your one dot below. And stick your comment slips if you want.

☺ Strong Agreement	☺ Agreement	😐 Neutral	☹ Disagreement	☹ Strong Disagreement	❓ Confusion
OOOOOOOOOO	OOOOOOOOO●	●OOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO

Strengths & Opportunities   **Concerns & Weaknesses**

GOOD POINT.
↳ MAKE DOG/
PRAM PARKS
INTRODUCTION
SPACES FOR
EXHIGIT?

DOES THE
HAIL ALREADY
DO THIS?

Participant ID: _BP3_   *Write* or *draw* one *idea* here in large letters:

Rectangular building to
use as much space as available.

One long side much higher than
the other to accommodate the
tallest dinosaurs.

Glass/perspex (?) construction

Do you agree?

Please fill your one dot below. And stick your comment slips if you want.

😊 Strong Agreement	😊 Agreement	😐 Neutral	🙁 Disagreement	😖 Strong Disagreement	❓ Confusion
◐000000000	●●00000000	●000000000	0000000000	0000000000	0000000000

Strengths & Opportunities	Concerns & Weaknesses
	WOULD RATHER HAVE SOMETHING THAT WORKED WITH NATURE ENVIRONMENT MORE BETTER

Participant ID: __BP 4__

Write or **draw** one **idea** here in large letters:

Site : Potentially the Site is
Completly Proper to accept its
New Guests.
Site ←——→ Components

Do you agree?

Please fill your one dot below. And stick your comment slips if you want.

☺ Strong Agreement	☺ Agreement	😐 Neutral	🙁 Disagreement	☹ Strong Disagreement	? Confusion
OO●OOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	OOOOOOOOOO	●OOOOOOOOO

Strengths & Opportunities   **Concerns & Weaknesses**

Participant ID: BP 4

Write or draw one __idea__ here in large letters:

Structure; It seems that the

Site itself plays the role of a

very appropriate Structure (Natural structure)

The existance of old, odd shap trees in the site has increased this functions of site, as a natural structure which is more relevant to its new integrations (components)

Do you agree?

Please fill your one dot below. And stick your comment slips if you want.

☺ Strong Agreement	☺ Agreement	😐 Neutral	🙁 Disagreement	☹ Strong Disagreement	❓ Confusion
●●●○○○○○○○	●○○○○○○○○○	○○○○○○○○○○	○○○○○○○○○○	○○○○○○○○○○	○○○○○○○○○○

Strengths & Opportunities   **Concerns & Weaknesses**

Participant ID: BP4   *Write or draw one __idea__ here in large letters:*

Size of structure: (If it is essential)

As much as possible in a proper size
Not to disturbe the relation between
Site and its new Components.

It can be Considered more depende on
the size of its Components.

Do you agree?

Please fill your one dot below. And stick your comment slips if you want.

Strong Agreement	Agreement	Neutral	Disagreement	Strong Disagreement	Confusion
●●○○○○○○○○	○○○○○○○○○○	○○○○○○○○○○	○○○○○○○○○○	○○○○○○○○○○	○○○○○○○○○○

Strengths & Opportunities   **Concerns & Weaknesses**

Participant ID: B P 4   *Write or draw one idea here in large letters:*

M

Material :   As much as possible

Transparent

more integration   Do not affect the
of site and   Dominance of historical
                          Building and do not
                          disconnecting inside
                          and outside of New
                          building (Pavilion)

Do you agree?
Please fill your one dot below. And stick your comment slips if you want.

☺ Strong Agreement	☺ Agreement	😐 Neutral	🙁 Disagreement	☹ Strong Disagreement	? Confusion
●●●●○○○○○○	●○○○○○○○○○	○○○○○○○○○○	○○○○○○○○○○	○○○○○○○○○○	○○○○○○○○○○

Strengths & Opportunities   Concerns & Weaknesses

Appendix 5-11 Final conclusion of Group B

Shape

- Visitor experience most important
- Transparent building with courtyard
- Temporary vs. permanent? Both - flexible structure, changeable shape?
- Large regional catchment of visitors
- Use of AV - augmented reality? Improved user experience

Building size

- No current provision for dogs/prams
- Accessibility
- Harmony with trees & surroundings
- Provision for audiences that travel further/attract & accommodate new audiences
- Staffing of building

Materials

- Reflective/camouflage materials
- Transparent - maintenance + cleaning!
- Do we need a building?
- Open air - security? Vandalism/theft

Appendix 5-12 Questionnaires of Group B

BD's questionnaires, page 1

Respondent's ID: __BD__ (ID only)

Survey of the Designer – Staff

Strictly Confidential

Please tick (☑) the appropriate box after each statement, to indicate *how you handle your disagreement or conflict with staff. "Staff" here represents the museum worker in workshop.* Try to recall as many recent conflict situations as possible in ranking these statements.

Questions	Disagree	Tend to Disagree	Tend to Agree	Agree
1. To uncover the conflict with **staff**, I attempt to get all concerns and issues out in the open.................................	☐	☐	☑	☐
2. Rather than negotiate the things on which we disagree, I try to stress those things upon which **staff** and me both agree.	☐	☑	☐	☐
3. I usually avoid discussion of my differences with **staff**.	☑	☐	☐	☐
4. I am usually firm in pursuing my goals.	☐	☑	☐	☐
5. I try to find a fair combination of gains and losses for **staff** and me.	☐	☐	☑	☐
6. I try to stay away from disagreement with **staff**.	☑	☐	☐	☐
7. I sacrifice my own wishes to satisfy the wishes of **staff**. ...	☑	☐	☐	☐
8. In order to win my position, I usually ignore the needs of **staff**.	☑	☐	☐	☐
9. I use my influence, authority, or expertise to achieve a decision in my favour.	☑	☐	☐	☐
10. I usually make concessions to satisfy the wishes of **staff**.	☐	☑	☐	☐
11. I avoid an encounter with **staff**.	☑	☐	☐	☐
12. I try to integrate my ideas with those of A to find a solution that really satisfies **staff** and me.	☐	☐	☑	☐
13. I strive whenever possible towards a fifty-fifty compromise to **staff**.	☐	☑	☐	☐
14. I try to exchange accurate information with **staff** for a proper understanding of a problem.	☐	☐	☑	☐
15. I try to find a middle ground to resolve conflicts with **staff**	☐	☐	☑	☐

Respondent's ID: _____ (ID only)

Survey of the Designer – Public

Strictly Confidential

Please tick (☑) the appropriate box after each statement, to indicate *how you handle your disagreement or conflict with* **public**. *"Public" here represents the local residents in the workshop.* Try to recall as many recent conflict situations as possible in ranking these statements.

Questions	Disagree	Tend to Disagree	Tend to Agree	Agree
1. To uncover the conflict with **public**, I attempt to get all concerns and issues out in the open……………………………….	☐	☑	☐	☐
2. Rather than negotiate the things on which we disagree, I try to stress those things upon which **public** and me both agree. ……………….	☐	☐	☑	☐
3. I usually avoid discussion of my differences with **public**.	☐	☑	☐	☐
4. I am usually firm in pursuing my goals. ……………………	☐	☐	☑	☐
5. I try to find a fair combination of gains and losses for **public** and me. …………………………………………………….	☐	☐	☑	☐
6. I try to stay away from disagreement with **public**. …………	☐	☑	☐	☐
7. I sacrifice my own wishes to satisfy the wishes of **public**.	☐	☑	☐	☐
8. In order to win my position, I usually ignore the needs of **public**. ………………………………………………………………….	☑	☐	☐	☐
9. I use my influence, authority, or expertise to achieve a decision in my favour. ………………………………………	☑	☐	☐	☐
10. I usually make concessions to satisfy the wishes of **public**.	☐	☑	☐	☐
11. I avoid an encounter with **public**. ……………………………	☐	☑	☐	☐
12. I try to integrate my ideas with those of A to find a solution that really satisfies **public** and me. …………………	☐	☐	☐	☑
13. I strive whenever possible towards a fifty-fifty compromise to **public**. ………………………………………	☐	☐	☑	☐
14. I try to exchange accurate information with **public** for a proper understanding of a problem. ………………………………	☐	☐	☐	☑
15. I try to find a middle ground to resolve conflicts with **public**. …………………………………………………………………	☐	☐	☑	☐

Respondent's ID: _FP1_ (ID only)

Survey of the Public – Designer

Strictly Confidential

Please tick (☑) the appropriate box after each statement, to indicate *how you handle your disagreement or conflict with* **designer**. *"Designer" here represents the design expert in the workshop.* Try to recall as many recent conflict situations as possible in ranking these statements.

