

**URBAN/VILLAGE EXTENSION - DESIGN PRINCIPLES
OF NEW URBANISM: THE CASE STUDIES OF
POUNDBURY AND UPTON**

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Abstract

The motivation for this research is based on the very serious problem – local identity loss of village extensions in the Chinese ordinary villages. During the new development of Chinese ordinary villages, international concrete blocks and multi-storey apartments, which have been mass-produced in urban areas, are simply copied into rural areas replacing the local distinctive built environment. The author of this thesis set out to rethink the design principles of new urbanism in a way which can help create an urban/village extension of a town or a village to respect local identity or local context. Therefore, the research question is that *‘Can the design principles of new urbanism promote local identity or harmony with local context for urban/village extension?’* By reviewing the primary theories and ideas, the literature review draws upon primary sources of new urbanism including introduction and design principles which underlies a fundamental theoretical framework of design principles of new urbanism, and the overall view of the practice.

Once the framework of design principles of new urbanism have been established in this research, it is essential to test it through case studies. The purpose of case studies is to identify if the design principles of new urbanism can promote local identity or harmony with local context in practice. Two UK cases, Poundbury and Upton were selected and analysed. During case studies, the interview plays an important role in modifying the design principles of new urbanism which direct the analysis of the physical environments of Poundbury and Upton. The initial outcomes are expected to confirm that the design principles of new urbanism could promote local identity or harmony with local context based on the case study findings. In order to further investigate these outcomes, factual information was collected through questionnaires administered face-to-face and on-the-spot to the residents of Poundbury and Upton. The findings of the questionnaire provided strong investigated evidence along with the initial outcomes addressed by literature review and the case studies.

Finally, it can be concluded that the design principles of new urbanism are appropriate to promote local identity or harmony with local context for creating an urban/village extension.

Keywords: urban/village extension, design principles of new urbanism, local identity, harmony with local context.

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1 Introduction

Chapter 1 presents a broad overview to this research. Admittedly, this chapter tries to pique the readers' interests by expounding research background, research aims and structure, and defines the key research terms used in the study. The research background is set out in the following aspects: research motivation, analysis of the research problem and hypothesis of research question. Secondly, research aims and structure are discussed via text and diagrams. Finally, the specific terms: local identity and harmony, urban/village extension, and new urbanism, are defined.

1.1 Introduction to the Research Background

It is important to understand the underpinning motivation for this research. It can help to analyse the research problem and construct the key research question.

1.1.1 Research motivation

The original idea of this research is based on the author's previous academic project funded by the Ministry of Housing and Urban-Rural Development (MOHURD) of the People's Republic of China. One of the key aims of this project is to guide village extensions of Chinese ordinary villages by learning experiences of planning regulations and policies on villages in America, the UK, France, Germany, Japan, South Korea, Brazil, and Australia. The author was inspired by the clear need to explore more theoretical and practical support with more explicit details based on the existing problems of Chinese ordinary villages. Then it is essential to define the ordinary village in China firstly. From the perspective of location, the ordinary village here is not the village-in-city¹ and remote village² in China. From the perspective of

¹ Village-in-city are villages formed by part of Chinese urbanisation efforts. Their life is totally different from that of ordinary village due to the lack of farmland. They usually locate on the outskirts or urban segments, even central region of rapidly-developed cities (Luo, 2001; Ma, 2007).

² Remote village often means undeveloped villages that appear far from centre of community, town or city. It always connects to backward economy, unaccessible transport,

economy, it is not the developed village³ like Huaxi Village. And from the perspective of administration, it has village committee. Finally, the ordinary village is not famous as a historic and cultural village⁴. Therefore, the ordinary village⁵ of this research can be defined as the residential habitation locating between remote rural areas and village-in-city where residents are still doing the activities of agriculture production with medium developed economy and village committee.

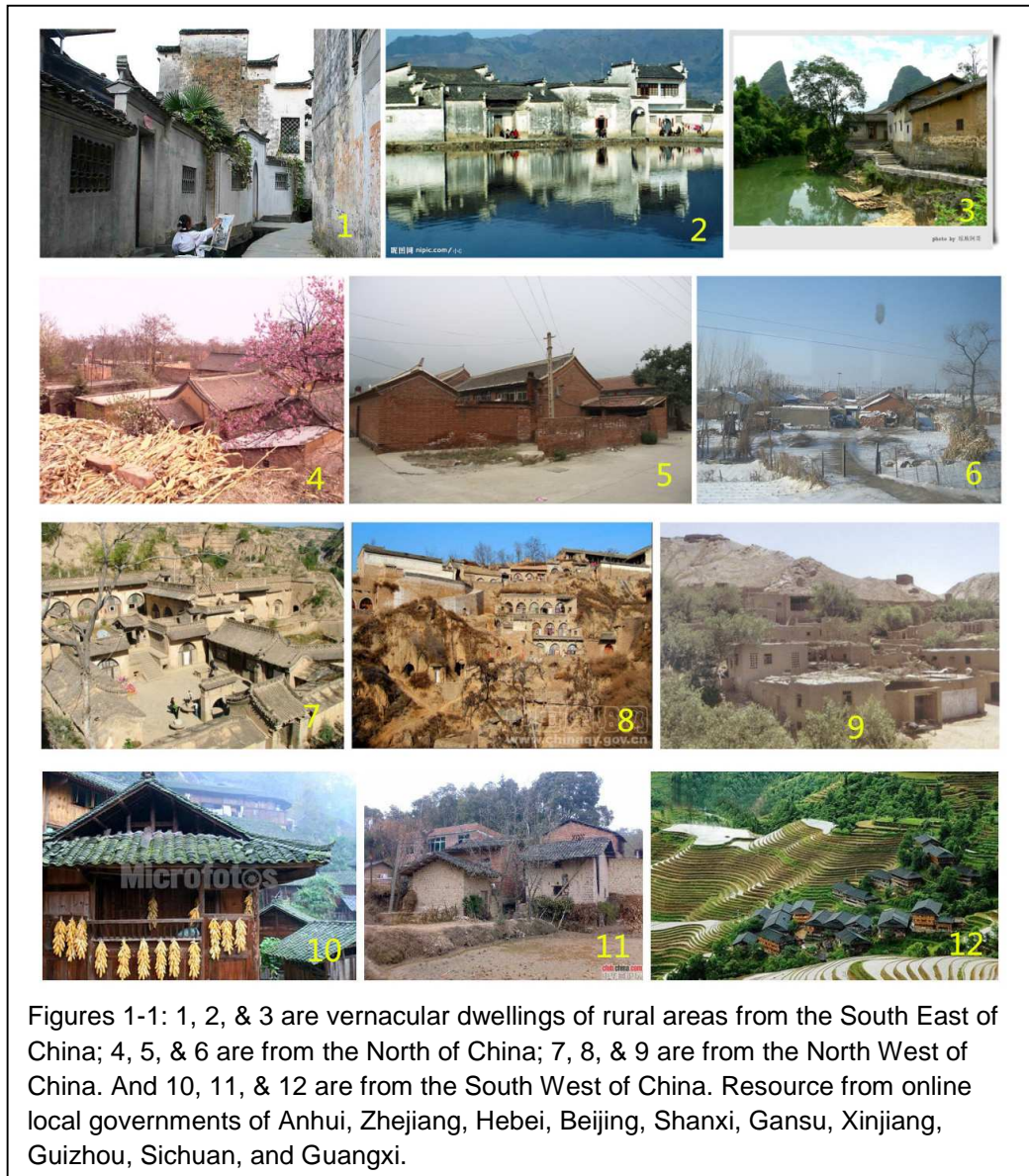
In contemporary China, the development of towns or cities was given greater priority than rural areas, which meant that the social, economic and environmental situations in ordinary villages lagged behind. There is a big disparity of the social, economic and environmental between urban and rural, which resulted in very serious 'three dimensional rural issues': farmers' hard lives, poverty-stricken rural communities, and agriculture in danger (Li, 2002). In order to address this situation, the central government has been intent on building a new countryside since the late 1980's to balance the urban-rural development by giving people of ordinary villages the same entitlements as the population of urban areas (Meng, 2009). This resulted in obvious changes, particularly at the beginning of the twenty first century in the economic, social, cultural, and built environments, in terms of higher income, better medical care system, village extension with totally brand new dwellings, and so on. Not all changes, however, are positive. For example, the village

and blocked information (Guo et al, 2007). So these kind villages are mostly impossible to extend their settlements in a relatively big scale at the same time.

³ Developed village is generally led by certain industries. The residents have a wealth which is normally a substantial amount by Chinese standards. The settlements have already been developed with modern construction during the process of urbanisation (Wang, 2010).

⁴ Historic and cultural village is often rich in architectural heritages, historic sites and cultural relics, ethnic customs, and so on (Zhao, 2008).

⁵ The ordinary village is a very typical form in China. Most of them are not full of famous historic sites and cultural relics but they can reflect the local characters of architecture and planning in the majority of ordinary rural areas (Liu, 2008; Rural Development Institute Chinese Academy of Social Sciences, 2012).



extension layout of ordinary villages physically changed a great deal compared with the preindustrial era when almost all the Chinese ordinary villages were built in response to local context (see Figure 1-1).

After a systematic literature review on documents, local reports, books, and articles (Li, 2002, 2010; Li and Wan, 2008; Feng, 2013; Chinese Traditional Village, 2011), it can be contended that China has experienced a lack of theoretical planning guidance and practical experiences to direct the extension development of an ordinary village. However, there is a desire to abandon the past and purely seek urbanisation in the process of extension development which is clearly evident in the country (Li, 2010; Chinese Tradition Village, 2011). A piece of greenfield, adjacent or close to the old



Figure 1-2: 1, 2, & 3 are new dwellings of rural areas from South East of China; 4, 5, & 6 are from North of China; 7, 8, & 9 are from North of China. Resource from online local governments of Anhui, Zhejiang, Hebei, Beijing, Shanxi, Gansu, Xinjiang, Guizhou, Sichuan, Guangxi.

village, is selected as the site for extension development. Then concrete blocks and multi-storey apartments, which have been mass-produced in urban areas, are simply copied into villages without respect for the local context (see Appendix C). The result of this is that – arguably, and observably – most have lost their local identity, and have become similar in regional, national, or even international construction, in their scope and effect (Owen, 1995), see Figure 1-2. Moreover, Li (2010) argues that against the background of booming, within ordinary villages since the late twentieth century, the harmony between new development and its pre-existing village is disappearing. The characterless extension of the ordinary village is fragmented from its connatural society – separated from relatives and friends – and the traditional bonds of community are broke down, which have served

the community so well. This kind of urbanisation seems to be one of the most important trends currently shaping Chinese ordinary villages. With the development of this trend, there is now little distinction on built environment not only between ordinary villages and villages but also between towns and villages soon. In general, the phenomenon and problems form are important motivation and indicate a workable research opportunity.

1.1.2 Analysis of the research problem and hypothesis of research question

a) Analysis of the research problem

Bearing the fact that all these characterless designs of new housing projects replace the strong local identification with featureless barracks (see Appendix C), there is a real danger that sameness and repetitiveness would happen not only in the extensions of ordinary villages in China but also elsewhere in the world including towns. Behind the mask of this built environment, what has been lost is the soul and essence of people's lives as they have existed for centuries. This 'characterless' environment also has a devastating effect on the physical village/urban form and social groupings built-up over the years with local residents' initiatives and civic pride (Shan, 2011; Zhao, 2011). This raises a very pertinent question: What is wrong with people desiring surroundings which are familiar, traditional, well-trying and beautiful in a rapidly changing world with new technological breakthroughs? Such a traditional desire does not mean that we could be any the less 'modern', suddenly reverting to a pre-industrial existence and behave in an eighteenth century fashion for instance. Indeed we could build an extension which echoes the familiar, attractive features of our vernacular styles (HRH the Prince Charles, 1989, p.15). In fact, there is a growing consensus in the architectural and urban profession that the local identity or harmony with local context matters (Adam, 2013). However, dealing with this research problem could be a big challenge, and it is very challenging for architects, urban designers and planners to knit and nudge new development into an existing ordinary village (Li and Wan, 2008). Nonetheless, so much for an academic

perspective - it is worth finding an appropriate way to approach how we could achieve it in the real life context.

b) Hypothesis of research question

Thus it is urgent to address this very serious problem of how we can achieve knitting and nudging new development into an existing ordinary village, and is urgent that the problem can be resolved according to the perception of local identity or harmony with local context. The relationship between extension and its pre-existing village, town, or city matters as it should be a part of the village's, town's, or city's sense of belonging (Adam, 2013). The ideal outcome would be to create local identity or harmony with local context rather than create an undesirable uniformity in an extension of a village, or town. Based on this aim, it is important to explore related theories or ideas not only to support and guide the urban/village extension but also to code its fabric pattern into the pre-existing towns or villages. Based on the in-depth literature review of main theories such as modernism, historicism, and new urbanism, it can be proved that new urbanism is arguably one of the most relevant planning ideas and theories to this research problem as shown in Chapter 3.

New urbanism is a planning theory and practice that incorporates interrelated patterns of land use, transportation, and urban form to create communities that foster the most desirable characteristics of human habitation: neighbourliness, environmental sustainability, economic efficiency and prosperity, historic preservation, participation in civic processes, and human health (American Planning Association, 2013). As a result, new urbanism might be one of the most appropriate techniques to help resolve the research question. Additionally, in terms of CAFE (2008), the best way to promote successful place-making is to think about design principles from the start of the planning and development process. Otherwise, it is unlikely to lead to the best outcome in light of quality. Furthermore, Douglas Kelbaugh (1997, p.134) states that if the development remains faithful to the principles of new urbanism, it should recognise and celebrate what is unique about a place's

history, cultures, climate, and architecture. Moreover, according to Michael Hough (1990), new urbanists do draw upon traditional local vernaculars in search of an authentic, not merely manufactured, sense of place. Thus a rough draft of design principles of new urbanism is explored for application into different contexts. This is based on critical thinking and case studies of new urbanism. The researcher tries to identify helpful solutions by employing design principles of new urbanism, which hopefully can promote local identity or harmony with local context as it stands today, rather than taking people back to a way of living that existed centuries ago.

Therefore, the research question that is established is: *Can the design principles of new urbanism promote local identity or harmony with local context for urban/village extension?*

1.2 Research Objectives and Structure

The research question stated above determines the possible contribution of this study. Before further discussion, it is important to define clear and achievable research objectives and structure in the development of the research question.

1.2.1 Research objectives

The setting of objectives is valuable as it can help researchers focus on the tasks that matter to the research and future perspectives. This research has two primary tasks to accomplish the goals of answering the research question. One is setting up the design principles of new urbanism as the fundamental theoretical framework of this research. The other is answering if the design principles of new urbanism can promote local identity or harmony with local context.

First, setting up the design principles of new urbanism can initially be accomplished as the fundamental theoretical framework through the literature review. This is a process of exploration. By introducing and discussing the design principles of new urbanism, a theoretical framework is established to identify what the design principles are in this research. The demand for these

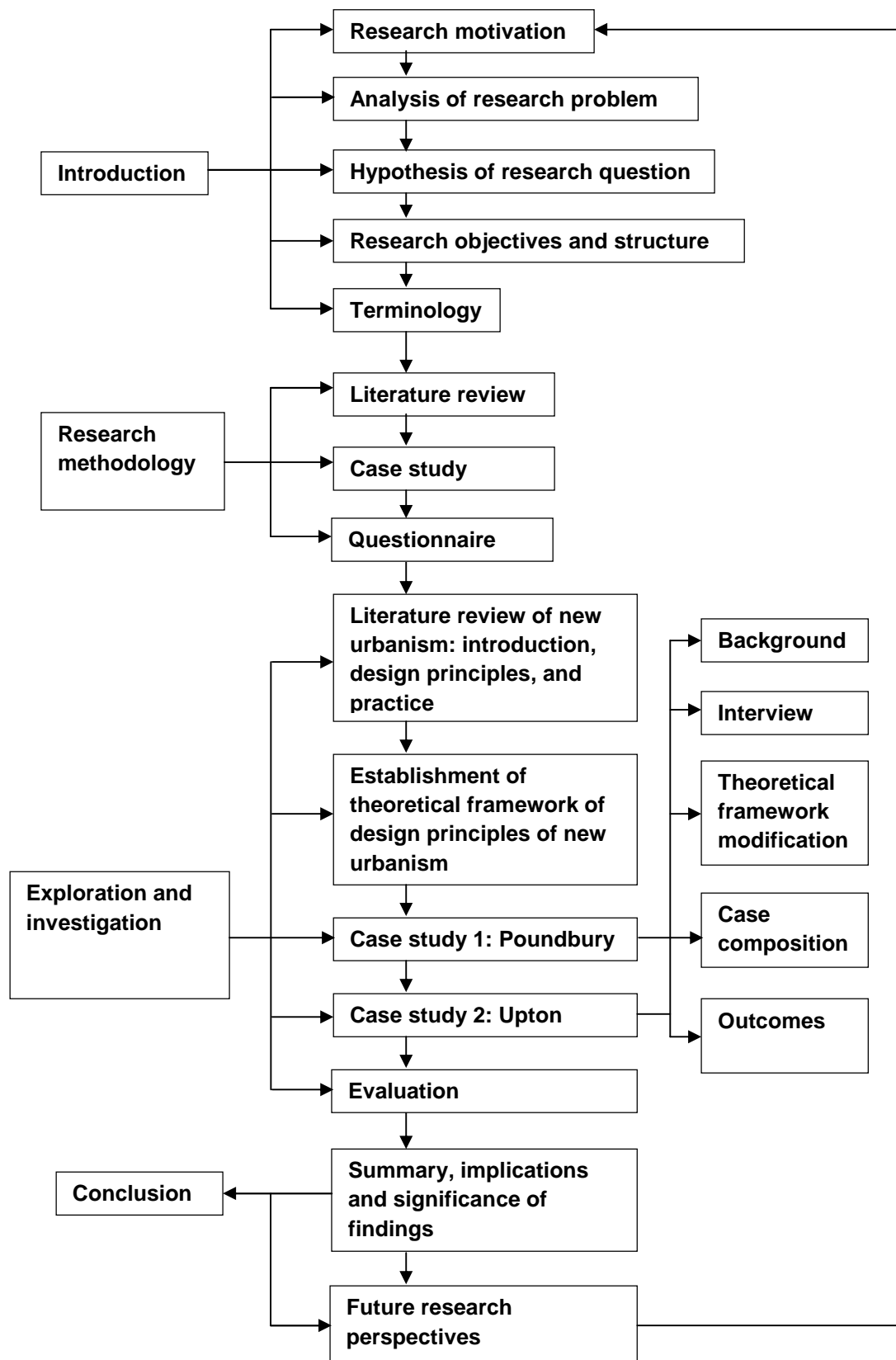


Figure 1-3: The research structure - Author's resource.

design principles is expected to boost local identification during the process of creating an urban/village extension where the buildings and spaces come together. This also means how well an urban/village extension is integrated with the surrounding city, or town, or village context and natural environment. The design principles of new urbanism should be transparent, and clearly applicable to local circumstances, which emphatically does not imply uniformity of design but work against local distinctiveness or against addressing harmony with local context. An urban/village extension should be considered as a settlement with its pre-existing town or city by identity, opportunities, and population. All those involved in urban/village extension can benefit from adopting a clear strategy of design principles of new urbanism for the built environment transformation of places to promote local identity or harmony with local context.

The second task is answering if the design principles of new urbanism can promote local identity or harmony with local context through case studies and questionnaire. These two methods form a process of verification to address the research outcomes. The UK cases focused in this research were selected to analyse and test these principles whether they can promote local identity or harmony with local context. In order to gain a better understanding of practice, some specific professionals were interviewed to develop applied design principles of new urbanism as a more reliable theoretical framework. This framework can be used to elucidate if it can promote local identity or harmony with local context in the development of selected cases. Moreover, after accomplishing the analysis of cases, it is necessary to do questionnaires completed by the case-study towns' residents aiming to investigate the situation analysed by two cases. The local residents can interpret the real application of design principles of new urbanism in terms of their cognition. The outcomes of case studies and questionnaires are expected to assure academic impartiality and allowing the findings to guide conclusions.

Overall, this research tries to accomplish the two tasks above to explore the answer of - Can the design principles of new urbanism promote local identity or harmony with local context? It is hoped that the findings would contribute to future extensions of ordinary Chinese villages.

1.2.2 Thesis structure

This research is structured in: introduction, research methodology, exploration and verification, and conclusion, as demonstrated in Figure 1-3. First, chapter 1 is the introduction to the study, including research motivation, analysis of research problem and hypothesis of research question, and terminology. Its outline has been depicted at the very beginning. Second, for the research methodology section, the role it plays is mainly demonstrating how this research addresses the research question proposed in chapter 1. Three primary methodologies are employed in this study: literature review, case study, and questionnaire. Detailed discussion of these is set out in chapter 2 – research methodology. Furthermore, exploration and investigation comprises five aspects: literature review of new urbanism – introduction of new urbanism, design principles of new urbanism, and practice of new urbanism, establishment of design principles of new urbanism, case study 1 – Poundbury, case study 2 – Upton, and evaluation. A literature review of new urbanism forms chapter 3 which assesses the existing knowledge relevant to the topic, shows the relevance to the investigation of new urbanism, and analyses how the investigation may help answer the key research question. Moreover, case study 1 and case study 2 covered by chapter 4 and chapter 5 respectively form empirical enquiries. These two case studies help bring an understanding of a complex issue or extend experiences relating to the investigation undertaken in the literature review. The analysis of real situations can provide the basis for the application of ideas and strengths by using evidence. Additionally, evaluation is crucial to gain insight into the investigation of outcomes explored by case studies. The evaluation is interpreted via questionnaire to ascertain the degree of achievements as discussed in chapter 6. Finally, in chapter 7 conclusions in this research are drawn based on the above that the design

principles of new urbanism can help promote local identity or harmony with local context for urban/village extension. According to the discussion in section 1.1.1, the research motivation is based on one of the problems identified in the field - characterless village extension during the process of building new rural areas in China. However, the overall area of study - resolutions to the village extensions in China - is too broad for this study, which is constrained by time, and only one researcher. So the localisation of outcomes established by this research into China will contribute to future perspectives – creating a harmonious village extension by applying design principles of new urbanism in Chinese ordinary village.

1.3 Terminology

- a) Local identity and harmony with local context
 - Local identity

Local identity is an important ingredient in creating a new development that will last and it paves the way for long-term viability for future generations (EP, NBC, TPF, 2005, p.8). The definition of 'local' in Oxford Dictionaries online is 'relating or restricted to a particular area or one's neighbourhood'. On the term of identity, Oxford Dictionaries defines it as the characteristics determining who or what a thing or person is. According to the above explanation, local identity may be depicted as the characteristics determining what an urban extension (neighbourhood) is. In addition to this, there are also some other ideas about local identity. First, local identity is connected to the term of place according to CABE and Ken Yeang. CABE (2008, p.18) claims that sometimes local identity is named 'local character' or 'local distinctiveness' of a place. In addition, Yeang (1995) summarises local identity in that every site is different and by responding to the locality we create a natural diversity from the principle of the spirit of the place. Second, the concepts of local identity focus on the reflection of local context. For example, Lynch (1960, p.8) states that an environmental image may be analysed into three components: identity, structure, and meaning in his book, *The image of the city*. He further explains that a workable image requires first

the identification of an object, which implies its distinction from other things, and its recognition as a separable entity, but with the meaning of individuality or oneness. He also persists in that the image must include the spatial or pattern relation of the object to other objects. In light of the context in this research, the whole image should include the spatial or pattern relation of urban/village extension to pre-existing old town or village. Thus, from the ideas of Lynch, it is possible to know that he primarily emphasises local identity or harmony with local context. Moreover, Owen (1997) believes that local identity displayed by attractive villages or small towns evolved mainly through local responses to local circumstances. Third, defining local identity is not only based on physical environment but also on natural environment, local social and economic aspect of local context. For instance, Wellman (2001, p.18) posits that the relationship between identity and community is encapsulated in the definition of communities as 'networks of interpersonal ties that provide sociability, support, information, a sense of belonging and social identity'. These three categories are complementary to each other rather than paradoxical. Obviously, the natural environment, and local social and economic contexts as invisible aspects play important roles for local identity as well as the physical environment. This research only focuses on the local identity of the built environment as discussed in terminology. All of what are targeting a successful urban/village extension by reflecting past experiences and transformation of built forms of local context.

- Harmony with local context

According to the Gospel of Mary Magdalene⁶, it is known that attachment to matter gives rise to passion against nature; thus trouble arises in the whole body. This is why people would be usually told: be in harmony. The definition of harmony varies from different perspectives. First, in music, harmony is produced by two or more voices or sounds heard simultaneously (Britannica

⁶ This very important codex was named by Karen King discovered in the late-nineteenth century somewhere near Akhmim in upper Egypt. It states that each soul might discover its own true spiritual nature, its root in the good, and return to the place of eternal rest beyond the constraints of time, matter, and false morality. Resource from www.earlychristianwritings.com/gospelmary.html, accessed on 24/09/2013.

Academic Edition, 2013). This definition suggests that two or more elements should have a sense of oneness if they are to be in harmony. Second, The Oxford English Dictionary (2013) defines harmony in built environment as the quality of forming a pleasing and consistent whole: delightful cities where old and new blend in harmony. For the old and new part, St. Augustine explained this in dialectic form: the new is in the old concealed and the old is in the new revealed (Christian Classics Ethereal Library, 2013). Additionally, from the perspective of visual literacy, harmony means that all parts of the visual image relate to and complement each other (Visual Literacy, 2013). Moreover, Rossi (2004) states that harmony with local context may be defined as a correspondence between parts, the result of the composition (or the division) of a whole into consonant parts. Furthermore, H.R.H Prince of Wales, Juniper, and Skelly (2010) argue that harmony is a blueprint for a more balanced, sustainable world that the human race must create to survive. They also claim that creating harmony with local context can give soul to the architecture and urban pattern of the built environment as no one part can grow well and true without it relating to – and being in accordance with – the well-being of the whole. Finally, Oktay (2005, p.3) argues that considering older towns which have a strong identity, the most significant determinant of the local identity is the local context that is formed by all elements of the physical and natural elements, in particular the built environment created over generations. Consequently, it may conclude in this research that harmony with local context appears consistent throughout the whole built environment between development of village/urban extension as the new part and its pre-existing village/town as the old part.

Local identity and harmony are closely associated although their meanings are not exactly same. However, in this research, they both serve and pursue the same targets. Therefore, it is possible to say that one can be an alternative to another.

b) Urban/village extension

There are many definitions of this term in the literature. For instance, the Planning Portal Glossary (2013) defines an urban/village extension as development that involves the planned expansion of a town or village and can contribute to creating more sustainable patterns of development when located in the right place, with well-planned infrastructure including access to a range of facilities, and when developed at appropriate densities (The Planning Portal, 2013). Moreover, Neal (2003) clarifies two different conditions to illustrate for the clarification of new urbanist projects. The first group addresses issues of urban/village infill, where the existing urban fabric is in need of repair. Neal also states that the second selection of projects addresses issues of the town/village edge where previously undeveloped green-field land has had to accommodate an increasing demand for new housing. According to Neal (2003), such projects of the second group, often described as urban/village extensions, are capable of forging new connections with the existing fabric pattern. Additionally, some people think that an urban/village extension means building a new perimeter to the urban/village area. In this research, urban/village extension is defined as *a new development that involves the planned expansion of a town or village when located on undeveloped green-field, adjacent or almost adjacent to the old pre-existing town or village, when labelled as new urbanist projects.*

c) New urbanism

New urbanism is a more American term although it was used earlier by the European academic thinkers. The Council for European Urbanism generally refers to this concept as '*sustainable* urbanism'. While in the British context, it is generally called *traditional* urbanism. Some other areas may clarify it by using other words. For example, neighbourhood is a notion with a universal appeal, reflected in terms like 'quartier' in France, or 'neighbourhood' in the US, suggesting a timeless and human scale to urban development, a form of urban planning that has a fresh relevance in the modern world (Prince Charles, 2003, p.v). The name used may vary, but the principles are same. Whether sustainable urbanism, traditional urbanism or others, these ideas

have not departed from that of new urbanism. In order to make a clear term, this research adopts 'new urbanism' as a unified term.

1.4 Summary

This chapter describes the process of constructing the research question and gives a brief overview of the research structure. In order to clarify specific terms, their various definitions were discussed. Based on this introduction, the following chapter reviews what kind of research methodology would best answer the research question - *Could the design principles of new urbanism promote local identity or harmony with local context by the UK cases.*

2 Research Methodology

Chapter 2 discusses the research methodology adopted to achieve the objectives of this study. The related research methodology is described in three sections. The first section is to understand the research methodology comprising literature review, case studies, and questionnaire. The second section assesses the potential application of the three research methods for this study. Last, section three discusses an overview about the summarised research methodology of this research.

2.1 Understanding the Research Methodology

This research adopts three research methods of literature review, case studies, and questionnaire. Literature review is undoubtedly important for this research. A case study is a research method which allows for an in-depth examination of a real-life context for purposes of investigation, theory development and testing, which plays an important role in advancing a field's knowledge base (Gillham, 2000; Shields, 2009; Yin, 2014). And questionnaire can look at the factual attitudes/opinions of a group of people relating to the research question (Dane, 2011; Franklin, 2012; Kirklees Council, 2003), in order to objectively further verify the outcomes investigated by literature review and case studies. As a result, these three research methods are important to answer the research question in this study.

However, how can these three methods connect and provide actionable value to this research? First, understanding the research methodology in section 2.1 is significant as it discusses a set of detailed aspects and specific techniques around the content presented. The arguments of this section as practical strategies make investigations more accessible and actionable in this research. Thereby this showcases the strategic dialogue between the generic use and potential application that addresses specific problems. Second, by pursuing the understandings of research methodology, it is possible to make research missions more relevant and targeted with

developing potential application of research methods as discussed in section 2.2 of this study.

2.1.1 Understanding the literature review

The literature review is an important process providing the context for the research study and it can serve multiple purposes at different stages of the research and writing process (Foundations of Qualitative Research in Education, 2008). Hart (1998, p.1) states that a review of the literature is important because without it one will not acquire an understanding of the topic under investigation, of what has already been done on it, how it has been researched, and what the key related issues are. He also argues that the literature review clarifies the main theories in the subject area, in order to ensure they are applied and developed correctly in the intended research, as well as the main criticisms that have directed to related studies in the field (Hart, 1998, p.1). Therefore, the literature review should be a necessary part of the academic development – of becoming an expert in the field.

A literature review may include four key aspects according to Hart (1998), Machi and McEvoy (2009), Booth, Papaioannou and Sutton (2012), Oliver (2012) and Ridley (2012). The first aspect is *searching the literature*; the second is *categorising the literature*; the third is *structuring the literature review* and the final aspect is *writing the literature review*. These four aspects need to be discussed to provide some guidelines for a good literature review, although Ridley (2012, p.98) stated that they are all interconnected and cyclical processes without a clear cut-off point for when one activity ends and another begins.

a) Searching the literature review

The topic or theme of this study has been defined, so first, there should be sufficient material to review. To begin with, Hart (1998, p.6) considers that a researcher needs to become familiar with: accessing and using the vast resources of academic, public and commercial libraries in the world, through, for example, JANET (Joint Academic Network), OPAC (On-line Public Access Catalogues) and the British Library; keeping accurate records and

establishing reliable procedures to manage materials; applying techniques to analyse bodies of literature and synthesise key ideas; and writing explicit reviews which display depth and breadth and which are intellectually rigorous. Second, Oliver (2012) recommends some other library catalogues, such as Copac National, Academic and Specialist Library Catalogue, SCONUL (The Society of College, National and University Libraries), WorldCat⁷, EthOS (The Electronic Thesis Online Service), and so on. Searching of these resources can be done by online keyword searches. Third, journal indexes and abstracting databases are popular. Google Scholar, for example, enables the researcher to access a wide range of academic material like scholarly journal articles, monographs and books, research theses and papers (Oliver, 2012). Furthermore, Elsevier (2011) suggests SciVerse Scopus which provides bibliographic information and citations for academic articles from nearly 17,000 journals in the broad subject areas of the sciences and social sciences. Thomson Reuters (2011) recommends the Social Sciences Citation Index which provides bibliographic and citation information from nearly 2,500 academic journals in the area of social sciences. In addition, an alternative in the case of this specific research is to search the databases of the University of Nottingham libraries for relevant information, which can be in paper or online format. Finally, researchers can look at the reference lists in relevant articles or books, identified as related to the specific field of study. According to the frequency of citation, the important sources can be filtered in the reference lists.

b) Categorising the literature review

When facing an enormous amount of information, researchers need to make decisions over which will be saved and which will be rejected after initial reading. Thus it is necessary to summarise and manage a large quantity of available information through categorising the literature review into meaningful sections. Most published articles contain a summary or abstract

⁷ WorldCat is a very large integrated catalogue, which identifies the location of academic materials including those of the University of Washington, the University of California, Berkeley, Cornell University and McGill University (Oliver, 2012, p.54).

at the beginning of the paper, which will assist with this process and enable the decision to be made as to whether it is worthy of further reading or inclusion (Cronin, Ryan, and Coughlan, 2008, p.40). In terms of their points, it is not difficult to undertake an initial classification and grouping of the articles by type of source: *primary* source—usually a resource by the original researches; *secondary* source—description or summary by somebody other than the original researcher, e.g. a review article; *theoretical* - sources concerned with description or analysis of theories or concepts associated with the topic, and *practice* - usually case studies (Colling, 2003). Additionally, according to Hart (1998), Machi and McEvoy (2009), the resources of literature review can be classified into five aspects: *fact* - statements of proposed truth about a person, place, or thing, *worth* - statements of judgment of the merit of an idea, course of action, behaviour, or position, *policy* - statements that set criteria or standards, *concept* - statements that either define or describe a proposition, idea, or phenomenon, and *interpretation* - statements that provide a frame of reference for understanding an idea. The researchers can also define their own classification according to the real needs of the study. This research seeks its categorisation based on the arguments of Hart, Machi and McEvoy. Based on the categorisation, it is possible to provide some insight into the connections of the central theme, a big map of research like a discipline or a practice, and the importance of the resources. Finally, to categorise the literature review, Oliver (2012) suggests that this may be achieved by summarising a resource in two or three sentences, synthesising the common features, analysing the important elements, identifying themes of emancipation, evaluating how a resource help us understand the subject, comparing different views on a subject, and taking notes.

c) Structuring the literature review

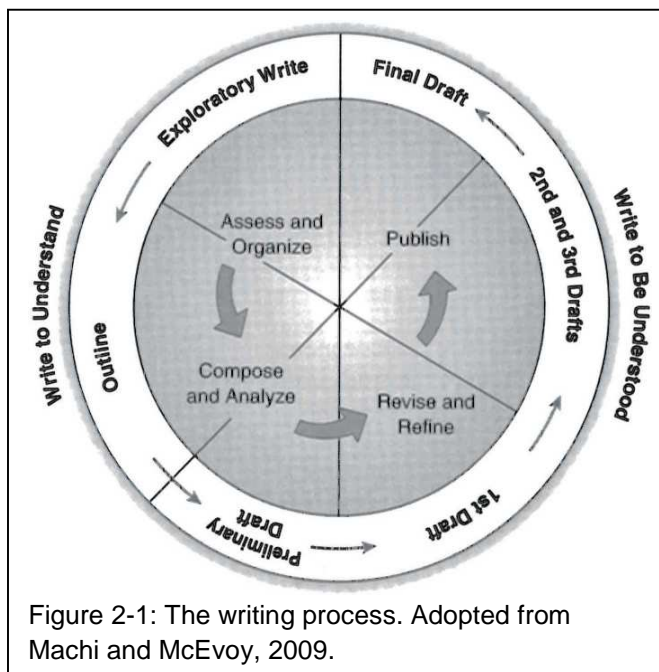
In order to have a good understanding the central theme of the study, researchers cannot escape the fact that at this stage a large amount of reading need to be undertaken and when researchers start to see themes emerge or start to identify possible gaps in the existing work, it will be

possible to increasingly focus on specific, and relevant, literature (Literature Review, 2013). The process of structure is expected to involve arguments analysis and development by assembling resources, and synthesising and integrating the information. Ridley (2012, p.104) claims that by constructing the argument, it is better to use the literature for the real purposes. In order to represent this, Hart (1998) suggests the construction of a *relevance tree* that aims to show the different ways in which the major topic has developed sub-themes and related questions. The tree shows how the topic has branched out and also can be what researchers want them to be, presenting whatever level of detail is required based on the principle of general-to-particular (Hart, 1998, p.151). He recommends the tree as an effective way to arrange the literature review, because a subject tree can provide a summative picture of the topic area. For a doctoral degree, there are possibly many drafts of drawing this kind of trees. The more trees researchers construct, the clearer the structure of the research becomes. Moreover, Oliver (2012, p.96) recommends that the use of headings and sub-headings is important to ensure a detailed categorisation of features of the literature, or - on a more straightforward level - to provide a sequence to the account. Whether trees or headings and sub-headings, they obviously can help to create an overall structure of the literature review by dictating the similar arguments, disagreements, controversial issues, and other points of relevance by linking them to the research purpose. In fact, the researcher should also think about more flexible approaches, and try to think of the most appropriate ways in which to approach the structuring of the literature review.

d) Writing the literature review

For writing the literature review, three primary points should be discussed: a literature critique, how researchers start to write a literature review, and the writing process. When writing, critiquing is the first important thing. It is essential to ask what kind of knowledge can answer the research question given the understanding about the topic when conducting the critique, which also needs to be considered during structuring the literature review. In terms of Machi and McEvoy (2009), if the answer is clear and is defined by the

discovery argument, researchers have found the thesis for the literature review. Of further importance, a main requirement is that the summarised views and arguments that others have made should be presented in a way that is fair by demonstrating that researchers are able to extract what might be useful



and possibly that new syntheses can be created (Hart, 1998, p.173). Second, writing is often closely related to the reading. Ridley (2012) suggests that starting to write while reading, before the overall organisational structure of the review is clear in the mind of the researcher, can assist in a greater understanding of the literature, and clarify on how it is to be used in the planned research. Furthermore, some recommend the development of the habit of writing as a starting point; for instance, Hart (1998) suggests that researchers will soon become habituated to the task with persistent writing or thinking about and planning to write by setting aside a regular time of the day or evening.

Third, once starting to write, there are some helpful experiences of writing process that can be applied. For example, Machi and McEvoy (2009) suggest two major stages for the writing process: write to understand and write to be understood, shown in Figure 2-1. This figure demonstrates that 'write to understand' comprises first draft, second draft, third draft, and final

draft. To start with, *exploratory writing* should take place throughout the whole process of the literature review, particularly when reading, as this facilitates better understanding of the research. Next, the *outline* closely links

with the structuring the literature review. The outline should incorporate all the relevant stages of the research, expressed through three main categories – the introduction, the body, and the summation (Machi and McEvoy, 2009). When the outline is expanded into coherent sentences, complete paragraphs, and a cohesive composition, it can be gradually developed to the *preliminary draft* as the first test of the researcher's true understanding of the material (Machi and McEvoy, 2009, p.143). The task of the *preliminary draft* might be achieved with the help of the habit of writing. When the *preliminary draft* is completed, it should be audited and edited with the aim of providing a strong foundation for a *first draft* which shows the integrity of the arguments and provides an overall assessment of the quality of the research thesis. Secondly, Machi and McEvoy (2009, p.149) argue that the completed first draft should be sent out to an appropriate outside reviewer for the sake of understanding by an outside audience, and then it is time to prepare the *second* and *third* drafts by refining the clarity and precision of the text so the work becomes the best rendition that researchers can produce. Finally, researchers may carry out a final audit on the form and format of the writing in order to improve their manual style. Machi and McEvoy provide some experiences for the academic writing process, and the researches may get on with the writing and tenaciously use that experience.

Overall, a strong literature review can ensure the completion of a credible research study, which supports and increases the understanding of the researcher and the reader.

2.1.2 Understanding case studies

Case studies can provide rich materials for advancing theoretical ideas and also provide insight at all stages of the theory – building process, and probably most valuable in testing theories (Gillham, 2000; Shields, 2009; Yin, 2014). It is often adopted in social science as a comprehensive method.

Yin (2014) states that there are six sources of evidence when understanding case studies: archival records, documentation, interviews, direct observations, participant-observation, and physical artifacts. However, according to

Marshall and Rossman (2006), a complete list of sources can be quite extensive - including films, photographs, and videotapes; projective techniques and psychological testing; proxemics; kinesics; 'street' ethnography; and life histories. Most possibly, extensive sources (such as - films, photographs, and videotapes) can provide some resources during the process of applying methodologies of archival records and documentation. No single source has a complete advantage over all the others. Actually, the various sources are highly complementary, and a good case study will therefore need to explore enough sources via several methodologies (Yin, 2009, p.101). All evidence will be of interest to the case study researcher, albeit varying in relevance and reliability (Knight and Ruddock, 2008). According to the above review, four main methodologies might be usually accepted for most social science research. They are documentation, direct observation, interviews, and visual mapping.

a) Documentation

This type of information can take many forms and should be the object of explicit data collection plans. These can be letters, memoranda, e-mail correspondence, and other personal documents, such as diaries, calendars, and notes. Drawings and contractual documentation, and bills of quantities are also included as an important form. Moreover, it is necessary to consider agendas, announcements and minutes of meetings, and other written reports of events. In addition, administrative documents should be focused on; for instance, proposals, progress reports, and other internal records. Furthermore, formal studies or evaluations of the same 'case' that researchers are studying should be clearly noted. Finally, it is significant to pay attention to news clips and other articles related to the field of study appearing in the mass media or in community newspapers (Proverbs and Garneson, 2008; Yin, 2014). These above and other types of documents are all increasingly available through internet searches. The documents are useful even though they are not always accurate and may not be lacking in bias. In fact, documents must be carefully used and should not be accepted as literal recordings of events that have taken place. For case studies, the

most important use of documents is to corroborate and augment evidence from other sources. Systematic searches for relevant documents are important in the data collection plan in view of documents that play an explicit role in any data collection in doing case studies (Yin, 2009, p.103).

b) Direct observation

Langley (1988) holds the opinion that observation involves looking and listening very carefully. We all watch other people sometimes, but we don't usually watch them in order to discover particular information about their behaviour. This is what observation in social science involves (Langley, 1988). According to Gillham (2000, p.45), very simply observation has three main elements which are watching what people do, listening to what they say, and sometimes asking them clarifying questions. Gillham (2000) also defines two types of observation: one is participant: being involved – mainly descriptive, i.e. qualitative, and the other is detached/structured: watching from 'outside' in a carefully timed and specified way – counting and classifying what you see, i.e. quantitative. These are categorised into participant observation and direct observation. *Participant observation* is one of the most common methods for qualitative data collection; it requires the researcher to be a direct participant in the context or culture being observed. Normally this needs months or years of intensive work because the researcher should become accepted as a natural part of the culture in order to assure that the observations are of the phenomenon in its natural context or setting. *Direct observation* on the other hand does not require the researcher to become a participant in the context. On the contrary, the direct observer should try to be as unobtrusive as possible in order not to bias the observations. In addition, direct observation suggests a more detached perspective: that is, the researcher is watching rather than taking part. Moreover, the researcher is observing sampled situations. Therefore, it tends to be more focused on direct observation than participant observation. Finally, direct observation tends not to take as long as participant observation (Social Research Methods, 2013). According to Proverbs and Gameson (2008, p.103), direct observation involves the researcher observing and recording

what they see and hear. The intention is to minimise the effect of the researcher's presence in order to capture an unbiased and accurate reflection of people's actions and practices.

Direct observation can range from formal to casual data collection activities. Most formally, observational instruments can be developed as part of the case study protocol, and the fieldworker may be asked to assess the occurrence of certain types of behaviours during certain periods of time in the field. This can involve observations of meetings, sidewalk activities, factory work, classrooms, and the like. Less formally, direct observations might be made throughout a field visit, including those occasions during which other evidence, such as that from interviews, is being collected. Based on the above discussion, the researcher took the decision to apply direct observation as an exploratory technique in this study.

c) Interviews

Qualitative research is concerned with meaning and not making generalised hypothesis statements (Crouch and McKenzie, 2006). Interviews are one of the major approaches in collecting data in qualitative research (Flick, 2007), so it is important to understand the different interview methods adopted by three aspects: understanding interviews, sample size, and data collection and analysis.

- Understanding interviews

Interviews have long been one of the key data collection instruments in case studies. According to Flick (2009, p.150), several types of interviews may be distinguished including the focused interview, the semi-standardised interview, the problem-centred interview, the expert interview, and the ethnographic interview. There are also other different divisions about the types of interviews. Yin (2014) posits three interview types. One type of case study interview is the prolonged case study interview. The interviewees can be asked about their insights, explanations, and meanings related to certain occurrences (Yin, 2014, p.111). This form of interview may take place over two hours or more. A second type is a shorter case study interview. This

normally takes a shorter period of time - an hour rather than occurring over an extended period of time or over several sittings, for example. In such cases, the interviews may still remain open-ended and assume a conversational manner, but researchers are more likely to be following a certain set of questions derived from the case study protocol (Yin, 2009). A third type entails survey interviews with more structured questions, along the lines of a formal survey. Such a survey could be designed as part of an embedded case study and produce quantitative data as part of the case study evidence (Yin, 2014, p.112). This situation would be relevant, for instance, if researchers were undertaking a case study of an urban design project and surveyed a group of designers about the project (e.g. Crewe, 2001) or if researchers did a case study of an organisation that included a survey of workers and managers. Moreover, Haigh (2008) claims that several types of qualitative interviews exist which are used by researchers in the built environment; for example, topical history, life history, oral history, evaluation interview, focus group interview, and cultural interviews. *Topical interviews* are concerned with the facts and sequence of an event (Haigh, 2008). The interviewer is interested in a reconstruction of the experience and what happened. *Life histories* deal with individual experience or rites of passage. The *evaluation interview* might be used by a researcher in a construction company or project to review practices and initiate continuous process improvement (Haigh, 2008). The *cultural interview* is mainly about the norms, values, understandings, and taken-for-granted rules of behaviour of a group or society (Haigh, 2008). This type of interview reports on typical shared activities and their meanings.

This one-to-one interview is arguably the primary form (Crouch & McKenzie, 2006, p.484). In light of the above explanation, shorter case study interviews seem to be appropriate for this research as a certain set of questions derived from the case study protocol could be followed.

- Sample size

Samples for qualitative studies are generally much smaller than those used in quantitative studies like questionnaire (Mason, 2010). Moreover, Crouch and McKenzie (2006, p.484) argue that interview-based studies involving a small number of respondents are becoming more common in social science research (often less than 20). Within a broad research area, different attendants may have varied opinions. For instance, according to Mason (2010, p.8), the most common sample sizes were 20 and 30 (followed by 40, 10 and 25). He also states that the significantly high proportion of studies utilising multiples of 10 as their sample is the most important finding from his analysis (p.8). In addition, Bertaux (1981, p.35) considers that 15 is the smallest acceptable sample size for all qualitative research. However, Jette, Grover and Keck (2003) suggest that expertise in the chosen topic can reduce the number of participants needed – while Lee, Woo and MacKenzie (2002) suggest that studies using more than one research method require fewer participants. As a result, the sample size can be less than 15 in this research in light of the above review.

- Data collection and analysis

There is an accepted interview protocol for data collection and analysis. The following seven stages for the interviewer could be included in this protocol referenced by Kvale (2007, p.35):

- Thematising. Formulate the purpose of an investigation and the conception of the theme to be investigated before the interviews start. The why and what of the investigation should be clarified before the question of how-method-is posed;
- Designing. Plan the design of the study, taking into consideration all seven stages of the investigation, before interviewing. Designing the study is undertaken with regard to obtaining the intended knowledge and taking into account the moral implications of the study;
- Interviewing. Conduct the interviews based on an interview guide and with a reflective approach to the knowledge sought and the interpersonal relation of the interview situation;

- Transcribing. Prepare the interview material for analysis, which generally includes a transcription from oral speech to written text;
- Analysing. Decide, on the basis of the purpose and topic of the investigation, and of the nature of the interview material, which modes of analysis are appropriate for the interviews;
- Verifying. Ascertain the validity, reliability and generalisability of the interview findings. Reliability refers to how consistent the results are, and validity means whether the interview study investigates what is intended;
- Reporting. Communicate the findings of the study and the methods applied in a form that meets scientific criteria.

Overall, interviews are an essential source of case study evidence because well-informed interviewees can provide important insights into the relevant situations under investigation (Yin, 2014, p.113).

d) Visual research and imagery analysis

We are surrounded by different sorts of visual technologies – photography, film, video, digital graphics, television, acrylics, for example – and the images they show us – TV programmes, advertisements, snapshots, public sculpture, movies, surveillance video footage, newspaper pictures, and paintings, which offer views of the world we live in (Rose, 2007, p.2). There is another view that visual is the most fundamental of all senses. Gordon Fyfe and John Law (1988, p.2) believe that depiction, picturing and seeing are ubiquitous features of the process by which most human beings come to know the world as it really is for them. John Berger (2008) claims that seeing comes before words, and the child looks and recognises before it can speak; however, some writers tend to historicise the importance of the visual sense (Rose, 2007). Schirato and Webb (2004, p.57) argue that seeing is a kind of reading, one which makes use of particular technologies and various skills in framing, selecting, editing and decoding the visual material that surrounds us. Stanczak (2007, p.10) takes the view that images are direct representations of the field once we have left it. Therefore, as a PhD study of Architecture

and Urbanism, visual research is also one of the most important methodologies to consider the creative ways in which a researcher uses visual techniques and tools in the fieldwork while collecting data.

2.1.3 Understanding the questionnaire

Questionnaires offer an objective means of collecting factual information about people's knowledge, beliefs, attitudes, and behaviour (Oppenheim, 2000; Sapsford, 1999). Gillham (2008) also states that questionnaires are one of the tools of population surveys – a main research method for social science. Thus the questionnaire can be considered as a very reliable research method in his research by supporting the initial outcomes investigated through case studies.

The questionnaire comprises a list of written questions, but should also include clear instructions and space for answer or administrative details (Kirklees Council, 2003). It is easily standardised which means every respondent is asked the same question in the same way (Sociology, 2013). In order to develop a reliable and valid questionnaire, four stages are commonly followed (Brace, 2013; Foddy, 1994; Gillham, 2000; Kirklees, 2003):

- Initial considerations
- Preparation
- Piloting the questionnaire
- Final data collection and analysis

a) Initial considerations

First, for the initial considerations, it is important that the questionnaire must relate to a clear topic to be investigated. It is also important for the researcher to know exactly who their target population is, to decide on the most appropriate method for administering the questionnaire, and consider the sampling approach to be adopted (Kirklees Council, 2003). Initial considerations can be discussed by administering the questionnaires, probability sampling and sample size.

- Modes of administration

Franklin (2012, p.175) suggests four modes of doing questionnaires: self-administered, directly administered, online/digital surveys and questionnaires, and web-based survey instruments. Franklin (2012, p.175) states that *self-administered* surveys see subjects responding to ready-made questionnaires, digital being the most efficacious at the data-gathering point. Directly administered questionnaires are used in carrying out a survey when researchers approach respondents personally (Franklin, 2012, p.176). The online/digital surveys and questionnaires are self-explanatory, in that in the current climate of globalisation, email, instant messaging, or texting are the best way to access people; email lists, address-books, or Facebook group providing a ready-made sample to use (Franklin, 2012, p.176). Finally, Franklin (2012, p.177) clarifies that *web-based* survey instruments deal with many of the above problems in email surveys; layout options allow for higher production values and attractiveness for easy use.

- Probability sampling

Probability sampling is any technique that ensures a random sample, a technique that ensures that anyone in the targeted population has an equal chance of being included in the sample (Dane, 2011, p.116). There are usually three aspects that probability sampling includes: *systematic* sampling - the population units are listed and a sample is taken by selecting units at fixed down the list, *stratified* sampling - the sample reflects the structure of the population, and *cluster* sampling - when sampling frame lists are unavailable, researchers randomly select hierarchical groups from the sampling frame (Dane, 2011; Franklin, 2012; Gillham, 2000; Lyn, 2002).

- Sample size

How many people are appropriate to meet the needs of the proposed research? According to Gillham (2008), in small-scale research, and using questionnaires, it may make sense to include everyone, whereas the only practicable way is to take a sample if the numbers are large, running into hundreds or even thousands. It is not possible to give all members a chance

of selection so the survey population should be restricted. Franklin (2012, p.174) argues that two things may influence how big a sample should be. The first response to individual researchers is that the size of the sample depends on time and cost restraints as well as the nature of the research question and the role that any survey is to play in the larger inquiry. The second might depend on how much precision is required. In addition, following Miaoulis and Michener (1976), Stern (1979), Lyn (2002), Dane (2011), Gillham (2000), and Brace (2013), two key criteria need to be specified in order to determine the appropriate sample size: the level of precision, and the level of confidence. *Precision* is usually measured by a quantity known as the confidence interval (Lyn, 2002, p.188). To start with, the precision can measure how sure we are that the answers from our sample can be generalised to the population (Gillham, 2000). No questionnaire can be 100% accurate. There is always going to be some error, and a *confidence level* less than 100% such as 99%, 95%, and 90% could be acceptable. Usually, most researchers use 95% as the accepted level (Israel, 1992; Survey System, 2012). This means if the confidence level is 95%, we can be 95% certain that the results are able to be generalised to the population.

Generally, once the confidence level and confidence interval are estimated, the sample size can be figured through formulae, published tables, or sample size calculator (Dane, 2011; Israel, 1992; Lyn, 2002).

b) Preparation

A well-designed questionnaire requires relevant information and careful considerations. It needs to be planned and developed. First, there are generally two types of questions for designing questionnaires: open questions and closed questions. In light of Foddy (1994, p.152), *open* questions tend to produce material that is extremely variable, of low reliability and difficult to code, and the answers to open questions are often less complete than answers to corresponding closed questions. When using *closed* questions, Dawson (2009) suggests that three aspects should be

noted: trying to ensure that all possible answers are covered, avoiding leading questions, and avoiding a long questionnaire. Second, for the font size, Brace (2013) recommends a general font size of 10, 11, or 12 point and larger font sizes for key instructions. He also proposes dividing the questions into sections with clear headings by adopting the convention of upper case type.

c) Piloting the questionnaire

Foddy (1994, p.185) states that there is an emerging consensus among survey methodologies in first piloting the questionnaire tool. He posits that piloting questions on a small sample of respondents drawn from the target population is more useful for uncovering aspects of questions that may cause difficulties for interviewers than for discovering whether or not the respondents interpret the questions as intended. Moreover, it's good practice to pilot the questionnaire with a small sample of respondents before a final version, which is able to check people's understanding and ability to answer the questions, highlight areas of confusion and look for any routing errors, as well as providing an estimate of the average time each questionnaire will take to complete (Oppenheim, 2000).

d) Final data collection and analysis

- Data collection

In order to answer the objectives of the survey the questionnaire must not only collect the data required, but collect the data in the most accurate way possible (Brace, 2008, p.7). In practice, some guidelines for data collection are discussed below. First, help from local residents' committees should be sought in advance. They can provide some useful information, such as events and hot spots where people gather, appropriate questionnaire time, and so on. Second, it is necessary to establish an appropriate level of rapport and trust with the sample under study by being friendly and polite. Third, participants need to be reminded when they miss one of the questions. Thus the researcher needs to concentrate when participants are doing questionnaires in order to ensure the validity of the tool.

- Data analysis

The analysis of quantitative data can be accomplished through the use of descriptive and inferential statistics (e.g. excel, SPSS) and are often presented in form of tables, pie charts, or bar charts (Akbayrak, 2000, p.9).

2.2 Potential Application of Research Methodology in This Study

In terms of the above understanding of research methodology, the research objectives may be achieved by the following considerations, all of which may need to be tested and further confirmed in the literature review of New Urbanism, relative case studies, and evaluation through questionnaire.

2.2.1 Potential application of literature review

According to the analysis of the research question in 1.1.2 and the methodology of the literature review discussed in 2.1.1, the review undertaken for this study is primarily related to New Urbanism. The author achieves this by searching all sources of New Urbanism, categorising by clarification like theories, practice, structuring, and writing, to obtain the previous research and the gap that this study aims to bridge. These steps offer fundamental theoretical support to answer the research question – *Can the design principles of new urbanism promote local identity or harmony with local context for urban/village extension?*

2.2.2 Potential application of case studies

a) Initial selection of case studies

The first decision in a case study is whether a single case or multiple cases will be investigated. The evidence from multiple cases is often considered more compelling than from a single case, and the overall study is therefore regarded as being more robust (Herriott and Firestone, 1983). According to Herriott and Firestone (1983), one case appears not to be representative of other instances; however more than one case may allow the researcher to generalise the outcomes. Given that the conduct of more than two case studies may require extensive resources and time beyond the means of a single student or independent research investigator (Yin, 2014, p.57), this

research selects two cases through a rigorous selection process, while tries to avoid case selection bias.

The next step is the identification of the cases to investigate. The researcher needs to define the case list which conforms to the research needs. For instance, it first needs to be a *new urbanist community*. On completion of the list, two appropriate cases are selected based on the research question. To start with, the cases of this study should be an urban/village extension by echoing the research subject of urban/village extensions as discussed in 1.1.2. The other factor is that it is better to consider physically available fieldworks, which means the appropriate cases should be completed or closely completed.

b) Case studies

Based on the discussion in section 2.1.2, four approaches are necessary for case studies: documentation, direct observation, interviews, and visual mapping.

First, in this research, a good documentation collection has done in terms of the guidance of this methodology, such as from published books and journal papers, minutes of meetings, master plans sent by Digimap, articles from newspaper and online newspaper in the media, administrative documents. Such a range of documentation is important in understanding the construct of a case study, and to retain focus on the targets to be achieved.

Second, this research requires field visits to the cases by using less formal ways of direct observation, such as observing neighbourhoods for understanding circumstances and local context being studied, experiencing the sense of place, taking photos, talking to local people, and so on. Therefore, the evidence that has been obtained via direct observation is very valuable to provide strong support for this research.

Third, the interviewees in this research, they include professionals involved in the selected two cases, from the perspective of land owner, engineer consultant, new urbanism pioneer like the Prince's Foundation, lead architect,

Council, or BREEAM Communities. Some candidates are identified through relevant documentation, and others are recommended by the earliest participants. Thematising is paramount for interviews. If the purpose and the concept are identified, the questions can be designed according to the needs of the research. This study adopts a semi-structured question list with open-ended questions. Semi-structured here means there are some fixed questions asked from the first interviewee to the last one. For example, a question is fixed based on the theoretical framework established in chapter 3. The question lists for the interviewees are slightly different because the professionals represent different perspectives; however, the main aim of the discussion is to answer the research question of this study. Of importance too, a few different questions are included that are individually guided by ongoing conversations. This requires having an overview of all interviewees and an interview study, paying attention to the interdependence of the stages and also pushing forward tasks at later stages (Kvale, 2007, p.41). Additionally, interviews need a quiet place to be conducted. For PhDs, if possible, it is better book a room in advance which not only partly eases tension but is also beneficial for recording interviews. Moreover, audiotape recording, phone recording, videotape recording, note-taking and remembering may be used in interviews. However, for instance, videotape recording is not necessary for a telephone interview, which is becoming a common way of conducting interviews. The interviewers can devote themselves to the theme and dynamics of the interview. All the digital data can be easily transferred to a laptop or computer and stored permanently, to be later written up and analysed by re-listening. Furthermore, coding and categorising play important roles for the analysis of texts in the social sciences. *Coding* involves attaching one or more keywords to a text segment in order to permit later identification of a statement, whereas *categorisation* entails a more systematic conceptualisation of a statement, thereby opening it up for quantification; the two terms are, however, often used interchangeably (Kvale, 2007, p.105). The analysis should illustrate one way of unified coding or categorisation. In addition, key respondents can be asked

about the facts of a matter as well as their opinions about events (Yin, 2009, p.107). However, the outcomes of interviews should be objective rather than subjective, showing reliability and validity which respectively pertains to the consistency and trustworthiness, the truth, the correctness and the strength of a statement (Kvale, 2007, p.122). Finally, the readability of interview quotes should be enhanced as much as possible in order to be understood by readers.

Fourth, there are two aspects of visual mapping. One is *photographing*, such as buildings, landscape, public places, unique decorations and arts, and so on. The other is the *analysis of documentation drawings* formatting as PDF, JPG, and DWG which are originally collected from Digimap, journal papers, books, interviewees, and others. By using relevant tools such as Photoshop or AutoCad, the photographs have been edited to fit the research needs, and the drawings have been analysed to show reliable data like phasing, urban form, the road network, walking analysis, and others. They help understand the inferences and qualities of texts. In summary, visual research and imagery analysis is a fundamental methodology applied in this research.

2.2.3 Potential application of questionnaire

This research employs face-to-face administered on-the-spot questionnaire that is used to collect factual information to further verify the outcomes established by case studies and answer the research question academically. This method can provide the possibility to explain and answer any questions of participants, which tries to avoid misinterpretation and low rate of returns, as discussed in 2.1.3. Moreover, the targeted population of the questionnaire is the residents living in where the cases are, because the residents may be more knowledgeable about new urbanist communities, which in turn strengthens the factual information of the questionnaires being reliable and valid.

Additionally, participants may answer the questions unintelligibly if the questionnaire takes too long time (Brace, 2013). So the questionnaire of this research is better to have no more than two pages and take five minutes approximately.

The questionnaire is designed by including three sections. The demographic information, age and gender is Section 1 in that this study plans to employ stratified probability sampling. As reviewed in 2.1.3, this can help create broad bands as strata while in the meantime providing an equal chance for everybody to be selected. Section 1 is not cross-tabulated to compare how opinions vary between these groups. Section 2 includes three questions. This section has a primary aim if the results are positive. It helps to further support that the two cases are representative. Finally, the respondents need to rate the importance for the design principles of new urbanism in Section 3. This section tries to further verify that the design principles are important to promote local identity or harmony with local context for creating an urban/village extension.

Furthermore, the questionnaire of this research requires a pilot study for a day on the spot to check people's understanding and ability to answer the questions, average time spent per questionnaire, hot spots accessible to people, and how many questionnaires can be administered and completed in a day. If the location of the case is not easily accessible, some questionnaires can be posted or sent by email to local residents' committee members by way of a pilot study. The contact of local committee member can be obtained through the relevant website or other possible sources. Based on the pilot study, the researcher is able to have clearer questionnaires, know where the best locations to do questionnaires are, and plan time and costs for the trips to distribute the questionnaires.

Finally, this research plans to use computer coding by transferring the responses from the paper questionnaire into an Excel spreadsheet. The researcher put each question number as a column heading, and use a row for each participant's answers. On conclusion of this procedure, the accuracy of the data must be checked. Then it is possible to calculate how many people there are for each option by employing a filter to each question via Excel. Additionally, graphs like pie charts are created at this stage to display the statistics. Once these diagrams are generated, the stories they tell and

the meanings they convey can be discussed, based on the research question. If necessary, the figures may be compared to better answer the main research question.

2.3 Chapter Summary

This research was enlightened by the phenomena and problems observed from the setting up of the Chinese Socialism New Countryside Campaign, which have been clarified by an in-depth literature review of documents, local reports, books and articles and interviews in China. To solve the large and complicated problems of the ordinary Chinese villages is far beyond the capacity of one PhD; therefore this thesis tries to only focus on one relevant point – whether the theory of New Urbanism could contribute towards a positive solution of distinctive urban/village extensions. Based on this focus, three main methodologies - like literature review, case studies, and questionnaire - are vital. One research method is not perfect but has some limitations, while the three methods are complementary each other to serve this research.

First, the main theories of urban planning including modernism, historicism, and new urbanism are systematically studied and a fundamental theoretical framework is generated. Then, built on this framework, further study focuses on New Urbanism by reviewing its typical theories, representative scholars and outstanding practical cases. Consequently, design principles of New Urbanism are supposed to be extracted from the literature review stage.

Secondly, the theoretical outcomes are further enhanced, verified and confirmed with the aid of another research method – case studies - which forms the content of chapter 4 and chapter 5. Through a logical process of case selection, two cases are finally enlisted. During the procedure of the case study, not only are the relative history, context, design background and theories carefully reviewed, but also support of supplementary propositions from relevant professionals is gained via the interview method. Thus, a more rigorous understanding of New Urbanism is further established.

Thirdly, the validity of case studies and their theoretical outcomes are further tested and confirmed by applying the questionnaire to illustrate the residents' cognition, understanding and opinions relating to the two cases. The relevant data analysis is presented in chapter 6.

As a result, the research methodology summarised above can help answer the research question and lead to conclusions of chapter 7.

3 New Urbanism

Chapter 3 focuses on the literature review and overview of practices of new urbanism. Literature review includes two main aspects: the background of new urbanism, and design principles of new urbanism. Via these two key points, a fundamental theoretical framework of design principles can be established to create an urban/village extension. This framework embraces 11 bullet points. Moreover, an overview of new urbanism practices discusses key practices: Seaside from America, Heulebrug urban extension from Belgium, and the UK practice list. The discussion on the UK practice list mainly argues the filtering process of key case studies for Chapters 4 and 5, which report two key cases: Poundbury and Upton.

3.1 The Background of New Urbanism

3.1.1 Introduction to new urbanism

New urbanism, as the latest reform movement and the most important planning movement since the twenty first century, has sought to establish new planning and design principles that may be applied to urban or rural areas and, particularly to new suburban neighbourhoods. It owes much to the City Beautiful⁸ and Garden City⁹ Movements of the early twentieth century. More generally, that is to say, it is an international movement concerned with tackling the problems associated with urban sprawl and car dependency (Cowan, 2005). New urbanists aim at reforming the design of the built environment and raising our quality of life and standard of living by creating better places to live (New Urbanism, 2011). The new urbanism nomenclature was adopted in 1993 when the Congress for New Urbanism was founded in

⁸ The City Beautiful movement intended to utilise the current political and economic structure to create beautiful, spacious, and orderly cities that contained healthy open spaces and showcased public buildings that expressed the moral values of the city. It was suggested that people living in such cities would be more virtuous in preserving higher levels of morality and civic duty (Wilson, 1989).

⁹ The Garden City Movement was very much a British development (Buder, 1990, p.ix).

the US. Since then new urbanism has its official voice and has become formally recognised in the world.

The basic elements of new urbanism can be seen in the urban village¹⁰ movement that began in Europe during the late 1960s (Thornton, 2010). New urban practitioners clearly connect the physical design and creation of community with the outcome of myriad benefits that affect the social, communal, financial, environmental, preservationist, and democratic lives of its residents (Rees, 2003, p.96). According to Calthorpe (1994), one of the co-founders of CNU, and Ford (1999), a notable urban geographer, there are usually two approaches to new urbanism. One is urban in-fill projects, which are often allied with historic preservation schemes aimed at enhancing older communities rather than disrupting them with inharmonious modernity (Ford, 1999, p.249). The other is new development; this is a goal of new urbanists to create compact, walkable, mixed use, traditional, and human scale community, which is both functional and sustainable (Rigosu, 2013).

Since the subject in this research actually focuses on the spectrum of new development – further defined as urban/village extension. This is where a traditional urbanism becomes relevant, as we need to say that new urbanism is relevant. Traditions allow us to recognise the lessons of history, preserve our sense of identity and counteract social alteration. Traditional buildings and places maintain a balance with nature and society that has been developed over many generations (INTBAU Charter, 2001). Nevertheless, new urbanism should not be simply regarded just a revival of traditional planning strategies as historicism. It proposes new solutions that are being prepared to serve the needs of our changing pattern of society and is trying to embrace the opportunities offered by new technology (Neal, 2003, p.8).

Furthermore, as suggested by Katz (1994), new urbanism is a movement that is of great relevance to future planning efforts. It is without doubt one of

¹⁰ The urban village movement grew from a desire for change – it offers an alternative and time-honoured approach to the creation of successful and sustainable urban communities (Neal, 2003).

the most exciting concepts to come out of the architectural and planning arena at present and in the future (Rees, 2003, p.111), and it offers us a applicable lens through which to resolve the research problem for this study. The continuing survey and synthesis of past and ongoing research indicates that new urbanism's reliance on building types, street and block patterns, land subdivision and land-use mix within small areas mirrors both traditional spatial arrangements and the processes of formation and transformation that continue to shape new developments of many towns and villages (Moudon, 1998). Consequently, new urbanism, most potentially, can facilitate the urban/village extension in the context of mature neighbourhoods and modern structural requirements.

In order to have an in-depth understanding of new urbanism, the introduction discusses four aspects. The first point is about the rise and development of new urbanism; the second is trying to discuss the definition of new urbanism; the third point is about critics and defence of new urbanism; and the last aspect is a brief of new urbanism.

3.1.2 The rise and development of new urbanism

To understand new urbanism, and to plot its rise over the years, many key players are involved both individuals and agencies. The following discussions show their roles by employing their principle ideas.

3.1.2.1 Influential representatives on the rise of new urbanism

What drives interests in new urbanism? Some express it in a single word: sprawl. According to Grant (2006, p.4), she states that the twentieth century seems to have no limits, oozing inexorably over landscape with little form or characters. There were many ills of sprawl development pattern to be addressed. Since the late nineteenth century, some important representatives started to think about the serious problems caused by urban sprawl. These representatives did have a very big influence on the rise of new urbanism. They share the same values of traditional urbanism and civic life, from the Aristotelian ideas of liveable communities for all citizens, to the works and thoughts on urban design formulated in the writings and practices

of professionals, such as Grady Clay, Camillo Sitte, Gordon Cullen, Colin Rowe, Denise Scott Brown, William Whyte, Jan Gehl, Vincent Scully, Jane Jacobs, Kevin Lynch, Christopher Alexander, Andres Duany, Leon Krier, Prince Charles and others (Haas, ed, 2008, p.9).

Grady Clay is best known for a prescient 1959 article published in Horizon Magazine, "*Metropolis Regained*," that critiqued the hollow, highway-connected contemporary vision of the city and described an inchoate rediscovery (primarily among journalists and critics) of the timeless traditional view of the city (CNU). Next is Camillo Sitte (1889). He wrote '*City planning according to artistic principles*' and advocated the use of the medieval forms. He suggested that the remedial approaches could be found by turning back to methods of the ancient town in a way that humanised the contemporary city. In addition, Gordon Cullen (1971), known for writing '*The concise townscape*', approached urban design based upon the experience, perception, and particulars of specific places, as opposed to the rationalism of modernist urban theory (Cullen, 2003). Furthermore, Colin Rowe was one of the earliest and most cogent critics of the theories of modern urbanism postulated by CIAM and widely embraced by the design culture of the time (CNU). Rowe's principle critique, '*Collage city*' published in 1978, developed with Fred Koetter, denounces the failures of modernist urban planning, and meanwhile provides an idea of eclectic, hybrid juxtaposition and layering of historic cities which are presented here as formal correlates of an open and inclusive approach more characteristic of urban life than the abstract purity of modernist proposals (Rowe and Koetter, 2003). Next Denise Scott Brown launched a critique of architectural modernism that led to the development of alternative strategies for urban design during the 1960s and 1970s, creatively combining elements of modernism with classical traditions and welcoming the contributions of numerous disciplines into the realm of architecture (CNU). Moreover, William Whyte, author of '*The social life of small urban spaces*' (1980) conducted pioneering studies on human behaviour in small public spaces by using direct observation and time-lapsed photography (Global Site Plans, 2013). Additionally, Jan Gehl (1971) argues that the single zone

planning approaches resulted in monotony and desertification of public spaces because they separated different uses into different spaces, such as residential, industry, offices, commercial, and so on. He encourages a human-centred planning approach which demonstrates how people sense, detect and interact with the community.

Vincent Scully, Jane Jacobs, Kevin Lynch, Christopher Alexander, Andres Duany, Leon Krier, and Prince Charles also play important roles in promoting the rise of new urbanism. First, Vincent Scully is one of the most influential architectural historians and teachers ever. Scully has provided the intellectual stimulus and impetus for new urbanism. He understood early on that urban development during the 1950s tended to destroy neighbourhoods by the imposition of freeways and superblocks, even suggesting that the principles of modernism were incompatible with communal values (CNU). Scully also advocates the traditional small towns and encourages the revival of the vernacular and classical traditions into the mainstream of modern culture.

Second, Jacobs launched her attack on professional city planning doctrine in her book '*The death and life of great American cities*' (1961). Her defence of traditional urban neighbourhoods from an explicitly and polemically amateur, common sense, and empirical position, is based on firsthand observation of the relationship between urban form and urban life in specific places, particularly her own Greenwich village, and grounded in an emergent movement of community-based activism and resistance. She appreciates the value of lively streets, crowded sidewalks and small blocks. She challenged official modernist urban theory descended from the Garden City movement and American Urban Renewal (Jacobs, 2003).

Third, Kevin Lynch devoted a considerable part to his career by offering guidance on mapping the city cognitively. His main contribution is to introduce empirical research on town planning in his book, '*The image of the city*' (1960). He put forward a central notion of legibility to individually navigate and perceive the city via five fundamental elements: paths, edges,

districts, nodes, and landmarks. These five components can be recognised and organised into a coherent pattern by proposing mental maps.

Fourth, Christopher Alexander wrote a groundbreaking book, '*A pattern language*' (1977), to provide sources for creating a good design. In this book, he explains the detailed patterns from the regional scale to the small scale, such as towns and neighbourhoods, houses and gardens, and rooms, and so on. He also wrote another book, '*The timeless way of building*' (1979), to look for historical and cross-cultural examples that reflect beauty and functionality. He suggests that past, present and future blend seamlessly together when it comes to a good design.

Fifth, it is generally agreed that Andres Duany was the leading American behind the initial Congress idea of new urbanism (Thompson-Fawcett, 2003, p.257). This has been verified by Dan Solomon, a co-founder of CNU. Solomon (1996) said CNU had long been a fantasy of Andres. Andres Duany and Elizabeth Plater-Zyberk are also the key members of Council for European Urbanism (CEU¹¹) founded in 2003. Duany is a founding principal at DPZ (Duany Plater-Zyberk & Company) which is widely recognised as a leader of the new urbanism (DPZ, 2013a). Andres Duany and Elizabeth Plater-Zyberk were commissioned to do a seaside village design, named Seaside, in the 1980s. They both wanted Leon Krier to become involved. This first cooperated project of traditional neighbourhood development started in 1981 as an American new urbanism model.

Sixth, Leon Krier is an architectural theorist, architect, urban planner and thinker. He is designated the primary intellectual 'father' or 'godfather' of new urbanism (Salingaros, 2001, p.1). As described in the Dictionary of Urbanism, Leon Krier has been a major influence on urban design and was probably responsible more than anyone for inspiring the new urbanism movement (Cowan, 2005, p.209). He had an important mentoring role in the early development of the CNU (Thompson-Fawcett, 2003, p.255) and CEU. Krier

¹¹ People came together to present projects from the US and Europe, and then formed CEU, a sister organisation to CNU (Andersen, 2003).

maintained close contact with his friend Andres Duany although based in London at the time. For example, after hearing a lecture given by Krier, Duany and his architect partner wife, Plater-Zyberk, completely changed the practice and established a new architectural and planning firm in 1980's (Thompson-Fawcett, 2003, p.259), named DPZ. When Andres Duany and his architect partner wife, Elizabeth Plater-Zyberk designed Seaside, Krier was invited as the masterplan consultant and designer of civic buildings. Seaside is the first built architectural project that Leon Krier was involved in. Krier is also one of the most important advisors of Prince Charles. He was appointed to design the masterplan by Prince Charles in 1989 for Poundbury, one of the best-known new urbanism communities in the UK. Leon Krier also played an important role in inspiring Duany to have the idea to establish the CNU. For Krier (1996), in an interview he also admitted that,

This urbanism congress was actually my idea. I thought we must make a new CIAM group...So they (Duany and his peers) took that up with one of their clients – it was Galen Weston. We have the session, he would found it'. Duany himself said 'I sometimes think that I would not have become an urbanist if I had not seen Leon's diagrams because I would never have understood how a city is made, what a city consist of (CNU).

Seventh, as one of the most recognisable and influential voices in the world, Prince Charles has led a public life that is deeply committed to the ideas of new urbanism (CNU). Stefan (2005, p.43) argues that, in the UK, the movement is officially activated with the initiatives taken by Prince Charles. He advocates ten design principles of traditional urbanism in his book '*A vision of Britain*' (1989) through the Prince's Foundation for Building Community. These principles embody the timeless solutions to the intricate needs of human beings in the built environment and, above all, demonstrate the ultimate value of placing the pedestrian, and not the car, at the centre of the design process to create more liveable, human communities (Prince Charles, 2003).

Besides, there are also other representatives giving impetus to the development of new urbanism. For example, Doug Kelbaugh and Peter Calthorpe co-authored '*The pedestrian pocket book*' in 1989, which helped jump-start new urbanism (University of Michigan, 2013). Robert A.M Stern emphasises context and the continuity of traditions and encourages combination of historical styles with contemporary contexts and successfully melding buildings with surroundings (CNU); while Jaquelin T. Robertson has been at the forefront of discussions on placemaking that led to the formation of the CNU, and the continued investigation of the transformation of traditional urban form (CNU). In addition to the above, the importance of several other mentors and generalist planners is also acknowledged in terms of the value of principles of urbanism, such as architectural theorist and teacher Maurice Culot who is Krier's long-time associate, Ebenezer Howard, Patrick Geddes, Raymond Unwin, John Ruskin, Aldo Rossi and Hermann Josef Stubbgen, among others (Thompson-Fawcett, 2003, p.257; Duany, 2002). Their influence on these innovators and their links with urban traditions were derived from romantic environmentalism, medieval urbanism (Calthorpe, 1993), renaissance urbanism, France's Beaux Arts School of Architecture, and the British garden city movement (Katz, 1994).

3.1.2.2 The development of new urbanism

The new urbanism design movement hails from the US even though the term had been used by the European Situationists since the mid-1950s (Thompson-Fawcett, 1993, p. 269). It attributed to the school of thought which emerged in the late 1980s that sought to harness principles of liveability and diversity in the way in which urban space is designed and managed. The movement represents a culmination in the attempts of policy-makers and professionals in a variety of fields to galvanise ways of thinking around making communities better places to live, something recognised in the pitch of politicians to not only address the deficits in the lives of the 'have nots' but also address the needs of 'the haves' (Stevens, 2004, p.1). There has been an almost parallel (although not entirely independent) emergence of 'new urban' thinking and practice in the United States, the United Kingdom

and other areas of Europe, which allows for a good understanding of the concept in main stream academics of the western world; so they are understood and implemented in the US and Europe (Thompson-Fawcett, 2003)

Based on the discussions in 3.2.1.1, three agencies play important roles in developing new urbanism of America and Europe, to great extent: Congress for New Urbanism (CNU), the Council for European Urbanism (CEU), and the Prince's Foundation (PF).

a) Congress for New Urbanism (CNU)

In the US, the movement of new urbanism is led by the Congress for the New Urbanism (CNU). The CNU was founded by Peter Calthorpe, Andres Duany, Elizabeth Moule, Elizabeth Plater-Zyberk, Dan Solomon and Stefanos Polyzoides, who were assisted in the coordination of their efforts by Peter Katz who became the first Executive Director of CNU (CNU, 2011). Now it is the leading organisation promoting compact, walkable, mixed use neighbourhood development, sustainable communities and healthier living conditions (CNU).

The first Congress for the New Urbanism was held in 1993 at Alexandria, Virginia. At this meeting key American practitioners came together to present and debate alternative and considered solutions to current models of suburban sprawl that were seen as clearly as unsustainable in terms of future urban growth patterns (Neal, 2003, p.7). CNU members ratified the Charter of New Urbanism at the CNU's fourth annual Congress in 1996. Then, the Charter of the new urbanism was published in 2000 which outlines design principles for building better communities, from the scale of the region down to the block (CNU, 2001). Thoroughly updated to cover the latest environmental, economic, and social implications of urban design, Charter of the New Urbanism, second edition was published in 2013. It features new and better ways of building and rebuilding – a progression of ideas (Poticha, 2013a, p.xv). The Charter views disinvestment in the spread of placeless sprawl, increasing separation by race and income, environmental

deterioration, loss of agricultural lands and wilderness, and the erosion of society's built heritage as one interrelated community-building challenge (Barnett, 2013, p.2).

One of the key weapons in the CNU team artillery is the Charrette, an intense contracted public workshop where theory and practice become one (Wood-Gush, 2011). Wood-Gush (2011) views that, during the Charrette, site analysis, factual interrogation are followed by vision setting which is then turned into non-binding indicative proposals. Now the Congress for the New Urbanism has members over hundreds of countries in the world and plays a paramount role in spreading the principles.

b) Council for European Urbanism (CEU)

According to Andres Duany (2003), and as is generally understood, the European influence on new urbanism is enormous. The movement of new urbanism in Europe officially took place when the Council for European Urbanism was founded. It was officially launched in Stockholm on 6 November 2003 with the help of INTBAU¹² (International Network for Traditional Building, Architecture & Urbanism). It is appropriate that the CEU has been founded during the year which celebrates the 100th anniversary of the first Garden City built in the world, Letchworth in England, as well as the 100th anniversary of the death of Camillo Sitte, a pioneer in urban design (CEU, 2013). It aims to promote new traditional urbanism in Europe by the Charter of Stockholm which is the guiding document (INTBAU, 2001).

The Council for European Urbanism shares many ideas and many of the same aims as the Congress for the New Urbanism. It believes that European cities, their environs, and countryside are threatened by development trends which cause four big problems (CEU, 2003). First is the loss of local, regional, and national uniqueness and cohesion. Second is waste of natural and

¹² INTBAU is a worldwide organisation dedicated to the support of traditional building, the maintenance of local character and the creation of better places to live. It is under the patronage of His Royal Highness The Prince of Wales (INTBAU).

cultural resources. Third is social segregation and isolation. Last is the expansion of monofunctional uses / single use zones.

CEU promotes further development of new urbanism in the twenty first century in European countries with INTBAU, such as the Netherlands, France, Italy, and Turkey, and particularly in the UK and Germany. It is dedicated to the well being of present and future generations through the advancement of humane cities, towns, villages and countryside in Europe (CEU, 2003).

c) The Prince's Foundation for Building Community

The rationalist, traditionalist kind of approach to urbanism evident in the 1970-1980 efforts of Krier and his associates in continental Europe, and the CNU founders in the United States, was also simultaneously emerging in the United Kingdom (Ellin, 1996). The inclination towards new urbanism has been spurred greatly by the discourse and practical implementations of HRH the Prince of Wales since the early 1980s (Thompson-Fawcett, 2003, p.258). One of Prince Charles most deeply involved roles has been in serving as head of The Prince's Foundation for Building Community (CNU, 2012). He offers his vision and encouragement to the foundation. The Foundation usually refers to the approach as traditional urbanism rather than new urbanism.

When this organisation was established in the late 1980s, it was named the Prince of Wales's Institute of Architecture. Then it changed to the Prince's Foundation for the Built Environment in 1998. In 2012, the new brand was unveiled as the Prince's Foundation for Building Community. It transforms lives through engaging, educating and empowering people by seeking sustainable ways of developing the communities and the homes in which people live, work and play (The Prince of Wales, 2013). In order to achieve this, the Foundation is grounded on the belief that the lessons of the past concerning traditional architecture and planning must be both remembered and learnt from. To date, the Prince's Foundation has already overseen

hundreds of new urbanist projects, such as Poundbury, Newquay, Knockroon, and so on.

Overall, the above three organisations offer big opportunities as shoulders to promote the development of either new urbanism or traditional urbanism internationally, regionally and nationally.

3.1.3 Definition of new urbanism

Based on the above review, this study can draw the definition of new urbanism. It is helpful to understand new urbanism from the following five points categorised by the researcher: what is new about new urbanism, traditional urbanism, neo-traditionalism, structuralism, and comprehensive understanding.

a) What is new about new urbanism?

What does the 'NEW' mean in the term, 'new urbanism'? To begin with, Kelbaugh (1997, p.132) views that new refers to its totality. He also points out that the new attempts to promote a kind of unified design theory for an entire region-from the small scale (building block, street) through the intermediate scale (corridor, neighbourhood, district) to the large scale (regional infrastructure and ecology). Thus the particular combinations and orchestration of new urbanism are new although many of its ideas may seem old hat. Also fresh is the new urbanist insistence that physical place making must be carefully and thoroughly linked to public policy. Second, the new lies in advocating neo-traditional communities. According to Watson et al. (2003, p.3.10-1), for instance, the 'new' has several aspects. It is the attempt to apply the age-old principles of urbanism – diversity, street life, and human scale – to the suburb in the twenty first century. It is also an attempt to resolve the apparent conflict between the fine grain of traditional urban environments and the large-scale realities of contemporary institutions and technologies. Finally, it is an attempt to update traditional urbanism to fit our modern lifestyles and increasingly complex economies. Third, in terms of Barnett (2013, p.4-7), there are several main new aspects of the new urbanism. Above all, new urbanism is the assumption that solutions to the

problems (characterless extension, increasing separation by race and income, the erosion of society's built heritage as one interrelated community, and so on) require that they all be worked out together. Then, new urbanism calls for new design concepts to meet new situations. Additionally, new urbanism is that it is not just another professional organisation but a coalition of designers, other professionals, public and private decision makers, and concerned citizens.

b) Traditional urbanism

New urbanism should not be understood as historicist or nostalgic architecture although some people think it is primarily a handbook of historical forms of urban development. Calthorpe was particularly critical of the tendency for new urbanism to be misrepresented as a style of traditional aesthetics rather than a radical and challenging set of planning principles and urban design (cited by Walters, 2007, p.137). The concept of new urbanism should, to some extent, meet the needs by reviving traditional urbanism rather than sending them back to the situation as it was many years ago. Therefore Thompson-Fawcett (2003) states that new urbanism movement provides lessons for practice elsewhere in the world, in remembering to learn from older traditions while challenging contemporary orthodoxies, as well as in areas such as management structure, participatory design and branding. Moreover, Ellis (2002, p.268) argues that new urbanism emulates-and modernises, where necessary-selected historical patterns that are consistent with life in the world of today. According to the official Organisation of New Urbanism (New Urbanism, 2013), new urbanism is not only the revival of our lost art of place-making, it is essentially a re-ordering of the built environment into the form of complete cities, towns, villages, and neighbourhoods – the way communities have been built for centuries around the world. Furthermore, the Prince's Foundation usually defines new urbanism as traditional urbanism (Bolgar, 2013). Additionally, Grant (2006, p.3) thinks that new urbanist approaches affirm the appeal of compact, mixed use, walkable, and relatively self-contained communities with drawing on historic lessons from the classical traditions. Furthermore, Peter Katz (1994, p.x) clarifies that

while new urbanism borrows heavily from traditional city planning concepts – the new urbanists acknowledge that many realities of modern life must be dealt with, such as, automobiles, ‘big-box’ stores, and so on. Finally, Cowan (2005, p.264) argues that new urbanism has been considered as the approach to town planning and urban design advocated by the Congress for the New Urbanism and the Council for European Urbanism, and as a prototype emphasising the physical characteristics that traditionally have created successful neighbourhoods, and the need for smart growth¹³.

c) Neo-traditionalism

Some people think the alternative term ‘neo-traditionalism’ perhaps can define what new urbanism is trying to achieve. For instance, British researcher Stephen Marshall (2003, p.189) describes that new urbanism is effectively an urban design package that combines neo-traditional style buildings arranged in street grids to form relatively dense, walkable, mixed use neighbourhoods. Andres Duany also regards neo-traditionalism as the ethos of new urbanism, characterised by the pragmatic selection of available options (Cowan, 2005, p.261). In fact, the ‘neotraditional’ view of urban planning that began in the early 1980s with the widely publicised new town of Seaside, Florida, has since matured into the new urbanism movement of the 1990s (Fulton, 1996, p.1).

d) Structuralism

Kelbaugh (1997) describes new urbanism as structuralist, or at least determinist. He argues that new urbanism maintains that there is a direct, structural relationship between physical form and social behaviour. It is normative in that it posits that good design can have a measurably positive

¹³ Smart Growth is aiming at mixing land uses, taking advantage of compact building design, creating a range of housing opportunities and choices, creating walkable neighbourhoods, fostering distinctive, attractive communities with a strong sense of place, preserving open space, farmland, natural beauty and critical environmental areas, strengthening and directing development towards existing communities, providing a variety of transportation choices, making development decisions predictable, fair and cost-effective, and encouraging community and stakeholder collaboration in development decisions (Smart Growth Network, 2006).

effect on sense of place and community, which it holds are essential to a healthy, sustainable society.

e) Comprehensive understanding

First, new urbanism is deemed to be applicable at all scales, from regional design, high-density urban design neighbourhoods to hamlets in the countryside. This is fully elaborated in the new urbanist transect (Ellis, 2002, p.267). Second, Andres Duany also argues that new urbanism is an informal movement of ideas, techniques, projects, and people (Duany, 2013, p.9). Then Beauregard (2002, p.184) describes new urbanism as both an urbanistic practice and a theory of urbanism. Fourth, Henton and Walesh (1998) state that new urbanist projects use the latest construction methods, accommodate automobiles, incorporate advanced communications technologies, provide live-work dwellings, and actually match better with emerging demographic and economic trends (an aging population, smaller households, home business) than monofunctional sprawl sub-divisions. Fifth, Harald Bodenschatz (2003) discusses that new urbanism can be programme, practice and institution. He believes there are three elements for form: masterplan, charrette and urban code. This forces urban development planning, landscape planning and architecture planning to be brought together from the outset (Bodenschatz, 2003, p.266). Sixth, new urbanism is primarily a set of principles for urban planning and design that suggest how to organise and design the layout of the community, as well as how to design the buildings and surrounding spaces and the transportation networks that serve them (Pointner, 2011). Finally, Peter Calthorpe (cited by Neal, 2003, p.8) concludes that: new urbanism is not just about the city or the suburb. It is about the way we conceive our community and how we form the region – its diversity, scale and public space in every context.

Based on the above discussion, it can be summarised that new urbanism is an attempt to apply design principles – diversity, street life and human scale - to meet our changing society and new technology by learning from classical traditions of physical design, such as place/building patterns, architecture,

and so on, in order that the new built environment can be re-ordered into the form of complete cities, towns, villages, as harmonious communities. This is a way we conceive our community and how form the region, which may echo the research question put forward in 1.1.2.

3.1.4 The critics of new urbanism

New urbanism clearly receives some criticism. For example, Michael Sorkin (2000, p.xi), an architectural writer, argues that the new urbanist town is too romanticised, with doll-houses for artificial subjects out of E.T.A. Hoffman¹⁴. In addition, Anthony Downs (1994) who is an economist specialising in public policy and urban problems thinks that even if the new urbanist could capture both political and popular support for their physical planning prescriptions, the results would do little to change the built-up area landscape.

Two of the key critics of new urbanism are very representative of this group. They are Peter Gordon and Harry W Richardson who both are professors in University of Southern California. They both set out several critiques of new urbanism in a presentation named '*A critique of new urbanism*' in 1998. First, they view that the stock of urban buildings is already largely in place and changes very slowly. Compared with that, the new urbanist communities amount little more than demonstrating projects, the object of international study tours, a pleasant living environment for a few thousand households, and well-paid lecture tours for a small clutch of somewhat immodest architects (Gordon and Richardson, 1998, p.2). Second, they criticise that there is no clear evidence to show that most people are happy to move in and to live in the communities of new urbanism. This point is not persuasive because the survey has limitations and weakness in that it only focuses on certain infill development rather than considering the worldwide impact of new urbanism. Third, Gordon and Richardson (1998) argue that the scale and impact of the loss of agricultural land to sprawl has been exaggerated; (Ellis, 2002) however counter-argues that this point is misleading. It is a fact

¹⁴ This is the pen name of Ernst Theodor Wilhelm Hoffmann who was a German Romantic author of fantasy and horror.

that the urban and suburban sprawl is serious particularly in developing countries with characterless new developments. For example, in China, the urbanisation on agricultural land takes place more rapidly than population urbanisation. Figure 3-1 about Urbanisation rate and urban built area shows that urbanisation of agriculture land increases over three times from 1982 to 2005, but population urbanisation increases two times. This imbalance leads to a big urban or characterless suburban sprawl. Finally, they contended there is little justification to encourage reduction of automobile dependence, more public transit use, increase of cycling, and pedestrian-friendly development. However, new urbanist projects do encourage and achieve this goal. For example, residents of Poundbury state that they love to live here (Oxford Brookes University, 2006). Two of the key reasons they cite for this is walkability and the fact that it is pedestrian friendly according to the discussion when the author of this thesis visited and did questionnaire at Poundbury.

Besides the above, the advocates of new urbanism are critical of housing provision in the form of large-scale social housing for the poor and a lack of diversity for everyone else. Perhaps this is something of a recognition that big is not necessarily beautiful when it comes to the scale of public works.

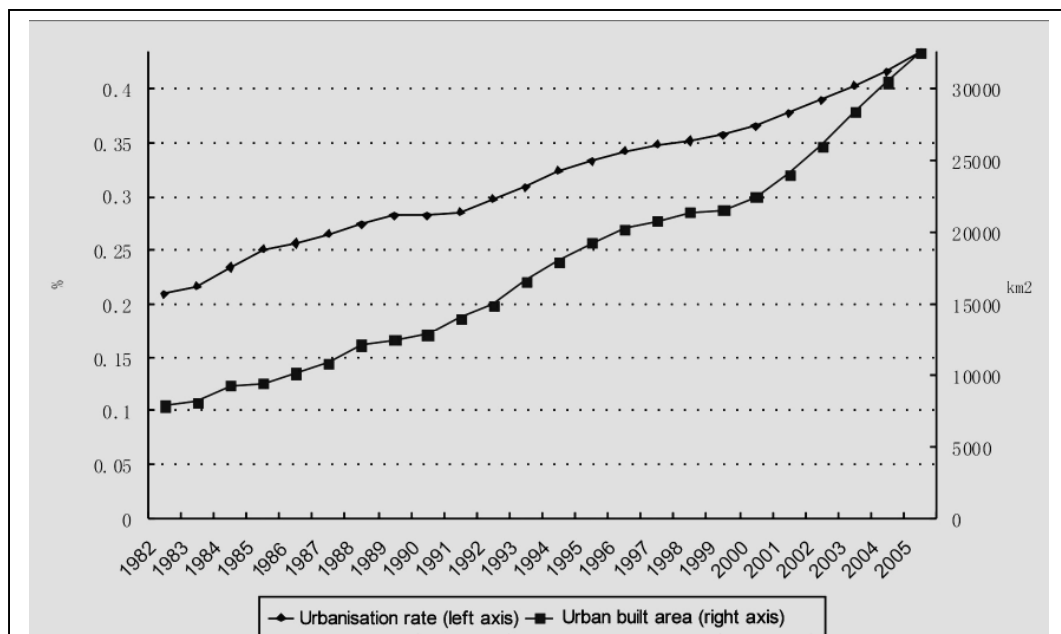


Figure 3-1: Urbanisation rate and Urban built area. Resource from Li, 2010, p.30.