Questions	Disagree	Tend to Disagree	Tend to Agree	Agree
1. To uncover the conflict with **designer**, I attempt to get all concerns and issues out in the open....................	☐	☐	☐	☑
2. Rather than negotiate the things on which we disagree, I try to stress those things upon which **designer** and me both agree.	☐	☐	☑	☐
3. I usually avoid discussion of my differences with **designer**.	☐	☑	☐	☐
4. I am usually firm in pursuing my goals.	☐	☐	☑	☐
5. I try to find a fair combination of gains and losses for **designer** and me.	☐	☑	☐	☐
6. I try to stay away from disagreement with **designer**.	☐	☑	☐	☐
7. I sacrifice my own wishes to satisfy the wishes of **designer**.	☐	☑	☐	☐
8. In order to win my position, I usually ignore the needs of **designer**.	☐	☑	☐	☐
9. I use my influence, authority, or expertise to achieve a decision in my favour.	☐	☑	☐	☐
10. I usually make concessions to satisfy the wishes of **designer**.	☐	☐	☑	☐
11. I avoid an encounter with **designer**.	☐	☑	☐	☐
12. I try to integrate my ideas with those of A to find a solution that really satisfies **designer** and me.	☐	☑	☐	☑
13. I strive whenever possible towards a fifty-fifty compromise to **designer**.	☐	☑	☐	☐
14. I try to exchange accurate information with **designer** for a proper understanding of a problem.	☐	☐	☐	☑
15. I try to find a middle ground to resolve conflicts with **designer**.	☐	☑	☐	☐

BP1's questionnaires, page 2

Respondent's ID: **BP1** (ID only)

Survey of the Public – Public

Strictly Confidential

Please tick (☑) the appropriate box after each statement, to indicate *how you handle your disagreement or conflict with* **public**. *"Public" here represents the local residents in the workshop.* Try to recall as many recent conflict situations as possible in ranking these statements.

Questions	Disagree	Tend to Disagree	Tend to Agree	Agree
1. To uncover the conflict with **public**, I attempt to get all concerns and issues out in the open...	☐	☐	☑	☐
2. Rather than negotiate the things on which we disagree, I try to stress those things upon which **public** and me both agree.	☐	☐	☐	☑
3. I usually avoid discussion of my differences with **public**.	☐	☐	☑	☐
4. I am usually firm in pursuing my goals.	☐	☑	☐	☐
5. I try to find a fair combination of gains and losses for **public** and me.	☐	☐	☑	☐
6. I try to stay away from disagreement with **public**.	☐	☐	☑	☐
7. I sacrifice my own wishes to satisfy the wishes of **public**.	☐	☐	☑	☐
8. In order to win my position, I usually ignore the needs of **public**.	☑	☐	☐	☐
9. I use my influence, authority, or expertise to achieve a decision in my favour.	☐	☑	☐	☐
10. I usually make concessions to satisfy the wishes of **public**.	☐	☐	☑	☐
11. I avoid an encounter with **public**.	☐	☐	☑	☐
12. I try to integrate my ideas with those of A to find a solution that really satisfies **public** and me.	☐	☐	☑	☐
13. I strive whenever possible towards a fifty-fifty compromise to **public**.	☐	☐	☑	☐
14. I try to exchange accurate information with **public** for a proper understanding of a problem.	☐	☐	☐	☑
15. I try to find a middle ground to resolve conflicts with **public**.	☐	☐	☐	☑

Respondent's ID: _BP2_ (ID only)

Survey of the Public – Designer

Strictly Confidential

Please tick (☑) the appropriate box after each statement, to indicate *how you handle your disagreement or conflict with* **designer**. *"Designer" here represents the design expert in the workshop.* Try to recall as many recent conflict situations as possible in ranking these statements.

Questions	Disagree	Tend to Disagree	Tend to Agree	Agree
1. To uncover the conflict with **designer**, I attempt to get all concerns and issues out in the open.........................	☐	☐	☒	☐
2. Rather than negotiate the things on which we disagree, I try to stress those things upon which **designer** and me both agree.	☐	☒	☐	☐
3. I usually avoid discussion of my differences with **designer**.	☒	☐	☐	☐
4. I am usually firm in pursuing my goals.	☐	☐	☐	☒
5. I try to find a fair combination of gains and losses for **designer** and me.	☐	☐	☒	☐
6. I try to stay away from disagreement with **designer**.	☒	☐	☐	☐
7. I sacrifice my own wishes to satisfy the wishes of **designer**.	☐	☒	☐	☐
8. In order to win my position, I usually ignore the needs of **designer**.	☒	☐	☐	☐
9. I use my influence, authority, or expertise to achieve a decision in my favour.	☐	☐	☒	☐
10. I usually make concessions to satisfy the wishes of **designer**.	☐	☐	☒	☐
11. I avoid an encounter with **designer**.	☒	☐	☐	☐
12. I try to integrate my ideas with those of A to find a solution that really satisfies **designer** and me.	☐	☐	☒	☐
13. I strive whenever possible towards a fifty-fifty compromise to **designer**.	☐	☐	☒	☐
14. I try to exchange accurate information with **designer** for a proper understanding of a problem.	☐	☐	☐	☒
15. I try to find a middle ground to resolve conflicts with **designer**.	☐	☐	☒	☐

Respondent's ID: _BP2_ (ID only)

Survey of the Public – Public

Strictly Confidential

Please tick (☑) the appropriate box after each statement, to indicate *how you handle your disagreement or conflict with* **public**. *"Public" here represents the local residents in the workshop.* Try to recall as many recent conflict situations as possible in ranking these statements.

Questions	Disagree	Tend to Disagree	Tend to Agree	Agree
1. To uncover the conflict with **public**, I attempt to get all concerns and issues out in the open…………………………	☐	☐	☐	☒
2. Rather than negotiate the things on which we disagree, I try to stress those things upon which **public** and me both agree. ……………………………………………………………………	☐	☒	☐	☐
3. I usually avoid discussion of my differences with **public**.	☒	☐	☐	☐
4. I am usually firm in pursuing my goals. …………………	☐	☐	☐	☒
5. I try to find a fair combination of gains and losses for **public** and me. ……………………………………………	☐	☐	☒	☐
6. I try to stay away from disagreement with **public**. …………	☒	☐	☐	☐
7. I sacrifice my own wishes to satisfy the wishes of **public**.	☐	☐	☒	☐
8. In order to win my position, I usually ignore the needs of **public**. ………………………………………………………	☐	☒	☐	☐
9. I use my influence, authority, or expertise to achieve a decision in my favour. ……………………………………	☐	☐	☒	☐
10. I usually make concessions to satisfy the wishes of **public**.	☐	☐	☒	☐
11. I avoid an encounter with **public**. ……………………………	☒	☐	☐	☐
12. I try to integrate my ideas with those of A to find a solution that really satisfies **public** and me. …………………	☐	☐	☐	☒
13. I strive whenever possible towards a fifty-fifty compromise to **public**. …………………………………	☐	☐	☒	☐
14. I try to exchange accurate information with **public** for a proper understanding of a problem. ………………………	☐	☐	☐	☒
15. I try to find a middle ground to resolve conflicts with **public**. ……………………………………………………	☐	☐	☒	☐

BP3's questionnaires, page 1

Respondent's ID: _BP3_ (ID only)

Survey of the Public – Designer

Strictly Confidential

Please tick (☑) the appropriate box after each statement, to indicate *how you handle your disagreement or conflict with* **designer**. *"Designer" here represents the design expert in the workshop.* Try to recall as many recent conflict situations as possible in ranking these statements.