However, the scale of housing provision is controlled by local plans according to local needs; that is, the scale usually meets local needs while aiming at social equality. A large number of new urbanist projects are being built and lived in although there are probably other critique, for instance, new urbanism is a Utopian vision.

3.1.5 Brief of new urbanism

Some of the criticisms are certainly useful and thought provoking, and new urbanists can learn from them. New urbanism has gradually evolved to exert an influence through its design principles on many aspects, such as urban planning, real estate development, land use, urban design, and so on. Among them, it is essential to specify the important roles that they play: Doug Kebaugh, Peter Calthope, the Krier brothers, Colin Rowe, Jane Jacobs, William Whyte, Stefanos Polyzoides, Ray Gindroz, Dan Solomon, Vincent Scully, Andres Duany and Elizabeth Plater-Zyberk. Doug Kebaugh and Peter Calthope focused on the Pedestrian Pocket studies; the Krier brothers, Colin Rowe, Jane Jacobs, and William Whyte concentrated on the anti-Modernist polemics; Stefanos Polyzoides highlighted the typological studies; Ray Gindroz and Dan Solomon have a main impact on the socially astute public housing; Vincent Scully intensified the traditional small towns by reviving vernacular and classical traditions; Andres Duany and Elizabeth Plater-Zyberk inaugurated the first new urbanism model – Seaside. The Prince of Wales initiated the first UK new urbanism model – Poundbury. Based on the discussion of new urbanism above, this research tries to apply the design principles of new urbanism as a crucial technique to identify resolutions to promote local identity or harmony with local context for urban/village extensions. New urbanism is, according to Kelbaugh (1997) far superior in economic, social, environmental, urban planning, and urban design terms to the prevailing ways of urban extension although it has drawn criticism which remains a debating manoeuvre other than a serious argument at the same time. Therefore, it is important to explore the design principles of new urbanism in the context of their applications.

3.2 Design Principles of New Urbanism

To move the research forward, it is essential to study the design principles of new urbanism from the perspectives of America, Europe, and the UK.

3.2.1 American perspective

a) Andres Duany and Elizabeth Plater-Zyberk

According to Duany and Plater-Zyberk (1994, p.xvii), the fundamental organising elements of the new urbanism are the neighbourhood, the district and the corridor. Neighbourhood has been defined above. A district is an area dominated by a single activity, and corridors are connectors and separators of neighbourhoods and districts. In accordance with the understanding held by Duany and Plater-Zyberk, new urbanism offers an alternative future for the building and re-building of regions. Neighbourhoods that are compact, mixed-use and pedestrian-friendly, districts of appropriate location and character, and corridors that are functional and beautiful can integrate natural environments and man-made communities into a sustainable whole. They both also set up the principles of an ideal neighbourhood design on traditional pattern (Duany and Plater-Zyberk, 1994, p.xvii):

- The neighbourhood has a centre and an edge;
- The optimal size of a neighbourhood is a quarter of a mile from centre to edge;
- The neighbourhood has a balanced mix of activities-dwelling, shopping, working, schooling, worshipping and recreating;
- The neighbourhood structures building sites and traffic on a fine network of interconnecting streets;
- The neighbourhood gives priority to public space and to the appropriate location of civic buildings.

From the point of view of Duany and Plater-Zyberk, some key ideas can be summarised: compact, mixed use, pedestrian-friendly, sustainable, edged, the optimal size of a neighbourhood is a quarter of a mile from centre to edge, a fine network of interconnected streets, priority to public space and to the appropriate location of civic buildings. The first five points - compact, mixed

use, pedestrian-friendly, sustainable, and edged - deliver the meanings very clearly and precisely. The optimal size identified for a neighbourhood. This conveys a walkable, five minutes from centre to edge. The third is about a fine network of interconnected streets. This needs to be refined further compared with the following ideas. Fourth, priority to public space and to the appropriate location of civic buildings can actually help people easily read a neighbourhood. Thus this point is able to be embraced in the meaning of legibility. Therefore, in terms of the above opinions from Duany and Plater-Zyberk, there are some key principles on new urbanism, which are compact, mixed use, pedestrian-friendly, edged, walkable, a fine network of interconnected streets, and legible.

b) Elizabeth Moule and Stefanos Polyzoides

Elizabeth Moule and Stefanos Polyzoides set out some physical conventions for creating new development on traditional patterns at the scale of the building, block and street (Cowan, 2005, p.264). They are described in their word, *The new urbanism* (Katz, 1994, pp.xxi-xxiv):

- Buildings, blocks and streets are interdependent. This point is more about coherence.
- The matrix of addressing the totality of street, block and building principles of the new urbanism is design planning, not policy planning. It can promote the coherence of the neighbourhood by addressing the totality of streets, blocks and buildings.
- It is important to express the cultural variety inherent in climatic, social, economic and technical differences. From this aspect, expressing the local cultural variety is necessary.
- It is also important to stress the integration and collaboration of all architectural, engineering and design disciplines.
- The public should participate in the design process. This point is clearly about public participation.
- The human scale should be preferred over that of the automobile. It picks up the meaning of walkability, pedestrian-friendliness and sustainability.

- The street pattern should follow that a single given street is always to be part of a street network. From this meaning, it can be refined a key term: a network of street pattern.
- Blocks are to be square, rectangular or irregular in their shape with historical dimensions between 250 and 600 feet. The neighbourhood should be coherent with the existing urban pattern.
- From the viewpoint of the building form, there exist two kinds of buildings: fabric and monumental. Fabric buildings are to conform to all street- and block-related rules and are consistent in their form with all other buildings of their kind. Monumental buildings are to be free of all formal constraints. Monumental architecture should be legible.
- Architecture is deeply bound within the culture of each region of the country. Building types, not building styles, are to be the source of historical continuity in our towns and cities. Further design should be based on research that establishes the viability of historic, regional types; and also suggests newly created or imported types that may have possible local applications. It is from the mix of time-tested and new architectural models that authentic regional building differences can emerge. Architecture should have traditional continuity.
- Regionally proven methods of building and easily available local and recyclable materials are to be favoured over international techno-generalisations. This can reduce the emissions of carbon dioxide, which means sustainability.
- Specific street, block and building design rules for public or private developments shall be typically designed and presented in the form of a code.

In light of the above discussions, the main ideas from Moule and Polyzoides can be concluded as: coherence, expressing the local cultural variety, public participation, walkability, pedestrian-friendliness, sustainability, a network of street pattern, coherence with the existing urban pattern, harmonious and diverse architecture, legibility, and traditional continuity.

c) Doug Kelbaugh

Kelbaugh is one of the key proponents of new urbanism, and at the time of writing this paper, is a professor of architecture and urban planning in the University of Michigan. Kelbaugh (2000) views that new urbanism is inspirational in style and structuralist in conception, which he holds are essential to a healthy and sustainable society. According to him, the paradigmatic model of new urbanism is a compact, walkable city with a legibility of private and public architecture and spaces that are conducive to face-to-face social interaction, including background housing and gardens and foreground civic and institutional buildings, squares and parks (Kelbaugh, 2000). Kelbaugh (2000) also states that the new urbanism, with its Latinate clarity and order, achieves the most aesthetic unity and social community, while it mixes different uses at a human scale in familiar architectural types and styles. Its connective grids of pedestrian-friendly streets look better from the ground than the air, from which they can look formulaic and overly symmetrical.

According to the vision of Kelbaugh, particular attention should be paid to sustainable, compact, walkable, legibility, mixed use, connective street grids, and pedestrian-friendly aspects.

d) Peter Katz

New urbanism addresses many of the ills of our current sprawl development pattern while returning to a compact, close-knit community (Katz, 1994, p.ix). Two key points can be extracted: compact and close-knit.

e) CNU

Charter of the New Urbanism helps to deliver the design principles of new urbanism held by CNU. The correlative principles are described in the following.

- Development pattern should not blur or eradicate the edges of the metropolis (CNU, 1999, p.35). This approach means the new development should be edged.

- Where appropriate, new development contiguous to urban boundaries should be organised as neighbourhoods and districts and should be integrated with the existing urban pattern (CNU, 1999, p.43). This point can be understood as that the new development should be coherent with the existing urban pattern.
- The development of towns and cities should respect historical patterns, precedents, and boundaries (CNU, 1999, p.49). Respecting traditional patterns, precedents and boundaries is paramount.
- The physical organisation of the region should be supported by a framework of transportation alternatives. Transit, pedestrian, and bicycle systems should maximise access and mobility throughout the region while reducing dependence on the automobile (CNU, 1999, p.59). The role that encouraging walking, cycling, public transport and reducing car uses play is very important. This role aims at promoting sustainability by connectivity of street pattern.
- Neighbourhoods should be compact, pedestrian-friendly, and mixed-use (CNU, 1999, p.79), and many activities of daily living should occur within walking distance (CNU, 1999, p.83).
- Within neighbourhoods, a broad range of housing types and price levels can bring people of diverse ages, races, and incomes into daily interaction, strengthening the personal and civic bonds essential to an authentic community (CNU, 1999, p.89).

As a result, CNU promotes that the new development should be edged, coherent with the existing urban pattern, respectful to the existing traditional patterns, precedents and boundaries, sustainable, compact, pedestrian-friendly, mixed use and walkable. It also have connective street pattern.

f) Jill Grant

Jill Grant (2006), Professor at School of Planning in Dalhousie University, Canada, describes that new urbanist community should be compact, mixed use, walkable, and relatively sustainable. Grant (2009, p.12) also states that new urbanism proponents draw substantially on Jane Jacobs (1961) in their

call for connected street pattern. Thus several points play important roles; these are compact, mixed use, walkable, sustainable, and connected street pattern aspects.

g) Brief

The discussions in the following table are summarised from the above key perspectives.

Table 3-1: Summary of design principles of new urbanism from the American perspective

Key researcher/player	Key design principles of new urbanism from the American perspective include:
Duany and Plater-Zyberk	Compactness; Mixed use; Pedestrian-friendliness; Sustainability; Edge; Walkability; A fine network of interconnecting streets; Legibility.
Moule and Polyzoides	Coherence; Expressing local cultural variety; Public participation; Walkability; Pedestrian-friendliness; Sustainability; A network of street pattern; Coherent with existing urban pattern; Legibility; Traditional continuity.
Kelbaugh	Sustainability; Compactness; Walkability; Legibility; Mixed use; Connective street grids; Pedestrian-friendliness.
Katz	Compactness; Close-knit.
CNU	Edge; Coherent with the existing urban pattern; Respecting traditional patterns, precedents and boundaries; Sustainability; Compactness; Pedestrian-friendliness; Mixed use; Walkability; Connectivity of street pattern.
Grant	Compactness; Mixed use; Walkability; Sustainability; Connected street pattern.
Brief	a): Compactness; b): Walkability; c): Edge; d): Mixed use; e): Pedestrian-friendliness; f): Sustainability; g): Connectivity of street pattern (Including 'A fine network

	of interconnecting streets, A network of street pattern, and Connective street grids, Connected street pattern); h): Legibility; i): Coherence (Including 'Close-knit, and Coherent with the existing urban pattern). j): In harmony with local context (Including expressing the local cultural variety and Traditional continuity); k): Public participation.
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For the key terms of compact, walkable, edged, mixed use, pedestrian-friendly, sustainable, legible, expressing the local cultural variety, traditional continuity, and public participation, the precise meaning is contained in these terms. Furthermore, the terms of a fine network of interconnecting streets, a network of street pattern, connective street grids, connective street pattern, and connected street pattern, pay the most attention to the words connective/connectivity. Streets and street grids are the carrier of the street pattern, so the street pattern is more comprehensive. Therefore, a network of street pattern, a fine network of interconnecting streets, and connective street grids are summarised as a connective street pattern. Moreover, close-knit is explained as bound together by strong relationships. A close-knit community should be coherence. Actually, the word coherence is more academic and professional than close-knit. So close-knit is a representation of coherence, and coherent with the existing urban pattern is also a representation of coherence. Additionally, expressing local cultural variety can embrace religious or traditional practices locally. This also means the new development should be locally relevant and culturally harmonious with the existing cities, towns or villages to retain traditional continuity. So both expressing the local cultural variety and traditional continuity are clearly designed to reflect harmony with the local context. As a result, from Table 3-1, the key design principles are summarised: compactness, walkability, edge, mixed use, pedestrian friendliness, sustainability, connective street pattern, legibility, coherence, in harmony with local context, and public participation.

3.2.2 European perspective

a) Leon Krier

Leon Krier is an architectural theorist, architect, urban planner and thinker, and is best known as the master planner of the new development of Poundbury. By the time he was in his twenties, he had developed a strong and enduring belief in the classical idea of architecture. Since then, he has deplored the effects of industrialisation on cities from the socio-economic dimension and started not only to seek inspiration from neo-traditional examples in the urban morphology of the early nineteenth century but also to advocate a return to the concept of multi-function localities replacing twentieth century zoning (CNU). Moreover, he favours what he calls an authentic urbanism, grounded in the traditional principles of the European city. For Krier, the most important antagonism which exists in architecture today is not between tradition and modernism but between authentic traditional culture and its caricature (Krier, 1998, p.36). His concern about the loss of authenticity in urban form presages a common theme in new urbanist discourse, particularly in the writings of Duany and Plater-Zyberk: a close reading of *Suburban Nation* reveals the preoccupation with 'true', 'real', and 'authentic' neighbourhoods and places throughout the text. The traditional city performs the miracle of allowing contrasting and competing ambitions, the most modest and greatest of talents to strive and thrive as neighbours, to build in harmony.

Krier attacks the chaos of the modernist city and advocates reviving classical principles. He would build walkable urban quarters with clear edges and centres that were coherent with the existing urban pattern: his emphasis on density differentiates his quarter from the earlier neighbourhood unit. Krier believes that streets are important public spaces, functioning as part of both the public and private realms. Furthermore, he prefers an urban form with small blocks, well-defined streets and attractive squares. He also claims that urbanism is essentially a matter of public spaces, plot sizes, plot ratios and numbers of floors (Krier, 1998, p.86). There are specific types, dimensions, ratios and numbers which allow us to build harmonious cities and others that

inevitably lead to sprawl, commercial strips and/or metropolitan congestion. His view of the city appealed to an important patron: Charles, the Prince of Wales (Grant, 2006, p.52).

Some key meanings can be extracted based on the views of Leon Krier: multi-function, walkability, with clear edge, coherent with the existing urban pattern, compact, streets functioning as part of both the public and private realm, harmonious with localities, and small blocks, well-defined streets and attractive squares. First, as defined by 'The lexicon of the new urbanism' (Duany and Plater-Zyberk, 2003), mixed use is multiple functions within the same building or the same general area (Duany and Plater-Zyberk, 2003). This apparently shows that the meaning of multi-function can apply to the principle of mixed use. Second, the precise meaning can be contained in the terms of walkable, with clear edge, and compact. Third, as discussed in the design principles of CNU, coherent with the existing urban pattern is represented by the word 'coherent'. Fourth, streets function as part of both the public and private realms. This implies the streets should be pedestrian-friendly. The last aspect of Krier's views is small blocks, well-defined streets and attractive squares. In terms of CABI (2003), a legible layout should be characterised by a framework of interconnected routes which define 'blocks' of housing, open spaces and streets. Based on this, the last point to note is legibility.

b) Harald Bodenschatz

Bodenschatz, a professor in the Department of Planning and Architectural Sociology at the Technical University of Berlin, is a German social scientist and town planner. He is famous for urban development and urban conservation planning centres in the post-industrial society, and urban development of suburban areas. According to Bodenschatz (2003, p.266), new urbanism aims to cater for a mix of uses, a social mix, greater building density and architectural variety within the framework of a set of urban planning rules. New urbanism is based on regional architectural regions. It also demands a focus or multiple foci such as pedestrian-friendliness, the

promotion of local public transportation and the reduction of automobile traffic. The basic premise is that urban planning oriented on the principles of the historical city serves to counteract the disintegration of society, encourages social cohesion, stimulates neighbourhood life and injects new life into the community. Bodenschatz also claims that one characteristic of the new urbanism projects is the dominance of town planning over architecture.

From the vision of Bodenschatz, some important points of new urbanism emerge. They are: a mix of uses, greater building density, diversity of architecture, pedestrian-friendliness, the promotion of local public transportation and the reduction of automobile traffic, and social cohesion. First, a mix of uses, as it expresses, means mixed use. Second, the meaning of greater building density is revealed by the term of compact. Third, diversity of architecture and pedestrian-friendliness are clear in their meaning. Fourth, for the point of promoting local public transportation and reducing automobile traffic, it focuses on reducing the emissions of carbon dioxide, which is a sustainable feature of mixed use. Finally, social cohesion is categorised in the term, 'coherent'.

As a result, according to Bodenschatz, the key principles of new urbanism include mixed use, compact, diversity of architecture, pedestrian-friendliness, sustainability, and coherence.

c) Rob Krier

Rob Krier is famous as a sculptor, urban planner, architect, and theorist. He became known internationally through his book, written in 1975, which was translated into English in 1979 and entitled '*Urban space*'. As it is also clear in his book, he has always paid more attention to the traditional repertoire (Kusadali, 2011). Urban space can be simply described as external space in towns and it is seen as open, unobstructed space for movement in the open air, with public, semi-public and private zones (Kusadali, 2011). Rob Krier has greatly advanced both the discourse and design of traditional urbanism throughout his academic and professional career (CNU, 2012). His work as an architect and urban designer has focused on livening the civic realm and

building communities that achieve a human scale (CNU, 2012). He has worked on some new urbanist projects with Christoph Kohl in the Netherlands, including the Citadel Broekpolder town centre and living quarters, Noorderhof densification, Haverleij Slot new village, De Parade redevelopment and extension, and others. The design of Rob Krier has always consulted the successful design of the past including the building of small blocks, which 'enables the creation of many different spatial configurations of squares and street sequences that give the individual places their indelible character...' (Clay, 2009). He also emphasises the creating of a coherent urban situation. Particular attention is paid to restoring the continuity of spatial experience within an urban context (Kusadali, 2011). Additionally, Kusadali (2011) views that Rob Krier designed streets and squares for pedestrians, harmonised as closely as possible with the existing structure and showing the utmost consideration for the legacy of the past.

From Rob Krier's perspective, several key concepts should be retained: unobstructed space for movement in the open air, human scale, creation of many different spatial configurations of squares and street sequences that give the individual places their indelible character, creating a coherent urban situation, restoring the continuity of spatial experience within an urban context, and designing streets and squares for pedestrians that are, harmonised as closely as possible with the existing structure, and showing the utmost consideration for the legacy of the past. First, the meaning of unobstructed space for movement in the open air can be embraced in the term 'connective movement' which is dependent on connective street pattern. Second, human scale is more about walkability and pedestrian friendliness when it is related to urban planning. Third, the creation of many different spatial configurations of squares and street sequences that give the individual places their indelible character can help people recognise the community and read the community easily. So this aspect relies on the legibility. Fourth, creating a coherent urban situation is derived from coherence. Fifth, for restoring the continuity of spatial experience within an urban context, it is more about being in harmony with local context. Sixth,

designing streets and squares for pedestrians represents for pedestrian-friendliness. The last aspect is about harmonised as closely as possible with the existing structure and showing the utmost consideration for the legacy of the past. It has similar meanings with the fourth and fifth points, and can be represented as coherence and in harmony with local context.

Therefore, the key principles from Rob Krier can be concluded in the following: connective street pattern, walkability, pedestrian-friendliness, legibility, coherence, and in harmony with local context.

d) CEU

The CEU (2003) promotes the distinctive character of European cities, towns, villages and countryside; consolidation, renewal and growth in keeping with regional identity and the aspirations of citizens; where appropriate, the creation of new towns and villages; the reorganisation and redesign of declining suburbs into thriving mixed-use areas; respect for the natural environment and its balance with human habitation; and the protection of our built and landscape heritage; by the following principles:

- Cities, towns and villages should have mixed uses and social diversity;
- Make efficient and sustainable use of buildings, land and other resources;
- Be safe and accessible by foot, bicycle, car and public transport;
- Have clearly defined boundaries at all stages of development;
- Have streets and spaces formed by an architecture that respects local history, climate, landscape and geography;
- Have a variety that allows for the evolution of society, function and design.

In the CEU manifesto, particular attention should be paid to the key terms: the distinctive character, keeping with regional identity, the aspirations of citizens, mixed use, sustainable, safe and accessible by foot, bicycle, car and public transport, clearly defined boundaries at all stages of development, respecting local history, climate, landscape and geography. First, the distinctive character and keeping with regional identity emphasises the

importance of local identity. Second, the aspirations of citizens aim at encouraging community involvement. Third, mixed use and sustainable clearly deliver their intrinsic meaning. Fourth, safe and accessible by foot, bicycle, car and public transport has two aspects. One is about safety, which shows that pedestrian-friendliness is significant. The other is about accessibility, which shows the street pattern should be connective. Fourth, clearly defined boundaries convey the meaning of clear edge in built-up areas. Fifth, respecting local history, climate, landscape and geography seem to represent in harmony with local context. Finally, the point, 'and have a variety that allows for the evolution of society, function and design' is more about mixed use. Overall, the key points that CEU promote can be summarised as local identity, community involvement, mixed use, sustainability, pedestrian-friendliness, connective street pattern, clear edge in built-up area, and in harmony with local context.

e) Brief

Table 3-2 summarises the key perspectives of Leon Krier, Harald Bodenschatz, Rob Krier, and the CEU.

Table 3-2: Summary of design principles of new urbanism from the European perspective

Key researcher/player	Key design principles of new urbanism from European perspective include:
Leon Krier	Mixed use; Walkability; Clear edge; Coherence; Compactness; Pedestrian-friendliness; In harmony with local context; Legibility.
Harald Bodenschatz	Mixed use; Compactness; Diversity of architecture, Pedestrian-friendliness; Sustainability; Coherence.
Rob Krier	Connective street pattern; Walkability; Pedestrian-friendliness; Legibility; Coherence; In harmony with local context.

CEU	Local identity; Community involvement; Mixed use; Sustainability; Pedestrian-friendliness; Connective street pattern; Clear edge in built-up area; In harmony with local context.
Brief	a): Mixed use; b): Walkability; c): Clear edge in built-up area; d): Coherence; e): Compactness; f): Pedestrian-friendliness; g): In harmony with local context; h): Legibility; i): Diversity of architecture; j): Sustainability; k): Connective street pattern; l): Local identity; m): Community involvement.

In summary, particular attention can be paid to the following design principles of new urbanism from the European perspective: mixed use, walkability, clear edge in built-up area, coherence, compactness, pedestrian-friendliness, in harmony with local context, legibility, diversity of architecture, sustainability, connective street pattern, local identity, and community involvement.

3.2.3 British perspective

a) The Prince of Wales and the Prince's Foundation

Charles, the Prince of Wales, initiated the movement of new urbanism in the UK, and is also a loyal advocate of new urbanism. His influence on planning, urban design and architecture began in 1984 with his speech at a banquet at Hampton Court Palace, organised to celebrate the 150th anniversary of the Royal Institute of British Architects (Cowan, 2005, p.306). Generally, the royal speakers on such occasions are expected to pat their hosts on the back; however, instead, the prince launched a bitter attack on planners and designers of the urban environment, and most of the architectural profession in particular, for designing ugly buildings, destroying communities, and ignoring 'the feelings and wishes of the mass of ordinary people' (Cowan, 2005, p.306). Since then, Prince Charles has continued to speak out and has condemned some proposals; for instance, a redevelopment proposal for the Paternoster site next to St Paul's Cathedral in London. In order to widen his

interests, he founded the Urban Villages Forum, the Prince Institute of Architecture, and an architectural magazine named *Perspectives*. All these have metamorphosed into the Prince's Foundation for Building Communities (former the Prince's Foundation for the Built Environment, established in 1986). It is an educational charity to bring together the Prince of Wales's interests in architecture, the arts and urban regeneration (Cowan, 2005, p.306). It aims at demonstrating and teaching in practice the principles of traditional urbanism. Nevertheless, the Foundation says it does not want to replicate the past, but to show 'how today's buildings, towns and cities, and villages might benefit from that body of knowledge (Cowan, 2005, p.307).

Based on the above belief, Prince Charles published a book *A vision of Britain*, in 1989. As a guide for the future, Charles introduced 10 principles that should be at the heart of a new approach to shape the future of Britain's towns and countryside (HRH the Prince of Wales, 1989).

The first principle is the *place*: the land must be respected and protected. The new buildings should fit in or blend carefully with the form of complete surroundings and be grouped together by avoiding sprawl. This point emphasised the importance of impressing coherence between the new and the existing complete urban patterns, and harmony with local context.

The second is *hierarchy*: it should be reflected according to the size of buildings in relation to their public importance and coherence of the buildings' elements. A good building should explain itself in its forms and spaces, and tell us where to go and what to expect. For public buildings, they ought to proclaim themselves with pride, as they have in the past. Inspired by these views, they sit close to the terms of legibility and coherence.

The third is *scale*: buildings should relate first of all to human proportions and then respect the scale of surrounded buildings; and the redevelopment of towns and cities should respect plot sizes, existing street patterns, parks and squares. It is possible to link this idea with the visions of in harmony with local context, and coherence with the existing urban pattern.

The fourth is *harmony*: harmony is the playing together of the parts, from the layout to the organisation of the smaller architectural elements. It is more necessary to respect the indigenous roots than to imitate transient international architectural fashions. Respecting the indigenous roots is more dealing with in harmony with local context. Important too, symbolic architecture and attractions helps avoid imitating international architectural fashions.

The fifth is *enclosure*: one of the great pleasures of architecture is the feeling of well-designed enclosure. The virtues are timeless, providing privacy, beauty and a feeling of total safety. Enclosure seems to be realised via the edge of construction works or plants.

The sixth is *materials*: the local character of towns and villages can be created by using what materials come closest to hand, which enables new buildings to look as though they belong and thereby enhance the natural surroundings. Such an approach would reduce consumption of fossil fuel and accordingly reduce the emissions of carbon dioxide. The principle of materials links with the meanings of local identity, in harmony with local context, and sustainability.

The seventh is *decoration*: if the new buildings can be built with a hint of decoration, they will give pleasure and delight, so it is very important to reinstate architecture as the mistress of the arts and the crafts. If these decorations appear to be built related to local characters, they will be symbolic especially with time being.

The eighth is *art*: a work of art is unique while decoration is concerned with repetition and pattern. Sculpture and painting play an important role in conferring on public buildings' a unique social and symbolic identity, which architecture alone cannot. As a result, architects and artists should be betrothed at an early stage in any major public project. The primary mission of the eighth point is to carry the message that unique and symbolic identity is important for a new development.

The ninth is *signs and lights*: attention to the signs and lights can help to improve the quality of public places and streets in the whole country. Towns and villages should be beautifully lit at night. Safety is not a matter of light intensity but of the overall quality of the surroundings. For this view, it tends to make pedestrian friendliness.

The last aspect is *community*: people should be involved in shaping their own community, and professionals need to consult the users of their buildings more closely. Good communities should be mix-used, walkable and diverse. HRH the Prince of Wales (1989) draws the conclusion that it is time for more experimentation in the way we plan, build and own our communities. This compelling plug obviously links to community involvement, mixed use, and walkability.

The views of the Prince of Wales can be responded through the following issues: coherence, in harmony with local context, legibility, symbolic architecture and attractions, edge, local identity, sustainability, symbolic decoration, symbolic identity, pedestrian-friendliness, local community involvement, mixed use, walkability, and diversity. The issues related to symbolic are captured three times here. Symbolic decoration can be expected to be addressed in symbolic attractions. For symbolic identity, it seems to be linked to symbolic architecture and attractions. This means symbolic architecture and attractions can help to express symbolic identity as required. Perhaps it is better to say that symbolic architecture and attractions tends to be more comprehensive and precise because they try to deploy themselves, symbolic decoration, and symbolic identity.

b) The Urban Task Force

UK governments have made a significant commitment to some of the design principles of new urbanism (Grant, 2006, p.112). In 1998, architect Richard Rogers was invited to set up the Urban Task Force (UTF) to drive urban renaissance. Its key aim is to establish urban communities as a vision of mixed-use and sustainable urban environment, well designed, compact, connected, and well-integrated with public transport by using concepts of

traditional urbanism (UTF, 2005, p.4). Actually, the terms mixed use, sustainable, compact clearly express the intended meanings. For connected, two points need to be targeted. One is about the coherence between buildings and urban patterns, and the other is connected street pattern. Then well-integrated with public transport by using concepts of traditional urbanism may be considered to have three implications: pedestrian-friendly, walkable, and sustainable. In addition, the Urban Task Force has proposed a coherence to traditional urban forms, with high-density housing (some houses, some flats) along traditional residential streets with side-walks and with a liberal admixture of shops and services within easy walking access (Hall, 2000, p.359). According to Hall (2000) the Urban Task Force argues for densities that can support a frequent bus service, running right through residential areas. From Hall's perspective, attention can be paid to several aspects of the Urban Task Force. First is coherence to traditional urban forms. This emphasises the coherence of urban patterns between the new development and the existing one. Second, the new development should be compact and pedestrian-friendly, and its street pattern should be connected. Third, compact can support public transport and encourage people to use public transport. So this can reduce the uses of vehicles to protect our environment, which is clearly a sustainable approach.

Therefore, with regard to the above discussion on the Urban Task Force, some important design principles can be summarised: mixed use, sustainability, compact, coherence, connected street pattern, pedestrian-friendliness, and walkability.

c) Dennis Hardy

Dennis Hardy is now a resident of Poundbury, Dorchester. He is Emeritus Professor of Urban Planning at Middlesex University. Hardy (2006, p.34) claims that the new urbanist settlement should be created based on the following guidelines:

- New urbanist settlements should be identifiable, with a sharp urban edge and coherent neighbourhoods and districts. This point can be

summarised as that a new urbanist development should have one of the important features of identifiable with a clear urban edge.

- The neighbourhoods should be compact, socially and functionally mixed, and pedestrian-friendly. This incorporates three key ideas: compact, mixed use, and pedestrian-friendly.
- Shops, schools and public buildings should be embedded in neighbourhoods, not isolated in single-use zones, with, ideally, everyday facilities within a short walk from home. The meaning delivered by this view can be defined as mixed use and walkability.
- A range of parks and village greens to playing fields and community gardens should be distributed through the neighbourhoods. With these, people should be able to read the community easily, and to orientate themselves. Thus, this suggests legibility.
- Buildings should be designed in a series of linked 'urban blocks' in which streets and public spaces are recovered as places of common use and civic pride. Such refinement can be translated into the intention of in harmony with local context.
- Cars should be accommodated but not to the exclusion of safe use of spaces by the pedestrian. Priority should be given to the pedestrians. When the pedestrian-friendly aspect is clear, people are likely to reduce car uses. It in turn reduces the emissions of carbon dioxide, which is more about sustainable.
- Importance is attached to symbolic architecture and attractions such as fountains in civic places. Symbolic architecture and attractions are important for a new development.
- Architecture should be shaped by its surroundings and local building traditions. Architecture incorporated into a new development should be in harmony with local context.

Simply put, the key ideas presented by Hardy can be concluded as identifiable with a clear urban edge, compact, mixed use, pedestrian-friendliness, walkability, legibility, in harmony with local context, sustainability, and symbolic architecture and attractions.

d) Brief

Table 3-3 summarises three key sets of perspectives from the Prince of Wales, the Prince's Foundation, the Urban Task Force, and Dennis Hardy.

Table 3-3: Summary of design principles of new urbanism from the British perspective

Key perspectives	Design principles of new urbanism from the British perspective include:
The Prince of Wales and The Prince's Foundation	Coherence; In harmony with local context; Legibility; Symbolic architecture and attractions; Edge; Local identity; Sustainability; Pedestrian-friendliness; Community involvement; Mixed use; Walkability.
Urban Task Force	Mixed use; Sustainability; Compactness; Coherence; Connected street pattern; Pedestrian-friendliness; Walkability.
Dennis Hardy	Identifiable with a clear urban edge; Compactness; Mixed use; Pedestrian-friendliness; Walkability; Legibility; In harmony with local context; Sustainability; Symbolic architecture and attractions.
Summary	a): Coherence; b): In harmony with local context; c): Legibility; d): Symbolic architecture and attractions; e): Edge; f): Local identity; g): Sustainability; h): Pedestrian-friendliness; i): Community involvement; j): Mixed use; k): Walkability; l): Compactness; m): Connected street pattern; n): Identifiable with a clear urban edge.

For the point of 'edge' and 'identifiable with a clear urban edge', the latter appears to include the meaning of the former, so it is possible to merge these two principles. This results in the design principles that can be addressed:

coherence, in harmony with local context, legibility, symbolic architecture and attractions, local identity, sustainability, pedestrian-friendliness, community involvement, mixed use, walkability, compactness, connected street pattern, and identifiable with a clear urban edge.

3.2.4 Holistic analysis of design principles of new urbanism in this research

a) Theoretical framework of design principles of new urbanism

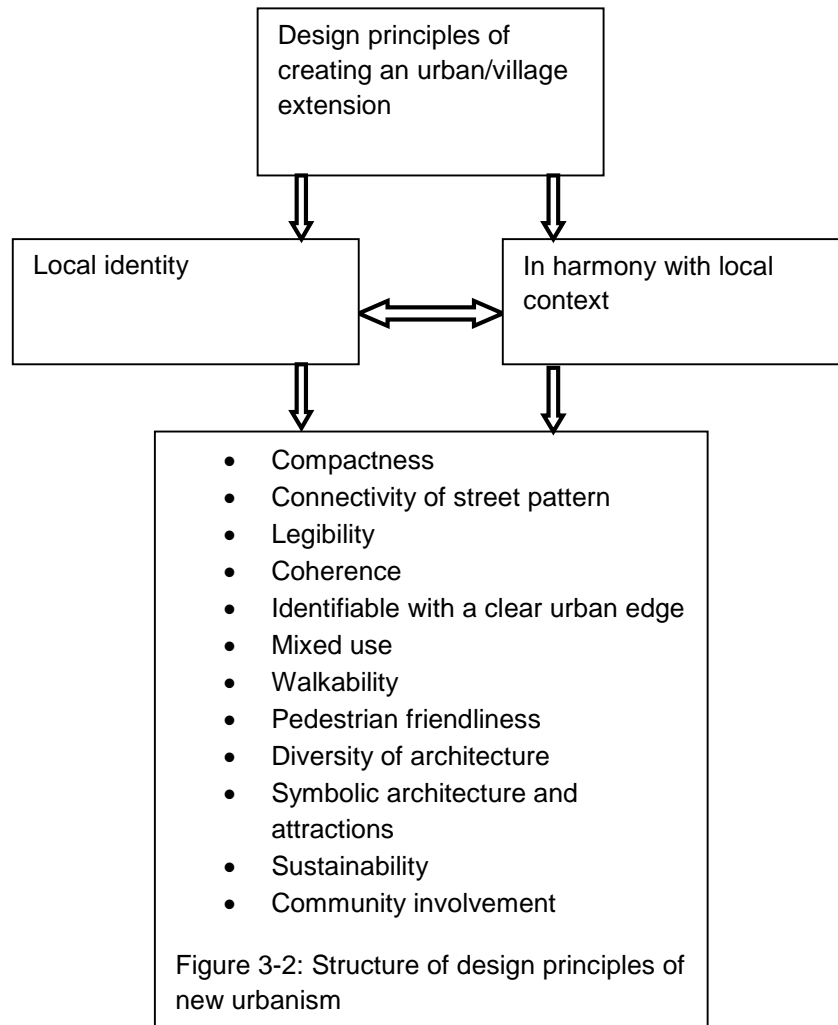
The design principles of three perspectives are mostly similar, which expresses the common aim of new urbanism although within different context; however, they are slightly different. Based on the American perspective, the design principles of local identity and diversity of architecture are added for the European perspective. And the points of local identity and symbolic architecture and attractions are added to the British perspective. Thus the theoretical framework of design principles of new urbanism is extended by incorporating these three perspectives in comparison with that of American perspective, as showed in Table 3-4.

Table 3-4: Theoretical framework of design principles of new urbanism

Perspectives	Design principles of new urbanism
American perspective	a): Compactness; b): Walkability; c): Edge; d): Mixed use; e): Pedestrian-friendliness; f): Sustainability; g): Connective street pattern; h): Legibility; i): Coherence; j): In harmony with local context; k): Public participation.
European perspective	a): Mixed use; b): Walkability; c): Clear edge in built-up area; d): Coherence; e): Compactness; f): Pedestrian-friendliness; h): In harmony with local context; i): Legibility; j): Diversity of architecture; k): Sustainability; l): Connective street pattern; m): Local identity; n): Community involvement.
British	a): Coherence; b): In harmony with local context; c):

perspective	Legibility; d): Symbolic architecture and attractions; e): Local identity; f): Sustainability; g): Pedestrian-friendliness; h): Community involvement; i): Mixed use; j): Walkability; k): Compactness; l): Connected street pattern; m): Identifiable with a clear urban edge.
Summary	a): Local identity; b): In harmony with local context; c): Compactness; d) Connective street pattern; e): Legibility; f): Coherence; g): Identifiable with a clear urban edge (Including edge, and clear edge in built-up area); h) Mixed use; i): Walkability; j): Pedestrian-friendliness; k): Diversity of architecture; l): Sustainability; m): Symbolic architecture and attractions; n): Community involvement (Including public participation).

Community involvement is a key component in the delivery of good planning outcomes. It is not only a statutory requirement for Local Planning Authorities (LPAs) to consult on planning policies for their areas but can also assist in the identification of local needs and problems, inform policy-making, and provide feedback on service delivery while at the same time fostering a sense of local ownership and civic pride (TCPA, 2013). Public participation is normally viewed as part of a democratic process and is often used as a broad principle. This term may be recognised as a right for the public to participate in planning. It is based on the belief that those who are affected by a decision have a right to be involved in the decision-making process (International Association for Public Participation, 2013). In this research, community involvement is considered as a more appropriate term to be used.



Moreover, in referring to edge and clear edge in built-up area, the meanings are expected to be embraced in the identifiable with a clear urban edge.

b) Holistic design principles of new urbanism

Table 3-4 demonstrates the holistic analysis of design principles of new urbanism. Following discussion of harmony in Chapter 1, the urban/village extension is in the pre-existing old town/village *concealed* and the pre-existing old town/village is in the urban/village extension *revealed*. Harmony with local context may be achieved by responding to the local circumstances of the built environment; so can local identity. This means that, theoretically, they both have same position level. It is expected that if an urban/village extension is in harmony with local context or has local identity, the research objective – *creating an urban/village extension through design principles of new urbanism* – can be achieved. To keep up with the demands posed by

the achieving of in harmony with local context or local identity reviewed in the terminology of Chapter 1, proposed actions can incorporate a network of the design principles above. As a result of these strategies, the first two points of the above list stand at a bit higher level compared with other twelve points, as showed in the structure of design principles made in Figure 3-2.

Therefore, the approaches of bottom box in Figure 3-2 appear to be most suited achieve the creation of an urban/village extension of harmony with local context or local identity.

3.2.5 Clarifying design principles of new urbanism for this study

Now that the design principles of new urbanism have been established in terms of the literature review, the next step is to clarify what each of the design principle represents by their statements of the meaning or significance and further develop (e.g. one design principle merges into another) the design principles of new urbanism for this research.

a) Compactness

According to the Oxford Dictionary, compact, as an adjective, means closely and neatly packed together or dense with all the necessary components or features neatly fitted into a small place (Oxford Dictionary, 2013). The term, 'compact' is often used to link with urban planning. The term 'compact City' was coined by George B. Dantzig and Thomas L. Saaty in 1973. They argued that the amount of land needed for building a compact city would be negligible (Dantzig and Saaty, 1973, p.11). Furthermore, based on the overall review about the compact city, it can be summarised that the advantages of a compact city are that it encourages public transport, walking and cycling, while also aiming achieve a higher building density, socially and functionally mixed usage, and intensified urban form. Public transport is discussed under sustainability, and walking is discussed under 'walkability'. Density is an important consideration in reducing people's reliance on the private car (DT and CLG, 2007). However, the current planning policies do not advocate putting obstacles in the way of car ownership, for example by omitting the provision of off-street car-parking spaces for a high proportion of dwellings in

new urban development. This would give further stimulus to the continuing flight from major towns and cities (TCPA, 2003, p.3). Therefore, in this research, compactness is focusing on the perspective of residential density as it plays an important role in helping shape urban form and makes land use in a community more effective and efficient, as is the case in a vernacular settlement.

According to Cheng (2010, p.14), the meaning of high density is a matter of perception: it is subjective and its definitions vary depending upon the society or individuals of different backgrounds and under different contexts. In the UK, density is a measure of the number of dwellings which can be accommodated on a site or in an area (Communities and Local Government, 2007, p.17). This means that the current government policy uses dwellings per hectare net (DPH) to measure the residential density. Dwellings per hectare should be used in conjunction with other planning standards and with plot ratio¹⁵ in particular when controlling development form in terms of the research carried out by the Department of the Environment, Transport and the Regions in the UK (Government of Ireland, 1999, p.9). The TCPA (2003) believes that in the matter of housing, environmental considerations do not necessarily justify over-riding public preferences. It takes the view that widespread imposition of very high residential densities (of, say, 60 dwellings per hectare or higher) would inflict high social, economic, and environmental costs on communities and create places that appeal only to a small minority of households. Nevertheless, it accepts that very low densities, meaning houses built at less than 20 per hectare, generally fail to create a recognisably 'urban' context for community life (TCPA, 2003, p.4). The government stipulates a target range for new building densities on plots of a hectare or more of between 30 and 50 dwellings per hectare; however, the current average density of new building is only about 25 dwellings per hectare (TCPA, 2003, p.2).

¹⁵ Plot ratio expresses a relationship between the area of a site and the total gross floor area of the buildings whether existing or intended to be erected on it. It is determined by the following equation: (gross floor area of buildings)/(site area) = plot ratio (Government of Ireland, 1999, p.26).

b) Connectivity of street pattern

In the discussions of 3.3.1, 3.3.2, and 3.3.3, particular attention has been paid to the connectivity of street pattern. The related details are necessarily listed in Table 3-5 below as a cross-reference.

Table 3-5: Cross references of connectivity of street pattern

Key player	Description	Location
Duany and Plater-Zyberk	A fine network of interconnecting streets	3.3.1
Moule and Polyzoides	A network of street pattern	3.3.1
Kelbaugh	Connective street grids	3.3.1
CNU	Connectivity of street pattern	3.3.1
Grant	Connected street pattern	3.3.1
Rob Krier	Unobstructed space for movement in the open air	3.3.2
CEU	Accessible by foot, bicycle, car and public transport	3.3.2
Urban Task Force	Connected streets	3.3.3

In addition to these, there are also other important arguments that should be emphasised. Connectivity means the state of being connected or interconnected (Cambridge Dictionary, 2013). Connectivity is also defined as how often streets or roadways intersect, or how closely intersections are spaced (Lehigh Valley Planning Commission, 2011). In this case, streets are typically lined with buildings and public spaces, while movement is still a key function requiring street networks which should be connected to allow for the easy passage of vehicles, cyclists and pedestrians (DT & CLG, 2007). Ideally, local streets would form a well-connected, efficient network that provides for safe, direct, and convenient access by a variety of means of transportation from walking to driving (Lehigh Valley Planning Commission, 2011).

Moreover, street networks should, in general, be connected, which encourages walking and cycling, and make places easier to navigate through (DT & CLG, 2007, p.41). Furthermore, increased connectivity of street pattern can promote transportation choices for a resident of a subdivision by providing different modes of travel besides the automobile (Lehigh Valley Planning Commission, 2011). Street pattern with connectivity is also permeable which helps minimise walking distance (DT & CLG, 2007, p.64). Additionally, grid-like street patterns usually have greater connectivity than those curving streets and cul-de-sacs (Turley, 2008). Marshall and Garrick (2009) also suggest that a gridded street pattern with good connectivity is most possibly associated with much more walking and cycling. If the grids of a new development are similar to those of an existing urban pattern with small blocks, the connectivity of street pattern can promote local identity. In order to make safe and identified connectivity, the streets should be constructed as a hierarchy, by addressing ordered approaches. The hierarchy is used not only for a proposed scheme but also for connections through existing networks to local shops, schools, bus stops, and other community facilities (DT & CLG, 2007).

Internal connectivity is important but the area also needs to be properly connected with adjacent street networks. Also of importance, the number of external connections that a development needs depends on the nature of its surroundings (DT & CLG, 2007, p.42). Therefore the connectivity of street pattern focuses on the internal links within the urban/village extension and external links with the pre-existing town/village.

c) Legibility

In the *Dictionary of Urbanism* (Cowan, 2005, p.216) argues that legibility is the quality of a place being welcoming, understood easily by its users, easy for visitors to orient themselves in, and presenting a clear image to the wider world. The key players in 3.3.1, 3.3.2, and 3.3.3 discuss legibility as described in the following as cross-reference. First, Duany and Plater-Zyberk (1994) defines legibility as giving priority to public space and to the

appropriate location of civic buildings (See 3.3.1). Second, in order to understand legibility, Moule and Polyzoides (cited by Katz, 1994) state that monumental buildings are to be free of all formal constraints (See 3.3.1). Third, Kelbaugh (2000) views that private and public architecture and spaces should be legible (3.3.1). Fourth, Leon Krier (1998) believes that legibility can be understood by preferring an urban form with small blocks, well-defined streets and attractive squares (3.3.2). Rob Krier (Cited by Clay, 2009) has a similar idea that creation of different spatial configurations of squares and street sequences gives indelible character (3.3.2). Hardy (2006) claims that distributions of a range of parks and greens to playing fields and community gardens can help create legibility (3.3.3). Moreover, CABE (2000) clarifies that legibility as a place that has a clear image and is easy to understand. In fact, the concept of legibility was also developed by Kevin Lynch in the mid-twentieth century. Lynch (1960, p.3) defines a legible city as one whose edge or paths or districts or landmarks or nodes are easily identifiable and are easily grouped into an overall pattern. The physical pattern of the built environment can conveniently be classified into five types of elements: paths, edges, districts, nodes, and landmarks (Lynch, 1960, p.46).

Paths are the channels along which the observer customarily, occasionally, or potentially moves (Lynch, 1960). They may be streets, walkways, transit lines, canals, railroads. For many people, these are the predominant elements in their image...along these paths the other environmental elements are arranged and related. For example, streets with identity play an important role in the orientation of people (Oktay, 2005).

Edges are the linear elements not used or considered as paths by the observer (Lynch, 1960). They are usually, but not always, the boundaries between two phases - linear breaks in continuity...These edge elements, although probably not as dominant as paths, are important organising features for many people, particularly in the role of holding together generalised areas, as in the outline of a city by water or wall. They act as lateral references to control the scale of a new development and also avoid

the sprawl which is important for effective land uses. Leon Krier (2009) claims that the controlled growth of suburbs can retain the character and integrity of town or village. The relationship between new development and town or village is managed with a clear outward-facing boundary. Hence edge mainly denotes the relationship between built-up area and the surrounding open field to avoid the destruction of the character and integrity of a community. Based on these discussions, the point of 'Identifiable with a clear built-up area edge' is a representation of 'edge of legibility', so it can be merged into 'legibility'.

Districts are the medium-to-large sections of the city, conceived of as having a two-dimensional extent, which the observer mentally enters "inside of," and which are recognisable as having some common, identifying character (Lynch, 1960).

Nodes are points, the strategic spots in a city into which an observer can enter... They may be primarily junctions...or the nodes may be simply concentrations, which gain their importance from being the condensation of some use or physical character as a street-corner hangout or an enclosed square (Lynch, 1960). In any event, some nodal points are to be found in almost every image, and in certain cases they may be the dominant feature. For instance, one square serves as the heart of the community, town and greatly helps identify the place (Oktay, 2005).

Landmarks are another type of point-reference, but in this case the observer does not enter within them - they are external (Lynch, 1960). They are usually a rather simply defined physical object, such as a building, sign, store, or mountain. Their use involves the singling out of one element from a host of possibilities....Landmarks are frequently used clues of identity and even of structure, and seem to be increasingly relied upon as a journey becomes more and more familiar (Lynch, 1960).

These five elements not only constitute the basic objective structure of a city (e.g. roads, junctions and building blocks), but also ignite the subjective structure of city-reading in the public's minds (Wang, 2011, p.405). As a

result, the meaning of legibility, according to Lynch, delivers a comprehensive understanding when people try to read a community. This definition is widely popular in the study of urbanism. Also importance, the discussions related to Duany and Plater-Zyberk, Moule and Polyzoides, Kelbaugh, Leon Krier, Rob Krier, and Hardy are included in the concepts of Kevin Lynch. Therefore, the discussion of legibility follows the concepts defined by Kevin Lynch in this research. In terms of the above definition of five elements from Lynch, it is essential to clarify their foci in this research. Paths focus on the channels of street pattern. Edges are established by the buildings' outward-facing walls. Districts are structured with nodes, defined by edges, penetrated by paths, and sprinkled with landmarks (Lynch, 1960, pp.48-49). This point focuses on the variation in scale and intensity. Nodes are targeting junctions and squares, while landmarks confine the attention to the buildings.

d) Coherence

The Oxford Dictionary defines coherence as the quality of forming a unified whole (Oxford Dictionary, 2013). According to *The Dictionary of Urbanism* (Cowan, 2005, p.73), coherent structure is defined as an attribute of a community whose parts relate in an easily understandable way to each other and to the whole. Cowan (2005, p.73) also views that a place with a coherent structure is likely to be legible. Accordingly, if a place is legible, it has a coherent structure. Zeldin (1994) argues that coherence of structure of new urbanism has a high value because it tries to eschew the physical fragmentation and the functional compartmentalisation of a new development and attempts to form a link of physical form between the new and its existing urban pattern. Moule and Polyzoides (See 3.3.1), CNU (See 3.3.1), and Leon Krier (See 3.3.2) argue that new urbanist community should be coherent with existing urban pattern. Moreover, Katz (See 3.3.1) states that new urbanists should create close-knit communities. In addition, Rob Krier (See 3.3.2) considers that it is necessary to create a coherent urban situation. The Prince of Wales and the Prince's Foundation (See 3.3.3) emphasise that the new buildings should fit in or blend carefully with the form of complete

surroundings and be grouped together by avoiding sprawl. Additionally, the Urban Task Force (See 3.3.3) targets connected community. Finally, By Design states that integrating new development into that which is already existing reduces the impact on nature and reinforces local distinctiveness (CABE, 2000, p.20). All these can clearly deliver the meaning of coherence.

To summarise, coherence here means that the structure of an urban extension is integrated whether within its own links or into the external links by integrating new and existing patterns, while maintaining the continuity of urban pattern.

e) Identifiable with a clear built-up area edge

Following the discussion of legibility above, this point is a representation of legibility. Thus this point is merged into the discussion of design principle of legibility.

f) Mixed use

It is necessary to understand mixed use. Historically, people were dependent on walking, so everything depends on the human scale. Mixed use must refer to the realities that existed in the past, because mixed use developments can help reduce the need for travel. For example, the residential building was not only used to live but also as somewhere to sell goods from, or for storage. Duany and Plater-Zyberk (2003) claim that mixed use constitutes multiple functions within the same building or the same general area through superimposition or within the same area through adjacency...from which many of the benefits emerge pedestrian activity and traffic capture. They both also consider that mixed use is a balanced mix of activities-dwelling, shopping, working, schooling, worshipping and recreating (see 3.3.1). Kebaugh (see 3.3.1) argues that mixed use is mixing different uses. For Leon Krier, mixed use is multi-functional (see 3.3.2). Moreover, Hardy states that mixed use is functionally and socially mixed (see 3.3.3). Mixed use can be found in a wide range of locations and varies significantly in terms of scale, type, the volume of activity generated by different uses and, ultimately, the benefits they afford to investors and end-users (The British Council for

Offices, 2005, p.3). Creating a mix of uses can help to attract people to live, work and play in the same area (CABE, 2012, p.32). For the meaning of a mix of uses, Hirt (2007) argues that mixed use should embed three dimensions: *functional* mix, *social* mix and *ecological* mix. In addition, Blackson (2013) states that mixed use is typically categorised as either a) vertical mixed-use buildings; b) horizontal mixed-use blocks; c) mixed-use walkable neighbourhoods. The urban designer Kelvin Campbell (1999) has described 10 issues that can help to create mixed-use developments. They are: a) Fine grained development; b) Diversity of ownerships; c) Dealing with tenure issues properly; d) Changing planning conditions through time; e) Critical land value; f) Location on busy streets; g) Sufficient density; h) Buildings with easy conversion form; i) An interface space on a double layer street, and j) Inspired attitudes of making attractive places.

Actually, whether vertical mixed-use buildings or horizontal mixed-use blocks, they both are included in the meaning of functional mix and social mix. For social mix, Ray Gindroz and Dan Solomon transform public housing projects into mixed-income neighbourhoods (Duany, 2013, p.9). In the UK, mixed housing tenures and mixed use are now seen by policymakers and urban designers alike as vital features of successful places and sustainable communities that need to be preserved (Tarbatt, 2012, p.15). Accordingly, mixed-use walkable neighbourhoods depend on ecological mix, which is discussed in the following point of walkability. Therefore, mixed use in this research mainly embraces two aspects: functional mix and social mix.

g) Walkability

According to the *Free Dictionary* by Farlex, walkability is to move over a surface by taking steps on foot at a pace slower than a run. It can attract and encourage people to walk if some pleasures are provided during the walking. Additionally, a recent Brookings Institution study by Christopher Leinberger and Mariela Alfonzo (2012) documents that real estate values increase as neighbourhoods become more walkable. In a large number of surveys, the acceptable walking distance for most people in ordinary daily situations has

been found to be around 400-500 metres (Gehl, 1971, p.137). The optimal walking distance between a transit station or stop and some community uses is 400-800 metres (Dittmar and Ohland, 2004, p.120). Duany and Plater-Zyberk also hold a similar idea that the optimal size of a neighbourhood is a quarter of a mile (see 3.3.1). The walking distance of 400-800 metres usually takes from 5 to 10 minutes. In addition, a walkable neighbourhood is an area where local facilities are within walking distance (see 3.3.1 and 3.3.3); for example, a post box or telephone box within two to three minutes (250 metres) walk, a newsagent within five minutes (400 metres) walk, and local shops, a bus stop, a health centre and perhaps a primary school within 10 minutes (800 metres) walk (Llewelyn-Davies, 2000, p.35). *The Dictionary of Urbanism* (Cowan, 2005, p.443) describes walkability as the ease with which it is possible to walk around an area, from one point to another, or from housing to local facilities. Walkable neighbourhoods are typically characterised by having a range of facilities within 10 minutes (up to about 800 metres) walking distance of residential areas which residents may access comfortably on foot (DT & CLG, 2007, p.45). In order to promote walkable neighbourhoods, Moule and Polyzoides caution that the human scale should be preferred over that of the vehicles (see 3.3.1), and also of importance, the Urban Task Force encourages well-integrated walking with public transport by using concepts of traditional urbanism (see 3.3.3). Additionally, Leon Krier (1998) prefers to build walkable urban quarters with clear edges and centres (see 3.3.2). According to Shelley Poticha (2013b, p.73), walkable urbanism is gradually emerging as the preferred and most resilient form of development. In terms of the above views, this research defines walkability from the perspective of walking distance of between 400 and 800 metres. If residents can meet their daily needs by walking 400 to 800 metres, this neighbourhood can be considered as walkable. The approach to measure walkability is through circles with radii of 400 and 800 metres based on the centre of neighbourhood centres.

h) Pedestrian-friendliness

It is becoming increasingly important to protect pedestrian-friendliness where it exists today, and to strive to integrate it in locations where growth is planned (FHWA, 1992; TRB, 1994). Rob Krier underlines that streets and squares should be designed for pedestrians (See 3.3.2). The CEU states that the community should be safe by foot (No.4, 3.3.2). In addition, the Prince of Wales and the Prince's Foundation suggest that signs and lights can help to improve the quality of public places and streets (see 3.3.3). Moreover, Leon Krier believes that streets function as part of both the public and private realms (see 3.3.2). Furthermore, walking actually demands space; it is necessary to be able to walk reasonably and freely without being disturbed, without being pushed, and without having to manoeuvre too much (Gehl, 1971, p.133): this could be considered one of the prerequisites of pedestrian-friendliness design.

Factors reducing pedestrian-friendliness include distance, roads that are difficult to cross, and large street blocks with no routes through them. The consultant Space Syntax, commissioned in 2001 by the Transport for London to develop a walkability index for London, identified a number of factors influencing walkability. These included footway quality, width and gradient; proximity of walking to road traffic; lighting; weather; proximity to transport facilities; signage; ground level activity; pedestrian crossing design; traffic signal phasing; time of day, and axial depth. Furthermore, FHWA (2008) clarifies that in a safe community pedestrians need: a space to walk, access to street crossings, signs and markings designating the pedestrian route, friendly drivers, and continuous and enjoyable facilities. The pedestrian and Bicycle Information Centre of the U.S. Department of Transportation usually adopt a checklist of survey to identify pedestrian friendliness. This checklist includes five questions: Did you have space to walk? Was it easy to cross streets? Was it easy to follow safety rules? Did drivers behave well? and Was your walk pleasant? It is possible to use these five questions to analyse pedestrian-friendliness in this research as they can cover other arguments, such as, safe by foot, signs and lights, walking space, pedestrian crossings, other factors provided by the consultant of Space Syntax, and so on.

i) Diversity of architecture

Bodenschatz clarifies that a new urbanist community should contain a diversity of architecture (see 3.3.2). Diversity means the state or fact of being different or varied (Oxford Dictionary, 2013). Based on this perspective, diversity of architecture seems to be different styles of buildings, which plays an important role in a traditional urbanism. In her book *The Death and Life of Great American Cities*, Jane Jacobs (1961, p.164-165) describes how close-grain diversity is both a goal and a marker for how successful places are, measured in terms of the degree to which they exhibit variety, choice and interest, thus increasing social and economic exchange possibilities in complex 'pools of use'. She does, however, caution that the alternative to diversity – monotony – leads not just to inconvenience, a lack of commercial choices and cultural interest, but to danger. In addition, Robert Venturi (1966) who declared '*Less is bore*' argued that a building derives meaning from its context, and different contexts require different forms of architectural expression (Arcspace, 2002). Moreover, Tarbatt (2012, p.14) thinks that the idea of a meritocracy values individuality, and increasingly people want to express their individuality through the design of their homes, workplaces, and entertainment facilities. The individuality of architecture appears to create a diversity of architecture. This diversity can impart to the 'place' its own unique character and identity and its sense of place. Nonetheless, the diverse architectural styles should respect local context by defining the characteristics of diversity of the existing architecture form. Furthermore, Robert Adam (2013) believes that by creating variety in the buildings, and with the use of high quality local materials. Simple and distinctive designs can be mixed to create a place that has its own individual character.

Diversity of architecture plays a very important role in creating an urban/village extension in this research. However, this does not mean that each architectural style is an isolated entity. They must have connections with each other. In light of Christopher Alexander (1977, p.xiii), each pattern can exist in the world, only to the extent that is supported by other patterns: the larger patterns in which it is embedded, the patterns of the same size that

surround it, and the smaller patterns which are embedded in it. Overall, diversity of architecture in this research targets the styles of buildings. The styles not only connect with and support each other but also link with local context, for instance, through local materials or distinctive design.

j) Symbolic architecture and attractions

The Prince of Wales and the Prince's Foundation consider that symbolic architecture and attractions help avoid imitating international architectural fashions (see 3.3.3). Moreover, Hardy (2006) states that importance should be attached to symbolic architecture and attractions in new urbanist communities, such as fountains in civic places (see 3.3.3). Symbolic architecture was coined by Charles Jencks in the 1980s to describe architecture with a strong degree of personification or with allusions to cultural ideas, historical references, and other pre-modernist themes, or in which there are visual jokes, puns, and mnemonic motifs (Curl, 2006).

Based on this, some key theorists need to be discussed to explore related disciplines to define the symbolic architecture, such as, Roland Barthe, Charles Jencks, Geoffrey Broadbent, Robert Venturi and Denise Scott Brown, Umberto Eco and Nelson Goodman, among others (Wang and Heath, 2011). First, as Roland Barthe the French literary critic and philosopher said, any tangible objects can deliver meanings towards the public as signs which link symbolic architecture. In addition, the American-born architectural writer Charles Jencks employed the term 'symbolic architecture' in 1985 in relation to the redesign/decoration of the facades, interiors, fixtures and furniture of three of his own properties which he undertook between 1978 and 1985. To Jencks, symbolic architecture was a facet of post-modernism. It marked a return to pre-modern ways of conceiving architecture as forms, structures and ornament personifying practical functions. For instance, in Charles Jencks' West London Victorian villa the design was determined by two major themes: cosmetic time and cultural time. The ground floor rooms were refurbished to symbolise the four seasons while the spiral stairs formed a symbolic calendar (with 52 steps). Visual jokes and puns abounded: e.g. a

window seat made out of framed glass (Walker, 1992, p.639). Third, Geoffrey Broadbent described four deep structures at the roots of architecture:“ the building as container for human activities; the building as modifier of the given climate; the building as cultural symbol and the building as consumer of resources” (Broadbent, 1980, p.137). Broadbent (1980, p.138) also states that the building as a cultural symbol operates even when the architect-or critic-has pretended it would not, as in the case, say, of so-called ‘functional’ architecture. Furthermore, Umberto Eco, the Italian semiologist, focuses on the architectural communication which can express the meaning of building itself. Last, Nelson Goodman who is an American philosopher argues how buildings develop a meaning. He considered the rigid part of a building’s meanings to be ‘from symbol to what it applies to as label’; but for the flexible part of a building’s meaning, it is ‘from symbol to certain labels that apply to it or to properties possesses by it’ (Wang and Heath, 2011, p.414).

In terms of the reviews above, it is reasonable to state that symbolic architecture and attractions can be understood in the way in which they express certain messages to become the label of what where they are located. Observers try to decipher the meaning of facades, structures, fixtures, and others, as one reads a book. The symbolic architecture normally is the landmarks and symbolic attractions usually are decorations or art on the streets. When they have more interactions of community with time going on, they can add variety and interest to the appearance. Accordingly, they can provide prominent visual features by helping people to orient themselves and find the local context.

k) Sustainability

Sustainability was one of the most frequently used words in discussions of urbanism in the 1980s and 1990s (Cowan, 2005, p.383). The most common definition is set out in the 1987 UN report, *Our Common Future*. The report clarifies that sustainable development seeks to meet the needs and aspirations of the present without compromising the ability to meet those of the future (UN, 1987, p.34). Its meaning here is used jointly with community

as 'sustainable community'. This term is pioneered by Sim Van der Ryn who has been at the forefront of integrating the sustainable principle into the built environment, creating solutions driven by nature's own intelligence (CNU, 2001). A sustainable community has been defined by US new urbanists as 'a viable human environment within a protected ecology' and was adopted by the UK government in 2003 as the focus for its new house building programmes (Cowan, 2005, p.386). The ODPM (2004b, p.18) identified that sustainable communities meet the diverse needs of existing and future residents, their children and other users, contribute to a high quality of life and provide opportunity and choice. This definition is a broad one which includes many issues, such as social and cultural, governance, environmental, built environment, economic, services, and so on. The ODPM (2005, p.3) also argues that planning has a key role to play in the creation of sustainable communities: communities that will stand the test of time, where people want to live, and which will enable people to meet their aspirations and potential. In 2007 the CNU prepared a companion to the Charter of the New Urbanism entitled Canons of Sustainable Architecture and Urbanism. The Canons set forth in more detail the sustainable principles and practices implicit in the Charter and explain their specific application (Barnett, 2013, p.2). In this point, sustainable community is focusing on environmental perspective of providing places for people to live in an environmentally friendly way at the planning stage. The new development can assist in reducing the use of fossil fuels and carbon dioxide emissions in a number of ways, such as using renewable resources, reducing the need to travel and reliance on private motor cars, encouraging walking, cycling and public transport, and so on. According to Neal (2003, p.56), sustainable development is a dynamic process. Moreover, as discussed in 3.3, some key individuals also contribute very detailed descriptions about sustainability, as cross-reference set out in Table 3-6.

Table 3-6: Cross references of sustainability

Key player	Description	Location

Duany and Plater-Zyberk	Districts and corridors can integrate natural environment and man-made communities into a sustainable whole.	3.3.1
Moule and Polyzoides	The human scale should be preferred over that of vehicles.	3.3.1
CNU	Reducing dependence on the automobile	3.3.1
Bodenschatz	The promotion of local public transportation and the reduction of automobile traffic	3.3.2
CEU	Making efficient and sustainable use of buildings, land and other resources	3.3.2
The Prince of Wales and the Prince's Foundation	Using materials that come closest to hand	3.3.3

As a result, it's important to reduce carbon dioxide (CO₂) emissions, and in particular for minimising the impacts of development and day-to-day living on the environment (WDDC, 2006, p.61). Sustainability of this study may cover two aspects: reduction of automobile-use, and technologies. Reduction of automobile-use is discussed in the point of walkability, while sustainability focuses on technology design such as Eco-Homes, public transport, and so on.

l) Community involvement

Community involvement is paramount at all times. Moule and Polyzoides emphasise that the public should participate in the design process (see 3.3.1). The Charter of the CEU also promotes the aspirations of citizens (see 3.3.2). The Planning and Compulsory Purchase Act 2004 requires local planning authorities to be proactively engaging with their many communities in the development control and plan-making process and to set out in a Statement of Community Involvement, setting out how this will be achieved (ODPM, 2004c). Communities are to be more actively involved at an earlier stage and

continuously in the plan preparation process, both at regional and local levels, than has traditionally been the case (Local Government Association, 2005, p.1). Some important persons play important roles in the development of community involvement. David Lewis has a key impact on prioritising the community through citizen empowerment. As one of the key promoters of citizens' engagement in the urban design process, Lewis argues that the essence of urban planning is teamwork, not just the professionals, but the citizens, to whom all cities rightfully belong (Donaldson, 2012). In the field of urban community development, Urban Design Associates has been a pioneer in community-based design, engaging in long-term community revitalisation processes and working closely with local groups (Deitrick and Ellis, 2000). Furthermore, Ray Gindroz (1999) argues that it becomes impossible for the developers to impose artificial and abstract ideas unless they make sense to the community. Moreover, Anton Nelessen (1994) pioneered the Visual Preference Survey technique, and specialises in working closely with communities to produce plans that accurately reflect local preferences. Additionally, according to Christopher Alexander (1977, p.x), towns and buildings will not be able to become alive, unless they are designed by all people in society, unless these people share a common pattern language within which to make these buildings, and unless this common language is alive itself.

Furthermore, professionals need to closely consult with the inhabitants at all times. Prince Charles (1989, p.97) argues that:

The inhabitants have the local knowledge: they must not be despised. People are not there to be planner for; they are to be worked with. In the creation of new communities the problems may be more difficult, but there is always local knowledge and that is where a community starts. People should be involved in shaping their own community, and professionals need to consult the users of their buildings more closely (see 3.3.3).

The Prince's Foundation for Building Community believes that listening to the wisdom of local people is crucial to successful development (The Prince of Wales). The wisdom of local people should be not only heard but really

listened to by pioneering an innovative community engagement framework called 'Enquiry by Design' (EbD) which was set up in 1999 (The Prince's Foundation for Building Community, 2012b). According to the Foundation, this needs to engage local stakeholders, residents and business owners to find what it is they want and need in their communities, and how the needs can be achieved. This method may not be perfect, but when executed properly and followed up with other citizen participation methods it can produce outcomes that are both fair and of high quality (Ellis, 2002, p.282).

Overall, community involvement should be a permanent thread which runs through all planning and development activity. Also importance, it must become second nature to the professionals involved in the use of land and the community should reasonably expect and be encouraged to be continuously involved in offering their positive views about how their locality is shaped over time (Local Government Association, 2005, p.2).

m) Brief

The above discussion defines the meaning of design principles of new urbanism for this study. Based on the understanding of legibility and identifiable with a clear urban edge, the latter can be merged into the former. Thus the theoretical framework of this research includes the following points:

- Compactness
- Connectivity of street pattern
- Legibility
- Coherence
- Mixed use
- Walkability
- Pedestrian-friendliness
- Architecture variety
- Symbolic architecture and attractions
- Sustainability
- Community involvement

When the theoretical framework is established and understood, the contributions of the above points to the creating of urban/village extensions with local identity or harmony with local context in practice can be better discussed.

3.3 Typical Practice of New Urbanism

Case study is an essential research method in this study, so it is important to overview the typical practice of new urbanism. There is a growing practice list of new urbanism in the world: currently, America is the leading country of new urbanism. In Europe, there are also many countries with tangible examples of new urbanism in action, such as the UK, Germany, Belgium, Italy, Turkey, the Netherlands, Sweden, Greece, France, and so on. *Seaside*, Florida, is the first new urbanist project in the world which involved Andres Duany and Elizabeth Plater-Zyberk (DPZ, 2013a), and Leon Krier. From the perspective of Europe, *Poundbury* can be considered as the second one but it is the first new urbanist projects collaborated on by Leon Krier, Prince Charles, and Andres Duany. By way of a second example of collaboration in Europe, Belgium provides an opportunity to develop the *Heulebrug* urban extension at Knokke-Heist. This example was designed by Leon Krier, Andres Duany, and Elizabeth Plater-Zyberk (DPZ, 2013a). Therefore, in the following, *Seaside* is briefly discussed as the key influential American practice of new urbanism. *Heulebrug* is the key influential European practice of new urbanism. These two cases are discussed briefly to show some lessons in practice. As the targeted location in this research, more details on the case studies of new urbanism in the United Kingdom are analysed in 3.4.3.

3.3.1 Key influential American practice of new urbanism – Seaside, Florida, America

Seaside is the first new urbanist project in America based on the design principles of new urbanism as a pioneering symbol. It was described by Time Magazine (1990) as 'the most astounding design achievement of its era, which proposes pedestrian-oriented, mixed-use, compact urban growth

(University of Notre Dame, 2013). In terms of the Seaside Research Portal, the plan for the town of Seaside began in 1978 after Robert Davis was gifted an 80 acre plot of land in the Florida Panhandle on the shores of the Gulf of Mexico. Robert and his wife Daryl set out to build a liveable resort town and create a haven for those who missed the communities that were developed when cars were not the dominant form of transportation (The Seaside Research Portal, 2013). As a result, the couple invited Andres Duany and Elizabeth Plater-Zyberk, along with European classicist and town planner Leon Krier, to plan a community grounded in the character and scale of traditional southern towns (Hardie, 2006).

The programme for Seaside proposes traditional American settlement patterns as an alternative to contemporary methods of real estate development and recounts a process of rediscovering the tradition of town building and traditional architecture by involving numerous architects and town architects (Duany Plater-Zyberk & Company, 2013). In order to identify key underpinning features, Davis spent two years driving around Florida, studying towns, architecture and the qualities that gave them their character (Hardie, 2006). The first plan, the result of many drafts, was completed in about 1985 and is the result of the efforts of DPZ, contributions by Leon Krier, and numerous tests and charrettes (The Seaside Research Portal, 2013). The masterplan includes the agreed list of features, such as, white picket fences of varying designs around each home, screened porches with large overhangs, galvanised metal roofs, dirt footpaths, native landscaping, and so on (Hardie, 2006). This town has become the topic of slide lectures in architectural schools and in housing-industry magazines, and is visited by design professionals worldwide. New urbanist principles are reflected in the flagship development of Seaside, Florida, which famously provided the backdrop for the film 'Truman' in the late 1990s.

According to Duany and Plater-Zyberk, the following ideas should be emphasised. First, a community of genuine variety and authentic character could not be generated by a single architect. Building was therefore given



Figure 3-3: Seaside master plan and Central Square. Resource from www.izbal.org/Practice/7903, accessed at 24/09/2013.

over to a multitude of designers. Second, the public buildings have been designed by architects selected for their known sympathy with the regional vernacular, and the private buildings have been commissioned by the individual buyers. Third, a master plan and zoning code regulate the buildings to ensure the creation of an urban environment similar to its traditional town. Based on the well adaptation to the local climate, the code

set parameters for a vocabulary of materials, street widths, distances between structures, placement of houses in relation to the street, street trees and lighting and building forms and types, which were tested in university design studios and proved to be workable (Hardie, 2006).

Today, more than 30 years after its inception, Seaside is widely acclaimed, and almost completely built-out (Duany Plater-Zyberk & Company, 2013). On their practice website Duany and Plater-Zyberk (2013a) also state that there are several underlying principles by exemplifying Seaside: the built environment must be diverse in use and population; it must be scaled for the pedestrian yet capable of accommodating the automobile and mass transit; and it must have a well-defined public realm supported by an architecture that reflects the ecology and culture of the region. Seaside has led to a profusion of communities and neighbourhoods following the principles and it has stimulated the recovery of traditional American urban planning principles and helped revive the notion of public life in community planning (Hardie, 2006).

3.3.2 Key influential European practice of new urbanism – Heulebrug urban extension, Knokke-Heist, Belgium

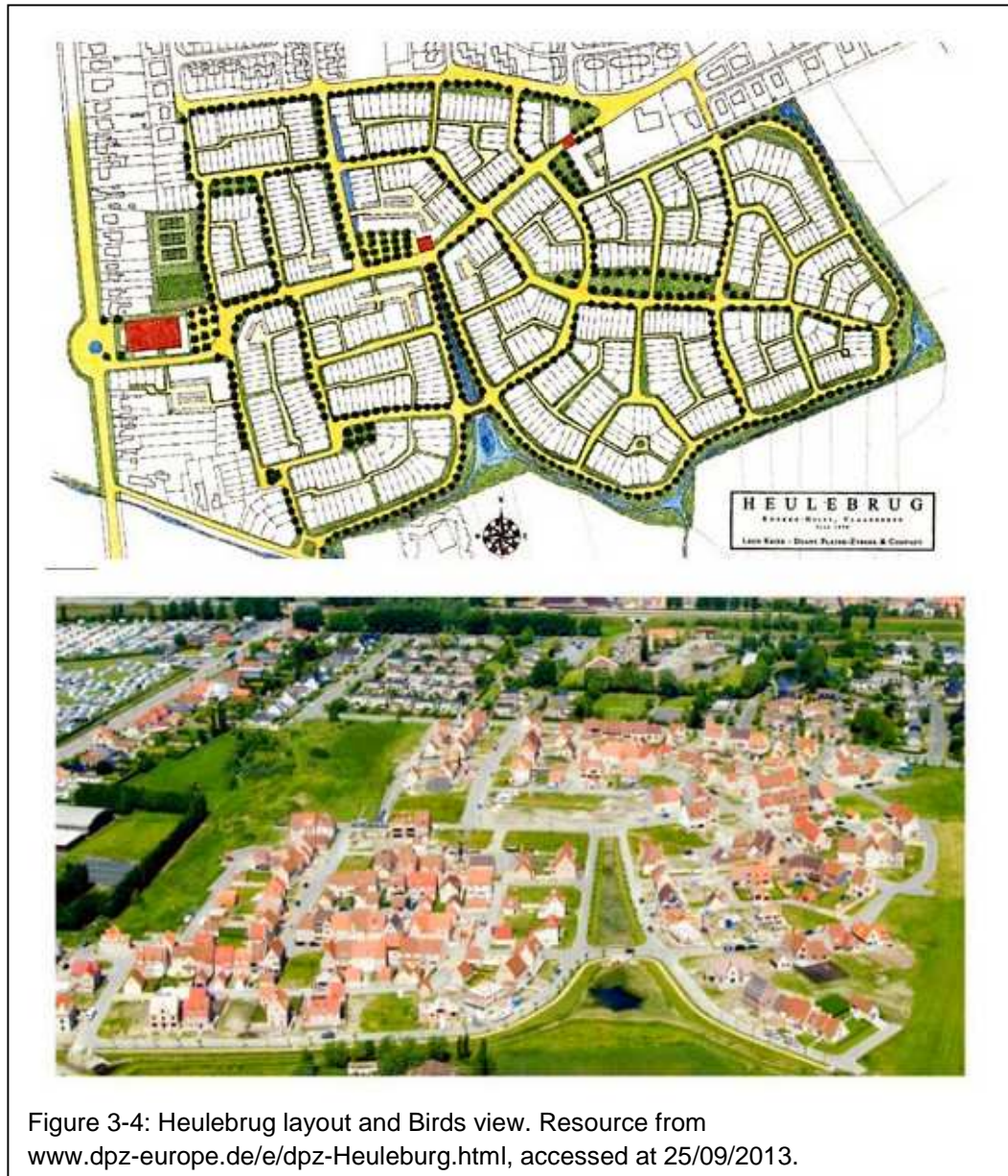
Heulebrug is a development based on the principles of new urbanism. It is the second new urbanist project in Europe, following Poundbury, and was collaborated on by Leon Krier and DPZ. It was awarded 'The best new garden city' by A Vision of Europe Foundation Pour L'Architecture Prix Rotthier pour la Reconstruction de La Ville in 2008.

Heulebrug covers 26-hectare site as a new coherent neighbourhood. At the beginning, it was promoted to be a traditional neighbourhood by the Lord Mayor of Knokke-Heist who prefers traditional architecture for this project. After an intense design charrette that included DPZ, architect and urban planner Leon Krier, local communities, and local groups, Heulebrug would be a traditional neighbourhood (Meghan, 2003). The site is approximately a ten-minute walk from east to west, making it the ideal size for a traditionally-organised neighbourhood that can have a clear centre and edge, support

transit, and contain a range of uses and incomes (DPZ-Europe, 2013). This is a large-scale residential project of more than 600 homes, including affordable and social housing, and is entirely based on the principles of new urbanism (AGSO Knokke-Heist, 2013). Its masterplan commenced in 1998, and the construction started in August 2003. In the light of DPZ Europe, in the masterplan, the features can be described in the following. Heulebrug has a central square located at the convergence of the major north-south and east-west axes. These two axes divide the neighbourhood into four quadrants, each with its own secondary square. The central square acts as the civic and commercial heart of Heulebrug and features a prominent tower as an orienting landmark. While the central square contains a mix of residential and retail uses, the smaller squares in the four quadrants are greener, quieter places designed for the recreational activities of the immediate residents. Almost one-half of the neighbourhood's edge fronts the agricultural greenbelt of Knokke-Heist, which is developed as an esplanade for public strolling.

The design satisfies a need for social housing (approximately 32% of the project), its organisation and composition reflect the traditional urban fabric of Knokke-Heist, and thus it can be understood to be not a housing project but rather a natural extension of the city (DPZ- Europe, 2013). The planning permission of Phase 1 was approved in September 2000. In Phase 1, 12 hectares were constructed, standing for 185 residential units and 26 social purchase or rental units (VK Group, 2013). Phases 2 (9 ha) and 3 (1.5 ha), with welfare houses and the zone called 'The Minstrel' are now almost completed (VK Group, 2013). The concept focuses on mixed use by integrating residential and supported functions, such as, cafes and restaurants, retail, services, offices, government buildings and all necessary facilities and green spaces, and so on.

Essential to the successful development of Heulebrug as a new traditional neighbourhood, the Urban and Architecture Standards control those aspects



of private buildings that affect the quality of the public realm (DPZ-Europe, 2013). The planning regulations were viewed from a sustainability point of view. These regulations place buildings on their lots in configurations that reinforce the edges of the neighbourhood's streets and squares, while keeping garages and parking lots out of public view (DPZ-Europe, 2013). DPZ Europe also describes that the building materials, roof pitches, window geometries, and architectural detail are all controlled in order to create an environment that is internally consistent and also compatible with the traditional neighbourhoods of Knokke-Heist.

3.3.3 Overview of the UK practice of new urbanism

In particular, in the British context, new urbanism represented a challenge to a form of planning in that new urbanism creates the opportunity for communities to take root and develop (Hardy, 2006, p.34). The traditional view in urban issues of Britain is not new due to urban village movement which had the similar perspective before new urbanism was officially recognised.

New urbanism was firstly shaped by Prince Charles in 1989 when he delivered his ideas about creating more traditional and sustainable urban design and architecture in Britain. Meanwhile he promoted the first UK new urbanist project – Poundbury - as the land owner. Following Poundbury, a growing list of new urbanist projects is emerging. In 1990s, a series of social causes led to a desire to create exemplar residential developments in the UK. These include housing demand in southeast England; concern about the quality of speculative house building products; increasing interest in environmental sustainability; influence of new urbanism in particular; and a new government (A+DS¹⁶, 2011). Consequently, this study targets two cases from the UK new urbanist project list. The selection follows a rigid process.

a) UK new urbanist project list

In that this research focuses on the new urbanism, typical new urbanist communities in the UK (as discussed in 2.4.2) are listed in Table 3-7 below. This table demonstrates the detailed information of project partners, scale, project type, start year, and development status.

Table 3-8: The UK new urbanist community list

Project name	Project partners	Scale	Project type	Start year	Development status
1.Richmond Riverside Development,	Quinlan & Francis Terry	15,000 m ²	Urban in-fill, Riverfront development	1984	Completed

¹⁶ A+DS is fully named Architecture and Design Scotland.

Surrey					
2.Poundbury, Dorchester, Dorset	Leon Krier, Duchy of Cornwall, Prince Charles, The Prince's Foundation	155 ha	Urban extension	1987	Phase 1 & Phase 2 completed
3.Little Germany urban village, Bradford	Bradford Council Yorkshire Forward, The Prince's Regeneration Trust	n/a	Urban in-fill, Urban regeneration	1999	Ongoing
4.Upton, Northampton	English Partnerships, The Prince's Foundation Northampton Borough Council, EDAW	44 ha	Urban extension	1999	Site A, B, C, D1, D2, E completed
5.Westoe, South Shields, Tyne and Wear	The Prince's Foundation One Northeast South Tyneside, MBC, George Wimpey	750 homes	Urban in-fill, Brownfield regeneration	1999	Completed
6.Aylesham, Canterbury	Dover District Council, Architects EDAW, The Prince's Foundation	38 ha	Village extension	2003	Ongoing
7.St John's Urban Village, Wolverhampton city centre	Wolverhampton Council, AWM, The Prince's Foundation	n/a	Urban in-fill, urban regeneration	2003	Ongoing
8.Telford & Lawley, Shropshire	HCA, Prince's Foundation, Telford and Wrekin BC	3,300 homes	Urban extension	2003	Advanced design
9.Newquay growth area, Cornwall	Duchy of Cornwall, The Prince's Foundation	100 ha	Urban extension	2004	Work on site in 2012

10.Sherford, Plymouth, Devon	Red Tree LLP, WSP, South Hams District Council, Plymouth City Council, Paul Murray	485 ha	Urban extension	2004	Planning application granted in 2009
11.Crewkerne, Somerset	George Wimpey, The Prince's Foundation	51 ha	Town Extension	2004	Ongoing
12.Crewe, Cheshire	Duchy of Lancaster Crewe Green Parish Council, The Prince's Foundation	15 ha	Town Extension	2007	Being considered
13.Letchworth Garden City, Letchworth	Letchworth City Council, The Prince's Foundation	n/a	Urban in-fill, urban regeneration	2007	Charrette
14.Walthamsto w, London	London Borough of Waltham Forest, Alan Baxter & Associates, Center for Neighbourhood Technology, Seth Harry & Associates	2,483 homes	Urban in-fill, Town centre regeneration	2007	Proposal
15.Western Riverfront proposal, Bath	Bath & North East Somerset Council, Somerset Community Housing Trust, HCA, The Bath Riverside Art Strategy	18 ha	Urban in-fill, Riverfront development	2007	Work on site in 2011
16.Romsey & North 17.Baddesley, Hampshire	The Prince's Foundation, Test Valley Borough Council, Soil Association, Wyatt Homes	70 ha	Urban Extension	2008	Awaiting finalisation

18.Winfrith, Purbeck, Dorset	Zog Brownfield Winfrith, English Partnerships, Purbeck Council, Dorset County Council, The Prince's Foundation	51ha	Urban in-fill, Business Park Development	2008	Being considered
19.Holloway Road, Islington	First Base, Porphyrios Associates, The Prince's Foundation	119 homes	Urban in-fill	2009	Completed
20.South Hams, Devon	The Prince's Foundation, South Hams District Council	6,000 homes	Urban extension, Regional growth	2009	Inspector's report submitted
21.Truro District Centre East, Cornwall	Cornwall Council, The Taste of Cornwall, Duchy of Cornwall	90 homes	Urban in-fill, Mixed use development	2009	Planning application
22.Long Stratton, South Norfolk	South Norfolk District Council	2.5 ha	Town extension	2010	Ongoing
23.South Kings Lynn and West Winch, Norfolk	West Norfolk Borough Council, The Prince's Foundation	n/a	Town extension	2010	Being Considered
24.Welbeck, Nottingham	The Prince's Foundation, Prince's Regeneration Trust	6,000 ha	Estate regeneration	2010	Being considered
25.Cerne Valley, Cerne Abbas	Local Parish Council, The Prince's Foundation	n/a	Urban extension, Regional growth	2011	Proposal

26.Ivybridge, Devon	Ivybridge Town Council	n/a	Urban extension, regional growth	2011	Proposal
27.Tetcott Village, North Devon	The Prince's Foundation, Partners William & Carolyn Molesworth St Aubyn	n/a	Village extension	2011	Proposal
28.Western Harbour, Leith, Edinburgh	Forth Ports, City of Edinburgh Council	17,000 homes	Urban in-fill, Waterfront development	2004	Completed in 2020
29.Ballater, Aberdeenshire	Ballater Community Council, Scotia Homes, Urban Design Associates, The Prince's Foundation	n/a	Village extension	2006	Ongoing
30.Castle Town, Caithness, Scotland	North Highland Initiative, The Highland Council, The Prince's Regeneration Trust, The Prince's Foundation	3.3 ha	Town extension	2007	Planning application of phase 1 was submitted in 2011.
31.Ellon, Aberdeenshire	Scotia Homes, Barratt Homes, Urban Design Associates	16 ha	Town extension	2007	Planning permission of phase 1 granted
32.Knockroon, East Ayrshire, Scotland	East Ayrshire Council, Hope Homes, Zero C	30 ha	Town extension	2008	Proposal
33.Cove, Aberdeen	Urban Design Associates, Scotia Homes, Stewart	737 homes	Town extension, Suburban	2010	Planning permission granted in

	Milne Homes, Michael Gilmour Associates, The Prince's Foundation		retrofit		2011.
34.Coed Darcy, South Wales	The Prince's Foundation, St. Modwen,	520 ha	Urban in-fill, Brownfield development	1999	60 homes completed
35.Neath Port Talbot, Neath, South Wales	The Prince's Foundation, British Petroleum, Zedfactory	2 ha	Village extension	2010	Planning application submitted in 2011.

b) UK urban extension project list

As illustrated in 2.2.2, the first criterion of selection is that the appropriate cases should be an urban/village extension as the research subject defined in 1.1.2 in this study. When the list of Table 3-8 was filtered via this criteria, a new list was created, which is shown in Table 3-8.

Table 3-8: The list of urban/village extensions of the UK new urbanist communities

Project name	Project partners	Scale	Project type	Start year	Status
Poundbury, Dorchester, Dorset	Leon Krier, Duchy of Cornwall, Prince Charles, The Prince's Foundation	155 ha	Urban extension	1987	Phase 1 & Phase 2 completed
Upton, Northampton	English Partnerships, The Prince's Foundation Northampton Borough Council, EDAW	44 ha	Urban extension	1999	Site A, B, C, D1, D2, E completed
Aylesham, Canterbury	Dover District Council, Architects EDAW, The Prince's Foundation	38 ha	Village extension	2003	Ongoing

Telford & Lawley, Shropshire	HCA, Prince's Foundation, Telford and Wrekin BC	3,300 homes	Urban extension	2003	Advanced design
Newquay growth area, Cornwall	Duchy of Cornwall, The Prince's Foundation	100 ha	Urban extension	2004	Work on site in 2012
Sherford, Plymouth, Devon	Red Tree LLP, WSP, South Hams District Council, Plymouth City Council, Paul Murrain	485 ha	Urban extension	2004	Planning application granted in 2009
Crewkerne, Somerset	George Wimpey, The Prince's Foundation	51 ha	Town Extension	2004	Ongoing
Crewe, Cheshire	Duchy of Lancaster Crewe Green Parish Council, The Prince's Foundation	15 ha	Town Extension	2007	Being considered
Romsey & North Baddesley, Hampshire	The Prince's Foundation, Test Valley Borough Council, Soil Association, Wyatt Homes	70 ha	Urban Extension	2008	Awaiting finalisation
South Hams, Devon	The Prince's Foundation, South Hams District Council	6,000 homes	Urban extension, Regional growth	2009	Inspector's report submitted
Long Stratton, South Norfolk	South Norfolk District Council	2.5 ha	Town extension	2010	Ongoing
South Kings Lynn and West Winch, Norfolk	West Norfolk Borough Council, The Prince's Foundation	n/a	Town extension	2010	Being Considered
Cerne Valley, Cerne Abbas	Local Parish Council, The Prince's	n/a	Urban extension,	2011	Proposal

	Foundation		Regional growth		
Ivybridge, Devon	Ivybridge Town Council	n/a	Urban extension, Regional growth	2011	Proposal
Tetcott Village, North Devon	The Prince's Foundation, Partners William & Carolyn Molesworth St Aubyn	n/a	Village extension	2011	Proposal
Ballater, Aberdeenshire	Ballater Community Council, Scotia Homes, Urban Design Associates, The Prince's Foundation	n/a	Village extension	2006	Ongoing
Castle Town, Caithness, Scotland	North Highland Initiative, The Highland Council, The Prince's Regeneration Trust, The Prince's Foundation	3.3 ha	Town extension	2007	Planning application of phase 1 was submitted in 2011.
Ellon, Aberdeenshire	Scotia Homes, Barratt Homes, Urban Design Associates	16 ha	Town extension	2007	Planning permission of phase 1 granted
Knockroon, East Ayrshire, Scotland	East Ayrshire Council, Hope Homes, Zero C	30 ha	Town extension	2008	Proposal
Cove, Aberdeen	Urban Design Associates, Scotia Homes, Stewart Milne Homes, Michael Gilmour Associates, The Prince's	737 homes	Town extension, Suburban retrofit	2010	Planning permission granted in 2011.

	Foundation				
Neath Port Talbot, Neath, South Wales	The Prince's Foundation, British Petroleum, Zedfactory	2 ha	Village extension	2010	Planning application submitted in 2011.

c) Final selection of case studies in this research

The last selection criterion, as discussed in 2.2.2, is that the research requires the UK urban/village extensions which should be completed or close to completion. The demand can help to provide the opportunities for physical fieldwork. This criterion is also supported by Barnett (2013, p.5), who states that new urbanism is the recognition that design and planning concepts cannot be separated from their implementation. According to the information of development status in Table 3-8, two cases conform to this criterion, and are listed in Table 3-9. The first is *Poundbury*, which is over half way to completion. And the second is *Upton*, where six sites have been completed. For all the others, some of them had been granted planning application, some of them submitted planning applications in 2011, and some of them are at the proposal stage, and so on.

Table 3-9: Final list of case studies in this research

Project name	Project partners	Scale	Project type	Start year	Status
Poundbury, Dorchester, Dorset	Leon Krier, Duchy of Cornwall, Prince Charles, The Prince's Foundation	155 ha	Urban extension	1987	Phase 1 & Phase 2 completed
Upton, Northampton	English Partnerships, The Prince's Foundation Northampton Borough Council, EDAW	44 ha	Urban extension	1999	Site A, B, C, D1, D2, E completed

3.4 Summary

Given that new urbanism is mainly developed in America, its fundamental design principles from key American representatives and CNU are listed and summarised. Meanwhile there are also many key players and agencies which are practicing new urbanism. Among them, the UK plays an important role for developing new urbanist communities. Therefore this research selects the UK as a case study resource. In line with the listed and summarised design principles of new urbanism from America, Europe, and the UK, the fundamental theoretical framework including 11 design principles of new urbanism is established. The theoretical framework contains three levels. The highest level is the research aim of creating an urban/village extension. This aim has two meanings with local identity and in harmony with local context, which constructed the middle point. As viewed in Figure 3-2 of Chapter 3, the roles that local identity and in harmony with local context play are the bridge between creating an urban/village extension and 11 design principles of new urbanism. This means that local identity and in harmony with local context can be expressed by the design principles of new urbanism. If the design principles can promote local identity or harmony with local context, they can help to create a harmonious urban extension. They are: compactness, connectivity of street pattern, legibility, coherence, mixed use, walkability, pedestrian friendliness, diversity of architecture, symbolic architecture and attractions, sustainability, and community involvement. Therefore, these 11 key points form the fundamental theoretical framework of design principles of new urbanism in the UK.

Furthermore, in terms of the key American practice – Seaside, Florida, and Key European practice – Heulebrug urban extension, Belgium, it is valuable to know what they have done, and what they have achieved, such as coherence, walkability, connectivity of street pattern, legibility, pedestrian-friendliness, and so on. They provide practical support for this research. With regard to the UK case studies, the last part of this chapter presents an overview of the new urbanist projects in Table 3-7. Finally, following a

rigorous selection process, two cases are confirmed: Poundbury and Upton. Poundbury is discussed in Chapter 4 and Upton is discussed in Chapter 5.

4 Case study one: Poundbury, Dorchester

Chapter 4 presents an analysis of the first case study, Poundbury. Three topics are covered in this chapter. First, the background to Poundbury is discussed; this includes introduction to Poundbury, and its town, Dorchester, Poundbury and its project partners, and Poundbury's masterplan and phases. This is undertaken through a clear and logical narrative on the new development process of Poundbury. The second topic is the design principles of new urbanism at Poundbury followed the interviews with key individuals and documentation analysis. The third topic addressed in this chapter is an analysis of Poundbury based on the defined design principles. This part mainly investigates whether Poundbury can promote local identity or harmony with local context by applying the key points of new urbanism for creating an urban extension.

According to discussions of the above three topics, it can be summarised that Poundbury is able to promote local identity or harmony with local context as an urban extension via the following design principles:

- Compactness
- Connectivity of street pattern
- Legibility
- Coherence
- Mixed use
- Walkability
- Pedestrian-friendliness
- Diversity of architecture
- Symbolic architecture and attractions
- Sustainability
- Community involvement
- Return visit made by designers after built-up

4.1 The Background of Poundbury

Before discussing the details of Poundbury, it is important to establish why Poundbury is appropriate as the first case study. The first was through the movement known as New Urbanism, essentially American in origin but even at that time attracting international interest and application.

The second was through the appointment of the Luxemburg architect and master-planner Leon Krier who although a founding father of New Urbanism, would also bring to the table a distinctive European perspective.

The third was to be found in the further development of the Prince's own ideas, advanced under the broad banner of 'traditional urbanism' (Hardy, 2006, p.30). The Prince explained what he did not like by using certain terms and was strident in showing what he did like, putting an unequivocal emphasis on traditional form and values. To show how to build for the future places that people will enjoy being in, and also places that will add to rather than detract from the beauty of the countryside, the Prince listed 10 essential principles to create a better environment, which are the place, hierarchy, scale, harmony, enclosure, materials, decoration, art, signs and lights, and community (Hardy, 2003; Prince of Wales, 1989).

The fourth stemmed from the fact that the site for the experiment was not located just anywhere, but specifically in Dorset, and from a recognition that it would not succeed without use of the region's vernacular architecture (albeit with the addition of some universal classical features). These different sources were brought together and emerged in a remarkable way to shape the new settlement and to create something unique (Hardy, 2006, p.31).

Poundbury, like landmark new communities in the past, is intended both as a worthwhile place in itself and also as something similar elsewhere (Hardy, 2003, p.155). The details are discussed in the following.

4.1.1 Poundbury and Dorchester

4.1.1.1 Why is Poundbury selected for expansion of Dorchester?

Dorchester is the county town of Dorset and the seat of local government. It is built on the River Frome. The town was founded by the Romans who named it Durnovaria after their victory over the Iron Age hill fort of Maiden Castle close by (Dorset OPC, 2012). It has developed as a market town and administrative centre which provides shopping and services for a large rural area (WDDC, 2006). The population was 2,402 in 1801, and grew to 9,000 by the beginning of the twentieth century when Dorchester remained a small country town but today it is growing very rapidly (Lambert, 2012) although it remains one of the smallest county towns in England (Duchy of Cornwall, 2011). The current population of Dorchester is over 16,000 according to UK National Statistics. Today there is an IT industry, and light industry, and tourism is also an important industry in Dorchester.

The changes of boundary in Figure 4-1 demonstrate the growth of Dorchester from medieval to the present day. The town's continual growth extended on to the land owned by the Duchy of Cornwall. A major consultation exercise in 1987 examined options for the future expansion of Dorchester in order to meet its long-term development needs (WDDC, 2006, p.6). During the consultation, the local planning authority, West Dorset District Council, selected Duchy land to the west of Dorchester at Poundbury for future expansion. The Duchy of Cornwall has owned land here since 1342. As the Duke of

Cornwall, Charles, the Prince of Wales who re-examined many of the precepts of urban and rural planning, took this opportunity to work with the

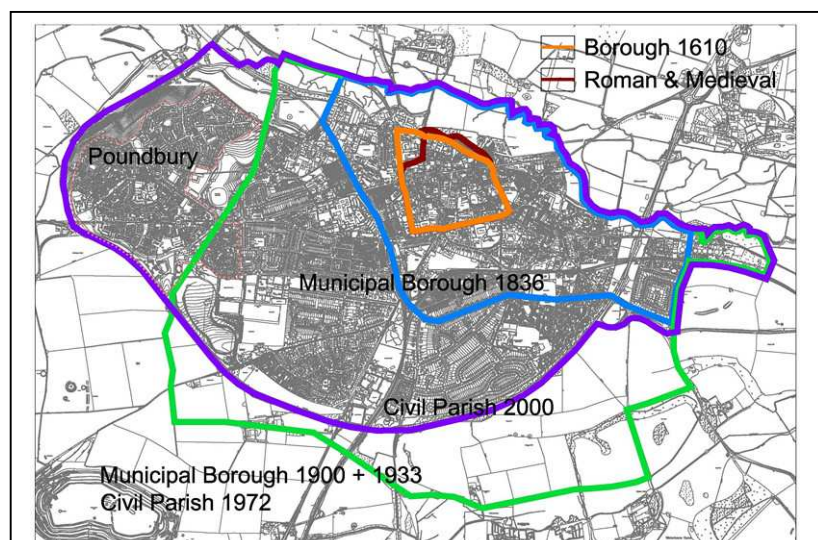


Figure 4-1: Dorchester boundary growth, drawn by the author. Original resource is the map displayed in Dorset County Museum

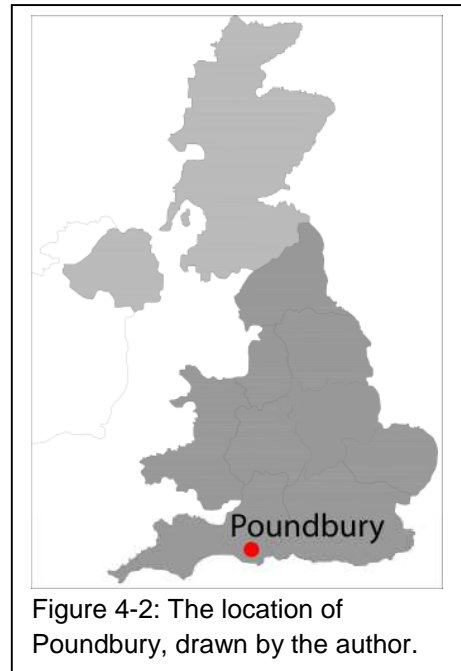
council (Duchy of Cornwall, 2011).

Hardy (2006, p.46) describes some of the process followed by West Dorset District Council and the Duchy. Discussions between the two stakeholders were advanced and there was initial agreement on the principle of town expansion, where both parties came to the table with their own starting positions. The demands of the District Council were straightforward: new housing was the priority and some of it would have to be accessible to lower-

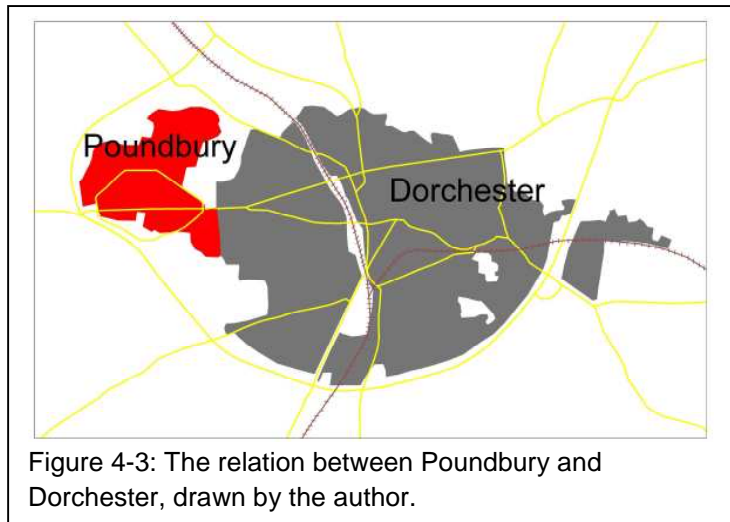
income groups. In turn, the Duchy, echoing his own priorities, asserted that new development should form an urban rather than suburban extension to Dorchester, a place where people could work as well as live. This idea of the Prince faced a potential minefield from planning officials, present regulations, and public consultation. For the Duchy, there was an alternative way. Poundbury could have been developed without recourse to the authorities, under ancient rights of Crown exemption. However, the Duchy was keen to create similar exemption elsewhere in the UK, and even further afield. The route followed to undertake the development was far from easy with many protracted negotiations until, it attracted the help of MPs of the time from the House of Commons Committee on the Environment, Transport and the regions. With the positive support from the MPs, the Prince was free to single out his favourite planner to create a greater mix of housing, shops, businesses and leisure facilities at Poundbury.

4.1.1.2 An introduction to Poundbury

Poundbury takes its name from an adjacent Iron Age hill fort and one of the original farms upon which the new development was to be built (Neal, 2003, p.240). The site location is in the south central part of England as shown in Figure 4-2. Poundbury is adjacent to the west of Dorchester and clarified as



the urban extension to Dorchester in Dorset (see Figure 4-3). It began in the late 1980s as the UK's best-known sample of new urbanist community, which is usually considered with a traditional face. It was initiated by Charles,



Prince of Wales, and designed by the 'godfather' of new urbanism, Leon Krier. Andrews Duany, a key founding board member of CNU, was called upon to prepare the urban building code for Poundbury to ensure the faithful realisation of the master-plan. The Prince of Wales, with the Duchy, determined that Poundbury would become an urban rather than a suburban extension to Dorchester, respecting the traditions of the past while also looking forward to the requirements of the twenty first century (Duchy of Cornwall, 2011).

To a great degree, Poundbury is the direct outcome of the support from Prince Charles. He devised and presented a television programme originally broadcast in October 1988. It was the first time that most people heard about the project of Poundbury. After broadcast, Charles demonstrated his populism by citing the evidence of correspondence, of which over 90 per cent was in support of his ideas (Hardy, 2006, p.28). In late 1988, the Prince appointed Leon Krier as his master-planner, a role that Krier is still performing for over 20 years, to prepare the overall development concept for 400 acres, within the line of the Dorchester Bypass – 250 acres of mixed-use buildings and 150 acres of landscaping. Within a year, Leon Krier had produced his first version of Poundbury's masterplan and presented it to a five-day charette located in a marquee at Poundbury Farm in 1989 (Hardy, 2006, p.48). The Prince shown his great support for Krier; however, there were some concerns about the masterplan. For example, the proposal was

expensive and it should respect the local context; it should be suited to its Dorset surroundings. However, Krier took the view that if they, the community, did not like what he was up to he would go home and the community could have the usual stuff (Martin and Miller, 2003). Nonetheless, there was more criticism from a range of other professionals. Leading architects like Max Hutchinson and architectural critic Martin Pawley claimed that Poundbury was a totally misguided concept that would never materialise, and, even if some of it did, it would represent a long outmoded style of architecture (Hardy, 2006, p.50). Faced with so much criticism, Krier responded positively, considering this the best course of action. He conceded that local context of Dorchester - and even Dorset - should be respected much more for the masterplan of Poundbury by modifying his plans to embrace more closely the characteristics of building in the Dorset vernacular, making good use of local materials, and with the promise of commissioning local architects familiar with these conditions (Hardy, 2006). Therefore, the important comments of public and professionals were reflected in the scheme before planning consent was sought (Duchy of Cornwall, 2006). The planning consent for the first homes was obtained in May 1993 following extensive public consultation (Duchy of Cornwall, 2011). The construction started in October 1993 and completed around 2000. In 2003, Poundbury Village Stores and the Poet Laureate pub were opened at Pummery Square. The second phase of the development was granted outline planning permission in October 1999 and the first successful bidder, CG Fry & Son commenced work on-site in June 2000 (Duchy of Cornwall, 2011). The focus of phase 2 would be Queen Mother Square which was completed in 2011 with retailers and café bars; Waitrose opened in November 2011 and Poundbury Barns Garden Centre was opened in 2006, followed by other facilities such as the Garden Centre Café Bar and the Gallery Café, among others. This phase is currently completed. Outline planning permission for Phases 3 and 4 was granted by WDDC in September 2011 (Duchy of Cornwall, 2011). Poundbury is planned to grow to 2,200 homes and be fully completed by 2025 when it will add approximately 5,000 to the population of Dorchester with 2,000 jobs in the

factories, offices and general facilities across the site (Duchy of Cornwall, 2013). As at the beginning of 2012, there were about 2,000 people living in Poundbury and 1,500 employed in business (Conibear, 2013).

Poundbury now seems destined to become an important and attractive spot for local residents and visitors according to information from the Prince's Foundation (2013). More than half of the local residents claim that it has a good quality of environment and is authentically historical (Oxford Brookes University, 2006).

4.1.1.3 Development timeline of Poundbury

The development timeline of Poundbury can be clearly delivered by the following table.

Table 4-1: Development timeline of Poundbury

Timeline	Events
1987	The west of Dorchester at Poundbury, owned by the Duchy of Cornwall, was selected as an urban extension of Dorchester.
Late 1988	Leon Krier was appointed as the masterplanner.
1989	The masterplan was exhibited.
May 1993	The first planning consent was obtained.
Oct. 1993	The construction at Phase 1 was started.
Oct. 1999	The outline planning permission was granted for Phase 2.
2000	The first phase was completed.
Jun. 2000	The work on site was commenced for Phase 2.
2003	Poundbury Village Stores and the Poet Laureate Pub were opened at Pummery Square.

2006	Poundbury Barns Garden Centre was opened.
2011	The outline planning permission was granted for Phases 3 and 4.
Nov. 2011	Waitrose was opened at Queen Mother Square.
Jul. 2012	Poundbury electric buses were officially launched.
2013	Phase 2 was completed.
2025	Poundbury will be probably completed.

Poundbury is becoming more mature as time passes. More and more shops, café bars, small restaurants and offices were opened under the encouragement policy of exemption from the first year's rent at Poundbury. The Poundbury electric buses route was officially launched by Prince Charles in July 2012 connecting Dorchester town centre with Poundbury through Bridport Road and Queen Mother Square. The buses provide a service every 30 minutes from Monday to Friday. Residents are optimistic about the ongoing improvements to Poundbury.

4.1.2 Poundbury and its project partner

The design of Poundbury is strictly traditional by using local architectural idioms and materials familiar to Dorchester. Emphasis is placed on the quality of design and materials, and attention to details. The architecture at Poundbury uses a variety of Dorset materials such as stone, slate and render. The architecture draws on the rich heritage of Dorset and, in particular, on the attractive streets of Dorchester itself. This is all due to the fact that three key individuals play more important roles through the development process of Poundbury. They are Prince Charles, Leon Krier, and Andrews Duany who are the key players of new urbanism. During the 1980s and through to the early 1990s, it is clear that there was salient intercontinental interaction on new urbanism between key players, notably Krier, Duany, and HRH the Prince of Wales (Thompson-Fawcett, 2003, p.258). The Prince of Wales with the Duchy of Cornwall, is the landowner of Poundbury, and he hopes his 10

design principles can be demonstrated via this project. Krier is well known in Europe and America as a champion of traditional urban design; he is also well known as the masterplanner of the new development of Poundbury. For the project of Poundbury, his challenge was to create an autonomous new extension to the old town, Dorchester, within the context of traditional Dorset architecture. Andrews Duany who is one of key founders of Congress for New Urbanism, as the design code writer, was called in to create a bridge between the plan and design



Figure 4-4: Master plan. Resource from www.duchyofcornwall.org, accessed at 10/11/2011.



Figure 4-5: Detailed master plan. Resource from www.poundburyforum.proboards.com, accessed at 10/11/2011.

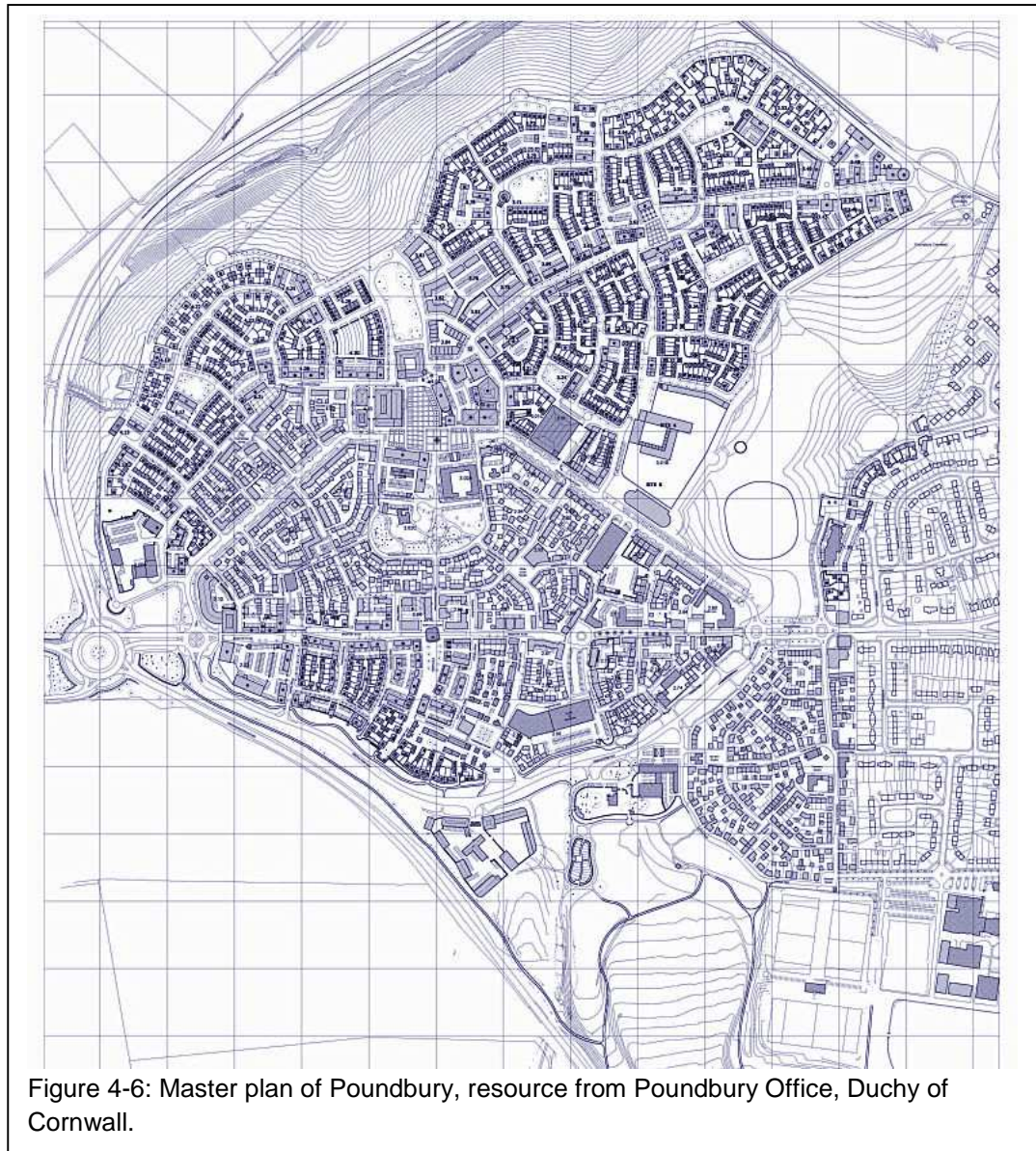
guidance for builders. In Association with Krier and others, Duany produced the Poundbury Code, which he termed a Regulating Plan and which was intended to assume legal standing that would supersede other regulations in force (Hardy, 2006, p.55). This Code helped to put useful general principles into practice although it was replaced by the Poundbury Building Code later (Hardy, 2006).

4.1.3 Masterplan and phases

4.1.3.1 Masterplan

The masterplan divides Poundbury into four distinctive quarters as illustrated in Figure 4-4. The detailed masterplan is shown in Figure 4-5 and Figure 4-6. For development purposes, each quarter corresponds to a phase.

4.1.3.2 Phases



Poundbury is being phased according to market demand and is expected to increase the population of Dorchester by about one-quarter – which is approximately 5,000 people – by 2025. There are four phases of development at Poundbury (see Figure 4-7). The framework for development allows each section to establish Poundbury of its own, while still connected to the town as a whole (ODPM, 1998, p.25).

a) Phase 1

Phase 1 is 18.5 acres which is equal to 7.5 hectares, as shown in Figure 4-8. There are 196 houses, 56 flats and pockets of open space in Phase 1 including 55 social housing units (accounting for 20 per cent of the residential

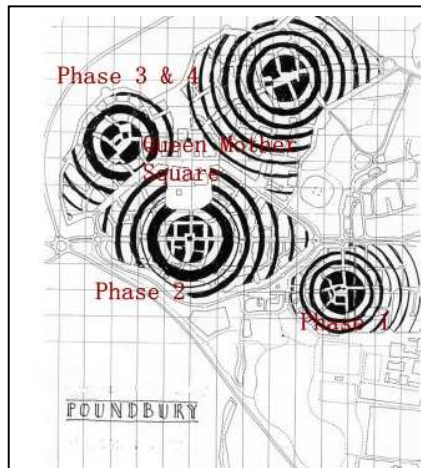


Figure 4-7: Phasing. Resource from WDDC, 2006.



Figure 4-8: Aerial view of Phase 1. Resource from WDDC, 2006.

buildings) rented through the Guinness Trust (Duchy of Cornwall, 2011). It also includes a market hall, a pub, a café bar and shops at the Pummery Square, leisure facilities, some offices, and light industrial workshops (Hardy, 2003, P156). Peterjohn Smyth, Ken Morgan and Graham Saunders are the key architects through the whole process of Phase 1. Several local architects were also involved at certain stages. CG Fry & Son, Morrish Builders, and some other local builders were selected to start work in the autumn of 1993 for Phase 1.

b) Phase 2

Phase 2 is a 43.3-acre site which is around 17.5 hectares, as shown in Figure 4-9. It includes approximately 980 dwellings and 6 hectares of employment space over a 10-year development period, providing 35 per cent affordable housing (Duchy of Cornwall, 2011). Phase 2 now offers many other uses, such as café bars, shops, offices, restaurants, dental care, industries, and so on. The development is being built by CG Fry and Morrish Builders. Many architects are involved, like Ben Pentreath, Peterjohn Smyth, and Ken Morgan.

c) Phase 3 and 4

Phase 3 and 4 account for the remainder of Poundbury – 36.7 hectares (Measured by author via AutoCad), which cover the northern and western



Figure 4-9: Aerial view of phase 1 and 2. Resource from www.duchyofcornwall.org,

perimeters, including 1,200 dwellings, a replacement for Damers First School, and alterations to the Monkey Jump Roundabout (Duchy of Cornwall, 2011).

4.2 Applied Design Principles of New Urbanism at Poundbury

It is a fact that it is impossible to secure an interview with the Prince of Wales or Leon Krier; the author has already made every effort. This is necessary to try in order to confirm design principles of new urbanism at Poundbury. Therefore, the ideas of the following key persons are discussed based on the interviews with them. They are Simon Cornibear, Ian Madgwick, Peterjohn Smyth, Andrew Cameron, and Ben Bolgar who used to work or collaborate with Prince Charles and Leon Krier.

As discussed in Chapter 3, the theoretical framework of design principles of new urbanism is established based on the analysis in the UK context. They embrace: compactness, connectivity of street pattern, legibility, coherence, mixed use, walkability, pedestrian-friendliness, diversity of architecture, symbolic architecture and attractions, sustainability and community

involvement. Consequently, the main ideas from five key participants are analysed according to the 11 points of new urbanism stated above.

4.2.1 Perspectives on Poundbury from key individuals

As discussed in 2.4.2, each interviewee would be representative on behalf of their teams, such as land owner, lead architect, council, engineer consultant, the Prince's Foundation, and so on. It is better to have one interviewee from every team. Based on the availability of candidates, five persons agreed to be interviewed about Poundbury. These are Simon Cornibear from the Duchy of Cornwall representing *land owners*, Peterjohn Smyth representing *lead architects*, Ian Madgwick representing *Dorset County Council*, Andrew Cameron as an *engineer consultant* from Alan Baxter Associates, and Ben Bolgar from the *Prince's Foundation*. Details on the question design for interviewees were discussed in 2.2 and 2.4.2. The interview data are coded according to the theoretical framework of design principles of new urbanism, discussed in Chapter 3 (see Figure 3-2).

a) Simon Cornibear

Mr. Cornibear is now Estate Director of the Duchy of Cornwall and has taken the responsibilities for the Poundbury development. He has worked with Leon Krier on Poundbury for over 15 years and knows the development process very well. As a result, he is one of the right persons to interview about this research.

- **Legibility**

Legibility is an important aspiration for new development. You need to know where the shops are. The public building should be more important and taller. The scale of buildings is different according to the importance in the whole community.

- **Compactness**

Poundbury is more urban, not suburban.

- **Connectivity of street pattern**

The streets are connective and permeable. Their scale is applied according to human scale.

- In harmony with local context

The architecture style and scale are more like Dorchester. It is important to promote local identity in Poundbury which is an urban extension of Dorchester.

- Mixed use and walkability

The development should be mixed use. People can meet their daily needs by walking rather than using cars.

- Symbolic architecture and attractions

The traditions should be respected in the local areas when an urban extension is built.

- Sustainability

Cornibear argues that they are building at Poundbury for ever. The buildings can be there for a long time. People should build things that will last. This is one of the ways to understand sustainability.

- Community involvement

Cornibear said that we did public consultation when we started Poundbury and we had five years consultation with local community putting ideas on the wall.

- Return visit by Leon Krier and Prince Charles

Leon Krier is still involved in Poundbury, and Prince Charles is undoubtedly involved to a great extent. They both visit Poundbury several times every year. The visits are necessary to help the improvement of Poundbury.

b) Ian Madgwick

Mr. Madgwick is a Highway Engineer of Dorset County Council. He is involved in the development of Poundbury as one of the key highway engineers. Madgwick (2013) argues several design principles that Leon Krier probably applied according to his understanding during the development process of Poundbury.

- Street pattern

Madgwick thinks that Leon Krier really gets away from the cul-de-sac (meaning suburban dead-end street pattern).

- Coherence

Krier was trying to go back in time by using streets properly based on the traditional form to seek coherence between a new development and an old town that has existed for centuries. This meant that Poundbury maintained respect for the old fabric of Dorchester, by enhancing and improving it with the new build.

- Local identity

It is important to incorporate local identity in any new design. To do this, people can draw experiences from other examples by retaining and promoting local identity.

- Legibility

Madgwick argues that an urban/village extension should be fairly legible if hierarchy is right.

- Symbolic architecture and attractions

Leon Krier draws inspiration from the vernacular by studying old Dorchester over a long period of time. Madgwick views that this approach is a principle new urbanism. He suggested that one could draw experience from the design of some of the old building of Dorchester.

- Community involvement

It is always good to get involved in community involvement.

c) Peterjohn Smyth

Mr. Smyth is one of the key architects for the Poundbury development, particularly for Phase 1 as the leading architect. In terms of the ideas of Smyth, Krier knows that he has to make Poundbury belong to England, then to Dorset, and then to Dorchester.

- Local identity/in harmony with local context

Poundbury should belong to the place, Dorchester, Dorset. Local builders know their place very well; therefore it is important that the buildings should be built by local firms. For example, many of Poundbury's buildings were built by CG Fry which is a local firm from Dorset. They bring a strong local identity to the build as they have been based in Dorset for a long time. It would be easy for the observer to identify whether or not an urban extension is in harmony with the local context.

- Compactness

The houses and streets are very integrated. Pedestrians belong to the street just like residents belong to the house. When people walk on the street, they are almost at the front of the door of a house.

- Legibility

Legibility is an easily understood pattern. People know where they are if it is legible.

- Symbolic architecture and attractions

Smyth said that the master planner and the architect have to capture the character with very strict rules if something is to reflect the local vernacular. For instance, Krier said all the windows must be painted wood, not plastic. Every house must have a chimney - a brick chimney. External walls must be either local brick or local stone or render. As an architect, Smyth states that he actually drove around Dorset itself and around villages, taking photographs and making notes in order to find some unique and symbolic architecture, decoration and art. All these would make Poundbury 'feel' like its surroundings.

- Pedestrian-friendliness

Pedestrian-friendliness means that people will be safe on the streets. This is important for Poundbury, as presumed by Leon Krier.

- Diversity of architecture

All the buildings are slightly different from each other but there is still a unified feeling about them. Like people, they should have common features but every single person is different from the others.

- Community involvement

Poundbury had local consultation when it started.

d) Andrew Cameron

Mr. Cameron played an important role not only in the new development of Poundbury but also in Upton when he worked for Alan Baxter and Associates which was the lead consultant of highway engineering on transport and engineering of both projects. He is also one of the key members of the

project team producing the 'Manual for Streets'. For Poundbury, Cameron collaborated with Krier in designing the street system.

- Connectivity of street pattern

Cameron (2013) thinks the movement issue is key at Poundbury. Good movement system requires that streets should be connective and permeable by connecting main street to main street, or main street to minor street, or other alternatives. This can encourage walking and cycling and reduce car use. Therefore, connectivity is the key for street pattern. Connectivity of street pattern was applied by historic towns for centuries. It lowers speed and there are no accidents. People love it.

- Local identity

New developments should have local identity by using local materials, street pattern, and local architecture style.

- Legibility

Variety of street pattern is helpful to legibility which can help people find the way.

- Coherence

The urban form of a new urbanist development should be congruent with historic towns, plans, parks, and settlements.

- Mixed use

The idea of tackling mixed use achieves positive results. People travel less and get the benefits from it.

- Walkability

Poundbury is designed in terms of the concept of 'walkable neighbourhood' as a typical design principle of new urbanism.

- Pedestrian-friendliness

This is important to encourage people to select walking over using their cars.

- Diversity of architecture

Diversity of architecture is reflected in the architecture styles if a new development wants to draw inspirations from Dorchester, which makes diverse architecture appropriate. Poundbury possibly mixes a bit too many different architecture styles.

- Community involvement

Community involvement is important because you can know a lot from local people who know the local context very well. Community involvement took place after establishment of the master plan at Poundbury.

- Return visit after built-up

It is important to visit Poundbury to see how it is now, and identify any areas of improvement for the future.

e) Ben Bolgar

Mr. Bolgar is senior design director at the Prince's Foundation. He is responsible for leading new building and community regeneration projects. Currently his teaching embraces quite a lot about the new development of Poundbury, particularly new urbanism.

- In harmony with local context

The buildings are designed with local character because of the local architecture language of reference. Local materials are used, such as local stones, local bricks, and local tiles. This is quite successful. Poundbury tends to fit in with the local area to demonstrate that 'here is Dorchester' not anywhere else.

- Legibility

Poundbury is easily readable because the hierarchy of the streets and architecture can help people orient themselves. According to Bolgar, hierarchy of streets is successful at Poundbury, the hierarchy of architecture should be reinforced.

- Mixed use

Bolgar said this is really one of the most important design principles of new urbanism used in the development of Poundbury. The movement networks go through the middle of the walkable neighbourhoods. The land use planning can be predicted. People are able to predict where the mixed use should be, where the shops are, and even where the factories are.

- Walkability

Bolgar states that another main structural principle of new urbanism applied to Poundbury is the creation of a walkable neighbourhood.

- Diversity of architecture

The styles of architecture can reflect the perceptions of styles in the area that people have.

- Symbolic architecture and attractions

Bolgar believes that Krier might want to see more localised building traditions.

- Sustainability

Bolgar views that sustainability of a new development is more about a mix of uses and walkability.

- Community involvement

According to Bolgar, the benefit working with local people is that they know their place very well - often much better than the architects or the master planner. The professionals quickly become well informed about local issues when work with local people. Leon Krier and Prince Charles would also like to see a revival of traditional building methods (Bolgar, 2013).

4.2.2 The applied design principles of new urbanism at Poundbury

a) Holistic study of design principles applied on Poundbury

This is discussed according to two aspects. One is the theoretical framework established in Chapter 3. The other is from the perspective of the key participants who were involved in the development of Poundbury. The key participants were asked questions based on the theoretical framework during interviews. Their understandings aim to confirm and supplement the applied design principles on Poundbury. The following table shows the details of summarised analysis of design principles from the above five key participants.

Table 4-2: The design principles of new urbanism from the perspectives of key participants (Marked by Ø)

Design principles of New urbanism	Cornibear	Madgwick	Smyth	Cameron	Bolgar	Total
a) Local identity		Ø	Ø	Ø		3

b) In harmony with local context	Ø		Ø	Ø	Ø	5
c) Legibility	Ø	Ø	Ø	Ø	Ø	5
d) Compactness	Ø		Ø			2
e) Connectivity of street pattern	Ø	Ø		Ø		3
f) Coherence		Ø		Ø		2
g) Mixed use	Ø			Ø	Ø	3
h) Walkability	Ø			Ø	Ø	3
i) Pedestrian-friendliness			Ø	Ø		2
j) Diversity of architecture			Ø	Ø	Ø	3
k) Symbolic architecture and attractions	Ø	Ø	Ø		Ø	4
l) Sustainability	Ø				Ø	2
m) Community involvement	Ø	Ø	Ø	Ø	Ø	5
n) Return visit made by designers after built-up	Ø			Ø		2

b) The applied design principles of new urbanism at Poundbury

In Table 4-2, the points from legibility to community involvement match with the theoretical framework. For the design principle of local identity and in harmony with the local context, they both clearly are the higher-level points (see Figure 3-2 of Chapter 3), reflected by analysing the other points. This means this point is discussed individually; however, the last one, 'return visit made by designers after built-up' is supplemented by two interviewees - Simon Cornibear and Andrew Cameron. They differ slightly in this; Cornibear refers to 'return visit', while Cameron refers to 'return visit after built-up'. They both suggest that this is also important and helpful for building an urban/village extension. As a result, it is added to the design principles of new urbanism as a supplementary point for the case of Poundbury. When the pilot questionnaires were done, this was included as return visit after built-up. However, many people did not understand this term, so following discussion with people who completed the pilot questionnaires, this point was finally modified as 'return visit by designers after built-up'.

To summarise, Poundbury is analysed by the following design principles of new urbanism.

- Compactness
- Connectivity of street pattern
- Legibility
- Coherence
- Mixed use
- Walkability
- Pedestrian-friendliness
- Diversity of architecture
- Symbolic architecture and attractions
- Sustainability
- Community involvement
- Return visit made by designers after built-up

4.3 The Analysis of Poundbury based on the Applied Design

Principles of New Urbanism

For further analysis, the key question needs to be studied: that 'Can design principles promote local identity or harmony with local context at Poundbury?'

4.3.1 Can design principles of new urbanism promote local identity or harmony with local context at Poundbury?

a) Compactness

Compactness is largely about residential density as a design principle of new urbanism in this research. At Poundbury, Phase 1 has been completed with residential density of 34DPH. Phase 2 has almost been completed with residential density of 56DPH which is higher than the national target range of between 30 and 50DPH. Phases 3 and 4 commenced in 2013 with planned residential density of 33DPH. The detailed figures are shown in Table 4-3.

Table 4-3: Residential density of Poundbury, calculated by author

	Number of dwellings	Site area (ha)	Residential density (DPH)	National target range (30-50 DPH)	National very low density (≤ 20 DPH)	National very high density (≥ 60 DPH)
Phase 1	252	7.5	34	30-50	—	—
Phase 2	980	17.5	56	>50	—	—
Phases 3 and 4	1,200	36.7	33	30-50	—	—
Total	2,432	61.7	39	30-50	—	—

For Dorchester, the core areas are Historic Dorchester and Fordington according to the documentation analysis and field investigation. Table 4-4 demonstrates the detailed information of representative residential areas.

The residential density in 1 and 2 is high. However, Fordington has much lower residential density than 1 and 2.

Table 4-4: Residential density of Dorchester Historic and Fordington. The locations of 1, 2, 3 are shown in Figure 4-10. Resource is from author

Dorchester Fordington	Number of Dwellings	Site area (ha)	Residential Density (DPH)	National very High density (≥60DPH)
Residential area 1	118	1.5	79	—
Residential area 2	150	2.8	54	—
Residential area 3: Fordington	1,147	38.1	30	—

Comparing the figures of Table 4-3 and 4-4, residential density of Phase 2 at Poundbury, 56 DPH, is a bit higher than that of residential area 2 of Historic Dorchester, 54 DPH. Residential density of Phase 1, 3 and 4 at Poundbury is similar to that of Fordington, residential area 3. The average residential density at Poundbury, 39 DPH, is a bit higher than Fordington but lower than 1 and 2. Therefore, Phase 2 is compact as similar as Historic Dorchester but more compact than Fordington. However, Phase 1, 3 and 4 are less compact than Historic Dorchester but more compact than Fordington. Based on the national target range of 30 to 50 DPH, Phase 1, 3 and 4 conform to this range.

To summarise, compactness can help promote local identity or harmony with local context at Poundbury.

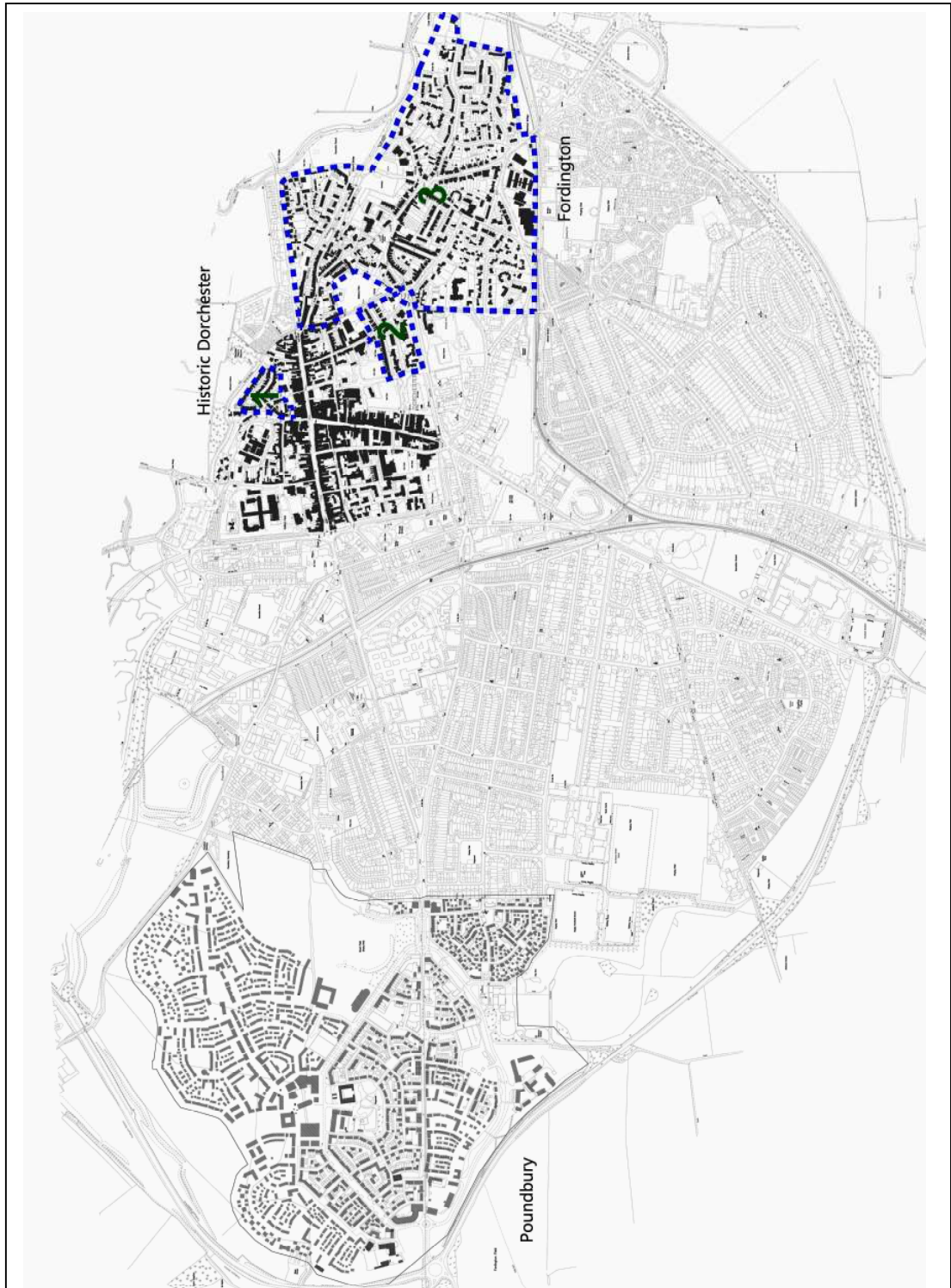


Figure 4-10: The comparative urban form between Poundbury and Historic Dorchester and Fordington, resource from author.

b) Connectivity of street pattern

According to the definition of this point in Chapter 3, connectivity of street pattern is not only focusing on the connectivity within Poundbury but also that of between Poundbury and Dorchester.

First of all, it is about the connectivity within Poundbury. When Poundbury was first developed, there were many gaps between the master plan and the highway guidance of Dorchester. The design concepts were not able to be realised in terms of the guidance at that point in time. With the help of highway engineers from the Highways Agency, like Alan Baxter and Associates, the roads are subsidiary to the buildings. The roads are public space, then buildings were set up and cars were allowed to cross them slowly by learning from historic towns (Cornibear, 2013).

The street pattern of Poundbury is an organic street pattern like that of Dorchester, such as orthogonal streets, long streets, footpaths, and so on (Cameron, 2013). They link with each other like an interconnected network of streets, considering the market square as centre stage, such as Pummery Square in Phase 1, and Butter Cross Square and Queen Mother Square in Phase 2. This reflects the characteristics of historic settlement structure with the market square taking centre stage. The accessibility is achieved via the hierarchy network of Primary Route, District Distributor, Local Distributor, Feeder Road, and Local Access Street, and Mews at Poundbury. The connectivity within Poundbury is mainly discussed from the perspective of the hierarchy network.

To start with, the movement of traffic on Primary Routes, A35 and A37 shown in Figure 4-11, is very fast as they have regional importance. The A35 trunk road bypasses Dorchester to the south and forms part of the east-west route of Poundbury (WDDC, 2006, p.35). The A37 to Yeovil joining with A35 at the Monkey's Jump roundabout bypasses the west of Poundbury. These two routes focus on the accessibility pattern of distribution around Poundbury periphery rather than passing through the Poundbury development. Thus the residential areas are designed to be a peaceful precinct.

The District Distributor is named Middle Farm Way at a width of seven to eight metres. The cycling and walking routes are segregated from the main vehicle roads. Middle Farm Way replaces the Bridport Road that formerly functioned as district distributor (WDDC, 2006, p.37).

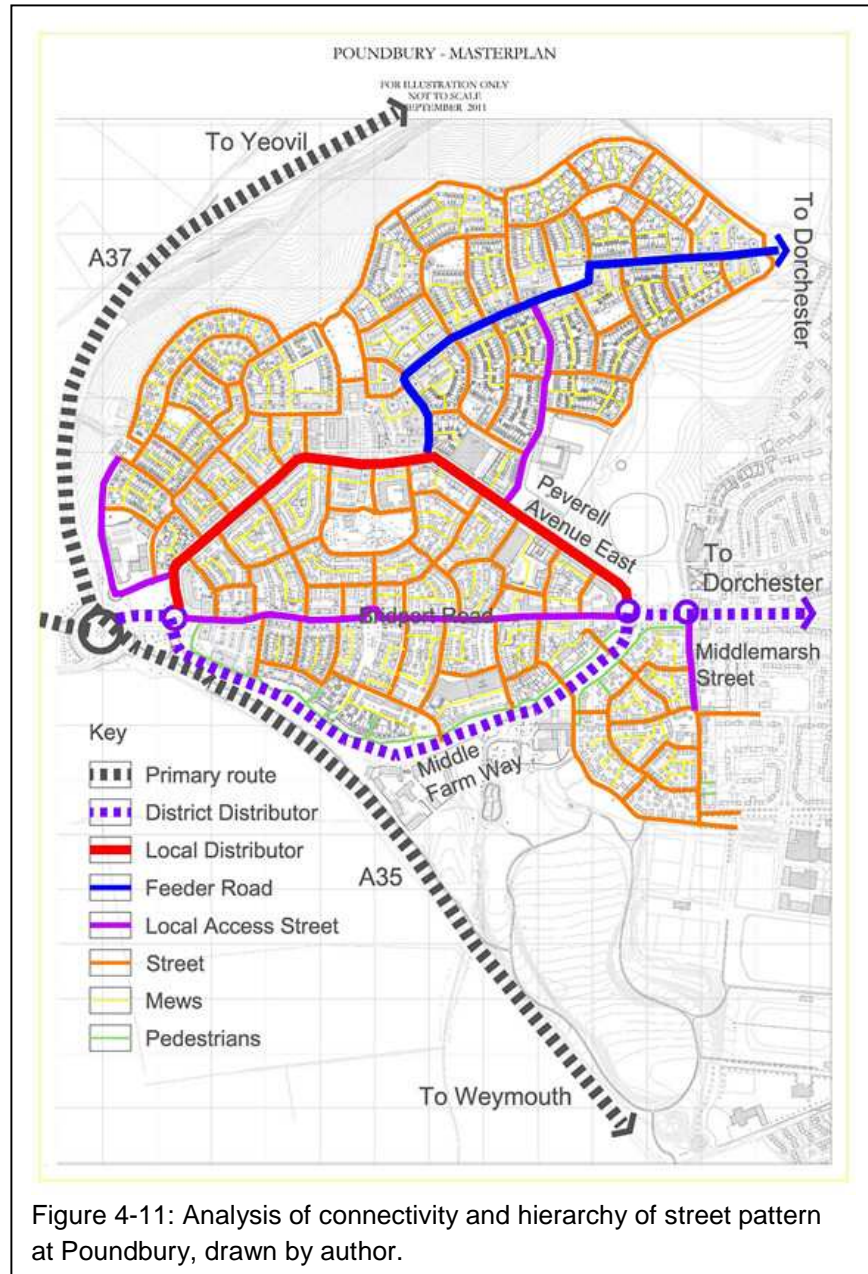


Figure 4-11: Analysis of connectivity and hierarchy of street pattern at Poundbury, drawn by author.

Therefore, the traffic volume on the Bridport Road at Phase 2 is reduced to become a local access street. This can avoid as much disturbance as possible from a large traffic volume to Phase 2 of Poundbury.

Local distributors are designed in order to offer easy access to the District Centre, Queen Mother Square. They are Peverell Avenue East and Peverell Avenue West. They form the link between the district distributor, Queen Mother Square and nearby residential streets by serving in excess of 300 dwellings (WDDC, 2006, p.37).

Furthermore, Phase 3 and 4 need a route, clarified as feeder road, to provide the main access for very large commercial vehicles to access service shops, offices and light industry, particularly important where it joins the central square, Queen Mother Square (WDDC, 2006, p.38).

In addition, local access streets are less wide than the feeder road. Their main function is providing accessibility to local neighbourhood centres, such as Pummery Square, Victor Jackson Square, Butter Cross Square, and so on. There are normally footways on both sides of local access streets.

Moreover, the streets play an important role at Poundbury by providing access to residential properties and safe pedestrian routes. These streets are designed to offer natural traffic calming, rather than having to introduce additional features like speed humps. For example, Limiting forward visibility helps keep speeds down in Poundbury (DT and CLG, 2007, p.94). Some engineers may caution against this, describing it as dangerous. However, Cameron (2013) contends that it does work as it forces people to slow down and drive with greater care. The street pattern of Poundbury is human-friendly rather than car-friendly, and no accidents have been reported since the first family moved into Poundbury around 1998.

The final aspect of connective street pattern at Poundbury is mews. As discussed in Chapter 3, pedestrians, cycles and cars can share the surface of mews, which are widely used at Poundbury. This is one of the typical street patterns of a traditional town like Dorchester.

The connectivity of streets within Poundbury can form a permeable network of streets by linking both ends rather than being cul-de-sacs. This maximises pedestrian and cycle accessibility at Poundbury, helping pedestrians to move about anywhere within Poundbury on a short and direct route (WDDC, 2006, p.39). This is also a typical feature of Dorchester town centre as a traditional town.

Second, the connectivity of street pattern between Poundbury and Dorchester town centre is necessary to discuss. The street line at Poundbury

is not too regular or contoured (Cornibear, 2013). Leon Krier created a distinctive housing pattern specifically for Poundbury, as shown in left bottom of Figure 4-12. This is based on the conventional road space and housing pattern. The closed road, usually following uniform streets (see left top of Figure 4-12), is the classic geometric pattern of road dominated layout, with the road designed first and then the houses arranged around them. It could be anywhere in the UK regardless of local



context. They limit ease of movement, particularly for pedestrians and cyclists (ODPM, 1998, p.23). As a result, Leon Krier required a different approach for Poundbury to arrange the buildings by considering place, community and local context. It is paramount to create a good relationship of buildings in the making of places, as the pattern of Dorchester shows. These are used as typical street pattern of Historic Dorchester and Fordington. This really is called a place. Based on Figure 4-10, the street pattern of Poundbury is in harmony with that of Historic Dorchester and Fordington.

Overall, connectivity of street pattern can promote local identity for Poundbury. It is in harmony with local context.

c) Legibility

As discussed in Chapter 3, legibility can be analysed in terms of the concept of Kevin Lynch. There are five main aspects to understand legibility for Poundbury, shown in Figure 4-13. They are paths, edges, districts, nodes, and landmarks. These five aspects are able to help people read Poundbury easily and sense a link between Poundbury and Dorchester.

The first aspect is *paths*. Particular streets can become important features of paths, such as Middle Farm Way, Peverell Avenue West and Peverell Avenue East, and Bridport road, and so on. They play important roles to connect Poundbury and Dorchester. Several landmarks are along these streets, including Fleur de lis, Armitage House, and Queen Mother Square. For the

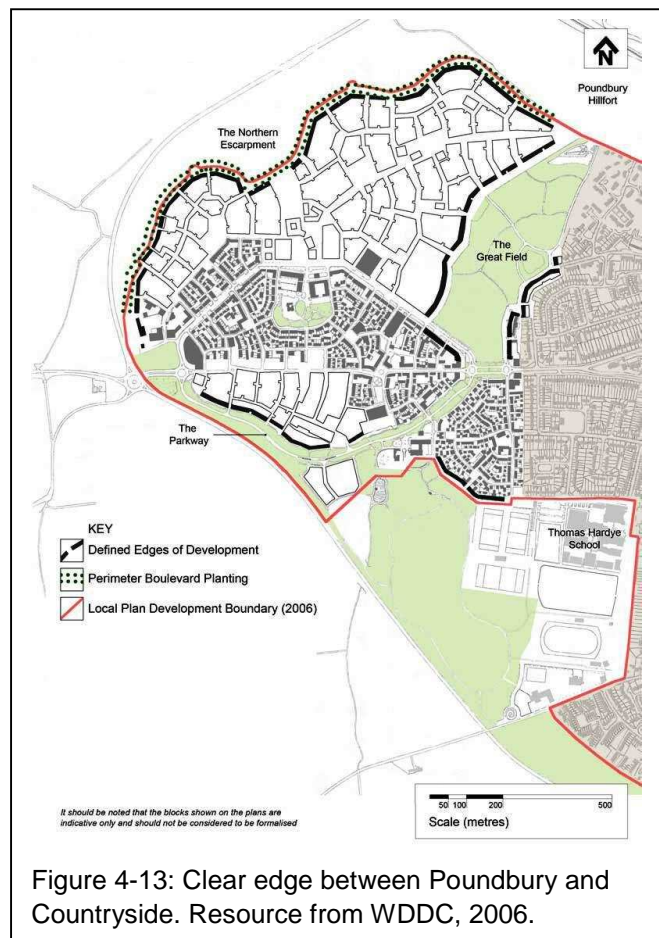


Figure 4-13: Clear edge between Poundbury and Countryside. Resource from WDDC, 2006.

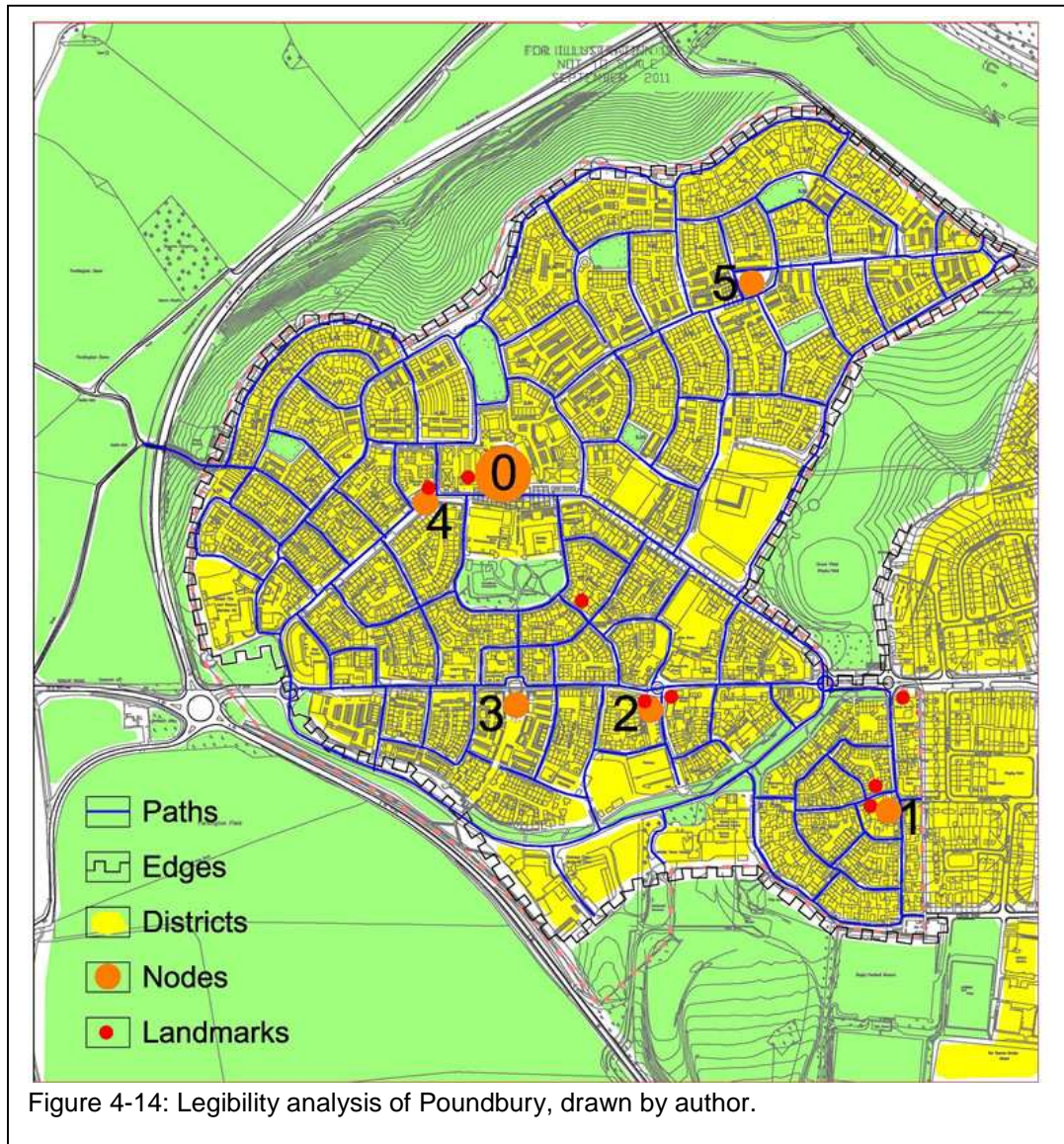
ordinary streets and mews, their pattern is more like Dorchester as demonstrated in Figure 4-12. The functions and width of streets vary in terms of hierarchy; even the heights of buildings differ from street to street. The paths of Poundbury have rich identity and characters, so people can remember them easily, and know where they are going.

The second aspect is about Poundbury *edge* analysis. Figure 4-13 demonstrates that there is a clear edge along the outward-facing boundary at

Poundbury. The black bold-dashed line shows the physical edge built by Perimeter Boulevard Planting. When people walk by the outer road, it is easy to decipher the boundary of human built and open space without any transition, which clearly means there is no suburban transect between Poundbury built area and surrounding green field. This shows an effective land use and distinctiveness of urban transect (see Figure 5-5), like that of old town, Dorchester. The circular oriel windows are designed along the bottom edge of Phase 1 in order to create a good view.

Third, *districts* of Poundbury are shown in yellow colour in Figure 4-14. They have different scale and intensity to accommodate the landform of the development, relative prominence of different locations, and links with Dorchester. The districts would normally be more intensely developed closer to the centre of the site and there would be more vernacular at the point at which they meet Dorchester (WDDC, 2006, p.28). For example, Queen Mother Square (No. 0 in Figure 4-14) is the only central square at Poundbury. Within this very central zone, the buildings are predominantly three to four storeys in height which is higher than the other areas. For the adjacent buildings whether locate at the Phase 1 or at the existing community, they have the same scale and intensity as the pre-existing community of Dorchester. All these are also the key points for the traditional urbanism.

The fourth point is nodes. There are six nodes in Poundbury. One of them is the district centre, Queen Mother Square (No. 0). Five of them are neighbourhood centres which are Pummery Square (No. 1), Victor Jackson Square (No. 2), Butter Cross Square (No. 3), north part of Lydgate Street (No. 4), and No. 5 at Phase 4. These six nodes with different characters can help people mark the transition between major structural units. For instance, the node of junction can strongly demonstrate that here is an important connected point of Poundbury and Dorchester. Moreover, Queen Mother Square is bigger than the other nodes. There are more commercial uses enclosed within this square, such as Poundbury Garden Centre, Gallery,



Café, Waitrose, and so on. People are able to sense that this square is the most important one in Poundbury by comparing it with others.

Fifth, there are five landmarks, three representative attractions in Phase 1 and Phase 2 at Poundbury, as shown in Figure 4-14. Landmarks are Brownsword Hall, Fleur de lis, Armitage House, No 26 of Peverell Avenue West, and the major building of Queen Mother Square. Three attractions embrace the belfry gate on Sheepdown Road, and the water features on Longmoor Street, water fountain situated on Victor Jackson Square. The form of the Belfry gate can be found on the High Street of Dorchester. There are also other four small typical elements which are discussed in details in the section on symbolic architecture and attractions. They are more easily

identifiable with a clear form and their details are discussed in the point of 'Symbolic architecture and attractions'. These landmarks clearly help Poundbury to be legible and also establish the special link between Poundbury and Dorchester.

To summarise, Poundbury is legible with identifiable links with Dorchester. This means the design principle of legibility contributes to making Poundbury an urban extension of Dorchester.

d) Coherence

The definition of coherence of this study is clarified in Chapter 3. It means the structure of an urban extension is integrated whether within its own or with the existing vernacular structure of the old town or village.

First is about the coherence of Poundbury within its own. The masterplan demonstrates the visual coherence, shown in Figure 4-4, 4-5 and 4-6. For Phase 1 at Poundbury, it is coherent with the existing community of Dorchester. The new and old back gardens are joined altogether between buildings along Middlemarsh Street and Blagdon Road. Besides, people living in the existing community always use shops and restaurant located in Pummer Square of Phase 1, such as Poundbury Village Stores, the Poet Laureate restaurant (traditional home cooked food), the Arthair Gallery and cafebar. However, a visual gap is easily sensed between Phase 1 and Phase 2 due to the Middle Farm Way as a district distributor. In order to protect the community from the disturbance of heavy traffic flow, the width of grass space is much wider at both sides on the Middle Farm Way than any other streets. On the other hand, the scale is different between Phase 1 and Phase 2. Phase 1 is smaller with 250 dwellings of two or three storeys on a 7.5-hectare site. Phase 2 is much bigger with 980 dwellings of three, four, or even five storeys on a 17.5-hectare site. In fact, the houses of two phases have similar scale. But there are many bigger residential buildings with flats and bigger public buildings at Phase 2. The Care Home standing at the Poundbury Roundabout, for instance, has a bigger scale than the opposite buildings at Phase 1. Thus it is necessary to have a physical transition

between Phase 1 and Phase 2 as a buffering area. However, people feel easy crossing Middle Farm Way via the pedestrian crossings. Therefore, actually, there are no obstructions of movements between Phase 1 and Phase 2. Furthermore, Phase 3 and 4 commenced construction in 2013 and are due for completion around 2025, so the analysis on Phase 3 and 4 is mainly based on the masterplan. There is clear coherence among Phase 2, Phase 3 and 4 as they are jointed organically by the district centre, Queen Mother Square. The services provided at Queen Mother Square attract lots of people including residents of Poundbury and Dorchester even farther. People go to Waitrose, Poundbury Garden Centre and others. The three phases can be accessed easily via Peverell Avenue East and Peverell Avenue West as a local distributor. For the buildings along Peverell Avenue East and West and the buildings around Queen Mother Square, they can not be identified which is Phase 2 and which is not according to their scales. Overall, the whole of Poundbury is coherent within its own.

Second is about the coherence between Poundbury and Dorchester. In terms of road network in Figure 4-15, it is proved that there is an organic coherence between Poundbury and Dorchester via the following two aspects. To begin with, it is about the harmonious street pattern as discussed in the connectivity of street pattern. On the other hand, it is about the road structure coherence. Phase 1 links closely with the adjacent pre-existing community via Middlemarsh Street, Balgdon Road and Cambridge Road. Phase 1 and Phase 2 connect to Dorchester conveniently by means of Bridport Road and Cambridge Road. Phase 3 and 4 is related to Dorchester through Poundbury Road. Of course, the central part of Phase 3 and 4 also have numerous points of contact with Dorchester town centre via Poundbury Road. From the big map showing the road network, all the parts of Poundbury and Dorchester are covered in a pocket. This pocket is mainly formed by the A35 while the small part to the east of the town is edged by the A37. Therefore, Poundbury is coherent with Dorchester from the perspective of road structure.

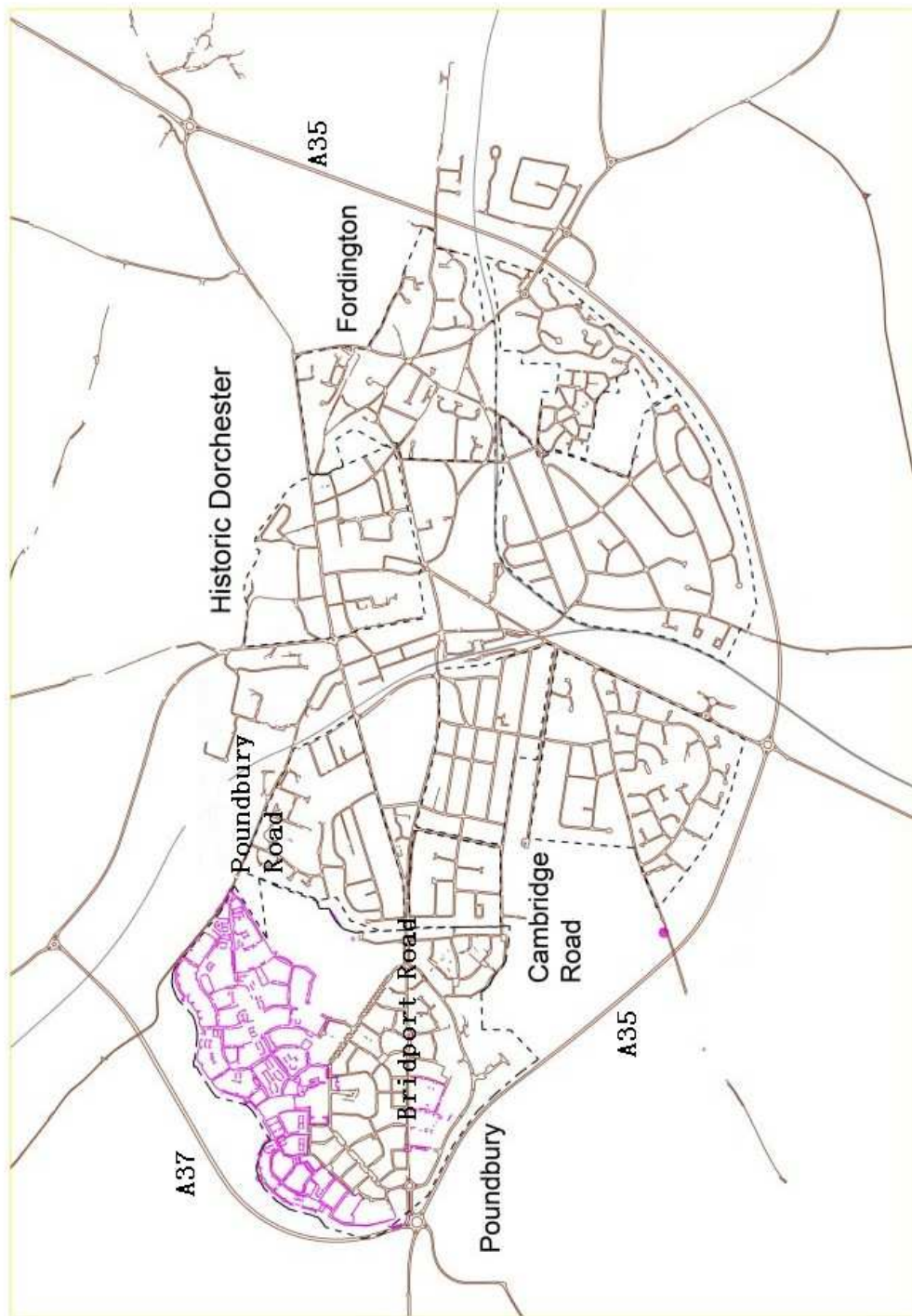


Figure 4-15: Road network of Poundbury and Dorchester, drawn by author.

In view of the above discussions, Poundbury can be considered as unified both socially and physically within its own, and it is coherent with Dorchester with a harmonious structure.

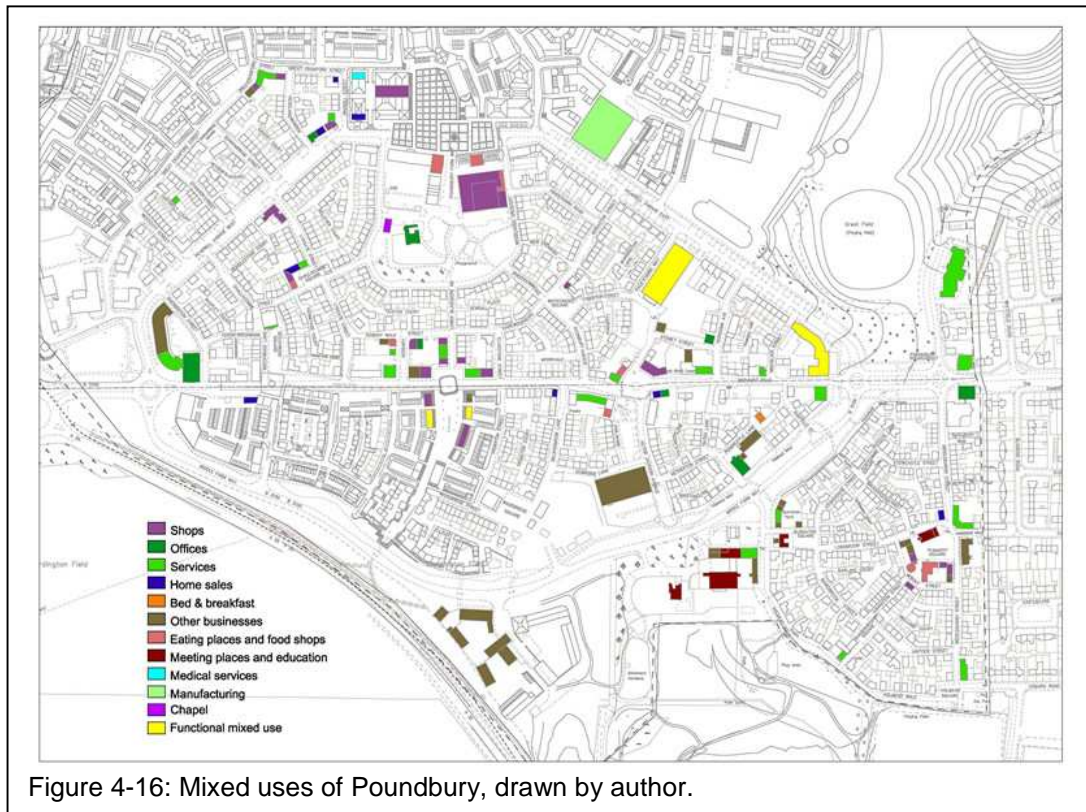


Figure 4-16: Mixed uses of Poundbury, drawn by author.

e) Mixed use

This point comprises three dimensions which are functional mix, social mix and ecological mix as discussed in Chapter 3. Functional mix and social mix are analysed at Poundbury, while Ecological mix is embraced in the point of sustainability.

The first point refers to functional mix at Poundbury. Functional mixed use can be divided into two aspects which are different uses of different buildings, and different uses in the same building. For the different uses of different buildings, this involves an analysis of one of the most important aspects of urban structure. Different parts of towns or villages play different roles, such as roads, market square, shops, offices, industries, church, greens, and so on. Cameron (2013) views mixed use as Poundbury's greatest achievement. The services of Poundbury include factories (Image 1 of Figure 4-17: Dorset Cereals on Peverell Avenue East; and Image 3 of Figure 4-17: House of Dorchester as a chocolate factory on Victor Jackson Avenue), residential, shops, offices, leisure facilities, businesses, and other community facilities, which is a much better result than the case of many other urban extensions,

which only provide the basic network of residents, school and shops (Cameron, 2013). By referring to the mixed use map of Poundbury, as shown in Figure 4-16, the town has incorporated many roles into its features; these include meeting places and education, eating places and food shops, shops, home sales, services, offices, medicals, manufacturing and other business, bed and breakfast, and chapel. Many of them are distributed almost evenly over six nodes which are Pummery Square, Victor Jackson Square, Butter Cross Square, the north part of Lydgate Street, Queen Mother Square, and No. 5 shown in Figure 4-14. All these make it convenient for the residents, particularly for their daily needs. The observers may frequently see pedestrians who stop to pick up some eggs or milk, or other basics, on their way home. Even many of those who live outside Poundbury go shopping in Waitrose which is located at Queen Mother Square. Furthermore, the different uses in the same building are also important at Poundbury. There are some buildings which are mixed use, as shown in Image 2 of Figure 4-17. This building is a mix of offices and housing, which may achieve vitality and variety equally by a mix of uses within it. When offices are empty at weekends, people in houses can look after them. During the week when people leave their homes to go to work, officers can help watch the houses



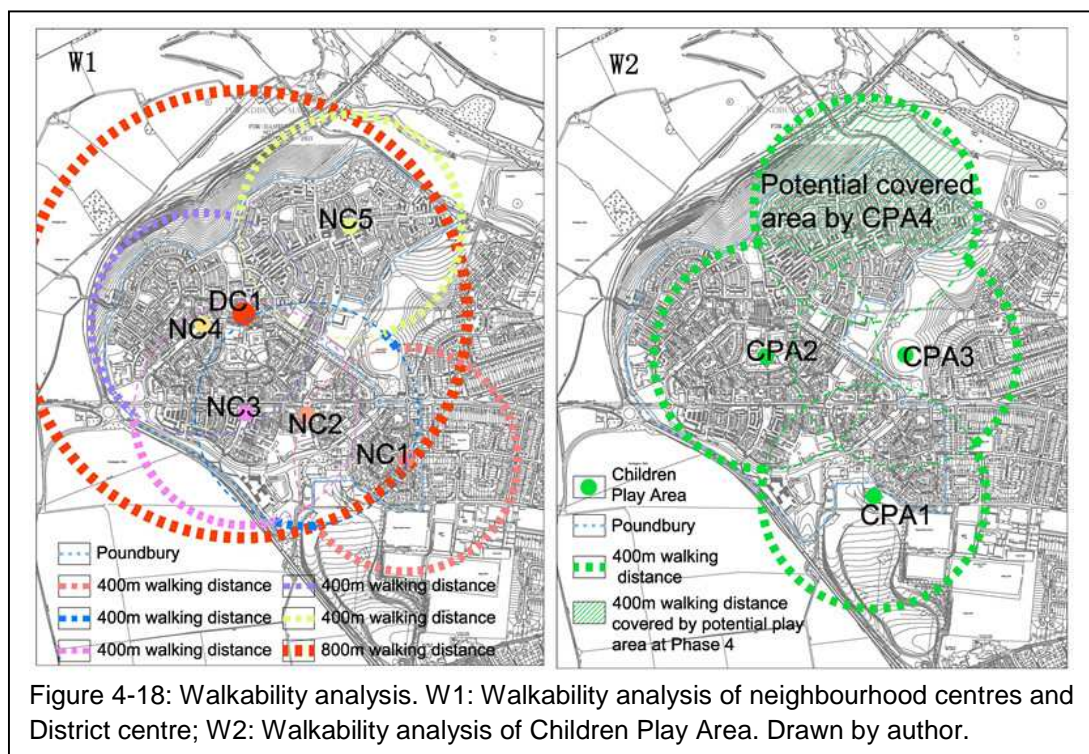
and friendly community, it is important to pursue tenure blind when the affordable housing are designed. This means that affordable housing needs to be provided in a mix of house sizes and styles, and have the same appearance as market housing. Different types of property are mixed. Social and private buildings are intermingled. For example, the social housing located at Challacombe Street (Image 4 of Figure 4-17) at Phase 2, Mansell Square and Stowcastle Street (Image 5 of Figure 4-17), and Bridport Road at Phase 1 (Image 6 of Figure 4-17) are now used by appropriate residents as affordable houses and are difficult to distinguish from the private housing. Consequently, Poundbury does play an active role in supporting social mix.

Thus, functional mix and social mix are important features in a traditional town or village, and Poundbury does clearly retain these features. Therefore, the design principle of mixed use can help to promote local identity or harmony with local context at Poundbury.

f) Walkability

There is no train station or tram service in Poundbury, so the discussion mainly focuses on the walkability around the community uses including a walkability analysis of the Neighbourhood Centre (NC) and the District Centre (DC), and the walkability of Children Play Area. First is about the walkability analysis of neighbourhood centres and the district centre. People living in Poundbury demand convenience, like food, services and local facilities. In order to ensure all these are as approachable as possible for the local population, and to control the site and distribution of shops and services, a hierarchy of centres has been identified in the development, which varies in importance, with concentration of commercial and community uses. In view of the above analysis of legibility and mixed use of Poundbury, there are six important nodes that provide for the daily needs of the residents; NC1-Poundbury Square, NC2-Victor Jackson Square, NC3-Butter Cross Square, NC4-north part of Lydgate Street, NC5 at Phase 4, and DC1-Queen Mother Square. Queen Mother Square is a district centre, the biggest circle shown in red colour in Figure 4-18. The others are neighbourhood centres.

Neighbourhood centres are designed to cover the area within 400 metres walking distance including the pink circle (on the centre of NC1-Pummary Square), the blue circle (on the centre of NC2-Victor Jackson Square), the magenta circle (on the centre of NC3-Butter Cross Square), the purple circle (on the centre of NC4-north part of Lydgate Street), and the yellow circle (on the centre of NC5). The district centre of Queen Mother Square should cover the area within 800 metres walking distance. According to the analysis in the above discussion, everything is included in the circles with radii of 400 metres and 800 metres respectively from the centre of the six nodes, as



shown in Figure 4-18. These squares are connected by logical, legible and hierarchical streets. For example, Pummary Square forms the 'hub' of Phase 1. The permeable network of roads, alley ways and parking courtyards of Phase 1 fans out from the hub to give immediacy to the facilities within the square. All this means that the walking distance is in the optimal range that people are willing to walk. The second point is about the walkability analysis of Children's Play Area. There are three constructed Children's Play Areas (CPA1, CPA2 and CPA3) at Poundbury now. They are covered by Phase 1, Phase 2, Phase 3, and bottom part of Phase 4 within 400 metres walking

distance. Phase 4 requires a new Children's Play Area when the phase is underway. The hatch of green diagonal lines demonstrates the potential covered area within 400 metres walking distance, as shown in W2 of Figure 4-18. So CPA1, CPA2, CPA3 and potential CPA4 can cater for the whole area of Poundbury within 400 metres walking distance for children playing when Poundbury completes.

While doing fieldwork in Poundbury, many residents stated that they moved here because they can walk to shops, hospital, restaurants, facilities and other services without using cars. As a result, this can be summarised by borrowing the words of Cameron. Poundbury is effective as a walkable neighbourhood and realises that the places of new urbanism should be designed as walkable neighbourhoods (Cameron, 2013). This idea brings into correspondence with that of Dorchester. So walkability can promote local identity or harmony with local context for Poundbury.

g) Pedestrian-friendliness

For the analysis of this point, five questions need to answer the case as it relates to Poundbury¹⁷. Do you have space to walk? Is it easy to cross streets? Is it simple to follow safety signs and rules? Do drivers comport well? Is your walk pleasant and enjoyable?

First question: *Do you have space to walk?* In fact, there are footways at both sides of the District Distributor (the Middle Farm Way), the Local Distributor (Peverell Avenue West and Peverell Avenue East), and the Local Access Street (Bridport Road and Middlemarsh Street). For streets, there is usually a footway on one side. For mews, people share the surface with cars. As a result, people do have space to walk in Poundbury.

Second question: *Is it easy to cross streets?* This question can be discussed in the light of the order of street hierarchy from district distributor to mews. The District Distributor (Middle Farm Way) is located between Phase 1 and

¹⁷ These five questions are summarised based on some literature reviews about the transit-oriented development, walkability and pedestrian-friendliness.

Phase 2 and is wide with a heavy volume of traffic. Physically, it creates a gap between the two phases. However, several pedestrian crossings have been installed to make it easier for pedestrians to cross. On the Local Distributor (Peverell Avenue West and Peverell Avenue East), there are not many cars passing through with low speed. Therefore, they appear easy to cross although there are no pedestrian crossings. The Local Access Distributor comprising Bridport Road and Middlemarsh Street is more human scale, so these roads appear easy to cross. The feeder road is under the process of construction, which means it is too early to judge if it is easy to cross. The streets in between the plots are very easy to cross. For the mews of every courtyard, people can walk freely. Thus for the second question 'Is it easy to cross streets at Poundbury?' - the answer is clearly yes.

Third question, *Is it simple to follow safety signs and rules at Poundbury?* There has been a big improvement in safety signs and rules at Poundbury. In 2011, the feedback from field work and documents analysis showed that it was not simple to follow safety signs and rules particularly for visitors. The issue on improving safety signs and rules was put forward at the Poundbury Residential Committee meeting in 2012. As at April 2013, the situation was much better. Many people feel the safety signs and rules are simple to follow, although some still say otherwise. Nonetheless, it is highly likely that this will be improved in the near future.

Question four: *Do drivers comport well?* Cameron (2013) argues that the drivers comport very well at Poundbury. On each occasion that he had to show people around Poundbury, they walked in the middle of streets. Although cars did use the street, they did not pose a danger to the pedestrians, nor did the drivers sound their horns. Instead, the drivers would slow down and give priority to the pedestrians in the road. Cornibear (2013) states the same idea as Cameron. Furthermore, traffic engineers from Dorset County Council help to supervise vehicle speed on certain streets in Poundbury in order to create a friendlier environment for pedestrians. As a result, drivers try to make Poundbury a more civilised place.

Question five: *Is your walk pleasant and enjoyable?* For the main streets like the District Distributor, Local Distributor and Local Access road, there is enough walking space on both sides. People can walk safely and happily although there is traffic noise. For the streets and mews, the scale is human. Drivers comport in a friendly way. People feel comfortable to walk.

Overall, Poundbury is pedestrian friendly, the same as the traditional settlements of Dorchester form. Pedestrian-friendliness can help people shape and explore the characters of their own community by promoting local identity or harmony with local context.

h) Diversity of architecture

There are four phases at Poundbury. The residential density of Phase 3 and 4 is almost same as that of Phase 1. Site preparation on Phase 3 commenced in 2013. Consequently, the discussion on diversity of architecture focuses on Phase 1 and Phase 2 in this research.

The architecture of Phase 1 is familiar, being firmly rooted within the National Target Range (30-50DPH) of residential density. It is dominated by buildings of two storeys in height with the occasional three-storey building (WDDC, 2006, p.26).

The discussion first turns to the main buildings of Pummery Square, shown on the first line of Figure 4-19. The most outstanding building should be Brownsword Hall as the community hall on Pummery Square. It was designed by John Simpson via the idiom of a traditional European market hall. The undercroft was used to host a farmers' market on two Saturdays every month before 8th April, 2013. It is now for craft market. The upper chamber is effectively Poundbury's community hall. Brownsword Hall has a steep roof which usually gives people a feeling of domestic Gothic style. The columns on the ground floor are of the Tuscan order - out of proportion with plain shafts, simple capitals, bases, and friezes - and influenced by the Romans. The segmental arches can be perceived with key stones. They are very familiar in Roman because they often exist in Roman buildings. The vault space enclosed by the Tuscan columns on the ground floor is a bit dark with

a hint of the Romanesque. The corner building of Pummery Square is interesting to read. It has a simplified renaissance facade with pediment which has a curved elevation decorated by balls. Two Egyptian-style columns stand in front of the door. The style of these columns can be found in the Karnak Temple in Egypt. About the other buildings fronting Pummery Square, most of them are Victorian buildings with commercial use on the ground floor and residential use above.

Second, most residential buildings are traditional houses common to the UK as shown on the second line of Figure 4-19. Some are rendered, and some have their original materials exposed, like brick or stone.

Finally, it is necessary to analyse the building named Fleur de lis due to its important location as a gate from Dorchester to Poundbury. The last two photos of the first line in Figure 4-19 demonstrate what the building looks like. The building has strong mediaeval style with one square tower and one circular tower. The area behind the two towers has a dark roof in a style of gambrel which is a French style. As a result, there are mixed architecture styles at Phase 1, such as Roman style, renaissance, Victorian, and mediaeval style for the public buildings. For the residential buildings, they are mostly in harmony with the architecture of Dorchester.

Phase 2 is more intense and more compact. The average residential density is over that of the National Target Range. Phase 2 is mixed predominantly by three-storey buildings or four-storey structures and has a wider range of architectural styles than Phase 1.

The first part of the discussion concerns the main building of Queen Mother Square as shown on the third line of Figure 4-19. This square forms the only district centre of Poundbury, commemorating Her Majesty Queen Elizabeth, the Queen Mother, and incorporating a statue of her by sculptor Philip Jackson. Larger shops and commercial uses are allowed to surround this central square and attract customers from a wider area than the neighbourhood centres. Thus the main building on Queen Mother Square attracts discussion. It provides a visual focal point and a focus for community

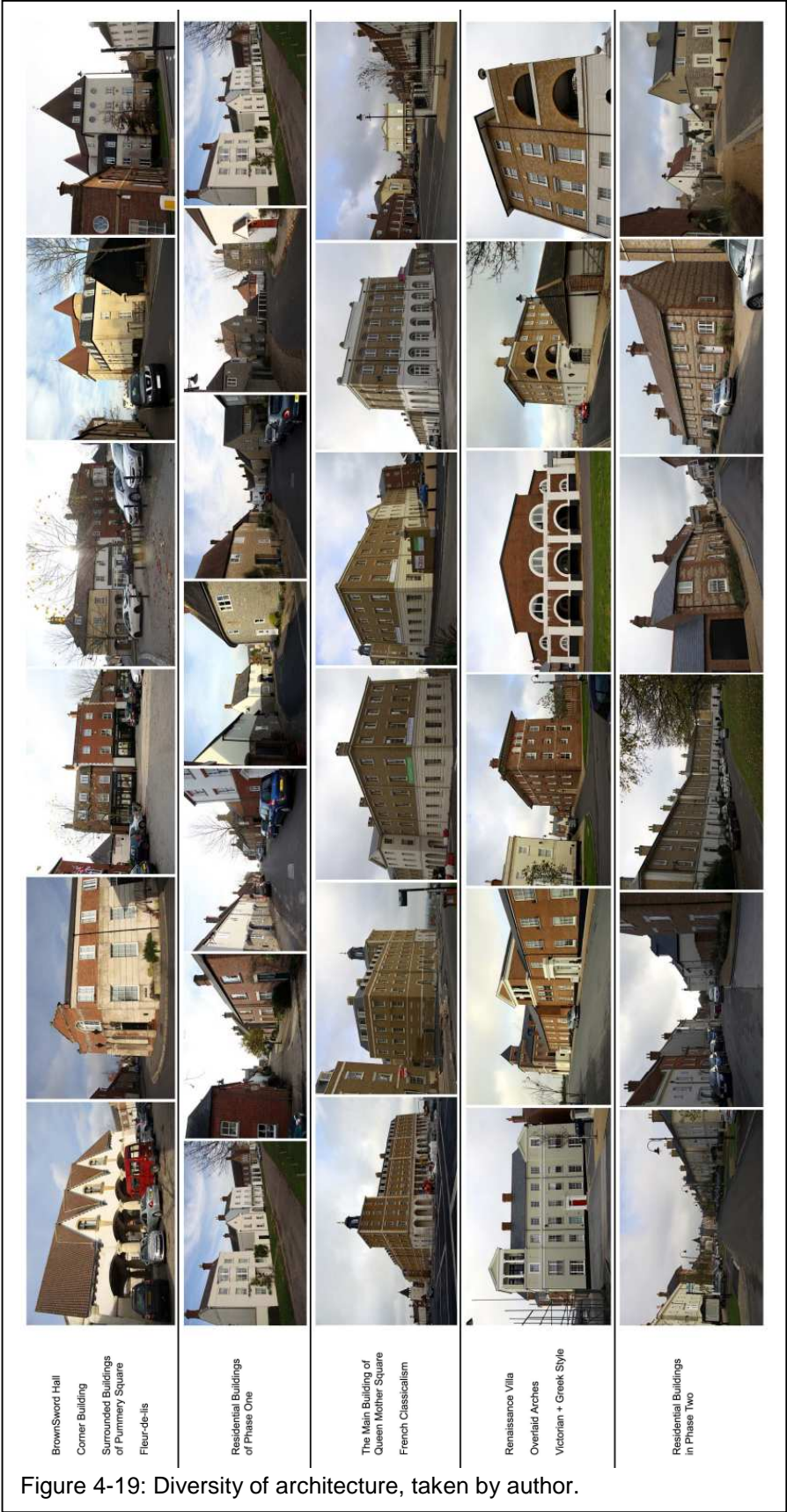


Figure 4-19: Diversity of architecture, taken by author.

activities. Its size is appropriate; it has four-storey and some five-storey buildings to match the status of Queen Mother Square as the only district centre. The façade-facing the square on the ground floor is surrounded by a Roman arcade and Greek colonnade used as a Waitrose store opened in November 2011. The middle part of this façade is of a Victorian style. The upper part of the dark roof is similar to that of Fleur de lis being French gambrel. Moreover, the watch tower as a belvedere at the tallest point is a familiar architecture feature within Europe.

Besides the above building, there is another type of building at Phase 2; the style of these buildings is mainly Victorian with Greek temples on their tops, following the Ionic order, and shown on the fourth line of Figure 4-19. Then some conspicuous architecture would be noticed as a style of French classicalism. This style was very popular in seventeenth century and the beginning of eighteenth century in Europe, influenced very much by the renaissance. Its proportion is precise with tripartite division on the façade normally a feature of the classical order. The French classicalism architecture seems to have been simplified at Poundbury. Some buildings have columns with classical order, while others do not. The common point is retaining the tripartite division on their elevations whether on the horizontal dimension or the vertical dimension.

The next style discussed is a typical architecture style - renaissance villa in Italy, like the Palazzo Medici Riccardi in Florence. There are several famous characteristics of the Palazzo Medici Riccardi, such as, rustication and ashlar masonry, tripartite division, stringcourses, massive cornices, and so on. The buildings of this style at Poundbury use brickwork rather than stonework. They retain the characteristics of tripartite division to show the renaissance essence of order, rationality and classicism on a human scale. They also use massive cornices to circumscribe their roof outlines.

It is worth continuing in the discussion of buildings with the pattern of overlaid arches. The last three representative photos show the detailed appearances at the fourth line of Figure 4-19. This style reminds people to remember the

Roman aqueduct. It is well known that aqueduct was a kind of functional structure and used to supply water. This pattern is designed to the buildings at Poundbury.

Finally, many residential houses are designed by local architects. Most of them follow local styles by making use of local characteristics like local grey stone. If one knows the residential buildings of Dorchester, or even in other parts of Dorset, one can sense a familiarity with the residential buildings at Poundbury.

In summary, the architectural styles are really diverse at Poundbury. These are mainly reflected on public buildings, and include mediaeval, renaissance, French classicalism, Romanesque, Victorian, and mixed style. This matches the principle that public buildings should indicate their importance by using clear forms. This approach matches the rule in which a traditional town or village was built. Most residential buildings retain their harmonious style with that of Dorchester, and even with some outstanding areas of Dorset. Hence, the diversity of architectural style can promote local identity or harmony with local context to help Poundbury be an urban extension of Dorchester.

i) Symbolic architecture and attractions

As discussed in Chapter 3, the landmarks play important roles as symbolic architecture. Symbolic attractions mainly include decorations and arts on the streets. There are five focal buildings in Phase 1 and Phase 2; these indicate legibility in the landmarks.

First of all, the Brownsword Hall (Image 1 in Figure 4-20) in Phase 1 should be discussed. The function of its undercroft on the ground floor is for a craft market on Saturdays. The function of the main hall on the first floor is used as Poundbury Residential Committee Meeting Room and it can also be hired to the local community for private or commercial events like weddings, parties, and others.

The second is the Fleur de lis building (Image 2 in Figure 4-20) which marks the eastern 'gateway' into Poundbury. Fleur means flower, and lis means lily.



Figure 4-20: 1: Brownsword Hall; 2: Fleur de lis; 3: The major building on Queen Mother Square; 4: Armitage House; 5 and 6: No.26 on Peverell Avenue West, taken by author.

It has two towers located at the bottom right of Poundbury Roundabout in Phase 1 designed with housing support. There are 29 flats to bring local people back into the community.

Third, there are three important buildings located in Phase 2. One is the major landmark standing at the Queen Mother Square (Image 3 in Figure 4-20). This building can be used for commercial and community purposes, and was designed by Quinlan and Francis Terry. The public can access the top of the tower as a focal point to view the attractive landscape of surroundings. In addition, another landmark at Phase 2 is Armitage House (Image 4 in Figure 20), used as offices for the sister companies of Ecofirst Consult and Zero C. The tallest part of this building is five storeys and resembles the square watchtower in mediaeval time. Then the last landmark is the building of No 26 on Peverell Avenue West (Images 5 and 6 in Figure 4-20). The ground floor is used as a wedding dress shop. The watchtower part has four residential storeys with a tower on the top. All these landmarks can help people read Poundbury while they need the deposit of time with richer and deeper meaning as time goes by. For example, the primary meaning of the London Eye when it was erected in 1999 was its accessibility to the public to view the City. However, it has been one of the symbolic attractions in London

since 1 January 2005, and used to showcase New Year's firework displays. To summarise, all the five buildings play important roles as landmarks as discussed in the point of legibility. The symbolic architecture can make Poundbury identifiable now and more in the future.

For symbolic attractions, seven items are discussed at Poundbury including three main ones and four small elements. The first attraction discussed in the water feature art (Image 1 of Figure 4-21a) standing on

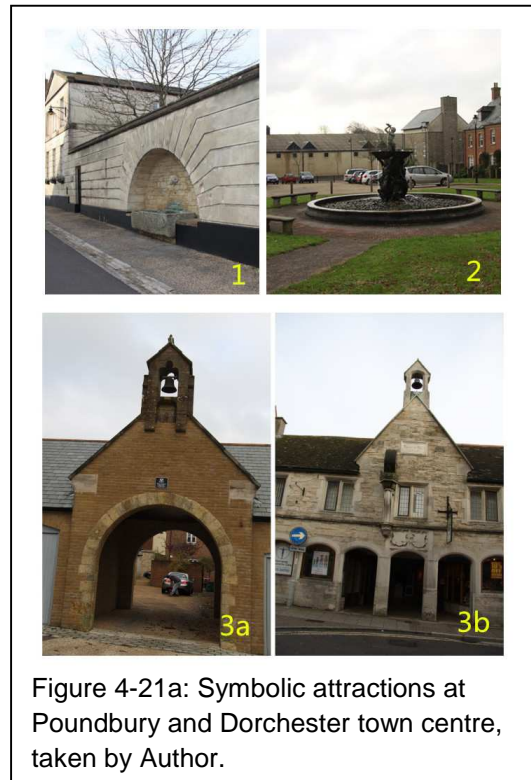


Figure 4-21a: Symbolic attractions at Poundbury and Dorchester town centre, taken by Author.

the Longmoor Street at the rear of the community hall on Pummery Square. This art is rich in elegant decorations with a style of renaissance created by using a semi-circle arch and mason block work. The second attraction is the water fountain (Image 2 of Figure 4-21a) situated on the Victor Jackson Square. This style of fountain is familiar in Italy. Third is the belfry (Image 3a of Figure 4-21a) on top of the entrance situated on the Sheepdov Road. According to the description on the pinup plate, this belfry is from the former Beaminster and Netherbury Grammar School in Hogshill Street, Beaminster where it stood from 1897 to 1962. The belfry has a special meaning because the school was closed in 1962. This style is local and it can be traced on top of some traditional buildings in the town centre of Dorchester (see Image 3b of Figure 4-21a). People who are living on the Sheepdov Road are very proud of it for its symbolic meaning.

Next, four small elements that are in harmony with Dorchester are discussed. The wall features of houses are in keeping with the houses of Dorchester (Image 4a and Image 4b in Figure 4-21b). The houses design at Poundbury uses oriel windows which are one of the typical house features of Dorchester

(Images 5a and 5b of Figure 4-21b). Furthermore, archways on the ground floor and outside residential buildings are harmonious between Poundbury and Dorchester (Images 6a and 6b of Figure 4-21b). Finally, many outdoors of residential properties at Poundbury are also in harmony with those of Dorchester. For instance, Image 7a and Image 7b in Figure 4-21b are harmonious with each other.

In summary, the design principle of symbolic architecture and attractions can clearly encourage Poundbury to be a harmonious urban extension of Dorchester by respecting local context and other traditional signs.

j) Sustainability

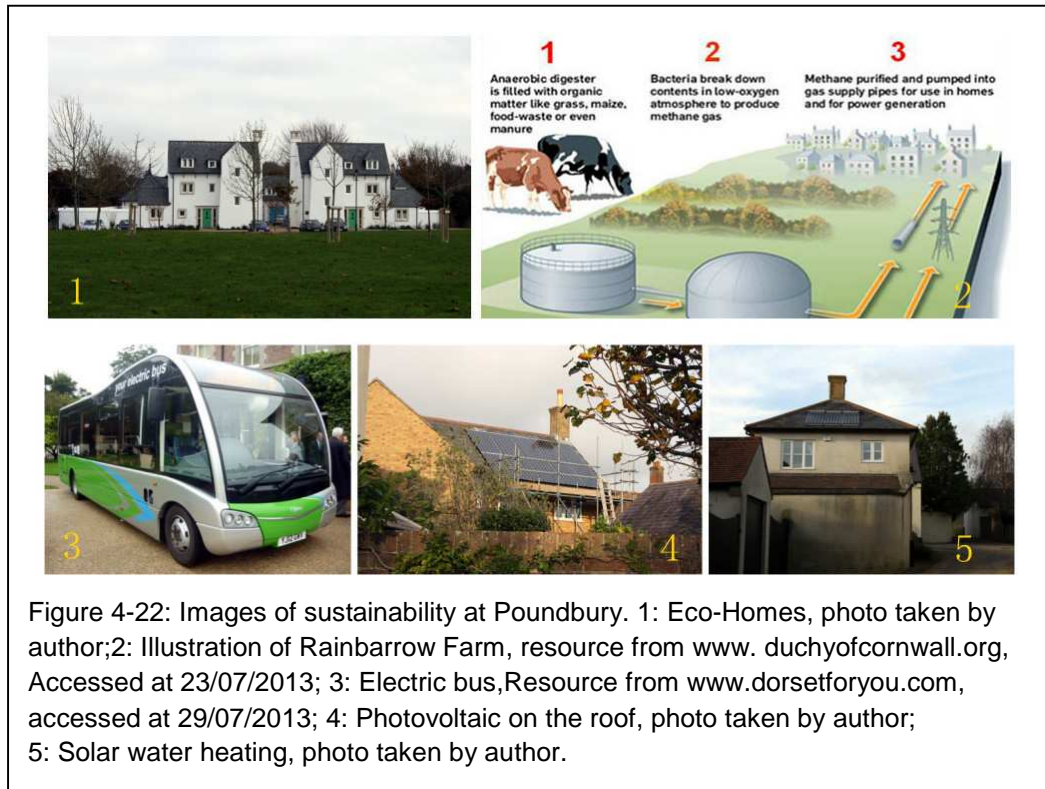
As defined in 3.3.5, sustainability are considered by this study focuses on the aspect of technologies. The Duchy of Cornwall proposes that Poundbury should develop increasing

levels of sustainability, through further improvements in the energy efficiency of building, combined with onsite production of hot water and locally generated electricity (Duchy of Cornwall, 2011, p.11). Four main aspects of sustainability at Poundbury are discussed in the following. They are Eco-Homes, Anaerobic Digestion – Rainbarrow Farm, electric bus, and other sustainable technologies.