Questions	Disagree	Tend to Disagree	Tend to Agree	Agree
1. To uncover the conflict with **designer**, I attempt to get all concerns and issues out in the open………………………………	☐	☐	☐	☑
2. Rather than negotiate the things on which we disagree, I try to stress those things upon which **designer** and me both agree. ………………………………………………………	☑	☐	☐	☐
3. I usually avoid discussion of my differences with **designer**. ……………………………………………………………	☑	☐	☐	☐
4. I am usually firm in pursuing my goals. …………………	☐	☐	☑	☐
5. I try to find a fair combination of gains and losses for **designer** and me. …………………………………………	☐	☐	☐	☑
6. I try to stay away from disagreement with **designer**. ……	☑	☐	☐	☐
7. I sacrifice my own wishes to satisfy the wishes of **designer**. …………………………………………………	☑	☐	☐	☐
8. In order to win my position, I usually ignore the needs of **designer**. …………………………………………………	☑	☐	☐	☐
9. I use my influence, authority, or expertise to achieve a decision in my favour. ……………………………………	☐	☐	☑	☐
10. I usually make concessions to satisfy the wishes of **designer**. …………………………………………………	☐	☐	☑	☐
11. I avoid an encounter with **designer**. …………………………	☑	☐	☐	☐
12. I try to integrate my ideas with those of A to find a solution that really satisfies **designer** and me. ………………	☐	☐	☐	☑
13. I strive whenever possible towards a fifty-fifty compromise to **designer**. ………………………………	☐	☐	☐	☑
14. I try to exchange accurate information with **designer** for a proper understanding of a problem. ……………………	☐	☐	☐	☑
15. I try to find a middle ground to resolve conflicts with **designer**. …………………………………………………	☐	☐	☐	☑

Respondent's ID: _BP3_ (ID only)

Survey of the Public – Public

Strictly Confidential

Please tick (☑) the appropriate box after each statement, to indicate *how you handle your disagreement or conflict with **public**. "**Public**" here represents the local residents in the workshop.* Try to recall as many recent conflict situations as possible in ranking these statements.

Questions	Disagree	Tend to Disagree	Tend to Agree	Agree
1. To uncover the conflict with **public**, I attempt to get all concerns and issues out in the open………………………	☐	☐	☐	☑
2. Rather than negotiate the things on which we disagree, I try to stress those things upon which **public** and me both agree. ……………………………………………………………	☑	☐	☐	☐
3. I usually avoid discussion of my differences with **public**.	☑	☐	☐	☐
4. I am usually firm in pursuing my goals. …………………	☐	☐	☑	☐
5. I try to find a fair combination of gains and losses for **public** and me. ……………………………………………	☐	☐	☐	☑
6. I try to stay away from disagreement with **public**. ………	☑	☐	☐	☐
7. I sacrifice my own wishes to satisfy the wishes of **public**.	☑	☐	☐	☐
8. In order to win my position, I usually ignore the needs of **public**. ………………………………………………………	☑	☐	☐	☐
9. I use my influence, authority, or expertise to achieve a decision in my favour. ……………………………………	☐	☐	☑	☐
10. I usually make concessions to satisfy the wishes of **public**.	☐	☐	☑	☐
11. I avoid an encounter with **public**. ……………………………	☑	☐	☐	☐
12. I try to integrate my ideas with those of A to find a solution that really satisfies **public** and me. ………………	☐	☐	☐	☑
13. I strive whenever possible towards a fifty-fifty compromise to **public**. …………………………………	☐	☐	☐	☑
14. I try to exchange accurate information with **public** for a proper understanding of a problem. …………………	☐	☐	☐	☑
15. I try to find a middle ground to resolve conflicts with **public**. ……………………………………………………	☐	☐	☐	☑

Respondent's ID: _BP4_ (ID only)

Survey of the Public – Designer

Strictly Confidential

Please tick (☑) the appropriate box after each statement, to indicate *how you handle your disagreement or conflict with* **designer**. *"Designer" here represents the design expert in the workshop.* Try to recall as many recent conflict situations as possible in ranking these statements.

Questions	Disagree	Tend to Disagree	Tend to Agree	Agree
1. To uncover the conflict with **designer**, I attempt to get all concerns and issues out in the open........................	☐	☐	☐	☑
2. Rather than negotiate the things on which we disagree, I try to stress those things upon which **designer** and me both agree.	☐	☐	☐	☑
3. I usually avoid discussion of my differences with **designer**.	☐	☐	☑	☐
4. I am usually firm in pursuing my goals.	☐	☐	☑	☐
5. I try to find a fair combination of gains and losses for **designer** and me.	☐	☐	☑	☐
6. I try to stay away from disagreement with **designer**.	☐	☑	☐	☐
7. I sacrifice my own wishes to satisfy the wishes of **designer**.	☐	☑	☐	☐
8. In order to win my position, I usually ignore the needs of **designer**.	☑	☐	☐	☐
9. I use my influence, authority, or expertise to achieve a decision in my favour.	☑	☐	☐	☐
10. I usually make concessions to satisfy the wishes of **designer**.	☐	☑	☑	☐
11. I avoid an encounter with **designer**.	☐	☑	☐	☐
12. I try to integrate my ideas with those of A to find a solution that really satisfies **designer** and me.	☐	☐	☐	☑
13. I strive whenever possible towards a fifty-fifty compromise to **designer**.	☐	☐	☑	☐
14. I try to exchange accurate information with **designer** for a proper understanding of a problem.	☐	☐	☐	☑
15. I try to find a middle ground to resolve conflicts with **designer**.	☐	☐	☑	☐

Respondent's ID: _BP4_ (ID only)

Survey of the Public – Public

Strictly Confidential

Please tick (☑) the appropriate box after each statement, to indicate *how you handle your disagreement or conflict with public.* "*Public*" *here represents the local residents in the workshop.* Try to recall as many recent conflict situations as possible in ranking these statements.

Questions	Disagree	Tend to Disagree	Tend to Agree	Agree
1. To uncover the conflict with **public**, I attempt to get all concerns and issues out in the open……………………………………	☐	☐	☐	☑
2. Rather than negotiate the things on which we disagree, I try to stress those things upon which **public** and me both agree. ………………………………………………………………	☐	☐	☐	☑
3. I usually avoid discussion of my differences with **public**.	☐	☑	☐	☐
4. I am usually firm in pursuing my goals. ……………………	☐	☐	☑	☑
5. I try to find a fair combination of gains and losses for **public** and me. ……………………………………………………	☐	☐	☐	☑
6. I try to stay away from disagreement with **public**. …………	☐	☐	☑	☐
7. I sacrifice my own wishes to satisfy the wishes of **public**.	☐	☑	☐	☐
8. In order to win my position, I usually ignore the needs of **public**. ……………………………………………………………	☑	☐	☐	☐
9. I use my influence, authority, or expertise to achieve a decision in my favour. ……………………………………………	☑	☐	☐	☐
10. I usually make concessions to satisfy the wishes of **public**.	☐	☑	☐	☐
11. I avoid an encounter with **public**. ………………………………	☐	☑	☐	☐
12. I try to integrate my ideas with those of A to find a solution that really satisfies **public** and me. ……………………	☐	☐	☐	☑
13. I strive whenever possible towards a fifty-fifty compromise to **public**. ……………………………………………	☐	☐	☑	☐
14. I try to exchange accurate information with **public** for a proper understanding of a problem. …………………………………	☐	☐	☐	☑
15. I try to find a middle ground to resolve conflicts with **public**. ……………………………………………………………	☐	☐	☑	☐

BF's questionnaire

Respondent's ID: __*BF*__ (ID only)

Survey of the Facilitator

Strictly Confidential

Please tick (☑) the appropriate box after each statement, to indicate *how the **participants** handle the disagreement or conflict with **disputant***. The **"participants"** here represents one or more *participants from designer, staff and public in the workshop.* **"Disputants"** *represents* the ones who had conflicts with the **"participants"**. **"Both"** represents the **"participants"** and **"disputants"**. Try to recall as many recent conflict situations as possible in ranking these statements.