First, the Eco-Homes scheme comprises 11 houses designed by the award-winning architect, Francis Roberts. The development is situated on the St



Figure 4-21b: Symbolic attractions at Poundbury and Dorchester town centre, taken by Author.



John's Way (Image 1 in Figure 4-22). Prince Charles and Leon Krier made a visit to the first phase of four houses on 19 November 2010 (Francis Roberts Architects, 2013). Now all of them have been built. All houses are rated as BREEAM EcoHomes Excellent and NHER rating of 10 (Duchy of Cornwall, 2011). This can lead to way to build highly energy efficient sustainable homes with a traditional British architectural style.

The second technology is Anaerobic Digestion – Rainbarrow Farm (Image 2 in Figure 4-22). The Government's Energy White Paper in 2003 set a target to generate 20% of UK electricity from renewable sources by 2020 (DT and DEFRA, 2003). When Poundbury was built, one of the conditions was that 20% of its energy has to come from renewable resources (Mason, 2013). The Duchy of Cornwall does not want to buy the green credits from wind turbine (Cornibear, 2013); rather, they want to give local sustainability and local employment. As a result, Anaerobic Digestion – Rainbarrow Farm was born. Rainbarrow Farm digests the resources of green crops and local food waste within a 20-mile radius, such as potato waste from Weymouth, chocolate waste and cereal waste from Poundbury, and so on. Therefore the gas can be generated locally. Anaerobic Digestion – Rainbarrow Farm is the

UK's first commercial biomethane-to-grid plant, generating enough gas to flow to 4,000 houses mid-winter and 56,000 houses mid-summer; and it is also the first development in Britain to switch to 'green' methane made from farm and food waste (Duchy of Cornwall, 2011).

Third, two electric buses (Image 3 in Figure 4-22) operate between Poundbury and Dorchester, connecting Queen Mother Square and Bridport Road with the town centre and the South Station of Dorchester. They are named no. 6 to deliver a service from Mondays to Saturdays every 30 minutes. The official launch of the electric buses was on 3 July 2012 at the Duchy of Cornwall offices in Poundbury (Dorset for you, 2013). At the opening ceremony, Councillor Peter Finney, Cabinet member for highways and transport at Dorset County Council viewed that public transport is a sustainable way to travel, which can surely reduce air pollution and carbon emissions (Dorset for you, 2013). These two buses are the first operational electric buses fired by sustainable electricity from the Anaerobic Digester at Rainbarrow Farm in the southwest of England (Duchy of Cornwall, 2011). Clearly, electric buses emit less noise and have a minimum impact on the environment.

Finally, there are also some other sustainable technologies applied at Poundbury, such as, Poundbury 4.00B communal biomass boiler, photovoltaic (Image 4 in Figure 4-22), and solar water heating (Image 5 in Figure 4-22), among others. Biomass boilers have come a very long way since man first gathered around communal fires for warmth (Sustainable Heating Solutions, 2013). Poundbury's 4.00B boiler is a mixed development of apartments, houses and commercial units with a total of 24 units being supplied by a KWB 100KW biomass wood pellet boiler with a 100kw gas back-up system. Photovoltaic and solar heating are not encouraged because the Duchy of Cornwall believes they are not efficient or developed enough. The Duchy of Cornwall prefers to wait until they have been proven to be efficient. Cornibear (2013) argues that the photovoltaic and solar heating equipment is ugly, and therefore, currently, they are not keen to have them at

Poundbury, particularly on the front side of the buildings. However, some residents may have them installed at the rear of the buildings.

In compliance with the above discussion, Poundbury is trying to be a sustainable community by making use of a range of sustainable options, like creating Eco-Homes, generating gas locally, electric buses, biomass boiler, and solar photovoltaic to the rear of the homes. All these approaches of sustainability try to correspond to the contemporary life with a low impact on the environment, which echoes the development mode of traditional urbanism as that of Dorchester. As a result, sustainability can promote local identity or harmony with local context.

k) Community involvement

Community involvement of Poundbury can be described as a process from the top down, not the bottom up. Poundbury has had a vision with new urbanists since the very beginning. Leon Krier was appointed by Prince Charles in 1989 as the masterplanner of Poundbury. Plans were floated in regional consultation represented by the people of Dorchester (Cornibear, 2013). During the consultation, people were asked 'Do you think it is a good approach?' The residents of Dorset said 'Yes, we think It is better than what we've done before. We haven't got that in Dorset'. Therefore, people of Dorchester have clearly shown that they are far more interested in Poundbury as a new urbanist project from the very beginning. The master plan was designed by Leon Krier. Within a year, in 1989, Krier had produced his first version of Poundbury's master-plan (Hardy, 2006, p.48). After Krier established the first sketch for Poundbury, the plan was put on a five-day charrette located in a marquee at Poundbury Farm for discussion by involving different groups, such as the master planner, the Duchy of Cornwall, engineers, architects, landscape architects, local communities and stakeholders, and other interested parties. During the charrette, a wider agreement was achieved under the support of the Prince although there were some concerns voiced from experts or local communities. Prince Charles believes that a place can be designed creatively with a higher degree

involvement of local people. As a result, John Thompson who engaged with local people was appointed to organise the community consultation (Bolgar, 2013). This was followed by a dialogue between Thompson and Krier to deliver and express the ideas of local people.

Krier also believes that it is a good idea to consult with local people but he does not necessarily believe one should develop or draw the plans while local people are in the room (Bolgar, 2013). He prefers to draw plans in a studio. This is why community involvement of Poundbury took place after Leon Krier drew the first draft of master plan. After the charette, Krier faced many challenges and criticism even though he attracted strong support from the Prince. He fought back by taking the view that 'if they did not like what he was up to he'd gone home and they could have the usual stuff' (Martin and Miller, 2003). Nonetheless, Krier responded quickly to produce an updated version of the masterplan by having more local context of Dorchester, and even of Dorset. From the first-version masterplan in 1989 until construction was commenced in 1993, there was a five-year consultation period with the local community about establishing a good urban extension at Poundbury.

Since construction started on Poundbury, the Duchy has favoured (but not exclusively so) local architects and local family firms with a reputation for traditional excellence (Hardy, 2006, p.62). Many local architects are involved in the project, such as Clive Hawkins, Peterjohn Smyth, Ken Morgan, and others. C.G. Fry & Son and Morrish as local builders have played major roles in Phase 1 and Phase 2; in the latter they have been joined by a nationally based firm, Westbury (The Duchy of Cornwall, 2011).

All these confirm that it is significant to involve local intelligence. Bolgar (2013) argues that the ideal process of community involvement should be 'Top down and bottom up'. This means that designers consult with local communities and learn a great deal from local intelligence and then develop the masterplan without necessarily having to bring local people in the studio. When the masterplan is established, it can be discussed with local communities, following which the designers would make some amendments.

The circle might be repeated a couple of times until agreement is reached. During the process of construction, local professional should also be involved.

To summarise, community involvement is quite strong in the development of Poundbury, and it is crucial to promote local identity or harmony with local context for Poundbury.

l) Return visit by designers after built-up

This point is also paramount, in the same way that the other design principles are. Return visit by designers after built-up is not operated formally by certain organisations in this research. It can be carried out by the designers themselves based on a strong sense of responsibility and a good professional quality. Designers can talk to people including visitors and local residents. Louis Kahn, for instance, made many visits to the sites of his projects, which he paid for himself. By visiting the site, designers can know not only the performances of their designs but the differences between concepts and practices. By visiting again after built-up, they are able to identify or clarify any further possible improvements either to the current project or future one. Cornibear (2013) states this point is a two-way process. The community itself wants the design to meet their needs and the designers want the concept to be realised. They are not in the conflict; they should complement each other.

Leon Krier is still involved in the development of Poundbury as the masterplanner. He goes to Poundbury two or three times a year with the Prince. When Krier returns to Poundbury, sometimes he is disappointed because some of his ideas changed. Sometimes he is happy to see that his ideas have been realised. Krier wanted Longmoor Street, for example, to be a local distributor with all traffic passing through it, including lorries; however, if lorries have access, this is not in compliance with the situation that was originally intended as the Duchy tries to protect the community from heavy traffic. So the route has been changed to the Middle Farm Way. There are also some other involved designers who are making return visits. For example, Andrew Cameron as a transport engineer often visits Poundbury to

show people around. Cameron (2013) believes it is important to go back and have a look, in order to see what is working and what is not, and then find ways to improve the latter.

By using a metaphor, if the whole development process of Poundbury were a circle, this point should be the part of the arch to make an enclosed circle. This circle helps Poundbury to be a harmonious urban extension of Dorchester. In other words, return visits by designers after built-up complement other design principles to create a harmony between Poundbury and Dorchester by promoting the local identity of Poundbury.

4.3.2 Summary

The above discussions can be summarised in the following. First, compactness offers a big opportunity for Poundbury to be an urban extension of Dorchester by applying its residential density. Second, connectivity of street pattern helps Poundbury to identify a hierarchical network with characteristics through the use of the typical orthogonal street pattern of Dorchester. Third, legibility plays an important role in promoting local identity or harmony with local context through making use of a clear structure formed by paths, edges, districts, nodes and landmarks. All these elements present Poundbury as an urban extension of Dorchester from the perspective of legibility. Fourth, Poundbury is not only coherent within its own but also coherent with Dorchester. So this proves the development of Poundbury to be an urban extension of Dorchester. Fifth, mixed use at Poundbury is in compliance with that of a traditional town or village. This is actually significant in promoting local identity or harmony with local context at Poundbury. Sixth, walkability has a role to play in promoting local identity for Poundbury. Many residents move in mainly because Poundbury has a good walkability. In fact, many people living in Dorchester also enjoy the benefits of walkability by using shops, community facilities and other services of Poundbury. Seventh, pedestrian-friendliness is satisfied at Poundbury. This design principle is also one of the typical features of planning a traditional town or village, like Dorchester. Eighth, the architectural style at Poundbury can be clarified as

diverse by respecting the local context of Dorchester - and even Dorset - although there are some familiar classical styles, like mediaeval, renaissance and French classicalism. Ninth, it is crucial to be aware that Poundbury tries to achieve local identity or harmony with local context by applying symbolic architecture and attractions refined from those of Dorchester. Tenth, the point of sustainability is indeed possible to plan for a better future at Poundbury through encouraging sustainable technologies. All these have minimum impact on the environment as was the way centuries ago; however, we do not necessarily need to return to that era. Eleventh, community involvement does influence the promotion of local identity or harmony with local context at Poundbury. The local intelligence knows their places and can inform the designers about what local context is. This obviously can help designers to develop Poundbury. Finally, specific attention should be paid to the design principle of return visit made by designers after built-up. Both the current project and the future ones have opportunities to be improved if designers can make return visits; however, this depends on the individual designer. Nonetheless, designers can benefit from making return visits.

Therefore, via the demonstration of applying design principles of new urbanism in this research, Poundbury is, in fact, an invaluable attempt as an urban extension of Dorchester, with promoting local identity or harmony with local context.

5 Case study two: Upton, Northampton

Chapter 5 presents an analysis of the second case study, Upton. Three topics are covered in this chapter. First, the background to Upton is discussed; this includes an introduction to Upton, and its town - Northampton, Upton and its project partners, and Upton's masterplan. This is undertaken through a clear and logical narrative on the new development process of Upton. The second topic is the design principles of new urbanism at Upton followed the interviews with key individuals and documentation analysis of key agencies. The third topic addressed in this chapter is an analysis of Upton based on the applied design principles. This part mainly investigates whether Upton can promote local identity or harmony with local context by applying the key points.

Based on the discussion of the three topics listed above, it can be summarised that Upton is able to promote local identity as an urban extension via the following design principles:

- Compactness
- Connective street pattern
- Legibility
- Coherence
- Mixed use
- Walkability
- Pedestrian-friendliness
- Diversity of architecture
- Adaptable building form
- Sustainability
- Community involvement
- Return visit by designers after built-up

5.1 The Background of Upton

To begin with, it is paramount to analyse why Upton is appropriate as the second case of this study, before further discussion. There are four main

reasons for selecting Upton, which are examined below. It is hoped to get a clear idea by the following depiction.

First, Upton can be considered as a new urbanist project. It involved the application of urban design principles primarily and made familiar through the work of the new urbanism (Taylor, 2012). Its project partners include English Partnerships (Now Homes and Communities Agency), the Prince's Foundation, and Northampton Borough Council. As mentioned in Chapter 3 — New Urbanism, the Prince's Foundation plays the most important role in developing and teaching new urbanism in the UK with a longstanding interest and commitment to new urbanist projects and design principles. Obviously, the Prince's Foundation aims to shape a range of exemplar projects, like Poundbury in the above chapter with a commitment to spreading the knowledge of new urbanism. Thus it gained significant influence within English Partnerships (The Scottish Government, 2010, p.147). English Partnerships invited the Prince's Foundation to be involved as one of the main contributors during the new development of Upton in 1999. Therefore, Upton can be considered as a new urbanist project.

Second, Upton belongs to the scope of new development that has been defined in Chapter 1 – Introduction as it is not only addressing a growth area of urban extension of existing centuries-old community but also has been nearly completed or completed fully. If the neighbourhood is nearly or fully completed or completed, it is beneficial to undertake a further assessment according to the real physical built environment and reviews from local users, which can prevent the analysis from degenerating into empty talk. As a result, the practical consequence emerging from this is a perceived need to demonstrate the project in order to meet the requirements of this research.

Third, Upton also involved key members of the consultant team from Poundbury. Of particular significance was Alan Baxter Associates who were largely responsible for Poundbury's innovative streets (The Scottish Government, 2010, p.148), which means two cases can be analysed via the same benchmark. Most possibly, this can be helpful for a constructive

synthesis. Finally, but no less important, Upton, Northampton is one of the most exciting developments planned in England today. It could be a national example of best practice in sustainable urban growth and a model for the design of other urban extensions across the country (English Partnerships, 2003).

5.1.1 Upton and Northampton

5.1.1.1 Why is Upton selected for the expansion of Northampton?

Northampton is a historic market town and service centre in the East Midlands region of England. In the late nineteenth century, Northampton was dominated by shoe-making and its rapid population growth of nearly 50% necessitated the expansion of its boundaries. However, this dominated industry started to decline since in the early twentieth century, as the population growth slowed down. Until 1965 Northampton was designated a new town which led to a huge expansion of the population. Many Londoners relocated to Northampton (Lambert, 2012). With Northampton identified for major expansion to almost double its size to 230,000 by 1981, the Northampton Development Corporation was established in 1968 to be responsible for the new town development and soon acquired undeveloped land to the south-west towards the M1, including land at Upton (The Scottish Government, 2010, p.148). However, the real increase of the population was slower than planned in Northampton. According to the 2011 census, Northampton had a population of 194,200 in 2001 and 212,100 in 2011 (Northamptonshire County Council, 2011). Although the population in 2011 was less than the planned 230,000, its percentage rise is above the national average.

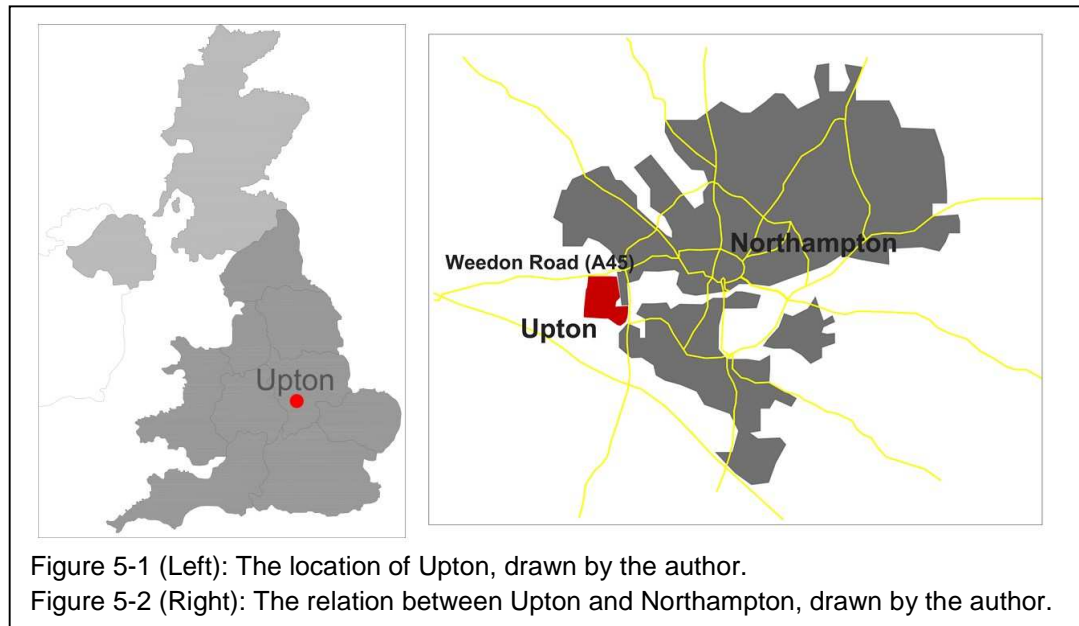
Moreover, according to Regional Planning Guidance for the east Midlands (DTLR, 2002, p.43) and East Midlands Regional Spatial Strategy (East Midlands Regional Assembly, 2007, p.32), Northampton was designated as an growth area capable of approaching housing provision. Milton Keynes, one of the three other growth areas designated in the Sustainable Communities Plan, embraces five growth centres among which is

Northampton (ODPM, 2003). In 1991-2000, employment growth in Milton Keynes and Northampton was three times the national average (Power, 2003, p.33).

Based on the above backdrop, Northampton obviously should be one of the major expansion areas in England. Although many of these homes can be built on existing brownfield sites, some Greenfield land in Northampton was identified for development to meet this target (Neal, 2003, p.236). The best known Greenfield area identified for the extension in Northampton is a site allocated in the Local Plan at Upton on the south-west edge of the town, less than three miles from the town centre as the initial phase of a major urban extension in Northampton (Human, 2010).

5.1.1.2 An introduction to Upton

Upton, as a part of the south-west district of Northampton, is a strategic urban extension to the town of Northampton because it lies on the existing town edge (Energy Saving Trust, 2006, p.2), shown in Figures 5-1 and 5-2. The south-west district is being constructed in phases, with phase 1 of Upton covering 44-hectare and comprising of approximately 1,382 homes and associated infrastructure such as schools, work units, retail and community development (Balmforth, 2006, p.175). As a result, the Upton in this research is phase 1 of the south-west district expansion of Northampton. The Upton site itself, former farming land, is bounded by the Upton Way to the east and adjoins a country park and the River Nene to the south. To the north, it is bordered by the Weedon Road (A45) and the Upton Park growth area to the west. It is a parish in the district and county of Northampton and located 1¾ miles west of Northampton rail station (Wilson, 1872).



The site ownership of Upton was acquired by the Northampton Development Corporation and held by them until 1985 when the body was wound up. At that time, it was still undeveloped. In 1997, it passed to the Commission for New Towns, who secured outline planning permission for mainly residential development on the site, and then in 2003 to English Partnerships, the national regeneration agency, which supported high-quality sustainable growth in England, such as expansion area of Milton Keynes (CABE, 2011). The outline planning permission was granted in 1997 for a conventional scheme based on the current car-dominated paradigms - cul-de-sacs off distributor roads and local services located in the scheme's centre (CABE, 2011). It included 1,020 homes along with a primary school, local centre with up to 700 square metres of retailing, medical centre, nursery and other community facilities (Energy Saving Trust, 2006, p.2). By virtue of this granted plan of suburban development, Northampton Borough Council faced criticism for the development quality in Upton area. Therefore, it was decided to seek a new approach - Enquiry by Design - to demonstrate the project better.

In late 1999, the first Enquiry by Design (EbD¹⁸) exercise was held for the site at Upton. This first Enquiry by Design demonstrated that an intensive

¹⁸ Three key issues are embraced in the new urbanism: charrette/EbD, masterplan, and design code. Charrette or EbD is a tool for helping to create the masterplan. In the UK, it is

design workshop involving key stakeholders could successfully contribute to the masterplanning of a large area and help to define an agreed and locally acceptable solution for development (Neal, 2003, p.237) based on the piloted Enquiry-by-Design in July 1999. In terms of the pilot and first Enquiry by Design, outline planning consent was granted in 2000. Then EP¹⁹ with the PF and NBC²⁰ appointed a design team led by EDAW²¹ (Now a part of AECOM), a newly-formed Upton Working Group, to review the 'conventional' scheme for Upton and recommend a new way forward (CABE, 2011). They set out to deliver an urban extension which would be an exemplar of sustainable urban growth (HCA, 2012). In the light of the basis, the second Enquiry by Design for offering more detailed set of proposals was held in December 2001 as a workshop through an intensive number of meetings spread over four days.

After the Enquiry by Design exercises, a radically different plan was prepared by English Partnerships, Northampton Borough Council and the Prince's Foundation (WNDC, 2011, p.2) in 2002 with a spinal high street, and the shifting of local services to the urban extension's edge to link with adjoining neighbourhoods and better integrating it with the rest of Northampton (CABE, 2011). In late 2002 Northampton Borough Council granted planning consent for the new framework (Street, 2007, p.20). The Upton Framework Plan received planning approval in February 2003 for eight sites; work started on the infrastructure provided by English Partnerships in 2003 and housing building commenced in 2004 (Balmforth, 2006, p.175).

normally named EbD. Its process is a planning tool that brings together key stakeholders to collaborate on a vision for a new or revived community to assess a complex range of design requirements for the development site, with every issue tested by being drawn. This is developed through a workshop facilitated by the Prince's Foundation for the Built Environment in the UK. It is delivering masterplans based on enduring design principles, and developing the place-making skills of all participants in the workshop process (The Prince's Foundation).

¹⁹ EP is fully named English Partnerships which later became part of the HCA, formed in 2008 (Energy Saving Trust, 2006, p.2).

²⁰ NBC is fully named Northampton Borough Council.

²¹ EDAW was transited its name to Design + Planning at AECOM in October 2009 (PRWeb, 2009).

5.1.1.3 Development timeline of Upton

The details of the development of Upton based on its timeline are listed in Table 5-1 below.

Table 5-1: Development timeline of Upton

Timeline	Events
1968-1985	Former farming land at Upton was acquired by NDC ²² .
1985	The land ownership was transferred to the Commission for New Towns (CABE, 2011).
1997	Upton was granted outline planning permission (TCPA, 2007, p.15).
1999	The PF ²³ had involved to the development of Upton (Prince's Foundation for Building Community, 2012).
July 1999	The Enquiry by Design was piloted to look at the whole of Northampton south-west expansion and discuss something better for Upton.
Late in 1999	The first Enquiry by Design exercise was held for the site at Upton (Neal, 2003, p.237).
2000	Outline planning consent, establishing the principle of development, was granted (Neal, 2003, p.237).
2001	Newly-formed Upton Working Group reviewed the 'conventional' scheme for Upton and recommended a new way forward (CABE, 2011). They set out to deliver an urban extension which would be an exemplar of sustainable urban growth (HCA, 2012).
December	The partners of Upton developed their vision to seek a new approach to change some outdated thinking of cul-de-sacs

²² NDC is fully named Northampton Development Corporation which was set up in 1968 and wound up in 1985 (Lambert, 2012).

²³ The PF is fully named the Prince's Foundation.

2001	off distributor roads which normally occurs in the suburban communities. Therefore they held the second Enquiry by Design which included public consultation as well as input from statutory agencies.
2002	The masterplan was established by EP (now HCA), the PF, and NBC (WNDC, 2011, p.2).
Late 2002	Northampton Borough Council granted planning consent for the new framework (Street, 2007, p.20) based on the second Enquiry by Design and established masterplan.
February 2003	The Upton Framework Plan received planning approval (CABE, 2011). Then a variation to the original planning approval was granted, covering relocation of the local centre from its central site to Weedon Road, at Upton's northern edge and adjacent to existing housing (TCPA, 2007, p.15).
April 2003	The Upton Design Code was first published (TCPA, 2007, p.15).
2003	The land ownership was passed to EP (CABE, 2011). And the first advanced infrastructure contract started (Balmforth, 2006, p.175).
2004	The West Northamptonshire Development Corporation was established to oversee this growth area (WNDC, 2010). And house building commenced on Site A (Balmforth, 2006, p.175).
2005	Detailed planning permission for Site B was granted (Energy Saving Trust, 2006, p.3).
December 2008	HCA was formed by the Housing and Regeneration Act 2008. EP was brought to be one of its parts. HCA started to

	take over the functions and assets of EP (The National Archives, 2013).
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The development is now well under way with the aim to shape a neighbourhood rather than an ‘insular’ estate, and when complete it includes (HCA, 2012):

- Approximate 1,382 dwellings of different housing types on a 44-hectare site, plus commercial and retail units, all featuring a wide range of green technologies;
- Community playing fields with a high-quality changing facility/community meeting hall, partially powered by a wind turbine and including an educational area that uses renewable technologies and design innovation;
- A public transport system which links Upton with Northampton town centre and the railway station;
- A primary school accommodating 420 children.

5.1.2 Upton and its project partners

In 1999, a partnership was formed between English Partnerships, the Prince’s Foundation, Northampton Borough Council, the Council for the Protection of Rural England and the Department of Transport, Local Government and the Regions to launch a major national initiative promoting sustainable urban extensions in Northampton (Neal, 2003, p.237). The Upton urban extension was jointly delivered through the teamwork of English Partnerships (now HCA) as the landowner, the Prince’s Foundation as the adviser and Northampton Borough Council as the planning authority (HCA, 2012). The consultants of Upton include EDAW (now a part of AECOM) — town planning and urban design, Alan Baxter and Associates — transport and engineering, Lambert Smith Hampton — property market assessment, and Paul Murrain — urban design consultancy (Neal, 2003, p.239).



Figure 5-3: The masterplan of Upton, resource from Rosanna Law who was working for Upton in EDAW (Now a part of AECOM).

5.1.3 Master plan

5.1.3.1 Masterplan

Figure 5-3 shows the detailed masterplan of Upton.

5.1.3.2 Sites

In order to manage the development, Upton has been split into eight separate sites or 'development areas' (Energy Saving Trust, 2006, p.4),



shown in Figure 5-4. These eight separate sites are named in alphabetical order, Site A, Site B, Site C, Site D1, Site D2, Site E, Site F, and Site G.

a) Site A

Shenley Lodge Developments (now Paul Newman Homes) were selected in November 2003 as preferred developers for site A. This 3.8-hectare (measured via AutoCad by the author) development includes 220 homes, comprising a mix of higher density townhouses and apartments as well as

semi-detached and detached homes. (Energy Saving Trust, 2006, p.6). Site A, the 'Upton One' development is in a traditional 'Georgian' style (CABE, 2006, p.14); it has 22% affordable units (16 shared ownership, 33 rented) which are pepper-potted throughout the scheme, and its building density is 58 units per hectare gross including SUDS and public space (CABE, 2011).

b) Site B

Cornhill Estates and Fairclough Homes were selected for site B. This 4.8-hectare site (Measured via AutoCad by the author) consists of a further 204 properties, ranging from apartments to townhouses and large family homes. Almost all will have rainwater recycling and solar water heating. (Energy Saving Trust, 2006, p.6) Site B is considered to manage the transition between Site A of 'Georgian' style and Site C of modern (CABE, 2006, p.14).

c) Site C

David Wilson Homes and HTA Architects were selected to develop Site C. This phase consists of 30 large family semi-detached and detached homes (Energy Saving Trust, 2006, p.6) on a 1.6-hectare site (measured via AutoCad by the author). The scheme embodies the architectural integrity of traditional building in a contemporary style that builds on the local vernacular by reinterpreting the traditional 'one room deep' house common in Northamptonshire, as well as the custom of having rooms in the roof space (HTA, 2012). Additionally, simple cubic volumes are added to the basic house form to increase flexibility of the living space (HTA, 2012). Furthermore, sustainable features include solar water heating and green roofs (Energy Saving Trust, 2006, p.6). Site C is much more modern and its proposals won a Housing Design Award 2006 (CABE, 2006, p.14).

d) Site D1

MHP²⁴ will build 345 houses and flats on Site D1 (MHP, 2013). Site D1 covers 5.7 hectares (measured via AutoCad by the author). A number of advanced technologies will be included, from water recycling to PV, and the

²⁴ MHP is fully named Metropolitan Housing Partnership.

scheme will apply ZED standards to some of the homes (Energy Saving Trust, 2006, p.6). Currently, nearly half has been built-up, and another half is still under construction.

e) Site D2

Site D2 was the site for the Design For Manufacture competition, to be developed by Barratt, with Midsummer HA and HTA Architects (CABE, 2006, p.14). It has approximately 255 dwellings (counted on the site by the author) on a site of 3.7 hectares (measured via AutoCad by the author). Many of them are defined as affordable housing, £60,000 homes described recently in the local press although the final costs are much higher. Site D2 is almost completed.

f) Site E

Site E is a lower intensity development with 56 dwellings (counted on the site by the author) on a 2.5-hectare site (measured via AutoCad by the author). Its west is countryside landscape, and its south is Ashby Wood. Site E is now completely built-up.

g) Sites F and G

Sites F and G seek to complete the masterplan for the Upton area. The high-quality frontage of Weedon Road to the Northampton vernacular, together with its scale and massing, will provide appropriate enclosure to the Weedon Road, acting as a high-quality gateway into the town (WNDC, 2011, p.2). Sites F and G are described as an erection of mixed-use development which comprises public house, convenience store, nursery, retail units, cafe/restaurant, 324 dwellings, and a 77-apartment extra-care facility (WNDC, 2011, p.1) on a 7.5-hectare site (measured via AutoCad by the author). The site is currently empty. The construction will commence soon.

5.2 Applied Design Principles of New Urbanism at Upton

The Upton masterplan in the Urban Framework Plan and Design Codes are based upon design principles which promote a distinctive, enduring environment and sustainable urban growth (English Partnerships, 2003).

Therefore, it is paramount to discuss the applied design principles when development of Upton commenced.

5.2.1 Perspectives on Upton from key participants

In the same way that Poundbury was analysed, the primary opinions of key participants are investigated according to the theoretical framework of design principles of new urbanism. They are identifiable with a clear built-up area edge, are compact, connectivity of street pattern, in harmony with local context, legibility, coherence, a mix of uses, walkability, pedestrian-friendliness, diversity of architecture, symbolic architecture and attractions, sustainability, and community involvement.

There are four key participants discussed here. Two are Trevor Beatie and Sylvia Short. Both used to work for English Partnerships as the land owner and they are two of the three key players²⁵ in the development of Upton. The third is Andrew Cameron from Alan Baxter Associates which is the key consultant of transport and engineering. The last but no less important one is Rosanna Law from EDAW (now a part of AECOM) which is the key consultant of town planning and urban design.

5.2.1.1 Trevor Beatie

Trevor Beatie is one of the three key players of Upton who used to be Corporate Strategy Director of English Partnerships (Now he is Chief Executive for the new South Downs National Park Authority). He emphasised the following fundamental design principles of Upton:

- a) Community involvement
 - Community involvement (Asking people what the model of Upton should look like);
 - Non-prescriptive approach (No fixed model of development and get people involved before you have a plan).

²⁵ Key individuals within English Partnerships at Upton were Peter Springett, Silvia Short, and Trevor Beattie, who were instrumental in the decision to do something different and in winning political battles and persuading others to ensure that it happened (HCA, 2012).

The community involvement belongs to the spectrum of public participation which is important to set up the design principles for Upton.

b) In harmony with local context

- Local scheme reflects the local properties and local design principles;
- Reflecting local vernacular with local style of architecture.

c) Coherence

- Deliberately designing Upton as an urban extension to the existing structure of Northampton (Northampton vernacular is very important, like street pattern, local stones, the gable ends, development masses. But Upton is not a copy of Northampton).

d) Compactness

- Compactness is important for a new urbanist project.

e) Mixed use

Improved development around a hub includes community facility, village green, and a small shopping centre.

f) Connectivity of street pattern

- Road and housing pattern was integrated design with natural oversight (There are no cul-de-sacs at Upton).

g) Pedestrian-friendliness

- Using traffic calming.

h) Sustainability

- The new dual carriageway includes public transport which tries to reduce car uses.

5.2.1.2 Sylvia Short

According to Sylvia Short, also one of the three key players of Upton from English Partnerships, the design principles of Upton include (Short, 2004, p.3; Short, 2013).

a) Community involvement

- Enquiry by Design;
- The neighbourhood should be self-governing.

b) In harmony with local context

- Building styles to reflect the local character and styles.
- c) Legibility
- Focal point (A High Street and Main square serving as a focal point for the community;
 - Discernible centre (The neighbourhood should have a discernible centre);
 - Certain prominent sites (Certain prominent sites at the termination of street vistas or in the neighbourhood centre should be reserved for civic buildings).
- d) Compactness
- A variety of housing types, sizes and tenures at higher densities.
- e) Mixed use
- There should be a variety of dwelling types: usually houses, row houses and apartments – so that younger and older people, singles and families, the poor and the wealthy may find places to live;
 - At the edge of the neighbourhood there should be shops and offices of sufficiently varied types to supply the weekly needs of a household.
- f) Connectivity of street pattern
- Human scale of street pattern (Buildings in the neighbourhood centre should be placed close to the street, creating a well-defined outdoor room. And also parking lots and garage doors should rarely front the street.);
 - Hierarchy of street pattern (Local centre located along Weedon Road).
- g) Walkability
- Most of the dwellings should be within a five-minute walk of the centre, and an average of roughly 0.25 miles;
 - An elementary school close enough for the children to walk to;
 - Small playgrounds accessible to every dwelling – not more than a tenth of a mile away.
- h) Pedestrian-friendliness
- Improved pedestrian and cycle links on and around the site;
 - The streets should be relatively narrow and shaded by trees.

- i) Diversity of architecture
 - Building styles to reflect the local character and styles.
- j) Adaptable building form
 - A small ancillary building or garage apartment within the backyard of each house allows someone to operate a small office or craft workshop in their house in the future;
 - The dwellings on the High Street and the Main Square were to be designed with higher ceiling heights on the ground floor and internal layouts to allow a change of use to a small shop or office in the future.
- k) Sustainability
 - Improved public transport to the site and surroundings;
 - Sustainable urban drainages.

5.2.1.3 Andrew Cameron

According to Andrew Cameron who was involved in the development of Upton and Poundbury when he used to work in Alan Baxter and Associates which was the lead consultant of transport and engineering, the applied design principles in the development of Upton include (Cameron, 2013):

- a) Connectivity of street pattern
 - Street pattern is in harmony with that of Northampton with regular linear – 45 degrees or 90 degrees; (But the block pattern and the size of blocks cannot be copied or repeated simply. You have to arrange a different pattern and urban grid with hierarchy and connectivity for the new development by applying principles)
 - Street-oriented housing. (It is essential for houses facing onto the street, which brings parking cars to the back. It is more human-scale on the cross section.)
 - Mews
- b) Community involvement
 - Enquiry by Design; (It is a very collaborative process with artists, the partnerships, the council, and all the others. And it also can speed up the planning process);

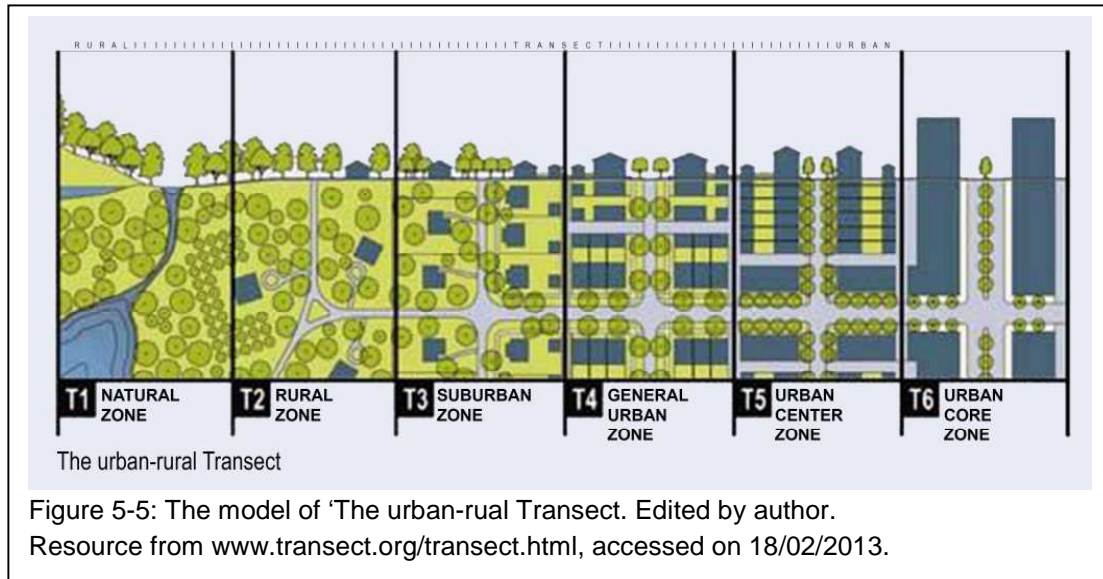
- Getting people to promote local identity. (Let people say what they like and understand what the local context is.)
- c) Coherence
 - Connectivity of local context. (Looking at local context, such as plans, historic, parks, settlement, and so on.)
- d) In harmony with local context
 - Vernacular design. (Such as local materials, street pattern, local architecture style, and so on.)
- e) Legibility
 - Legibility helps people find the way out.
- f) Walkability
 - One of the typical design principles of new urbanism is a walkable neighbourhood. Upton is designed as a walkable neighbourhood.
- g) Pedestrian-friendliness
 - Pedestrian-friendliness is important to encourage people to walk and cycle in order to reduce car uses.
- h) Diversity of architecture
 - Rich architecture. (The architecture seen on the road is mixed architecture. You even can see the wind turbine on the roof of houses. Maybe it probably gets too rich for a place.)
- i) Return visit after built-up
 - Going back and have a look to see what is good and what is bad, then improve where required.

5.2.1.4 Rosanna Law

EDAW (Now a part of AECOM) is the leading consultancy of planning and design for Upton. Rosanna Law is one of the key individuals of EDAW connecting the masterplanning of Upton. In light of her understanding, there are some key design principles applied during the development of Upton (Law, 2012):

- a) The concept of transect (Urban hierarchy)

A transect is a geographic cross section of a region used to reveal a sequence of environments which while clearly distinct from one another, still interact with and rely on each other (DPZ, 2013b). Naturalists use a concept called transect to describe the characteristics of ecosystems and the transition from one ecosystem to another (Steuteville, Langdon and special contributors, 2003). Before the automobile, most development patterns were walkable, and transect with towns and city neighbourhoods revealed areas that were less urban and more urban in character (Centre for Applied Transect Studies, 2013). Duany has applied this concept to human settlements, and in recent years this idea has permeated the thinking of new urbanists (Steuteville, Langdon and special contributors, 2003). A model of transect was released in 2003 by Duany Plater-Zyberk and Company by including the principal tiers, being Core, Centre, General, Suburban, and Rural. DPZ describes the model as 'the transect' and arranges in useful order the elements of urbanism by classifying them from rural to urban and also notes that every settlement has its own transect, which can be studied and mastered (Steuteville, Langdon and special contributors, 2003) (shown in Figure 5-5). Although the model is based on exemplary American urbanism, there have been numerous successes adapting the transect methodology to the traditional patterns of other countries, including England, Scotland, Mexico, the Bahamas, Spain, Russia, and Romania (Centre for Applied Transect Studies, 2013). This is possible because each has its own distinctions, to a degree, from all other transects. For example, all downtowns have unique characteristics even though they have commonalities as well. When judiciously followed, the guidelines inherent in the transect can help planners and developers create stronger, better-functioning places (Steuteville, Langdon and special contributors, 2003). The transect is a powerful tool that new urbanists can use to analyse and understand places – and ultimately to design new settlements that will possess qualities associated with the best old urbanism (Steuteville, Langdon and special contributors, 2003). This delivers a strong idea that a new development should be identifiable with a clear built-up area edge.



b) In harmony with local context

- Architectural references to local vernacular architecture in terms of form and materials, notably shoe factories within Northamptonshire, use of iron stone and colours.

c) Coherence

- Use and enhancement of existing woodland and landscape features to create a strong sense of place;
- Appropriate residential densities and typologies that work with local context.

d) Mixed use

- Using Weedon Road mixed use frontage as a local centre for the whole of south-west district of Northampton.

e) Public transport and relationship with urban densities

- Good pedestrian, vehicular and public transport connections to surrounding context. This conforms to the conditions of sustainability.

f) Sustainability

- All buildings achieve BREEAM excellent rating;
- Integration of sustainable urban drainage (SUDs) as part of street design;
- Locally sourced materials for public realm infrastructure work as well as for buildings.

5.2.2 Perspectives on Upton from key agencies

Perspectives of five key agencies are discussed in the following, which are English Partnerships, The Prince's Foundation, Homes and Communities Agency, Town and Country Planning Association, and The Scottish Government.

5.2.2.1 Perspective of English Partnerships (EP)

According to an executive summary published by English Partnerships the design principles in the development of Upton will comprise (English Partnerships, 2003):

- A structure of streets and blocks
- Mixed use
- Adaptable building form
- Inclusion of a Sustainable Urban Drainage System
- Legible and permeable design
- Energy efficiency through environmental assessment
- Accessible public transport
- Positive aspects of the local vernacular in design
- Respect for key aspects of the existing landscape
- Ongoing resident management

5.2.2.2 Perspective of the Prince's Foundation (PF)

The Prince's Foundation posits that the development of Upton marks a radical departure from the typical cul-de-sac - based suburban development (The Prince's Foundation, 2012). The suburban cul-de-sac pattern with road-dominated layout has much less ease of movement, particularly for pedestrians and cyclists than a distinctive open housing pattern with a street-oriented layout. It is important to create a good relationship of buildings to each other in the making of places by a preference for street-oriented rather than road-dominated layout.

5.2.2.3 Perspective of EDAW and Alan Baxter and Associates (2005, p.6)

- a) Achieving social diversity

- Critical mass: a critical mass of local population would be established to sustain local amenities and viable public transport;
- Diverse dwelling types and tenure mix: with a mixture of unit sizes, house types and tenure to suit people of different incomes and at different stages of their lives;
- Indistinguishable affordable housing: a minimum of 22% affordable housing would be provided, pepper potting throughout, the external design of which would be indistinguishable from market housing;
- Mixed use: this includes a primary school, local shops and live-work units with other commercial office use, retail and community uses along a local centre of Weedon Road on the northern edge of Upton.

b) Environmental sustainability

- Achieving BREEAM excellence;
- Sustainable Urban Drainage System (SUDS): this is being put in place to manage rainwater run-off.

c) Local character

- Distinctive local character: the design of Upton would draw inspirations from the Northamptonshire vernacular, including urban morphology, architecture and landscape design. The use of local materials and an innovative approach towards their applications would help establish Upton as a part of Northampton with a distinctive identity.

d) Liveability

- Accessible public transport: to reduce reliance on cars and encourage a walkable environment;
- Well-connected open space network: east access to the Upton Country Park and associated recreational facilities;
- Legible design: a legible structure of streets and blocks will link Upton to adjacent developments and amenities, such as the Upton Grange and Princess Marina Hospital developments, the Sainsbury's supermarket, other facilities at Sixfields and the Country Park;
- Resident management: this includes the management of SUDS and the maintenance of communal courtyards within blocks.

5.2.2.4 Perspective of Homes and Communities Agency (HCA)

Furthermore, THE Homes and Communities Agency makes special mention of community involvement which is key to planning. A masterplan was developed through a highly participative process. This means the project shows how a participative planning process can result in high-quality developments where people can live, work and play (HCA, 2012, p.2).

5.2.2.5 Perspective of Town and Country Planning Association (TCPA)

Furthermore, in light of the report of the TCPA, a series of design principles were applied during the development of Upton (TCPA, 2007, p.16).

a) Local distinctiveness;

- The design of Upton draws inspiration from the Northamptonshire vernacular, including local urban morphology, architecture and landscape design. The use of local materials and an innovative approach towards their application will help to establish Upton as a part of Northampton but with its own distinctive identity.

b) Achieving social cohesion

Social cohesion is sought through the following requirements.

- Diverse dwelling types and tenure mix: Upton will include a wide range of dwelling types, sizes and tenure to cater for people with different incomes and at different stages of their lives;
- Indistinguishable affordable housing: A minimum of 22% affordable housing will be provided, pepper-potting²⁶ throughout the development. The external design of the social housing will be indistinguishable from that of market housing, as is the case at Poundbury.

c) Mixed use

- The local population will support a mix of uses, including a primary school, local shops and live-work units. Other commercial office, retail

²⁶ Pepper-potting means that the dispersal of affordable housing units within residential developments to promote mixed communities and minimise social exclusion (Local Government Yorkshire and Humber, 2013).

and community uses will form a local centre along Weedon Road at Upton's northern edge.

d) Area-wide integration

- The local centre will form the activity focus for Upton and other communities to be developed within the South West District.

e) Environmental sustainability

- A sustainable urban drainage system (SUDS) is being put in place to manage rainwater run-off, and rainwater harvesting technologies are being incorporated into block and building design to allow for rainwater use within homes.
- The buildings in Upton try to achieve the expected rate of BREEAM EcoHomes' 'Excellent' standard.

5.2.2.6 Perspective of the Scottish Government (SG)

Moreover, based on the research, the Scottish Government states that 'In terms of the second Enquiry by Design, a series of key issues and preferences emerged from the first event are depicted in the following' (The Scottish Government, 2010, p.149):

- Compactness
- Walkability
- A preference for located the commercial element on the edge of the new neighbourhood rather than at its centre — enabling it to link better with adjoining neighbourhood;
- A preference for traditional 'streets' fronted by house fronts, doors and windows rather than 'estate' roads fronted by garden fencing;
- A preference for the sustainable urban drainage scheme to be a green space network rather than merely a piped system.

5.2.3 The applied design principles of new urbanism on Upton

5.2.3.1 Holistic study of design principles applied on Upton

The points are set up based on the theoretical framework of design principles of new urbanism discussed in Chapter 3. The following two tables summarise

the applied design principles in terms of the opinions from key participant and key agency at Upton.

- a) The summarised analysis of design principles based on different perspectives of key individuals

Table 5-2 below shows the detailed summarised analysis of design principles of new urbanism based on the different perspectives of key individuals.

Table 5-2: The design principles from the perspectives of key individuals
(marked by Ø)

Design principles	Trevor Beatie	Sylvia Short	Andrew Cameron	Rosanna Law	Total
a) In harmony with local context	Ø	Ø	Ø	Ø	4
b) Community involvement	Ø	Ø	Ø		3
c) Coherence (Within its own and with the existing vernacular urban pattern)	Ø		Ø	Ø	3
d) Compactness	Ø	Ø			2
e) Mixed use	Ø	Ø		Ø	3
f) Connective street pattern	Ø	Ø	Ø		3
g) Walkability		Ø	Ø		2
h) Pedestrian-friendliness	Ø	Ø	Ø	Ø	4

i) Diversity of architecture		Ø	Ø		2
j) Legibility		Ø	Ø	Ø	3
k) Adaptable building form		Ø			1
l) Sustainability	Ø	Ø	Ø	Ø	4
m) Return visit by designers after built-up			Ø		1

c) The summarised analysis of design principles based on different perspectives of agencies

Table 5-3 below demonstrates the summarised analysis of design principles of new urbanism based on different perspectives of agencies.

Table 5-3: The design principles of key agency (marked by Ø)

Design principles	EP	PF	EDAW and ABS	HCA	TCPA	SG	Total
a)Local identity			Ø		Ø		2
b)In harmony with local context	Ø					Ø	2
c)Connective street pattern	Ø	Ø				Ø	3
d)Mixed use	Ø	Ø	Ø		Ø		4
e)Adaptable	Ø						1

building form							
f)Sustainability	Ø	Ø	Ø		Ø	Ø	5
g)Legibility	Ø	Ø	Ø				3
h)Coherence (within its own and with the existing vernacular urban pattern	Ø	Ø	Ø		Ø	Ø	5
i)Walkability		Ø	Ø			Ø	3
j)Community involvement	Ø	Ø	Ø	Ø			4
k)Compactness		Ø				Ø	2
l)Pedestrian- friendliness		Ø					1

d) The applied design principles for the new development of Upton

The point of symbolic architecture and attractions in the framework is not listed according to the perspectives of key participant and key agency. However, adaptable building form is suggested on two occasions, based on an overlap between the two tables. Therefore symbolic architecture and attractions are removed in this Chapter, and replaced by adaptable building form. Return visit after the built-up is suggested by Andrew Cameron who believes this is an important action. This point has already been included in Chapter 4, in the analysis of Poundbury. Thus it will be applied to the analysis of Upton.

As a result, Upton is discussed according to the following points:

- Compactness
- Connectivity of street pattern
- Legibility
- Coherence
- Mixed use
- Walkability
- Pedestrian-friendliness
- Diversity of architecture
- Adaptable building form
- Sustainability
- Community involvement
- Return visit made by designers after built-up

5.3 The Analysis of Upton based on the Applied Design Principles of New Urbanism

The applied design principles can be clearly seen during the development of Upton. For further analysis, the following key question needs addressing: 'Can design principles promote local identity or harmony with local context at Upton?'

5.3.1 Can design principles of new urbanism promote local identity or harmony with local context at Upton?

a) Compactness

As discussed in Chapter 3, compactness is mainly analysed by the residential density in this research. For Upton, in fact, there are 1,511 dwellings on a whole 44-hectare site, which is more than the planned 1,382 dwellings at the masterplan stage. The gross average residential density on the whole site is 34DPH. The approximate residential density on different sites (see site boundary in Figure 5-4) is shown in the following table.

Table 5-4: Residential density of Upton

Upton	Number of Dwelling s	Site area (ha)	Residenti al density (DPH)	Nationa l target range (30-50DPH)	National very low density (≤20DPH)	National very high density (≥60DPH)
Site A	220	3.8	58	>50	-	-
Site B	204	4.8	43	30-50	-	
Site C	30	1.6	19	-	<20	-
Site D1	345	5.7	61	-	-	>60
Site D2	255	3.7	69	-	-	>60
Site E	56	2.5	22	<30	-	-
Sites F and G	401	7.5	53	>50	-	-
Total	1,511	29.6 ²⁷	51	>50	-	-
Old Upton ²⁸	236	8	27			

Table 5-5 discusses the residential density of Northampton town centre. Residential Areas 1 and 2 are marked in Figure 5-6. Based on the fieldwork, these two areas are typically representative for the calculation of residential density.

Table 5-5: Residential density of Northampton town centre

²⁷ The total sites net area is less than the whole gross site area, see Figure 5-4.

²⁸ Old Upton, please see Figure 5-3, right side of Upton.

Northampton town centre	Number of Dwellings	Site area (ha)	Residential density (DPH)	National very high density (≥ 60 DPH)
Residential area 1	1,710	2.2	78	>60
Residential area 2	9,230	17.7	52	-

By comparing the residential density in Tables 5-3 and 5-4, the closest residential area to the High Street of Northampton has the highest density 78DPH which is the very high density category. Residential Area 2, shown in Figure 5-6, is a bit further away from High Street but within Northampton town centre. Its density is 52DPH. The Upton average density is 51DPH. This means that Upton is compact; the same as Residential area 2. Nonetheless, Site D2 has a density of 69DPH which is almost compact, almost same as the 78DPH of Residential Area 1 in Figure 6, which is a very central area. For Sites A, D1, F and G, their densities are higher than that of Residential Area 2. Therefore, Upton is compact similarly with Northampton by comparing the residential density. This means that from the perspective of compactness, it can promote local identity for the new development at Upton.

b) Connectivity of street pattern

Connectivity means the state of being connected or interconnected (Cambridge Dictionary, 2013). There are no cul-de-sacs. For street pattern, Cameron (2013) states that the key thing is its connectivity by connecting anything to anything, like a mew street to a main street or a main street to a minor street. Sylvia Short (2013) considers that the streets within the neighbourhood should form a connected network which disperses traffic by providing a variety of pedestrian and vehicular routes to any destination. These linkages not only support social interaction and exchange, which are vital functions but also contribute significantly to the quality and identity of a new development (CMHC, 2002, p.1).

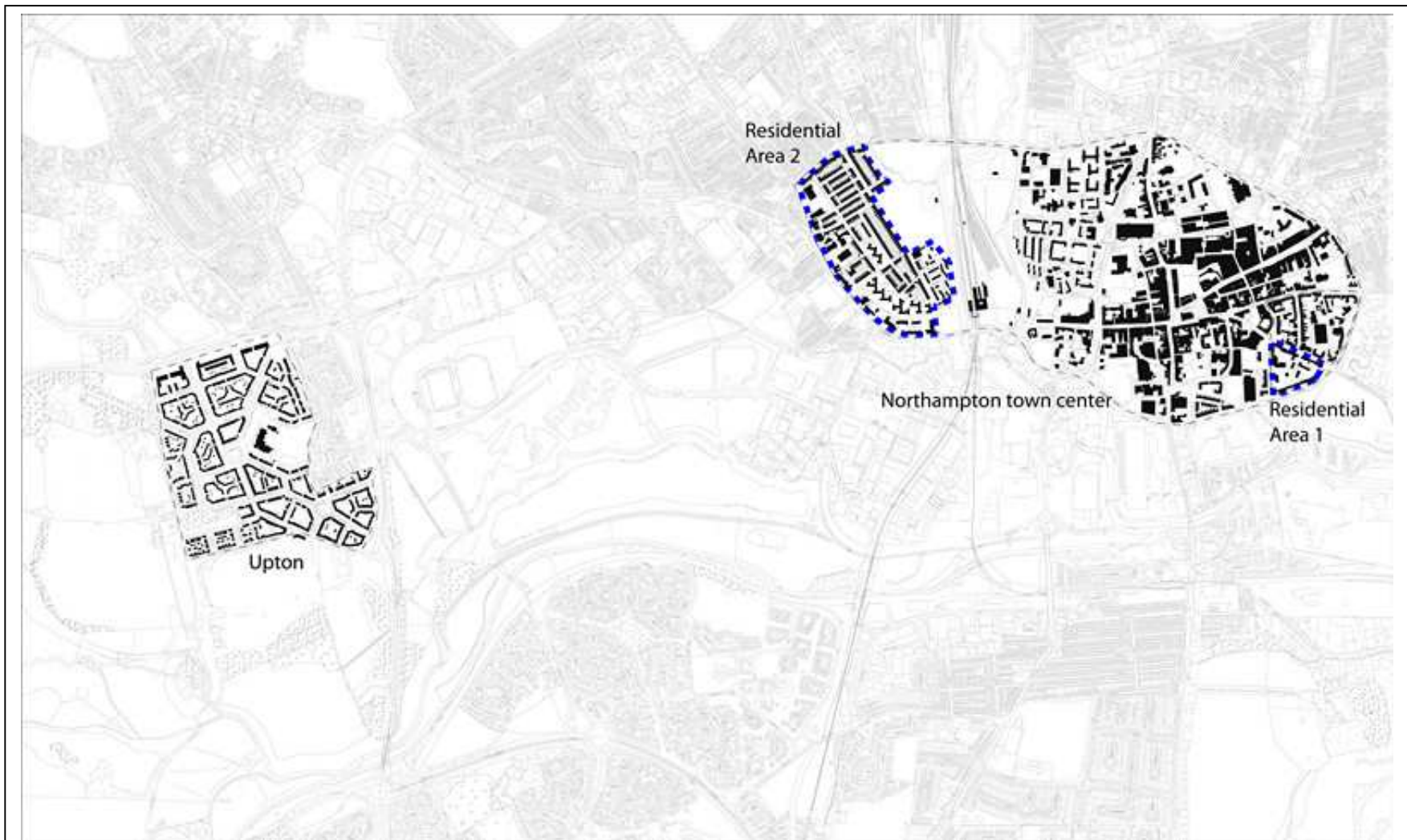


Figure 5-6: The comparative urban form between Upton and Northampton town centre, drawn by author, 05/2013.

First, it is about the connectivity within Upton. The streets of Upton connect with each other; meanwhile they are also a hierarchy, such as Weedon Road (Urban Boulevard). High Street (Main street of neighbourhood spine), ordinary streets, streets with SUDS (Sustainable Urban Drainage System), lanes and mews, as shown in Figure 5-7 of Upton street connectivity. Weedon Road, shown in blue, is a new dual carriage which links Upton itself and Northampton with the motorway as a fundamental part of a connective street pattern (Beatie, 2012). The High Street, shown in red, is the principal north-south route as an artery through Upton. It forms the movement spine of Upton including local centre next to the new junction with Weedon Road, two circuses and Upton Square (EDAW, ABA, 2005, p.26). The ordinary streets play an important role as a bridge for circulation routes within the residential areas of Upton. They connect the High Street and streets with SUDS, lanes and streets with SUDS, mews and the High Street. The Sustainable Urban Drainage System (SUDS) originally was designed because of a very serious flooding event around the Upton area in 1998. It endows Upton with a strong identity by defining its own urban form as an element of the infrastructure. There is an important relationship between the street system and SUDS playing particular attention to the orientation of streets and design integration of the SUDS (EDAW, ABA, 2005, p.34). The streets with SUDS set up an organic network to allow pedestrian-friendly permeability. The swales on these streets are designed in order to maximise exposure to direct sunlight (Cameron, 2013). It also provides a paradise of cycling and skateboarding for the youth. It is common to see children playing in these streets while people are walking around. The use of the lanes is allowing vehicles and pedestrians share a level surface between buildings (EDAW, ABA, 2005, p.37). Regarding the mews, according to the Oxford Dictionary (2013), they are a row or street of houses or flats that have been converted from stables or built to look like former stables. Mews must have building frontages on both sides of the street, designed as a shared level surface where pedestrians and cyclists have equal priority with vehicles (EDAW, ABA, 2005, p.38). Upton

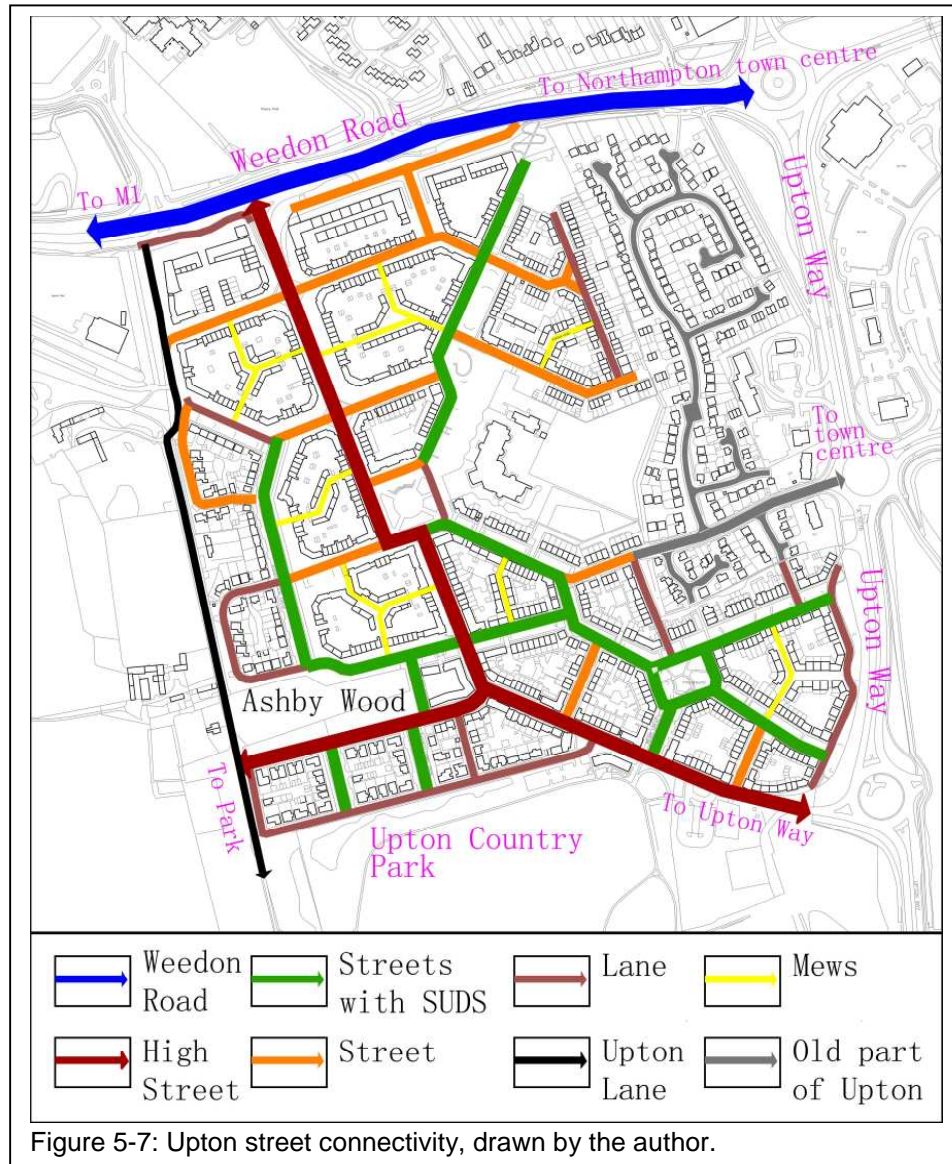


Figure 5-7: Upton street connectivity, drawn by the author.

Design Code (EP, NBC, PF, 2005, p.63) proposed two criteria for mews. One is there must be two-sided development along as much of the mews as possible. The other is that mews should be defined by building fronts along as much of the mews as possible. In Northampton town centre, the street pattern is also connective between streets of different hierarchy, such as the A508 (the north-south through road of Northampton), Abington Street (main street of town centre), streets, lanes and mews, and so on. So the connectivity of the street pattern hierarchy at Upton can be in harmony with that of Northampton. However, the physical link in the street pattern is weak between the old part and the new part of Upton. There is almost no connectivity of streets between two parts if the Telford Way does not connect

to the new part of Upton, shown in grey with an arrow to Northampton town centre. People living in the old part refused to open up their streets and refused to link with the new part physically. They only allow some footpath access between two parts.

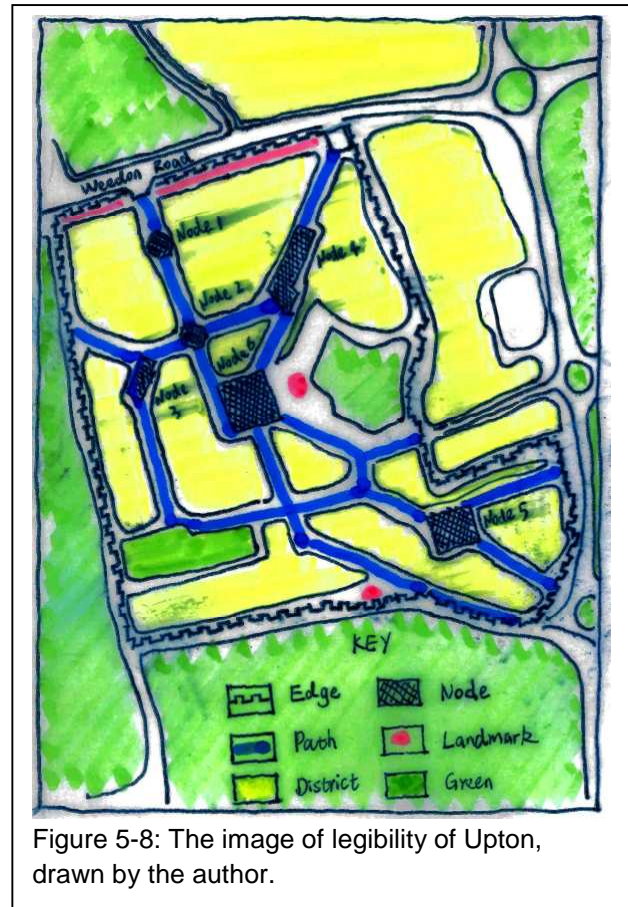
Furthermore, the streets of Upton need to not only connect within its own neighbourhood but also with Northampton because it is the urban extension of Northampton. In fact, the street design of Upton borrows the irregular, tight grid models from Northampton town centre, a traditional pedestrian centre. For example, the pattern of the fork junction is typical in the town centre of Northampton. You may find many fork junctions in Northampton like the junction between Kettering Road and Wellingborough Road, and the junction between St Giles Street and Derngate. A fork junction can increase flexibility in layout design (DT and CLG, 2007, p.86). Moreover, the north-eastern area of Northampton is predominantly defined by a much larger and orthogonal grid where urban expansion took place during the Edwardian and Victorian eras (EDAW, ABA, 2005, p.9). Upton also integrates this orthogonal grid into its own street pattern. As Cameron (2013) said, it is in harmony with that of Northampton with irregular linear – 45 degrees or 90 degrees, and the orthogonal grid. The identity of street pattern is very strong at Upton when it is designed with local context, as shown in Figure 5-6, of Northampton town centre.

In summary, the connectivity of street pattern can promote local identity to help people find different ways for going somewhere, which helps Upton deliver a good character that is in harmony with that of Northampton town centre.

c) Legibility

As discussed in Chapter 3, legibility is discussed according to the classification of Kevin Lynch, based from five elements: paths, edges, districts, nodes, and landmarks. Thus the legibility of Upton can be analysed by borrowing the ideas of Kevin Lynch who does influence the theory development of new urbanism.

At Upton, the discussion of legibility is about something that people can read easily, and it makes people sense a link in between Upton and Northampton from the analysis of the five elements. Figure 5-8 shows the paths, edge, districts, nodes and landmarks. First, Madgwick (2013) viewed that paths are legible if they are hierarchical, which help to promote local identity. The paths depicted in blue show the channels for the residents or visitors. This irregular grid existing in Northampton town



centre can also become an overall, hierarchical pattern as a distinctiveness of Upton. Second, the relationship between Upton and the surrounding Greenfield is managed with a clear edge via an outward-facing development (see Figure 5-9). The edge shown by the concave-convex is very recognisable. This means there is no suburban transition between Upton and the surrounding countryside. For some parts of the western and southern edges at Upton, the development intensity, shown in green (see Figure 5-9), is lower than elsewhere towards the Upton Lane leisure route on the west and Upton Country Park to the south (EP, NBC, TPF, 2005). The other parts, shown in orange, have the higher development intensity which not only prevents sprawl in the future but also creates an enclosed place for Upton, particularly Weedon Road which is shown as the top orange dashed line. Weedon Road is an important historical route into Northampton town centre. Some four-storey buildings are inspired by previous shoe factories which can be used as shops, offices, eating places, and other uses. The appropriate

scale of buildings along Weedon Road helps to establish a sense of enclosure and arrival (EDAW and ABA, 2005, p.14). Thus it is clear that Upton has a clear out-facing built-up area edge to make a new distinguishable development (see Figure 5-9). Third, the districts, shown in yellow of Figure 5-8, spot common characteristics as residential areas by using local materials. There are six nodes at Upton with three hierarchies from small to big; two roundabout Nodes 1 and 2, Node 3 Ashby Wood Drive, Node 4 of Knot Tiers Drive, Node 5 of the children's Play Area and Node 6 of Upton Square. For landmarks which are shown in red (Figure 5-8), three main landmarks can help people orientate themselves. The bottom one is Elgar Centre standing near the crossroads of Parkside and High Street. The middle one is Upton Primary School located at the west side of Upton Square. The third one is along Weedon Road which is a historical route into Northampton town centre. The architecture will be designed beautifully based on the shoe factories of Northampton, shown in Figure 5-10, because Northampton was famous as shoe-making city.

According to the analysis method used by Kevin Lynch, the analysis shows the edge, paths, districts, nodes and landmarks. This drawing can clearly direct people where they can go. As a result, Upton itself is legible, and the legible links is also clear between Upton and Northampton. Thus, Upton has its own characteristics which can be easily read by people, which means legibility can help to promote its local identity.

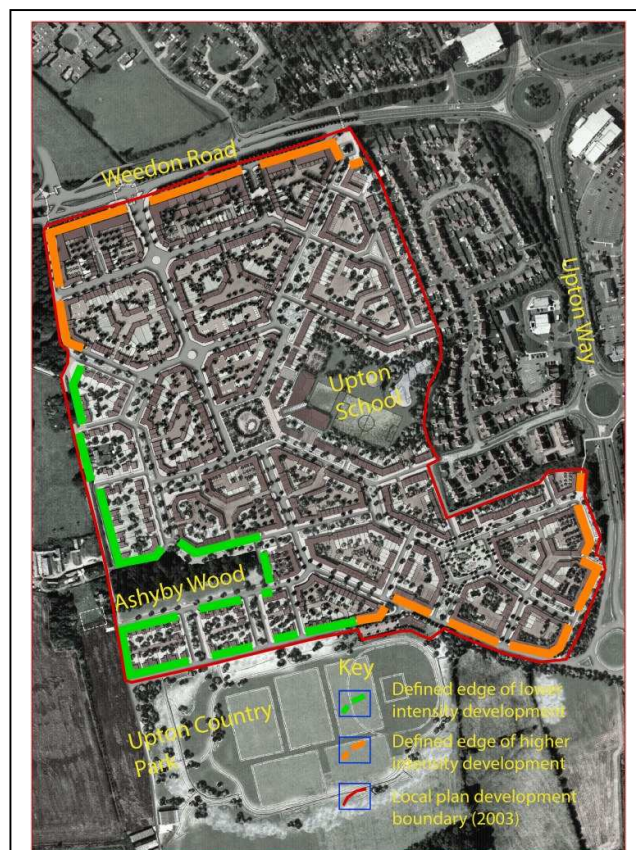


Figure 5-9: Clear edge between Upton and surroundings, drawn by the author, 05/2013.



Figure 5-10: Shoe factories in Northampton, photos taken by the author.

d) Coherence

As defined in Chapter 3, coherence in this research means that the structure of an urban extension is integrated whether within its own or with the existing vernacular urban pattern of Northampton. For the structure of Upton, as shown in Figure 5-9, it looks naturally organic because all the parts are interacting to an unified neighbourhood. Additionally, there are friendly relations among different sites without any physical or visual gap. Based on the discussion of legibility in the above, Upton is legible, which also helps clarify that Upton itself has a coherent structure. The structure of Upton is easily readable. Nonetheless, it is difficult to include the old part of Upton as a coherent part of a whole Upton, shown in grey in Figure 5-8. This has been argued in detail within the discussion over the connectivity of street pattern. The situation is easily understandable because the old part of Upton, as a suburban development, was developed much earlier than the new part. The street pattern is cul-de-sac, and dominated by cars. The urban pattern was formed influenced by the car-dominated street pattern. However, the people living in the old part do like the new part of Upton which has a strong coherence of social behaviour. They like walking dogs here, or accompanying their children to play at the Children's Play Centre.

Moreover, for the link of urban pattern between Upton and Northampton town centre, people can easily read the similar structure with an irregular street

grid, as illustrated in Figure 5-7. As an urban extension of Northampton, Upton does reflect its local character physically to avoid fragmentation by using 45 degree or 90 degree linear street grids and similar plot size.

To summarise, there is a very strong social and physical coherence within Upton itself but the street links with the old part of Upton are weak. Therefore, Upton itself is coherent within its own, and its urban pattern has a link to physical urban form with Northampton town centre. This means that applying the design principle of coherence can promote local identity of Upton by linking itself and Northampton on physical urban form.

e) Mixed use

According to Kelbaugh (2000), mixed use attempts to achieve an equitable mix of people of different income, ethnicity, race and age, and a civic ideal that coherently mixes land of different uses and buildings of different types, which make residents feel they are part of - even proud of - their culture that is more significant than individual and private worlds.

There are three dimensions of mixed use in Upton, which are functional mix, social mix and ecological mix. First, with functional mix, based on the master plan of Upton, its main parts will be grouped along the south-bound route of Weedon Road like pub/restaurant, shops, offices, live-work space, housing with active ground floors, and other community facilities. In fact, the site of Weedon Road is still empty with no indication that construction is due to commence. The master-plan also shows there will be some small-scale shops and community facilities along the High Street. Currently, there is only a small shop at the corner of Black Cat Drive and Clickers Drive, a primary school at Upton Square, a meeting and event place named Elgar Centre at the corner of Parkside and High Street, and two temporary home sales near Upton Square. Apart from those, there is a Travel Lodge and a restaurant named Buddies in the old part of Upton. Therefore, it is very hard to find many other parts playing different roles except residential buildings, visitors may find it very difficult to find a place to drink and eat. However, it would be much better if the aspect of functional mix has to be argued in a bigger

spectrum. As shown in Figure 5-11, a very big service centre, not far away at 1.3 miles, is located on the top right side of Upton. This centre also provides services for several other communities living nearby. There are superstores, pubs, restaurants, entertainment, education and sports facilities, a Travel Lodge, and other business, and so on.

Second, regarding social mix, it is mainly focused on mixing social housing with private residential housing. As argued by Kelbaugh (2000), people might be proud of their culture if different income and ethnic groups are equitably mixed. The per-centage of social housing of Sites A, B, D1, F and G is at the

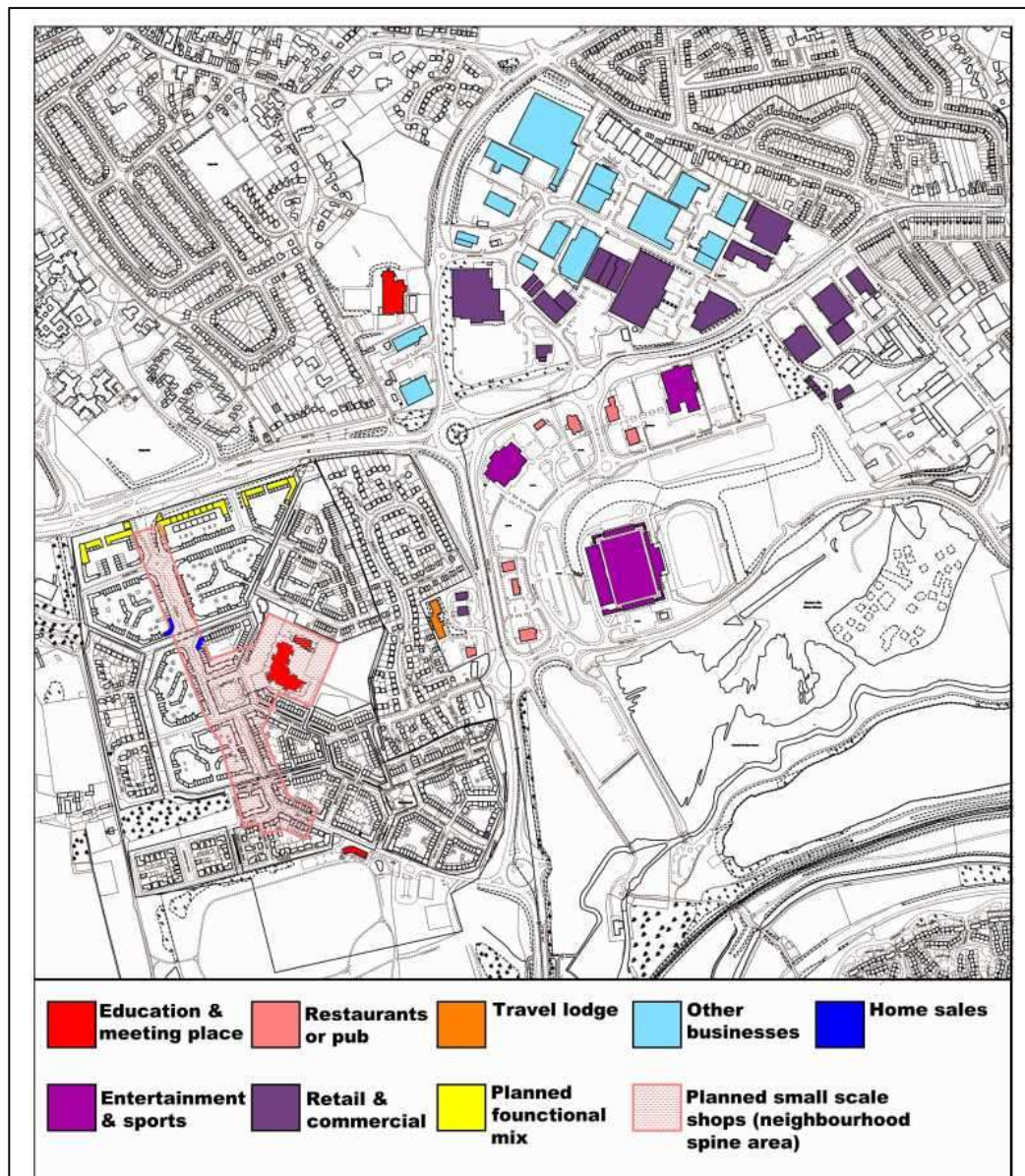


Figure 5-11: Mixed use of Upton and its surroundings, drawn by author.

ordinary level as the other new developments are following the pepper-dotted principle. It is hard to recognise which is social housing and which is not. Six innovative homes become the first social housing units in the UK to achieve Code Level 6 status (Lynch, 2012). For Sites C and E, the house prices are much more expensive than those of other sites because of the low residential density and big size. As a result there is no social housing at these two sites. However, at Site D2, there are too many social housing leading many complaints from the private houses. During the survey and fieldwork of the author, many people said that the 60% social housing on Site D2 is much more than the 30% that the developer stated when they bought the private property several years ago. Anti-social behaviour disrupts the lives of the residents and destroys public places, such as vehicle nuisance, substance misuse, environmental damage, and so on. What is more, it is easier to distinguish which houses are social housing because all of them look very similar. Some people would like to sell their private properties but they find it is difficult. The buyers immediately give up once they see the real properties for themselves. This can deliver the clear lesson that the per-centage of social housing at Site D2 should retain a similar level with Sites A, or B, or D1, or F and G and the design of social housing should follow the pepper-dotted principle.

Table 5-6: Social housing per-centage

	Site A	Site B	Site C	Site D1	Site D2	Site E	Site F and G
Social Housing Units	49/220	45/204	0/30	104/345	153/255	0/56	113/401
Per cent	22%	22%	0%	30%	60%	0%	26%
Total	464/1511=31%						

Third, for ecological mix, it includes two points which are houses of Code Level 6 and Sustainable Urban Drainage System. All these are discussed in detail on the aspect of sustainability.

Overall, Upton can benefit from a mix of uses although the per-centage of social housing in Site D2 should be much lower, at about 30%. Most possibly, it would achieve more benefits in the near future when the local centre along Weedon Road is completed, and when all the buildings are totally completed on both sides of the neighbourhood spine. The functional mix can promote local identity or harmony with local context by meeting the community's own needs as is the case with Northampton town centre, although the proportion of social mix is very high.

f) Walkability

In terms of the previous arguments about 'walkable', 'walkable neighbourhood', and 'walkability' in Chapter 3, it is not difficult to find a way to analyse if Upton is walkable. Upton has no tram or train service at present, so walkability is an important aspect of community use. Local residents have daily needs, such as, drinks and food, shopping, services and local facilities, and so on. The layout of shops, services, and facilities is significant in order that all the needs are as approachable as possible for local people by walking. Three centres are identified at Upton with a concentration of commercial and community uses; these are the linear local centre of Weedon Road, Upton Square, and Children's Play Area. The linear local centre of Weedon Road and Upton Square, shown in pink in Figure 5-12B, have both commercial and community functions in the light of the master plan. However, the commercial uses on both are due to be constructed in the near future. There are no planned commercial buildings around the Children's Play Area. In fact, Upton is dependent on a very small-scale shop, which is close to Children's Play Area, for meeting the basic daily needs. If people have more shopping requirements, they have to use the adjacent commercial and service centre, shown in orange in Figure 5-12A. It is not possible to reach anywhere within the orange centre by walking five minutes from Upton. The

10-minute walking circle, shown in magenta in Figure 5-12A, shows that a small part of Upton can be serviced by the surrounding big commercial and service centre. This means many people have to go shopping by car.

The situation will change, however, if the local centre along Weedon Road and Neighbourhood Spine, shown in pink in Figure 5-12B, is built-up. If this happens, these two areas will jointly cover the whole of Upton by a five-minute walking range. In this case, Upton will have good walkability. Based on the 10 minutes walking range, the commercial and community facilities will also offer some benefits to other surrounding communities.

In summary, Upton itself is currently walkable from the perspective of public

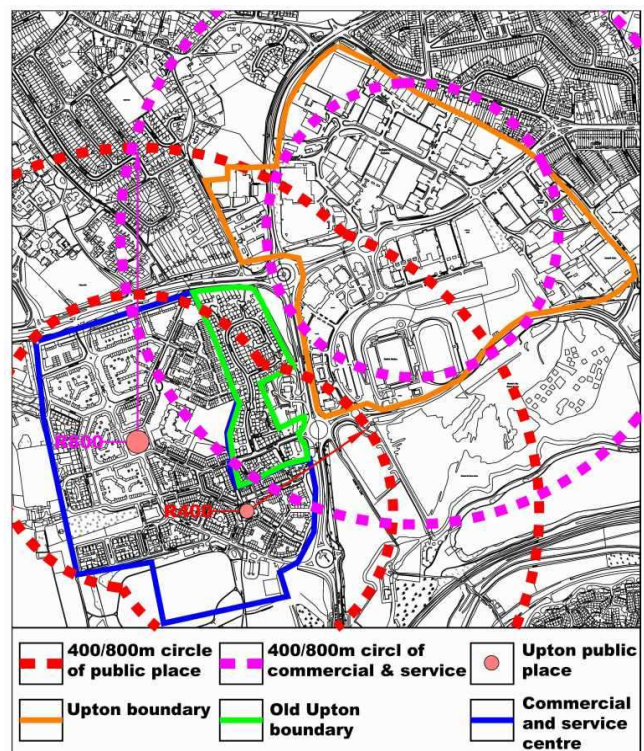


Figure 5-12A: The walkability analysis before local centre of Weedon Road and Neighbourhood Spine complete. Drawn by author.

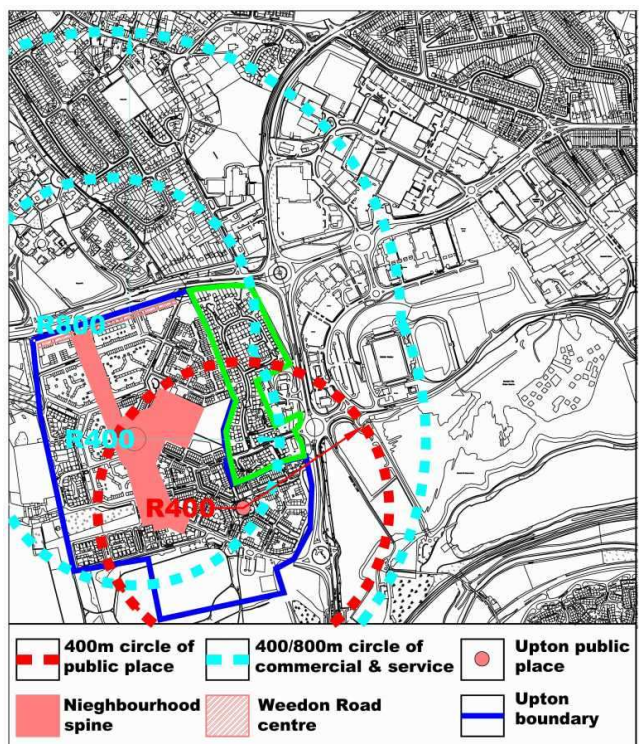


Figure 5-12B: Walkability analysis after local centre of Weedon Road and Neighbourhood Spine complete in the near future. Drawn by author.

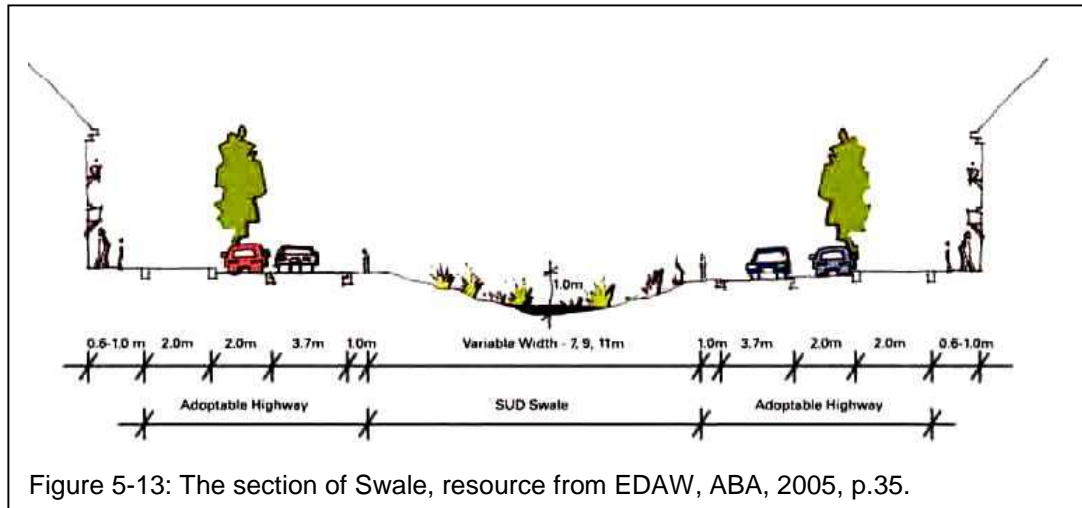
places as one of the important components of community uses, shown in Figure 5-12A. However, it is not walkable if people use the big shops, services, or other facilities. Nonetheless, Upton is supposed to be walkable in the aspects of commercial and community uses when the local centre of Weedon Road and buildings along the neighbourhood spine are completely built-up, shown in Figure 5-12B. Walkability is significant to encourage people to use shops, services or other facilities on foot.

g) Pedestrian-friendliness

In terms of the summary of some literature reviews about the transit-oriented development, walkability, and pedestrian-friendliness, five questions need to be discussed to analyse pedestrian-friendliness of Upton, as originally discussed in Chapter 4. They are: a) Do you have space to walk? b) Is it easy for pedestrians to cross streets? c) Is it simple to follow safety signs and rules? d) Do drivers comport well? e) Is your walk pleasant and enjoyable?

First: *Do you have space to walk?* The footway of the High Street (the main street) is a minimum of 2.5 metres and a maximum of 4 metres wide on both sides. On both sides of the streets, they are normally wide between 2 and 3 metres. Concerning the street with SUDS in the middle, the footway on both sides of the street is 2 metres, and on both sides of the swale it is 1 metre respectively (see section of Figure 5-13). On lanes and mews, pedestrians share the surface which is wider than 6 metres with vehicles or cyclists. Quite a few vehicles use this route. Thus pedestrians are able to use the wide space almost 24 hours a day. As a result, there is enough footway space to walk around Upton both comfortably and safely.

Second: *Is it easy for pedestrians to cross streets?* The width of the carriageway is 6.1 metres with two lanes, and this is the case both on the High Street or other streets. This is on the human scale, and makes it easy to cross the streets. For the streets with SUDS, the width of one lane is 3.7 metres on both sides respectively. Pedestrian crossings or bridges over swales are provided at every 60 metres maximum, so that continuous and safe pedestrian circulation can be ensured (EDAW and ABA, 2005, p.34).



Therefore, it is easy for pedestrians to cross streets at Upton.

Third: *Is it simple to follow safety signs and rules?* In fact, there are not enough detailed safety signs and rules to give people good guidance because Upton is still in the process of construction, people would inevitably feel confused. However, people state they feel safe although these community facilities are not yet mature enough. They will be completely satisfied when the constructions are completed.

Fourth: *Do drivers comport well?* The drivers comport in a friendly manner at everywhere in Upton. This point is supported in two ways. Many local residents said the drivers did comport well when they were driving within the community. The author herself has visited there on many occasions for fieldwork and questionnaires and never encountered uncomfortable experiences with drivers. Therefore, drivers comport well at Upton.

Finally: *Is your walk pleasant and enjoyable?* The above analysis can help to answer the last question. There are enough footways with space to walk. The streets are easy for pedestrians to cross although the safety signs and rules are not currently mature enough and need to be improved. The drivers comport well when they drive at Upton. What is more, it is safe and enjoyable when people walk on the street, especially on the streets with SUDS, the outfacing streets with good views, and mews, which can give people a strong sense of place. As a result, the walk at Upton is pleasant and enjoyable.

To summarise the above findings, Upton is pedestrian-friendly. People can read and enjoy the community by pleasant walk in walkable ranges, which can contribute to promote local identity.

h) Diversity of architecture

Upton has diverse architecture styles. People are able to see the diversity of architecture if visiting Upton, or even seeing photographs of the town. There are now two public buildings at Upton. One is Upton Primary School located on the east side of Upton Square, and the other is Elgar Centre, location see the bottom red point in Figure 5-8. The other buildings of completed Sites A, B, C, part of D1, D2, and E, are used for residential purposes, apart from a small converted shop as discussed in the point of 'mixed use'. The Prince's Foundation was more heavily involved in Sites A and B than the other sites (Law, 2012). Therefore, Site A and Site B are in harmony with each other and are more neo-traditional. For the other sites, the architecture styles appear less neo-traditional in style.

The discussion started with a description of the buildings around Upton Square, shown in Figure 5-14. Upton Primary School is now the only public building around Upton Square. It is difficult to say what its exact style is. It might be more modern than traditional with pitched gable wall facing outward and a few large steel pipes on the roof. Two residential tower buildings are symmetrically located on both sides of the Primary School. They use steel



Figure 5-14: Upton Square and shoe factory of Northampton, photos taken by the author.

structures on the roof and have big windows. The residential building on the north side of Upton Square has a flat roof and a big volume designed to one-bedroom and two-bedroom apartments. The west side of Site D1 is still under construction, and enclosed by block walls. The corner building between High Street and Scribes Drive shows some characteristics from Northampton shoe factory. The harmony can be demonstrated according to the last two photos of Figure 5-14. Simply put, the architecture is more modern according to the style and materials observed around Upton Square.

The second point relates to residential buildings. There are quite a few styles. Some of them are typical, such as, neo-eclectic, the style of the renaissance villa in Italy, neo-classical, Victorian, ordinary render house, localised gable wall style, modern design with traditional architecture language, modernism with a little minimalism, and so on.

To begin with, neo-eclectic combines detailed decorative techniques from the house styles of different historic periods and also combines brick, stone, vinyl, or composite materials. The style of residential buildings located in a fork shape and named Clickers Mews is actually neo-eclectic (Image 1 and 2, Figure 5-15). The buildings here combine the styles of different historic periods and materials of brick and stone. In addition, the style of the renaissance villa in Italy can also be found. Referring to the buildings along Clickers Drive between Black Cat Drive and Clickers Mews, the two corner



Figure 5-15: Diversity of architecture at Upton. Photos are taken by the author.



Figure 5-16: Diversity of architecture and harmony between Upton and Northampton, photos taken by the author.

towers are typical of the style of a renaissance villa in Italy with features of tripartite division, and stringcourses style to show the renaissance of order, rationality and classism on human scale (Image 3, Figure 5-15). There are again some houses with a modern style but which use the material of stone like a rustic medieval castle (Image 4, Figure 5-15). The corner building standing at the crossroads of High Street and West Street seems to be of a neo-classical style. Neo-classical is not any one certain style but a trend, or an approach to contemporary classical design by using classical vocabulary.

It tends not to focus on sculptural volumes but planner qualities (Image 5a, Figure 5-16). Moreover, the houses on Scribes Drive facing Bristle Street are more like Victorian house (Image 6a, Figure 5-16). The typical features of Victorian-style house are pitched slate roof with chimney, using materials of red brick or stone. Sometimes they would be built with bay windows. There are also mews built like that of an old Victorian town; for instance, Scribes Mews (Image 7a, Figure 5-16). What is more, the ordinary render house can be found at Upton (Image 8a, Figure 5-16). Next to consider is the localised style standing opposite Code Level 6 buildings. The design concept most reflects Northampton's vernacular building styles, particularly the profile of continuous gable walls facing onto the street (Image 9a, 10a, 11a, 12a, Figure 5-17). This style can be traced back to the residential area of the old shoe factories. For many residential buildings, the party walls are applied on the roofs (Image 12a, Figure 5-17). These party walls can also be traced on the roofs of residential buildings in Northampton. Furthermore, there are several impressive houses outward-facing Upton Country Park at Site C. They are of a contemporary design that uses some traditional architecture language of a gable wall with a pitched roof. The contemporary style incorporates big open viewed glazing while still employing the traditional house profile (Image 13, Figure 5-18). Additionally, there is a building standing at the corner of High Street and Upton Hall Lane. It is more modernism in its style, with a bit of minimalism like the design of Adolf Loos (Image 14, Figure 5-18) although the elevation facing on to Moorcut Drive seems to reflect cubism architecture (Image 15, Figure 5-18). Besides the above, a totally different style exists at Upton; the RuralZed Code Level 6 homes (Image 16, Figure 5-18). These houses seek the target of sustainability but sacrifice harmony with its residential surrounded buildings. Finally, the modern residential buildings that were built in Site D2 comprise apartments with sustainable techniques on the flat roof.



Based on the above discussion, people can explore similar architecture style language in Northampton on neo-classicalism (Image 5a and 5b, Figure 5-16), The Victorian house (Image 6a and 6b, Figure 5-16) and mews (Image 7a and 7b, Figure 5-16), render house (Image 8a and 8b, Figure 5-16), gable wall houses (Image 9a and 9b, 10a and 10b, 11a and 11b, Figure 5-17), and party wall (Image 12a and 12b, Figure 5-17) when people visit Northampton town centre. All these styles are encouraged by new urbanism.

In summary, the architecture styles are diverse at Upton including neo-classicalism, neo-eclectic, renaissance villa in Italy, Victoria, localised style, ordinary render house, contemporary design with a bit traditional architecture language, modernism with a bit minimalism and cubism, RuralZed ecohomes, and modernism. However, the style of modernism has already overstepped the design principle of new urbanism on diversity of architecture. Therefore Upton would have applied a diversity of architecture in a much better way to promote local identity if it had not mixed many buildings of modernism.

i) Adaptable building form

Places need to be adaptable at every scale; for example, a household makes different demands on a house as children are born and grow up (Commission for Architecture and Built Environment, 2012, p.29). Changes

demand the adaptability of housing and the nature of workplaces. In light of Short (2013), adaptable building form in Upton includes two points. One is that a small ancillary or garage apartments within the backyard of each house allows someone to operate a small office or craft workshop in their house in the future. The other is that dwellings on the High Street and the Main Square were to be designed with higher ceiling heights on the ground floor and internal layouts to allow a change of use to a small shop or office in the future, shown in pink in Figure 5-19. In fact, there is no evidence to show the functional conversion on any ancillary buildings or garage apartments



Figure 5-18: Diversity of architecture at Upton, photos taken by the author.

within the backyard of each house and the dwellings with higher ceiling heights of the ground floor on the High Street and the Main Square. The only conversion is a small-scale shop located on the corner of Clickers Drive and Black Cat Drive, which demonstrates the initial operation of adaptable



Figure 5-19: Upton adaptability, drawn by the author.

building form at Upton, as shown in red in Figure 5-19. If a new development specifically adopted the design principle of adaptable building form, in the manner of the traditional community, this might help to promote local identity by shaping its own characteristics with some local shops converted from dwellings and small offices or craft workshops in the backyard.

j) Sustainability

As reviewed in Chapter 3, a sustainable community focuses on environmental perspective of providing places for people to live in an environmentally friendly way at the planning stage. It is significant to reduce carbon dioxide emissions by using technologies (e.g. renewable solar energy), reducing car use, encouraging cycling, walking and use of public transport, and others.

As a result, four main aspects are discussed in the following about sustainability at Upton from the perspective of the environment. First is about public transport. Second is high environmental standard. Third is Sustainable Urban Drainage System. Fourth are uses of local sourced materials.

First, *public transport* is convenient at Upton. Based on the master plan, Weedon Road is a new dual carriageway to connect Upton and Northampton

by embracing good public transport services. In addition, there are two bus lines running every 30 minutes during the day-time and once every hour at night through the whole community. People feel this public transport service is convenient to go to Northampton and it is not necessary to have to use their cars.

Second, regarding

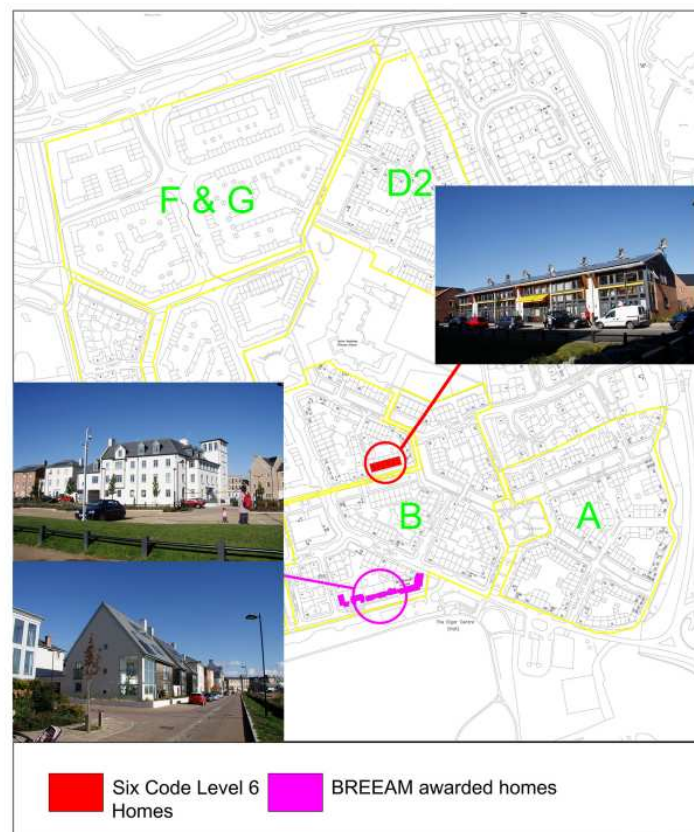


Figure 5-20: Code Level 6 Homes and BREEAM awarded EcoHomes, drawn by the author.

high environmental standards, all the new buildings at Upton are required to achieve BREEAM (Building Research Establishment Environmental Assessment Method) excellent rating (Law, 2013) and are assessed by qualified assessors at the design stage and post-construction.

For housing, English Partnerships additionally applies the NEF (National Energy Foundation) scheme known as the NHER²⁹ (National Home Energy Rating) (EDAW, ABA, 2005, p.88). The NHER is assessed during the design stage by registered NHER assessors. In particular, Plots 1-19, Block 6, Site B of Upton was announced as the BREEAM Award EcoHomes Winner in 2007 (BREEAM, 2007), shown in magenta in Figure 5-20. Moreover, six social homes are designed to achieve Code Level 6 status as upgraded versions of the standard Rural Zed house, shown in red in Figure 5-20. They

²⁹ The NHER is the UK's first and largest energy rating scheme. The highest rating is 10.0. It is owned by National Energy Services (NES), available at www.nesltd.co.uk, accessed on 04/06/2013.

achieve a higher environmental standard than other houses. Thus it is easier for people, particularly visitors, to identify these six different Upton Zed houses. This means this point can help Upton to create identity.

Third, the *Sustainable Drainage System* is designed to prevent serious flooding which happened once in 1998. The layout of streets with SUDS is designed to optimise sunlight onto them like a network of green 'fingers' (EDAW, ABA, 2005, p.34). This contributes to the sustainability of Upton although it is different to the local context of Northampton. However, it specifically denotes one of the important identity features for Upton.

The fourth point relates to the uses of *local sourced materials* at Upton. The use of local sourced materials does not only reduce the emissions of carbon dioxide by reducing transport required to deliver it but also promotes local identity. Upton Design Code (2005, p.82) encourages Upton to use local materials by four aims: a) Using local materials is a successful environmental technology with integration of building fabric; b) the choice of local materials reflects the locality and context; c) local craftsmanship and architectural 'tectonics' are celebrated in the making of buildings for Upton; and d) architectural design establishes a dialogue and continuity with the Northampton vernacular. In fact, Upton uses the local sourced materials quite extensively, such as red brick, stone, timber, plant hire, and so on, during the development. Therefore, use of local materials plays an important role in promoting local identity. To summarise, sustainability does promote local identity by the above aspects during the process of development at Upton.

k) Community involvement

Community involvement is considered a vitally important element for creating good new developments. The outcomes from planning affect everyone, and everyone must therefore have the opportunity to play a role in delivering effective and inclusive planning (ODPM, 2005, p.15). The planning and Compulsory Purchase Act 2004 (ODPM, p.11) regulates that the local planning authority must prepare a statement of community involvement. A statement of community involvement sets out how a local planning authority

will involve local people in planning and development issues affecting its own living place. Active participation in the development of options and proposals should be at the heart of the process and people need to feel that their participation can make a difference (ODPM, 2004c, p.8). The ways that people are involved include focus groups, workshops, meetings with individuals or small groups, and residents' committee meetings. This also requires a range of ways in which to consult with, notify and inform people, such as questionnaires, online discussions, public exhibitions in accessible locations, leaflets and posters, letters and email, council website, local media, council publications, and so on (SCPT, 2008, p.8).

At the Upton planning-making stage, community involvement was delivered via Enquiry by Design which is an important tool of new urbanism. Upton initially set up its residents' committee; unfortunately, this was disbanded some time ago. Consequently, the community involvement at Upton mainly focuses on Enquiry by Design. There are three instruments of new urbanism: charrette, masterplan and design code. In the UK, charrette is usually called Enquiry by Design. Enquiry by Design is a part of the planning process with an opening perspective at the real site instead of behind closed doors. It brings together key stakeholders to collaborate on a vision for a new or revived community to assess a complex range of design requirements for the development site, with every issue tested by being visually depicted (The Prince's Foundation, 2012b). It has started to play an important role in some new developments in the UK aiming at creating best practice due to the major influence of new urbanism since the late 1990s.

The demonstration of Enquiry by Design is through a couple of days activity normally up to five days. It is always preceded with good preparations by seeking key points and acquainting the main persons in advance with the process. The key stakeholders involved include local community, voluntary groups, local agencies and authorities, statutory agencies and interest groups, developers, retailers, urban/spatial planners and architects, sustainability experts, transport engineers, environmental experts,

landowners, and others. Enquiry by Design is focusing on developing a response to local characteristics and issues as well as the skills and knowledge of conveneers. During an Enquiry by Design workshop, it is hoped that a consensus can be achieved for the pattern of future development and to take forward the proposals jointly for the new community (Neal, 2003, p.239). By virtue of analysis of The Prince's Foundation (2012b) and others, the outcomes generally would be a comprehensive report which comprises details on the following: a) the objectives of Enquiry by Design; b) the key principles with a summary of review and comments to guide the development properly; c) a series of plans in a shared vision for the development site, including an overall masterplan; d) the potential targets of implementation; and e) critical ideas for further research.

Upton has been particularly innovative in terms of engagement through Enquiry by Design which was pioneered in 1999 by The Prince's Foundation and English Partnerships. Northampton Borough Council had already granted a plan of Upton based on the suburban car-dominated paradigms of the mid-1990s. However, this plan faced a great deal of criticism from local people because it did not emphasise quality of product but focused more on ease of the development process in the Upton area. Local people have an extremely increasing interest in environmental sustainability and want a place-making plan with high-quality. Therefore, it was necessary to seek a new approach to make changes. In 1999, a partnership was formed to launch a major national initiative promoting sustainable urban extensions as the new approach (Neal, 2003). Thus, Enquiry by Design was initiated by The Prince's Foundation which is well known for developing and teaching new urbanism and English Partnerships which was greatly influenced by new urbanism. In late 1999, the first Enquiry by Design tried to offer a different vision towards something better by consulting key stakeholders, particularly involving local communities before getting a plan. People were asked what the model of Upton should look like via leaflets and posters, online discussions, local media, and publications. This was to allow people to say as much as possible about what they like, and to express what the local

context is. In order to develop more detailed proposals, the second Enquiry by Design was held in December 2001. During Enquiry by Design, you can talk to a huge amount of people. Many of them are from local communities and are very familiar with the local context (Cameron, 2013). This helped to achieve a consensus for the pattern of future development and take forward the proposals jointly for the new community (Neal, 2003). Via Enquiry by Design, it came out a draft plan. This probably condensed three months' work to one week, which saved a great deal of time (Cameron, 2013). The outcomes were shown to the public, in a number of ways, such as the public exhibitions in Northampton town centre, council website, local news, and so on. A masterplan with identity was established in 2002. People can feel the positive difference because of their participation.

Overall, community involvement plays a key role for shaping a new community because local people know local context from different perspectives, such as, history, culture, character, environment, social context, and so on.

l) Return visit by designers after built-up

This is not an original design principle of new urbanism as discussed in Chapter 3. However, some interviewees (Conibear, Cameron, Bolgar, Smyth, Pineo, Madgwick, 2013) and many questionnaire responders (Poundbury and Upton residents) argue this is important to promote local identity for shaping a new development. For return visit after built-up, this is the responsibility of architects, urban designers and planners. There is no evidence to show that return visit happens currently; however, the professionals are suggested to return to the site to assess progress and identify any areas for improvements. They can go back to see if their design concept have been delivered properly. If not, they can analyse the reasons via the return visit in order to learn lessons. The designers should include all the experts involved, such as urban planners, urban designers, architects, engineers, and others. The return visit is not compulsory but encouraged. Designers would greatly benefit from the visit because they are able to know

the differences between *before* completion and *after* completion. Local residents are also happy to communicate with the designers and relate their experiences. The opinions might not always be positive; however, that will also be helpful for making better new developments where people want to live, play and work in the future. For Upton, return visit by designers after built-up stage should be positively encouraged although the designers respond negatively.

5.3.2 Summary of analysis

First, compactness plays an important role for shaping urban form and making a community enjoy more effective land use in the same way as the case of Northampton. Therefore compactness can help to promote local identity or harmony with local context at Upton. Second, for the connectivity of street pattern, it helps Upton to deliver a strong identity which is harmonious with Northampton although the connectivity between the old and new parts of Upton should be reinforced. Third, Upton is legible with a hierarchy and readable structure which is an equally important aspect for a traditional town, community or village. Fourth, in light of the analysis of the design principle of coherence, Upton is coherent within its own. The urban pattern has a physical link with that of Northampton. Obviously, coherence can help to promote local identity for Upton. Fifth, Upton will have a mix of uses when it is totally completed including a local centre along Weedon Road and all buildings on both sides of neighbourhood spine. Sixth, currently, the public places are walkable, like Upton Square and the Children's Play Area. People living in Upton will use shops, restaurants, services and community facilities conveniently on foot when the new development is completed. Seventh, the design principle of pedestrian-friendly is applied successfully at Upton by promoting local identity or harmony with local context. Eighth, the architecture style is diverse at Upton, but that would be more positive without mixing modernism. Ninth, adaptable building form may help Upton to shape a stronger identity if more adaptability occurs in the future. Tenth, sustainability is able to promote local identity during the development process of Upton. Eleventh, community involvement is essential for promoting local identity for

a new development. In Upton, community involvement needs to be reinforced with more and more residents. Finally, return visit by designers after built-up stage should be positively encouraged as the designers respond negatively.

Overall, according to the above analysis of Upton, it manifests as one of the step-forward cases to promote local identity by applying design principles of new urbanism, which may have implications for other new developments.

6 Evaluation

There are three components to Chapter 6: the questionnaire analysis of Poundbury, the questionnaire analysis of Upton, and the evaluation outcomes. These three points focus on the importance of the analysis of new urbanism design principles established in Chapter 3.3 and discussed in Chapter 4 and Chapter 5. By administering the questionnaire as a data collection tool, it can be summarised that the design principles of new urbanism play important roles in promoting local identity or harmony with local context for urban/village extensions. The sample sizes of the questionnaires at Poundbury and Upton are 222, 184 respectively in this research.

6.1 Questionnaire Analysis of Poundbury

The initial outcomes of two case studies are that the design principles of new urbanism can promote local identity or harmony with local context for urban/village extensions. The purpose of the questionnaire is trying to critically assess these outcomes as this tool is often used to collect factual information (see 2.1.3 and 2.2.3).

In order to attain the goal above, the questionnaire of this research was designed with three sections by using closed questions (see sample in Appendix A). As discussed in 2.2.3, the demographic information of age and gender forms the first section. This infers that every member of the wider population has an equal chance of being included in the sample (see 2.1.3). As a result, the analysis is not cross-tabulated to compare how opinions vary between these groups. Section 2 of three questions tries to obtain the overall review about Poundbury via three questions; the aim of these is to further demonstrate the representatives of cases by illustrating statistical findings. Finally, Section 3 rates the importance of design principles of new urbanism by each of the respondents, for Poundbury or Upton, based on their views and perceptions. What the targeted population needs to do is rate the

importance of promoting local identity or harmony with local context for every single design principle. It is expected to guide the future extension. The purpose of the third section is not only to help to further assess the validity and reliability of the investigations of Chapters 4 and 5 but also to help to answer the research question rigorously.

In order to best achieve the above purposes, this research adopted the pilot study which plays an important role in correcting any parts of the questionnaire which might be ambiguous, or cause confusion and identified some hot spots for questionnaire (e.g. shops, bus stops, and play grounds). Through the pilot study, it was found that 30 or 40 questionnaires could be done per day, which helped the researcher to arrange the questionnaire trips to Poundbury and Upton.

Finally, the illustrated statistical findings are presented in the form of tables and pie charts. They are often considered as scientific and validated results (see 2.1.3). Thus the collective results are expected to allow the researcher to generalise the research outcomes – the design principles of new urbanism are ‘Important’, ‘Very important’, or ‘Extremely important’ to promote local identity or harmony with local context for urban/village extensions.

6.1.1 Analysis of three questions in the Poundbury Sample

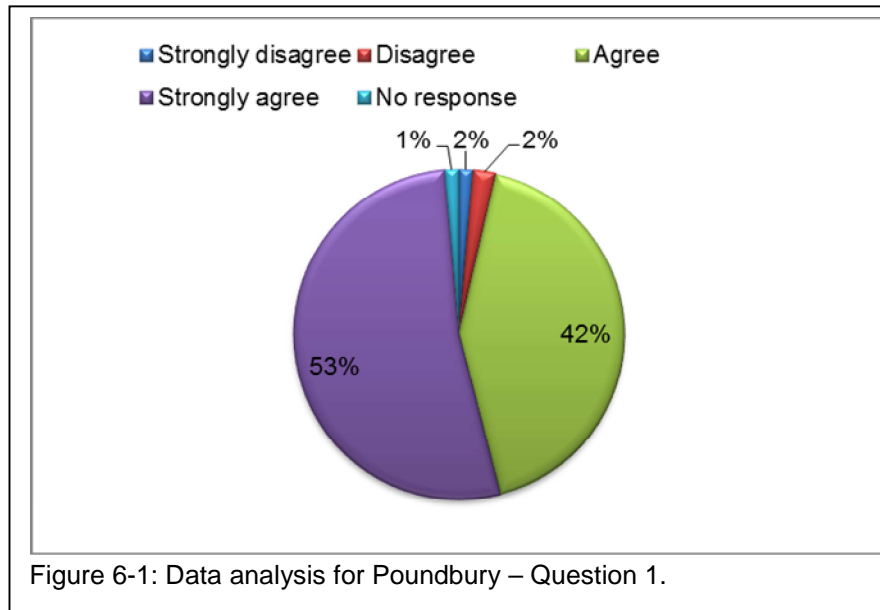
The data coding for the Poundbury questionnaire are demonstrated in Tables 6-1 and 6-2, and Table 6-3. The results are represented in Figures 6-1, 6-2 and 6-3.

a) Question 1: To what extent do you agree that you like living at Poundbury?

- Data coding of Question 1 for Poundbury

Table 6-1: Poundbury data coding of five options for Question 1

Respondents	Strongly disagree	Disagree	Agree	Strongly agree	No response	Total
Total	3	5	94	117	3	222



As Table 6-1 describes, 222 Poundbury residents participated the survey. Three of them selected strongly disagree, five selected disagree, and three had no response. The others selected ‘Agree’ and ‘Strongly agree’.

- Data analysis of Poundbury questionnaire – Question 1

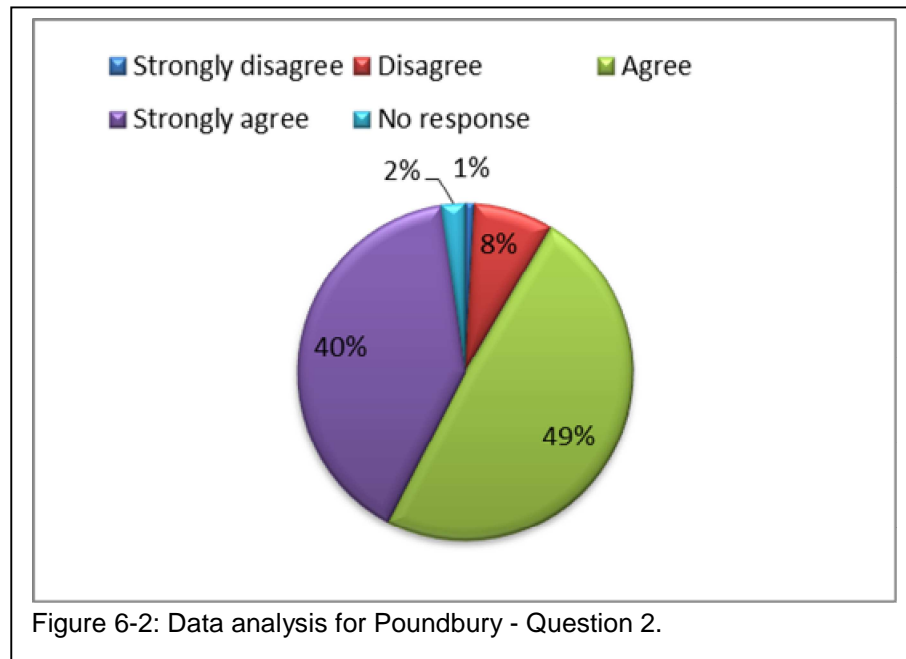
In terms of Figure 6-1, it is clearly shown that very few Poundbury residents selected the options of ‘Strongly disagree’, ‘Disagree’, or ‘No response’; most gave positive feedback. The percentage those who ‘Agree’ is 42% and of those who ‘Strongly agree’ is 53%. The total percentage of ‘Agree’ and ‘Strongly agree’ is 95%, demonstrated in Figure 6-1. Therefore, it can be concluded that an average of 95% of Poundbury residents expresses that: *they like living at Poundbury*.

b) Question 2: To what extent do you agree that Poundbury is generally successful in the built environment?

- Data coding of Question 2

Table 6-2: Poundbury data coding of five options for Questions 2

Respondents	Strongly disagree	Disagree	Agree	Strongly agree	No response	Total
Total	2	17	109	89	5	222



question, most respondents also focus on the options of 'Agree' with 109 and 'Strongly agree' with 89. Only 24 Poundbury residents selected negative options of 'Strongly disagree', 'Disagree', and the neutral option of 'No response'.

- Data analysis of Poundbury questionnaire – Question 2

When compared, the percentage distribution results of Question 1 and 2 are similar – most respondents gave positive feedback. The percentage those who 'Agree' is 42% and of those who 'Strongly agree' is 53% (see Figure 6-2). As a result, it is clear to show that an average of 89% of Poundbury residents believes: *Poundbury is generally successful in the Built Environment*.

c) Question 3: To what extent do you agree that Poundbury is an urban extension of Dorchester with local identity or harmony with local context?

- Data coding of Question 3 for Poundbury

Table 6-3 shows the detailed survey information for Question 3. As similar as the first two questions, most respondents valued positive options. One hundred and thirteen selected 'Agree' and forty three ticked 'Strongly agree'. Respondents who selected 'Disagree' are higher than the first two questions.

Table 6-3: Poundbury data coding of five options for Question 3

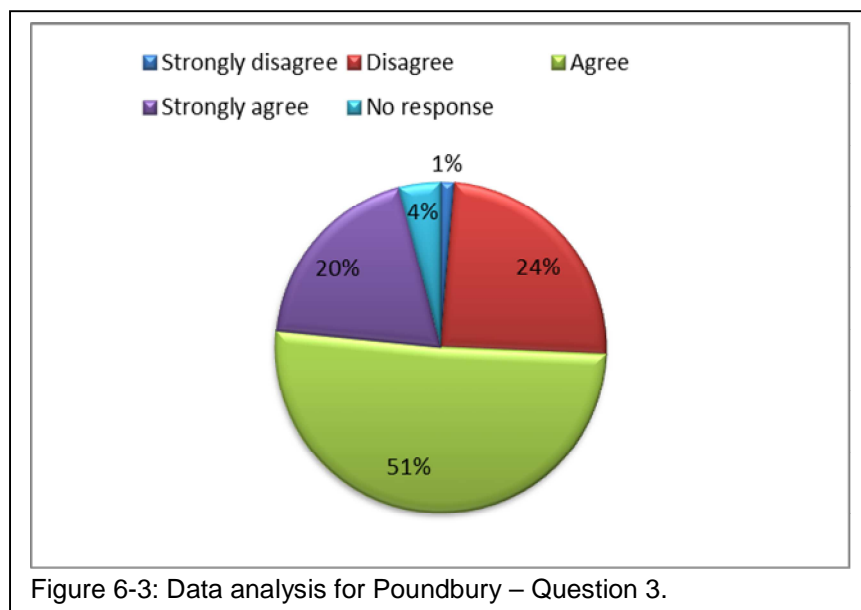
Respondents	Strongly disagree	Disagree	Agree	Strongly agree	No response	Total
Total	3	54	113	43	9	222

- Data analysis of Poundbury questionnaire – Question 3

Figure 6-3 shows how the data are distributed across the five options. 'Disagree' attracts a higher rate compared with the results for the first two questions. However, the combined percentage of 'Agree' and 'Strongly agree' responses is 71%; this is still much higher than the percentage of responses for the remaining three options: 'Strongly disagree', 'Disagree', and 'No response'. Overall, over 70% of Poundbury residents offered positive feedback: *Poundbury is an urban extension of Dorchester with local identity or harmony with local context.*

6.1.2 Analysis of level of importance: 'Local identity', 'In harmony with local context' at Poundbury

As shown in Figure 3-2 of Chapter 3, Poundbury is unlikely to be an urban/village extension if it is without local identity or harmony with local context. Therefore it is necessary to first review the importance of these two



features. If the result is positive, then the importance of the analysis of design principles should be discussed. Otherwise, this would be meaningless.

a) Local identity

- Data coding for local identity at Poundbury

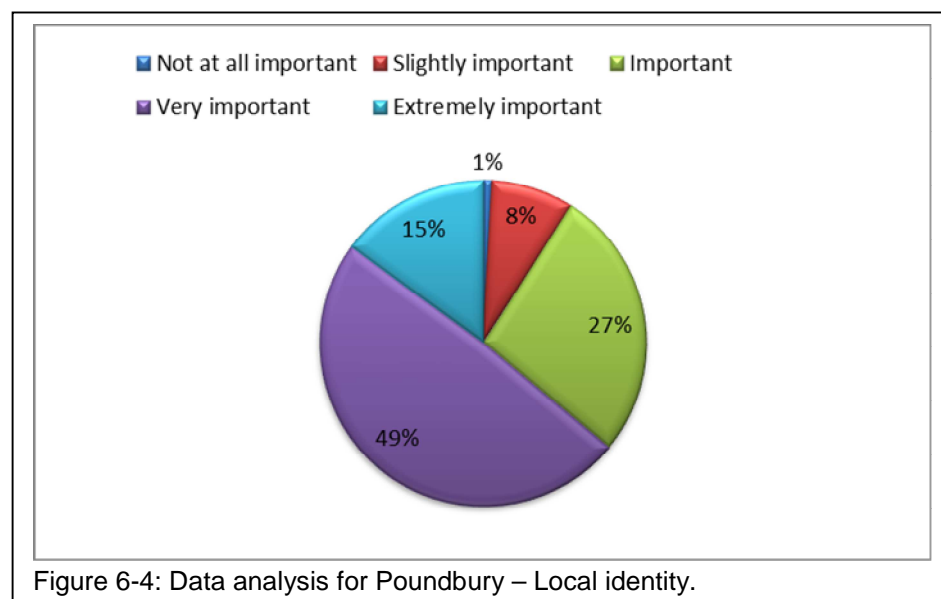
Table 6-4: Data coding for local identity at Poundbury

Respondents	Not at all important	Slightly important	Important	Very important	Extremely important	Total
Poundbury residents	2	18	60	109	33	222

Of the 222 Poundbury residents who participated in the study, only 2 believe local identity is not important, while 18 believe it is only slightly important. All the others rated it as either 'Important', 'Very important', or 'Extremely important'.

- Data analysis of Poundbury questionnaire – Local identity

From Figure 6-4, the data distribution of five ratings tells us that less than 1% has a negative opinion with 'Not at all important'. Around 8% believe that local identity is slightly important. However, the undoubted fact is that 49% of respondents value the option of 'Very important'; while 15% value local



identity as 'Extremely important'. Moreover, 27% took the view of 'Important'. Apparently, approximately 91% of Poundbury residents claim that local identity is important or much more than important with quite positive feedback.

b) In harmony with local context

- Data coding for in harmony with local context at Poundbury

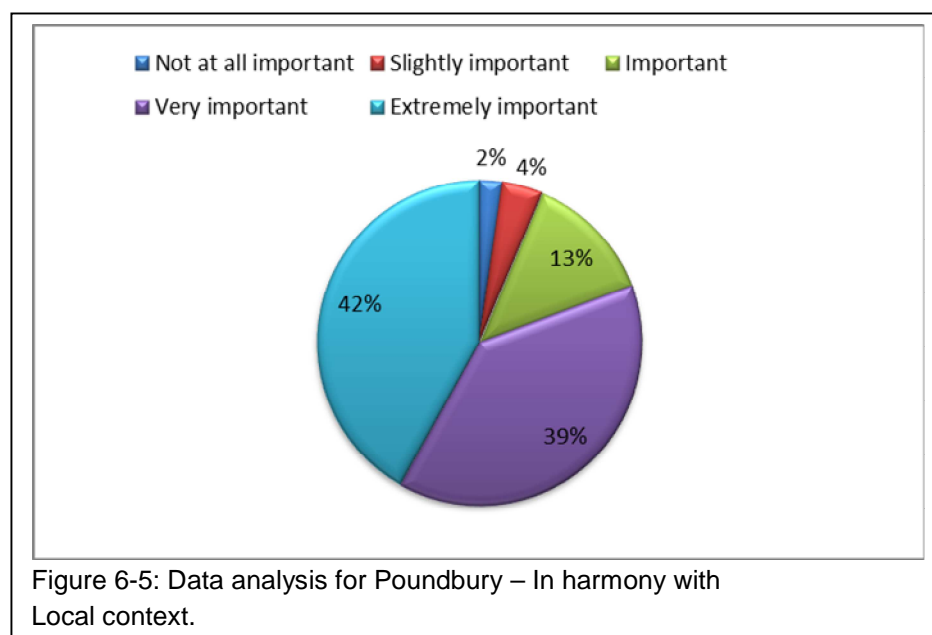
Table 6-5: Data coding for in harmony with local context at Poundbury

Respondents	Not at all important	Slightly important	Important	Very important	Extremely important	Total
Poundbury residents	5	9	29	86	93	222

Based on Table 6-5, most people focus on the options of 'Important', 'Very important', and 'Extremely important' with 208 respondents from the original 222 sample. Only five people believe that in harmony with local context is not at all important while nine believe it is slightly important.

- Data analysis of Poundbury questionnaire – In harmony with local context

For the percentage analysis of five options shown in Figure 6-5, the highest



number is 42% - for 'Extremely important'. The option of 'Very important' ranks second at 39%. Then the option of 'important' is among the third place at 13%. This means that 81% of Poundbury residents believe that in harmony with local context is very important or extremely important and 94% believe it is important or much more than important.

c) Brief

In line with the data analysis about 'Local identity' and 'In harmony with local context', the results are extremely positive. As argued in Chapter 2, it is paramount to discuss 'To what extent it is important that the 12 design principles of new urbanism promote local identity or harmony with local context' at Poundbury.

6.1.3 Analysis of the level of importance: the 12 design principles of new urbanism at Poundbury

As reported in Chapter 3.3.5 and Chapter 4.4.2, the following design principles are included in the survey: compactness, connectivity of street pattern, legibility, coherence, mixed use, walkability, pedestrian-friendliness, diversity of architecture, symbolic architecture and attractions, sustainability, community involvement, and return visit after built-up. Detailed information of their data coding and data analysis is discussed in the following.

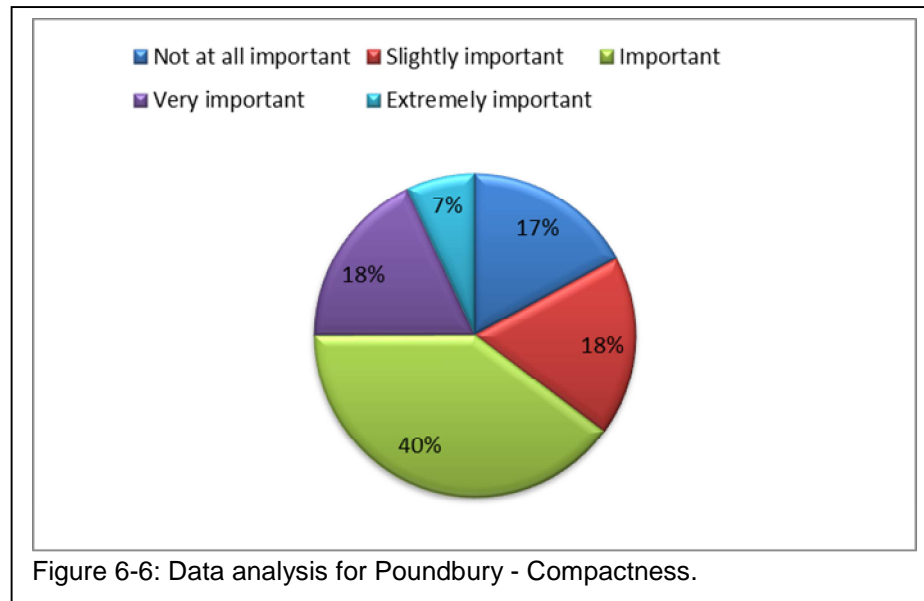
a) Compactness

- Data coding for compactness at Poundbury

Table 6-6: Data coding for compactness at Poundbury

Respondents	Not at all important	Slightly important	Important	Very important	Extremely important	Total
Poundbury residents	39	40	88	40	15	222

This table provides statistics on different options. The population rating 'Important' is 88 which occupies first place. Then the number valuing 'Slightly important' and 'Very important' are exactly the same with 40 respondents for



each coding. Moreover, 15 respondents believe that compactness is extremely important. However, 39 Poundbury residents selected the option, 'Not at all important'.

- Data analysis of Poundbury questionnaire –Compactness

Figure 6-6 contains the calculated percentage for each set of responses to the five options in the questionnaire. 17% indicated a negative view by selecting 'Not at all important', while 18% believe that compactness is slightly important. The remaining respondents selected positive options of 'Important', 'Very important', and 'Extremely important' respectively at 40%, 18%, and 7%. Accordingly, the total percentage of positive feedback is 65%; that is, an average of 65% of Poundbury residents believes that compactness is important or much more than important.

b) Connectivity of street pattern

- Data coding for connectivity of street pattern at Poundbury

Table 6-7: Data coding for connectivity of street pattern at Poundbury

Respondents	Not at all important	Slightly important	Important	Very important	Extremely important	Total

Poundbury residents	7	25	54	98	38	222
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In terms of the statistical data of Table 6-7, 54 respondents selected 'Important', eight selected 'Very important', and 38 selected 'Extremely important'. Only seven people ticked 'Not at all important' and 25 ticked 'Slightly important'. Obviously, those who chose 'Important', 'Very important', and 'Extremely important' far outnumber those choosing 'Not at all important' and 'Slightly important'.

- Data analysis of Poundbury questionnaire – Connectivity of street pattern

As can be seen from the chart in Figure 6-7, the sum percentage at 85% of 'Important', 'Very important', and 'Extremely important' is far higher than that of 'Slightly important' and 'Not at all important' at 15%. Therefore, it can be concluded that the feedback about connectivity of street pattern is absolutely positive with 85% of Poundbury residents considering it is 'Important', 'Very important', and 'Extremely important'.

c) Legibility

- Data coding for legibility at Poundbury

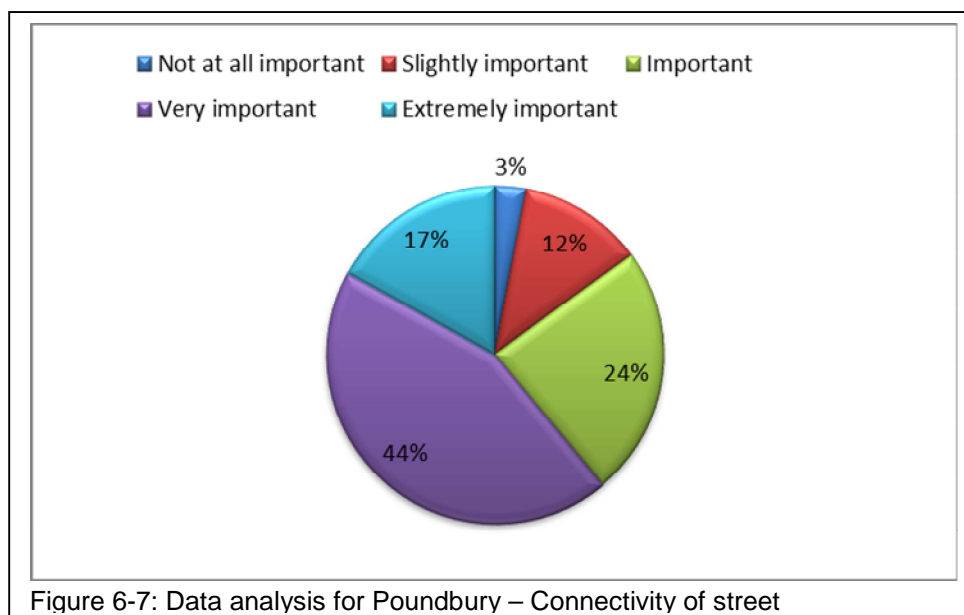
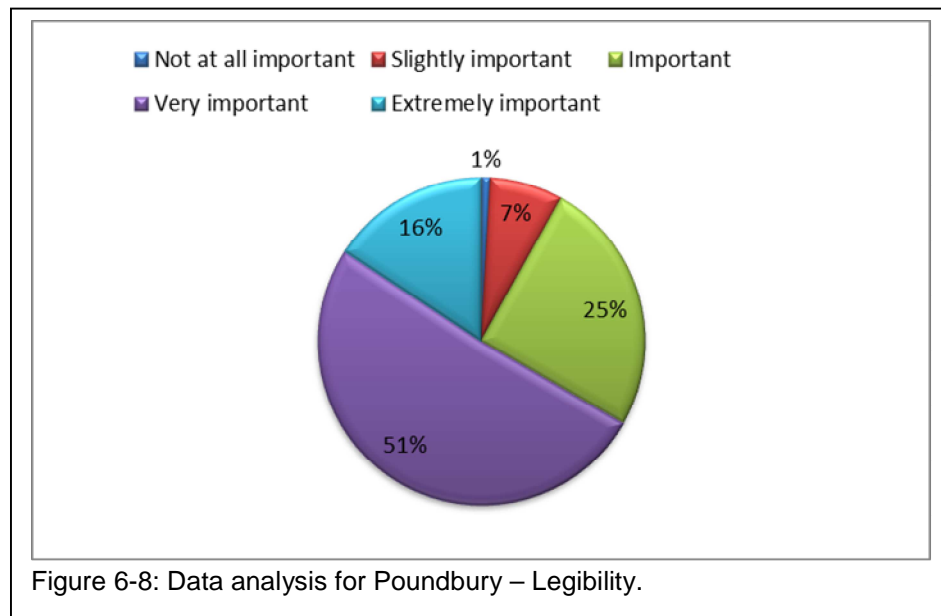


Table 6-8: Data coding for legibility at Poundbury

Respondents	Not at all important	Slightly important	Important	Very important	Extremely important	Total
Poundbury residents	2	16	56	113	35	222

From the statistics given in Table 6-8 it can be seen that only two of the sample group chose the option of 'Not at all important', and only 16 chose 'Slightly important'. The vast majority of the respondents ranked the three other options with 56 for 'Important', 113 for 'Very important', and 35 for



'Extremely important'.

- Data analysis of Poundbury questionnaire – Legibility

As shown in Figure 6-8, the percentage of those who chose the option of 'Very important' accounts for more than half at 51%; meanwhile the percentages of those who chose the options of 'Important' and 'Extremely important' are 25% and 16% respectively. Compared with these, the percentage of 2% who selected 'Not at all important' can be ignored, to a great extent. The sum of the percentages for 'Important', 'Very important', and 'Extremely important' add up to 92%. Therefore, it can be concluded that

an average of 92% of Poundbury residents believe legibility is 'Important', 'Very important', or 'Extremely important', to promote local identity or in harmony with local context.

d) Coherence

- Data coding for coherence at Poundbury

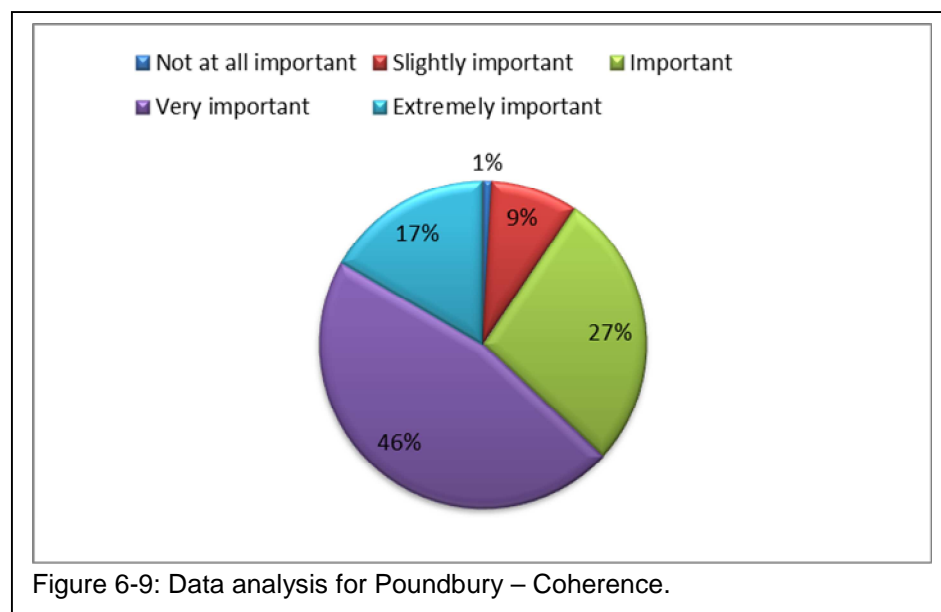
Table 6-9: Data coding for coherence at Poundbury

Respondents	Not at all important	Slightly important	Important	Very important	Extremely important	Total
Poundbury residents	2	19	61	103	37	222

Table 6-9 show the data distribution for the five options. Only two people selected 'Not at all important', which ranks the lowest while 'Very important' was ranked highest with 103. 'Important' ranks the second, valued by 61 people; 19 chose 'Slightly important', and 37 selected 'Extremely important'.

- Data analysis of Poundbury questionnaire – Coherence

Figure 6-9 indicates that positive feedback accounts for a much larger percentage than negative feedback of 'Not at all important' and 'Slightly important'. Forty six per cent of respondents take the view that coherence is 'Very important'; 17% believe it is 'Extremely important', and 27% value



coherence as 'Important'. Thus, approximately 90% of Poundbury residents state that coherence is 'Important', 'Very important', or 'Extremely important' to promote local identity or harmony with local context.

e) Mixed use

- Data coding for mixed use at Poundbury

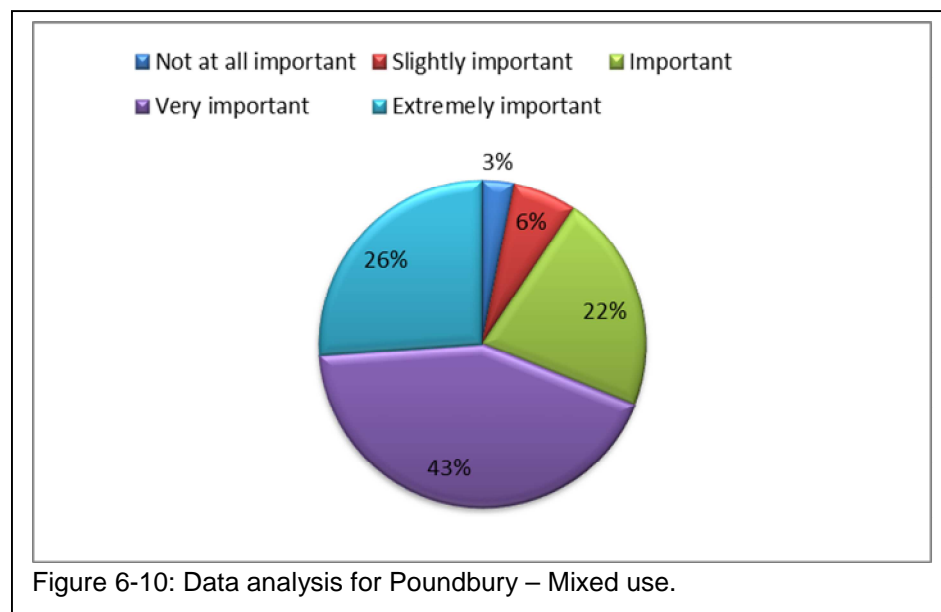
Table 6-10: Data coding for mixed use at Poundbury

Respondents	Not at all important	Slightly important	Important	Very important	Extremely important	Total
Poundbury residents	7	14	48	95	58	222

It is clear from the statistics in Table 6-10 that most respondents valued the positive options of 'Important', 'Very important', and 'Extremely important', which were selected by 48, 95, and 58 Poundbury residents, respectively. Only seven people selected 'Not at all important' and 14 selected 'Slightly important'.

- Data analysis of Poundbury questionnaire – Mixed use

Figure 6-10 depicts that the highest percentage is 43% for 'Very important'. The second is 26% for 'Extremely important'. The percentage selecting 'important' is 22% after 'Extremely important'. Negative feedback is only



represented by a total of 9% for 'Not at all important' and 'Slightly important'. Consequently, we can conclude from the data that an average 91% of Poundbury residents believe that mixed use is 'Important', 'Very important', or 'Extremely important' to promote local identity or harmony with local context.

f) Walkability

- Data coding for walkability at Poundbury

Table 6-11: Data coding for walkability at Poundbury

Respondents	Not at all important	Slightly important	Important	Very important	Extremely important	Total
Poundbury residents	2	3	27	92	98	222

This table indicates the data distribution of five options for walkability. The situation shows an increasing trend from negative feedback to positive one. Only five respondents out of 222 ticked 'Not at all important' or 'Slightly important'. All the others valued the positive options. Twenty seven people valued 'Important' while a sharp rise occurs for 'Very important' with 92 and on 'Extremely important' with 98.

- Data analysis of Poundbury questionnaire – Walkability

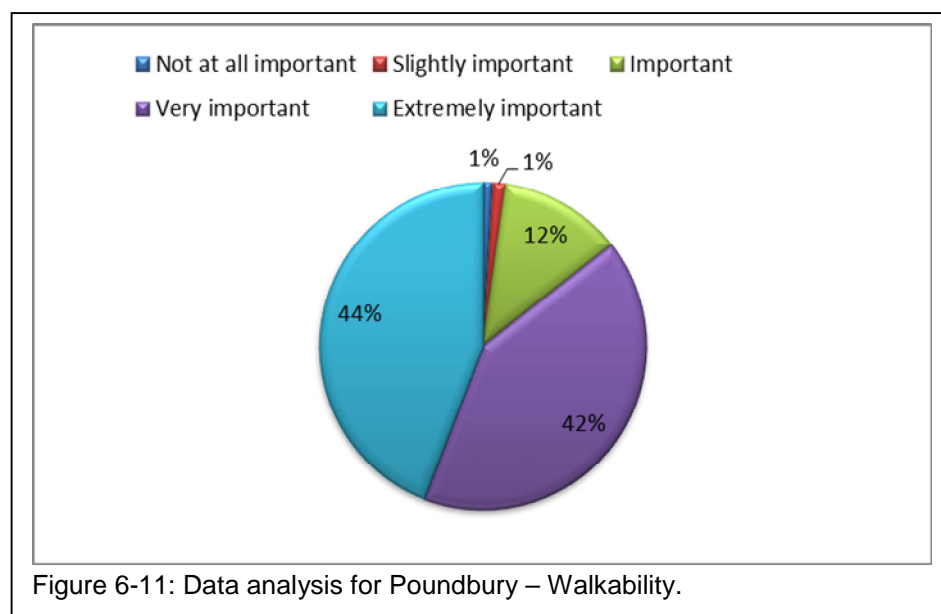


Figure 6-11 shows the upward trend from 'Not at all important' to 'Extremely important'. The proportion of 'Not at all important' and 'Slightly important' is the same at 1%. Then there is a noticeable increase for 'Important' at 12%. From this point on, a sharp rise occurs to 42% on 'Very important'. Finally, the data peak at 44% for 'Extremely important'. Obviously, approximately 98% of Poundbury residents take the positive view that walkability is important or much more than important to promote local identity or harmony with local context.

g) Pedestrian-friendliness

- Data coding for pedestrian friendly at Poundbury

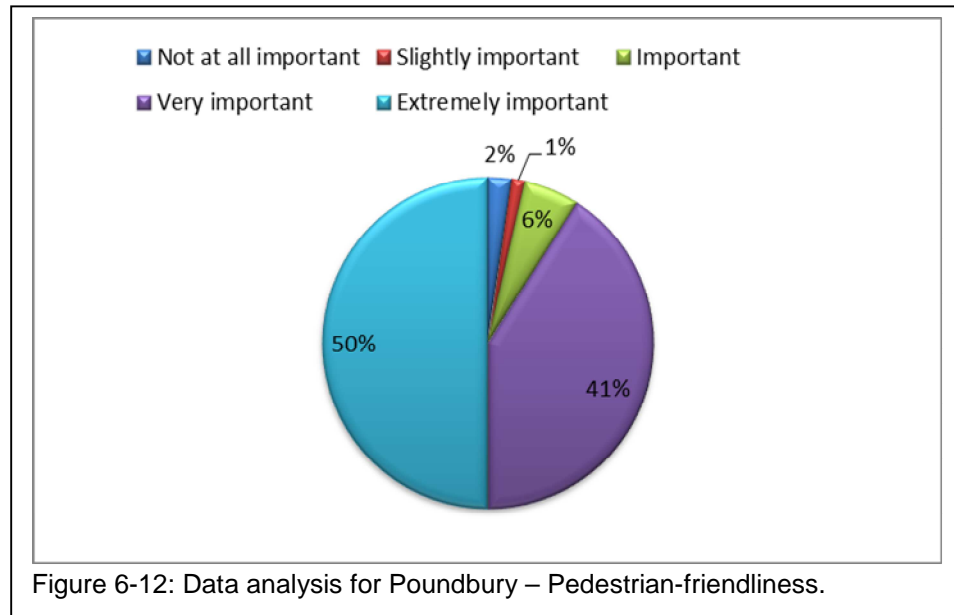
Table 6-12: Data coding for pedestrian-friendliness at Poundbury

Respondents	Not at all important	Slightly important	Important	Very important	Extremely important	Total
Poundbury residents	5	3	12	91	111	222

As exhibited in Table 6-12, only five people chose 'Not at all important'. From the option of 'Slightly important' onwards, there is a upward trend particularly for 'Very important' and 'Extremely important' which were respectively valued by 91 and 111 respondents.

- Data analysis of Poundbury questionnaire – Pedestrian-friendliness

Figure 6-12 indicates that only 2% respondents selected the option of 'Not at all important'. The figure bottoms out in 'Slightly important' at 1%. Then the percentage of 'Very important' sharply goes up to 41%; meanwhile the percentage of 'Extremely important' reaches a peak of 50%. As a result, from the chart, it is clear that around 91% of Poundbury residents clarify their value of 'Very important' or 'Extremely important'. Moreover, it also can be seen that an average of 97% argue that pedestrian-friendliness is 'Important', 'Very important', or 'Extremely important' to promote local identity or harmony with local context.



h) Diversity of architecture

- Data coding for diversity of architecture at Poundbury

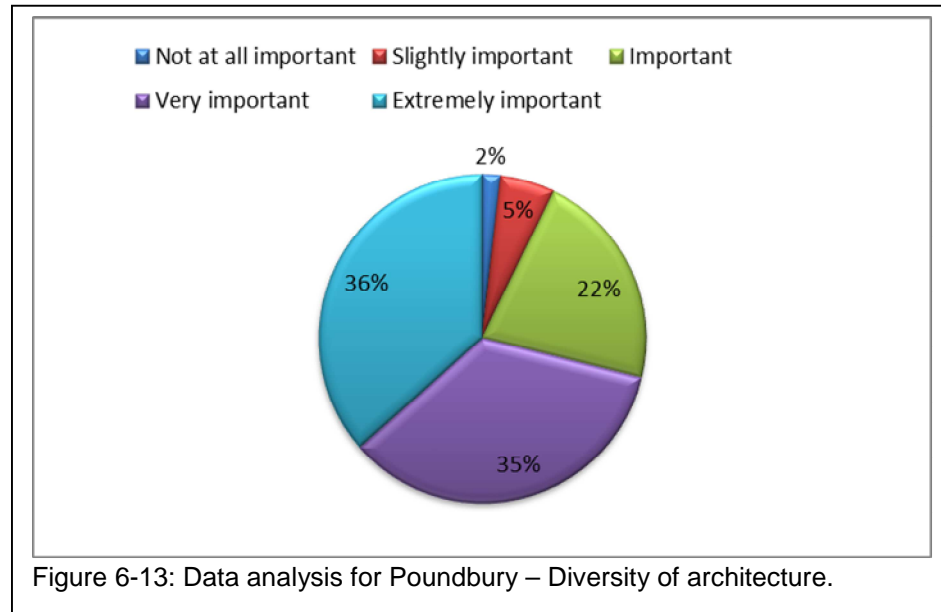
Table 6-13: Data coding for diversity of architecture at Poundbury

Respondents	Not at all important	Slightly important	Important	Very important	Extremely important	Total
Poundbury residents	4	12	48	77	81	222

As can be seen from Table 6-13, the population who selected 'Not at all important' is the lowest with four. For the option of 'Slightly important', only 12 people selected it. Then a considerable increase occurs from 'Important' with 48 to 'Very important' with 77. Last, the option of 'Extremely important' peaks with 81 respondents.

- Data analysis of Poundbury questionnaire – Diversity of architecture

The pie graph illustrates proportion of five options. For the option of 'Not at all important' and 'Slightly important', only 7% respondents chose them. Significantly the highest proportion is 36% for 'Extremely important' and the second is 35% for 'Very important'. Finally, after 'Very important' comes



‘Important’ at 22%. Thus Figure 6-13 clearly depicts that approximately 93% of Poundbury residents hold the positive view that diversity of architecture is ‘Important’, ‘Very important’, or ‘Extremely important’ to promote local identity or harmony with local context.

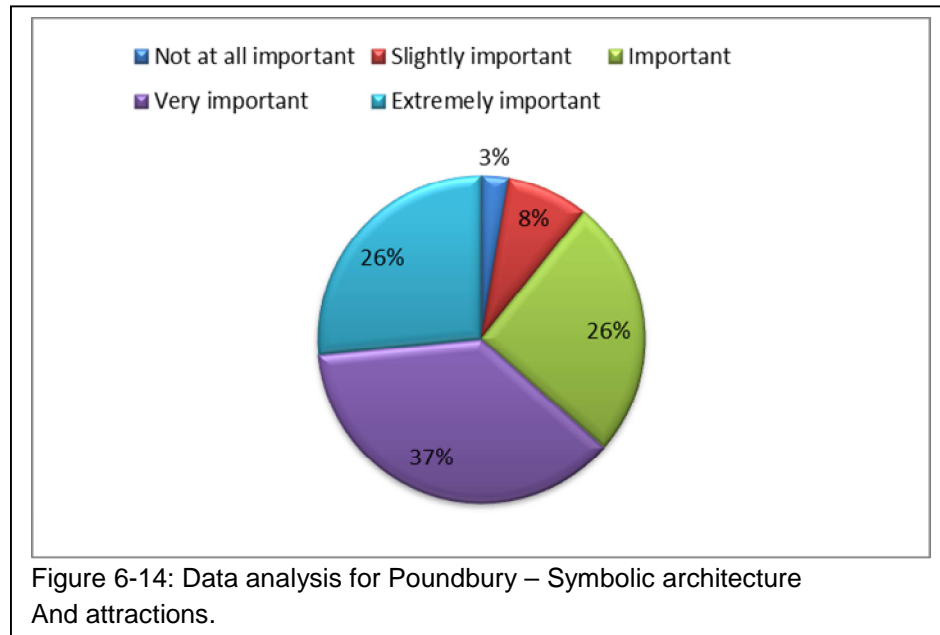
i) Symbolic architecture and attractions

- Data coding for symbolic architecture and attractions

Table 6-14: Data coding for symbolic architecture and attractions at Poundbury

Respondents	Not at all important	Slightly important	Important	Very important	Extremely important	Total
Poundbury residents	6	18	57	82	59	222

Table 6-14 provides the statistical information regarding the survey of symbolic architecture and attractions. Those who selected ‘Very important’ accounted for 82 respondents. People who chose ‘Important’ and ‘Extremely important’ are very similar in number at 57 and 59 respectively. In contrast, for the negative option, only six respondents ticked ‘Not at all important’ and 18 selected ‘Slightly important’.



- Data analysis of Poundbury questionnaire – Symbolic architecture and attractions

As demonstrated in Figure 6-14, the data show that 'Important' and 'Extremely important' score the same at 26% which is only lower than that of 'Very important' at 37%. This pie chart also presents that only 3% respondents take the view of 'Not at all important' and only 8% take the view of 'Slightly important'. Therefore, it can be inferred that around 89% of Poundbury residents believe that symbolic architecture and attractions is 'Important', 'Very important', or 'Extremely important' to promote local identity or harmony with local context.

j) Sustainability

- Data coding for sustainability at Poundbury

Table 6-15: Data coding for sustainability at Poundbury

Respondents	Not at all important	Slightly important	Important	Very important	Extremely important	Total
Poundbury residents	2	10	36	81	93	222

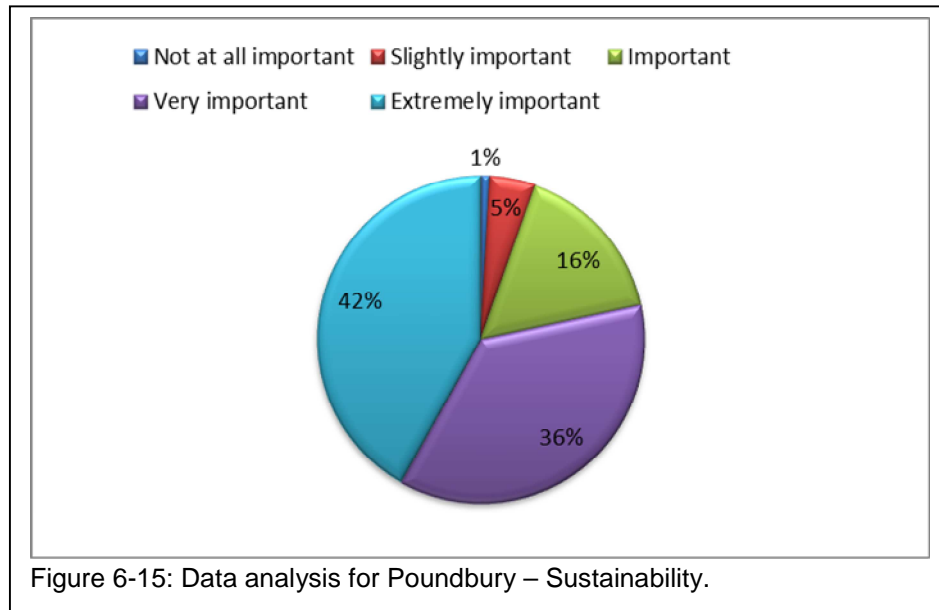


Table 6-15 displays the scores for each of the five options. Only two selected 'Not at all important' and 10 selected 'Slightly important'. An overall upward rise follows with the other three positive options. Among them, the number of people who chose 'Extremely important' at 93 is slightly higher than that of 'Very important' at 81. In addition, 36 chose 'Important'.

- Data analysis of Poundbury questionnaire – Sustainability

The graph in Figure 6-15 sets out the percentage of survey feedback. Obviously, the percentage of 'Not at all important' is the lowest at 1%. Also only 5% respondents took the view of 'Slightly important'. In contrast, the percentage of positive options dominates the response. The numbers are 16%, 36%, and 42% respectively for 'Important', 'Very important', and 'Extremely important'. Overall, it can be concluded that about 94% of Poundbury residents clarify that sustainability is 'Important', 'Very important', or 'Extremely important' to promote local identity or harmony with local context.

k) Community involvement

- Data coding for community involvement at Poundbury

Table 6-16: Data coding for community involvement at Poundbury

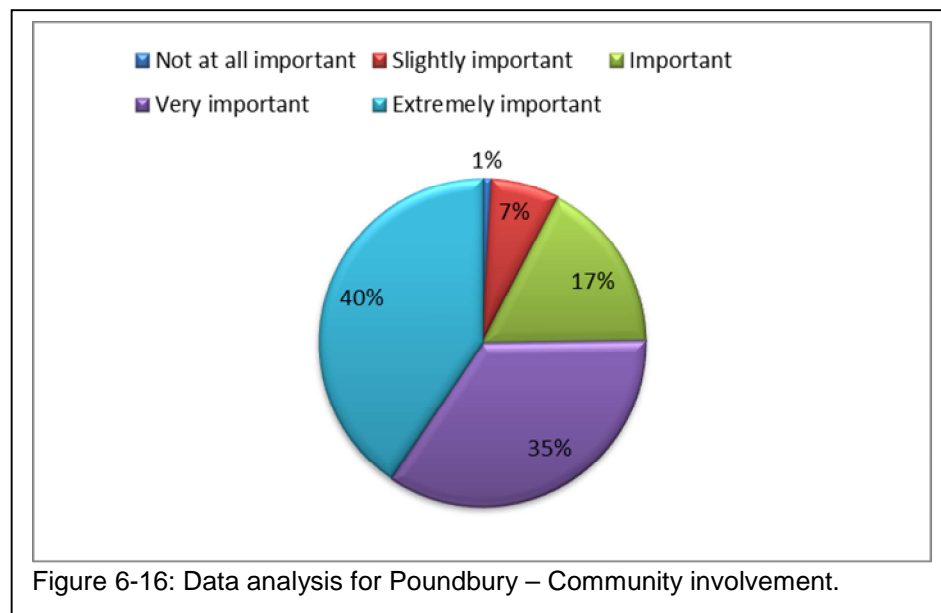
Respondents	Not at all important	Slightly important	Important	Very important	Extremely important	Total

Poundbury residents	2	15	38	77	90	222
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According to Table 6-16, most people valued the positive options of 'Important', 'Very important', and 'Extremely important' respectively with 38, 77, and 90. No doubt, very few people selected the negative ones. Only two selected 'Not at all important' and 15 selected 'Slightly important'.

- Data analysis of Poundbury questionnaire – Community involvement

It can be clearly seen from the pie chart that the percentage of 'Extremely



important' at 40% is far higher than that of 'Not at all important' at 1% and 'Slightly important' at 7%. 'Important' and 'Very important' stand in the middle at 17% and 35% respectively. This means the positive feedback dominates over negative feedback at 92% overall in Figure 6-16. As a result, approximately 92% of Poundbury residents argue that community involvement is 'Important', 'Very important', or 'Extremely important' to promote local identity or harmony with the local context.

- Return visit by designers after built-up

- Data coding for return visit by designers after built-up at Poundbury

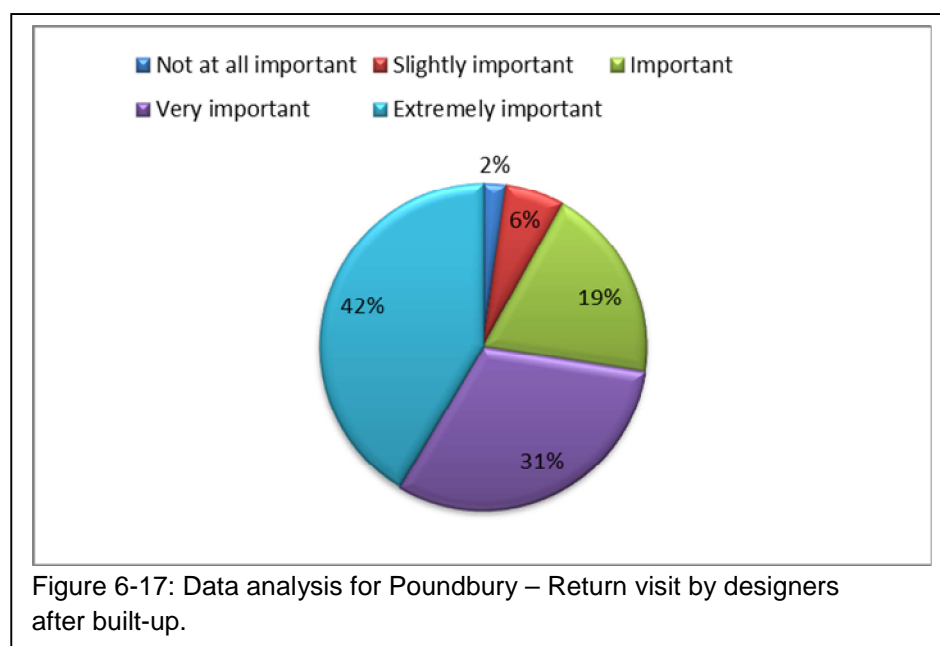
Table 6-17: Data coding for return visit by designers after built-up at Poundbury

Respondents	Not at all important	Slightly important	Important	Very important	Extremely important	Total
Poundbury residents	5	13	43	69	92	222

Table 6-17 displays the numbers of residents who selected each of the five options. The number of 'Important', 'Very important', and 'Extremely important' shows the dominance of positive feedback. In contrast, the number of negative options is far lower with 'Not at all important' at five and 'Slightly important' at 13.

- Data analysis of Poundbury questionnaire – Return visit by designers after built-up

The first point to note is that the percentage for positive feedback is far higher than that for negative feedback. The pie chart shows the percentages for 'Important', 'Very important', and 'Extremely important', which are 19%, 31%, and 42% respectively. On the contrary, only 2% of respondents chose 'Not at all important' and 6% chose 'Slightly important'. To sum up, on



average the majority - 92% of Poundbury residents believe that return visit made by designers after built-up is 'Important, 'Very important', or 'Extremely important' to promote local identity or harmony with local context.

m) Summary

In terms of the above data analysis of 12 design principles, most of them get close when we compare the sum percentage of positive feedback. Significantly the percentage of walkability is the highest at around 98%. Pedestrian-friendliness ranks the second at 97% which is quite similar to walkability. The second point to indicate is that the percentage of 'Sustainability' and 'Diversity of architecture' are very close at 94% and 93% respectively. 'Legibility', 'Community involvement', and 'Return visit by designers after built-up' each scored exactly the same at 92%. Moreover, the percentage of positive feedback is also closer to 'Coherence', 'Mixed use', and 'Symbolic architecture and attractions' respectively, at 90%, 91%, and 89%. Furthermore, the total percentage of positive feedback is slightly lower at 85%. Finally, 65% of Poundbury residents hold the positive view that compactness is 'Important, 'Very important', or 'Extremely important' although the percentage of negative feedback is greater than that of other design principles. In summary, most Poundbury residents believe that the 12 design principles are 'Important, 'Very important', or 'Extremely important' to promote local identity or harmony with local context. This can clearly verify that the initial outcomes analysed in Chapter 4: the design principles of new urbanism can promote local identity or harmony with local context at Poundbury.

6.2 Questionnaire Analysis of Upton

The administration of the questionnaire at Upton followed the same process as the case of Poundbury (described in 6.1, see Appendix B). The questionnaire analysis of Upton contains two parts; the first is the analysis of three questions at Upton, while the second analyses the level of importance ascribed to the design principles of new urbanism at Upton.

6.2.1 Analysis of three questions at Upton

The three questions aim to understand residents' overall perceptions of Upton. The detailed information is illustrated in Table 6-18 and Figure 6-18, Table 6-19 and Figure 6-19, and Table 6-20 and Figure 6-20.

a) Question 1: To what extent do you agree that you like living at Upton?

- Data coding of Question 1 for Upton

Table 6-18: Upton data coding of five options for Question 1

Respondents	Strongly disagree	Disagree	Agree	Strongly agree	No response	Total
Upton residents	3	8	101	70	2	184

In terms of the data reflected in Table 6-4, it can be found that a few people at Upton selected 'Strongly disagree' with three persons, 'Disagree' with eight persons, and 'No response' with two. The majority of 101 Upton residents selected 'Agree', and 70 selected 'Strongly agree'.

- Data analysis of Upton questionnaire – Question 1

According to the data distribution of five options, only 7% of respondents

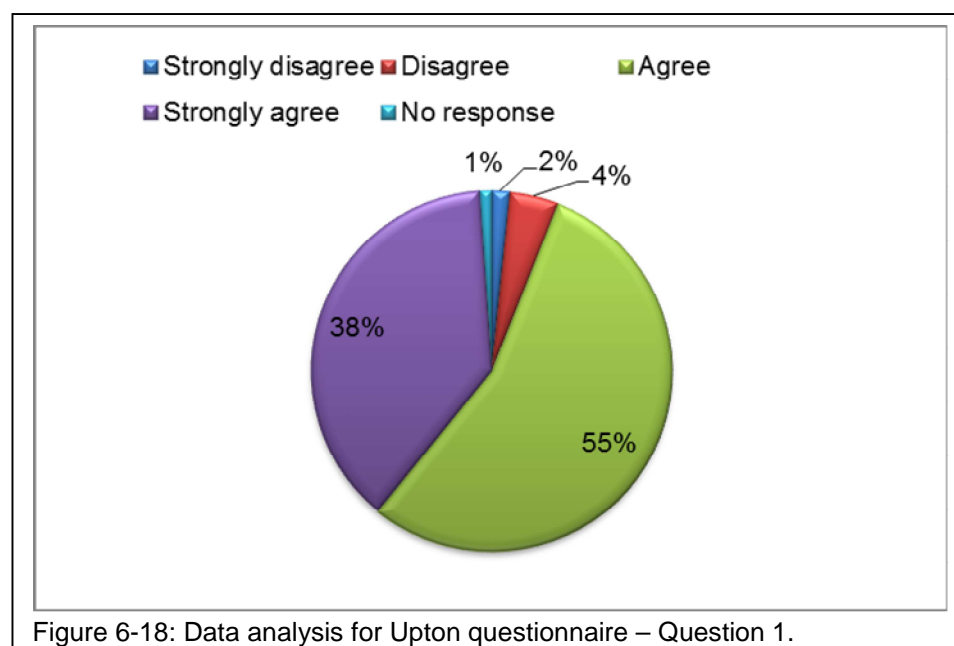


Figure 6-18: Data analysis for Upton questionnaire – Question 1.

hold negative views with 'Strongly disagree', 'Disagree', and 'No response'. More than half the residents answered 'Agree' at 55%, while 38% of survey respondents selected 'Strongly agree'. Therefore, based on the information in Figure 6-18, on average, 93% of Upton residents have a positive response to question 1: they like living at Upton.

b) Question 2: To what extent do you agree that Upton is generally successful in built environment?

- Data coding of Question 2 for Upton

Table 6-19: Upton data coding of five options for Question 2

Respondents	Strongly disagree	Disagree	Agree	Strongly agree	No response	Total
Upton residents	2	15	116	48	3	184

Table 6-19 shows the data distribution for responses to the second question relating to Upton, based on five options. The highest score was for 'Agree', with 116 respondents selecting this option, while 'Strongly agree' is in second place with 48. For the negative options of 'Strongly disagree', 'Disagree', and 'No response', the scores are respectively two, 15, and three

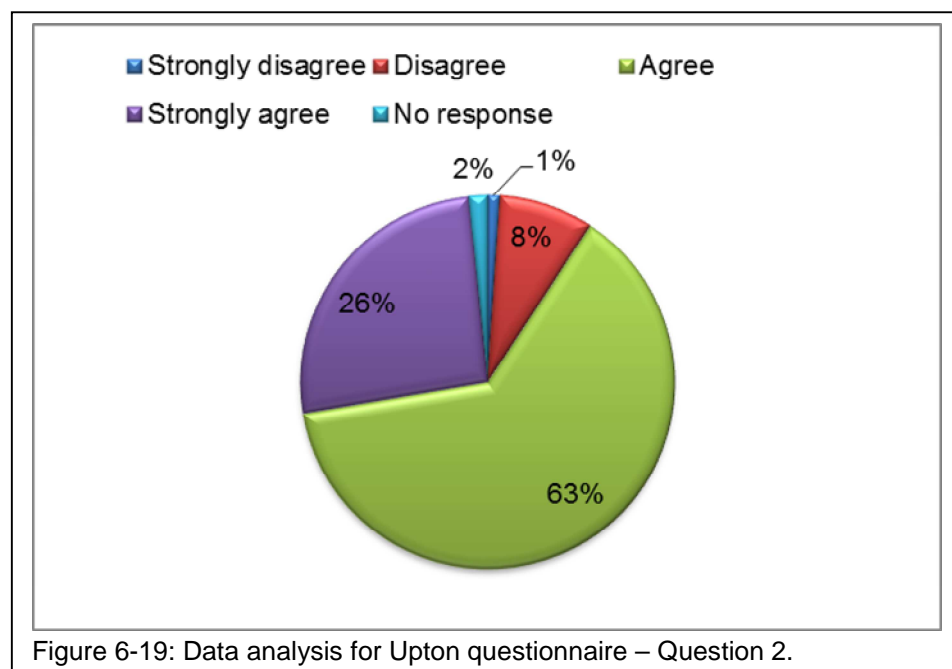


Figure 6-19: Data analysis for Upton questionnaire – Question 2.

respectively.

- Data analysis of Upton questionnaire – Question 2

Figure 6-19 shows that 63% of respondents 'Agree' and 26% 'Strongly agree'. This means the total percentage of two positive options is 89%. Consequently, approximately 89% of Upton residents agree or strongly agree that Upton is generally successful.

- c) Question 3: To what extent do you agree that Upton is an urban extension of Northampton with local identity or harmony with local context?

- Data coding of Question 3 for Upton

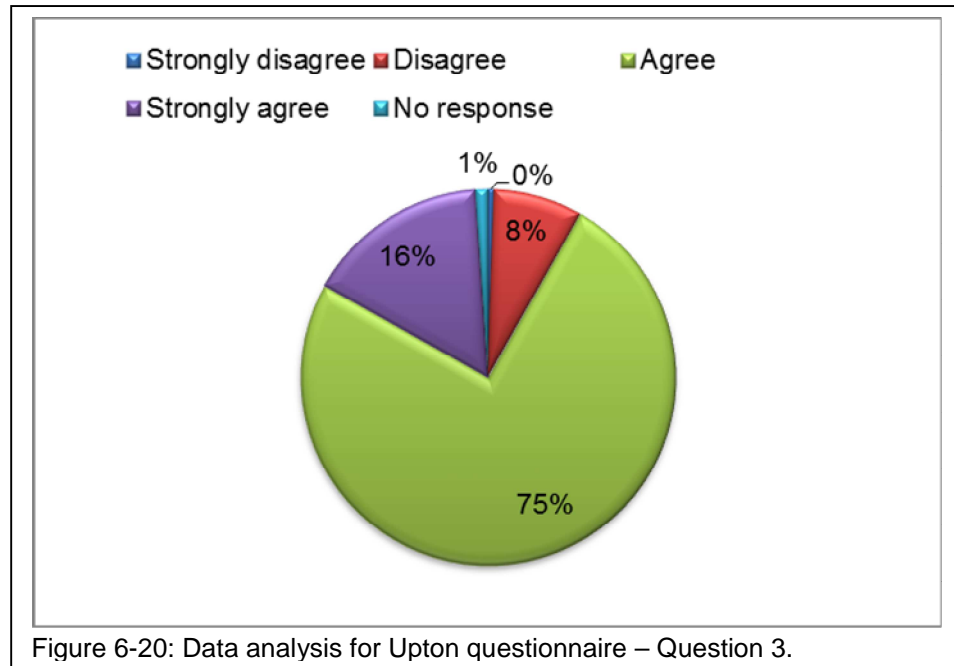
Table 6-20: Upton data coding of five options for Question 3

Respondents	Strongly disagree	Disagree	Agree	Strongly agree	No response	Total
Upton residents	1	14	138	29	2	184

The information contained in Table 6-20 clearly shows that there is much more positive feedback than negative feedback. 138 respondents selected 'Agree', while 29 indicated 'Strongly agree'. Only a few people ticked 'Strongly disagree', 'Disagree', and 'No response', at which one, 14, and two, respectively.

- Data analysis of Upton questionnaire – Question 3

Figure 6-20 shows the views of the respondents relating to each of the five options. The difference between negative feedback and positive feedback is obvious. Very few respondents selected the options of 'Strongly disagree', 'Disagree', and 'No response' at 0%, 8%, and 1%, respectively. However, 75% chose 'Strongly agree' at the highest rate in comparison with others. The second is positioned by 'Strongly agree' at 16%. Thus the sum percentage of the two positive options is 91%. Consequently, approximately



91% of Upton residents believe that Upton is an urban extension of Northampton with local identity or harmony with local context.

6.2.2 Analysis of the level of importance: ‘Local identity’ and ‘In harmony with local context’

As viewed in 6.1.2, it is paramount to first discuss these two aspects.

a) Local identity

- Data coding for local identity at Upton

Table 6-21: Data coding for local identity at Upton

Respondents	Not at all important	Slightly important	Important	Very important	Extremely important	Total
Upton residents	5	19	73	69	18	184

As shown in Table 6-21, few people ticked the option of ‘Not at all important’ with five and ‘Slightly important’ with 19. Most respondents go for positive options of ‘Important’ with 73, ‘Very important’ with 69, and ‘Extremely important’ with 18.

- Data analysis of Upton questionnaire – Local identity

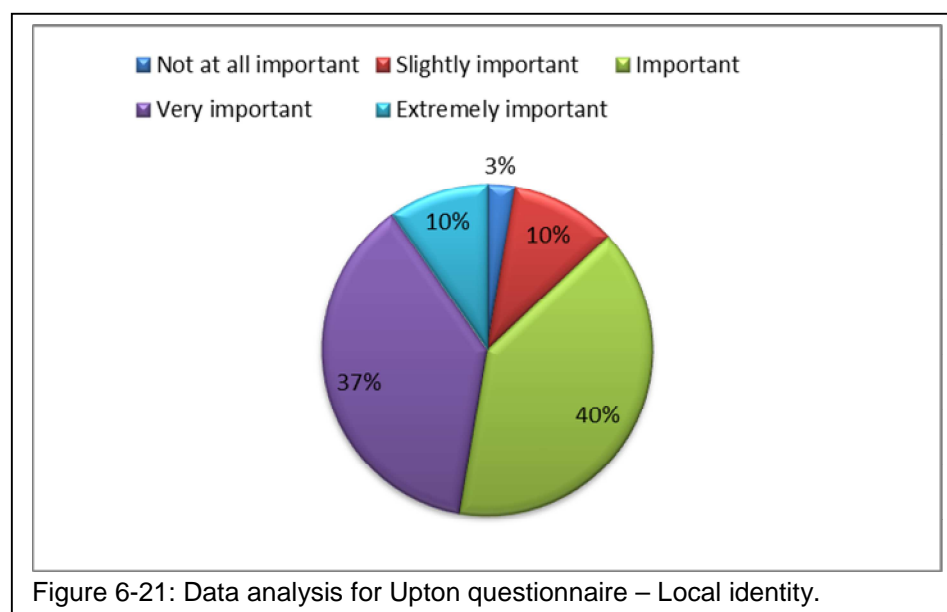


Figure 6-21 illustrates that at the top of the list is 'Important' which accounts for 40%, followed by 'Very important' at 37% and 'Extremely important' at 10%. The percentage of 'Slightly important' is also 10%, followed by 'Not at all important' at 3%. Consequently, approximately 87% of Upton residents believe that local identity is important, or important, or extremely important for an urban extension of pre-existing town or village.

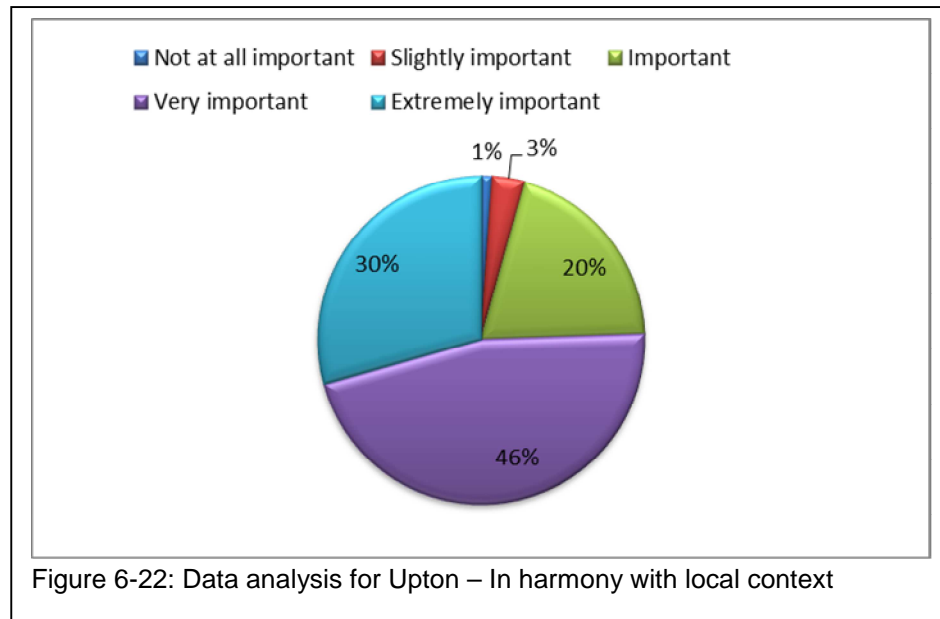
b) In harmony with local context

- Data coding for in harmony with local context

Table 6-22: Data coding for in harmony with local context at Upton

Respondents	Not at all important	Slightly important	Important	Very important	Extremely important	Total
Upton residents	2	6	37	85	54	184

The statistics in Table 6-22 reflect the data distribution of five options. Apparently, very few respondents chose negative options of 'Not at all important' with only two and 'Slightly important' with six. Nearly half, 85, selected 'Very important', followed by 'Extremely important' with 54 and 'Important' with 37.



- Data analysis of Upton questionnaire – In harmony with local context

As shown in Figure 6-22, the figure peaks at 46% for 'Very important'. 'Extremely important' is ranked second at 30% which is higher than 'Important' at 20%. Thus the sum proportion of positive feedback is 96% or so. Obviously, only 4% respondents chose negative options of 'Not at all important' and 'Slightly important'. Consequently, approximately 96% of Upton residents believe that in harmony with local context is 'Important', 'Very important', or 'Extremely important' to an urban extension.

6.2.3 Analysis of the level of importance: 12 design principles of new urbanism at Upton

This section discusses the importance rate of 12 new urbanism design principles for promoting local identity or harmony with local context.

a) Compactness

- Data coding for compactness at Upton

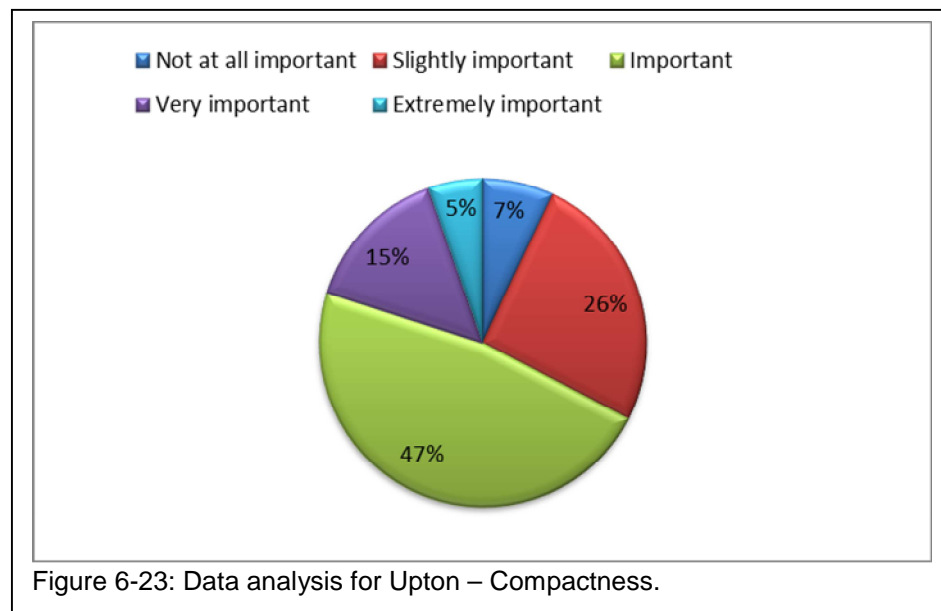
Table 6-23: Data coding for compactness at Upton

Respondents	Not at all important	Slightly important	Important	Very important	Extremely important	Total
Upton residents	13	47	87	27	10	184

Table 6-23 reveals that the 13 respondents chose 'Not at all important' and 47 chose 'Slightly important'. All the others selected positive options of 'Important', 'Very important', and 'Extremely important' with 87, 27, and 10 Upton residents, respectively.

- Data analysis of Upton questionnaire – Compactness

The pie chart of Figure 6-23 describes the data percentage of five options. The option of 'Important' has the largest percentage of 47%. For the other two positive options of 'Very important' and 'Extremely important', they respectively account for 15% and 5%. The sum proportion of negative



options of 'Not at all important' and 'Slightly important' is 33% which is somewhat lower than that of positive options at 67%. Consequently, approximately 67% of Upton residents believe that compactness is 'Important', 'Very important', or 'Extremely important' to promote local identity or harmony with local context.

b) Connectivity of street pattern

- Data coding for connectivity of street pattern at Upton

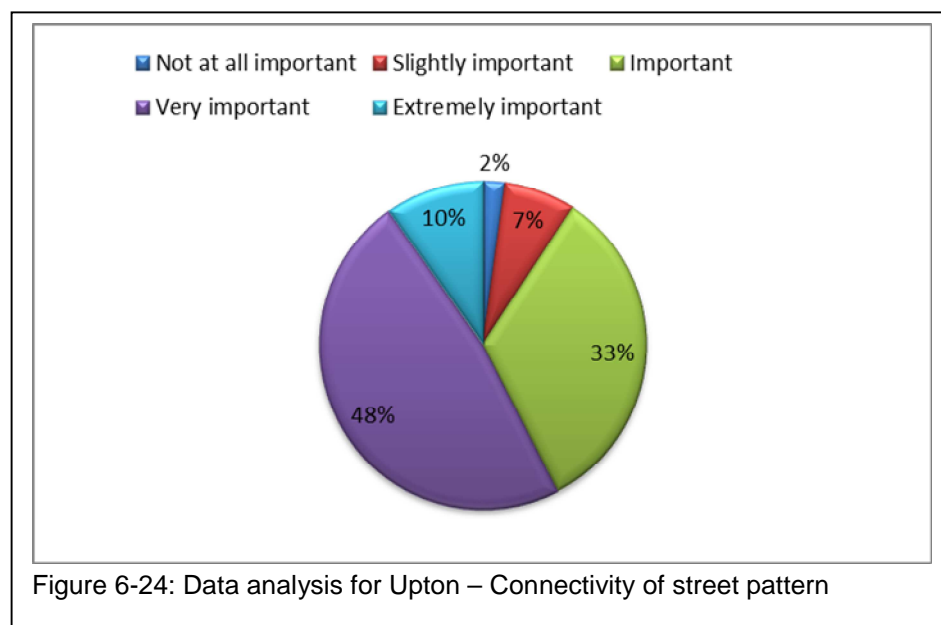
Table 6-24: Data coding for connectivity of street pattern at Upton

Respondents	Not at all	Slightly	Important	Very	Extremely	Total

	important	important		important	important	
Upton residents	4	13	61	88	18	184

It can be seen from Table 6-24 that the population choosing 'Very important', at 88, is significantly higher than the other options, followed by 'Important' with 61. The population of 'Extremely important' is ranked third with 18. For two negative options, 'Not at all important' scored four and 'Slightly important' scored 13.

- Data analysis of Upton questionnaire – Connectivity of street pattern



According to Figure 6-24, the highest percentage is for 'Very important' at 48%, while the second highest is for 'Important' at 33%. Moreover, 10% respondents selected 'Extremely important'. On the contrary, only 9% ticked the negative options of 'Not at all important' and 'Slightly important'. Consequently, approximately 91% of Upton residents believe that connectivity of street pattern is 'Important, 'Very important', or 'Extremely important' to promote local identity or harmony with local context.

c) Legibility

- Data coding for legibility at Upton

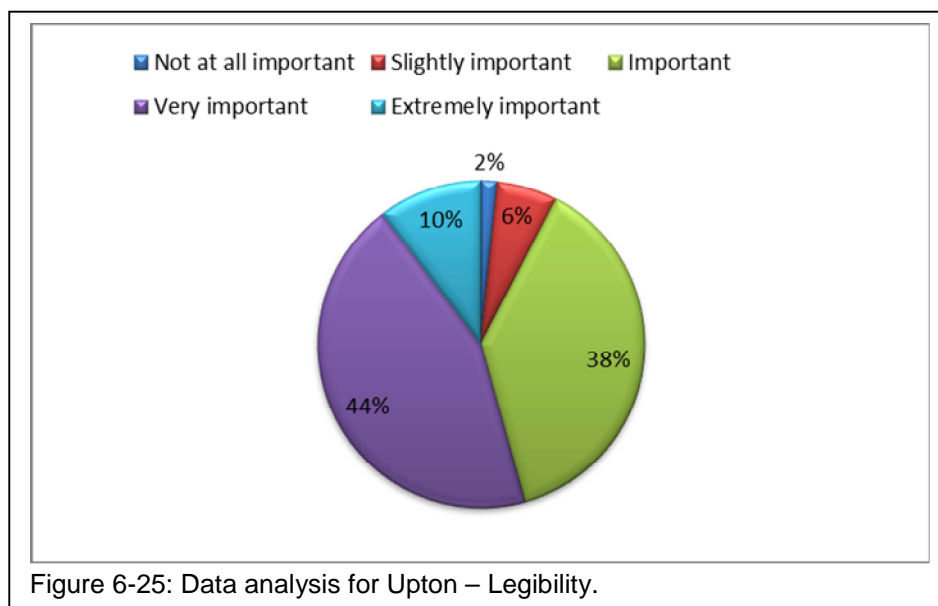
Table 6-25: Data coding for legibility at Upton

Respondents	Not at all important	Slightly important	Important	Very important	Extremely important	Total
Upton residents	3	11	70	81	19	184

Table 6-25 reflects the statistics of survey about legibility at Upton. Obviously, few people chose negative options of 'Not at all important' and 'Slightly important' respectively with only three and 11. Most people valued positive options. Among of them, 81 respondents valued 'Very important', followed by 70 of 'Important' and 19 of 'Extremely important'.

- Data analysis of Upton questionnaire – Legibility

In Figure 6-25, the first point to note is that the percentage of positive options is far larger than that of negative ones. People valuing 'Very important' account for 44% of the total, the largest percentage. The second largest one is 38% for 'Important'. The percentage of 'Extremely important' is ranked third at 10%. In contrast the two negative aspects of 'Not at all important' and 'Slightly important' make up 2% and 6% respectively. Thus it is clear to see that the three positive aspects in total account for 92% of the response, far higher than the percentage of negative ones. Consequently, approximately 92% of Upton residents hold the positive view of that legibility is 'Important,



‘Very important’, or ‘Extremely important’ to promote local identity or harmony with local context.

d) Coherence

- Data coding for coherence at Upton

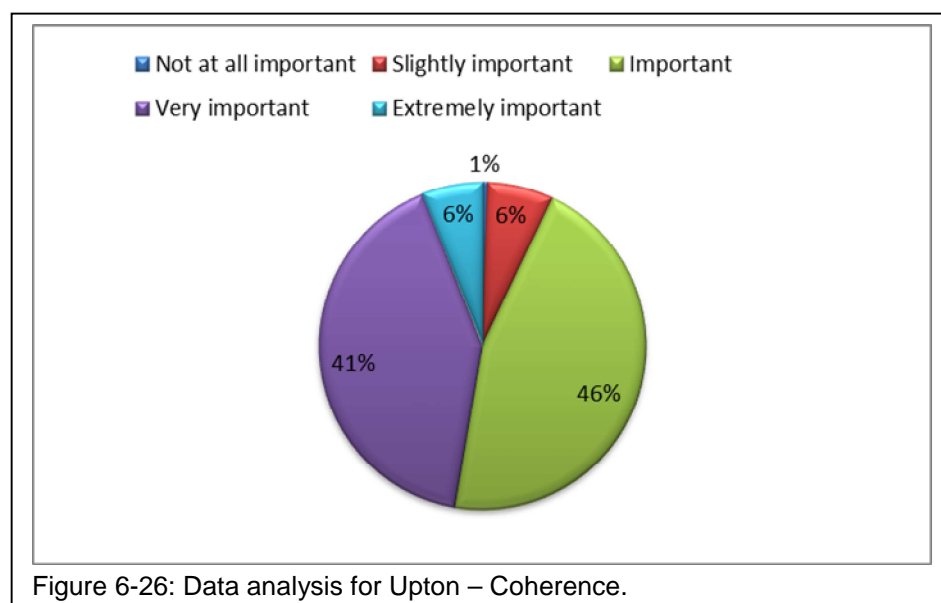
Table 6-26: Data coding for coherence at Upton

Respondents	Not at all important	Slightly important	Important	Very important	Extremely important	Total
Upton residents	1	12	84	76	11	184

Table 6-26 indicates that very few people ticked two negative options of ‘Not at all important’ and ‘Slightly important’ respectively with only one and 12. Conversely, most people chose three other positive aspects of ‘Important’, ‘Very important’, and ‘Extremely important’ respectively with 84, 76, and 11.

- Data analysis of Upton questionnaire – Coherence

As can be seen from Figure 6-26, people who valued ‘Important’ and ‘Very important’ account for the two largest scores at 46% and 41% of the total. The percentage of ‘Extremely important’ is ranked third at 6%, which is same as the rank for that of ‘Slightly important’. The smallest one comes from ‘Not at all important’ at only 1% in total. This means about 93% of respondents



take a very positive view point about coherence, which is significantly higher than that of the negative view point. Consequently, approximately 93% of Upton residents believe that coherence is 'Important', 'Very important', or 'Extremely important' to promote local identity or harmony with local context.

e) Mixed use

- Data coding for mixed use at Upton

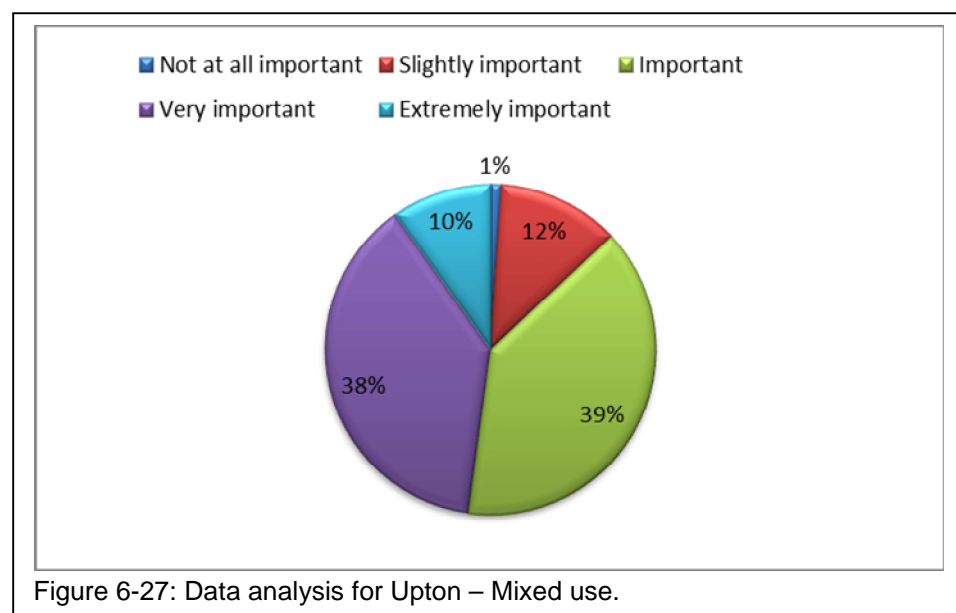
Table 6-27: Data coding for mixed use at Upton

Respondents	Not at all important	Slightly important	Important	Very important	Extremely important	Total
Upton residents	2	22	72	70	18	184

Table 6-27 shows the data distribution of five options. 72 selected the option of 'Important' while 70 selected 'Very important'. Moreover, the last positive option was ticked by 18 people. In contrast, only a few chose the negative options of 'Not at all important' and 'Slightly important' with two and 22 respectively.