Questions	0	1~2	3~4	5
1. How many **participants** attempted to get all concerns and issues out in the open?	☐	☐	☐	☑
2. How many **participants** tried to stress those things upon which **both** agree?	☐	☐	☑	☐
3. How many **participants** usually avoided discussion of the differences with the **disputants**?	☑	☐	☐	☐
4. How many **participants** were usually firm in pursuing the own goals?	☐	☑	☐	☐
5. How many **participants** tried to find a fair combination of gains and losses for **both**?	☐	☑	☐	☐
6. How many **participants** tried to stay away from disagreement with the **disputants**?	☐	☑	☐	☐
7. How many **participants** sacrificed the own wishes to satisfy the wishes of **disputants**.	☐	☑	☐	☐
8. How many **participants** usually ignored the needs of **disputants**?	☑	☐	☐	☐
9. How many **participants** used the influence, authority, or expertise to achieve a decision in own favour?	☐	☑	☐	☐
10. How many **participants** usually made concessions to satisfy the wishes of **disputants**?	☑	☐	☐	☐
11. How many **participants** avoided an encounter with the **disputants**?	☑	☐	☐	☐
12. How many **participants** tried to integrate the own ideas with those of **disputants** to find a solution that really satisfies **both**?	☐	☐	☑	☐
13. How many **participants** strived whenever possible towards a fifty-fifty compromise to the **disputants**?	☐	☑	☐	☐
14. How many **participants** tried to exchange accurate information with the **disputants**?	☐	☐	☑	☐
15. How many **participants** tried to find a middle ground to resolve conflicts with the **disputants**?	☐	☑	☐	☐

BO's questionnaire

Respondent's ID: BD _____ (ID only)

BP2 [ ] BD
BP3 [ ] BP1
BP4

Survey of the Observer

Strictly Confidential

Please tick (☑) the appropriate box after each statement, to indicate *how the **participants** handle the disagreement or conflict with **disputant**. The **"participants"** here represents one or more participants from designer, staff and public in the workshop. **"Disputants"** represents the ones who had conflicts with the **"participants"**. **"Both"** represents the **"participants"** and **"disputants"**. Try to recall as many recent conflict situations as possible in ranking these statements.*
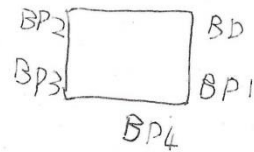
Questions	0	1~2	3~4	5
1. How many **participants** attempted to get all concerns and issues out in the open?	☐	☐	☒	☐
2. How many **participants** tried to stress those things upon which **both** agree?	☐	☐	☒	☐
3. How many **participants** usually avoided discussion of the differences with the **disputants**?	☐	☒	☐	☐
4. How many **participants** were usually firm in pursuing the own goals?	☐	☒	☒	☐
5. How many **participants** tried to find a fair combination of gains and losses for **both**?	☐	☐	☒	☐
6. How many **participants** tried to stay away from disagreement with the **disputants**?	☐	☒	☐	☐
7. How many **participants** sacrificed the own wishes to satisfy the wishes of **disputants**.	☐	☒	☐	☐
8. How many **participants** usually ignored the needs of **disputants**?	☒	☐	☐	☐
9. How many **participants** used the influence, authority, or expertise to achieve a decision in own favour?	☒	☐	☐	☐
10. How many **participants** usually made concessions to satisfy the wishes of **disputants**?	☐	☒	☒	☐
11. How many **participants** avoided an encounter with the **disputants**?	☐	☒	☐	☐
12. How many **participants** tried to integrate the own ideas with those of **disputants** to find a solution that really satisfies **both**?	☐	☐	☒	☐
13. How many **participants** strived whenever possible towards a fifty-fifty compromise to the **disputants**?	☐	☐	☒	☐
14. How many **participants** tried to exchange accurate information with the **disputants**?	☐	☐	☐	☒
15. How many **participants** tried to find a middle ground to resolve conflicts with the **disputants**?	☐	☐	☒	☐

Appendix 5-13 Interview transcripts of Group B

Interview of BD

1. Interviewer: What's your opinion about the workshop?

Interviewee: I find it interesting because there are different people with different point of view and perspectives from different backgrounds and they share their view about an architectural work. It was for me as an architect it was very interesting to hear other people. And there was interesting one that many of the ideas was similar to what we think and the other parties that see those angles of the whole project that maybe we don't look at them, we don't see them. It was quite interesting.

2. Interviewer: So which part of the workshop did you like best?

Interviewee: I think the discussion part. Yeah. It gave the opportunity to know about other people's opinion and comment on them, express you agree or disagree and give a reason for that, for me it was the most interesting part. Also the visit to the site, I liked that.

Interviewer: Oh, so you did visit the site. For how long?

Interviewee: At the beginning of the workshop, then we went to see the site, so this part was also interesting.

2+. Interviewer: So do you have something you like the least about the workshop? Like something to be improved.

Interviewee: Actually I think the weakest part of the workshop was the preparation at the beginning. Because when we came, I was supposed to come with the staff, but we came, the participants came and the staff or the organiser was not still there so they did all the organisation while the participant were sitting there. There was a little bit confusion, you know when there is people watching you and you're doing some stuff, you might forget something. So I think if we or the staff comes earlier and prepare everything and people come and just say okay take a seat here and this is your stuff it will improve it.

3. Interviewer: So when discussing in the group, did you express all of your ideas to the group?
Interviewee: Yeah actually, I think because we had many common ideas between the whole group, so for example we expressed the same view for example about the material and so, but the other points that we didn't mention, we actually expressed our ideas about it.

4. Interviewer: Did you express your thoughts regarding the other members' ideas? Like it depends on someone's idea

Interviewee: Not like 100% but I tried to do it and maybe some we are not like native speakers and some points when the natives are speaking we don't get some of the parts and this makes the participating or giving the comments a little bit difficult because we didn't understand what they say exactly to give a comment or give your opinion about it. But generally, yeah, I try to participate.

5. Interviewer: Did you explain the reasons or comments regarding others' ideas?
Interviewee: Yeah, I think. Yeah.

5+. Interviewer: Do you have example for that? Like which part, talking about details? I heard you are like trying to (inaudible) transparent for stuff

Interviewee: Yeah, actually it was one of the part transparent but I choose, I prefer the transparent over the other material and the other part was about the form of the building, because before seeing the site, I have a different idea. I had in my mind like a cubic box, transparent box within the trees. But after seeing the space and trees I was more thinking about a free organic shapes to accommodate

the trees within the space so I think these two parts were the parts that I give more detailed, I participated with more detail.

6. Interviewer: So if there were different opinions, how did you reach a decision as a group? By voting or by verbal discussion in this workshop?

Interviewee: I think it was more by verbal discussion, but also we didn't have disagreement actually, even about the material, about the shape and the importance of the trees, to keep the trees and accommodate the trees as part of the exhibition. It was like a common idea between the most of us. There was an idea of leaving the space without structure which seems very nice idea but me and some other we raised aspects like the protection of the specimen or the artefacts from the natural condition, from the rain and from the weather, so you can't have them just put them in the space without instruction (inaudible)…

7. Interviewer: Were you able to reach a final decision as a group regarding all the design elements? So was it possible to have like a final decision about the whole workshop?

Interviewee: You mean about the design elements? I think about the material and the form and even the size because nobody like mention (inaudible).. either too small building or huge building, or mention like a very modest building, and flooring on the ground, to keep the elements of the original Wollaton Halls. I think we reached like 3 main points about the size and shape and material. Yeah we can say that.

8. Interviewer: How easy or difficult was it to reach a final decision as a group?

Interviewee: I think it was like naturally doing the discussion and giving the idea these conclusions came out. It wasn't very difficult so. I didn't see it as difficult because we expressed ideas and we had like common sense about it so it made it easier. There wasn't anyone to say "no, okay I don't agree with this". Even when someone expressed their view the others just tried to enhance like giving more comments. It wasn't very difficult I think.

9. Interviewer: Do you think all of your opinions were treated fairly?

Interviewee: Yeah, I think yeah.

9+. Interviewer: So, do you have an example for that?

Interviewee: Yeah actually, because I mentioned one of my ideas was about the site which they didn't ask us about the site. It was mainly about the shape, the dimensions and the material, but one of my first ideas was about the site and how it feeds as a very potentially very suitable site for this extension because of the trees, there are a lot of trees and like the trees alone can create a natural history museum so, even it was not very related actually they mentioned it and we discussed it.

10. Interviewer: So is there a way the process of the workshop could be changed to enable the group to develop a finalised design?

Interviewee: I think one of the issues is the number of the participants maybe, because we've been like 1 architect, 1 graphic who is sort of have some background for the like design and there've been 3 other people. I think if there would be more public people with different backgrounds it'll give you more detailed insight into the topic and into the exhibition (inaudible) that one with the organisation before starting it. Even I'm not good at it because for me I always do my stuff at the last minute. I always see these as a like, weakness point that you can't like organise things before the start of the event. Yeah, so I hope me and other people who have these issues can develop it in the future.

11. Interviewer: Thank you. Do you have like one final suggestion or like comments for the workshop or future workshops?

Interviewee: Not exactly, I think I mentioned 2 points. Because it is like one of the first workshop of this kind that I participate I find it very exciting. It was good, so no. Not like anything special.

11+. Interviewer: Maybe like you should make the time longer?

Interviewee: Actually, based on the requirements I think the time was good but if you have more… if you want to look at even the sides or for example we mentioned because we have this real point as a main point that we want to give, reach a conclusion so I think according to the point it was enough but if you want to look at it in more detail yeah, the time was uh… yeah need extended time.

Interviewer: Okay, thank you so much.

Interview of BP1

1. Interviewer: What is your opinion about the workshop?

Interviewee: I think it went very well. I think we've accomplished a lot in a short period of time. A lot of very candid, open and friendly discussions. I was interested in what we were talking about. There wasn't actually much in the way of conflict between ideas and no ideas were presented in such a way that there would be conflict between them. They were all possibilities… no real disagreements between the participants. I think it was really organised except for the weather it was a really nice experience.

2. Interviewer: Which part of the workshop did you like the most?

Interviewee: I think the ideas discussion was quite enjoyable and I think it was quite profitable as well, we discussed a lot of important topics in detail that way. So I'd say the idea discussion that was following the individual filling out of the forms and putting up and rating against the wall. I think that was quite well organised.

2+. Interviewer: Which part of the workshop did you like the least?

Interviewee: There was no tea or coffee put out. Actually, I'd just come from work and had a horrible time on the buses and I was really thinking that I'll have a coffee and a biscuit and it would make it all alright and we got straight into it. So I was disappointed that there weren't any tea or coffee. Actually I can't find anything that I could say I didn't enjoy.

3. Interviewer: When discussing in a group did you express all your ideas to them?

Interviewee: Yeah, I think when you're having these discussions there's a tacit acknowledgment of what everybody else wants to be able to say, and letting other people have their say as well. So you often choose to wait until there's an appropriate time for your idea. Outside of that convention, I don't think I held back on any ideas. I don't feel that anybody else did. I think because we had a chance to get all our ideas on paper and then up on the wall, in a sense we'd already had our say and talked about our say oh sorry what we'd said and quite useful actually, and in addition to that, I think there was a lot of people on the same page, so I didn't really have to say all my ideas because others said them for me because they'd had the same ideas. So that seemed to be fine. Normally, in my experience with other workshops, you can't put forward certain ideas that you have, that you're quite interested in because it would derail the conversation and not progress the ideas overall, but I didn't have that feeling with this particular one possibly because we got all our ideas out and that we could start with.

3+. Interviewer: What were the main reasons that you were able to express all your ideas? Please could you give some examples?

Interviewee: We had a structure and a really safe and reassuring structure. Not having our names on our ideas was very good because you didn't have to own up to ones that you maybe had second thoughts about and you had all that you really needed to basically draw out or write out your ideas and just put them on the wall and having done that everybody had equal opportunity to say what they thought so I didn't feel like there was any conflict that people would feel they didn't get their point across or they felt they hadn't had as much say as someone else. So I think that structure and method was very successful in that way.

4. Interviewer: Did you express all your ideas regarding all the other members' ideas?

Interviewee: Yes, I think so. Again, we were all roughly on the same page. A lot of the concepts involved in the workshop were the things we came up with and with that there didn't seem to be a lot of disagreement. I think with these kind of workshops, people don't want to disagree with each other because we're all strangers to each other and we don't want to offend anyone. We don't want to be critical of somebody else's input. We don't want to discourage people from having their say either.

That would be very rude and unpleasant for everyone I think. So I think there's sense in this particular workshop that ideas are put out there and allowed just to be out there and then we could talk about them finding things we liked about them and try to build on them. The only mild notion of disagreement I think was the concept that the buildings had to be an enclosed building for reasons of security and accessibility, providing facilities like pram parks or dog pounds and versus having it completely open air and my main concern is when people say "well, it's not useful coz you need to have this" when the more design approach would be okay, "we need to have this, what's the way to have this thing in that context where it's open air or there's a minimal structure or temporary prefabricated" and I think by being open minded and not put a foot down on any one's topic we're able to come to one interesting, novel solution, which was to have a temporary, reusable structure that could be dismantled and reconstructed in different configurations, so I was very pleased to see that came out very naturally between people being unafraid to put forth original ideas. It maybe that we had one architect, I think, a chemist and a graphic designer in the room and you know those professions, the science ones, encouraged people to put forth ideas in an appropriate and professional way and you were expected to speak up and not keep quiet about ideas in those professions. That might've helped.

4+. Interviewer: What were the reasons you were able to express all your comments. Please give examples.

Interviewee: The facilitator was very good at making sure that everything was brought up, put on the board and talked about and the fact that fully half of the sheet for cutting our ideas down was room for feedback really helped and if there was a challenge in putting feedback on, for example some of them were on bits of wall that were flimsy so you couldn't really write on them we got around that really quickly, we put up bits of paper reattached to the sheets and going through everything thoroughly and inviting questions and firstly allowing people in a really anonymous, safe way to put their feedback on each sheet, I think really helped. Coz I think people would be embarrassed or reticent to speak out about someone else's idea so it doesn't seem to be rude or unfair.

5. Interviewer: Did you explain all the reasons for your comments regarding your own or others' ideas?

Interviewee: Yeah, I think we covered that earlier, but yeah I did, I think I did. If I had something to say, an idea to put forward, normally what would happen is that someone had the same idea earlier, at the same time and they put it forth before I did, but I was quite pleased to see.

5+. Interviewer: What were the reasons you were able to express all your reasons? Please give examples.

Interviewee: Everybody seemed to be in a really good mood actually. In spite of the weather, people seemed friendly, cheerful and there didn't seem to be any kind of aggression or anybody trying to put their ideas over somebody else's so I think that environment, that atmosphere really helped.

6. Interviewer: If you had differing opinions how did you reach a final decision as a group? E.g. voting or verbal discussion.