- Data analysis of Upton questionnaire – Mixed use

The graph of Figure 6-27 reflects the percentage of different options. People who valued 'Important' account for 39% of the total, which differs slightly



from 'Very important' at 38%. The other positive option of 'Extremely important' accounts for 10% of the responses. In addition, the two negative options are 'Not at all important' and 'Slightly important', taking up 1% and 12% respectively. From this chart it can be seen clearly that the majority, 87%, gave positive feedback. Consequently, approximately 87% of Upton residents claim that mixed use is 'Important', 'Very important', or 'Extremely important' to promote local identity or harmony with local context.

f) Walkability

- Data coding for walkability at Upton

Table 6-28: Data coding for walkability at Upton

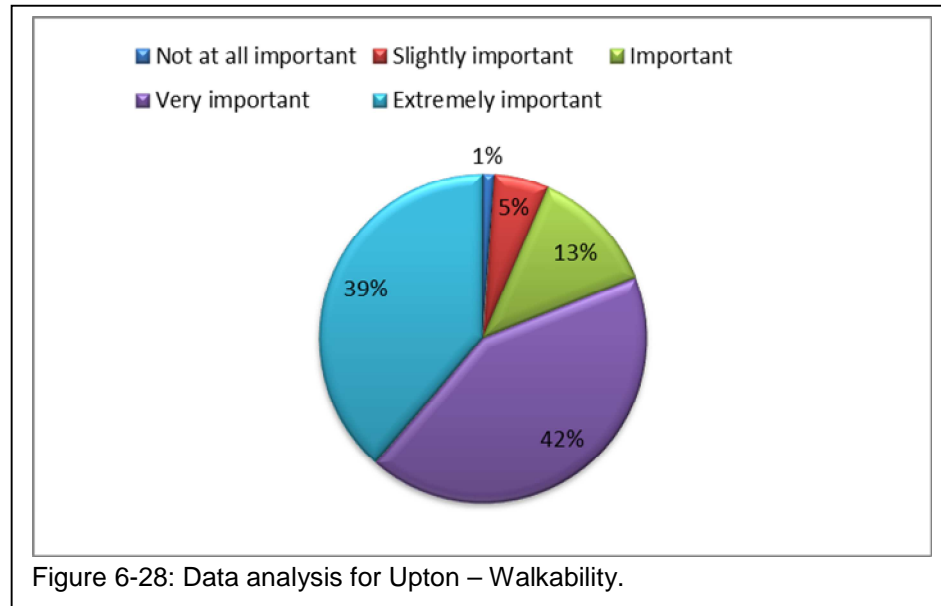
Respondents	Not at all important	Slightly important	Important	Very important	Extremely important	Total
Upton residents	2	10	23	78	71	184

From the statistics given in Table 6-28 it can be seen that the overwhelming majority chose three positive options of 'Important', 'Very important', and 'Extremely important', respectively, with 23, 78, and 71. In contrast, only a few people selected the negative options of 'Not at all important' with two and 'Slightly important' only with 10.

- Data analysis of Upton questionnaire – Walkability

The pie graph of Figure 6-28 depicts the percentage of different options about walkability. Obviously, the majority of responses were 'Very important' and 'Extremely important'. People choosing 'Very important' occupies the largest percentage at 42%, followed by 39% for 'Extremely important' and 13% for 'Important'. In comparison, people ticking 'Not at all important' accounts for the lowest score at 1% while the percentage of 'Slightly important' is only 5%.

Clearly, the statistics shows that the three positive aspects make up 94% of the total. Consequently, approximately 94% of Upton residents believe that



walkability is 'Important', 'Very important', or 'Extremely important' to promote local identity or harmony with local context.

g) Pedestrian-friendliness

- Data coding for pedestrian-friendliness at Upton

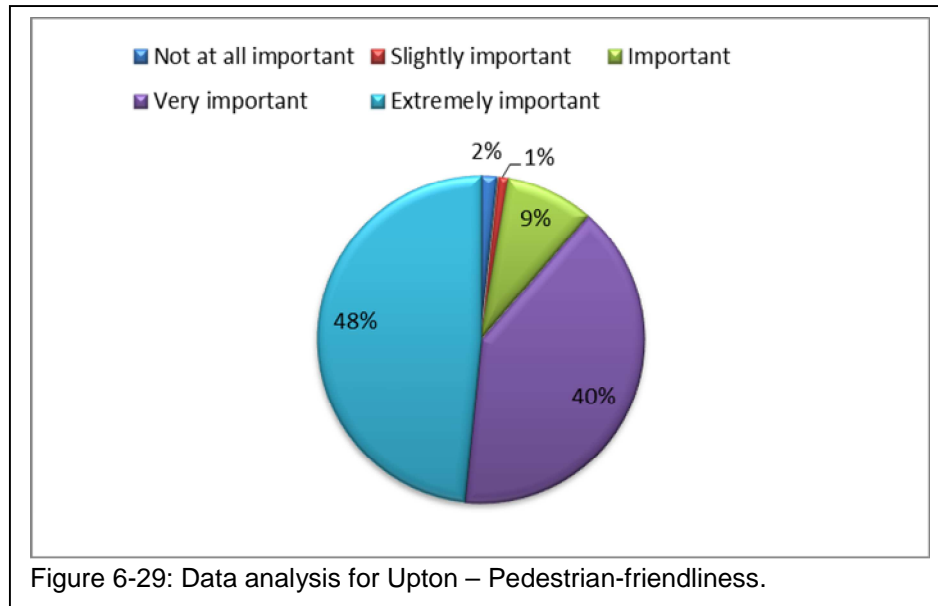
Table 6-29: Data coding for pedestrian-friendliness at Upton

Respondents	Not at all important	Slightly important	Important	Very important	Extremely important	Total
Upton residents	3	2	16	74	89	184

Table 6-29 describes the numbers of people choosing different options. Apparently, most people selected positive options of 'Important', 'Very important', and 'Extremely important' with 16, 74, and 89, respectively. The two negative aspects of 'Not at all important' and 'Slightly important' were only selected by five persons.

- Data analysis of Upton questionnaire – Pedestrian-friendliness

From Figure 6-29, the first thing to note is that people who chose 'Extremely important' occupies the largest percentage at 48%, followed by 40% for 'Very important'. The last positive option of 'Important' accounts for 9%. In contrast,



percentage of the two negative options is far lower than that of the three positive options. The sum per centum on 'Not at all important' and 'Slightly important' is only 3%. As presented in the pie chart, the sum percentage of positive feedback is 97%. Consequently, approximately 97% of Upton residents believe that pedestrian-friendliness is 'Important', 'Very important', or 'Extremely important' to promote local identity or harmony with local context.

h) Diversity of architecture

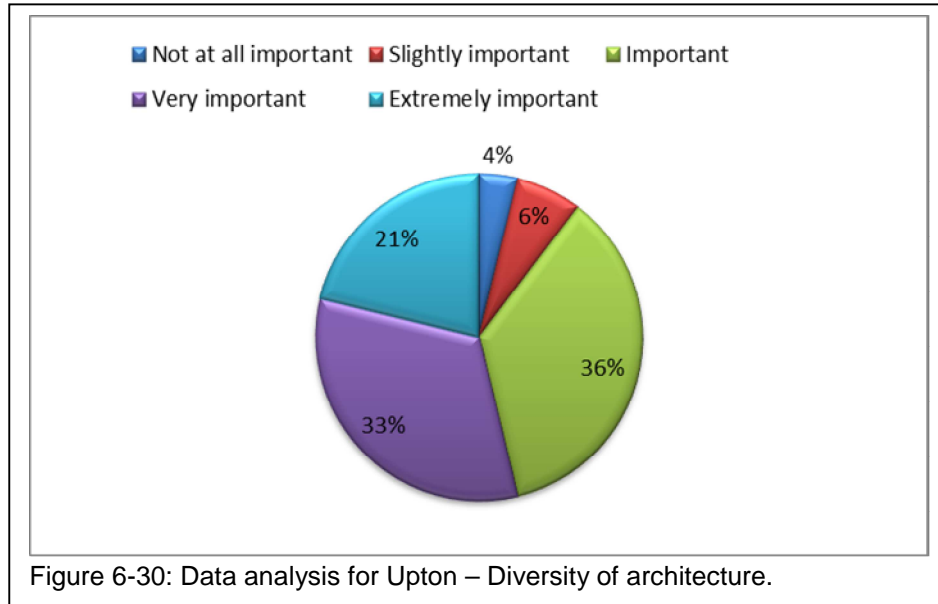
- Data coding for diversity of architecture at Upton

Table 6-30: Data coding for diversity of architecture at Upton

Respondents	Not at all important	Slightly important	Important	Very important	Extremely important	Total
Upton residents	7	12	66	60	39	184

Table 6-30 shows the situation in the number of five options. There is a slight difference between the rankings for 'Important' and 'Very important' with 66 and 60, respectively. The number on 'Extremely important' is ranked third with 39. Compared with the three positive options, far less people chose the

two



negative options. The number is only seven for 'Not at all important' and 12 for 'Slightly important'.

- Data analysis of Upton questionnaire – Diversity of architecture

Figure 6-30 provides the percentage data of different options. The percentage peaks at 36% on 'Important', followed by 33% on 'Very important' and 21% on 'Extremely important'. On the contrary, the percentage is very low at 4% for 'Not at all important'. There is a slight difference between 'Not at all important' and 'Slightly important' which accounts for 6%. Thus the sum positive per centum is 90%. Consequently, approximately 90% of Upton residents believe that diversity of architecture is 'Important, 'Very important', or 'Extremely important' to promote local identity or harmony with local context.

- i) Adaptable building form

- Data coding for adaptable building form at Upton

Table 6-31: Data coding for adaptable building form at Upton

Respondents	Not at all important	Slightly important	Important	Very important	Extremely important	Total
Upton residents	15	33	56	53	27	184

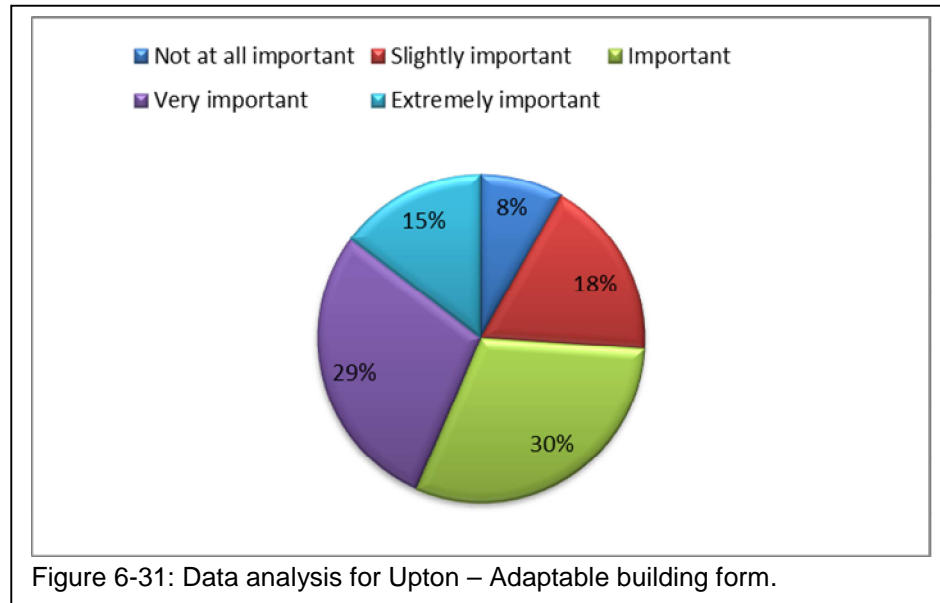


Table 6-31 illustrates the numbers distributed over the five options. First, 15 persons selected ‘Not at all important’ and 33 selected the negative option of ‘Slightly important’. For the other three positive options of ‘Important’, ‘Very important’, and ‘Extremely important’, respectively, 56, 53, and 27 chose these.

- Data analysis of Upton questionnaire – Adaptable building form

As presented in Figure 6-31, the percentage of negative options shows a considerable increase compared with other design principles except compactness. The percentages for ‘Not at all important’ and ‘Slightly important’ are 8% and 18% respectively. Accordingly, the graph shows a decrease of sum percentage on the three other positive options of ‘Important’ at 30%, ‘Very important’ at 29%, and ‘Extremely important’ at 15%. Consequently, approximately 74% of Upton residents state that adaptable building form is ‘Important, ‘Very important’, or ‘Extremely important’ to promote local identity or harmony with local context.

j) Sustainability

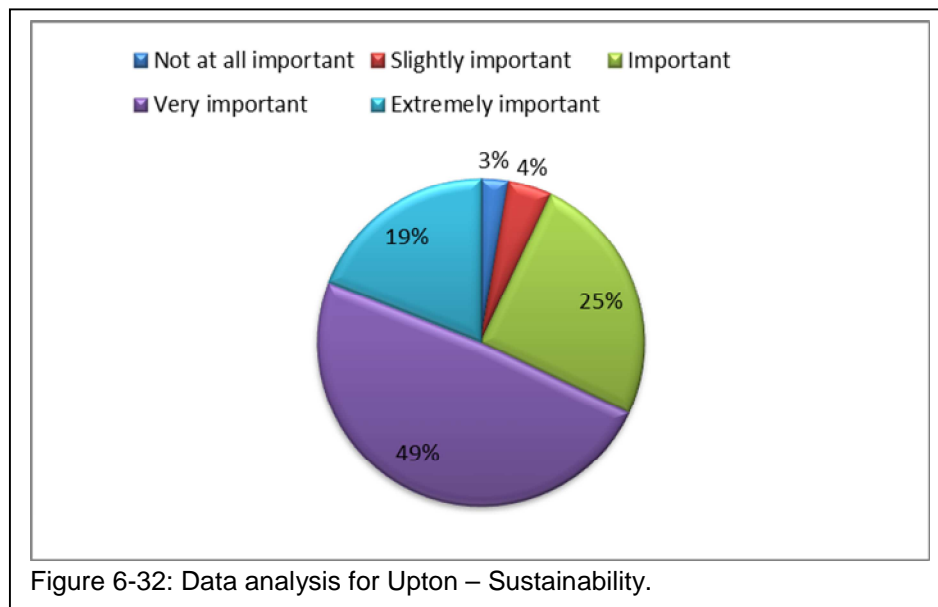
- Data coding for sustainability at Upton

Table 6-32: Data coding for sustainability at Upton

Respondents	Not at all important	Slightly important	Important	Very important	Extremely important	Total
Upton residents	5	8	46	90	35	184

As shown in Table 6-32, only a few respondents chose the two negative options. Only five selected 'Not at all important' and eight selected 'Slightly important'. The population of the sample who selected positive options is far higher than the proportion who chose negative options. Among them, 90 valued 'Very important', occupying the greatest number of people, followed by

46



valuing 'Important' and 35 valuing 'Extremely important'.

- Data analysis of Upton questionnaire – Sustainability

The figures for the positive options in the pie chart are overwhelmingly greater than the corresponding figures for the negative options. The percentage of 'Not at all important' is 3% which is the smallest proportion. The responses to the other negative option of 'Slightly important' only account for 4%. The graph in Figure 6-32 proves the dominance of the percentage of positive options. The option of 'Very important' takes up nearly half of the total at 49%, followed by 25% for 'Important' and 19% for

‘Extremely important’. This means that overall, 93% respondents hold very positive views about sustainability. Consequently, approximately 93% of Upton residents believe that sustainability is ‘important’, ‘Very important’, or ‘Extremely important’ to promote local identity or harmony with local context.

k) Community involvement

- Data coding for community involvement at Upton

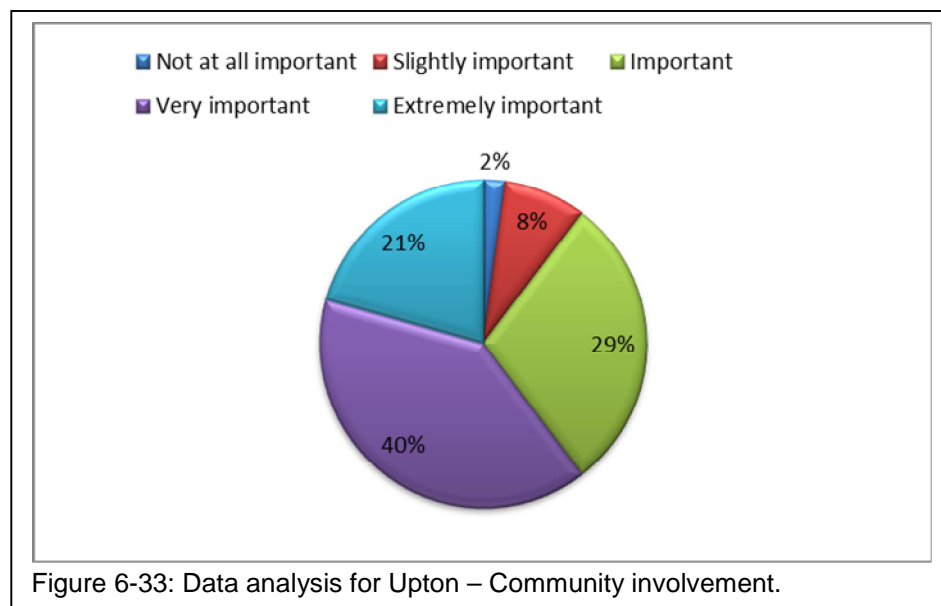
Table 6-33: Data coding for community involvement at Upton

Respondents	Not at all important	Slightly important	Important	Very important	Extremely important	Total
Upton residents	4	15	54	73	38	184

According to Table 6-33, the positive options attract greater numbers than the negative ones. Significantly, 73 people chose ‘Very important’, accounting for the greatest number of the total, followed by ‘Important’ with 54 and ‘Extremely important’ with 38. In contrast, only four people selected ‘Not at all important’ and fifteen selected ‘Extremely important’.

- Data analysis of Upton questionnaire – Community involvement

This pie chart in Figure 6-33 depicts the percentage of five options from ‘Not at all important’ to ‘Extremely important’. Their proportions are 2%, 8%, 29%,



40%, and 21% respectively. The last three are the percentage of positive feedback accounting for 90%. As a result, from the diagram it can safely concluded that 90% of Upton residents believe that community involvement is 'Important', 'Very important', or 'Extremely important' to promote local identity or harmony with local context.

l) Return visit by designers after built-up

- Data coding for return visit by designers after built-up

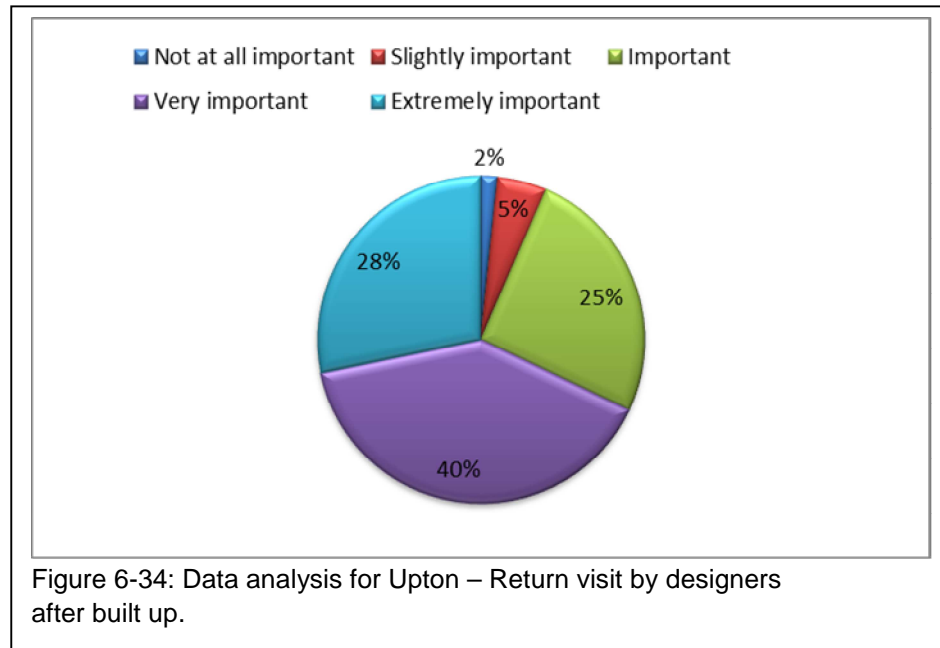
Table 6-34: Data coding for return visit by designers after built-up at Upton

Respondents	Not at all important	Slightly important	Important	Very important	Extremely important	Total
Upton residents	3	9	47	73	52	184

The statistics in Table 6-34 show the data distribution of the survey about return visit by designers after built-up at Upton. The majority of respondents take the positive views of 'Important', 'Very important', and 'Extremely important'. They respectively account for 47, 73, and 52 persons. For the two negative options, only three persons selected 'Not at all important' and nine selected 'Slightly important'.

- Data analysis of Upton questionnaire – Return visit by designers after built-up

Figure 6-34 illustrates the proportion of five options. The first point to note is that the percentage of positive feedback is overwhelmingly higher than that of negative feedback. There are three positive options of 'Important', 'Very important', and 'Extremely important'. Their proportions are 25%, 40%, and 28% respectively. For the other two negative options of 'Not at all important' and 'Slightly important', the percentage are, respectively, 2% and 5%. Thus it is clear that the total percentage of positive feedback is 93%. Consequently, approximately 93% of Upton residents believe that return visit by designers after built-up is 'Important', 'Very important', or 'Extremely important' to promote local identity or harmony with local context.



m) Summary

As can be seen from the sum percentage of positive feedback for the twelve design principles in 6.2.3, they are far larger than that of negative feedback. First, the positive feedback on pedestrian-friendliness accounts for 97%, occupying the largest number compared with the others, followed by walkability at 94%. Second, for design principles of coherence, sustainability, and return visit by designers after built-up, they each received positive feedback at 93%. Third, 92% of respondents hold the positive view that legibility is 'Important', 'Very important', or 'Extremely important' to promote local identity or harmony with local context. Fourth, the total proportion of positive options is 91% for connectivity of street pattern, followed by diversity of architecture and community involvement both at 90%. Fifth, for mixed use, the percentage of valuing 'Important', 'Very important', and 'Extremely important' is a bit lower than the above at 87%. In addition, the sum percentage of positive feedback is 74% for adaptable building form. The positive feedback is three times as much as the negative feedback, although there is a considerable decrease compared with the above figures. Finally, 67% of respondents take the positive view that compactness is 'Important', 'Very important', or 'Extremely important' to promote local identity or harmony with local context. Consequently, it can be confidently stated that

most Upton residents believe that the 12 design principles of new urbanism are 'Important, 'Very important', or 'Extremely important' to promote local identity or harmony with local context.

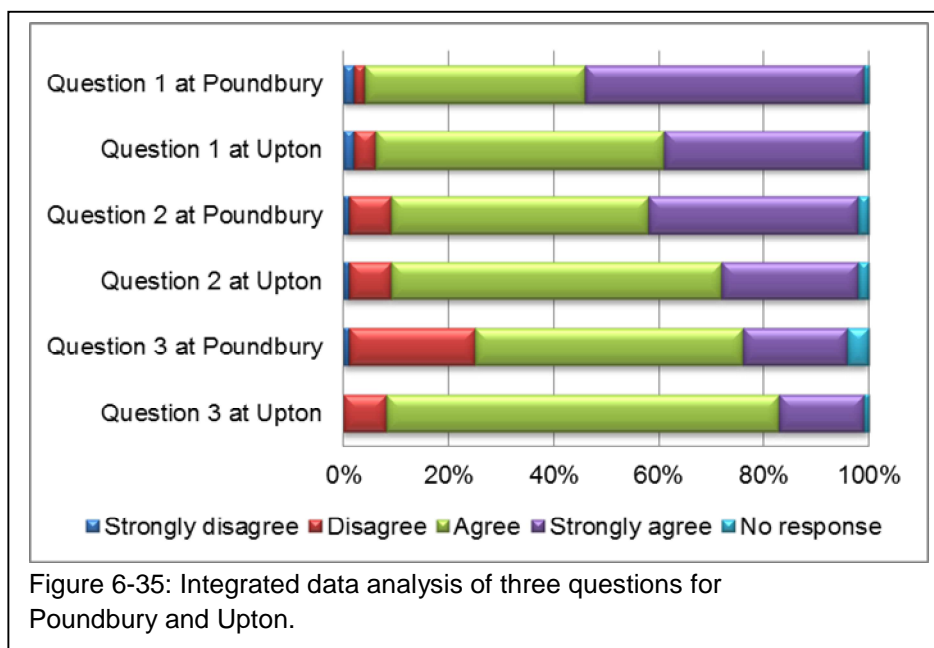
6.3 The Evaluation Outcomes

In this research, two cases are addressed to help resolve the research problem. It is necessary to integrate them based on the above reviews in this chapter.

6.3.1 Integrated data analysis

- a) Integrated data analysis of the responses to three questions posed to Poundbury and Upton residents

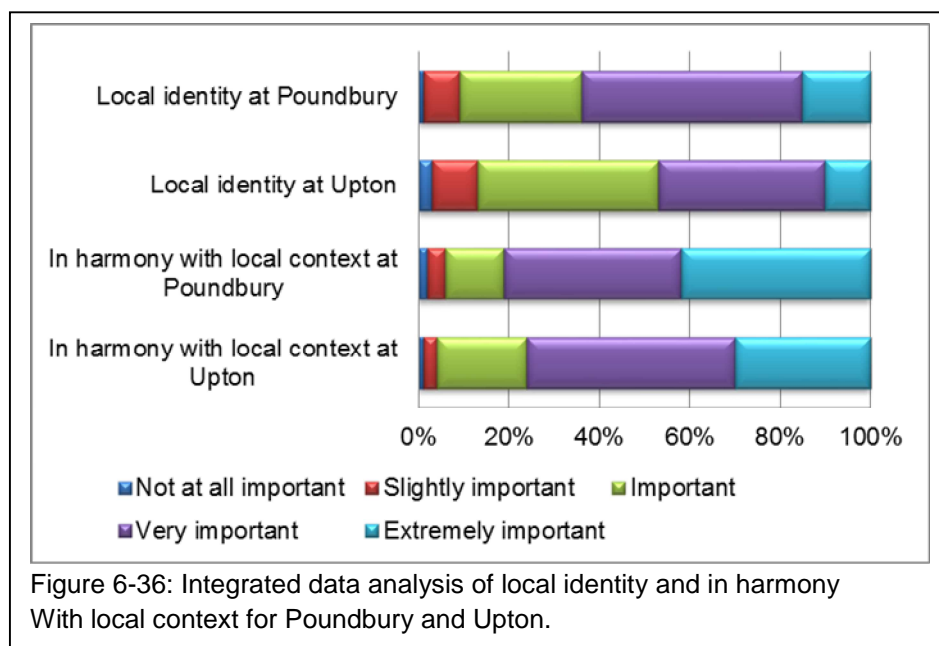
As discussed in 6.1.1 and 6.2.1, three questions were posed to gain an overall review about Poundbury and Upton. Question 1 is 'To what extent do you agree that you like living at Poundbury/Upton'? Question 2 is 'To what extent do you agree that Poundbury/Upton is generally successful'? and Question 3 is 'To what extent do you agree that Poundbury/Upton is an urban extension of Dorchester/Northampton' with local identity or harmony with local context?



The bar chart of Figure 6-35 illustrates the result of different questions. There are two negative options of 'Not at all important' shown in dark blue and 'Slightly important' shown by red. For the first question, there is a slight difference in the positive feedback between two urban extensions. Approximately 95% of Poundbury residents like living at Poundbury and around 93% of Upton residents like living at Upton. For the second question, the sum percentage of positive options is same. People who believe Poundbury is generally successful account for 89% of the total; meanwhile people who believe Upton is generally successful also account for 89% of the total. Finally, the proportion of positive feedback is 71% relating to the third question at Poundbury while it is around 91% at Upton. Most people hold the positive views although there is a slight difference in the proportion between Poundbury and Upton. The residents of both Poundbury and Upton have positive views, which helps to understand that the two cases are representative. The representativeness is important as it can support the generalisation of the research findings.

b) Integrated data analysis of the responses to local identity and in harmony with local context posed to Poundbury and Upton residents

As can be seen from 3.3.4, 6.1.2 and 6.2.2, it is important to review the importance of local identity and in harmony with local context. Figure 6-36



reflects the data distribution of local identity and in harmony with local context at Poundbury and Upton. Dark blue represents the negative option of 'Not at all important' and red represents the negative option of 'Slightly important'. Moreover, the positive feedback includes three options of 'Important', 'Very important', and 'Extremely important' which are shown by green, purple, and light blue respectively. First, for local identity, the total percentage of positive feedback is 91% at Poundbury meanwhile it is 87% at Upton. This means overwhelming majority of Poundbury and Upton residents believe that local identity is 'Important', 'Very important', or 'Extremely important' to help create a harmonious urban extension. Second, with reference to in harmony with local context, the total percentage of positive options is 94% at Poundbury and 96% at Upton. That is to say, almost the entire population believe that in harmony with local context is 'Important', 'Very important', or 'Extremely important' to help create a harmonious urban extension in Poundbury and Upton. Therefore, it is paramount to discuss the importance of the following design principles to promote local identity or harmony with local context.

c) Integrated data analysis of the response to 12 design principles of new urbanism posed to Poundbury and Upton residents

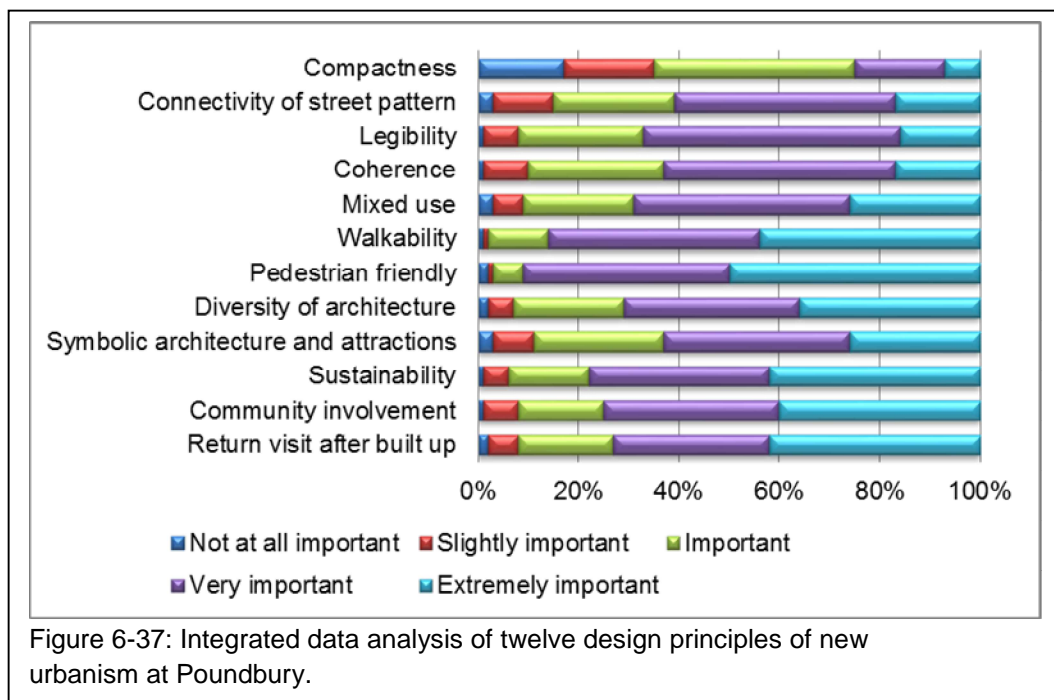


Figure 6-37 and 6-39 illustrate the proportion of scores for every option at Poundbury and Upton. There are two negative options of 'Not at all important' in dark blue and 'Slightly important' in red. The positive feedback contains three options of 'Important' in green,

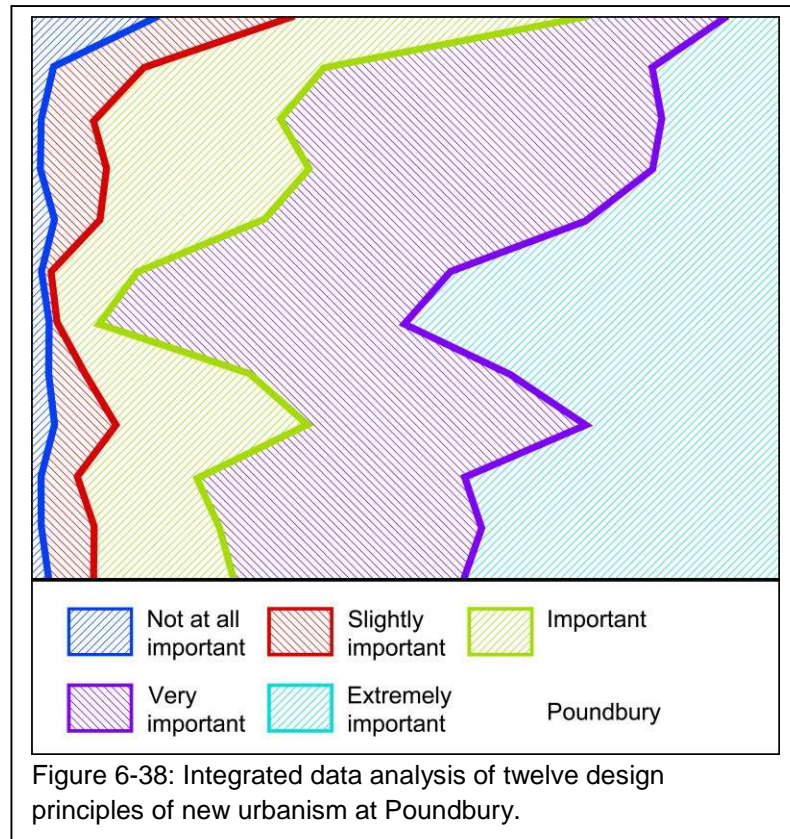


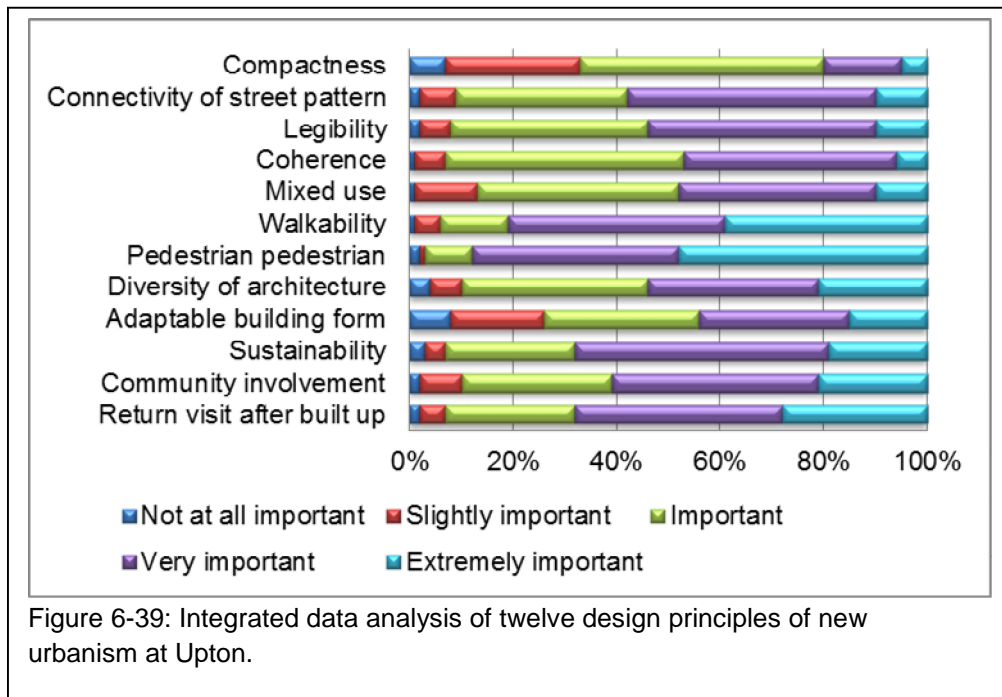
Figure 6-38: Integrated data analysis of twelve design principles of new urbanism at Poundbury.

'Very important' in purple, and 'Extremely important' in light blue.

- Poundbury

As can be seen from the bar charts of Figure 6-37, it is clear that three colours of green, purple, and light blue account for the overwhelming majority. That is to say, the majority of population states that the 12 design principles are 'Important', 'Very important', or 'Extremely important' to promote local identity or harmony with local context.

The graph of Figure 6-38 was drawn based on Figure 6-37. For example, the continuous dark blue line is formed by connecting the end points of every bar in dark blue, while the red line is shaped by linking the end points of every red bar. The rest can be deduced in the same way. Thus Figure 6-38 demonstrates the coverage area of five options including two negative options and three positive ones. The far left side stands for the negative option of 'Not at all important' shown by oblique lines of dark blue. Next, the red diagonal illustrates another negative option of 'Slightly important'.



Furthermore, for the covered area depicted oblique line in green, purple, and light blue colour, they respectively represent the positive options of 'Important', 'Very important', and 'Extremely important'. There are slight differences about the proportion of positive feedback on the design principles of new urbanism, except in the case of compactness. For compactness, the majority of the population holds positive views although its percentage is smaller than the others.

- Upton

The graph of Figure 6-39 proves the dominance of

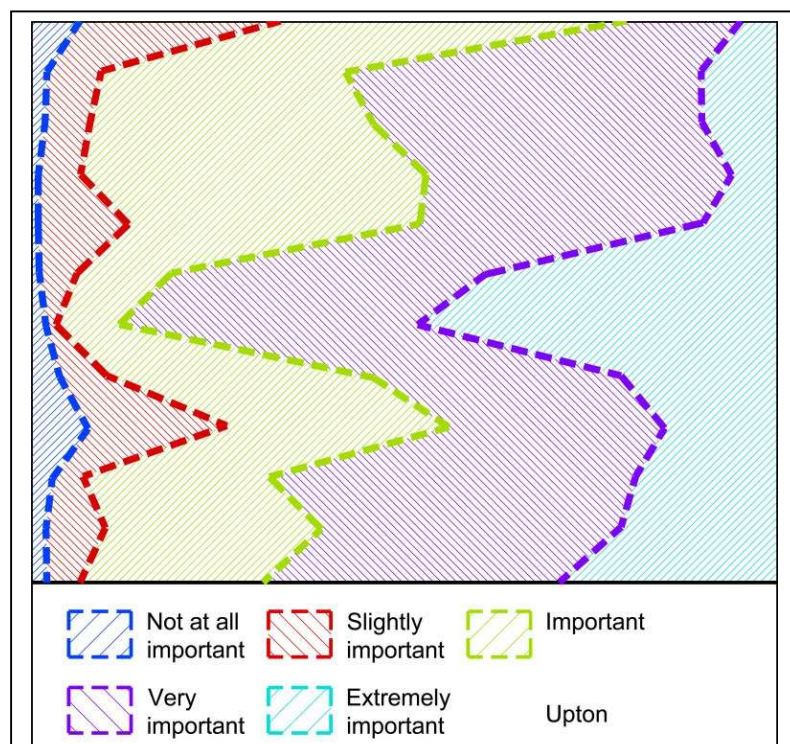


Figure 6-40: Integrated data analysis of twelve design principles of new urbanism at Upton.

positive feedback at Upton. The proportion of green, purple and light blue is overwhelmingly larger than that of dark blue and red. The total percentage of 10 design principles is similar with each other for the positive feedback except for compactness and adaptable building form. The total percentages of 'Important', 'Very important', and 'Extremely important' account for 67% and 74% respectively for compactness and adaptable building form. This means that the majority of the population holds positive views.

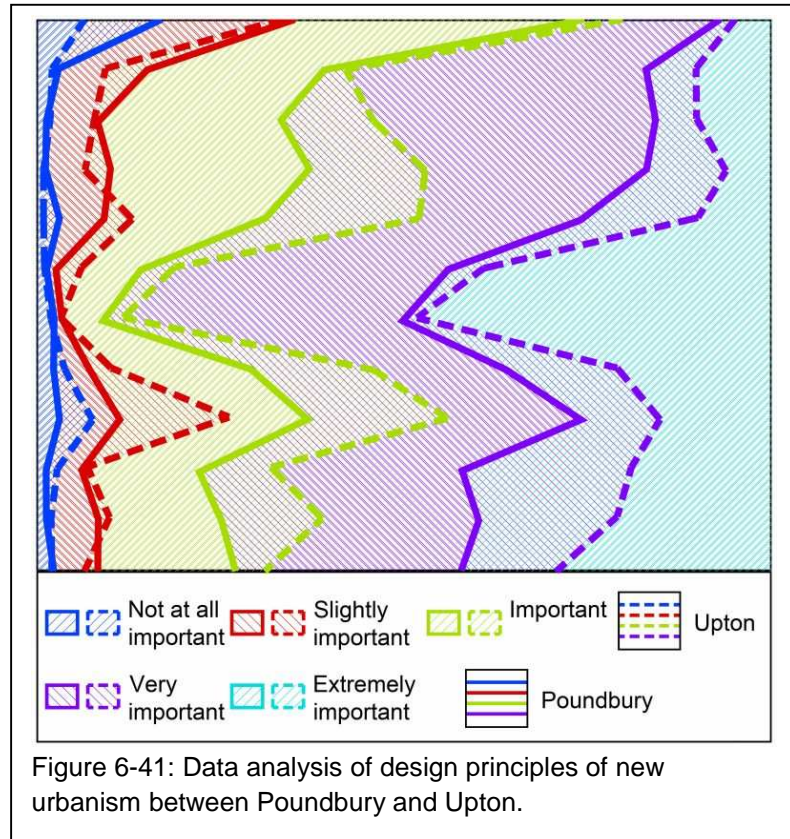
By the same token, Figure 6-40 was also drawn based on Figure 6-39. For instance, the dark blue line is shaped by joining the end points of every bar in dark blue, and the red line is moulded by connecting the end points of every red bar; so do for the green, purple, and light blue lines. As can be seen from Figure 6-40, this graph proves the dominance of positive feedback about the 12 design principles of new urbanism. It reflects that the proportion of positive feedback is overwhelmingly larger than that of negative feedback. For compactness and adaptable building form, their proportion of positive options is obviously smaller than the others. Nonetheless, the majority of the population takes the positive view that they are 'Important', 'Very important', or 'Extremely important' to promote local identity or harmony with local context, respectively accounting for 67% and 74% of the total. Consequently, it can be summarised that the 12 design principles of new urbanism are 'Important', 'Very important', or 'Extremely important' to promote local identity or harmony with local context at Upton.

6.3.2 The summary of evaluation outcomes

a) The evaluation outcomes

In the graph of Figure 6-41, the continuous line represents the case of Poundbury, while the dashed line presents Upton. The dark blue diagonal lines, red diagonal lines, green oblique lines, purple oblique lines, and light blue oblique lines respectively demonstrate the proportion of 'Not at all important', 'Slightly important', 'Important', 'Very important', and 'Extremely important' in the area. As can be seen from the performances of every line, it

is obvious that their trends are quite similar within the same colour group. For the negative feedback of 'Not at all important', whether continuous line or dashed line, they cover the same area. In addition, the covered area by red continuous line relating to the negative option of



'Slightly important', is analogous with that of the red dashed line, apart from the design principle of 'Adaptable building form' of Upton. For the positive feedback, the total areas show their proportions of the design principles of new urbanism covered by green oblique lines, purple oblique lines, and light blue oblique lines. Their proportions are very similar except in the case of the design principle of 'Adaptable building form' of Upton. Nonetheless, the majority of the populations has positive views about this, accounting for 74%. For all the others, the overwhelming majority presents their positive views that the surveyed design principles are 'Important', 'Very important', or 'Extremely important' to promote local identity or harmony with local context. Accordingly, all of them are able to help promote local identity or harmony with local context for urban/village extension. The involved design principles of new urbanism embrace:

- Compactness
- Connectivity of street pattern
- Legibility

- Coherence
- Mixed use
- Walkability
- Pedestrian-friendliness
- Diversity of architecture
- Symbolic architecture and attractions
- Adaptable building form
- Sustainability
- Community involvement
- Return visit by designers after built-up

b) Rethinking the evaluation outcomes

The significance of this chapter lies in its discussion of the importance of design principles of new urbanism for promoting local identity or harmony with local context for urban/village extensions. Also of importance, it is possible for other researchers to consider different viewpoints about the evaluation of the design principles of new urbanism from different analytic perspectives which may help them to explore potential ideas and understandings.

This chapter rates the importance of design principles of new urbanism, it can be clearly seen that every single point is 'Important', 'Very important', or 'Extremely important' to promote local identity or harmony with local context. However, whether in theory or practice, they do not appear to exist alone; rather, most of them *interact with* others and are also *relevant to* each other, as discussed in Chapter 3, 4, and 5. In particular, according to the discussions in 4.3 and 5.3, the design principles of new urbanism in this research are interrelated. For example, compactness is related to connectivity of street pattern, coherence, mixed use, and walkability. It is possible to link connectivity of street pattern with legibility, coherence, walkability, and pedestrian-friendliness. Legibility appears to have relevance with connectivity of street pattern, walkability, pedestrian-friendliness, diversity of architecture, symbolic architecture and attractions. Mixed use

relates to compactness, walkability, and diversity of architecture. Pedestrian-friendliness can encourage walkability. Sustainability seems to link with legibility, walkability, pedestrian-friendliness, and diversity of architecture style. Community involvement may be connected to the other points by getting involved in local communities and local interested groups from the beginning of an urban/village extension development. Return visit after built-up appears to have a link with all the other design principles of new urbanism to potentially improve future urban/village extensions.

In order to illustrate the potential interrelations above among the design principles of new urbanism, two points are discussed to exemplify their links with the others - *legibility and walkability*. First, legibility comprises five aspects: paths, edges, districts, nodes, and landmarks. Paths focus on streets including the streets within Poundbury or Upton, and streets as a bridge between Poundbury and Dorchester, or Upton and Northampton. Also the functions and width of streets are various based on the street hierarchy. Some streets become important features by having landmarks. Thus paths are expected to have rich identity and characters, which make people feel they are easy to walk. According to the above meanings, legibility has close relations with connectivity of street pattern, coherence, mixed use, walkability, pedestrian-friendliness, diversity of architecture, symbolic architecture and attractions. Furthermore, clear edges between built area and surrounding green field make for highly effective land use, which is beneficial to create compactness. Moreover, the characters of districts differ from each other in terms of location. If the district is closer to the local centre, it would have higher density, and if the district stands at the crossing point with its pre-existing town or village, it would consider more about the coherence. Thus legibility also connects to compactness and coherence. Additionally, nodes play important roles in making major structural units, either as a bridge point or by providing community facilities. For the nodes with community facilities, it is better to meet community daily needs like food shops, cafes, or other services. Also of importance, people can walk there conveniently. As a result, this point seems to correlate with mixed use and walkability. The fifth point is

landmarks. It is possible for symbolic architecture and attractions to become landmarks, thus making an urban extension more legible. Briefly, legibility is relevant to connectivity of street pattern, coherence, walkability, pedestrian-friendliness, diversity of architecture, symbolic architecture and attractions, and mixed use. On the other hand, legibility may be reinforced by other certain design principles of new urbanism. To some extent, legibility can be reinforced by community involvement because local people can contribute their local knowledge to the urban extension. What is more, the key aspects of sustainability, particularly demonstrated by outdoor equipment, can be propitious in helping to create the meaning of legibility, such as solar panels on the roof, zed houses, electricity buses, and so on. Finally, the designers may strengthen the legibility for future urban/extensions through return visits to the new community by checking the built-up outcomes. According to the gap between concept and completed physical built environment, designers might seek areas for possible improvement in future developments.

Walkability is the second point. In order to encourage the community to use approachable services and facilities as much as possible, the community is better cover within optimal walkable distance, centred mixed-use neighbourhood (with walkable distance of 400 metres), or central node (with walkable distance of 800 metres). Thus 'connectivity of street pattern' is able to provide more options to the community uses. Also legibility, and symbolic architecture and attractions can help residents find ways to walk. Additionally, pedestrian-friendliness may encourage local residents to walk. If people are willing to walk rather than use their cars, this apparently can protect our environment by reducing emissions of carbon dioxide. Therefore, walkability is expected to interact with connectivity of street pattern, legibility, mixed use, pedestrian-friendliness, symbolic architecture and attractions, and sustainability.

Perhaps the above illustrations about the connections between legibility or walkability and others do not show all the potential relations with the other design principles. However, this is an approach which tries to indicate the

potential interactions and linkages of the design principles of new urbanism in this research. The interactions and linkages aim at showing that the whole system is affected when one of the design principles is pulled during the practice. In completing the questionnaire, in order to ensure a technically feasible approach, the participants were asked to rate the importance for every single design principles of new urbanism while all the design principles fall under the same system. It is important to have a perspective of the situation as a whole by considering all the design principles as an organic system that can promote local identity or harmony with local context for urban/village extensions.

7 Conclusions

Chapter 7 sets out the conclusions to this research, and plays an important role in presenting an overall picture of what the study has achieved. The discussion covers two primary points: study conclusions and directions for future research perspective in the field. The first point is further broken into *research synthesis and research statements*. The research synthesis gives brief perceptions and deduction on the research while the research statements help identify the implications of the findings. The second primary point, *future research perspective*, includes recommendations as potential additional elements for future action and speculations on future trends.

7.1 Research Synthesis and Statements

This research has asked the question: Can the design principles of new urbanism promote local identity or harmony with local context for creating an urban/village extension? The discussions set out in Chapters 1 to 6 demonstrate that the design principles of new urbanism can promote local identity or harmony with local context in creating an urban/village extension. The research picture related to answering the research question is discussed from two aspects: research synthesis and research statements.

a) Research synthesis

This research has two primary tasks to accomplish the goals in order to answer the research question, as discussed in 1.2.1. The first task is exploring the design principles through an in-depth literature review, and the second task is answering if the design principles of new urbanism can promote local identity or harmony with local context for urban/village extensions through case studies and questionnaires.

First, in order to explore the design principles of new urbanism for this research, the literature of new urbanism was reviewed including introduction, to the concept and design principles, among others. The introduction of new urbanism was discussed from the perspectives of key representatives and

agencies of new urbanism. Thus the literature of design principles of new urbanism was reviewed from American, European, and British perspectives. According to these discussions, this research is able to identify the design principles of new urbanism as the fundamental theoretical framework (see Figure 3-2). The framework shows that local identity or harmony with local context may be achieved by employing the defined design principles of new urbanism when creating an urban/village extension. The defined design principles of new urbanism comprise: compactness, connectivity of street pattern, legibility, coherence, mixed use, walkability, pedestrian-friendliness, diversity of architecture, symbolic architecture and attractions, sustainability, and community involvement. These principles can form the foundations for the practice; which confirms that it is necessary to review the literature on key practice. In particular an overview of the UK practice is fundamental, so to address this, two case studies, Poundbury and Upton, were designated through a rigorous selection process.

Case studies were analysed to help achieve the second task by combining the questionnaire as part of the research methodology of this thesis. These two methods demonstrate that the design principles of new urbanism can promote local identity or harmony with local context as the verified process. To begin with, the key individuals involved in Poundbury and Upton were interviewed in order to support and modify the design principles of new urbanism established by the literature review. Shorter case-study interviews were also employed as part of the process of modifying the design principles applied for the two cases. In terms of the data analysis of the shorter case-study interviews, two further points, return visit made by designers after built-up and adaptable building form, were identified and added to the design principles of new urbanism established in the literature review. Thus the two cases have been analysed respectively by employing the modified design principles of new urbanism in order to test whether it is possible to promote local identity or harmony with local context for Poundbury and Upton. On the basis of Chapter 4 and Chapter 5, the answer on the stage appears to be as follows: The design principles of new urbanism in this research could

promote local identity or harmony with local context; thereby it is possible to help create an urban/village extension of a built environment. Finally, in order to further verify the outcomes achieved by the case studies, the questionnaire as a research tool was important in that it allowed for the collection of factual information from the residents of Poundbury and Upton. According to their cognition and knowledge, the responses of the Poundbury and Upton residents offer further verification that the design principles of new urbanism, as an organic system, are important, very important, or extremely important to promote local identity or harmony with local context.

Table 7-1 overview the brief outcomes of case studies and questionnaire between Poundbury and Upton. The information helps to answer the research question clearly.

To summarise, the research question – that the design principles of new urbanism, as an organic system, can promote local identity or harmony with local context when creating an urban/village extension of a built environment – is answered.

b) Research statements

On the basis of the research synthesis, the study set out to explore two main tasks. One is about the establishment of design principles of new urbanism as the theoretical framework in this research. The other is to test and verify their level of importance in promoting local identity or harmony with local context for urban/village extensions. In theory this approach that the research has identified therefore assists in understanding the role of design principles of new urbanism for promoting local identity or harmony with local context. In practice, it can follow controlling masterplan by relying on the design principles of new urbanism as a static information system and process to conduct an urban/village extension. This might help translate the best features from traditional urbanism generated over the centuries in the pre-existing town or village. All attempts should be made to preserve and incorporate these features within the extensions. An implication of this is the possibility that harmony of built environment between the urban/village

Design principles of new urbanism	Case studies		Questionnaire	
	Can design principles of new urbanism promote local identity or harmony with local context? (Yes or No)		To what extent is important that the following design principles can promote local identity or harmony with local context for urban/village extensions? (<i>The percentage believes the design principle is important or more than important.</i>)	
	Poundbury (see 4.3.2)	Upton (see 5.3.2)	Poundbury (see 6.1.3)	Upton (see 6.2.2)
Compactness	Yes	Yes	65%	67%
Connectivity of street pattern	Yes	Yes	85%	91%
Legibility	Yes	Yes	92%	92%
Coherence	Yes	Yes	90%	93%
Mixed use	Yes	Yes (after built-up stage)	91%	87%
Walkability	Yes	Yes (after built-up stage)	98%	94%
Pedestrian-friendliness	Yes	Yes	97%	97%
Diversity of architecture	Yes	Yes	93%	90%
Symbolic architecture and attractions	Yes	-	89%	-
Adaptable building form	-	Yes (To be improved in the future)	-	74%
Sustainability	Yes	Yes	94%	93%
Community involvement	Yes	Yes (To be reinforced after built-up stage)	92%	90%
Return visit by designers after built-up	Yes	Yes (The designers need to be encouraged)	92%	93%

Table 7-1: Poundbury and Upton

extension and its pre-existing town or village could be achieved. Then this possibility can help keep local distinctiveness during the development of urban/village extensions, and also can identify the urban/village extensions regionally.

It is, however, noted from this study that there are two main limitations, which should be considered. First, the current study is that promoting local identity or harmony with local context for urban/village extensions through design principles of new urbanism. However, creating an urban/village extension is a complex process involving the interaction of natural, social and built elements. In terms of the three dimensions of natural, social and built elements, the current study was not specifically applied to analyse natural and social elements but focused on the built environment. Second, the cases of Poundbury and Upton are still under construction, which impacts on showing the whole real image after they are completely built-up. Chapters 4 and 5 have also discussed this aspect. However, this limitation may provide more opportunities for the researcher to undertake subsequent study when Poundbury and Upton complete. Perhaps the readers of this research may identify further limitations. Any ideas would be most welcome if they have the potential to enhance this academic paper. However, this study is an innovation initiative dealing with an urban/village extension on built environment by employing the design principles of new urbanism. Hopefully it is possible to influence the design for future urban/village extensions of towns or villages like Dorchester, or Northampton by catering to a broader spectrum of potential similar projects.

7.2 Future Research Perspective

The findings offer some useful lessons and have broader implications for future urban/village extensions that could be developed in other places, particularly in China, although this study has faced certain limitations as discussed in research statements of 7.1.

The findings of this study may provide the following insights for future research. First of all, the design principles of new urbanism could be usefully applied in the global context, with important implications for other countries. This further development would allow knowledge to spread within different context. Importantly, it may give a better impression of an overall new urbanism undertaking. In addition, the research motivation of this study is on the basis of Chinese ordinary villages. Thus Chinese ordinary villages should be highlighted. If the problem of Chinese ordinary villages can be resolved, the research will have proved meaningful. However, as a PhD student, due to time constraints, not all problems associated with the area of study could be solved or addressed. Therefore, if the findings are to be able to respond to the case in China, further investigation and experimentation are recommended. With respect to local context, it is significant to consider how to apply the design principles of new urbanism undertaken in this research to the expansion of Chinese ordinary villages. This means that the findings generated by this research are expected to be further investigated and localised into the context of China, and to help create village extensions for Chinese ordinary villages. According to the main findings of this study, further investigation can potentially focus on the following key approach: not only to develop planning policies or guidance by applying the findings to the context of China, but also to provide important implications for a practical masterplan for a village extension in a Chinese ordinary village. These approaches would be reasonable and applicable to tackle the issues put forward in the research motivation of Chapter 1. Finally, although the recommendations in this thesis may appear to be hard to implement, they can be achieved with optimism and a positive mindset. It is hoped that the findings from this study will inform those who plan extensions to the built environment in Chinese ordinary villages of the range of possibilities available to them.

Bibliography

- A+DS, (2011) *Delivering better places: visual case studies*, [Online] available at www.ads.org.uk, [Accessed: 29 October 2012].
- Adam, R. (2008) Introduction in *Tradition today: continuity in architecture and society*, Billerica: WIT Press.
- Adam, R. (2013) *Creating local identity through architecture*, [Online] available at http://www.worldarchitecturenews.com/?fuseaction=wanappln.commentview&comment_id=128, [Accessed: 02 April 2013].
- AGSO Knokke-Heist, (2013) *Heule Bridge*, [Online] available at agsoknokke-heist.be, [Accessed: 20 August 2013].
- Akbayrak, B. (2000) A comparison of two data collecting methods: interviews and questionnaires, *Hacettepe Universitesi Egitim Fakiiltesi Dergisi* 18: 1-10.
- Alexander, C. et al. (1977) *A pattern language: towns, buildings, construction*, New York: Oxford University Press.
- Alexander, C. (1979) *The timeless way of building*, New York: Oxford University Press.
- American Planning Association, (2013) *New urbanism*, [Online] available at www.planning.org/divisions/newurbanism, [Accessed: 19 August 2013].
- Andersen, I. (2003) *Council for European Urbanism (CEU) formed*, [Online] available at bettercities.net/article/council-european-urbanism-ceu-formed, [Accessed: 20 May 2013].
- Arcspace, (2002) *Out of ordinary: the architecture and design of Robert Venturi, Denise Scott Brown and Associates*, [Online] available at www.arcspace.com/exhibitions/unsorted/out-of-the-ordinary, [Accessed: 24 September 2013].
- Art Directory, (2013) *Historicism*, [Online] available at www.art-directory.info/design/historicism/index.shtml, [Accessed: 15 August 2013].
- Balmforth, D; Digman, C; Kellagher, R; Butler, D, (2006), *Designing for exceedance in urban drainage – good practice*, London, CIRIA.
- Barnett, J. (2013) What's new about the new urbanism in *Charter of the New Urbanism*, 2nd ed, New York; London: McGraw-Hill Education.
- Beauregard, R.A, (2002) New urbanism: ambiguous certainties, *Journal of Architectural and Planning Research*, 19 (3), p.181-194.
- Benjamin, W. (1992) *Illuminations*, Zohn, H. (Trans) London: Fontana.
- Berger, J. (2008) *Ways of seeing*, London: Penguin.
- Berman, M. (1982) *All that is solid melts into air: the experience of modernity*, New York: Simon and Schuster.

Bertaux, D. (1981) From the life-history approach to the transformation of sociological practice, in Bertaux, D. ed. *Biography and society: the life history approach in the social science*, London: SAGE.

Blackson, H. (2013) *Don't get mixed up on mixed-use*, [Online] available at www.placemakers.com/2013/04/04/mixed-up-on-mixed-use, [Accessed: 30 August 2013].

Bodenschatz, H. (2003) New urbanism and the European perspective—presumption, rivalry or challenge? in R. Krier, *Town Spaces, Contemporary Interpretations in Traditional Urbanism*, Krier-Kohl-Architects, Introduction by M. Graves, Birkhauser Verlag, Basel, p.266-279. [Online] available at <http://www.ceunet.de>, [Accessed: 21 May 2012].

Booth, A. Papaioannou, D. and Sutton, A. (2012) *Systematic approaches to a successful literature review*, London: SAGE.

Boyce, C. & Neale, P. (2006) *Conducting in-depth interviews: a guide for designing and conducting in-depth interviews for evaluation input*, Watertown: Pathfinder International.

Brace, I. (2008) *Questionnaire design: how to plan, structure and write survey material for effective market research*, 2nd ed, London: Kogan Page.

Brace, I (2013) *Questionnaire design: how to plan, structure and write survey material for effective market research*, 3rd ed, London: Kogan Page.

Brannigan, J. (1998) *New historicism and cultural materialism*, New York: St. Martin's Press.

BREEAM, (2007) *BREEAM Award Winners for 2007 announced*, [Online] available at www.breeam.org/news, [Accessed: 04 June 2013].

Britannica Academic Edition, (2013) *Harmony*, [Online] available at www.britannica.com/EBchecked/topic/255575/harmony, [Accessed: 4 December 2013].

Britannica, (2013) *Leopold Von Ranke*, [Online] available at www.britannica.com, [Accessed: 14 August 2013].

Broadbent, G, (1980) The deep structures of architecture, In *Signs, symbols, and architecture*, ed. G. Broadbent, R. Bunt, and C. Jencks, John Wiley & Sons, Chichester.

Buder, S. (1990), *Visionaries and planners: the garden city movement and the modern community*, New York, Oxford: Oxford University Press.

CABE, (2000) *By design: urban design in the planning system – towards better practice*, London: Department of Environment Transport and the Regions.

CABE, (2003) *The 20 Building for Life Criteria*, [Online] available at webarchive.nationalarchives.gov.uk/20110107165544/http://www.buildingforlife.org/criteria, [Accessed: 30 August 2013].

CABE, (2008) *Creating successful masterplans: a guide for clients*, [Online] available at webarchive.nationalarchives.gov.uk/http://www.cabe.org.uk, [Accessed: 30 October 2012].

CABE, (2011) *Upton: Northampton*, [Online] available at webarchive.nationalarchives.gov.uk, [Accessed: 25 October 2012].

Calthorpe, P. (1993) *The next American metropolis: ecology, community, and the American dream*, New York: Princeton Architectural Press.

- Calthorpe, P. (1994) The region in Katz, P. ed, *The new urbanism: Toward an architecture of community*, McGraw-Hill, New York.
- Calthorpe, P. and Fulton, W. (2001) *The regional city: planning for end of sprawl*, Washington D.C; London: Island Press.
- Campbell, K. (1999) *Mixed use city centres*, Issue 70, Urban Design Quarterly, Oxford, April.
- Centre for Applied Transect Studies, (2013) *The transect*, [Online] available at www.transect.org/transect.html, [Accessed: 15 February 2013].
- CEU, (2003) *Charter of Stockholm: the charter for European urbanism*, [Online] available at www.ceunet.org/charter-of-stockholm-6-november-2003, [Accessed: 27 August 2013].
- CEU, (2013) *What we believe*, [Online] available at www.ceunet.org/what-we-believe, [Accessed: 8 August 2013].
- Cheng, V. (2010) Understanding density and high density, in Ng, E, (ed). *Designing high-density cities for social and environmental sustainability*, London: Earthscan.
- Chinese Traditional Village, (2011) *Village rehabilitation: development with local characters*, [Online] available at ctv.wodtech.com, [Accessed: 9 December 2011].
- Christian Classics Ethereal Library, (2013) NPNF 1-05 St. Augustine: Anti-pelagian writings, [Online] available at www.ccel.org/ccel/schaff/npnf105.xi.xxx.html, [Accessed: 4 December 2013].
- CIAM II, (1929) Frankfurt am Main, Germany.
- Clay, G. (2009) *Rob Krier to receive Athena Awards at CNU 17*, [Online] available at www.cnu.org/cnu-news/2009/05/grady-clay-rob-krier-receive-athena-awards-cnu-17, [Accessed: 27 August 2013].
- CMHC (Canada Mortgage and Housing Corporation), (2002) *Residential street pattern design*, [Online] available at www.cmhc-schl.gc.ca, [Accessed: 20 May 2013].
- CNU, (1999) *Charter of the new urbanism*, New York: McGraw-Hill.
- CNU, (2001) *Charter of the new urbanism*, [Online] available at www.cnu.org/charter, [Accessed: 13 July 2013].
- CNU, (2012) *Athena Medals*, [Online] available at www.cnu.org/athena_medals, [Accessed: 24 May 2012].
- Colling, J. (2003), Demystifying the clinical nursing research process: the literature review, *Urol Nurs* 23(4), p.297-299.
- Communities and Local Government, (2011) *Planning Policy Statement 3 (PPS 3): Housing*, London: The Stationery Office.
- Corbusier, L. (1927) *Towards a new architecture*, US: CreateSpace, (2011).
- Cowan, R. (2005) *The dictionary of urbanism*, Tisbury: Streetwise Press.
- Crewe, K. (2001) The quality of participatory design: the effects of citizen input on the design of the Boston Southwest Corridor, *Journal of American Planning Association* 67: 437-455.
- Cronin, P. Ryan, F. and Coughlan, M. (2008) Undertaking a literature review: a step-by-step approach, *British Journal of Nursing*, Vol 17, No. 1, 38-43.

- Crouch, M & McKenzie, H. (2006) The logic of small samples in interview-based qualitative research, *Social Science Information* 45: 483-499.
- Cullen, G. (1971) *The concise townscape*, 1st ed, London: Architectural Press.
- Cullen, G. (2003) in *Time-saver standards for urban design*, Watson, D. Plattus, A. and Shibley, R. (eds) New York: McGraw-Hill.
- Curl, J.S. (2006) *A dictionary of architecture and landscape architecture*, Oxford University Press, 2nd ed, Online resource of University of Nottingham.
- Dane, F.C. (2011) *Evaluating research: methodology for people who need to read research*, London: SAGE.
- Dantzig, G. and Saaty, T. (1973), *Compact city: a plan for a liveable urban environment*, San Francisco, W.H: Freeman and Company.
- Dawson, C. (2009) *Introduction to research methods: a practical guide for anyone undertaking a research project*, Oxford: How To Books.
- Deitrick, S. and Ellis, C. (2000) *New urbanism and inner-city neighbourhood revitalization in Pittsburgh*, paper presented at the 96th Annual Meeting of the Association of American Geographers, 4-8 April, Pittsburgh, PA.
- Denzer, (2013) A. *Masters of modernism*, [Online] available at www.masterofmodernism.com/?page=Modernism, [Accessed: 13 August 2013].
- Dictionary, (2013) *New urbanism*, [Online] available at dictionary.reference.com/browse/new+urbanism, [Accessed: 16 August 2013].
- Distinct Build, (2013) *Modern architecture defining characteristics*, [Online] available at distinctbuild.ca/modern_architecture_defining_characteristics.php, [Accessed: 12 August 2013].
- Dittmar, H. and Ohland, G. (eds) (2004) *The new transit town: best practices in transit-oriented development*, Washington D.C: Island Press.
- Donaldson, B. (2012) *David Lewis: an urban legend*, [Online] available at www.post-gazette.com/stories/ae/art-architecture/david-lewis-an-urban-legend-219018, [Accessed: 7th August 2013].
- Dorset OPC, (2012) *Dorchester and Fordington*, [Online] available at www.opcdorset.org [Accessed: 22 February 2012].
- Dorset for you, (2013) *Electric bus project in Dorset*, [Online] available at www.dorsetforyou.com/travel-dorset/bus/electric-bus-project-in-Dorset, [Accessed: 23 July 2013].
- Downs, A. (1994) *New visions for metropolitan America*, Washington D.C: Brookings Institution.
- DPZ, (2013a) *Andres Martin Duany*, [Online] available at www.dpz.com/Organization/AndresDuany, [Accessed: 7 August 2013].
- DPZ, (2013b) *Transect*, [Online] available at www.dpz.com/Thought/Transect, [Accessed: 18 February 2013].

DPZ-Europe, (2013) *Heulebrug, Belgium*, [Online] available at www.dpz-europe.de/e/dpz-Heuleburg.html, [Accessed: 20 August 2013].

DT & CLG (Department for Transport & Communities and Local Government), (2007), *Manual for streets*, London: Thomas Telford Publishing.

DT (Department for Transport), DEFRA (Department for Environment Food and Rural Affairs), (2003) *Energy white paper: Our energy future – creating a low carbon economy*, Norwich: The Stationery Office.

DTLR (Department for Transport, Local Government and the Regions), (2002), *Regional Planning Guidance for the East Midlands (RPG8)*, London: The Stationery Office.

Duany, A. and Plater-Zyberk, E. (1994) The neighbourhood, the district and the corridor, in Katz, P. ed, *The new urbanism: toward an architecture of community*, New York: McGraw-Hill.

Duany, A. (2003) *New urbanism in Europe: DPZ projects*. Masterclass in Traditional Urbanism, 8 April 2003, London: The Prince's Foundation.

Duany, A. and Plater-Zyberk, E. (2003) The Lexicon of the new urbanism in *Time-saver standards for urban design*, Watson, D. Plattus, A. Shibley, R. (eds) New York: McGraw-Hill.

Duany, A. (2013), 20 years of new urbanism in *Charter of the New Urbanism*, Talen, E. (ed), 2nd ed, New York; London: McGraw-Hill Education.

Duany Plater-Zyberk & Company, (2013) *Seaside information*, [Online] available at www.dpz.com/Practice/7903, [Accessed: 19 August 2013].

Duchy of Cornwall, (2006) *Poundbury: the masterplan*, [Online] available at www.duchyofcornwall.org, [Accessed: 13 November 2011].

Duchy of Cornwall, (2011) *Poundbury factsheet*, Poundbury: Poundbury Office.

Duchy of Cornwall, (2013) *Poundbury*, [Online] available at www.duchyofcornwall.org, [Accessed: 1 June 2013].

East Midlands Regional Assembly, (2007) *East Midlands Regional Spatial Strategy Annual Monitoring Report 2005/06*, East Midlands: Rich Designs.

EDAW, ABA (Alan Baxter & Associates), ed, (2005) *Upton Design Code*, [Online] available at http://www.northampton.gov.uk/downloads/file/3804/upton_design_codes, [Accessed: 31 January 2013].

Ellin, N. (1996) *Postmodern urbanism*, New York: Princeton Architectural Press.

Ellis, C. (2002), The new urbanism: critiques and rebuttals, *Journal of Urban Design*, Vol. 7, No. 3, p.261-291.

Elsevier, B.V. (2011) *SciVerse Scopus*, [Online] available at www.info.sciverse.com/scopus, [Accessed: 21 November 2011].

Energy Saving Trust, (2006) *Creating a sustainable urban extension – a case study of Upton, Northampton*, London: Energy Saving Trust.

England Shelter, (2012) *What is social housing?* [Online] available at www.England.shelter.org.uk, [Accessed: 8 March 2012].

English Partnerships, (2003) *Upton executive summary*, [Online] available at www.rudi.net/node/7781, [Accessed: 8 November 2012].

EP (English Partnerships), NBC (Northampton Borough Council), TPF (The Prince's Foundation), (2005) *Upton design codes*, [Online] available at http://www.northampton.gov.uk/site/scripts/download_info.php?downloadID=332, [Accessed: 18 November 2012].

EST (Energy Saving Trust), (2006) *Creating a sustainable urban extension – a case study of Upton, Northampton*, [Online] available at www.northampton.gov.uk, [Accessed: 29 October 2012].

Feng, J.C. (2013) *Saving the traditional village culture*, [Online] available at ctv.wodtech.com/ft/20130415/95434.shtml, [Accessed: 9 December 2013].

FHWA (The Federal Highway Administration), (1992) *National bicycling and walking study*, Washington, DC: U.S. Department of Transportation.

FHWA (The Federal Highway Administration), (2008) *A resident's guide for creating safe and walkable communities*, Washington, DC: U.S. Department of Transportation.

Flick, U. (2007) About this book in *Doing interviews*, Kvale, S. London, SAGE.

Flick, U. (2009) *An introduction to qualitative research*, 4th ed, London: SAGE.

Foddy, W.H. (1994) *Constructing questions for interviews and questionnaires: theory and practice in social research*, Cambridge: Cambridge University Press.

Ford, L.R. (1999) Lynch revisited: new urbanism and theories of good city form, *Cities*, Vol 16, No.4, p247-257.

Fordham Research Group, (2008), *Dorset survey of housing need and demand*, [Online] available at www.dorsetforyou.com, [Accessed: 10 October 2011].

Foundations of qualitative research in education, (2008), *Literature reviews*, [Online] available at isites.harvard.edu/icb/icb.do?keyword=qualitative&pageid=icb.page350640, [Accessed: 5 November 2013].

Foucault, M. (2010), Introduction: the critical attitude in *Modernist cultural studies*, Driscoll, C. Gainesville: University Press of Florida.

Francis Roberts Architects, (2013) *New houses at Poundbury*, [Online] available at www.francisroberts.com/category/residential/houses-at-Poundbury, [Accessed: 22 July 2013].

Franklin, M. (2012) Understanding research: coping with the quantitative-qualitative divide, London: Routledge.

Fulton, W. (1996) The new urbanism challenges conventional planning, *Land Lines*, Vol 8, No.5, p.1-2.

Fyfe, G. and Law, J. (1988), *Picturing power: visual depiction and social relations*, London: Routledge.

- Gehl, J. (1971), *Life between buildings*, translated from the Danish by J. Koch, London: Island Press.
- Gillham, B. (2000) *Case study research methods*, London: Continuum International Publishing.
- Gillham, B. (2008) *Developing a questionnaire*, 2nd ed, London: Continuum.
- Gindroz, R. (1999), *Interview by S. Deitrick*, 2 February, Pittsburgh, PA.
- Global Site Plans, (2013) *Lessons of observation: what William H. Whyte would say*, [Online] Available at www.cnu.org/cnu-salons/2013/03/lessons-observation-what-william-h-whyte-would-say, [Accessed: 5 August 2013].
- Gordon, P. and Richardson, H.W. (1998) *A critique of new urbanism*, Presented at the November, 1998 meeting of the American Collegiate Schools of Planning (Pasadena, CA), [Online] available at www-bcf.usc.edu/~pgordon/urbanism.html, [Accessed: 20 October 2011].
- Government of Ireland, (1999) *Residential density: guidelines for planning authorities*, Dublin: The Stationery Office.
- Grant, J. (2006) *Planning the good community: new urbanism in theory and practice*, New York: Routledge.
- Grant, J. (2009) Theory and practice in planning the suburbs: challenges to implementing new urbanism, smart growth, and sustainability principles, *Planning theory & Practice*, 10:1, 11-33.
- Gropius, W. (1965) *The new architecture and the Bauhaus*, Cambridge, Massachusetts: MIT Press.
- Guo. X. N.A. et al. (2007), *The research on the problems of Chinese agriculture and economic development*, Beijing: China Agriculture Press.
- Haas, T, ed, 2008, *New urbanism and beyond: designing cities for the future*, New York: Rizzoli.
- Hall, P. (2000) Urban renaissance/New urbanism: two sides of the same coin? *Journal of the American Planning Association*, 66:4, p.359-360.
- Haigh, R. (2008) Chapter ten-interviews: a negotiated partnership in the book of *Advanced research methods in the built environment*, Chichester: Wiley-Blackwell.
- Hardie, J. (2006) *Case study: Seaside*, [Online] available at jameshardie.com/au, [Accessed: 19 August 2013].
- Hardy, D. (2006) *Poundbury: the town that Charles built*, London: Town & Country Planning Association.
- Hart, C. (1998) *Doing a literature review: releasing the social science research imagination*, London: SAGE Publications.
- HCA (Homes & Communities Agency), (2012) *Upton sustainable urban extension*, [Online] Available at www.homesandcommunities.co.uk, [Accessed: 26 October 2012].

- Henton, D. and Walesh, K. (1998) *Linking the new economy to the livable community*, San Francisco: James Irvine Foundation.
- Herriott, R.E. & Firestone, W.A. (1983) Multisite qualitative policy research: optimizing description and generalizability, *Educational Researcher*, 12, 14-19.
- Hirt, S. (2007) The mixed-use trend: planning attitudes and practices in northeast Ohio, *Journal of Architectural and Planning Research*, 24:3, p.224-244.
- Hirt, S. (2009) Premodern, modern, postmodern? Placing new urbanism into a historical perspective, *Journal of Planning History*, Vol.8, No.3, p.248-273.
- Hough, M. (1990) *Out of place: restoring identity to the regional landscape*, New Haven: Yale University Press.
- Howard, E. (1965) *Garden cities of to-morrow*, London: Faber and Faber.
- Howard, T. (2000), *Religion and the rise of historicism*, Cambridge: Cambridge University Press.
- HRH the Prince of Wales, (1989) *A vision of Britain: a personal view of architecture*, London: Doubleday.
- H.R.H the Prince of Wales, Juniper, T. and Skelly I. (2010) *Harmony: a new way of looking at our world*, London: Blue Door.
- HTA, (2012) *Upton Site C*, [Online] available at www.hta.co.uk/projects/upton-site-c, [Accessed: 15 October 2012].
- Human, B. (2010) *Upton, Northampton*, [Online] available at www.historictownsforum.org/upton_northampton, [Accessed: 16 November 2012].
- Hvattum, M. (2004), *Gottfried Semper and the problem of historicism*, West Nyack: Cambridge University Press.
- Ibid, (2013) *The automobile in Le Corbusier's ideal cities*, [Online] available at mitpress.mit.edu, [Accessed: 13 August 2013].
- INTBAU, (2013) *Council for European Urbanism*, [Online] available at www.intbau.org/archive/CEU.htm, [Accessed: 8 August 2013].
- INTBAU Charter, (2001) *Charter and Ireland essays*, [Online] available at www.intbau.org/ire/charter.html, [Accessed: 14 August 2013].
- International Association for Public Participation, (2013) *Core values for the practice of public practice*, [Online] available at www.iap2.org, [Accessed: 14 September 2013].
- Israel, G.D. (1992) Determining sample size, *Fact Sheet PEOD-6*, November: 1-5.
- Jacob, J. (1961) *The death and life of great American cities*, New York: Vintage Books.
- Jacobs, J (2003) in Time-saver standards for urban design, Watson, D. Plattus, A. and Shibley, R. (eds) New York: McGraw-Hill.
- Jette, D. Grover, L. & Keck, C.P. (2003) A qualitative study of clinical decision making in recommending discharge placement from the acute care setting, *Physical Therapy*, 83(3), 224-236.

- Katz, P. (1994) ed, *The new urbanism: toward an architecture of community*, New York: McGraw-Hill.
- Kelbaugh, D. and Calthorpe, P. (1989) *The pedestrian pocket book: a new suburban design strategy*, New York: Princeton Architectural Press in association with the University of Washington.
- Kelbaugh, D. (1997) *Common place: toward neighbourhood and regional design*, Washington: University of Washington Press.
- Kelbaugh, D. (2000) *The essential common place*, Washington: the University of Washington Press.
- Kirklees Council, (2003) *Questionnaires*, [Online] available at www.kirklees.gov.uk, [Accessed: 13 November 2013].
- Knight, A. & Ruddock, L. ed, (2008) *Advanced research methods in the built environment*, Chichester: Wiley-Blackwell.
- Krier, L. (1998) *Architecture: choice or fate*, Andreas Papadakis Publisher, Windsor, Berks.
- Krier, L. (2009) *The architecture of community*, Thadani, D. and Hetzel, P. (ed), Washington D.C; London: Island Press.
- Krier, R. (1979) *Urban space*, Czechowski C. and Black G. (trans), London: Academy Editions.
- Kusadali, M. (2011), *Rob Krier: Urban space (1979)*, [Online] available at architectureandurbanism.blogspot.co.uk, [Accessed: 26 August 2013].
- Kvale, S. (2007) *Doing interviews*, London: SAGE Publications.
- Lambert, T. (2012) *A brief history of Northampton, England*, [Online] available at www.localhistories.org/northampton.html, [Accessed: 28 November 2012].
- Langley, P. (1988) *Data-driven approaches to empirical discovery*, Irvine: University of California.
- Lee, D.T.F. Woo, J. and MacKenzie, A.E. (2002) The cultural context of adjusting to nursing home life: Chinese elders' perspectives, *The Gerontologist*, 42 (5), 667-675.
- Lehigh Valley Planning Commission, (2011) *Street connectivity: improving the function and performance of your local streets*, [Online] available at www.lvpc.org/pdf/streetconnectivity.pdf, [Accessed: 16 September 2013].
- Leinberger, C. and Alfonzon, M. (2012), *Walk this way: the economic promise of walkable places in metropolitan Washington D.C*, Washington D.C: Brookings Institution.
- Li, B.H. and Wan, Y.H. (2008), *Chinese architectural culture of villages and towns*, Wuhan: Hubei Education Press.
- Li, C.P. (2002) *I talk truth to the Prime Minister*, Beijing: Guangming Daily Press.
- Li, L.X. (2010) Urbanisation rate in China: existing, challenge and coping, *Zhejiang Social Sciences*, No. 12, Dec. p.27-42.
- Literature Review, (2013) *Structure and content*, [Online] available at www.literaturereviewof.com/structure, [Accessed: 18 November 2013].

- Llewelyn-Davies, (2000) *Urban design compendium*, London: English Partnerships and the Housing Corporation.
- Liu, H.X. (2008), *Sociology of Chinese villages*, Beijing: China Renmin University Press.
- Local Government Association, (2005) *Community involvement in town and country planning*, [Online], available at www.natplanforum.org.uk/NPF_1_F321_comm_involve_Layout_1.pdf, [Accessed: 13 September 2013].
- Local Government Yorkshire and Humber, (2013) *Affordable housing guide: pepper-potting*, [Online] available at www.deliveraffordablehomes.co.uk/glossary/p/pepper-potting [Accessed: 17 January 2014].
- Lu, D.F. (ed) (2011), *Third world modernism: architecture, development and identity*, Abingdon: Routledge.
- Luo, C. (2001), The views of village-in-city, *Du Shu*, Vol.9.
- Lyn, P. (2002) Principles of sampling in *Research Methods for postgraduates*, Greenfield, T, ed, 2nd ed, London: Arnold.
- Lynch, K. (1960), *The image of the city*, Cambridge, Massachussettes: MIT Press.
- Lynch, M. (2012), *Case study 3: one earth, Upton Square, Northampton*, Sustainable social housing – best practice Conference, [Online] available at www.insidehousing.co.uk, [Accessed: 26 October 2012].
- Ma, X. (2007), The problems and regeneration of village-in-city, *Te Qu Economy*, Jan.
- Machi, L.A. and McEvoy, B.T. (2009) *The literature review: six steps to success*, Calif: Corwin Press.
- Main, E. (1996), *The walkable community: a GIS method of pedestrian environment analysis*, [Online] available at www.walk21.com/papers/Main.pdf, [Accessed: 10 July 2013].
- Marshall, W. and Garrick, N. (2009) Street network types and road safety: a study of 24 California cities, *Urban Design International*, 15, p.133-147.
- Marshall, W. and Garrick, N. (2011) Evidence on why bike-friendly cities are safer for all road users, *Environmental Practice*, 13 (1), p.16-27.
- Marshall, C. and Rossman, G.B. (2011) *Designing qualitative research*, 5th ed, Los Angeles: SAGE.
- Marshall, S. (2003) An urbanism: an introduction, *Built Environment*, Vol 29, No.3, P189-192.
- Martin, C. and Miller, M. (2003) *Poundbury, Dorchester: British new urbanism or picturesque illusion?* Paper presented at the Tenth Biennial Conference on Planning History of the Society for American City and Regional Planning History, St Louis, Missouri, 6-9 November.
- Mason, M. (2010), Sample size and saturation in PhD studies using qualitative, *Forum: qualitative social research*, Vol 11, No.3 Art.8.
- Mason, H. (2013), *Site video*, [Online] available at www.jvenergen.co.uk/site_video, [Accessed: 23 July 2013].
- Meghan, D. (2003) Knokke-Heist, Belgium Heulebrug, *Residential Architect*, [Online] available at www.highbeam.com/1G1-107525748.html, [Accessed: 21 August 2013].

Meng, F.Q. (2009), Optimisation and rationalisation of harmony between urban-rural, *Urban-rural Construction*, September.

MHP, (2013), *Upton*, [Online] available at www.metropolitan.org.uk, [Accessed: 1 May 2013].

Miaoulis, G. and Michener, R.D. (1976) *An introduction to sampling*, Iowa: Kendall/Hunt Publishing Company.

Mitrovic, B. (2011) *Philosophy for architects*, New York: Princeton Architectural Press.

Moudon, A. (1998), Proof of goodness, *Places*, Vol 13, No. 2, p.38-43.

Neal, P. ed, (2003), *Urban villages and the making of communities*, London: Spon Press.

Nelessen, A. (1994) *Visions for a new American dream*, Chicago, IL: American Planning Association.

New Urbanism, (2011), *New urbanism*, [Online], available at www.newurbanism.org/newurbanism.html, [Accessed: 17 November 2011].

Northamptonshire County Council, (2011), *Northamptonshire results: 2011 census 1st data publication summary*, [Online] available at www.ons.gov.uk, [Accessed: 29 November 2011].

ODPM, (1998), *Places, streets & movements: a companion guide to design bulletin 32 residential roads and footpaths*, London.

ODPM, (2003), *Sustainable communities: building for the future*, London.

ODPM, (2004a) Planning and compulsory purchase Act 2004, [Online] available at www.legislation.gov.uk/ukpga/2004/5/section/18, [Accessed: 13 September 2013].

ODPM, (2004b), *The Egan Review: skills for sustainable communities*, [Online] available at dera.ioe.ac.uk/11854/1/Egan_Review.pdf, [Accessed: 3 June 2013].

ODPM, (2004c), *Community involvement in planning: the government's objectives*, [Online] available at webarchive.nationalarchives.gov.uk, [Accessed: 4 June 2013].

ODPM, (2005), *Planning policy statement 1: delivering sustainable development*, [Online] available at www.ukcip.org.uk/wordpress, [Accessed: 31 May 2012].

Oktay, D. (2005) *How can urban context maintain urban identity and sustainability?: evaluations of Taormina (Sicily) and Kyrenia (North Cyprus)*, International Conference for Integrating Urban Knowledge and Practice, 155. Gothenburg, Sweden, May 29 – June 3, 2005 [Online] available at www.webjournal.unior.it, [Accessed: 4 December 2013].

Oliver, P. (2012), *Succeeding with your literature review: a handbook for students*, Maidenhead: Open University Press.

Oppenheim, A.M. (2000) *Questionnaire design, interviewing and attitude measurement*, 2nd ed, London: Continuum.

Owen, S. (1995) Local distinctiveness in villages: overcoming some impediments to clear thinking about village planning, *Town Planning Review*, 66 (2), p.143-161.

Owen, S. (1997) Speaking at the *Local Distinctiveness in Design Conference*, Nottingham University, 19 March.

Oxford Brookes University, Department of Planning, (2006) *Poundbury residents survey*, resource from Poundbury Office, Poundbury.

- Oxford Dictionary, (2013) [Online] available at oxforddictionaries.com.
- Park, S.J. (2008) *Defining, measuring, and evaluating path walkability, and testing its impacts on transit users' mode choice and walking distance to the station*, [Online] available at www.uctc.net/research/diss150.pdf, [Accessed: 18 September 2013].
- Partnership for Prevention and SafeTREC, (2011) *Transportation and health: policy interventions for safer, healthier people and communities*, [Online] available at www.prevent.org/data/files/transportation/transportationandhealthpolicycomplete.pdf, [Accessed: 16 September 2013].
- Pointner, P. (2011) What's in a name...sustainability, smart growth, new urbanism, *The Commissioner*, Issue of APA's.
- Poticha, S. (2013a) Foreword in *Charter of the new urbanism*, Talen, E. (ed) 2nd ed, New York; London: McGraw-Hill Education.
- Poticha, S. (2013b) Seven in *Charter of the new urbanism*, Talen, E. (ed) 2nd ed, New York; London: McGraw-Hill Education.
- Power, A. (2003) *Sustainable communities and sustainable development: a review of the sustainable communities plan*, London: Centre for analysis of social exclusion.
- Prince Charles, (2003) Foreword in *Urban villages and the making of communities*, Neal, P. (ed) London and New York: Spon Press.
- Prince Charles, (2003) *A speech by HRH the Prince of Wales at the traditional urbanism in Contemporary Practice Conference at the Prince's Foundation, London*, [Online] available at www.princeofwales.gov.uk/media/speeches/speech-hrh-the-prince-of-wales-the-traditional-urbanism-contemporary-practice, [Accessed: 7 August 2013].
- Proverbs, D. & Gameson, R. (2008), Chapter nine: Case study research in the book of *Advanced research methods in the built environment*, edited by Knight. A & Ruddock. L, Chichester: Wiley-Blackwell.
- PRWeb, (2009) *EDAW to become Design + Planning at AECOM*, [Online] available at www.prweb.com, [Accessed: 27 November 2012].
- Rees, A. (2003) New urbanism: Utopian landscapes in the twenty-first century in *Suburban sprawl: culture, theory, and politics*, Lindstrom, M. and Bartling H. (eds), US: Rowman & Littlefield Publishers.
- Research and Information Team of Clackmannanshire Council, (2008) *Consultation guidance on selecting your sample size*, [Online] available at www.clacksweb.org.uk/document/1707.pdf, [Accessed: 14 November 2013].
- Ridley, D. (2012) *The literature review: a step-by-step guide for students*, 2nd, London: SAGE.
- Rigosu, S. (2013), *New urbanism*, [Online] available at www.sarch3d.com/new-urbanism.html, [Accessed: 16 August 2013].
- Rose, G. (2007) *Visual methodologies: an introduction to the interpretation of visual materials*, 2nd ed, London, Thousand Oaks, and New Delhi: SAGE.

- Rossi, C. (2004) *Architecture and mathematics in ancient Egypt*, Cambridge, New York: Cambridge University Press.
- Rowe, C. and Koetter, F. (2003) in *Time-saver standards for urban design*, Watson, D. Plattus, A. and Shibley, R. (eds) New York: McGraw-Hill.
- Rowe, C. (1978) *Collage city*, London: MIT Press.
- Rural Development Institute Chinese Academy of Social Sciences, (2012), *Report of China's rural development No.8*, Beijing: China Social Science Academic Press.
- Salingaros, N. (2001) *The future of cities: the absurdity of modernism*, PLANetizen, [Online] available at <http://www.planetizen.com>, [accessed: 20 June 2012].
- Sapsford, R. (1999) *Finding out: an introduction to survey research*, Thousand Oaks, Calif; London: SAGE.
- Schirato, T. & Webb, J. (2004), *Understanding the visual*, London, Thousand Oaks, and New Delhi: SAGE.
- SCPT (Strategic and Citywide Policy Team), (2008) *Bristol development framework: statement of community involvement*, [Online] available at www.bristol.gov.uk, [Accessed: 4 June 2013].
- Semes, S. (2008) New buildings among old, *American Arts Quarterly*, Vol 25, No. 2.
- Semper, G. (2004) *Style in the technical and tectonic arts, or, practical aesthetics*, Francis, H. and Robinson, M. (Trans) Los Angeles, Calif: Getty Research Institute.
- Shields, S. (2009) *The case study approach: the use of case studies in information operations*, [Online] available at www.mors.org [Accessed: 12 October 2011].
- Short, S., (2012) *Building for coded land: the process at Upton, Northampton*, HBF Annual Design Conference, May 12 2004, [Online] available at www.designforhomes.org, [Accessed: 1 November 2012].
- Sitte, C. (1889) *City planning according to artistic principles*, trans. By Collins, G. and Collins, C. (1965) London: Phaidon.
- Smart Growth Network, (2006) *This is smart growth*, [Online] available at www.smartgrowthonlineaudio.org/pdf/TISG_2006_8-5x11.pdf, [Accessed: 1 August 2013].
- Social Research Methods, (2013) *Direct observation*, [Online] available at www.socialresearchmethods.net, [Accessed: 12 April 2013].
- Sociology, (2013) *Sociology research skills*, [Online] available at www.sociology.org.uk/methodq.pdf, [Accessed: 12 November 2013].
- Sorkin, M. (2000) Foreword in Deckker, T. ed, *The modern city revisited*, London; New York: Spon Press.
- Stanczak, G.C. ed, (2007) *Visual research methods: image, society, and representation*, Thousand Oaks, New Delhi, London, and Singapore: SAGE.
- Stefan, A.M. (2005) *The new urbanism movement: the case of Sweden*, [Online] available at <http://www.nelearning2002.org>, [accessed: 23 May 2012].
- Stern, P.C. (1979) *Evaluating social science research*, Oxford: Oxford University Press.

Steuteville, R., Langdon, P. and Special Contributors, (2003) *New urbanism: comprehensive report & best practices guide*, 3rd ed, Ithaca, NY: New Urban Publications Inc.

Stevens, A. (2004) *RIBA president calls for stronger recognition of new urbanism*, [Online] available at www.citymayors.com/environment/new_urbanism.html, [Accessed: 26 September 2012].

Street, E. (2007) *Project Paper 5: The use of design coding in England*, [Online] available at www.kcl.ac.uk, [Accessed: 8 November 2012].

Sudman, S. (1976) *Statistics, An introductory analysis*, 2nd ed, New York: Harper and Row.

Sullivan, L. (1896) The tall office building artistically considered, *Lippincott's Magazine*, March, p.403-409.

Survey System, (2012) *Sample size calculator*, [Online] available at www.surveysystem.com/sscalc.htm, [Accessed: 11 November 2013].

Sustainable heating solutions, (2013) *Biomass boilers*, [Online] available at www.sustainableheatingsolutions.com/biomass_introduction.php, [Accessed: 23 July 2013].

Tarbatt, J. (2012) *The plot: designing diversity in the built environment: a manual for architects and urban designers*, London: RIBA Publishing.

Taylor, E. (2012) *The work introduction of the Prince's Foundation for the Built Environment*, [Online] available at www.rudi.net/pages/19086, [Accessed: 5 December 2012].

TCPA, (2003) *TCPA Statement: residential densities*, [Online] available at www.tcpa.org.uk/data/densities.pdf, [Accessed: 13 May 2013].

TCPA, (2007) *Best practice in urban extensions and new settlements: a report on emerging good practice*, Oldham: RAP Spiderweb Ltd.

TCPA, (2013) *Community involvement in planning*, [Online] available at www.tcpa.org.uk/pages/planning-community-needs.html, [Accessed: 13 September 2013].

The British Council for Offices, (2005) *Mixed-use development and investment*, [Online] available at www.bco.org.uk, [Accessed: 7 March 2012].

The National Archives, (2013) *English Partnerships is now part of the Homes and Communities Agency*, [Online] available at <http://webarchive.nationalarchives.gov.uk/20110218194413/homesandcommunities.co.uk/english-partnerships.htm>, [Accessed: 30 March 2013].

The Planning Portal, (2013) *Planning Portal Glossary: U*, [Online] available at www.planningportal.gov.uk/general/glossaryandlinks/glossary/u, [Accessed: 9 December 2013].

The Prince's Foundation for Building Community, (2012a) *Upton, Northampton: sustainable urban extension*, [Online] available at www.princes-foundation.org, [Accessed: 1 October 2012].

The Prince's Foundation, (2012b) *Enquiry by Design*, [Online] available at www.princesfoundation.org/sites/default/files/enquiry_by_design_ebd_pdf.pdf, [Accessed: 10 May 2012].

The Prince's Foundation for Building Community, (2013) *History*, [Online] available at www.princes-foundation.org/about-us/history, [Accessed: 8 August 2013].

The Prince of Wales, (2013) *The Prince's Foundation for Building Community*, [Online] available at www.princeofwales.gov.uk, [Accessed: 8 August 2013].

The Seaside Research Portal, (2013) *The Seaside plan*, [Online] available at seaside.library.nd.edu/essays/the-plan, [Accessed: 19 August 2013].

The Scottish Government, (2010) *Delivering better places in Scotland: a guide to learning from broader experience*, [Online] available at www.scotland.gov.uk, [Accessed: 1 November 2012].

Thompson-Fawcett, M. (1993) *Placing the urban village within global and local debates*, Auckland: University of Auckland.

Thompson-Fawcett, M. (2003) A new urbanist diffusion network: the Americo-European connection, *Built Environment*, Vol 29, No. 3, P253-270.

Thomson Reuters, (2011) *Social Sciences Citation Index*, [Online] available at thomsonreuters.com/social-sciences-citation-index/?subsector=scholarly-search-and-discovery, [Accessed: 19 November 2011].

Thornton, R. (2010) *What is new urbanism? – Part 1*, [Online] available at www.examiner.com/article/what-is-new-urbanism-part-1, [Accessed: 16 August 2013].

Time Magazine, (1990) Best of the decade: design, [Online] available at content.time.com/time/magazine/, [Accessed: 2 January 2014].

TRB (Transportation Research Board), (1994) *Research issues on bicycling and pedestrians*, Washington, DC: National Research Council.

Turley, M. (2008), *Mobilizing connectivity: applying connectivity tools in the arterial planning process*, presented at the 11th National Conference on 209. Transportation Planning for Small and Medium-sized Communities, Transportation Research Board and Federal Highway Administration, [Online] available at pubsindex.trb.org/view.aspx?id=89909, [Accessed: 16 September 2013].

UN, (1987) *Report of the World Commission on Environment and Development: Our Common Future*, [Online] available at www.un-documents.net/wced-ocf.htm, [Accessed: 3 June 2013].

University of Michigan, (2013) *Douglas S. Kelbaugh*, [Online] available at sitemaker.umich.edu/kelbaugh/home, [Accessed: 19 August 2013].

University of Notre Dame, (2013) *Andres Duany and Elizabeth Plater-Zyberk*, [Online] available at architecture.nd.edu, [Accessed: 20 August 2013].

UTF, (2005) *Towards a strong urban renaissance*, [Online] available at <http://www.urbantaskforce.org>, [accessed: 23 May 2012].

Venturi, R. (1966) *Complexity and contradiction in architecture*, New York: Museum of Modern Art.

- Visual Literacy, (2013) *Design principles – harmony*, [Online] available at www.educ.kent.edu/community/vlo/design/principles/harmony, [Accessed: 3 December 2013].
- VK Group, (2013) Heulebrug, [Online] available at www.vkgroup.be/en/infrastructure/project/heulebrug, [Accessed: 10 June 2013].
- Walker, J. A., (1992) *A glossary of art, architecture & design since 1945*, 3rd ed, London: Library Association Publishing.
- Walter, D. (2007) *Designing community: charrettes, masterplans and form-based codes*, Oxford, Burlington: Elsevier/Architectural Press.
- Wang, H. (2010), *Labour migration in Chinese developed villages*, Beijing: Economic Science Press.
- Wang, Q. and Heath, T. (2011) Towards a universal language of the built environment, *Social Semiotics*, Vol 21, No. 3, p.399-416.
- Watson, D, et al, (eds), (2003), *Time-saver standards for urban design*, New York: McGraw-Hill.
- WDDC (West Dorset District Council), (2006) *Supplementary planning document: Poundbury development brief*, [Online] available at www.dorsetforyou.com, [Accessed: 12 November 2011].
- Wellman, B. (2001) Physical place and cyberplace: the rise of networked individualism, In Keeble, L. and Loader, B.D. eds, *Community informatics: shaping computer-mediated social relations*, London: Routledge.
- Whyte, W. (1980) *The social life of small urban urban spaces*, Washington D.C: Conservation Foundation.
- Wilson, J. (1872) *Imperial Gazetteer of England and Wales*, Edinburgh: Fullarton.
- Wilson, W.H. (1989) *The city beautiful movement*, Baltimore: The Johns Hopkins University Press.
- Wilson, T. (2009) *Art history – Le Corbusier's Utopian urban-renewal*, [Online] available at www.dieselpunks.org, [Accessed: 13 August 2013].
- Zhao, Y. (2008), *Theories and methods of preservation on Chinese historic and cultural villages*, Beijing: China Architecture and Building Press.
- WNDC (West Northamptonshire Development Corporation), (2010) *About us*, [Online] available at www.wndc.org.uk/about-us/, [Accessed: 28 November 2012].
- WNDC (West Northampton Development Corporation), (2011) *Northampton UDA Planning Committee Paper*, [Online] available at www.wndc.org.uk, [Accessed: 8 November 2012].
- Wood-Gush, B. (2011) *Active by design*, [Online] available at <http://www.planning.org.au/documents/item/1672> , [Accessed: 20 November 2011].
- Yeang, K. (1995), *Designing with nature: the ecological basis for architectural design*, New York: McGraw-Hill.
- Yin, R.K. (2009) *Case study research: design and methods*, 4th ed, London: SAGE.

Yin, R.K. (2014) *Case study research: design and methods*, 5th ed, London: SAGE.

Zeldin, T. (1994) *An intimate history of humanity*, New York: Harper Collins.

Interviews:

Beatie, T, 21st Dec. 2012.

Bolgar, B, 19th Feb. 2013.

Cameron, A, 30th Jan. 2013.

Conibear, S, 5th Apr. 2013.

Law, R, 5th Dec. 2012.

Madgwich, I, 14th Mar. 2013.

Pineo, H, 13th Mar. 2013.

Richards, L, 25th Feb. 2013.

Shan, Y. M, 25th Aug. 2011.

Short, S, 4th Feb. 2013.

Smyth, P, 25th Feb. 2013.

Zhao, W. Q, 22nd Aug. 2011.

Appendix A

Questionnaire for Poundbury, Dorchester

This questionnaire with **2 pages** is for the lovely local residents of Poundbury, Dorchester, which aims at surveying the feedback of living here and assessing the principles measured by Poundbury.



Section 1 About you (Please tick)

You are

- Male ☐ Female ☐
- 16-24 ☐ 25-44 ☐ 45-64 ☐ 65 and over ☐

Section 2 About Poundbury (Please tick the answer)

➤ To what extent do you agree that you like living at Poundbury?

- 1: Strongly disagree; 2: Disagree; 3: Agree; 4: Strongly agree;
5: No response.

➤ To what extent do you agree that Poundbury is generally successful in built environment?

- 1: Strongly disagree; 2: Disagree; 3: Agree; 4: Strongly agree;
5: No response.

➤ To what extent do you agree that Poundbury is an urban extension of Dorchester with local identity or harmony with local context?

- 1: Strongly disagree; 2: Disagree; 3: Agree; 4: Strongly agree;
5: No response.

Section 3 Ratings

According to your cognition about Poundbury, to what extent local identity or harmony with local context is important for an urban/village extension? Please tick the answer from **one, not at all important, to five, extremely important.**

Design principles of new urbanism	Not at all important 1	Slightly important 2	Moderately important 3	Very important 4	Extremely important 5
Local identity	1	2	3	4	5
In harmony with Local context	1	2	3	4	5
To what extent is important that the following design principles can promote local identity or harmony with local context for urban/village extensions? Please tick the answer in the same way as above.					
Compactness (Residential density)	1	2	3	4	5

Design principles of new urbanism	Not at all important 1	Slightly important 2	Moderately important 3	Very important 4	Extremely important 5
Connectivity of street pattern	1	2	3	4	5
Legibility (Help people get about and find things)	1	2	3	4	5
Coherence (within its own and with the existing vernacular urban pattern)	1	2	3	4	5
Mixed use	1	2	3	4	5
Walkability	1	2	3	4	5
Pedestrian friendliness	1	2	3	4	5
Diversity of Architecture	1	2	3	4	5
Symbolic architecture and attractions	1	2	3	4	5
Sustainability	1	2	3	4	5
Community involvement	1	2	3	4	5
Return visit by designers after built up	1	2	3	4	5

This questionnaire is only for research not passed to any other parties. Thank you very much indeed for your kindness!

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Questionnaire for Upton, Northampton

This questionnaire with **2 pages** is for the lovely local residents of Upton, Northampton, which aims at surveying the feedback of living here and assessing the principles measured by Upton.



Section 1 About you

You are

- Male ☐ Female ☐
- 16-24 ☐ 25-44 ☐ 45-64 ☐ 65 and over ☐

Section 2 About Upton

➤ To what extent do you agree that you like living at Upton?

1: Strongly disagree; 2: Disagree; 3: Agree; 4: Strongly agree;
5: No response.

➤ To what extent do you agree that Upton is generally successful in built environment?

1: Strongly disagree; 2: Disagree; 3: Agree; 4: Strongly agree;
5: No response.

➤ To what extent do you agree that Upton is an urban extension of Northampton with local identity or harmony with local context?

1: Strongly disagree; 2: Disagree; 3: Agree; 4: Strongly agree;
5: No response.

Section 3 Ratings

According to your cognition about Upton, to what extent the local identity or harmony with local context is important for an urban/village extension? Please tick the answer from **one, not at all important**, to **five, extremely important**.

Design principles of new urbanism	Not at all important 1	Slightly important 2	Moderately important 3	Very important 4	Extremely important 5
Local identity	1	2	3	4	5
In harmony with local context	1	2	3	4	5
To what extent is important that the following design principles can promote local identity or harmony with local context for urban/village extensions? Please tick the answer in the same way as above.					
Compactness (Residential density)	1	2	3	4	5

Design principles of new urbanism	Not at all important 1	Slightly important 2	Moderately important 3	Very important 4	Extremely important 5
Connectivity of street pattern	1	2	3	4	5
Legibility (Help people get about and find things)	1	2	3	4	5
Coherence (within its own and with the existing urban pattern)	1	2	3	4	5
Mixed use	1	2	3	4	5
Walkability	1	2	3	4	5
Pedestrian friendliness	1	2	3	4	5
Diversity of Architecture	1	2	3	4	5
Sustainability	1	2	3	4	5
Adaptable building form (The ground floor can be converted to the retail.)	1	2	3	4	5
Community involvement	1	2	3	4	5
Return visit by designers after built up	1	2	3	4	5

This questionnaire is only for research not passed to any other parties. Thank you very much indeed for your kindness!

Best regards

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Appendix B

Interview with Beatie T.

Beatie: Lei, you mentioned China for several times. I am very interested in it. When you have finished the thesis, I really want a chance to read it. Lei: Oh, thank you very much for that. I will send you a copy and let's keep in touch later. Beatie: Anyway, you have questions to ask. Lei: Yes. I've got 13 questions around. I think it probably takes one hour or so. Beatie: I am not sure if I've got that long, Lei. I haven't got one hour. Do you want to ask the important one? Ask the most important one and get going. Let's see we get on.

Lei: The first one is 'What kind of changes have had for the new development of Upton since The Prince's Foundation involved in?' You know, at the beginning of design of Upton, it was by the rule.

Beatie: Yes, I see. You mean what are the changes to the place between the original idea and invention development? Lei: Yes. In 1999, Prince's Foundation just involved in. After that, the master plan changed. Beatie: I try to answer the question briefly. You can get the meaning as 13 as possible. The original concept changed a great deal over time. We adapted it as the market adapt and as the community consultation fed in at a very early stage of Design Code. Have you got a copy of that? Lei: No, I try to find online. But there is no full version. Beatie: I'll see if I can find to send you a copy. I might have one I have to see. It all affected to the design code once we had set the design code we stuck to it. The design code allowed a lot of flexibility. The design code was quite broad. It can also chase the changes within the code. So original 1999 concepts, lots of changes design code produced. The subsequent phases followed that code. Lei: Okay, I see. Good. Shall we start the second one? Beatie: Yeah. Lei: English Partnerships, The Prince's Foundation, and Northampton Borough Council pioneered the Enquiry by Design for Upton. Can it be considered as the first time when Enquiry by Design formally held in England? Beatie: Yes, it is the first time. Lei: This answer is quite simple, isn't it?

Beatie: Laugh. Lei: The third one is 'What kind of design principles had been set out to guide the design of master plan for Upton?' Beatie: Oh, we followed Enquiry by Design principles exactly. It was first time being done on that way. And the result of design code followed the design principles precisely. Lei: What kind of design principles were established via the Enquiry by Design? Beatie: I'm not quite sure that you're asking me. There are three the way it works. Firstly it is community consultation. Secondly we try to replay the result of community consultation to the community showing what is in the practice their thoughts made. Fourthly, non-prescriptive approach to design. And fifthly, emphasis on the quality. Sixthly, very clear guidelines of development with the community and applies to the tendering process. The team is to do everything earlier. What I used to feel at Upton was we haven't bought you a model of development. We're asking what the model should look like. At the time when you see the model of development, you'll recognize it because you'll have affected it.

Lei: I see. What about the detailed design principles applied in terms of your memory? Beatie: I'm talking the process now. Do you mean what's actually mean on the ground in Upton? Lei: Yes, for the design principles, you need to establish them for the master plan in Upton, you need to follow them about what you're looking for, what you want to create. I mean this kind of design principles. Have you got some ideas about them?

Beatie: Well. Very briefly we look to reflect the local vernacular. Are you familiar with local vernacular? The local style of architecture, we call it local vernacular. It's local style. Secondly, it's deliberately designed as a urban extension to the existing structure of Northampton. Thirdly, traffic calming and a new traffic calm dual carriageway links between Northampton itself and Upton and motorway with a fundamental part of design and was included in public transport. Fourthly we can improved the development around a hub which included community facility, village green, (time 8'43) clear area, a cri , small shopping centre. Fifthly, we've got no cul-de-sacs. It was integrated design with natural oversight. Is that you're looking for? Those are fundamental principles. They come out from Enquiry by Design process. And they apply from then we can develop the code. And the master plan can be developed once the code was being developed. In other words, the code set up the design principles. The master plan followed. The old way in this country I think the way they are doing in China as well. When you're doing the master plan, the people would ask what do you think with the master plan. We did that. We asked people what they wanted. We develop a code, then we did a master plan. Yeah?

Lei: Okay, I see. Thank you. The next one is 'After Enquiry by Design, I mean there should be some like what you mentioned just now design principles followed by Upton. Are they different between the design principles set out via Enquiry by Design and new urbanism's own principles as advocated by the Charter of New Urbanism?

Beatie: Not really, no. I would say they followed the same logic. Enquiry by Design is just a way of contextualising new urbanism design principles in the English environment. As I say, the Thomas Telford road we reflected (time 10'42) our own culture approachable. In China you would do it same. We were delivering new urbanism approaches. Enquiry by Design is our way doing it. It was very influenced by Prince of Wales who shows the different influence on the community involved engagement. Are you familiar with Poundbury?

Lei: Yeah. I'm very familiar with that. It's one of my case studies. Beatie: Yes, good. Consistent but putting the perspective of the UK. Lei: Okay. The next one is 'Do you think which design principles can help to promote local identity during the development of Upton in terms of your opinion? Beatie: Yeah. I mean the local identity is crucial. It is very important. This is the local scheme to reflect the local properties and local design principles. That was fundamental. At the process of the start, that adds the value.

Lei: The next one is 'How much degree do you think they have been achieved in the implementation? What kind of factors can influence its implementation? Beatie: Say that again. Lei repeated the question. What should I say? The final development is not as closed to the original concept development it liked. That was definitely moving away from some of the concept as the development. One of the lessons I've learnt is to work harder and keeping to the original concept as a different basis of the development progress.

Lei: erm... Have you got any ideas about why the implementation is a little bit moving away from the original idea?

Beatie: Yeah. It's because we had strong commercial pressures. They've lost public money as the development when on and the commercial pressures that English Partnerships has affected. The house builders were under the great commercial pressure. Therefore each site development was marketed. The pressure dilutes some of the design principles grow. There maybe not something effective in China. One of the things I think is useful to identify a pot of money up fund for the public effects involvement and to endow the development with that rather than lack of that. That might be principle you apply in China. It wouldn't work here. It would work in China. Lei: Probably, I am not sure yet. Laugh... Beatie: Well, you might look at it. Laugh... Some kind of urbanist investment bank, maybe. Lei: Yeah, sure. The next question is 'How Upton draws inspirations from Northampton vernacular being a part of 'Northampton'?

Beatie: Yes, definitely. Northampton vernacular is very important, like the local stones. We even look at the gable ends, and we followed that. And also the massing, the way development masses Northampton with typically two or three storey homes. We followed that. So the form of development was varied that links to Northampton. But this is not copy. One of the points is design code. The design code did not tell each tender or included developers what the development should look like. It told them how each should feel. That was always about the vernacular. We even write down the details to touch the trees. There is an excellent design code which explain which tree should be used and which tree shouldn't. Precisely dealing on the trees were used in the urban centre or Northampton.

Lei: Yeah, that's brilliant. Thank you. I think you're familiar with Poundbury. Yeah? Beatie: Yes. I'm very familiar with Poundbury. Lei: This is brilliant because the following question is about Poundbury and Upton. 'Could you please give me some ideas about comparison between Poundbury and Upton? Which one is better to respect local identity by applying design principles of new urbanism according to your point of view?'

Beatie: In my opinion Upton respects the local vernacular is better than Poundbury. Poundbury I think it's too entertainment developed. You're probably familiar with when you move toward the gap. It is not linked into the urban structure. And then there is a very high wall of development you should approach it. Are you familiar with what I'm describing? Lei: Yeah. I don't think Poundbury is very well linked into the urban structure surrounded. Upton is less intensive and also the design code in Upton was less prescriptive. You should probably know in Poundbury the controls of exactly what people store in garages and what colour of front door painted are very extreme. Upton is not that extreme. So I think Upton is a better and more flexible model. Lei: Okay. That's brilliant. So I mean 'Do you think Upton learns something from Poundbury since Prince's Foundation involved? What are the lessons?'

Beatie: What I give you is important not to the development itself but high links to surrounding urban and rural context. That's number 1. The linkages are really important. No 2, Don't be too descriptive about the details. Look at the broader structure and design, a guide to an example. I didn't worry about the code. No 3, we learn also don't have very rigid master plan and speak to a light blur (time 18.07) and allow flexibility as a development progresses. So what I'm saying is greater flexibility within a design code.

Lei: Okay. The next one is 'Have you got any other suggestions to improve local identity by criticising design principles of new urbanism?' Beatie: Criticising? Lei: Yeah, if you want. Beatie: No, no, I support the design principles of new urbanism. My key issue would be consulting people before you get the plan. I get back to that point. What we did recently about Enquiry by Design is we've got everyone together in the village hall and everyone was interested in it. We said there's no plan, there's no master plan, there's no model. We want you to draw on this map what you want. Is this what you want? Say what you want. We'll come back to we saw. That is the key message. Get people involved before you have a plan. I don't know a lot what about it in China. But I have a very strong feeling in China people not involved in to as often as they can (time 19'32). If people can involve beforehand they come out a really good idea. Lei: It's a very good idea about public participation. Beatie: Yeah. Lei: Yes. I know you really support the new urbanism. Can we get any ideas if they promote the local identity via the design principles of new urbanism? Have you got any more comments about that or. Beatie: No. I'm pleased to get as many questions as I can. So go on. I really got another 5 or 10 minutes. So let's get as many as possible.

Lei: Sure. According to my research focal point – 'Can the design principles of new urbanism promote local identity in the new development within different cultural background? How do you think it? Please give your comments.' Beatie: They do by emphasizing on community involvement. I do think they need to be given different cultural lens for each country they applied. For other words, don't follow new urbanist. New urbanist is very American. In this approach, I would suggest we had applied here in the UK context. And each nation will need to adopt the principles being their own image. Do not follow them obviously. Lei: Yeah. I think that's a quite helpful point. Beatie: Cultural lens are very important as approaches. I would say try consistent with new urbanism. But there are many new urbanist developments in America that I do not like. Lei: Yeah, I see. Beatie: Yeah? We know some in the 'True Man' show about the new urbanism development. Lei: Yes, I see. Laugh... Beatie: Laugh... Lei: I think many people don't like the 'True Man' show for the new urbanism project. Beatie: I like the film but it's not the best for the new urbanism. Lei: Yes, I see. Beatie: So those principles do distinguish from those principles. What it means in design term. The design and the principles are two different things. I'm a formative (time 22'06) of the principles. What it means in practice with difference in England, difference in China, difference in America. I know you know that. I'm just answering the question.

Lei: No. This is very important. The last two questions are very simple. 'Would you mind I ask that 'Have you got any other persons to recommend for me to do more interviews related to my research?' Beatie: Did you say you interviewed Sylvia and Peter? Lei: No. I try to contact them. Have you got their details? Beatie: Unfortunately, Peter has dropped out of altogether. I lost contact with him some years ago. Sylvia has retired. Her son, Simon Short, is working in Homes and Communities Agency. I suggest you give Simon a ring and ask him if your mum could speak to you. Lei: Oh, that's brilliant. Beatie: I can't give you the telephone number for some reason. But talk to Simon. Lei: That's brilliant because I just worry about 'How can I find the contact of them?' Beatie: No. You know the HCA website? Lei: Yes, I know. Beatie: I just got the links of Simon. Any other points you want to ask? Lei: No. I think that's it. Beatie: You send Sarah your address details. I'll send you the compendium. If I've got design code and I'll send you a copy as well. Unfortunately I may not have. I've got the compendium in a box. I may not have the design code. If I've got them, I'll send to you. Lei: Please. I really appreciate your big help. Beatie: Do keep in touch. I love to have a copy of your thesis. I really wish you well what you're doing on some of the developments in China. How can that influence the developments in China? Do you think they will?

Lei: Yes, I think so. But right now for my thesis, the main contents about the localization of this kind of design principles in the UK to China are put in the future work. I will focus on the experience of new urbanism applied in the UK. Is that alright for you? Beatie: Yes. Now I just got the website. If you put Simon Short in, you'll come up with '5 minutes Simon Short'. You talk to him the interview what we're doing there. Lei: Yes, I've got that. Beatie: Thanks, Lei. I wish you're well. Lei: Thank you very much. Beatie: Thank you. Lei: I really appreciate your kindness. Beatie:

No problem. Lei: Wish you have a very Merry Christmas and Happy New Year! Beatie: And you. Happy Christmas! Lei: Thank you. Beatie: Bye. Lei: Bye-bye.

Interview with Bolgar B.

Bolgar: Hello. Lei: Hello, Bolgar. I feel very lucky to do interview with you about my research. Thank you very much. Bolgar: Good. Not at all. Lei: So I think you've got the rough idea about my PhD research, right? Bolgar: Yes, I did. Lei: So maybe we start from the first question. Is that alright for you? Bolgar: that's absolutely fine. Lei: Good, I think I have sent my question list. I hope you have read through that. But never mind, I will repeat the questions. Bolgar: Okay, yes. I've got that in front of me.

Lei: Okay, that's brilliant. The first one: 'What kind of aspects do you think are the biggest successes during the development of Poundbury for promoting local identity? What kind of aspects need to be improved in the future?'

Bolgar: In a first phase of Poundbury, I think they use 6 or 7 architects. Some are local. My understanding is that they all drove around in cars looking at local villages and towns and photographing and drawing local buildings the thought everyone likes. Then Leon Krier signed different size, different block to different architects. And they went to way and designed houses with character of local buildings. So one thing is the architecture language of references locally. And also use of local materials. They try to use local stones, bricks. They found common tiles. I think that's been quite successful. That's the good sight. What needs to be improving is the issue that runs through your lots of questions. Obviously a lot of local identity in Britain comes from vernacular building techniques. People are using local stones to build stone walls or using models or fetching the character of English villages before the 17 or 18 century. It was very much to do with what local materials available. Obviously with today, lorries, railways, ships are sort of globalised economy. We build up concrete blocks, cavity walls. They are industrialised modern method to building. I think there's inherent conflict between making vernacular looking buildings. They actually aren't necessarily authentic. I think we understand this matter and probably Leon Krier would understand the matter. If you are still using industrialised methods to buildings, like concrete blocks, because that's how the industrials can build to make things affordable to make a certain price. It's still better to use natural materials on the outside for two reasons. One is because they tend to fitting in the local area so they give the local identity. This is Dorset not Cambridge. It fits in. And second reason is the natural materials with traditional details tend to getting better with the age. But I think Leon Krier and Prince of Wales automatically would to like to say a revival of traditional building methods. So I think that's further along to look for the local ways. Lei: Is that for the first question? Bolgar: Yes.

Lei: Okay. So the second one is 'What kind of design principles of new urbanism are applied into the development of Poundbury according to Leon Krier? How does Leon Krier promote the local identity of Poundbury?' Bolgar: I think the main structural principle is one of the walkable neighborhoods. You probably know Poundbury is really 3 overlapping walkable neighbourhoods, 400 meters to 500 meters radius. And then connecting those local centres is a logical and legible hierarchy streets. So that's one of accessibility and walkability around the 5 minutes walk. And then the second principle is really the most important, which is one of the new urbanism principles, mixed use, because the movement networks go through the middle of the walkable neighbourhoods. You can predict with your land use planning. You can predict where the mixed use should be. Where the shops are, where the factories are. I think that's the main principles of new urbanism. New urbanism doesn't tend to get into the architecture too much because they leave that to the pattern books, the coding of new urbanism tends to be about form and uses. The code is use of class and defines where the mixed use should be. Lei: Okay. Erm... How does Leon Krier promote the local identity of Poundbury?

Bolgar: I think just by making sure that there's a list of architects who have respected for local building traditions. Poundbury has obviously design control because of the Duchy of Cornwall. They don't need to have a strict pattern book or a strict code because Leon Krier is the masterplanner. He draws each face of tradition. Leon Krier and Duchy of Cornwall point the coordinating architects and the other architects for each face. So when they come to the new face developments, the 200 houses might be the typical face. They choose the architects to that face and then they would expect. That would be a dialogue at the stage between the masterplanner, Leon Krier, and architects.

Lei: So Leon Krier discusses what he wants with all the architects. Oh, my god. That's a so great job. Bolgar: Yes. There's a very good architect called Bolgar Pentreath. Lei: Yeah. I know him. And I try to contact him to do interview. But he said he's too busy to do interview at the moment. Bolgar: yes, he is. Lei: Maybe you've got other potential interviewee as a kind of local architect. Bolgar: There's a good local design architect who is involved in coordinating architect to phase 1. He is called Peterjohn Smyth. Lei: I think I can check website and look for the contact details. Bolgar: yes. If you look at the company called Esha Architects. You'll get the email from the website. I'm sure he's happy to talk how made phase 1.

Lei: Okay, brilliant. Thank you for that. And shall we move on? The third question is 'I know ten design principles of HRH the Prince of Wales in his book 'A vision of Britain'. How does HRH the Prince of Wales influence the development of Poundbury based on his perspective to promote local identity? Bolgar: I think as you know, one of the first principles of 'A vision of Britain' is to do with making places. In the chapter on Place making, it's very clear about the importance of having developments for feel part of a place they are in. And so that was very much aspiration of the earlier phases of the architecture. Lei: Okay. I mean during the masterplan, how prince of Wales work or coordinate with masterplanner, Leon Krier? You know they've got their own perspective to understand new urbanism to design Poundbury. I mean for all the ideas, do they totally agree with each other? Or Prince of Charles sometimes said I want this, and I want that and then discussed that with Leon Krier. Bolgar: Yes. They have design review sessions with Prince of Wales where they show him the face. The typically is that Leon Krier would have a dialogue with architects. And they would draw up the 1st phase. Then they would have a review with Prince of Wales to ask him his comments. And he would give comments. And then they would respond. It's a very much team working altogether.

Lei: Yeah. You know for Leon Krier, maybe he knows about the ten principles of Prince of Wales. Has he got ideas from the design principles of Prince of Wales? like hierarchy, place, something like that. Bolgar: Back in 1980s, there was Prince of Wales commission review into architecture education. And he has some of the advisors. One of them is called Brian Hanton, another is called Jules Laubbock. They were talking to lots of architects interested in traditional planning and architecture like Leon Krier. Then they developed 'A vision of Britain' with him. You know he has a series of advisors and Leon Krier was one of the advisors of that. Lei: Leon Krier was one of the series of advisors of that book? Bolgar: I don't know if Leon Krier is specifically one of the advisors for 'A vision of Britain'. But he's one of the many advisors advising Prince of Wales on architecture. So he was in many cases. In 1990, when he first set up the summer school in architecture. There were 50 tutors, professional architects, urban planners, art professors, stone masons, leather cutters. There were amazing group of people who were brought altogether to all contribute the teaching. So lots of people were involved in advising on the whole movement. Lei: You mean the movement of new urbanism? Bolgar: It wasn't called new urbanism in England. That's American face. But if you think Poundbury, it was happening at the same time on Seaside in US. Really you had Leon Krier and various movement in England you had John Simpson, Robert Edom, Quiland Terry. You had a whole group of traditional architects in England. And you had a whole group of traditional planners and architects in America. And they all were doing same things in different countries. But they were in network and they were talking each other all the time. Leon Krier, for instance, helped Andres Duany draw the first plan for Seaside. He was one of the advisors on that. So they shared a sort of critic. Lei: I mean if you don't want to call new urbanism in England, what kind of proper word are you going to call? Bolgar: I call it traditional urbanism. There was also a movement called CEU (Congress for European Urbanism) because obviously in Europe it is not new. It's in thousands of years.

Lei: The fourth one is 'The master plan of Poundbury was established by Leon Krier, some master plans of other new development were established via the Enquiry by Design, like Upton. What kind of advantages and disadvantages of the two types between a genius and Enquiry by Design according to your opinion?' Bolgar: That's an interesting question. There is a quite interesting study, Newquay. You might see the plan on the Duchy of Cornwall website. I was involved about 6 years ago running Enquiry by Design workshop with Leon Krier. Leon Krier, he believes that it's a good idea to consult with local people but he doesn't necessarily believe you should develop or draw the plans while you have local people in the room. He prefers to draw his plans in a studio. So what we did in Newquay is that I would work with local people developing ideas. The benefit working with local people is that they know their places very well often much better than architects or masterplanner. So when you are

working with them, it's very quickly. You got a lot from local intelligent. So you are becoming to very well-informed about local issues quickly. So I think if you're genius, like Leon, if you're a really good masterplanner, like Leon Krier, you can still make a very successful place without involving local people. I would suggest because great planners do produce through our history from the top down if you like. But I also think the planner can be more certificated if you take account of local intelligent. So to my mind, the perfect process is 'Top Down and Bottom Up'. For the local consultation, you don't want people to tell you how to design. That's really a bad idea because it's going like a doctor. You don't tend to tell the doctor how the medicine works. At same way you shouldn't be telling how the masterplaner design a town. But the masterplanner knows how to develop a town. You were the patient to help the doctor by telling how you feel. You see what I mean. It's a dialogue. Good medicine is a dialogue between patient and doctor. In the same way, good masterplanning is a dialogue between the professional masterplanner and the local community. Some types are charrette, some types are local consultation. They get people to make a big list of what everybody wants. That's not always a very good idea because it can raise full suspectations. We like bottom up and top down as approach at the same time.

Lei: You mean bottom up local people or? Bolgar: Yes. Lei: And then top down the professionals' ideas. Bolgar: Yes, exactly. So I think Leon Krier prefers the idea that the masterplanner is obviously professional so they can design a place and they need to design the place. And I think probably the Prince's Foundation believes that you can also design the place creatively with a higher degree involvement of local people. In 'A vision of Britain', it promotes the idea of consulting with local people and asking what they want. Lei: Yes, sure. And then 'How does Poundbury cope with public participation during the process of development? Has Leon Krier involved some or just a dialogue between Leon Krier and professional architects? Bolgar: No. They are originally the community consultation with John Thompson. Lei: Can I get the information online about John Thompson? Bolgar: Yeah, you should be able to. Lei: So he's organising the local community involvement. Bolgar: That's right. Lei: Sometimes maybe he can be considered as a kind of representative of public participation. He can get some ideas from locals and then discussed that with Leon Krier. Have they got this kind of way? Bolgar: That's right. I think what's happened was John Thompson was engaging with local people. Leon Krier was developing the masterplan. And there was a dialogue between John Thompson and Leon Krier.

Lei: That's a very smart way. So shall we move on to the fifth question? According to my research, I would analyse Poundbury via the following design principles to see if they can promote the local identity of Poundbury. In terms of the following key words, have you got any suggestions? Identifiable; In harmony with surroundings; Compact; Mix used; Hierarchy; Legible; Walkable; Pedestrian friendly; Diverse architecture; Unique and symbolic architecture, decorations and art; Public participation. If you have any suggestions, please do feel free to talk. I've got 11 points, how do you think about that? Bolgar: They are specifically related to local identity, are they? Lei: Yeah. Bolgar: I mean some of them are more general than just local identity. For instance, compact, mixed use, they don't really relate to local identity and they are more with how the place works. I think it's true to say the neighbour in town of Dorchester. The historic centre of Dorchester, the Roman Dorchester, the historic core, Poundbury is more similar to that because it's quite compact and mixed uses. So I could say similar. Most of Dorchester is not similar to that at all. Most of Dorchester is urban housing. So when you are talking local identity, you have to make very clear which local identity you are talking. Most people when they talk local identity in Britain, they are talking about pre-war architecture, probably before 1920 when they were still traditions of architecture. But obviously the local identity in part of places can also be suburban spot? (Time 29'40). Newquay is a very interesting example. If you go on the Duchy of Cornwall website, you'll find the pattern book. We prepared with Edom Architecture. Lei: Yeah, I saw that. Bolgar: We were quite careful in that book to represent what Newquay actually was like and we try to pick the best bit but Newquay is quite old? (Time 30'25). It was built in 1910 or 1920s. Number of people think it's slightly ugly. Newquay is not known as a picturesque, beautiful place. There are other towns in Cornwall, like Portscatho, some fishing villages in Cornwall. Other ones, you'll see Polperro in television or in magazine. They're pretty white fishing villages. Newquay isn't that pretty so there was a very interesting discussion between ourselves, the architects and Leon Krier because Leon Krier thought that example showed in Pattern Book. They should be the examples from outside of Cornwall or bad examples that the architecture should be attractive. So to me this is a very interesting discussing when you talk about identity because it is not necessarily a bad thing to import building styles or

traditions. Maybe when you think about St. Petersburg in Russia, Peter the Great imported Italian architecture. There's nothing about Russia. The most architecture in St. Petersburg is Italia. But because it's done in Russia with the climate, with materials, with Russian builders, it becomes over time, over history, and it becomes Russian. You know what I mean. It's kind of imported, but it takes on Russian identity. In a same way, in terms of local identity, coming back to Poundbury, Leon Krier very much likes mediaeval towns, like *pienza*. He thinks they are very efficient because they have a town which is quite urban. And then you have a countryside on the outside which is productive. You can grow food. He believes that's a very good model for food security. It's very compact and efficient living. In Poundbury they want to control cars and movements. And they need every 70 meters in the road there are some kind of events whether square or the road bends a little bit. What that does is having an efficient compact urban form combined with the desire to slow the traffic speeds, which means the place, feels slightly European. To a lot of people, maybe it doesn't feel it's British. Lei: No, No. Bolgar: Do you see? So it's a very interesting import over a number of ideas from Europe which become like a recipe, like a food recipe. You have a recipe of *Belonia* or part of Italian with pumpkins and almond seeds. They might become a part of local tradition because of the availability of materials. But the recipe may be imported from other places. Lei: Yeah, I see what you mean. Bolgar: You see what I mean. It's a fusion idea. So I think the interesting discussion in the Newquay will be, therefore, 'Is it more important to have new development that looks like the adjacent development to Newquay?' or 'Is it more important to have better looking buildings?' Why the region? Actually, that makes Newquay or new part of Newquay more attractive. I don't think it's right or wrong. It's a choice. So my feeling would be mixed use, compact that may be more general. I think hierarchy, legibility, they relate to each other very closely because part of what makes settlements legible because of hierarchy streets and hierarchy architecture. I think walkable again is not really to do with the local identity just affect the distribution of uses. And that is very close links to pedestrian friendly, the design of streets. Lei: So design of streets is very important, right? Bolgar: Yes, I think really if you are studying local identity, the most important factors are building materials because that in England at least before 17 century, before the 18th century, really before the railway introduced they couldn't move materials around very far. It's too expensive. So what gives something local identity is principally building materials. Then because of the local vernacular traditional buildings with those materials are series of details emerge which become style. The vernacular style of region dictated really by the materials and the way the craft people and builders were putting those materials together to make them dry and to keep weather round. What you identified in the 1820s is just after the industry revolution which really starts to take hold of England about 1810, 1820 was when started to affect. And the most influential British architect was called John Nash, the regency style, a fantastic architect, amazing architect who produces classical, principally classical buildings in a regency style. They are typically rendered, white rendered buildings. And during that period, you have places, like Bristol, Clifton in Bristol, Bath. Bath was slightly earlier but a lot of Bath were built up. Notting Hill Gate in London, Elington (time 39'17). You have huge spread of pattern book, pattern book buildings, standard house types. They become spread across the country. They are very uniform. And they are not vernacular, they are classical with distinctions. You can export. It doesn't matter with regency buildings in 1820. It doesn't really matter what local materials is because you're going to cover it with render given the classical details. But again like St Petersburg, the example I used, because there was still local traditions and local builders and built were so more local. Those generic classical styles became localised. Lei: Yeah. Bolgar: Do you see what I mean. Clifton in Bristol feels different from Notting Hill Gate in London because there're very subtle differences. That's myself and Ben Pentreath who's developing Poundbury now. We're very interested in local identity that is subtle variation on standardisation. (Time 39'58) In a way, it's a more honest representation of our current situation where we have globalisation. Lei: You mean variation instead of standardisation. Bolgar: Yes, we believe today it's actually good to have standardisation because in 1820s they had, even in George period, they had standardised house plans and house types. So we think for quality for getting high quality, standardisation is good but in terms of local identity it's important to study and measure local buildings particularly for that period of 1800 to 1830 because they have very subtle local variety. If you want to do an authentic vernacular building, a building from 1600 or 1700, either going to be slightly fake (the language is going to be applied) or you properly build authentic vernacular building. Do you see what I mean. That's to me the most interesting dilemma with local identity.

Lei: I know what you mean (time 42'29). But sometimes the standardisation does influence the variation, right?

Bolgar: Yes, if you look at lots of traditional buildings or old buildings, they are very very standardised. They tend to build up by very similar materials, 2 or 3 materials. The windows were made in a very similar way. We have freedom to use maximum variety within a narrow range. So we think you can build beautiful towns and cities, like Vienna. You don't need lots of materials, lots of house plans and lots of house types. You just need them to be adaptable locally. Lei: That's a great idea I think. Bolgar: The steps happening with Ben Pentreath now in Poundbury is he has put house plans and details into CAD, into a computer. Then he has standardised like catalogue. Standardised very good details draw properly in a computer. When he does a street he can understand what the character of street he wants to make. Some streets he wants to make more formal or more classical. And some streets maybe he wants to make more vernacular, more informal. Then he will compose, like a composer. He will compose a street with different character. But they're all made from standardised pieces. Lei: I see. Bolgar: Do you see? It takes a standard building façade, a double-fronted house with five windows, and the door in the middle. You can either make it vernacular having no door case, low ceilings, very simple gutter. Do you see what I mean? Very plain and almost vernacular and maybe you put a stone wall, hand-made stone wall in front of it, and rough render finish. So it feels very primitive and very simple. But you can take the same house and add another 300mm to ceiling. You can make the windows another 100mm wider. You can add a door case. You can give the cornice rather than just gutter. You can make the render smooth or you can build type of brick with stone door case. That same house feels much grander and more classical. Lei: That makes house design more efficient. Bolgar: Also he's in control. He knows slightly turning a dial, the volume control, the color control, up and down. He's in control whether he makes buildings more grand and more classical, and whether he makes more simple or more vernacular. So that's very appropriate for that place. Lei: I mean for this kind of standardised catalogue, did Ben Pentreath get them from local region or just like what you said, a wider region? It's wider, right?

Bolgar: Yes. There's no question. So far the most successful universal language of architecture has been classical architecture. Maybe one could say it's lime architecture. It's amazing with principles. But classical architecture for Europe and America has been without the question the most successful universal language. But then it was interesting is in a local place how one then decides to respond to local conditions, local styles, local building materials through the vernacular. That's the dialogue. So they take your mind. I'm over simplify it but that may help you to think about it clearly. If you take the date of 1800, 1810, 1820, you see when the industrial revolution began to take effect. Maybe the industrial revolution was slightly earlier than that. You look at all the buildings. You look the buildings of place before 1800. Then you look the buildings before 1700. Before 1700 you'll get clear pictures of local vernacular traditions, building materials, and building details. Then you'll typically see, after 1800, classical architecture inspired by John Nash. The classical regency period takes effect and you'll see that period of interesting fusion dialogue between local conditions and materials and classical buildings which is more universal style.

Lei: Yes, I see. Bolgar: So the interesting question now to me is 'What is local identity in an age of globalisation. We believe it's still very important. We believe the sensible thing to do, the smart thing to do now, is starting to source materials and supply chains more locally same with food because it's more efficient. It helps to preserve local traditions and local culture. In a way with food they protect the regions by having Parma (a city of Italia) Ham or cheddar cheese, do you know what I mean? Italia country, they protect local tradition but it marks quality. They sustain local economy. Gives local identity but it's still successful in an age of globalisation because if you want to you can sell the cheddar cheese to America. So maybe ideally similar thing to building where local places would preserve the integrative local traditions but that should come from using local materials authentically. In an ideal world, it's not enough. I don't think to speak on local style. It's not wrong. It's still better. We would say it's still better to speak on local style. Then ignore it completely and just speak up in a glass box. But the revolution in a vernacular building will probably come once energy becomes so expensive. It's too expensive to import materials. That's when the arrival of price to ship the local identity will probably come. Lei: Yes, I see. I think that's brilliant and I get lots of useful ideas from your talk. Is that question finished for you? Bolgar: Yes, I try to short and answer the other questions quickly. Lei: I just worry about your time. Bolgar: Yes, I probably have to go in 5 or 10 minutes.

Lei: Yeah, very quickly. The sixth one is 'How much degree do you think they have been achieved in the implementation? What kind of factors can influence its implementation?

Bolgar: I think the principles of walkability, hierarchy streets, controlling traffic, all of those things have been very successful, extremely successful. It's a development whose values are increasing dramatically. I would say it's the most successful new development in Britain without question. In terms of where could be better, it's the issue that I talk about building authentically building traditions. That's where I think the reality of current building at synthetic materials, fast track production. That's the big effect for implementation things the most that hasn't achieved is to change building culture. But everything else is very successful. Lei: You mean the reality of local... I can not get it. Could you please repeat it? Bolgar: The buildings in Poundbury are still being built with cavity walls, concrete blocks. So the things have effected implementation have more adventic time (Time 53'49) it's the current way of building buildings. That's battle of not yet one. The most of the other battles of doing mixed use developments, walkable developments, those battles are actually one, very successfully.

Lei: Sure. Then 'How Poundbury draws inspirations from Dorset vernacular being a part of 'Dorchester'? Bolgar: Yes, I think I have advanced this question before. The architects study photograph draw local buildings in forms the architecture. In late phases, I mentioned they are introducing less local architecture more classical architecture but with local references.

Lei: The next one is 'Leon Krier sees the plan as a 60 per cent success when the theory of Poundbury has to be measured against reality. What kind of reasons let down the plan according to your opinion? Bolgar: The main one I think is the one I talk about is local building traditions. I believe Leon would like to say more localised building techniques and traditions. He refers to current building practice as same in (time 55'57) authentic building. And I think he's right. That's probably the thing he would most like to say changed. Maybe the other thing is the course in a traditional city. You typically get a huge of variety of scale from cathedra or big churches through to cottages. Because of the financial constraints, you know you need patrons historically. I think Leon would like to say maybe more variety. So they're looking at the designers as the main tower. That's main square at the moment. I think for Leon getting a height. You know hierarchy is a very tall, taller things, grander things to smaller simple things is a very very important part of traditional town making. Lei: But right now there is no church in Poundbury. Is that because of the financial constriants? Bolgar: There is a chapel. Lei: Oh, there's a chapel. Okay. Bolgar: It just built a chapel, yeah.

Lei: I see. I think the ninth question you just answer that when I ask you the sixth one because it's the most successful development. Bolgar: Yeah.

Lei: So the tenth one is 'Have you got any other suggestions to promote local identity by applying design principles of new urbanism in the new development within different cultural background?' Bolgar: I think Pattern book is a very good idea. I would like to look at a pattern book by a man called Steve Mouzon. He's got a very good book which you can get on Amazon called 'Traditional construction patterns'. He calls it design and details rules of thumb. You'll see the book. I work with Stephen in Newlyn (time 58'10), and I like his approach because we do with students is a very very simple exercise but a very very good exercise for local identity. We split the students into groups maybe 3 or 4 and give them a digital camera. Take them to a part of town, village or a city where there is a good tradition fabric. Then you say to them: we want you to identify, this is the first exercise, those patterns. We're not necessarily talking about just buildings. We're going to talk about streets. It could be posters, signage. We want you to identify the patterns this place repeat the most. Do you see what I mean? So it's a bit like Christopher Alexander, the pattern language. The student will do. They probably identify 5 or 6 patterns. They see they are repeating again and again. What we then ask them to do is recording those patterns by photographing them. One favourite recorded patterns, we then ask them to study to take one of the patterns. In Newlyn, one of favourite patterns is the bracket, the whole big long overhanging the buildings, the porches, the porch becket. We ask them to study just brackets and see what the variation exists between that one element. And then we get them to ask the question 'Why did they do that?' Why did they make it? Once they do the very very simple exercise, you'll start to unlock the structure, integrity, the cultural identity, you'll begin to learn. And then what we'll do is we get them to grade the patterns from simple to fancy. So a simple bracket just 45 degree bit of wood with a mortise of ten joints through the diagonal. But a fancy bracket is with circles, scrolls and pendants. You can see the origin form of fancy bracket and you'll see the

simple bracket. That is the simple principle of triangulation. That exercise is very similar and related with what I was describing from my 1700 to 1800 to 1900 study buildings. You go from a very simple vernacular tradition to more classical. And that to my mind, that exercise were telling you more about local identity than anything else.

Lei: Yeah, I think this is a very good idea. Bolgar: You'll see Steven Mouzon, his Pattern books for bmda (time 1'01'20) and places, and he uses that technique he does in Pattern book. That is very useful because you can give those patterns to local builders. And you can educate local craft people and builders in local traditions and they can begin to develop languages. He discovers language in a place. Lei: But for this kind of pattern, is that possible to put them in the design code to control the architecture styles in the new developments? Bolgar: You can either like Upton. I did that. I took pictures from local buildings which are relevant. And then describe them in words. We put them in the code. They weren't legally binding. They were in appendix and references. The local builders use them. Or if you own the land, you want the buildings definitely to have those patterns, you can develop a pattern book with developer. That actually becomes a code. You can make the whole development by the pattern book, standardisation. Lei: Yeah, that's brilliant. So 'Have you got some related resources to show the feedback about promoting local identity from local residents in Poundbury?' Bolgar: No. There's only one of Oxford Brooks Survey which you see. Lei: Yeah. I just find very brief one, one page. Where can I find the full version of the survey? Bolgar: I don't know. One of my students, in next three months, he's going to start to collect resources on Poundbury. And maybe do some surveys. Basically, there isn't any information on what local residents think about local identity. We know 85% of local residents feel Poundbury has broken their mould, a traditional development. But there is nothing specifically local identity.

Lei: Okay, I see. That's fine. And for the twelfth question 'If you are familiar with Upton, could you please give me some ideas about comparison between Poundbury and Upton? Which one is better to respect local identity by applying design principles of new urbanism in light of your point view? What kind of aspects are better? Bolgar: I think Poundbury is more successful in a its more carefully done. Upton is quite successful. I wouldn't say Upton is unsuccessful (Time 1'05'18) in terms of local identity because it's a government project. The government took away from the building, took away from the code about the section of local identity of direct. They deliberately took out of the code. What you see in the latest Upton, it has really little local identity. The buildings come less Northampton like which I think it's a shame. Because they didn't want too many traditional buildings, they want more modernist buildings. Lei: Oh, that's very unbelievable. Bolgar: Yes. There's amount of funny planning authorities, the architecture profession, they think the copy of old buildings is a very bad idea. So everybody talks about local identity, you see the freeze of every document. When they come to build buildings, very few people do proper local identity. Someone likes Bath or conservation areas because they will use local materials. Lei: The Prince's Foundation was just involved in the very first sites, right? Bolgar: Yes. That's right. We've got two phases. Lei: Two phase? Bolgar: Yeah. Lei: Is Site A and Site B, right? Bolgar: Yeah. We were obviously involved in drawing masterplan, the whole design. But in terms of controlling architecture, it's really just the first two phases. Lei: So since Site C, the government just took the design controls from the design code, right? Bolgar: Yes, they throw that away. It's a shame.

Lei: Oh dear. Then 'How do you view new urbanism and sustainable urbanism?' You know when I check the website of Prince's Foundation, sometimes it's new urbanism, and sometimes it's sustainable urbanism. Bolgar: Yeah. I think new urbanism specifically refers to the movement in America. In this country, the last government, the labour government, the deputy Prime Minister called John Prescott. He visited America, and he visited some new urbanist developments. He really likes them. Then he started to talk about new urbanism. Many people in government started to talk about new urbanism. They use the phrase of new urbanism. To me, it's traditional urbanism. We, the Prince's Foundation, always use the word of traditional urbanism because we think that's important. That talks about learning from the past. Traderes in Latin is hand on. Handing on knowledge, so we believe this is important not to shy away from tradition. In America, they deliberately call it new urbanism, they want to create a movement founded attractive and modern. It was a specific word to choose to do that. Sustainable urbanism, you were right. There's drive to sustainability in everything. I think most people in the UK would say sustainable urbanism is a urbanism has mixed uses and it's walkable. I think most people would refer to that. Most people in the United Kingdom probably wouldn't say sustainable urbanism necessarily has to have local identity.

Some people would. Some would say that's what we all make sustainable fit into the local place. But other people would say no. It doesn't matter. That's not sustainability. Sustainability is about making a new version.

Lei: Yes, I see. Then for the fourteenth one 'Would you mind 'I ask you if there are any other agents to be involved to develop new urbanism in the UK?' And also would you mind to recommend any other representatives for me to do interviews about my research?' Bolgar: Yes. The biggest that we call new urbanist project is in Scotland, designed by DPZ (Duany Plater-Zyberc). This development called Tornagrain. They have website. And you can see it. It's a planned town. I don't think they have a pattern book. But you'll see the images of buildings quite traditional. And again Ben Pentreath was a traditional architect that I was telling about it. He is applying the exact principles that I described, the standardisation but local adaptation is to make more Scottish, local varieties. Lei: So except Prince's Foundation. Is there any other organisation very keen to develop new urbanism?

Bolgar: Not that many. But it's becoming common if you look the three big developments in London. One is Kings Cross, the masterplan for that. What I could say that is traditional. The Chelsea Barracks, I was on a design review. Both are traditional urbanism, and they studied very carefully, the local building traditions, local styles. And then the third one is Earls Court by Terry Farrells. Farrells has been in traditional urbanism for a quite long time. And you'll see the website. They just get the planning consent. It's a very interesting discussion about local identity because they have a Hong Kong investor. And a lot of big developers want development to feel familiar to foreign buyers because London is an international market for foreign money and foreign investment. At the moment there is an extremely interesting debate about local identity. The reason why most rich foreign investors put their money in London because London looks like a stable 18th century democratic city, it looks like a stable George city. They want that because that is what they like. But the developers also want to bring a piece of Hong Kong or a piece of St Petersburg or middle east pieces of pita (Time 1'14'46) into London because they think that's the primary buyers all want to see. I think London needs to resist that kind of communication to import international architecture. That's a big debate at the moment. Lei: Yes. I see. Similar in China. Bolgar: Exactly. Lei: I think you've got some potential interviewee in our above talking. Have you got any other representatives to me to do interviews? Bolgar: Peterjohn, Ben Pentreath are the best. You've spoken to Andrew Cameron. Lei: Yes, I spoke to him. Ben: What you might also do if you email me, I can give you the email address of one of my students here called Vincent. Vincent is going to spend next three months collecting lots of materials about Poundbury. This hasn't been really done. We haven't collected it. You send me your email address. Lei: Maybe we can coordinate to some degree. Bolgar: Yeah. He's collecting anyway and might give you some information.

Lei: Yes, thank you very much for that. And then the next one is 'Is that possible for me to observe the courses when you teach something about Poundbury and new urbanism?' Bolgar: Yes. Andres Duany has already come. I think he came 4 months ago. Lei: Oh, dear, I just miss that. You missed it this time. But I don't know what the next term of new urbanism is going to be. What we do have, I have to say we've got typically DVDs to sell on website, 20 pounds something. We recorded on DVD 5 seminars on Poundbury with all the people involved. There is one of the DVDs called 'Getting the details right'. That one is about the architecture. Ben Pentreath gives a talk. I gave the talk. That's the closest thing to master class four hours of event we held two years ago. Lei: I can buy it from Prince's Foundation, right? Ben: Yeah, you should be able to. Lei: Next time, when you get the lecture session about new urbanism, how can I know that? Is that possible to get emails about it from Prince's Foundation? Ben: The person you want to contact is Matthew Hardy, Matthew.Hardy@princes-foundation.org. Lei: Matthew is responsible for the lecture series. Ben: That's right. Lei: Thank you very much, Ben. I think I have taken you for lots of time. Ben: That's okay. Good luck with your research. Lei: Sorry, it's a long time. I know you are quite busy. Bolgar: We are always happy to help people to do the important research. Lei: Thank you. I am very happy to do interview with you because I've got lots of ideas. Bolgar: Good. See you then. Thank you. Bye bye. Lei: Thank you. Have a good day. Bye bye.

Interview with Cameron A.

At the beginning of interview, Lei introduced the research motivation of the PhD research like the contents in the file of 'Interview questions with Andrew Cameron'. Why I am doing the research about Poundbury and Upton? Why I am doing the local identity rather than sustainable urbanism. Cameron: How many interviews that you have done?

Lei: I've done Mr. Trevor Beatie in December. And you're the second one. I am contacting to Sylvia Short and also Ben Bolgar. But for Ben, it's too hard to catch him although I've made lots of rings to his secretary, Victoria. Cameron: When I went to African projects, he was there with me. Next week I am going to Oxford Uni to do the lectures of 'Sustainable urbanism' with Ben. I can mention that we have met already. Lei: Oh, please, thank you very much. Cameron: You probably can contact to Duchy of Cornwall which is doing data collection about transport. Simon Conibear, development director of Project there, have worked for over 20 years. He knows lots/everything about Poundbury. Have you been to Poundbury? Lei: Yeah. I have been to Poundbury. And I also have been to Upton. You know if I want to analyse the cases, I have to go there to see what it looks like. Cameron: Yeah. How do you think Poundbury and Upton? Lei: I probably think Upton is better than Poundbury. Cameron: Why is that? Lei: Poundbury is more experimental than Upton. There might have too much diverse architecture styles in Poundbury, which beyond too much from local context of Dorchester. For the first phase, that would be alright cause lots of people are there with viability. But for the second phase, when I was there just few people were there. You just felt you were isolated from other places. Maybe now is better cause more and more people are coming to live. Cameron: I tend to agree with you about Poundbury. The architecture mixed too rich. But you know Poundbury is a hot place. How is it after 20 years? The problem maybe is not a problem after 20 years. Lei: Shall we start the questions? Is that alright for you? Cameron: Yes.

Lei: For the first question, 'What kind of design principles of new urbanism have been applied during the design process of master plan of Poundbury and Upton respectively according to your understanding?' Cameron: The big things for Poundbury and Upton, for my perspective, have been more about the movement issues, and connectivity, building, connected network, streets, which Prior to Poundbury, the guidance in this country was DB32 (Design Bullet 32) which actually encourage building and distributed roads and context?. That was norm. And no one could say doing anything differently. And I would be started Poundbury even better to give the talk to every place around the country with connected street. And people working on it are really killing me. No, you can't do this. We have to build cultural context. Streets would be di? play. And the real cultural shift to get over everyone should make streets connected. Dry the pardon ? (First, time 3'51), some principles of new urbanism, Upton be saying, I think it's also moving away a tree like structure of being like a hierarchy where you're going to connect certain streets to certain streets. Actually it just connects anything to anything, amusement to main street or main street to minor street. You don't worry about it. And that's a big shift as a principle different. I think it would also try to deal with a car. The car parking problem we haven't set. What both of those examples are keen to do are putting the cars, vehicles on mews' lanes and what you have. And it's very degrees success some of places are better than other. This is the problem found within? (First, time 4'36) the context as Poundbury looked the villages around Dorset. I try to replicate that context, it's really difficult. Some wanna provide car park per house, something like that. This just kills the urbanism, you know. This was response to that.

I think the other sort of main principle which applies to Poundbury not to Upton is the idea of mixed use. I come across many other developments in this country or the new urbanist model. I think tackle the mixed use idea is well. Because Poundbury we started with sort of rural farm work that Brevet House we built which should find? (first, time 5'29) one job. And service of Poundbury includes factory, residents, shops, all that mixed in. And Upton are being next a couple of years now and still hasn't got very much mixed use at all. Many other urban extensions just provide the basic network of school and shops. What we're finding Poundbury now are hunch for all. We have mixed use properly integrate business park or put settlely. Then it could work quite well with residential compatible. When people remain in houses at weekend and offices and factory are empty. People in houses can look after those and by the week people is back to work. People are around work and factories. So they actually help each other. The big thing was trying that we hope people to move there to live in a slightly more sustainable lifestyle in terms of moving around. They can choose to work 5 or 10 minutes walk to where they live, walk with the kids to school. Some of the surveys have been done. We found around 25% people live to walk. They are walking to work which is of our figures. Some people are buying lifestyle (time 6'58). I can walk with my kids to school in the morning. I can go to walk and come for lunch. I have to own my second car. I have more money. That spends me one hour or two hours a day in commuting my car. I have more free time. That was always ideal. We're just saying now we realize lots people are buying into that because they say it is a good thing that they have more free time more money which

are you want that. That's quite interesting there's more survey work that's been done at the moment just updating it. Lei: About Poundbury? Cameron: No. Lei: Have you got the data things?

Cameron: No, the Duchy of Cornwall are doing it. They've done the initial traffic surveys. And they need to do more data collection. But that's actually ongoing at the moment we're talking. So that is the theory we build proper mixed use. And people get the benefits. People travel less. That's what I think Poundbury's greatest achievement. But something it really can't get important is architecture. It's fair enough. It wouldn't be perfect. And that was the vision from Leon Krier, the master planner, and the Prince of Wales. The Duchy of Cornwall always built for many many decades. In Dorchester, they built lots of houses in 70s and 80s. The Prince visited that and tried to make some differences. I put lots of talk on Poundbury. Is that useful for everyone? Lei: Yeah, Sure. Cameron: Did I explain that?

Lei: But for Upton, do you think what's the biggest achievement like what you said for Poundbury? Cameron: For Upton, to make the biggest achievement. It's actually we set up on the ground which was producing the robust design code? You see the design code? Lei: I just see the very rough one. But Trevor said he will send me a copy of design code. And I'm still waiting for that. Cameron: I've got an electronic copy. If you want one, I can send it to you. Lei: Really? Please send me a copy of design code. Cameron: You know English Partnerships started to produce design code in a collaborative process. We do some research via videos and some others. And we also research about American coding system, new urbanist code that's code born from. And the way we did it was a very effective with artists, the partnerships, the council, and others. It's very collaborative. And then we produced a detailed design code which is full guide for partnerships. And what that did was when the planning application went in for the first phase of houses in 8 weeks. That would be ideal. Anyone knew about it and hold with it there. So we speed up the planning process eventually. I think that's what's good in Upton. Then other people started to produce design codes. I think it depends on the developer, the architect. They have to get things right. I have been involved in lots of code work. The good ones and bad ones depend on how much they have enforced. Even though you have two pages on A4, if it is enforced properly and can actually deliver. You can have a brilliant code on that fake. But it didn't, it would be useless. Lei: Yeah, sure. Cameron: But that is good at Upton. I think the street pattern is interesting. It's much more rep linear, 90 degrees, 45 degrees, which is little bit trying to respond to street pattern of Northampton which is different with Dorset. Between the projects, we try to treat that differently. I think that's interesting in Upton is we try to set up a very strong designing public ground. All the streets and square properly designed. And public ground within the sort of glued how is everything together. And they can be reasonably well. And the architecture seen on the road is mixed architecture. Maybe it probably get too rich for a place. You've got a traditional George looking double front houses, next to weak? (time 12'45) houses. You even can see the wind turbine on the roof of houses. They might just try to make the rate but what the houses next to each other. Lei: They want to achieve level 6 or something. Cameron: I think so. I think English Partnerships wanted to demonstrate the design of project. That was a good thing because they tried lots of different things, Some being good, some being bad. If you don't try those of things, you don't forward it. It's good like Poundbury. Poundbury starts as an experiment built very quickly by the Duchy of Cornwall. It's a commercial proposition, the money of it.

Lei: Lots of information, they are quite useful. The second question: 'How much degree the street pattern in Poundbury and Upton are influenced by the design principles of new urbanism? What are the differences between them? How much degree do you think they have been achieved in the implementation? What kind of factors can influence its implementation? I know you have talked some just now. Cameron: I know, that's fine. I probably cover lots of these. But as I say, connectivity is the key. I think both projects which I delivered is looking at local context, looking at plans, historic, parks, settlements, which works well. When people visit, they said it's a nice street, and it works very well. The tour doesn't get enough. I work with the new urbanist in places with a very strong character. I work in Scotland to plan a settlement. New urbanist conceive and produce a street pattern of a place and then produce them everywhere in the world. The place works as a ? (time 15'33). Historic town has a street pattern like this, beautiful grid. And the new urbanist master plan wants to build kind of new urbanism like that of historic town. Why don't you build this? This has been here for centuries. It works low speedy, no accidents. People love it. They wouldn't/couldn't translate that to that. It's out of simple things to say to look context. You know at a time to copy or adopt, it doesn't happen. I think it at least Upton and Poundbury to certain degree have done that and try to do that. One of the biggest issues to do within implementation is highways guidance. We found in Poundbury where as

soon you start applying standard roads with and forward flexibility, criteria, site lines, junctions and all that. The whole highways guidance you look at a little historic, a little Dorset village and it actually fully breaks ? (time 0'20) a half dozen rooms in terms of street design and layout. When we started Poundbury the guidance just said you can't build this place and they don't meet the current guidance. That was a big problem with Design Bullet 32 to do with getting the right sort of context street. We want a very good local engineer from the local council, West Dorset District Council, Ian Madgchick (Highway) might be good to put him on the interview list as well if want to get interview about street design. I think he was a really council approach. You know we can show the safe and then we did necessarily need to hear to the guidance. That allowed to build things where we didn't put white lines, we didn't put signs. As I showing in my talk, some of the junctions and corners are almost blind bad, you can't see around. The type of other engineers will tell you can't do this. It would be terrifically dangerous to kill people even more than that. But of course it works because people slow down and be careful. That would be the pretty one of the biggest things to do with the tension in a course. When I worked on Poundbury and other projects, they are similar. You know I was very lucky we were to write 'Manual for Streets' documents. We wrote manual for streets. That was really a good opportunity to shape old guidance. I should get rid of it and change the thinking. You know, we are reducing the site land down and sort of things like that because there are other examples to be safe and context is right. Why not? That seems good before I also have to write planning guidance, DB 32: place of streets movement document in 1997. That's start of process. We get almost kill off ? (Time 2'44) some streets via DB 32 in that stage. But there was too much streets to be killed off in DB 32 looking at – started to make a good condition. Lei: What's the name of the person from West Dorset District Council? Could you please write for me? Cameron: Yeah, sure. Ian Madgchick.

Lei: thanks. The third question: Do you think if the street pattern is in harmony with the conventional street pattern like what new urbanism advocates to promote local identity? I know you have mentioned some just now. Please talk a little bit more. Cameron: Yeah. I think I've done lots of work with some of the biggest new urbanist face. Quite often regular and formular, block pattern, size of blocks are similar where they are working. When you got context, the street pattern are so strong. You can (Time 4'13) think it could just not repeat this. Whether they see this or even manage (Time 4'18) too obvious things to do, they both to me can not, it's kind of, you know, you want to adapt this like olympic or (Time 4'29) rather a role of product. The other thing is tricky. When you are looking at big scope, 2,000 houses, in India a city for a million people--350,000 houses, you see master plan cross the whole scale. That can bug me you look a city. You have to arrange a different pattern and urban grid you as go through it. That does get expressed in a large plan. I think Poundbury is that of guilty as well. You got drops mixed a bit. If you go there for the first time, you can't find the way out. And you lose that legibility. Upton is a little bit better because a big main street through the middle. That has a very strong street hierarchy diagram. That's a big issue of variety within the street pattern.

Lei: How do you view the street-oriented housing in Poundbury and Upton? Can it promote local identity? Cameron: I think both are quite pedestrian friendly. Poundbury we still reassisted putting any times, white lines, or things like that. I think mentally vehicles are driving much slower a little bit like Shearbis (a place? Time: 6'25) scheme with exhibition road, which makes a bigger view for the driver and makes a bit confusing. I think that makes more friendly for pedestrians. All the time I go to Poundbury with showing people around, we walk around in the middle of roads. A car comes, they don't horn or kill us. They just slow down, and you just go to other way. I think both are trying to make the place a little bit more civilised for observe. People look out for each other on the street. I think they've done that basically very well. The issue is that they both are very quiet with not bad traffic and not bad many people. I think the very interesting thing is Poundbury, I don't know how long ago you went, has a different traffic plan between Leon Krier and Andrew Cameron (See Figure 1). The idea is sharing half traffic. And the idea was always making Queen Mother Square a busiest place in the scheme. I think it would be interesting grows to see how that was. But the all opinion debate I still have with Leon Krier when I worked with last year. I think all the traffic must do this as busy as possible. Yet with this road at the end to the south of Park Way which is sort of by pass sort of this. He wants all the traffic just going through the way of Queen Mother Square and the way of Middle Farm Way. I think when it finished we should close this and put everything here which makes the square extremely very busy, very chaotic. It feel like a high street then. This is the issue. You can spread the load of traffic too much time, and

sometimes you can concentrate if you want to build a high street with traffic park to play on it. This is a longer time debate. After 20 years you'll know if he is right.

Lei: He selected the bottom one? Cameron: He selected both. I want to put everything on the way of Queen Mother Square. He said 10,000 vehicles on each a day, but I said 20,000 on mine a day. And this makes it very busy and very chaotic. I keep saying let's build it and try it. We don't experiment enough. When we build these and we try all of these at day one. Maybe after 20 years, we are going to close this road (Middle Farm Way). Let's see what happen. Fair enough. Lei: Oh, I see. Yes, sometimes the time can prove something. Cameron: We try to experiment and try to design. I don't know about Upton, but I know Poundbury. It has 20 years already but there is no accidents. Lei: No accident? That's brilliant. Cameron: That's living out of lines, signs, building blind corners, during all the wrong things, still no accident. Something must be right. And also both Poundbury and Upton were designed the concept of 'walkable neighbourhood'. This is the very strong new urbanism design principle. I am back on the question 1. But working with Prince's Foundation, we believe that 5 or 10 minutes walk to facilities, schools, and all that, which clearly I gain some resource on the research from the states. They are realizing the places of new urbanism are designed as walkable neighbourhood. You know the conventional suburban, the figure shows three times much more walking. Although the evidence is hard to show it is exact three times, but the structure is not effective like the walkable neighbourhood.

Lei: How do you view the street-oriented housing in Poundbury and Upton? Can it promote local identity?

Cameron: I think it's essential houses face onto the street. I guess Poundbury is sort of standard model of street, path, car parking spaces, the cars, and the house. That was we were building. You look out on the street or you see your cars or nothing else. Both Poundbury and Upton, this idea are actually bringing house to the back of parking cars. I think suddenly changed everything because the cross section is more human scale (See Figure 2). It's going through this to this. For me, we build everything with cars in the front for decades, all the people do come out in the morning, finding milk. They get their car, that's the only way to move around. The street would be the great place to walk. For Poundbury, it's quite hard to get the car on the back, but to work or school, just 5 minutes. They really want to walk from front door which is part of philosophy. They're just turning the houses around and getting there or taste the street. Again it was a big difference. They are still resistant to do this. The pattern of Poundbury (See Figure 3). Lei: Is the bottom one for Poundbury? Cameron: Yes. This is Poundbury. The upper one is sort of car dominated. They are still resistant to put the cars on the back of courtyard. But this has been built. For the car dominated, you don't see the historic context. For the bottom one, you do see. Lei: Yeah, sure.

Lei: The streets of Upton do look different because of the Sustainable Drainage Systems compared with that of Poundbury? Are they learning something from traditional urbanism? Cameron: Do you think it learns? Lei: I don't think so. I think that's a creative idea. Cameron: Yeah. The swale was digged in soil. This is sort of experiment of English Partnerships, an experiment development they want to show down the streets. They are very few. I designed that swale with the others. Some of them are better than others. Generally it doesn't work for me. If you want to create good urbanism, it's urban, and it's type. These things were better than an age condition. If house are overlooking on the lane, so putting the swale on the edge is better for me (See Figure 4). I try to put it on the urban context. This is harder and using lots of land as well. I see at Upton with rubbish at the bottom and with everything. I think the kids love them. The kids ride their bicycles through the swale. They ride down to the bottom and ride up, again and again. This is good for experiment things. I think industry does quite work on the edge, much better. Of course it's about the ground conditions. Poundbury we don't need to do that. Most of the land, it doesn't short and most of soaks and drainage are going to soak ways and court yards. It's another reason happen coincident. I suppose to putting on the streets like this. Putting cars on the back is called soak ways for the courtyards and drainage as well. And some are in the gardens. So interesting experiment.

Lei: Yeah, I think so. The next question is 'One of the typical design signs of new urbanism is allocating a back car parking space or garage. Can it promote local identity? Yeah, I think you just answer that, right? Cameron: Yeah, it's difficult one because you look at historic village in Dorset which is absolutely outstanding. But it wasn't designed to accommodate to a half car perhaps. As soon you start having to accommodate the car, then you've got the project. I think Poundbury, some of the courtyards are better than others. And some of them got we put houses in them not just making the car parking on the court and making some people live in. I think Duchy of Cornwall found

that the houses are sold very well. People do see the exclusive houses almost. 12 cars whatever in the courtyard and people see a little bit private which we never expected. But that's market. At Poundbury and Upton, the other successful thing to do is the mew street. At Upton, you've got some quite big blocks. It might be something. These are the mews (See Figure 5). It seems to work reasonably and may accommodate car parking. And the problem is not making the end system tight after that, a little bit narrower. The mews, obviously, are good. These are local context for that. In many countries, the back lanes in a where, also cut ways where the services all that recreate that things good to give you legibility but also accommodate everywhere. Garage is another debate. Many projects, they won't let you count garage and car parking space. You know people don't put their cars in the garages. Poundbury has a lot of car puts which is not like a garage with a roof. So you can't store anything in it, only can put your car in. They work quite well. The local people accept this kind of car park space because you can use very often.

Lei: For the eighth one, 'According to the direct observation in Poundbury and Upton, the residents in these two places rely on the car use which is different with reducing car uses, one of the manifesto of new urbanism. How do you think this conflation?' Cameron: It's a good observation because car uses is still high in both places because they are approaching town. Their bus services are good. Poundbury is more successful because mixed use is retaining more journeys within the development like living to work, shopping or other things there. I guess there are thing that we are still not cracking that well in this country really promoted things around trying to orient (time 9'34) development, they call it in United States new urbanist. I think both of development are strong and form that. You know we're gonna have amazing bus service or tram service that delivers you to town centre. Upton will be better in long terms. It's got the main road, weighd road. The first phase, the last phase, they've got good bus service. Dorset is harder because it's more rural and make bus service harder economically. One of the thing we are promoting on other schemes is car park idea. Lots of people own the car but tackle the second car. You can have one car but actually it's not cheap for remaining another car. This is one of the things that I always promote for various schemes. The other for scale is easier for city level. I am working on a very large project in Chicago at the moment. This idea still works and is regenerated. There we are replanning car transport system in Chicago now by quick lines providing new tram system to the airport and also city centre. This is about city scale. You can do all of this in big cities. But small market town in Dorset, it's always hard.

Lei: For the left questions, they are more general than the above. So the ninth one is 'Do you think they are positive try for using the design principles of new urbanism to promote local identity in the case of new development?' Cameron: I think they are good examples. I see lots of other developments are still big built which is no reference to context at all. We know the people just put it up. Developers put it up. They've done the standard houses with a complete non distinguished layout in Newcastle, or Cornwall. It's so productive. For Poundbury and Upton, they at least they have tried. They are not achieved 10 but actually they try to get there. I think they are good for that. Lots of architects have been involved in Poundbury, and engineers, like me. We are all learning. This is fascinating profession either because no one got the right yet. We are all getting better and learning different things. A great development in Scotland is Knockroon, Cumnock. Ben Pentreath is the architect. And he is being the architect in Poundbury. He's got Scottish architecture context offered a team which is not big at the moment. I did streets with him. It's very funny because that's a low cost development. And that means buildings are incredibly simple which actually is localised Scottish buildings. So bizaarely the low cost street is made much more local identity. That's a good question. They are not perfect but actually you got a try. They encourage others to build things a bit better. That's always the desire of Prince of Wales and equally with English function. They want to use it to encourage the others at least. Hopefully they provoke debate and reaction. Some people love them and some hate them rather than just plans. Lei: Could you please write the name of the Scottish architect? Cameron: Yeah, he is based in London, named Ben Pentreath. If you google this and you can see the website. He's a traditional architect. I think he's good.

Lei: Good. The tenth one is 'During the design process, Upton used the Enquiry by Design but Poundbury didn't. How do you view the differences in between with Enquiry by Design and without?' Cameron: I did lots of Enquiry by Design work with Prince's Foundation. I am a fan of it. It does really work with engages of stakeholders and others and get on the skin of place. The way we do enquiry by design is that we consistently draw. They are normally in

three days or a week at most. We draw a plan for 20 times with ease. Because we keep drawing people can understand the drawing or the section. It might be messy but after that we can understand rather than talking about it. To the drawing process, I think it helps delivery the product at the end of the day. I think Poundbury was before the enquiry by design people were doing in this country really. Enquiry by Design is Prince's Foundation, philosophy engaged with everyone approach. It works very well. Poundbury is much of Leon Krier with master plan. This is my design. That works because he is a genius. He is brilliant. You don't realize that but actually what he draws is perfect. He's doing amazing development completely changed the whole country you have to think about it. Everything they built 50 years engaged communities with guidance. They built the network of shops, cafes and others. People are sitting out. It's completely changing the country. He's the guide and he's doing that and not collaborative. I think both works. You put a genius and you can do a master plan which is fine. But probably often more Enquiry by Design is a good process. It tries to involve localism and engage local communities. It does work. We go to projects and I won't doubt there are many things come out of it. At there for a week you can talk to huge amount of people. They are local people. They know far more than us. You can know what you need to achieve. And also you can have the knowledge if you've done is well or badly. The most big development now look a bit similar whether using workshop or charrette to get half thousand different things. For the work of Upton, we did a week on Enquiry by Design. We do a week for the right people and it comes out a draft plan, a concept plan, probably three months work condensed to a week. So it can save huge time. That's of the part things showing Upton the work has quickly been done. It makes of good fun. It was a lovely debate.

Lei: Yeah. Thank you. The next question is 'The design of Poundbury and Upton separately draws inspiration from Dorchester and Northampton vernacular, including local urban morphology and architecture. Could you please list what they are according to your understanding?' Cameron: That's hard (Both are laughing and Cameron is repeating the question.). There are lots of brick in Northampton. Lots of that are reflected in buildings. As you see for the urban morphology, the street pattern is very regular and linear, like 45 degrees or 90 degrees. There are also lots of tower buildings, like Victoria Parks in city centre. We do report that like town houses. Poundbury is a bit more mix. There are lot more render like that of Dorset. And Georgia architecture is very common on the square of Dorset. That controls the style of buildings. The street pattern of Poundbury is sort of very organic street patterns like in the main villages of Dorchester, such as long street, footpaths in Poundbury. That helps the visibility of street and sort of things. Poundbury has share streets / share service streets and put cars on. There are probably lot more over there.

Lei: Yeah. Next one is 'Could you please give me some ideas about comparison between Poundbury and Upton? Which one is better to respect local identity by applying design principles of new urbanism according to your point of view? What kind of aspects are better?' Cameron: If I have to make a comparison, I would say Poundbury has achieved more because of the mixed use to be helpful for the movements. This is such a big thing in this country although lots of people don't realize that. They probably can achieve more because People share on the street. I think both meet many principles of new urbanism, walkability, a place, connectivity, nature street, buildings have a good relationship on the street. I think they both are quite different. Some streets at Poundbury are excellent with crescents around the central park which is very nice. The patron does like that. Some streets at Upton are also very well. The view is quite good. They both got the fair share but the architecture maybe too rich. Perhaps the architects work too hard and can't cut down being simplar.

Lei: Do you think Upton learns something from Poundbury? What are the lessons? Cameron: I think it's interesting. I think there's a problem at Upton with car parking. English Partnerships are keen to supply one and half car parking spaces for a dwelling on average which was the PPG guidance at the time. And we said it wasn't wrong (time 23'50) but probably more car parking were needed. That doesn't work as well. In the evening, people park on the parks and emergency something like that because there isn't enough car parking. I think that's one of the mistakes Upton made. I think in Poundbury there are over-providing car parking spaces which actually I think that's a good thing. There is a big tolerance in there. So car parking isn't a big issue. It's good.

Lei: You mean over-providing car parking in Poundbury? Cameron: Yes. Poundbury probably have too many. I know Poundbury the first phase. We have some good feedback from residents that some of the gardens are small (time 24'30) but they are just reuseable. That feedback drawn from Poundbury went into Upton as well. I think there

are also some detailing in Poundbury that we did allow the service box for electricity and gas metres in front of the dwellings. Upton copied that as well. It was a good thing. That makes streets look as good as possible. It's a good lesson to learn.

Lei: The fourteenth one is 'Have you got any other suggestions to promote local identity by applying design principles of new urbanism in the new development within different cultural background? Cameron: The big thing to me is getting people go out to look at the context. The city in India, we try to make some style of colonial architecture. Let people say what they like or if that is a good work. This is very important to get people to promote local identity and get people to understand what the local context is. Poundbury has over 2,000 visitor a year all over the world. People will see what they can achieve and take away from it. The principles can be applied. That's not copy the vernacular like the architecture, streets but applying the principles. This is actually important.

Lei: For this question of 'Would you mind I ask you 'Have you got any other persons to recommend for me to do more interviews related to my research?' I think you have talked about it. Cameron: Yes. I think 'Simon Conibear, Ben Pentreath, Ian Madgchick' are the persons that I would recommend. They are the best to talk to. Lei: For Ben Bolgar, you'll meet him in Oxford University next week. Cameron: We've got lectures about sustainable urbanism altogether next week. Lei: Please mention that we have met already. Thank you. Cameron: Keep chasing him.

Lei: Yes, I will ring his secretary. I plan to ring every day (Laughing). That's brilliant. Any other comments you want to say? Cameron: I think it's interesting to make a comparison between Poundbury and Upton to analyse the good things, the bad things, both of them. I think they lead other places. That would be interesting if you look at other places as well because they are not perfect with score of 7 (Upton) or 8 (Poundbury) if 0 is terrible and 10 is great. Everywhere else built in this country maybe down from score 7 (See Figure 6). They can learn some lessons. The design of Poundbury and Upton are not perfect but take some lessons improving the further new development. It's a big challenge. Lei: If you make a score for Poundbury and Upton. So you make Poundbury 8 and Upton 7. Cameron: Yeah, I think so. 8 is for Poundbury and 7 is for Upton. They are not perfect and they are not better than what else are getting built. I think all of us work for Poundbury are very critical. We go back and look and think about if something is right or wrong. That's just part of the process. We never accept anything which is not being perfect. Keep making things slightly better. Lei: Hi (To Dr. Yan). I would like to introduce Andrew to Dr. Yan. This is , and this is... They say hello to each other.

Interview with Cornibear S.

Lei: How do you do? Simon. Simon: I'm fine. Thank you. What about you? Lei: Good, thank you. Lei: Have you read through the copy that I sent this morning? Simon: Yes, I have read it. Can I understand your approach? So your study will go back to China? Lei: Yes, afterwards. Based on my PhD, my supervisor just suggests me to put that in the future work. If I put everything in the PhD thesis, it's too big. And I can't finish in three years. So that's why I have to divide them into different parts. The first part is getting experience from here. You know I've got the research motivation from China. Then see how England has done about it. Simon: Yes. Lei: I want to learn some lessons and get some experiences from here. Simon: Yeah. Lei: Maybe I can have some key points or key bullets. Simon: Yeah. Lei: Afterwards, I try to localise to see how China can use that without problems. Simon: I think you are right because we always everybody in the world will take inspiration from others and very importantly, obviously, practical architecture in Europe, even in Greece. So I think it's very important to influence every country in terms of the way that adds its own ingredients. I think that's very important. That was interesting to know. I'm very curious how will influence your Chinese villages. The impression we get from England is that China modernism rules everything. Lei: Yes, you're right. Simon: That anything in old fashion was considered negative. It has destroyed the past. That's all we heard. The element of traditional historicism is very important to us, the architecture here. To me it's very curious to know whether in modern China there is also interest in Chinese historicism. I know there is a bit because friends of auction areas, they sell a lot of Chinese pottery imported from China, 19th century China. Lots of porcelain, lots of people own that in England. Of course, when they go to auction, many Chinese people buy them back. Lei: Yes. Simon: So we understand there is great interest in China in its old cultural ways. I think that was clear also in Olympics. Lei: Oh, yeah. Simon: In Olympics ceremony, there are very much things. There is modern country, and also 2000, 3000 of civilisation. So it's quite interesting for my perspective. Lei: Thank you.

Simon: How it fit back in China. So I'm very curious. And we had several trips from Chinese delegates, two from Shanghai in particular, quite high level. Lei: Are they from government? Simon: One is from government in Shanghai. Another is from business. Lei: Oh, I see. Simon: Two separate groups. Of course, it's curious to know what their interest because it's so difficult, obviously in Shanghai. Shanghai has a centre which is a metropolis, almost like London is a metropolis perhaps because there is out visions in Shanghai because that is 30 or 40 kilometres away which the development needs, identity needs. So for me, it's very interesting to intellectual. Lei: Yeah, it's very important. To be honest, sometimes, I don't like the new developments in Shanghai because they just copy some into new towns here. I think they've got one kind of, just like a little England village. Simon: Oh, yeah, the Thames town. I've heard from people for several times. Lei: Yeah, they just copy that in the new development, you know, in Shanghai. Simon: Yeah, yeah. Lei: directly. So we lose the identity directly, very very straightforward. So that's why I try to see how Poundbury designed. And then we can exemplify something from here. Simon: Yes. I think that's right. I think the system you'll get here rather than the product. Lei: Yeah, that's right. Simon: And you've spoken to the Prince's Foundation which is an important system because they do the public consultation, and they start to go to area to look what we sought. So I expect Poundbury which might be relevant elsewhere. And probably it won't be the architecture. It'll be more like land use, urban planning, streets, urban design, publicability, mixed use, integration of different types houses. Lei: Yes. Simon: Mixed use of different types. That's the idea. Some works, some don't. Lei: I think that's quite closed to my work. That's why I've got different key points. Cornibear: Yeah. Lei: It's very rough design principles. If I learn how the detailed building is designed, things like that, maybe it's not much useful for the China. But if I know the design principles how to guide the development, it will be more useful. So that's what I'm thinking. Cornibear: Yeah. Okay, shall we get through all of your questions? Lei: Yes, please.

Cornibear: What are the design principles applied by the masterplanner, Leon Krier? Well, in multitude, you really need to talk to him. I can't summarise what he likes here. Lei: But you know it's very difficult to get him. That's why I ask you because you've got lots of contacts with him and lots of dialogue with him. Cornibear: Yes. I think he thinks the important thing is that the relationship between buildings, hierarchy, street scale, road scale. There is an earlier sketch... Have you seen his earlier image of Poundbury that he did in 1998? Lei: You mean for the Phase 1? Cornibear: Not the Phase 1. But he did a sketch. Let me have a look. Lei: You mean the watercolour one? Yes, I saw that. I think there is one in the book. Cornibear: Yes. Lei: In Dennis Hardy? Cornibear: This is the one. There's still another one which is perspective. I think that's he tries to achieve is that... I'm sure I saw it somewhere. I'll have a look to other rooms. Lei: Okay, thank you.

Cornibear: I find it. This is where Leon Krier starts to do. He did the sketch. This is very different from the new development that usually did in Britain. Lei: Yes. I think so. It's more Europe, right? Cornibear: Yeah, it's more Italy. I think it's middle age. It's 500 years ago. The thing is we love this. You can see the road... If you choose some of the principles, maybe this is an interesting place. This is completely different with what we've done for the last 500 years. We were building housing states. We divided every land uses for houses, parks, schools, offices. People used the car to get every function and everything is divorced. He thought Medieval towns where people relied on feet to meet their needs. Lei: Yeah. Cornibear: It's an important aspiration for new development because that hierarchy is very important. You need to know where the shops were, like showed in Krier's sketch. The building should be more important and taller. And you have different scale buildings according to the importance in the whole community. So we don't influence on Krier. I think that's something happened in many ways, place making, and I think that's universal principle of new urbanism. It's about making places. It is so much different and obviously so much more interesting to habitation to own the building. It's more urban not suburban which is used to. It's 5,000 people which is Poundbury's planned population. Lei: How many population will whole Poundbury have? Cornibear: 5,000, at the moment it's 2,000. Half way through. So it will be fine. Lei: Not too many, right? Cornibear: Not too many compared with China. Laugh... We're doing in 35 years. How long will China take in building a town? Maybe in a couple of weeks? Laugh... Lei: Yeah, that's Chinese. Cornibear: Probably the bureaucracy, I know about it in China, the bureaucratic is different with we are now. I think they want to do it and then they do it. That probably has advantages and disadvantages. Lei: Yes, sure. Cornibear: We are very slow. We're looking at stage. So we are frustrating. Sometimes we never build on time. But on the other hand, maybe we avoid some mistakes. Lei: Yes, I agree with you. Cornibear: Yeah. It can take more time and more slowly. Lei: It takes time but the buildings have a

very very high quality. Cornibear: Yes. We think we are building for ever. The building can be there for over 200 years. They should be. That's sustainable. It's really not sustainable to knock the buildings down only in 30 years. So it should build things that will last. We believe the things have to last that should be beautiful and pleasant. That is why our historic town is survived. Sometimes it's difficult for living but they're beautiful. People want to preserve that beauty and keep for the future generations. That's something very fundamental criteria as well. You build it for long time and they are sustainable and beautiful. So that's what I think. The design principles, otherwise there is a book written by Krier. You may read them. Lei: Well, I just get one book with several design principles from Krier. But for others, I just think maybe... He is the key people for new urbanism because he does influence very much on the development of new urbanism. Cornibear: Yes. He does because he is very good at the architecture, masterplanner and the designer. Here we take his masterplanning scales. We rarely use his architecture scales because we think they are not like for Dorchester. They're probably better in the hot climate. And he designed Seaside in Florida and Celebration. The architecture scale is more proper for Florida than for Dorchester. So we can understand his principles about size, hierarchy, different grade to build lots of importance, and streets showed on the image drawn by Krier. Lei: Yes, I think the image likes Poundbury. The circled building stands at the gate of Poundbury and then Brownsword Hall. Look that is bakery building, right? Cornibear: Which one? Lei: (Using fingers to point) That one. Cornibear: Oh, yes, yes. It is. It calls Butter House. That street there is functional. We've got different design at the beginning. I think it's more Chinese, the cake roof. Laugh... I'm sure the creative design should be very interesting in China. So the design principles of Krier are very complex. Have you walked around Poundbury? What we think one of the important things is that you never have one thing which is too regular. You need to have a break thing. One of things that he never does is having the street line. You can see the street there. It's always that you come to the corner and then find something indeed. It's not like some renaissance in Italy. For example in Roma or Florence, they've got grand squares. That serves as formal. Actually we have that kind of irregularity nothing is quite straight. That's not the things quite new. I think that's important actually. If you go to London and look at the whole city of London, you'll find they're similar. Medieval city pattern we use, you'll find that's very contoured (time 18'20) and twisted. That's really called a place, a funny sort of way.

Cornibear: To what extent it is influenced by 'A vision of Britain'? Cornibear: A lot, a great deal. There are 10 principles in 'A vision of Britain'. I think they're excited here. A vision of Britain was written in 1989. Exactly the same time of this land was elicited (time 18'53) as a development by the government. We have to put our many ways into the map with the inspirations. We have to reflect what he was saying. Here I think the point of Leon Krier with his own perception but analyse. So Krier and Prince, both are fundamentally very important. Prince was very well advised. He doesn't rely on Italy what he thinks himself. He is very well advised. He has access to people who are the best thinkers at the time on certain subject. He can ask for dinner and he can arrange conferences. So the books like 'A vision of Britain' are written with advise for the principles and people involved. You know this is the one time. So 'A vision of Britain' was written by an architect according to the memory. And also Alan Baxter, the Highway engineering is very important in roads design. He made the roads subsidiary to the buildings. The roads are public space. Then they set up the buildings and allow cars to cross. But you do not stop the roads and try to get houses on. That was the 20th century. It's the human account not the cars. So you can made difficulty for cars to make them slowly. Lei: Yeah. Cornibear: That is a very important principle. In the 'A vision of Britain' principles, the first one is that any new development has a sense of place. So I think when you walk around Poundbury, you feel this is a place. Lei: Yeah.

Cornibear: Not a housing estate. It's not half built yet, it is felt like a place. The second one is any new development should respect the locality. So these are two universal principles. Anybody would apply that very well. So you should respect the traditions in your area when you build it. You should look at the materials, uses, indicated by economy. You should see what will be available locally and easily. The styles can reflect the perceptions of styles that people have in the area. That gives you a feeling of the architecture in that area. If you look at the buildings in Dorchester, County of Dorset, the bricks in Dorchester used for hundreds of years. You look at the materials and the styles. We use those as ingredients like making a new pudding. (Here it's quite like what Ben Bolgar said.) Lei: Yes, sure. Cornibear: You don't make a same pudding but you use the ingredients to make a new pudding with them. Lei: Yeah, I know what you mean. Cornibear: They inform the developments. I guess if you'll be look at

transferring them into China, for example, in Shanghai. You'll be looking at the traditions, the very important traditions that you have in China. The other ten 'A vision of Britain' principles, I think signage, sense of enclosure, Lei: hierarchy, arts, decoration, community, etc. Cornibear: You know them. That's great. Yes, they all have their place. We think they are universal principles even you build modernist models. You might have a bit of difficulty with local identity if you still use concrete, glasses. They are international materials which have no roles to take local identity. Most of ten 'A vision of Britain' principles are transportable.

Cornibear: Then we move on to the third one? Lei: Yeah. This is what I try to summarise from all the principles that I've got. I've got 14 key points. So just try to get some comments from you. Cornibear: Okay. The first: identifiable with a clear built up area edge. That's a hard urban edge. Have you walked on Phase 1? Lei: Yes. Cornibear: You saw the hard urban edge? Lei: Yes, very clear. Cornibear: very clear? Like a city wall. Lei: Yeah. Cornibear: And that's important. You've seen that has been demonstrated there. Compact is high density. We think density is good. All the nice places would have high density. Lei: Yes, I think so. Cornibear: from Florence, Roma, Kedington in Chelsea London, French fishing villages, they're all more interested in high density. The worst place in the world has a low density. Density is a good thing but traditionally in England we fear it. We thought it many times, you know, like no fresh air. So you need to get the right density in the area. Lei: Do you think how it important to promote local identity in Poundbury? Cornibear: No, is it important we should promote local identity in Poundbury. Probably it's not in many ways because we are part of Dorchester, addition to town, an urban extension. We develop it to be a place that people like it. It has relevance with self-sufficiency most of which is about daily needs when you live here. But it also segregates people from old Dorchester. It comes a little bit a problem psychologically. People said I live in Poundbury. Some people will ask why you said you live in Poundbury. You live in Dorchester. You know, do you think you're smart like that because you live in Poundbury. It's not island. So I don't think we should define ourselves. Lei: No. Cornibear: I think we should avoid that. Lei: Yeah. I try to find the local identity in Poundbury. At that side, when people first come over to visit, it is very impressive this is Poundbury. This is the only place called Poundbury like that. Cornibear: Yeah. Lei: On that side, you can lots of harmony things between Poundbury and Dorchester. It is an urban extension of Dorchester. So I define local identity like that. Does it make sense? Cornibear: Yeah. Lei: This is why I just list these design principles to promote local identity, not only for Poundbury' own identity, just putting Dorchester and Poundbury altogether. Cornibear: Yeah. I think the things about community, a sense of community. There is a strong sense of community. Lei: Yes. Cornibear: Community is good because people support each other. But it can't become important as we know. I've got a news what's happening in Burma with muslims. They start to kill muslims because they form the community. The community is nothing like that which is fine. I think we should be careful about community because it should be broad not too exclusive. Lei: I think that's a good idea. Cornibear: Yeah.