Interviewee: We discussed things. We kept talking about what we'd like to see until one person came up with an idea which was incorporating what was the best of both worlds. Not compromise, but the best of both worlds which is a very important thing to hold onto as a designer, because a compromise design is usually a bad design. Someone that has taken strands from 2 things and combine them into a new thing, is a usually very good design.

7. Interviewer: Were you able to reach a final decision as a group regarding all the design elements?

Interviewee: I don't think this workshop was intended to bring us to a final decision. We came to a very good decision, a very good idea near the end of the session, which was to have a refabricated, refabricatible building, that isn't permanent, it's semi-permanent, but is a permanent addition to the assets of Wollaton Park, where they can take it down and build it into something completely different

the next year, for the next exhibition or as they need to, feel appropriate. So I think that was a very good idea a very firm stepping stone to moving forward with the project. It could that there things that we didn't know that we would need to know. So there wasn't a lot of clarity on the nature of the exhibit, so we had to seek that out pretty quickly from the document and we were kind of expecting the organiser to be quite quick with his answers, and he didn't really have them. And also the question of budget with this project. You can tell us that we might have 150 thousand pounds to spend but we don't know what that will buy. Fortunately we have an architect in there, I think she kept quiet so as not to inhibit anybody else's ideas, but we felt, we didn't really know what we could do with that money. What would that get us? So that was a bit of a challenge. In some respects that hindered the discussion to the extent that it took up minutes of time. And when you think about the discussion period, you only have minutes. It took a couple minutes of time, either deal with that topic or move on from it.

7+. Interviewer: What were the reasons you were able to reach a final decision? Please could you give examples?

Interviewee: I think there was a sense coming out of the discussion, what brought it about was that somebody came up with a really great idea and somebody else helped visualize it and this idea was good in an incorporative kind of (inaudible) if it wanted out of the outcomes. It was original and by incorporating all those outcomes in an original way everyone felt satisfied with it. Nobody felt (inaudible) behind it. Nobody felt that (inaudible).

8. Interviewer: How easy or difficult was it to reach a final decision as a group?

Interviewee: I think fairly easy, I think because it was easy going. I think we were conscious of time, we used time very well. We finished bang on 4 o'clock, so I think everyone had the right mind set to be easy going and accepting and open to ideas and open to generating suggesting ideas.
Interviewer: Can you please give examples of how you were able to reach a final decision?
Interviewee: It was sort of the question of we'd like to be open and airy and incorporate the environment but we have these concerns that we need to have some quality of security to it against vandals, against theft and also to have structures that will enable accessibility and facility for visitors. Someone tried to describe a semi-permanent structure can be really used at a later date around a whole area inside of which the structures might be and I didn't quite grasp what he was articulating. One of the architects, the other architects sketched it up very quickly and exactly as the first man was trying to get across and that team work got everyone behind it and really helped.

9. Interviewer: Do you feel that all your opinions were treated fairly?

Interviewee: Yes, I think so, everyone's was, I hope opinions were treated fairly. Yes, I think it was a very nice, open discussion.

9+. Interviewer: How were your opinions treated fairly? Can you please give some examples?

Interviewee: Well, nobody said anything discouraging. Very very important, I think in a group like this. Nobody tried to lead the discussion which was paramount in a group like this and nothing was said explicitly yes or no to. Everything was kept as a possibility so nobody had to feel as if there ideas had been discarded.

10. Interviewer: Is there a way the process of the workshop could be changed to enable the group to develop a finalised design?

Interviewee: What you would have to do in that situation is umm get somebody else to do a final design and then get the focus group to use a test fit/pit (?), essentially debug it and put it through its paces and then provide feedback and in that sense. I'm not sure that … (inaudible) expecting members of the public to be architects and designers and engineers what you're doing if you're putting all that weight on to members of the public is you're disallowing expert opinion and the unfortunate truth is that design is not democratic. We'd like to think of it as being democratic but

actually what tends to happen, it tends to cause situations where great ideas that would benefit everybody are lost because they don't benefit a minority who feel their voice must always be democratically represented. And when Hemingway was telling me in a talk a couple of years ago, how he was called in to do some design consultation on some new social housing I think in Cumbria , no it wasn't it was in East London, and they had this one lady who said "well I like my flat. I don't want to move. I want a flat that's exactly the same as my flat." And there were about 300 residents who were going to move. Nobody else really wanted this but because the organisers had decided that they wanted to have, well they thought it was democratic at the time, where everybody who was involved, everybody who could be considered a stake holder had a say, this one lady I think either completely derailed or nearly completely derailed the whole project, because instead of saying: "well okay we'll build one flat for her", they refused to push on the design for the whole project overall. So when you do that what tends to happen is that great ideas or great vision can be lost and I would suggest that if you had a focus group for that situation then the right thing to do would be to give them designs which they could then feedback on and modify or discuss or a workshop with the experts there. It wouldn't be a case of them designing something or arriving at a design, but workshopping something that was pre-existent.

11. Interviewer: That's brilliant and finally, question number 11, do you have any comments or suggestions about the workshop?

Interviewee: Uh, tea or coffee would've helped. I don't think there's much that could be improved apart from having those answers at hand straight away. It was important questions and trying to make it, having to give factual information. What are the key factors that we might anticipate? Either arisen from previous focus groups and make sure that information is ready to hand. Umm, and also how grand do you want the information to be? How open do you want those ideas to be? The more specifics you give somebody, the more confined they're likely to feel in whatever they come up with. If they say, well you're going to have some dinosaurs, what would you imagine a dinosaur exhibit to look like or what would you want it to look like if it could be anything? That's quite useful. But it seems to have gone as well as I could possibly expect it to.

Interview of BP2

1. Interviewer: What is your opinion about the workshop?

Interviewee: What is my opinion about the workshop? The workshop is very useful, it's a very useful exercise to consult the public when setting up an exhibition like this. It just shows concerns about the public needs. And the format of the workshop was very enjoyable. It was very good, so in general I'm very pleased to have participated in it.

2. Interviewer: Which part of the workshop did you like the most?

Interviewee: The discussion of ideas and the changing of opinions between different people with different backgrounds, so in how to build the possible exhibition and museum, it was very good. I enjoyed that part, talking to each other.

2+. Interviewer: Which part of the workshop did you like the least?

Interviewee: The part of the workshop I liked the least… I think it really has a small weakness, probably the fact that we have to be silent during the visit to the site. Uh, I believe that communication and discussion on the actual site, when visiting the site could be useful. That's the only thing I probably didn't enjoy.

3. Interviewer: When discussing in a group, did you express all your ideas to them? And if yes or no, some examples.

Interviewee: Yes, I did express my opinions. I believe most of them, of course sometimes, they coincided with the ideas and the opinions of other people, so sometimes that itself means that my ideas were being expressed. I can give you an example, for instance when I was talking about building a structure that would surround a courtyard in which the pieces itself, the exhibit itself would be put on an open air space, that idea was met by someone else and he actually had a drawing of my idea that was his idea as well. So yeah, that would be an example of it.

4. Interviewer: Did you express all your thoughts regarding the other members' thoughts? And do you have examples?

Interviewee: When asked to yes, of course. I strived taking into consideration other people's backgrounds, other people's age, gender, religious beliefs. So yeah I did take that into consideration and when an opinion or personal statement was necessary, I did do so. So, yeah.

5. Interviewer: Did you explain all the reasons for your comments regarding your own or others' ideas?

Interviewee: Yeah, I did explain all of the reasons.

5+. Interviewer: Do you have any examples?

Interviewee: Uh, yeah, for instance, so one of my ideas was to use as minimal structures and minimal materials as possible. So for instance, I was very against the idea of using metal or any kind of other materials, because being a temporary exhibition, I believe that in sustainability and from the ecological point of view it would be better to use sustainable materials, so that idea and that conviction manifested itself in my opinions, so yeah.

6. Interviewer: If there were differing opinions, how did you reach a decision as a group?

Interviewee: We reached a decision as a group by simply accommodating each other's ideas, and reaching compromises and sometimes discussing further details that we needed to discuss. So yeah, compromising.

6+. Interviewer: How did you reach a compromise, by voting or verbally?

Interviewee: No no, verbally, we just more or less agreed with … Everyone more or less had the same ideas so there was no sharp contrast. And every time there was a different opinion, we felt that opinion had a good justification behind, so we took that into consideration. So the debate moved naturally into a place of consensus.

7. Interviewer: Were you able to reach a final decision as a group regarding all of the design elements?

Interviewee: Yeah, I believe so. I believe we did, yeah. If you want an example, for instance, we all decided, we all thought it would be, as a natural history museum, there needed to be a natural component in it, so for instance, we all agreed, that it could, wouldn't be helpful to create a structure that would enclose the pieces and not take into consideration, for instance, the trees. So we were very preoccupied as a group with the idea of being able to respect the natural environment of the site, so the trees that were there, the views, everything. So, the connectedness between inside and outside. So we looked as a group into that too. Our opinion as a group moved towards that direction.

8. Interviewer: How easy or difficult was it to reach a final decision as a group?

Interviewee: I would say because we had more or less the same vision and idea it wasn't that difficult. The only difficulty was to discuss, for instance, the use of certain materials, the use of certain aspects that other people hadn't considered. So I believe it wasn't that difficult. At the end, it was a good exercise. Yeah, yeah. It wasn't very difficult.

9. Interviewer: Do you feel that all your opinions were treated fairly? And do you have some examples for that?

Interviewee: Yeah, of course. I felt that my opinions were fairly criticised and fairly taken into account. So, for instance, when considering the prospects of building with materials and the sustainability of the materials, that was met with agreement and even people who had different opinions in material, about, sorry, different opinions about the materials that we could use, they also agreed that it was necessary to use materials that would be sustainable. So, that was taken into account and I felt that it was fair. That my opinion had been taken fairly.

10. Interviewer: Is there a way the process of the workshop could be changed to enable the group to develop a finalised design?

Interviewee: I think the workshop itself worked very well. And I don't think anything could be done to improve it on that aspect. I think, perhaps there's too many elements in it. So that materials of the actual workshop were too many. I don't think there should be that many materials. Or if you provide those materials, then we felt the need to use them. So I'll give you an example, the booklet with images. So materials and of the sites the actual sites, the museums. The pictures of the materials were good with the actual exhibit, but not… I didn't feel that the picture book with other museums and other sites was particularly helpful because I think it actually influences the way you look at things. For me that element was unnecessary and I think it could do without.

11. Interviewer: Do you have any suggestions or comments about the workshop?

Interviewee: Suggestions, yes. So the 2 I've mentioned, that the visit to the site could be made, communication could be allowed between members and not necessarily a silent exercise. And also the, I don't think we need that many materials. Particularly that picture book, I don't think it's necessary.

11+. Interviewer: More focused and…

Interviewee: More focused on the actual site and less influencing objects, because we need to have an idea and we need to be creative, and I think it's easier, it might help some other people, but I think

for me personally it would be more helpful if I hadn't a thing. I just had an idea and to build on it. So that's it.

Interview of BP3

1. Interviewer: What is your opinion about the workshop?

Interviewee: Yes, it was very good. I hope you found it useful.

2. Interviewer: Which part of the workshop did you like the most?

Interviewee: Just the discussion with the other people, to find out that my ideas were very similar to theirs.

2+. Interviewer: Which part of the workshop did you like the least?

Interviewee: Having to write all your ideas down at the beginning.

3. Interviewer: When discussing in a group, did you express all your ideas to them?

Interviewee: Yes, I think so.

3+. Interviewer: What were the reasons you were able to express them? Please give some examples.

Interviewee: Reasons I could express my ideas… because I had ideas I thought were relevant and I'm not inhibited to express my opinions even if it's different from everybody else's.

4. Interviewer: Did you express all your thoughts regarding other members' ideas?

Interviewee: Yes, I think so.

4+. Interviewer: What were the reasons you were able to express all your ideas? Could you give some examples?

Interviewee: Because I am old enough to have experienced a lot different exhibitions in my time and I could visualise similar exhibitions or similar things that I was happy to try and contribute things I'd experienced in the past.

5. Interviewer: Did you explain all your reasons for your comments regarding your own or others' ideas?

Interviewee: Yes, I think so.

5+. Interviewer: What were the reasons you were able to express all of your reasons? Please can you give some examples?

Interviewee: Because we had the opportunity to express opinions and as much time as we felt we needed to express an opinion.

6. Interviewer: If there were differing opinions, how do you reach a decision as a group? E.g. voting or verbal discussion.

Interviewee: I think that the consensus was fairly easy to come to. There was no real argument. One or two people put forward ideas I didn't feel were acceptable for security reasons and I expressed those and they accepted that probably that something they should've considered.

7. Interviewer: Were you able to reach a final decision as a group regarding all the elements of the design?

Interviewee: Well, I'm sure we didn't but we certainly covered a lot of ground.

7+. Interviewer: What were the reasons you think you were not able to reach a final decision?

Interviewee: Well, partly because I don't think they know enough about the Chinese requirements for whether the dinosaurs could be left in the open to the weather, how much security is required, whether they can be touched by the general public. Some of these absolute fundamental questions, I don't think they were very clear as to how much touching access could be allowed.

8. Interviewer: How easy or difficult was it to reach a final decision as a group?

Interviewee: I think it was very easy.

8+. Interviewer: Could you please give some examples?

Interviewee: Well, I think everybody considered that to have a glass or perspex building is something transparent so that we could include the external environment with all the trees but to have it enclosed. Everybody seemed to think that was the best option for the site available.

9. Interviewer: Do you feel your opinions were treated fairly?

Interviewee: Yes, I think I was given the opportunity to express an opinion whenever I had one.

9+. Interviewer: How were your opinions treated fairly?

Interviewee: Well I was allowed to express them and it was written down or that was a good point and it was all written down as an extra comment.

10. Interviewer: Is there a way the process of the workshop could be changed to enable the group to develop a finalised design?

Interviewee: I don't really know about that.

11. Interviewer: Do you have any suggestions or comments about the workshop?

Interviewee: Well it's a point of criticism, we were all asked to be there at quarter to two and unfortunately the leader didn't turn up until after most of us and I think he should be a little more organised than that so that he actually has his tables set up and balanced and everything established so that he is free to welcome people as they arrive, rather than getting everybody help him to set it up. That's just a case of experience I think.

Interview of BP4

1. Interviewer: What is your opinion about the workshop?

Interviewee: You know because before one year, I have heard about this workshop, this idea, this concept actually. I had no idea about, because I just saw some drawings from the last year's students about this concept but today during this workshop I see that the site is completely, have the potential for accepting this idea, this concept and I'm sure that it will be a very appropriate idea and concept for the exact site.

2. Interviewer: Which part of the workshop did you like the most?

Interviewee: I liked the second part, was taking ideas from different experts and also communication between these people from different stage of society. And sharing their idea, discussing, I find it a very useful way for a future of my work, collecting different ideas and something new pops in your mind.

2+. Interviewer: Which part of the workshop did you like the least?

Interviewee: I think, normally, I'm… I see this workshop very useful. I have no idea about which part is least.

3. Interviewer: When discussing in the group, did you discuss all your ideas with them?

Interviewee: Yeah, truly, because the number was limited, we have enough time to, every participant to express his idea, so we have enough time to do that. I think I said what I really want to do, to say.

3+. Interviewer: You mean the time length and number of participants was appropriate for you to express your ideas.

Interviewee: Yes.

4. Interviewer: Did you express all of your thoughts regarding the other members' ideas?

Interviewee: Actually, not all of it because I myself I'm not sure about all of my thoughts this time because I'm sure that it needs more studies about it, but I told them some of my thoughts that I was eager and more confident about the idea.

4+. Interviewer: So, you mean the reason is about your expertise?

Interviewee: Yeah

5. Interviewer: Did you express all of the reasons for your comments regarding your own or others' ideas?

Interviewee: Actually, you know because the manager, or the person who run this workshop, I forget the name, she was very … she was really good to give us the chance to express, interpret our ideas. And the way that we put our idea and discuss on the board. It gives us this opportunity to interpret our ideas.

6. Interviewer: If there were different opinions how did you reach a decision as a group? Voting or overall discussion.

Interviewee: Actually, I think there was a kind of voting on the board, we said that we are agree or disagree and we just pointed out and I think they will can use them to find how many people are agree with that kind of idea or not. It's kind of voting but written voting.

6+. Interviewer: After voting, do you verbally discuss and get one decision?

Interviewee: Yeah, after we vote on the paper, we discuss our ideas why we agree or we are not agree that ideas.

7. Interviewer: Were you able to reach a final decision as a group regarding all the design elements?

Interviewee: You know, what I get in this group, I understand the most of the participant have the same idea, the same. I think the general idea was about for example, saving and preserving the area, the site and the nature and also caring about the dominance of this historical building. So there was not a very distinguish difference between the ideas, they were similar more.

8. Interviewer: How easy or difficult was it to reach a final decision as a group?

Interviewee: You know as I mentioned before, because there were not very big conflict between the participants, most of them were agree with some general points, so it was not difficult to make a final decision.

9. Interviewer: Did you feel that all of your opinions were treated fairly? And how?

Interviewee: Maybe, yeah. I think, how can I say? Because it was the beginning and the very general for example ideas and we don't get through the details, so I think we have not any problems with opening our ideas and concepts.

10. Interviewer: So, is there a way the process of the workshop could be changed to enable the group to develop a finalised design?

Interviewee: I think it needs something else, perhaps that it's just the first time. One time. I think it needs more or three times to do the same process and have a better and more clear idea about the process on the project. So even we don't know each other the participants because it was the first time we meet each other, so I think if we have a chance to see each other next time, it will be very… more useful.

11. Interviewer: Do you have suggestions or comments about the workshop?

Interviewee: Ah, just the beginning, I think needs more discipline, means not wasting time.

11+. Interviewer: Which part do you think we can improve?

Interviewee: For example, there was a… prepare everything before starting of the workshop, so they come after us, after the participant and they started to prepare everything and they lost I think many things that they have to, they want to do, so I think if they come earlier they can arrange everything better and they can concentrate more. I think this was the only things. It was not very big challenge.

Interviewer: Time management.

Interviewee: Exactly, time management.

Interview of BF

1. Interviewer: what's your opinion about the workshop?

Interviewee: I think the workshop went very well. Everyone took part. Not everyone was as vocal as each other, but everyone gave their opinions and we produced many good ideas.

2. Interviewer: So which part of the workshop did you like the most?

Interviewee: I think the best bit for me is when they're coming up with their own ideas and so they're writing on the different pieces of paper and then I put them up and then they can look around at each person's ideas. So before there's any discussion, they can judge everyone's ideas and see which ones they agree and disagree with and it's interesting to see that there many people who had the same opinion. There wasn't too much disagreement.

2+. Interviewer: Can you describe the workshop, which part you don't like, like you like the least?

Interviewee: I think sometimes it's a bit difficult because this is like conceptual and people want to think that this is real and is going to happen, so it's hard sometimes to explain to people that this is just an idea for a project but otherwise yeah, it was fine. But the start when you're trying to get everyone to understand we're just thinking about the ideas, nothing is actually going to happen yet. It's just a proof of concept.

3. Interviewer: Was there anyone who dominated the conversation, taking control?

Interviewee: I'd say the BP2 on the right so that was a little bit of jam (?), mainly. Yeah, a couple of participants yes, but not negatively it was good that they had their opinions because it meant that they promoted more discussion and more people could then um, you know talk them about the ideas they had and why their ideas…you know they thought positively of their ideas. So it was good. It was good that they um did speak more because it then encouraged others to join them in the discussions.

3+. Interviewer: Are they architects?

Interviewee: No, neither of them were architects, which was again good. It was good that we had a genuine member of the public and she liked (inaudible) so I'm glad really that she came.

4. Interviewer: Is there anyone who kept quiet during the conversation?

Interviewee: BP1 I think he was and he was quite quiet, but he had really good ideas. Had lots of good ideas for the exhibition.

5. Interviewer: Did they express the reasons or comments?

Interviewee: Yeah, some of them did. Umm, a lot more vocal than others, but they were happy to talk about other people's ideas as well. So I think it was very fair, it was very balanced. Everyone got to discuss different parts of the exhibition.

6. Interviewer: If there were different opinions during the workshop, how did you reach a decision as a group? Was there a voting or verbal discussion?

Interviewee: Verbal discussion. So a good example was some people wanted a transparent building and some people didn't want a building at all, and so the way in which they could discuss and reach an agreement was by raising concerns about one and the other. That was a good thing, was that no one, people were willing to see the positive and the negative, no one was just biased towards one view, so they were very open to thinking about all different aspects of the design and that was really good and that you know people could feel comfortable in expressing their opinions but they could accept criticism and accept the constructive criticism.

7. Interviewer: Were they finally able to reach a final decision as a group regarding the design element?

Interviewee: No, no. So there was a range of ideas, but nothing was decided. You know they said that it could be a transparent building or it could be open air, but there was no decision of whether it would be one over the other.

8. Interviewer: So how easy or difficult was it to reach a final decision as a group in your opinion?

Interviewee: Umm, to be honest I didn't make them decide 100%, "Oh you must decide whether it's one or the other". I was happy for them to express all their opinions and show which, you know, what was positive and negative about each opinion. So at the end, I was happy to leave it as the range of ideas they had and some ideas were discounted like creating a wooden structure or whatever, because people realised the positives of the others were… made their ideas better than some of the others so it was more of a place of people willing to let go of certain ideas and then stick with a good 2 or 3 rather than saying one's the best. So we could reach that kind of decision which was good and it was easy to get to those decisions, yeah.

9. Interviewer: Do you feel that all of the opinions were treated fairly?

Interviewee: Yes, because we had plenty of discussion and some people thought of the same idea and what it meant was that everyone, I gave them plenty of opportunities to say if they didn't agree with something or didn't like something.

10. Interviewer: Is there a way the process of the workshop could change to enable the group to develop a finalised design?

Interviewee: The difficulty with these kind of consultations is that you rely on people to volunteer so the group size was quite small but this is what happened with the last workshop as well, we can't, we don't have … we can't help that but if we're able to make the group size a bit bigger I think then we would have more discussion and in depth discussion but you know it was good that we got a genuine member of the public today. If we could have more of these people, you know coming to do this sort of consultation then it would be much more valuable.

10+. Interviewer: Do you think the time is quite short?

Interviewee: I think the time was okay actually. If it had been longer I would've struggled to fill that time I think. That's the thing, these are busy people, they're either working or in of thems case, she's a retired person who lives in the local area, so she was able to give us those 2 hours of her time. But even so you know that's 2 hours she has to volunteer, so to make it longer would mean it would make it even more difficult for her to help us and we can't make it shorter because there would be no value to the discussion it would be too short. I think 2 hours is a good time.

11. Interviewer: Do you have any suggestions or comments about the workshop?

Interviewee: Any more comments? Uh, not really, I think it was a really good discussion and there were so many different ideas that hadn't been discussed in the first workshop at all, so it was worth doing the second one with different people and by changing, you know if we'd had the same criteria and the same discussions as the first one it wouldn't have been so valuable so by changing it and restricting the site we got some really different ideas, as well, which hopefully will help with the project, yeah.

Interviewer: Okay thank you very much.