Lei: Connective street pattern? Cornibear: Yes. Are you familiar with the special rack round in England? It's basically going to straight. Lei: You mean the linear? Cornibear: Yes, they are linear. If you'll go from here to there, you don't need go like zigzag. You just go like directly. That's a good thing. If you can go there like that rather than you have to get cars to go there, people can be divorced from using the cars closely. Homebilty, walkability, connectivity is very important. The real courtyard is a part of the walking. The connectivity is very important in the future. Cornibear: In harmony with surroundings. Yes, it comes vernacular landscape of the built environment in Dorchester. So we try our best to do like that. Sometimes it's difficult because the surroundings are not always good. Some of them are neighbourhood post war's worst. It was built quickly and unthinkably. It's very unattractively. So we don't build in harmony with that particularly. We want to set up new stand. Yes, we do want harmony with surroundings intensive what's your surrounds. How is the surroundings obviously? Sometimes the surrounding is ugly. You don't want to twist your face. You don't want your grand architecture next to humble. It's quite difficult and sensitive working on that. Maybe that's why we must ground this and dilute it to Dorchester. Phase 1 is in harmony with existing community Lei: Yeah. When I walk in Phase 1, I think there's a very good harmony with pre-existing community. Cornibear: Yeah, yeah. Lei: I can not feel any separation and isolation from the existing community. Cornibear: No. We do have links. Lei: Yes, it's doing very well. Cornibear: Yeah, I think it does. Lei: But for Phase 1 and Phase 2, there's a very physical road in between. I feel there's a little gap between two phases. Cornibear: Yes. Phase 1 is smaller, like a village. Phase 2 is more like a town. The storey of Phase 1 is two storey or two and

half storey. Phase 2 is 3, 4 or 5 storeys. It's different scales between two phases. Lei: Oh, I see. But why you've got different scales like that. Cornibear: Because of the prototype. Phase 1 is smaller, 250 dwellings with a little market centre. In Phase 2 it's much bigger. Yes, it's 2,000 dwellings. So it's nine times larger. This is factories. No factory in Phase 1. They have different scale. Lei: Would you mind I ask maybe between Phase 1 and Phase 2, the road can be narrower? Then it's a bit better. Cornibear: Maybe it should be. Equally, the road is much narrow here, interestingly. But the decision was taken because we have to keep this road. I think Krier made another road as the main road, showed in the image. On the image, the road between Phase 1 and Phase 2 is quite small, isn't it? It's a leisure road. But as it happens with the highway engineers, the discussions made a decision the road between Phase 1 and Phase 2 as the major distributor road. In the discussions it is more important. So we set it back, which is different with Krier's idea. Lei: Yeah.

Cornibear: Legibility? Hierarchy leads to the tallest building. You can see the King's White House on the Queen Mother Square. I think around that area the building is very large. We'll be making the planning application for the other buildings in the next two weeks. Lei: Oh. That's great. Cornibear: So if you go to dorsetforyou website in next two weeks, you'll see images about the new buildings. Lei: The new buildings on Queen Mother Square. Cornibear: Yes, the new buildings of urban design. They're very specific particular. They're designed by Quinlan Terry, very traditional architect. It's quite imposing. It might be international media attention. Cornibear: Coherence within its own and with the existing vernacular urban pattern. It's a very complicated question. Lei: Just like what I said just now, within Poundbury, like Phase 1 and Phase 2, they try to cohere with each other very well. Cornibear: Yes. Lei: And Phase 1, it is coherent with the existing community very well. Cornibear: I think they do. But 10 years ago, people did think they didn't. 10 years ago, people living in the existing community, they feel the architecture is a bit smart in Phase 1. It's gone now. I think their business help the community is working. They use the shop, the other facilities. And their children play here and they work here. And also you know the time. 20 years past, the buildings are there. And people get used to them. People are no longer unfamiliar with that. I think people, you now see, have a good integration. In 2000, there was a very bad integration. When the new stuff comes, people need time to get used to it. I think you're right. Now it's matured. Lei: Yeah. Cornibear: It's mellowed if you like. It's calm down. I think it makes now much better. But you know it's very different from the joining development of historic road. The disability of design they thought makes road very straight and clear. I think that's the accident. It's not safe for children. So that was a bad design. There is no disability, so the cars go very slowly. We have no accident. It hasn't been accident. Lei: It's important. Cornibear: Yes, it's very important. It was challenged compared with the more standard system at the beginning, no signage, no disability, very squeezed. maybe 7 meters goes down to 4 meters. Trees, lots of cars parking on the slot. All those things make cars go very slowly. That means children can play on the street very safely. Lei: Yes, I think so. Cornibear: So that's quite important.

Cornibear: Going back to mixed uses. You can see little shops, factories, local businesses. It's very important. 1,600 people are working in Poundbury, and 2,000 people live here. So it's very working and living. There are a lot of those. They're working in workshops that are kind of medieval sense shops. Lei: Yeah. Cornibear: You're working in it. And you have a window to have a fun to show what you do. Lei: Yes, sure. Cornibear: You might be making wedding cakes. You have a window to display. Maybe you're making curves, loosing covers. That's how medieval towns work. So we don't have industry instead. We make retails. People can find functions in one of these. They're quite cheap space. They're quite small. It's a good creative. So that's one of the important things of mixed use. It's creating a little shop in medieval centre. Cornibear: Walkability comes out under the rules of designing permeability. You get somewhere to go quickly by easy streets through court yard, you can get there quickly like that. You use your feet rather than use your car. That's quicker. So that's very important. I think you need attract the environment walk through, the safe environment walk through. Cornibear: Pedestrian friendly comes to same category. Lei: Yeah. Cornibear: Diversity of architecture is certainly true. It's traditional to use traditional materials, no modernism here. But that's not saying we couldn't take few modern structures, maybe one day. I doubt that Prince wants it. Lei: He doesn't like modernism, right? Cornibear: He is not keen to modern architecture. But the place is there. You would not want the city, like London or central Shanghai or the Italy tradition. You need it to be functional, dynamic fast, and efficient. So that's the functional place. This is rural habitation, you've got to be attractive, quiet and pretty. Lei: Yes, sure. Cornibear: Just to be pretty and attractive. Lei: Here is like a rural

community, right? Cornibear: Yes, it's more rural. It's much different from urban. Cornibear: Symbolic architecture and attractions, yes, I suppose symbolic architecture are large buildings designed by Quinlan Terry. They're very classical. Some of these is the Butter Cross Building which performs function. The bottom area is very interesting. It's my favourite actually, a bit like Newlyn. You know an active square and balconies overlooking at that square. Lei: Yes, there are lots of buildings like that around Butter Cross Square. Cornibear: Yes, people inside living and outside living not outside living. You can look at the square by balconies. And it's lovely. Maybe it's a bit cold in winter as you see. Newlyn is famous because its outside living. But that is a pretty good area with back gardens. People can dine outside in a summer. It's very nice. Lei: Yeah, sure.

Cornibear: Sustainability, you probably have known the bio-digester operating on the waste product for manure machine about a kilometre to the west Poundbury in the countryside. So it's through food waste and just collect it through the chocolate factory, cereal factory and other factory from Weymouth, like chicken market. All the stuff in the ingredients is the half of it. The other half has to be high energy crops which are usually remains. You put the remains and then produce everything. So we can produce gas locally. Lei: Oh, really? That's brilliant. Cornibear: Yes, that's enough for the most of Dorchester, gas in the winter. So it's a locally resource energy. It's a medium scale facility. It's not domestic scale. It's a quite large scale. It probably occupies about 3 or 4 hectares of land. That's quite big and a part of farm. So that's sustainability, source of gas, creating gas locally. Other things like photovoltaic, solar heating. We can have it, but we think it's not efficient. We don't the technology is quite developed yet. It's like mobile phones 40 years ago. It's huge. You remember, it's a big brick. Lei: Yeah, I can imagine. Cornibear: But now it's a very tiny thing. So we think that way. They are ugly. So we're not keen to have them. You'll see them some around but we make them on the back side rather than on the front side. We are not convinced. Insulation is good, walkability is good, and using the car less is good. There are low tech solutions lifestyles. They're permanently good. So I'll take sustainability slightly different. It's low tech apart from Dorchester. Lei: Yeah, I see. Cornibear: We come on to the community involvement and resident management. We have to admit this is, as a development, an inspiration from the top not the bottom, grass field development. Interestingly when Prince went to India a few years ago, he was quite interested in the slums development, slums character because people of grass field development have to create their own communities from very rough materials that we wouldn't want to live in there. But they create their own hierarchy, their own systems. He thought that was very interesting. To be honest, this is top down. We did consultation when we started it. We had 5 years consultation with local community putting ideas on the wall. We think we need leadership, vision, inspiration and coherence which you won't get from the grass field development. This development wouldn't suit for everybody but this is one form of development and one form of inspiration. This suits for part of people living in Dorchester not all of them. Lei: Yes, I see. Cornibear: You can't pick all the people all the time. Lei: No, you can't. Cornibear: But you can pick quite lots of people living here and give them what they want. Community involvement is quite strong. People do buy it from the development. They sign the cabinet so they move here. So they won't alter the building without our consent because that alteration will ruin the individuality. Then they are becoming involved in the management company. Everybody living in Poundbury is a shareholder. Lei: Oh, everybody? Cornibear: Yes. They have a voting share based on the company law rather than property office. So everybody is a shareholder. So they can decide on the part of the development they own and govern. Lei: Yeah, sure. Cornibear: There are many television system and real court yards. They belong to them. Lei: Oh, I see.

Cornibear: We do consult with the local community but the inspiration in the way we course was more. We wouldn't change the course now. People said what we really need is bungalows. I'm afraid we are not going. Lei: No. Cornibear: Because we've got the design characters what we have done in Poundbury with lots of land. You can build bungalows in somewhere else. This is not going to be bungalows. Lei: No, no. Cornibear: Some people don't like new urbanism. They don't want new urbanism. The community with their engagement won't be related to the new urbanism. Lei: Yes, sure. Cornibear: Now return visit after built up, made by the designers. Lei: I mean Leon Krier comes back to have a look at Poundbury to see how it is. Cornibear: Yes, yes, I see. Cornibear: He is still involved with the masterplan. He comes here two or three times a year with Prince. He is still in a very big masterplan project. Yes, we do. He came in 1989. And now he is still involved. Lei: At the beginning, for example, he designed the first phase. After built up, when he's back, he'll go there to have a look. Maybe somewhere needs

to be improved. Then he'll improve himself in the further phases. Cornibear: Laugh... That's a two way process. He's often disappointed with some things because he likes different. For example, this road (Longmoor Street) goes through to center. But we change it to the Middle Farm Way. Lei: Really? Cornibear: He wants all the traffic through including lorries. But we don't want the lorries to go through. Lei: Yeah, I see. Cornibear: We think small cars serving people living here can go there and protect the community from heavy traffic. Lei: Oh, I see. Cornibear: But he said no. Everybody should go down Longmoor Street and keep it busy, you know. We took the different decision and the County Council, the highway engineers. The engineers take over the road. They said there is no standard, no criteria. We are not going to do that. So he gets this disappointment. That painting was painted before everything was built (There's a 3D colourful painting on the wall in the room where we had interview). Lei: Oh, that's brilliant. Cornibear: You can see that in Phase 1, there are lots of almost like that. Lei: Yes, definitely. Cornibear: It's a bit of character job you know. It reflects almost exactly with a character what he wanted. So the whole satisfied percentage for him would probably be 80% happy. Lei: That product is also from Leon Krier (The painting on the wall)? Cornibear: No, he didn't paint it. It was painted by somebody else and was painted before everything was built. People could see what we had. Lei: Yes, it looks very real. Cornibear: Yeah. Now of course, we do CGI. You know about CGI? Lei: CGI? Cornibear: Yeah, Computer Graphic Image. Lei: Oh, I guess like that. Yeah, I know that. Cornibear: I might have some in the computer. I can show you. Lei: Oh, please, that's brilliant. You use 3D, right? Cornibear: Yeah.

We're waiting for switching on the laptop to show the Butter Cross Square, made by Morrish Builders. Lei: This morning (during waiting, Lei mentioned Ian), when I was walking on the Peverell Avenue East, I met Ian Madgwick. He was checking the vehicles' speed. Cornibear: Oh, is it? Lei: Yes. It is very occasionally. I just asked him 'Do you live in Poundbury?' He said no. I'm a traffic engineer. I asked him 'Where are you from?' He said 'I'm from County Council'. So I asked 'Do you know Ian Madgwick?' He said 'That's me'. We laugh... Cornibear: Oh, that's so funny, so funny. Lei: Yes, very funny. Still waiting... Lei: Where about do you live? Cornibear: I live 5 miles away. Lei: It's very close. Cornibear: Yeah. Lei: Is that same with that of Sale Centre of Morrish Builders. Cornibear: Yeah, have you seen it? Lei: No, I haven't seen that. But I've got the electronic file from there because Fran showed me around this morning. We went to the Sale Center this morning and had the memory stick with the file. Cornibear: Oh, that's great. Lei: The square is amazing. Cornibear: I think that's probably Chinese technology. Lei: Possibly. It's necessary to have this to show to the developers or other people. Cornibear: Yes. It can meet the commercial needs. I hope this can be a good market as well in the future. The buildings are not render like in the film. They should be brick. Lei: Okay, I see. Lei: It's fantastic. Thank you very much for showing me that.

How much degree has Poundbury achieved the applied design principles in the implementation according to your perspective? What kind of factors can influence its implementation? Cornibear: I try to say Poundbury applied design principles. But quite important Leon Krier said: He had 80% on it and 20% discord. It's a quite interesting idea. Lei: Why? Cornibear: Because you can have uniformity that comes of land. You can surprise yourself occasionally by changing. You can only do within inspiring the masterplan. You can know what changes a thing and surprise without demotion a character of that area. It's quite human perspective. But it's a product of 'A vision of Britain' because here is a place. The buildings do reflect the materials and signs of that area. We do a case introducing the building differently because it should have variety because people think no one can break up. That's a bit interesting.

How Poundbury draws inspiration from Dorset vernacular being a part of 'Dorchester'? Cornibear: Yes, it draws lots of inspiration from not only Dorchester but surrounding villages of Dorset.

The master plan of Poundbury was established by Leon Krier, some master plans of other new development were established after the Enquiry by Design, like Upton. What kind of advantages and disadvantages of the two types between a genius and Enquiry by Design according to your opinion? Does that mean it is lack of public participation during the development of Poundbury? Cornibear: About 'Is it lack of public participation during the development of Poundbury?', I think we have discussed that. It's top down. Lei: Yes, it is. Cornibear: The masterplanner has been appointed, we had a vision with new urbanist. So you can't have bungalows. Lei: No. Cornibear: So this is a project for Dorchester, it does not indicate everybody to like it. Once you establish the principles, then you allow people slightly to take participate that within the community. In terms of Enquiry by Design and Krier, they're different

approaches. The best thing is to have public participation, but it must be led. Lei: Oh, yeah, I see. Cornibear: You must have a leadership in terms of ideas. Newquay has a similar kind of development with strong more public participation in earlier stage. Unfortunately lots of principles we spouse to are not always scratched by all the people, all the buildings form. They very often want beautiful environmental bungalows. I can't have bungalows. You have to indicate the relevance about the ideas. Lei: Yes, I see. Cornibear: About Enquiry by Design, I think you can establish who you are your masterplanner. This is floated in regional consultation of Poundbury represented by people of Dorchester. We ask 'Do you think it is a good approach?'. They said 'Yes, we think it's better than what we've done before.' We haven't got that in Dorset. From the very beginning, we asked people. People straight show they're far more interested in that. Lei: Oh, that's brilliant.

Duchy of Cornwall is doing some surveys. Is it possible for me to access the data result? Cornibear: There is a Brooks Survey in 2003. Lei: Oxford Brooks? Cornibear: Yes, from Oxford Brooks University. I've got the documents from Naomi already. We have another one this year. Do you want that? Lei: Yes, please. Cornibear: It will probably be done in this summer. But it won't be later than the end of the summer. Lei: Oh, that's great. I can wait for that. Cornibear: Yes, you have to wait for that. Lei: Then I will contact to Naomi with that. Naomi is very nice. Please say 'Thank you' to her for me. Cornibear: Laugh... Yes, okay.

Leon Krier sees the plan as a 60 per cent success when the theory of Poundbury has to be measured against reality. What kind of reasons let down the plan according to your understanding? Cornibear: This is interesting. I think it's probably 80 per cent but it's 60 per cent. Lei: I've got it from one published paper to show the interview with Leon Krier. Krier said I give 60 per cent success for Poundbury. Cornibear: Big laugh... Lei: You know I can't contact to him. I just know it from the documents. Cornibear: Yes. That is interesting to say 60 per cent. But he said you'll never got more 80 per cent than what you want. 60 per cent maybe he lost a few arguments. He want it a big damp out of here. It's just too much for people here. They don't want it. You know as a landscape. Yes, he gets some disappointments. I don't think the plan let him down. I think it's just adapted to the local conditions. As a masterplanner, he has to accept that people living here don't want everything he does. It does dilute. We get things he doesn't presume as well. For example, electric bus running, he is not really interested in the electric bus services. Lei: Why? Cornibear: He thinks Poundbury is environmental and walkable. He doesn't think the electric buses are needed. Lei: He wants to let people walk rather than use bus services. Cornibear: Yes, he is not interested in that. We do things we think good. But for him, he is not interested in it. We think that's great. We make achievements that he doesn't really believe. We do social housing for example. The social housing are integrated with the private housing.

How do you evaluate Poundbury in terms of the perspective of respecting local identity? What kind of lessons can be learnt by the future urban extensions? Cornibear: I think it does respect local identity, the styles due to reflect the west country, villages, towns of Dorset, the styles of buildings around this area. It is very familiar with the big board of Dorchester. Not always, not applied for the applications. I think it does respect it. The point is that we respect it without following it. I don't think we have particularly changed the stuff.

If you are familiar with Upton, could you please give me some ideas about comparison between Poundbury and Upton? Which one is better to respect local identity by applying design principles of new urbanism in light of your point view? What kind of aspects are better? Cornibear: I think Upton is a bit more urban than Poundbury, slightly. The density is quite big. It's quite tall buildings as you see. More like a small city or a small market town. I like the earlier phases of Upton which is very good. They are different. I like the way they treat water. Have you seen the Swales? Lei: Yeah, I have seen that. Cornibear: I think that's inspired. It's wonderful. I think they've got a very good part. Have you seen the school there? I think that's awful. Laugh... I think that's a terrible building. I think that's very uninspired and very blind. I think all our architecture agenda is harder, harsher and more strict, with architecture here. I think Upton starts with a very good design. When the economy got very difficult, they just got a quick and easy. And they can't afford that any more. I think they've lost some quality in the last 10 years. The first 10 years is very good. The next 10 years is not. That's my opinion. So I think they're slightly banning in some of their design. Too strong influence by the developers, the houses were built by themselves always going with a quick fix, a quick insulation. They all sometimes lose fine projects, fine details, quick answers and quick problems. I think in the economic difficult time, they were too easy to let go the principles. It's my own view. I think we're more careful here.

Have you got any other suggestions to promote local identity by applying design principles of new urbanism in the new development within different cultural background?

Cornibear: I think for the principles, it's transferable. Permeability, walkability, hierarchy, street scale, street rather than roads, active streets (You have the front doors, opposite front doors, not suburban front doors. So people will engage. They park their cars around their back yards, so they engage their parking cars). I think these principles are transferable. I'll be very interested to see. I think it would be much better than Thames Town which just took the architecture, do look like Marlow Bridge. You know Marlow Bridge? It is a beautiful bridge. But I don't think it makes sense in a way. I think it would be much better to take the demo principles. Lei: Yes, sure. Cornibear: And take Chinese built. There's a traditional Chinese settlement, they call it Hong Town. Lei: We've got lots of traditional settlements. They are beautiful. Cornibear: And they are survived? Lei: Yes, they're survived. But currently when the developers try to do the new developments, even in the villages, I think most of them just ignore the traditional patterns and traditional characters in traditional villages because they just achieve quick built and quick sale to people. Cornibear: Yeah, is that do you think in the introduction of capitalism agenda in China? Maybe the capitalism will get the quick and better result. Lei: Yes, it's too quick. Cornibear: Yes. Therefore we have capitalism in west which is very well controlled by the government and the public fields, taxation, something like that. Do you think maybe there is not enough constraints yet in China on capitalism which is too quick, too loose and too free (time: 1'05'29)? What do you think? Lei: Hesitating... Cornibear: Or the community is not powerful enough to stop it? Lei: I think sometimes the community is not involved in very much especially during the process of design. For example, like the head of community, they said 'Okay, I want this kind of things'. Then the designers said 'Yes, I'll do that for you, rather than for all the residents'. But for the head of the community, sometimes they just try to achieve the market value rather the needs from the local residents. So that's why there's a quite big gap in between. Another side, it's too quick to build, they have no time to inspire what kind of local attractions from the traditional village. So they just maybe learn something from the urban area community. Okay, they can be built here. Cornibear: Yes, okay, I can understand that completely. Is that because of local government in the community? They are strong enough or not strong? Lei: Uh... I think they can stop that. Based on the background of China, some people maybe just try to live in a modern community rather than I hope this kind of community can be built with the local identity with the existing community. Some people don't care about it. They just feel 'Okay, I want to live in a urban area. I want to build the urban area even in the villages. Cornibear: So there will be public rash. Hopefully people can control that in the future. Lei: Yeah, hopefully. Cornibear: And presumably good development and good example as well. Shanghai is impressive, metropolis, very impressive. Lei: You mean capitalism, how do you use capitalism here? Cornibear: Yes. It is constrained capitalism by government here. Only government can constrain that. I think China is on a growth agenda. So it gives capitalism more freedom. The growth would be quicker. You pare the price in terms of the growth. It's too quick and losing some environmental characters or public good by sacrificing specifically private good. I'm interested in our banks with the constraints we have. It's probably because the capitalism comes too quick and certainly rushes on that. We've got lots of Russianism. Millionaire capitalism move out of Russia and living in Europe which is terrible. I think people try to stay within in China. I think it must be very interesting that the evolution is great to have good examples. That could be publicly preparation where it's done very well. This can influence government to control the developers. I think the best thing could do is forming the rules inspired by laws for everything governing and everybody does have other influences. I suppose we have been living with capitalism for a lot of longer. We're tender to some extent. The course was terrible. We can control and drag it. Lei: Yes, sure. For your process, like Poundbury Office, you will do the planning application for different phases. After you've got the planning permission, then you will parcel that to the different developers. Cornibear: Yes. Lei: Oh, I see. Cornibear: We were to do the design here and keep the design. We don't sell the land to developers first of all. You see the license will come on to that to build based on the plan. If they can build it nicely we want it, then we can sell. So this is control. If they don't build nicely, we don't sell the land to them. So there's agree risk when they're coming. We have contract between us provided in the plans to show, then we'll sell them the land. We don't get the money until they sell. It's a two way process. We both have to play with each other but it's a way of preventing. Built with the plan and nicely, then they can own the land, and they can do what they like. There's a contract in between us. We've done it. How much do you own it? You haven't lost your money. You

don't get your money. That's not a remedy. So that's not good enough to control. The only control is letting them on our land. We call it building agreement. Lei: You've just got the outline planning application, right? Cornibear: No, we get it for details. Lei: Oh, really? Cornibear: Yes, every detail for buildings. Lei: Oh, I see. That's brilliant. Cornibear: It's very important because we're doing something looks great on the land for the investors and developers. Lei: For the capitalism, one part is from Poundbury Office, another part is from developers, isn't it? Or all the money comes from Poundbury Office? Cornibear: We sell the land. The money will come to us. The developers will sell the houses. We might sell the land for 30,000 to 50,000 per plot (不知是否准确), but they sell the house 300,000 or 400,000. You'll need good working relations with your developers as personal relationship. We meet monthly. We have to understand each other. It's sympathy with each other which we are. There are some developers we wouldn't work with because we know they just build quickly and lose some quality. Lei: Do you enjoy that? Cornibear: Yes. It's a good relation. We know them very well. Lei: How often does Prince will come over to visit? Cornibear: It's twice a year. Lei: Arh, he does like here, right? Cornibear: Yes, he does. Lei: I think so. Cornibear: It's a very important part with legacy. It's probably very difficult for being Prince of Wales. It's not throne. The Queen has very few opinions or no one knows because she's got represent the whole people if you like. So she can't side any. And Prince has his opinions. Maybe it's very difficult to him. But when he becomes a king, then he is not allowed to have opinions. Lei: Oh, really? Oh my god. Cornibear: So it's quite complicated because expectation, the political opinions, he's got represent. It's very difficult period so but he did want the legacy. Certain thing is that he believes and wants environmentalism and he believes people are coming that way and following you. He needs some advises sometimes in some ways. He believes in quality environmentally, spiritually. Environment is very important, a nice environment, a pretty environment. He believes in other things, like holistic medicine, organic production, all those things. Lei: Yes, sure. Cornibear: So he wants to live here, in Poundbury. He wants a small legacy being a point of reference to the future for the rest of Britain. So you can build better. You can build lots of better than some years ago. So that's here really. Lei: Maybe after Prince of Wales is a king, he might let Prince Williams deliver his opinions. Cornibear: Laugh... well, Prince Williams, at the moment, doesn't have a very strong view of architecture. Lei: Oh, I see. Cornibear: He's obviously had a military career. Lei: Yes, sure. Cornibear: Maybe he just wants to be quiet. Lei: Laugh...Cornibear: Let's what happens when Prince becomes a king. Lei: Yeah. Cornibear: I don't know maybe he's just kept quiet. Lei: Anyway, when prince is the king, he needs some people to represent him to say 'Okay, I want this, I want that.' Cornibear: Oh, he can't because obviously the democracy. His opinion has to be respected. He has to have a prime minister once the people has been chosen. Lei: I see. Cornibear: It's a very interesting constituency. It shouldn't do but it does work. It all depends on the personality. Luckily we have a very good throne. He applicated in 1996. Lei: Are you local MP? Cornibear: Am I? Lei: Yes. Cornibear: No, no. I'm not in politics. Lei: You are not involved in any party? Cornibear: No, I'm not involved in. Lei: Neutral? Cornibear: Yeah, neutral. You know as Prince, when he brings people in the work, it should be careful about that. Lei: Yes, sure.

Lei: That's great. I just feel very very lucky to have you to talk. I think I've got lots and lots of useful information. Cornibear: Good, good. Lei: I really appreciate your kindness and help. Cornibear: It's quite interesting to talk to you. Lei: Thank you very much. Cornibear: You take on Poundbury, then further relevance to China. I find it's very interesting. Lei: Thank you very much for your encouragement. Cornibear: Well done, enjoy your research. Lei: Thank you. I feel more positive. Cornibear: Good, good. Lei: I know you're quite busy. Thank you very much for taking you so long time. Cornibear: Not at all. Lei: Thank you very much for your time. Cornibear: Thank you for your coming.

Interview with Law R.

Has Upton learned something from Poundbury since Prince's Foundation involved? What are the lessons if so? Law: The Prince's Foundation was heavily involved from Enquiry By Design through to implementation of site B in Upton. The intention was not to replicate Poundbury but to create a new urban extension that is 'of Northamptonshire'. There was also a consensus that Poundbury was not designed with volume house-builders in mind and therefore Upton needs to be more 'market-oriented' in terms of its architectural requirements in the design codes. The principle of transect, from urban edge to core, and the idea of having a main street/high street as a

central spine with mixed use along Weedon Road was agreed amongst key stakeholders (English Partnerships, Northampton Borough Council and the Prince's Foundation).

To some extent, Upton can be considered as a new urbanist project. During the design process of masterplan, what kind of design principles of new urbanism has been used? Law: a) The concept of transect (urban hierarchy); b) The use of design codes; c) Walkable neighbourhoods; d) Public transport and relationship with urban densities; e) Mixed use neighbourhood; f) In addition, Upton is aiming at a sustainable neighbourhood. Based on that, what kind of extra design principles have been used? a) All buildings achieve Breeam Excellent Rating; b) Development briefs requirement of demonstration sustainable technologies for each phase; c) Integration of sustainable urban drainage (SUDS) as part of street design; River Nene, south of Upton, is a substantial flood risk; d) Locally sourced materials for public realm infrastructure work as well as for buildings.

Upton is the urban extension of Northampton. Then it should have a close relation with local context. What kind of aspects can reflect the local context? Law: a) Good pedestrian, vehicular and public transport connections to surrounding context; b) Urban design response to its urban/rural edges; c) Architectural references to local vernacular architecture in terms of form and materials, notably shoe factories within Northamptonshire, use of Iron Stone and colours; d) Use and enhancement of existing woodland and landscape features to create a strong sense of place; e) Appropriate residential densities and typologies that work with local context; f) Using Weedon Road mixed use frontage as a 'local centre' for the whole of south west district of Northampton. It is designed to serve Upton as well as Princes Marina Hospital site north of Weedon Road and other pending residential developments further west.

What's the estimated population in Upton? Law: About 3,500 – 4,000.

According to the research focal point – 'Can the design principles of new urbanism promote local identification in the new development within different cultural background? How do you think it? Please give your comments. Law: A development with a strong sense of place (in the public realm) will help bring local communities together. For example, well-designed squares and parkland in Upton do become social focus for local residents because they are comfortable, beautiful and safe places to use. If the places are well-designed, they can become a magnet for people regardless of their cultural or social background. The question is whether the new urbanism principles on their own are conducive in creating urban environment with a strong sense of place. Urban hierarchy, good interface design between private and public domains, higher density at public transport hub are all good design ingredients. But sense of place ultimately requires good design in architecture (with a small 'a') and landscape design. If these are designed specific-enough for the locally and are built into the design codes then there is a greater chance of success. Otherwise new urbanism principles applied with 'generic hands' will not deliver a strong sense of place and promote the necessary sense of ownership. One cannot achieve good design without good designers.

Interview with Madgwick I.

Lei: Hello, is Madgwick speaking. Madgwick: Yeah. Hello. Lei: I'm Lei. Madgwick: Sorry. Can I phone you back? Lei: But for this room, I don't know the telephone number. I can give you a call again. Madgwick: Yes, give me 10 minutes. Lei: Yeah, okay. Madgwick: Then I'll be with you, Lei. Lei: Okay, no problem. Madgwick: Thanks a lot. Lei: Thank you. Bye bye. Madgwick: Hi, hello. Lei: Hi. Are you ready to talk? Madgwick: Yes, I am. Sorry about that. There are a couple of things that I have to get off my desk. Lei: Okay. Madgwick: I've picked up your email. So that's fine. I put the answers on the aisle. Lei: Yeah. Have you looked through the question list? Madgwick: Yes, I have really. We start to talk number 1. Lei: Yes, please.

What kind of aspects do you think are the biggest successes during the development of Poundbury for promoting local identity? What kind of aspects need to be improved in the future? Madgwick: I think the biggest success is not over engineer anything. Lei: Yes. Madgwick: It's really not emphasizing or over emphasizing the needs of motor transport. The design in traffic was for design. What we do in lots of time was we've got the architects free with their designing emphasis on the building blocks where you want major buildings and so on. When you check the highways structure, the roads or footways, you'll see the function of those buildings. There were things we can do. For example, if we've got the mixed use area which is going to have heavy good vehicles going to it, we could show

we've got the roads for dealing with those heavy goods. It's a question I'm making sure the function you expect carried out on the streets are achievable within the design layout. Does it make sense? Lei: Yeah.

The master plan of Poundbury was established by Leon Krier, some master plans of other new development were established via the Enquiry by Design, like Upton. What kind of advantages and disadvantages of the two types between a genius and Enquiry by Design according to your opinion? How does Poundbury cope with public participation during the process of development? Madgwich: Okay, this is for No 1. On No 2, the master plan Leon came up was based on his studies of historic cities and settlements. All of that, honestly, are primarily in Europe. He really gets away from the 70s and 80s, followed no regular of pattern separated with vehicles really. He was trying to get back using streets properly on the old form. The new development that Leon tried to replicate in Poundbury, it doesn't actually always understand the way how you do the design. I think we've talked about something being in Poundbury Esc mail (I think it's a newspaper). Somebody just took the photography almost in Poundbury with strong aim. And put somewhere which bears the relationships what sort of layout they should have. Does it make sense? Lei: Yeah. Madgwich: Let's move to the question 3. Lei: But another one is 'How does Poundbury cope with public participation during the process of development? Madgwich: Yeah. Lei: Have they got any public participation? Madgwich: Not really. There's so much reason upon Poundbury. They're difficult to keep tracing but really the document recently about cave which use Poundbury as a case study. That would be one I know because caves is important nationally and in internationally, it would be the cave documents. That commission for built environment really did come out very strongly on the theories and aims behind Poundbury. The other thing we did do is a major another development in Dorset which calls Charlton Down. That employed similar principles of Poundbury. Lei: Oh, so it's based on learning something from Poundbury, right? Madgwich: Yes, absolutely. We did with a number of developments. We did certain part of Poundbury in the early 90s. We then use some of those theories on the other developments in Dorset, particularly in west Dorset. And very obviously you can see we've got lots of small developments. Some of them are even only 30 houses. But we applied to same design resources. Those small developments have their own right won the design rewards. So that's a quite rough thing. There is a place called Stratton. That was about 120 houses. It's very close to Dorchester. That was again using the same design principles. Lei: This one is again following the design principles of new urbanism as well? Madgwich: Yes. That's really. Lei: So they just exemplified from Poundbury, right? Madgwich: Yeah. Lei: I see. Madgwich: What it does do really reinforces the new urbanism culture. It allows well. It could be slotted on the small development as well as large development. That has covered that I think. We're going down your question 3. Lei: Yeah.

According to my research, I would analyse Poundbury via the following design principles to see if they can promote the local identity of Poundbury. In terms of the following key words, have you got any suggestions? Street pattern; Identifiable; In harmony with surroundings; Compact; Mix used; Hierarchy; Legible; Walkable; PedestrMadgwich friendly; Diverse architecture; Unique and symbolic architecture, decorations and art; Public participation. Madgwich: Obviously you've 12 points. We try to get through those points. Lei: Yes, please. Madgwich: Street pattern, the street is obvious identifiable by their width and space that the buildings around them. So that's a very important street. It won't have much increase of width. Maybe it's got a bigger footway. But the principle of buildings around it will be bigger and more important. As you go away from those, more important streets are obviously the width diminishes and higher structure in built environment diminishes. Does it make sense? Lei: Yeah, yeah. Madgwich: What we do is we rely on those areas being identifiable by those varied methods. First is by the materials we use within them. If you look at Poundbury you'll find the squares, the certain areas defined by the materials we use on the road ways and the footpaths as well as the architecture surrounds it. What you've got rooms is coming out very much from an engineer's perspective. Lei: Yes. I think that's fine you know. Madgwich: My role is really very highways than anything else. Lei: That's alright. I think I can have different perspective from you. Madgwich: Sure. Madgwich: Lots of people would say isn't because previous it was just open agriculture land with couple of farms on it. But if you look at the context of Dorchester in a wider thing, you know largely it does respect what was the fabric of Dorchester. Where we've got the historic old buildings, like the two farm houses, one of which was converted into various offices, some businesses on the self site of Poundbury. The other old historic farm basically is converted into the garden centre. So it would be possible they certainly respect the old historic fabric and try to enhance and improve it by the surroundings with the new build. Yeah? Lei: Yeah. Madgwich: On no 4, compact.

Poundbury is a compact development. Those constraints largely come through the general topography ground. It faces very simply to the north of the main roads. It has its topographical problem on northern side. Along southern side it has limitation not going outside of the bypass. Does it make sense? Lei: Yeah. Madgwich: I try, to some extent, the densities of the development, a big city by central government target because in the UK we have to build so many units per acre or hectare. That's the major influence on the hell dense developments we get. Have you seen some of that? If you look at the early sketches, they quite clearly it was a lot shallow identity and then repeating in urban centres as you expect.

Lei: Do you think for the traditional cities, are they compact as well? Madgwich: Yes. Lei: Yeah. Madgwich: Question 5, mixed use. Mixed use is becoming the norm. What mixed use does is producing vibrancy to the community for the whole day. There is always something going on in the community. It presents a problem for me as a highways engineer because I have to make sure those mixed uses either functional mixed uses or respective in the street design. Lei: For street design, how do you mix use them? Madgwich: How do we...? Lei: I mean if you want mixed use on the street design, how can you make that? Madgwich: What we would do is making sure those if we know we've got to say..., something like the cereal factory, we need to make sure the road hierarchy leading to that if keep the most vehicles can go through it. So it's again a bill of respecting the function that you want the road serve. So you go in, that's problem of the road ways. Lei: Yeah. Do you know something about the social housing mixed use with private housing? Madgwich: sorry? Social uses? Lei: Yes. It's about the mixed use of social housing and private housing. Madgwich: Well, I can see them. But I suspect if you're around Poundbury, you won't spot them. Lei: Yeah. Sometimes if you want to control the per cent of social housing in the development of Poundbury, maybe for the residents living in the private houses, they feel okay. There's no much influence from them. But sometimes if you don't control the per cent of social housing surrounded the private housing, maybe for the people living in the private houses, they just feel lots of disruption from the social housing residents. Madgwich: What we tend to do or what happened in Poundbury, I think under the very first part of Poundbury, it's about 20%. And in late phases, it's about 35% of social housing. But what is pepper point around the development. So you don't get a huge area of social housing. That pepper pot seems to work in a way of building community stronger. If you're in phase 1, the central block (time 24'21), it seems to become a much more difficult area to deal with. What we are told, we told by the psychologist, is that if the pepper pot is around, it does have effect on the social behaviour. Lei: You mean it does have. Madgwich: Yeah. Lei: But how can you improve that? Madgwich: I don't think you can. I think if you have pepper pot, you've got the best thing you can. I'm sure some psychologists will tell you the way, but I can't really. Lei: Yes, I see. Madgwich: That's kind of mixed use. The hierarchy, basically the street footpath patterns should respect the hierarchy roads we're looking for. And they really by the answers I get you earlier question, where we look to the width, the streets, the footway, and high dominates the building to influence the hierarchy. We've got to the sense of very green streets, green footways, very green buildings. If you go to aisle of the fringes of the development, they obviously display to those, the width the roads, width of the footways. I'm more fruitful to that lower density and lower use.

Madgwich: On legibility, I would argue that same by the principle of hierarchy. If you've got the hierarchy right, it should be fairly legible to say I'm on the main street here or I'm on the side roads. Lei: Oh, I see. You mean hierarchy and legible, they are getting closer with each other, right? Madgwich: Yes. Lei: Can I just put both in the same definition? Madgwich: Yeah. Lei: So that means legible should follow the hierarchy. If the design has the hierarchy, then it's legible. Madgwich: Absolutely. If the hierarchy is wrong, in the development, the legibility would be wrong. Lei: But this place is legible, that means that's place is hierarchy. Madgwich: Yeah. Madgwich: The walkability, again it's getting back to the new urbanism approach of making sure things within certain walk time and walk distances. We've already have that in place before I did Poundbury. We have the phrase that people should be able to walk to the public transport points, no further than 400 meters. Lei: I don't think there is a very good public transport in Poundbury. Madgwich: The reason for that is the public transport in Dorset is incredibly poor. Lei: Oh...that's the reason. Madgwich: Yeah, because we're so sparsely populated. Lei: I see. Because when I visit to poundbury, for the buses, I think I didn't see any buses going through Poundbury. Madgwich: There's a couple of bus services. One of those is once a hour, one is about every 20 minutes. That covers at all. But generally speaking, Dorset, particularly west Dorset, it's really poor by public transport. Lei: Oh, dear, why? Madgwich: Money. Lei: Oh,

I see. Madgwich: I mean I live in 8 miles away north of Dorchester, we have a bus once a week. Lei: Oh my god, it's unbelievable. Madgwich: Yeah, it's once a week. You can get the bus on Wednesday but forget about any other days. Lei: Oh, I just worry about my visit to Poundbury at the beginning of April. Madgwich: You'll be alright there because Dorchester presumably by train. Lei: Yeah, I'll go there by train from Nottingham to Dorchester, then I will stay there for 5 nights. But I choose the very cheapest accommodation which is little bit far from Poundbury. But every day I need to commute to Poundbury. Madgwich: Where do you stay there? Lei: You know the Prince of Wales Street? Madgwich: I think you can get the bus to Poundbury quite easily from there. It's about 20 minutes. Lei: Okay, that's better. I feel much better. Madgwich: Laugh... I think you'll be fine. Madgwich: Pedestrian friendly very much so because we can't traffic the space by the design of the road. So we believe it's very pedestrian friendly.

Madgwich: There's a certainly easy of that. But I'm qualified for the comments really. Lei: Yeah. There are lots of diverse styles of architecture in Poundbury. You know somebody just say... Madgwich: It's very much so. That's beyond to Leon, his very sort of design ideas. Well we would say it's really important for highways. His key buildings are identifiable through the street. Lei: Yeah. Do you think the diversity of architecture is important to promote local identity? Madgwich: Absolutely. Lei: But what do you think if you've got too much? Madgwich: I think again that's a balance. You have to balance that. Certainly some people would say that's too much. At the moment, what they forget is the buildings programs got another 15 years. It's literally only half way through of the moment. For example, Queen Mother Square in Poundbury, the buildings are huge than some others of our place. They are not for themselves because from the north there's no main buildings yet. Then it looks very odd. At the moment, you've got phase one and two, built or being built. From the planning sense, what you could do is actually you could see the planning drawings on the West District Council website. There's a really good document -- good street things, staff appraisals submitting putting on that planning application. Lei: You mean the documents for getting the planning permission? Madgwich: Yeah. If you just research Poundbury, you'll find the most recent planning application for Phase 3 & 4. Within the window of website, you'll find the design access they went. They mentioned all the points that we've talked about, the hierarchy, the key buildings, that sort of things. It's all mentioned in the design access they went. Lei: That's a good suggestion. Madgwich: I only do the small part of Dorset. I linked an engineer, my colleague who deals with another part of Dorset. He is impressed by this because it's such a good document. Lei: That's brilliant. I'll search. Madgwich: Yeah. Lei: Thank you very much. Madgwich: If you don't find that, let me know. I'll try to get you the link. Lei: Thank you very much for that, that's brilliant. Madgwich: Back to your questions.

Madgwich: There are some. Those features are encouraged because it gives much stronger part of identity. It helps with legibility because people would say it's done there by statue or by fountain, something like that. So it's really important we get in that place. Madgwich: I actually did a meeting in Poundbury with the residents association. It's always good to get involved in public participation. Some of these, the one is Shell Eldest. No one said that doesn't like it. I'm sure what you'll find in research in Poundbury is people will say lovely or absolutely hate it. Lei: You mean hate research. Oh my god. What about mine? You know I'm going to Poundbury, I just told you about it. I will be there at the beginning of April. I will circulate the questionnaires in Poundbury. Madgwich: That's a really good idea. Lei: I mean you think 'Will people participate that?' Madgwich: I think so. I can't think the bad, I'll try to do it. Anyway, we've got 12. Let's go to question 4.

To what extent do you think the applied design principles of new urbanism have been achieved in the implementation? What kind of factors can influence its implementation when the theory has to be measured against reality? Madgwich: I think it's certainly accepted it nationally in this country. The rest buy the document like the key documents. I think it's important if you can have a look at the key document. That sort of document get mentioned and show where you go really.

How much percent success does Dorset County Council see the development of Poundbury when theory has to be measured against reality? And why? Madgwich: On question 5 I think the County Council as a whole see Poundbury as a huge success. Quote a percentage is very difficult. From my point of view, an engineering side, it's a hundred per cent successful. In terms of other things, the County Council might not say that. It's probably 75% successful. Lei: Why? Madgwich: Partially because of the demographic profile of who live there. There are a great number of retired secondary home owners in Poundbury. Lei: I see. Madgwich: Lot of that to do with the profile gain

nationally. Lei: You mean there are more retired people who are living there than younger people, right? Madgwich: I'm not sure the percentages, but it seems to be a higher demographic proportion than some of the other settlement. I mean your research might be in the aisle, and also they might give you some backup as well. So that was for question 5.

How Poundbury draws inspirations from Dorset vernacular being a part of 'Dorchester'? Madgwich: Go to question 6. I know Leon Krier spent all for a long time. I try to understand. We can understand the pattern of settlements because if you look at the old Dorchester, the layout form, presentation, matches he see in other cities or towns around Europe. All these are for new urbanism principles. Really if look at the old buildings of Dorchester and draw experience from there from some of these design. That's the best I can do for this question.

From the point of view of Dorset County Council, how many importance to promote local identity for the new development by applying design principles of new urbanism? Madgwich: Onto question 7, we believe it's important to put local identity as much as you can in any new design. Lei: Oh, I see. But I mean are you specifically to promote local identity by using design principles of new urbanism? Madgwich: Yes. Lei: Just because of the experience of Poundbury, right? Madgwich: Yes. Sort about so. This is to do with local government, the County Council on the planning authority. So what you've got in county is 6 different planning authority. Lei: I see. That's why the council encourage the Charlton Down and Stratton. Madgwich: Yeah. Lei: Yeah. I see. That's brilliant.

What kind of aspects should be improved if the Councils want to promote local identity for the new development like Upton? Madgwich: We've got question 8 with Upton. I think it's incredibly difficult in places, like Upton because they were very new built really. Their new development illuminates from 30s or 40s, very little of the old fabric of Upton remains. But I think what you can try do is drawing experiences from as close by as you can to try to promote the local identity. Lei: Yeah. Madgwich: Does it make sense?

Have you got any other suggestions to promote local identity by applying design principles of new urbanism in the new development within different cultural background? Madgwich: Onto question 9, I haven't really. But I think if you analyse Krier's work in Poundbury and look what he did. He did some development in United States, a place called sea town. That is one of the earlier works of his master planning. What I'm told because I haven't done a research myself, the sense of place, cultural if you like it is transferable between countries between continents even. That's the best I can do for this question. Lei: Yeah, would you mind I ask you if you know some background of new urbanism movement in America? Madgwich: I know a little. One of guys I work with for Poundbury a few years ago started doing work of the American east coast, places like that. Lei: But I mean, you know according to your understanding, what kind of challenges when new urbanism is transferred from America to the UK? Madgwich: I think the challenge to take somewhere, take new urbanism to America, the problem is they would drive their cars turning around/us. Their cars are so big. I think that's one of the problems we have there. The American have same situation with cars. If we try to persuade American change the cars, it's a little bit like to persuade them to give up the hamburger really. I think that's the particular problem we do need to face. There's still the same problem in Australia because they have so much space. When they create somewhere with the sense of place, it's very difficult. Lei: Yeah, I see. Madgwich: Does that make sense? Lei: Yeah, I understand. Laugh...Madgwich: Laugh as well. Okay.

If you know Upton, could you please give me some ideas about comparison between Poundbury and Upton? Which one is better to respect local identity by applying design principles of new urbanism according to your point of view? What kind of aspects are better? Madgwich: I'm really confused who can help Upton control except trying to look at some local aspect could be important. But certainly what Upton shouldn't do the standard, the principles don't exist. It doesn't really matter. You can do all the buildings in the most awful environment but understand that you create a better place, don't you? Lei: You mean Upton did or didn't understand the design principles of new urbanism? Madgwich: I don't think it does take it very well. Lei: I see. What kind of aspect let you think it didn't do very well. Madgwich: I suppose it doesn't look convince. Lei: I see, you mean according to the built up area. Madgwich: Yeah. Lei: Have you been there? Madgwich: Not for a while. Lei: If you make some suggestions for the development of Upton, what kind of suggestions could you have? Madgwich: I never think I can. I try to enjoy the experiences elsewhere. Lei: I see. Madgwich: It's not easy to get there.

Would you mind I ask 'Have you got any data collection from Poundbury about my research'? If so, Could I please access the data if possible? Madgwich: For question 11, I don't think I have much data that it would be useful for you. Have you been to Duchy of Cornwall's office? Lei: I contacted to the Duchy of Cornwall's Poundbury office. I contacted to Naomi, the secretary of Simon. I've already sent my question list to them, but Naomi said Simon is quite busy at the moment. So I have to wait for the proper time to have interview with him. Madgwich: Yes, sure. Actually Duchy of Cornwall has lots of data. Lei: For what kind of aspects? Madgwich: For everything, occupancies, business, all sort of things. They have lots lots of data on that. Lei: You know when I go to Poundbury the beginning of April, is that possible to visit Duchy of Cornwall? Madgwich: Yeah, if you certainly go to the office which is next to the Garden Centre. Lei: Just next to the Garden Centre of Poundbury? Madgwich: Yeah. You may also have lots of things they have prepared for other visitors as well. It's worth keeping in touch with the area really. Lei: You mean I just pop in and ask some data. Madgwich: Yeah. Simon I know he's busy at the moment but he's really good answering you sort of things. Certainly I would call in the office and have a chat with Naomi. Lei: Naomi and Simon are working there? Madgwich: Yeah. I work with them. There's a project at the moment. I manage the project a lot. Lei: I think that's a very very useful information for me. Madgwich: I think you'll get lots of information to really help your project. Thank you very much, Madgwich. Madgwich: No worries. Enjoy yourself. If you have any things, and send me email. Lei: Yes, I will. But I will contact to Naomi first, right? Madgwich: Yes, I could say to get as much as you can from Naomi and Simon first. If you need anything else, and give me email. Lei: Okay. Madgwich: Okay, Lei. Lei: What about the last question? Madgwich: I'm not sure. But you've got everywhere. Lei: Currently, I probably need a table when I do questionnaires at Farmers' Market, do you think maybe I can find help from Fran? Madgwich: Yeah. Lei: According to these ways for my questionnaire, you think I can achieve that, right? Madgwich: I think so. Lei: Thank you. Madgwich: Okay, Lei. Lei: Thank you very much, Madgwich. It's very very useful. I really appreciate that. Madgwich: No worries, you take care. Lei: Yeah. And you. Madgwich: Thank you, bye bye. Lei: Bye bye.

Interview with Short S.

What kind of changes have had for the new development of Upton since The Prince's Foundation involved in? The Princes Foundation was on board from the beginning of the Enquiry by Design process in 1999. Prior to that CNT did have an outline planning permission for Upton from 1997, which was very 1980's/early 1990's car dominated with cul de sacs, no pedestrian connectivity, separate sites for each use really only accessible by car. When we came to develop the site we, at CNT, decided that this was an outdated plan and we wanted to change it. Our thinking had moved on and we were aware of the New Urbanism movement in America and their thinking on urban design. We felt this would be a better way to develop a new neighbourhood and more in keeping with how towns used to work prior to the car being king. We were also aware of the Princes Foundation work at Poundbury and their wish to spread this work to other sites in the UK. The two organisations therefore decided to work together and Upton was chosen as the first "live" site to go forward. I would say that both organisations wanted to change how new housing sites were brought forward for development, to apply urban design principles, and to provide places that could change over time as towns and villages have done in the past, and not just single use sites incapable of change in the future.

English Partnerships, The Prince's Foundation, and Northampton Borough Council pioneered the Enquiry by Design for Upton. Can it be considered as the first time when Enquiry by Design formally held in England? Once the two organisations of the Princes Foundation and CNT, (soon to become English Partnerships), started to work together looking at how best to proceed, the Princes Foundation suggested that we try the Enquiry By Design process which was being used in Australia to good effect. It was decided to hold a workshop to test how Enquiry by Design could be applied in England and this was held in London in 1999 using three sites, Upton, Gardiners Lane, Basildon and a site in London. The various local authorities were invited to take part as well as our own staff to learn more about the process. Wendy Morris and Chip Kaufman came over from Australia, where they had used the technique in and around Perth, to demonstrate how it was done. At the end of the workshop both organisations felt it was a very worthwhile tool and decided to use it for real. Northampton Borough Council was approached to see if they were willing to use this technique with Upton and they also felt it was the way forward. Northampton had

suffered very bad floods in 1998 and any new development needed to be handled carefully so as not to make the problems worse.

We then issued a brief to consultants including the use of the Enquiry by Design process when drawing up a new master plan for Upton following the urban design principles outlined in this brief. Following a competitive tender Edaw (now Aecom), were appointed as the lead consultants with Alan Baxter as the lead engineers. The whole consultancy team was multidisciplinary but I am afraid after 14 years I have forgotten all the firms involved. After some months of preparation the actual Enquiry by Design was held in December 2001 and as far as I know it was the first event of its kind in the UK. All the key stakeholders were invited, which included Northampton Borough Council, (all departments and members from all parties), Northamptonshire County Council as the highway and education authority, Anglian Water, due to the flooding issues mentioned above, local residents, housing associations, adjoining land owners, public transport companies, local MP's, press and local interest societies. It took place over a week, with full involvement on the first day and the last and more technical workshops with the local authorities and the consultant team during the middle three days. The first day was to get from all the interested parties their view on what they wanted or needed, and the last day was to present our take on how this could be delivered. I must say the first day was difficult as there were so many conflicting issues to be resolved, but by the end of the week the draft master plan was well received by the vast majority, and enabled us to move forward.

What kind of design principles had been set out to guide the design of master plan for Upton? The key design principles which partially came out of the Enquiry By Design process were as far as I can remember:- A Variety of housing types, sizes and tenures at higher densities; Improved public transport to the site and surroundings; A High Street and Main square serving as a focal point for the community; Local shopping facilities; Building styles to reflect the local character and styles; Improved pedestrian and cycle links on and around the site; Innovative drainage techniques; Local centre located along Weedon Road.

What Kind of design principles of new urbanism have been applied during the design process of master plan for Upton? The design principles applied at Upton are similar in some respects to the new urbanism ones but I think this was as a result of applying good urban design rather than specifically taking theirs and applying them to Upton. Having said that, when I look at those identified by Andres Duany and Elizabeth Plater-Zyberk, two of the founders of the Congress for the New Urbanism, they are very similar. For example:- a) *The neighbourhood should have a discernible centre. This is often a square or green, where a transit shop could be located.* Upton has a central square where the school is located, and hopefully one day there may be a small local shop. b) *Most of the dwellings should be within a five minute walk of the centre, an average of roughly 0.25 miles.* At Upton all the houses are within an easy walking distance to the school. The main centre on Weedon road once finished would not be within five minutes' walk of all the houses, but the long term aim has always been to have a small local shop at the southern end of the site or around the square near the school, but this will be dependent on demand. The houses around the square and High Street should have higher ceiling heights and be capable of being changed into retail units when the time is right. Whether that design requirement has been implemented in the latter stages I do not know, but it was a requirement of the early sites. Part of our philosophy that buildings should be capable of change as the development proceeds, as has happened in villages and towns in the past. c) *There should be a variety of dwelling types – usually houses, row houses and apartments – so that younger and older people, singles and families, the poor and the wealthy may find places to live.* Upton has a complete range of dwelling types and mixed tenure to enable all age groups and socio economic groups to live together. The tenures are all mixed together and the design codes and briefs did not allow more than three rental dwellings to be together, if my memory serves me right. A technique called pepper potting. This was to avoid large areas of rental housing and then enclaves of sale housing, which has cause problems in the past. d) *At the edge of the neighbourhood there should be shops and offices of sufficiently varied types to supply the weekly needs of a household.* Again Upton had that facility in the master plan on Weedon Road. This was to contain shops, offices, apartments, a pub, and services such as doctor's dentist vets if possible. A completely mixed use development. I believe this has been marketed now but I do not know the outcome as it is about four years since I left HCA and my involvement with Upton ended before that. e) *A small ancillary building or garage apartment within the backyard of each house. It may be used as a retail*

unit or place to work (for example an office or craft workshop). This idea was built in to Upton but in a slightly different way. As I said before, the dwellings on the High Street and the main square were to be designed with higher ceiling heights on the ground floor and internal layouts to allow a change of use to a small shop or office in the future. We also spoke with the planners at Northampton Borough Council about the possibility of change of use of say a room within a dwelling to allow someone to operate a small office or craft workshop in their house in the future, and it was agreed this should be possible. Again I do not know if any of these have happened. f) *An elementary school close enough for the children to walk to.* In Upton the school is sited in the centre of the development fronting the main square and all children can easily walk to it. Pedestrian links have also been established so that the surrounding existing residential developments are within walking distance as well. g) *Small playgrounds accessible to every dwelling – not more than a tenth of a mile away.* Each site at Upton was required to provide children's play areas. For smaller children they were sometimes within the courtyards overlooked by the houses, older children had play facilities within the squares again overlooked by houses for safety reasons. Site A, the Paul Newman development, is a good example of this. . h) *Streets within the neighbourhood should form a connected network which disperses traffic by providing a variety of pedestrian and vehicular routes to any destination.* Upton has a very permeable network of streets, similar to a grid, albeit kinked rather than straight to suit the topography. There is however a clear hierarchy of streets by design so that people should be aware of which is the main thoroughfare and which are side streets. This was achieved by clear design requirements. The roads have different widths, materials and lighting to identify where they sit in the hierarchy. The buildings have different heights, the taller ones along the High Street and lower ones in the mews. Having said that for a person living within the development they can walk, cycle and drive along any street if they wanted to get anywhere in the development. i) *The streets should be relatively narrow and shaded by trees. This slows traffic by creating an environment suitable for pedestrians and cyclists.* At Upton as I said before we have a hierarchy of streets to make them more legible to people using them. There are trees planted along some of the streets but we also have a Sustainable Urban Drainage System to take care of the flood water and this leads to a different type of landscaping to allow for these particular circumstances. We also have mews type housing which is narrow but because of that it does not have so many trees to create an enclosed feel. j) *Buildings in the neighbourhood centre should be placed close to the street, creating a well- defined outdoor room.* The buildings at Upton were put into different categories by the master plan and later the design codes. Along the High Street they had to be taller, three to four storeys, with higher ceiling heights at ground floor level, and fronting onto the street with minimal front gardens and no garages or drives. In other areas a different set of rules applied. k) *Parking lots and garage doors should rarely front the street. Parking is relegated to the rear of buildings, usually accessed by alleys.* In Upton the parking has been handled in a different way. In the master plan and the design codes Upton was divided into a series of character area and each one had different rules. On the High Street, as I said above, any on street parking was designed as part of the highway and was seen as visitor parking. Residents' parking was in courtyards to the rear of the dwellings. Some character areas allowed drives and garages, but these were closer to the more rural areas. Mew housing could have integral garages within the dwellings. For a more detailed look at this I suggest you read the design codes or the master plan. Alleys were not encouraged as these were seen to have surveillance problems and part of our brief was to ensure all areas were overlooked by dwellings to give maximum security. Many of the courtyards are gated and only available to the residents. This was not originally part of the design but at residents requests. l) *Certain prominent sites at the termination of street vistas or in the neighbourhood centre should be reserved for civic buildings. These provide sites for community meetings, education and religious or cultural activities.* This has been dealt with slightly differently at Upton. A development of this size would not have that many civic buildings. The school has been sited at the head of the Main Square, whilst the meeting place/sports pavilion is located at the southern end of the development overlooking the playing fields and Country Park. The Weedon Road development has been briefed to be higher and prominent to the road, and where there are other prominent sites they are briefed via the design codes to have more height and presence to the roads. m) *The neighbourhood should be self- governing. A formal association debates and decides matters of maintenance, security and physical change.* This was proving problematical at Upton. Following the Enquiry by Design, a Steering Committee was set up consisting of EP, The Princes Foundation, Northampton Borough Council officers

and members, and a local resident from Upton Lane as at that time there were no residents on the development. Under this was a Working Group that dealt with the details of the development on a day to day basis. Both groups had the consultancy team advising. This worked for a number of years setting out the detailed master plan the design codes and the development briefs for each site. It liaised with the developers once they were chosen and ensured the developments were built as intended. However we knew this could not continue after the sites were completed and we felt that residents should take over the role in the long term. We tried to get Northampton Borough Council to take on the role of co-ordinating this but they did not want to be responsible for the on-going maintenance. I left before this had been resolved so I am not sure how this has progressed. Certainly HCA cannot be involved once all the land is sold and developed, nor can the Princes Foundation remain involved for ever. I therefore think some form of local governance would be in order but it is a legal nightmare, and I am not sure it has all been resolved.

How much different do you think between the design principles set out via Enquiry by Design and new urbanism's own principles as advocated by the Charter of New Urbanism? As I have outlined above many of our principles were the same as those of new urbanism although arrived at separately rather than a copy. Many of ours were used in building our new towns in England, but some of the urban design principles had been lost in the translation and needed to be reinforced again. New Urbanism and the Princes Foundation had started to bring these principles to the fore again, together with Oxford Brooks University Urban Design Department, which at that time had some very good lecturers spreading the word to their students. I think Upton had some extra ones that are important, namely the building styles to reflect local character and styles and the innovative drainage system. These are both important in today's world. You want to try and preserve the local character, it is what makes places different and distinctive, and again building over the countryside must be accompanied by drainage techniques to alleviate any flooding issues that could arise as a result of development.

Which design principles can help to promote local identity during the development of Upton in terms of your opinion? Originally we had a chapter on local character in our first version of the design codes. As we started to work with developers we found this needed to be much more detailed or they would continue to use standard house types. The second version of the codes is much more detailed and tries to give guidance on how this can be achieved. It is not about copying what has gone before but using it in a modern concept. It may be colours or materials or architectural detailing. It is important to use architects that can understand and design with these concepts, and not someone who just gets a design out of the bottom drawer that they have used elsewhere as a standard house type. This is a real problem with volume house builders. Many gave up on tendering for the sites as it was not cost effective in their eyes but the Working Group worked with those that continued to achieve what we all wanted..

How much degree do you think they have been achieved in the implementation? What kind of factors can influence its implementation? I think I have partially answered this above. I can only comment on the early sites as I have not been involved with the later ones. The design codes and the development brief are crucial to achieving this. In addition there was a lot of work by the Working Group to help the architects and developers understand and deliver the designs. We were always available for them to discuss designs with us. We met weekly and they could come along if they wished and get feedback. I think we have managed to get the character in, some more than others.

How Upton draws inspirations from Northampton vernacular being a part of 'Northampton'? At the Enquiry by Design we took all the main participants on a coach tour around Northampton with the aim for them to see the character and designs of the various areas and to decide what they felt was important and should be kept and what they did not like. The results were then fed into the master planning process and later the design codes. Photographs of the detailing were put into the document and later we included hand drawn details to help the process along. We also encouraged the appointed architects to visit the town and the surrounding villages to get a feel for the area before commencing their detailed designs.

Could you please give me some ideas about comparison between Poundbury and Upton? Which one is better to respect local identity by applying design principles of new urbanism according to your point of view? I do not have a detailed knowledge of Poundbury. I have visited the site a couple of times so my comments are based on a few hours of study albeit over a few years. I think both apply good urban design principles. The early part of Poundbury is in my opinion the best. This was led by Leon Krier and his attention to detail shows in how the

developments have been designed. The same attention to detail is not so obvious in the later stages, although all the design principles are adhered to. Upton is probably the same. The early stages are in my view the best, but I am biased. It is difficult when you have large volume house builders involved to get the variety that you need to make a street that looks as if it has evolved over years rather than built at the same time. Codes and briefs help a great deal and the personal involvement of a "Town Architect" or a Working Group. It also helps if the site is owned by a single land owner that has the vision to see it through. This was the case in both Poundbury with the Duchy of Cornwall and Upton with EP. The freehold in our case did not pass over until the development was complete and built to the standards we had required.

If you think Upton is better than Poundbury from the perspective of respecting local identity, what kinds of aspects are better in light of your own evaluation? I think both are good in their own ways. We learnt some lessons from Poundbury as the first phase was underway when we started. The main one in our view was the car parking courtyards were too big, and we made sure Upton's were smaller with fewer houses around them. We also included a bigger variety of dwellings. Having said that, Upton is part of Northampton in the Midlands, which was originally an industrial shoe making town. Poundbury is adjoining Dorchester, a rural county town which is part of Dorset so it is very hard to compare the two. That probably says it all. They are so very different because they need to be to keep their local identity. I think both have achieved their own local identity which is in keeping with the areas they are within.

Do you think Upton learns something from Poundbury since Prince's Foundation involved? What are the lessons? We learnt a lot of lessons from Poundbury. The first is always the guinea pig. We could go and look at their development and take on board all the good points and where we felt they were not so successful, we could make changes. I have already said the courtyards were one thing we changed. Another was the amount of pepper potting of housing tenure to get a more balanced community, as in the early stages Poundbury tended to have a more elderly population. We have also tried to integrate the development more with the surrounding houses, with footpath connections and hopefully one day road connections. The school is used by all which is helping but originally the existing local residents wanted to keep themselves separate and could only see the negatives and not the positives. I suspect the same was true in Poundbury, as when I last went there the connections to the old areas were very bad.

Have you got any other suggestions to improve local identity by evaluating design principles of new urbanism? I tried to give an answer to this on one of the early questions. I think the New Urbanism has great urban design principles but it does not deliver on its own local identity. For that to occur there is a need to study the old local towns and villages to pick up on their character and then embody this into the design codes for each particular site. Seaside in Florida does this quite well. It has studied the local vernacular and then incorporated it into the designs of the new houses. Again this was a single land owner involved and committed.

According to my research focal point – 'Can the design principles of new urbanism promote local identity in the new development within different cultural background? How do you think it? Please give your comments.

I think the design principles can be applied anywhere so long as these are used in conjunction with the different cultural backgrounds of the people of the area, and the local character of the buildings in the area. For instance, if the culture includes an extended family as is often the case in many cultures then this needs to be reflected in the design principles. If men and women need to have separate areas, again this will need to be incorporated in the design. I am sure there are many other examples but I think you can understand where I am coming from. There needs to be a clear understanding of the local culture and character of the area which together with the design principles of new urbanism can help to create a local identity. If you were to use just the design principles you would recreate a particular part of America and not your own country with its rich culture.

Would you mind I ask that 'Have you got any other persons to recommend for me to do more interviews related to my research?' I do not know who you have already spoken to. I would suggest Andrew Jones and Rosanna Law at Aecom, as they have been involved from the beginning. David Warburton who was with The Princes Foundation and now works for HCA. Lyndsey Richards who was with Northampton Borough Council and now works for HCA, also Kevin Murray who was the lead facilitator for the Enquiry by Design and has done many similar events since.

As they are all still working they may have contact details for more people. I do not have their e-mails but the HCA people would have the same e-mail address as Simon with their names instead of his.

Finally, May I ask you that 'Have you got the contact details of Peter Springett? Unfortunately I do not have the contact details for Peter Springett. Please do feel free to let me know if you still have other comments except the above. I hope the above is useful. I have been away from all this for a long time now and cannot remember all the details, so hope this will suffice. I think the success of any scheme like this is having a very dedicated team which are not governed by receipts alone. It helps to have a single land owner who is committed to producing a quality product. Disney at Celebration in Florida is another case in point to add to The Princes Foundation at Poundbury, the owner of Seaside (I am afraid I cannot remember his name) and EP at Upton. There is a need for a clear master plan, design codes and development briefs for each site, all help the process along, and finally a champion who could be a "Town Architect" or a Working Group to oversee the development through its various stages until completion. If you can get some form of local governance to see it onwards so much the better.

Interview with Smyth P.

Lei: Morning. Have you got my hard copy of the question list? Peter: Yes. I've got in front of me. Lei: Sorry I send you a little bit late. Peter: That's okay. Lei: Firstly I just want to say thank you very much for giving me this opportunity to talk. I think you have read through about the rough idea of my PhD research, right? Peter: Yes. Lei: Okay. So is that alright for you to start my first question? Smyth: Yes. What kind of aspects do you think are the biggest successes during the development of Poundbury for promoting local identity? (This also means 'How Poundbury draws inspirations from Dorset vernacular being a part of 'Dorchester'?) What kind of aspects need to be improved in the future? Lei: Yes.

Smyth: What I think is the biggest success? Although certainly it's not perfect. Compared with ordinary housing came before Poundbury, I think it's really one of the modern developments. Actually it begins to look like or feels like its surroundings, still feels like a bit of Dorset when the most development to be anywhere. That's true. I mean it's not perfect but it's much nearer. We call it a sense of belonging. Feeling belongs the place rather than being float somewhere else. It's not perfect in that aspect. I suppose it's very difficult to get it really to feel a part of the place for the whole series reason. When Dorset villages were built regionally we built it by local people. That's very difficult to make it happen again. They're actually built by local people. If China could make sure to build it by people actually who live in that area, and that could be a start. The problem we have in the most development built in Britain anyway is built by developers, a very usually quite large firm developers who don't know the place at all. They look like somewhere completely different. One of the very serious problems we have is that the craft man who actually built has no power and has no authority. The authority is all in the big companies. And the authority is not the builders at all. They are the people who are financial people. They don't know what the building is at all. It's delegated done. The people couldn't be given respect. You would know the community, and you would know the builder. If you didn't do a nice house, you get somebody else. But our developers now, if they don't do what they can, as long as manage the house in the first place. So one of the big problems is actually changing things. The people who really do the building have some respect and know people who live there. Poundbury didn't sort that although quite a lot of Phase 1 were built by CG FRY & SON. Have you heard that?

Lei: How to spell that? Smyth: FRY, the initials are CG. CG FRY. The advantage they had is they're the local firm from Dorset. They've been there for a long time. It's quite good because they're being in Dorset for a long time. Lei: They develop Phase 1, right? Smyth: Not all of it, most of it. There is another firm in Weymouth who is fairly local. I forget the name of company but they are based on in Weymouth. So Phase 1 was not built by one of the major developers. We have very big developers, Wimpy for example. If you have something by Wimpy, it won't be local people. They are not managed by local people. Of course, in this case, Phase 1 in Poundbury, all the elevations of the buildings were designed by the architects chose by Duchy of Cornwall. A big developer is a normal thing. They are just standard design. You have no chance of local identity if you have standard design. That's one of the biggest problems. That needs to be tackled. Probably it's the most important problem. So it's your worries about Chinese villages. You need to persuade local authorities that the buildings should be done by people locally.

Lei: Yeah, I see. This is a very good point I think. Smyth: Yeah. The builders should not be managed by somebody far away. They should be people who normally build houses might be for their neighbours. If you would say I want my house built, somebody would say Jack. Jack can build the house. He builds house very well. And he lives just down the road. I'm sure Chinese traditional village was just built like that. Lei: Yeah. I think to some degree, it's quite similar. Smyth: In traditional one, you wouldn't want people coming hundreds of miles, would you? Lei: No, no. Smyth: You would have people living around. Otherwise it would be impossible to do it. That's one of the reasons that I suggested you have a very strong local identity. Lei: Yeah. I agree with. Smyth: What we forget so often is architects, administrators, government, and so on, having idol things. This is dangerous in that if you want local identity. You see what I mean? It becomes the central part of modern life. I mean I've been to Hong Kong but I've never been to China. I went to an island in Hong Kong. I saw a couple of Chinese villages. They are very beautiful. Absolutely they are full of life and very strong local feeling. One of the things I like is that you are walking on the street, there is no real façade in front of the house. It's just like a shop opened to the street and people are selling all sort of things. I think this tries to answer your first question.

Lei: Yeah, I think that's a very good answer. Thank you. Is that all from the first question, right? Smyth: Probably I think you are trying to look at local identity. Yes. I just think you probably want to know what's happening in the first Phase. I actually drove around the Dorset itself and around Dorset villages with taking photographs and making notes. I tried to find all the things that would make Poundbury feels/looks like its surroundings. All sorts of the things like a pitched roof. You quite often have some, might have a slope roof, and have some rough tiles on the edge. It stops the water and then comes out very quickly. There are other things that we found in the villages. These are the things with local identity and are very important. Leon Krier, the planner, was very keen the houses were right on the street. This likes to catch a sense of a shelter. When you walk on the street, you're almost at the front of the door of the houses, not a big garden in between. What we notice in Dorset villages could be a stripe of a foot or so, 30 to 50 centimetres wide between the pavement and a house. That stripe unlikes the pavement which is public. They belong to the house. What you could do is apart of all sort of things in your stripe. Your local identity is that little stripe.

Lei: But I think in Poundbury the stripe is narrower than 30 to 50 wide, right? Smyth: Yes. Bear with. Usually we had 40 centimetres in between. But that's enough for a plant. Maybe a climbing plant goes up to your house. You could say that's not enough. You need a front garden, a proper front garden. I'm talking Chinese Hong Kong villages according to my memory. The houses are almost on the street. There's no division between street and houses. Lei: That's because the land is very expensive. Smyth: Do you think it's that or people like being right on the streets in Chinese villages? Lei: Chinese like walking on the street and staying on the street. But it depends on different places. Some places in China they've got very wide streets. But in Hong Kong, the land is quite limited and the price is very high. That's why the streets are very narrower. I think that's a little bit different. Smyth: Have you been to Italy? Lei: Yes. Smyth: Have you been to Vienna? Lei: No. Smyth: There, all the streets are no more than 4 or 5 metres wide. And the buildings are usually 4 or 5 storeys high. When you walk along on the street, you feel part of that. Lei: Yes, I see what you mean. Is that why the streets in Poundbury are very narrower. Is that because Leon Krier is keen to medieval cities? Smyth: Yes. You remember he's from Luxembourg. And also he's living now in south of France. So the present for him would be the towns, villages, cities of Europe before industrial revolution. The houses and streets are very integrative altogether. You belong to the street just like you belong to the house. I think that's true for Chinese villages. This's the idea that the community actually is expressed by the planning and how the streets are laid out.

Lei: This is a very good point. So shall we move on to the second question? When I went to Poundbury, I can sense there is a physical and visual gap between Phase 1 and Phase 2. However, Phase 1 is coherent well with the pre-existing community. How do you think this issue? Smyth: One of the things was on Phase 1, the Duchy of Cornwall was very anxious. And the Prince of Wales was very anxious if it was really good if you like. Leon Krier himself was involved in the detailed planning of it. He was very involved in Phase 1. Everything was very carefully designed. It's reviewed by Leon Krier and so on. Duchy of Cornwall appointed me to make sure everything was very well coordinated. I think lately they thought or the advisors thought 'Have you done Phase 1?' They need to have such a detailed control after that. They could adjust like Phase 1. I think that's a bit of big mistake because after that, after

Phase 1 was very carefully coordinated. It wasn't carefully coordinated after that not quite because we thought we just run naturally. Actually it does. Not in Italy. The danger was that when we were in Phase 1, we actually drew total elevation for each street. And we took the drawings from each architect and put them on one long drawing to see that if they are beautiful when they were getting together. I could say there were something that wasn't right. I can ask the architects 'Could you adjust it a bit?' I didn't have that kind of control on the late phases. Each architect was local and was appointed which is a good idea more than modern architects. There is natural variety. There wasn't control so sometimes you can say this architect and then communicate to next one (Time 19'12). So I don't think you can in Phase 1. Those cases are different architects coming along.

Lei: So in Phase 1, you can have a direct dialogue between you and architect. Smyth: Yes. Lei: In late phases, this kind of dialogue is not good, right? Smyth: It wasn't control. It wasn't detailed, and it wasn't very careful. It was wrong to say it wasn't control. It was. You see many things are very subtle, not black and white. Each architect is different and the control is different and so on. I think the advantage of phase 1 is not too big as well. When you go there, I don't know what you feel. You would have a feeling of kind unified. Do you think that? You'll see one of the important things with local identity and so on. It's like in real life and in a real village which is developed over a very long time. All the buildings are little different from each other. I would compare that to people. If you look at a lot of girls or boys, they all got two eyes, hair, nose, mouth, right? Yet every single person is different from each other. That's to me it's a model of what a village looks like. Like people, they should be common features which establish Chinese village but every single house should be different, a little different. The difference is very little, very small. It's like when you see your mother, you know she's your mother, don't you? It should be like your house. You look at your house, and know your house. The next door is your neighbour's house. They look like a little different. So when you see photograph of house near yours, you know that's not yours. And that's not mine.

Lei: Yeah, that's the sense of belonging, right? Smyth: Not only for the sense of belonging for a place, a community, but also the sense of belonging to you. If you haven't got that, it isn't right. There are some more terraces where you don't quite get that. You know the Royal Crescent in Bath. The quite interesting thing there is the beautiful terrace. They look like quite similar but you have a sense of belonging not to a house but a sense of that I live in a part of this palace. It's a magnificent palace. I live in that. And then you need a superb architecture to say I live in that palace. Normally like Chinese village which could like that. You belong to a house and you also belong to a village. Lei: When I was in Phase 1 of Poundbury, I just feel much better than in other phases. Smyth: Sorry? Lei: I mean when I was in Poundbury. When I was walking on the street of Phase 1, I feel a little bit better than other phases. Smyth: Yes. The time is revolution. There's nothing like that anywhere. Lei: So you mean, in Phase 2, 3 & 4, the architects just treat the design as experiment in Poundbury? Smyth: Sorry. I don't understand it. Lei: I mean, in Phase 2, 3, & 4, there are lots of diversity of architecture. When architects design that, they just treat that as kind of experiment. Smyth: I suppose so. To me it shouldn't be experiment. What you should be trying to do is making the houses with individuality. Then on top of that, it should belong to Dorset. And it should belong to the place, Dorchester, Dorset. That just feels belongs. It's very very important.

Lei: For third one, 'master plan of Poundbury was established by Leon Krier, some master plans of other new development were established via the Enquiry by Design, like Upton. What kind of advantages and disadvantages of the two types between a genius and Enquiry by Design according to your opinion? Smyth: In my opinion, whether you have Enquiry by Design or not, somebody has to do the plan. It's slightly misleading the Enquiry by Design than everybody has done the plan. They haven't really. Some designer will do it at the end. They may have influence from other people. In the end, you have to have an architect or a masterplanner. As you see, Leon Krier is intelligent. When he does masterplan, it is a normal as anything else. I don't think it's a method. I think people talk about the method and then forget. Actually he's an artist. And he's a very good one. And also cause lots of Poundbury owns revolution recharacter to Leon. He has kind of conversation to himself where having now. What's going wrong? Why you develop? Why they are horrible? Nothing like the thing they belong to. He has a very strong idea about that. And Poundbury is an example to answer that. He planned Poundbury. And he also realize on the individual architect designing the houses. The plan is by him and suddenly he calls it revolution because he got all the streets narrowed and he had people help him doing that. That normally had much wide streets because of highways people. You said we can't have that much narrower.

Lei: Why Leon calls it a revolution. Is that because he changed the wide streets to narrower? Smyth: That's one of the things that he did. He did lots of things. One of the things he did is windows, which is one of the important things. That affects the design. It's windows. Lei: What happened to windows? Smyth: Well, for instance, he had rules that all the windows must be side hanged casement. It's called sliding sash. There are two types traditional window: vertical sliding sash windows like George windows. And then more rural, that would be side hanged casement windows. The hinged is on the side. He said all the windows must be painted wood, no plastic. It must be no wider than 1.2 meters wide. It must be having proportion. They have very strict rules about windows. And they have quite strict rules about chimney. Every house must have chimney, a brick chimney. External walls must be either local brick or local stone or render. Lei: Is that because he wants to achieve local identity? Smyth: Yes. Because he knows he has to make it belong to England, and then to Dorset, and then to Dorchester. You've got to look at the buildings there and copy them. Ideally you come up with something new to get it. And you will copy things around. (time 30'23) And copy something exactly, not exactly but very very closely. You know the windows with hinged on the top. Leon Krier said none of the windows should be like that. So they are very very strict rules and quite right about that opinion. If you have something to be like local vernacular you have to catch the character with very strict rules. You have to say 'what do people do hundred years ago?' You have to do the exact same things. That would be true in your Chinese villages too. I would say in the main street you should not have front façade at all or hide any. You should have an opening where people can shop. You need streets rules.

Lei: Somehow, Leon Krier tries to achieve local character by the windows, materials, streets, something like that. But somehow, you may feel Poundbury is more like European city or town. Smyth: Remember, he comes from Luxemburg. If you feel like more Europe than England, to some instance, it fails. The architects have broad education. They've been to Italy or France. Maybe the builders built the Dorset villages went to Galdbart at all. They could ever only know the houses over there. To something instance, if you want local identity now, what you are saying is that you know many more things of previous people. You've got strict to yourself to get things locally. I think something is there because you're stricting yourself. You care about the surroundings. You think surrounding is a matter. Lei: Yes, I think so. Smyth: I would think in Dorset, there are some of the beautiful villages in the world. I think that's true in China as well. Lots are about beauty. People will say beauty is a natural opinion. I would say most people would say which girl is beautiful. It is a really natural opinion.

Lei: So when somewhere was designed with a proper sense of belonging. Maybe just for example, in Poundbury, you need not only look for some local identity from Dorset but also from Dorset, right? Smyth: Yes. Remember, the other thing is, if you look at plan, I'm sure in China as well, the passions in traditionally would come from the beginning. People will hear about something special from that field will have some passions from the beginning. You'll do get some of the passions coming from the big sentence and from smart architect. For instance, in England, you would have people like Christopher Ray. The things he did the mortise he used will get into the villages or town locally, a part of the smart houses belonging to the rich people. And every night, if you get a new thing coming in it was very slow. And usually local builders wouldn't get things completely right (time 35'43). So when we talk about local identity, it's not simple. Lei: No, no. Smyth: Not at all. Lei: How does Poundbury cope with public participation during the process of development? Smyth: Well, I don't know recently because I haven't been involved recently. But they had kind of enquiry which wasn't completely like. They had local consultation before they began. I don't know how much influence that really had. I think the certain things would, whether local identity would, when local people were getting involved they say we'll do. They don't want. That's a pressure to us. That's a sort of thing. It does get cooperated. The actual feeling of development I don't think Enquiry by Design has much influence on that. That's design by architects and builders. The local people they don't know things about it to really influence that. Do you understand? Lei: Yeah. Smyth: Overall, decisions like enquiries streets should be. The local people could have some say? That won't give you character that you're talking about local identity. I don't think Enquiry by Design gives you local identity. Upton is a good example of that because I don't think they achieve a good local identity in Upton. That's the force of designers. You see what I mean. Lei: Yeah. You mean local architects and local builders can give the place a very good local identity, right? Smyth: If they're very good architects. Actually there's local architect now untrained locally. They are trained internationally. You need an architect like Leon Krier who actually is determining to make a nice local place. What I'm suggesting is builders particularly are given more expertise and

more importance because actually they make things different. The things like windows could be made by local joiners or local carpenters, and so on. It's a very difficult problem because the circumstance is modern life tend to be generalised, like standardised everything. We've got more joined up world.

Lei: Yeah, I think so. Thank you. The fourth one is 'to my research, I would analyse Poundbury via the following design principles to see if they can promote the local identity of Poundbury. In terms of the following key words, have you got any suggestions? 1) Identifiable; 2) In harmony with surroundings; 3) Compact; 4) Mix used; 5) Hierarchy; 6) Legible; 7) Walkable; 8) Pedestrian friendly; 9) Diverse architecture; 10) Unique and symbolic architecture, decorations and art; 11) Public participation. If you've got any suggestions, please do feel free to talk.

Smyth: Identifiable is same as two, in harmony with surroundings, in a way. One and two are the same. In harmony with surroundings is identifiable? I think they are same. Compact is another point. I think towns and villages are always compact. Why? What do you think the reason was? Lei: Because they're mixed use, and they are walkable.

Smyth: I think really the co-point. Walkable is the point because people did have cars. If you want to be able to get the shops, schools or whatever, always walking. Even to work, you were walking. Even walking possibly even to a house. The other reason the old villages or towns are compact because they have compact to defence the war they have done time 41'23. People can get in. From my point view now is with concern using energy. It's gaining importance to walk. We're trying to save energy, aren't we? You need compact developments. So people can walk when they take their children to school. The children can walk to school. Most children can walk to school. Now they're going with a car. If you want a place where people walk, you need it to be compact. And mixed use is next thing. And it used to have everything in it. One very important thing is that I have been thinking about recently about mixed use. We have in Britain anyway. We have control of uses by authority. I think that's a mistake. You shouldn't have uses of control by authority. If you control uses, if you say you're going to have mixed uses, it isn't a real mixed use in a traditional way. In Chinese villages, you wouldn't say you are allowed to have a shop here and not there. Everybody could open a shop whenever they like. If you want to have a business in your house, you just have it. Nowadays, you have to make an application to say I want to run a business in my house. I think that's completely wrong. Instead, what I worry about is that next door neighbours. They don't like it. They like planning authority to tell people next door. I would suggest no mixed use. Otherwise it stops the liveness of traditional community instead of control revolution.

Next one is hierarchy. What would you say about it? Lei: I think the local centres should be hierarchy. The streets should be hierarchy. The architecture should be hierarchy as well. Smyth: What is it? I would suggest you should give it public function over private one. Smyth is moving to other room. Lei is holding on. When the phone was put through, it wasn't working. Lei call it again. Smyth: Sorry about that. Lei: Welcome back. Smyth: Hierarchy should look for what is private and what is public. The public of hierarchy should be more important than private. What is public belongs to all. What is private does belong to one of the individual part in a community. In England, if you go to a village or if you see a village from a distance, you can tell where it is. Because there is a church or a church tower there. That's the automatic example of hierarchy. That's saying the most important building is a church. Not England belongs to god, it belongs to all of us. So what I'm saying is that the things belong to community come first. That's the most important. We have terrible habits. Nowadays, it makes a school for example belong to all of us. Hierarchy can answer the best building. In a positional society, the public building will be always the most beautiful. They will be decorated and so on to say this building is very important because it belongs to all of us. Ordinary houses and businesses shouldn't look too important. The danger in modern city, you probably have it in China. They make the offices or something the most important building. We can see them from everywhere. The offices are just private. They shouldn't be like that. In London, we have two offices blocks with funny shapes and so on. People know them more. What they are saying is private company, the more important than parliament or whatever, which is completely wrong, of course. One of the examples is Venice. Have you been to Venice? Lei: Yeah. Smyth: How do you think about Venice? Lei: um... I think they've got a good hierarchy. Smyth: Certainly. When you look at the skylines of Venice, you can see the right buildings on the right squares. The power of the square can control the whole city. If you've got a church which is a public building, nothing else can be higher because all the other buildings are private. In the most good modern cities, they hide any of them—private buildings.

Smyth: Legible? What do you think legible means? Lei: I think Legible. You can know exactly where you are and where you are going. Smyth: Yes. One of the things again is you would know from the kind of street you are in whether it's a main street or not, whether it's leading to square. Legible is a pattern easily understandable. You know where you are. How would you do that and make sure it's legible. Lei: I think from two ways. One is from street pattern. Another one is from architecture design. Smyth: How would architecture helps you? Lei: The architecture like what you mentioned just now, every single building should be slightly different. And then you can sense where you are. You can recognise where you have been because there's individuality about the architecture. Smyth: The other thing is in an old town, buildings on the main street are more decorated than the buildings on the ordinary street. They can tell you at the moment. This is the main street and that one isn't. A good place, you can always tell. One of the things, the modern architecture they have the problem is in modern architecture and modern theories, everything should depend on the function. What buildings should be doing. Decoration is corrupt and you shouldn't have more decorations. It's not like vernacular because vernacular is not functional with decoration. It's crazy. Of course a proper place, a nice place, every important feature is decorated. They tell you it's very important. There's some ways to tell you something is important with decorations inside. If the decoration is not essential, that means it's not important. When you decorate something, this means it's important. Actually when you look at a house, what is the most important feature in front of the house? Lei: Decoration. Smyth: What I am trying to say is that the front door is very important feature. That's the way you go in. What almost in tradition, all the front doors were decorated. I could tell you that's the most important to show the way in. Most private houses, they were decorated.

Smyth: Walkable, we have talked about walkable before, haven't we? Lei: Yes. Smyth: Pedestrian friendly. This is a quite good point. It's very important to Poundbury presumed by Leon Krier again. The engineers help him to get it. Before Poundbury, the streets were dominated by highways authority. We try to make sure there wouldn't have accidents on the street. They will be safe on the street, which means pedestrian friendly. There was bizarre if street is wider. They made corners and you could see around. They observe in fact. This can make cars go faster. It's not safe if cars go faster. In Poundbury, there is a revolution because the engineers help Leon Krier, Alan Baxter, manage and persuade local authority. Actually it's safer if you make streets narrower, the corners tighter. Actually if you want to avoid to bump your car, slow down your car. That thing makes pedestrian friendly. When you walk around Poundbury first Phase, you would never feel you are in danger. You can see children accompanied by parents, they just walk on the streets. Everything doesn't get wrong over. It's a very important course because it's related to walkable. You wouldn't walk in a place in danger. And also for pedestrian friendly, if you have compact and narrow streets, it must be slightly away from the wind. This is really important in Poundbury where there is lots of wind. In Dorset, there is quite strong wind from sea. So when you are making a nice place, you should feel sheltered away from the wind. You don't have to put the biggest coat on at the time when you just see your friend around the corner. This (time 56'43) is very important. It's feeling like a shelter. And also a nice street, although there's no roof, you would feel a part inside, like European square, I'm sure in Chinese square same. You feel partly inside and you feel part of the place. If you don't feel a part inside of the place, there is problem of it. Are you with that? We're talking about architecture. Something is just a little bit different just also like everything is in nature. Everything is unified. There is a system in it. You think a tree. All the branches in a tree belong to a very strong pattern. There is no leaf same as the next one. Every branch is different. The sense order is very strong. You have a sense of individuality within the order, absolutely fundamental characteristic in the nature. Lei: Yes, absolutely. Smyth: About the symbolic architecture, I think we have talked about that. Smyth: Public participation. I think it's important that people should feel they are involved. It doesn't mean they are designing that. You need a good architect. And you need a good designer, like a professional designer. It's a huge danger if you get all the bodies altogether. That's the answer. The answer is that you need your Leon Kriers. You need an artist just to do the picture. You need a very good artist. Who is your favourite artist? Lei: This question is very important, but for me it's quite hard to answer that. Smyth: Public spatial artist. Lei: Artist? Smyth: I mean a good artist who does a picture and you like the picture. Lei: I saw lots of pictures and drawings from Leon Krier's books. They're quite fantastic, you know. Smyth: Yes. But I'm thinking it's not only Leon. There are any other artists. Lei: Yeah. Smyth: I'm sure

there are some very good Chinese artists. Lei: Yes, I think so. Smyth: Design is like a picture. And you need somebody who is very good at it in public. The public should have a very good artist. Lei: Yes.

Lei: Then 'How much degree do you think they have been achieved in the implementation? What kind of factors can influence its implementation?' Smyth: Whom controls it at the end. In Poundbury, Duchy of Cornwall has a lot of control. They are the landowner. The planning authority can also influence that. Um... This is a very difficult question to answer because lots of things can influence. What I think is that Poundbury is certainly getting success because Prince of Wales thought Duchy of Cornwall makes sure of that. It's good. It's ideal. As a landowner, he can say I'm going to do this but I'm going to do that. And also the planning authority, they can say getting in the way. If you have a good landowner, a free planning authority, maybe that would be alright.

Smyth: How much percent success ... I don't know. Lei: Embarrassed laugh... Smyth: I think it's much better than most of developments but there's still quite a long way to go. What do you think? Compared with your Chinese villages. Lei: I think it's much better compared with Chinese ordinary villages. For the Chinese ordinary villages, there are no kind of careful design and the concept based on the new development. The design company and builders, just like what you said, they're too much far away from the locals. Sometimes they just design the universal plans. Smyth: Yes.

Smyth: Have you got any other suggestions to promote local identity by applying design principles of new urbanism in the new development within different cultural background? I think I have introduced that. Lei: Yeah. Smyth: Have you got some related resources to show the feedback about promoting local identity from local residents in Poundbury? I don't know what you mean now. Lei: Except the interviews with the professionals, I also need to go to Poundbury to do some interviews with local residents about my research. Smyth: Oh, I see. Lei: I mean if you know some people who are living there or ... Smyth: The only way that I think you can contact to local people who are living there. You can contact Duchy of Cornwall, Poundbury. The person that you can contact to named Simon Conibear. Lei: Yes, I know him. He's one of my interviewees. Smyth: He's very nice. If you also want to interview with the designers, he would help you. Lei: Okay. You mean they know some residents. Smyth: Oh, yes, they are. Have you asked him that question? Lei: Yes, I ask him that question. Smyth: I think he's very kind to do that. Okay? Lei: Okay.

Smyth: Comparison between Poundbury and Upton. I think because of Leon Krier, Poundbury is much better. He's an artist. Very simple, okay? Lei: Okay. Smyth: The particular people who were employed designed it. Are they the people who made it successful or not? Alright? Smyth: You ask me the people that you try to talk to? Lei: Yeah. Smyth: What about Leon Krier himself? Lei: I don't know how to contact to him. Smyth: Can you look at internet? Lei: I try to look for contact information via internet. But you know, when I search that, there's a lot of articles and paper from Leon Krier, but there's no contact information. Smyth: Ask Simon Conibear. Lei: So he knows that? Smyth: He probably can be able to give you the address of Leon Krier. Lei: Really? If I can have an interview with Leon Krier, that would be fantastic! Smyth: Yes. He may want to do it. Simon might be able to give you the address. Lei: What about Ben Bolgar? Smyth: Ben Bolgar is working for Prince's Foundation in London. Lei: I have done the interview with Ben Bolgar. When I ask him the recommended people that I can do the interviews afterwards, he didn't mention Leon Krier. You mean he is also the specific person to ask. Smyth: I think Simon Conibear is the right person to ask because Leon Krier is still involved in Poundbury. Lei: He's still involved in Poundbury now? Smyth: Yes, I think so. I think he's the main people. Lei: Okay, brilliant. Smyth: Okay?

Lei: Yeah. One more question about Poundbury. When you were doing phase 1 of Poundbury, the prince of Charles, and Leon Krier went there to review. How much influence Prince of Charles involved in the masterplan of phase 1? You know Leon Krier and Prince of Wales, they cooperated with each other very well. How Prince of Wales influence Leon Krier during the masterplan? Smyth: I don't know. I think Prince of Wales chose Leon Krier because he met what he wants. Prince of Wales would say as long as Leon Krier does alright. Lei: Okay. You mean Prince of Wales chose Leon Krier, whatever Leon Krier has done, they can have a good discussion between each other. Smyth: What I'm trying not to say whatever, but all the whole thing, yes. Lei: I see. Smyth: It's just like you employ an artist to design for you if you own land. You will respect. You appoint somebody you would feel what he did is wonderful. You don't necessarily agree with everything. You also can say 'I don't really like that thing'. It still depends on the picture from the artist. Lei: Yeah. Have you met with Leon Krier and Prince of Wales for many times,

right? Smyth: Not many times, a few times. Lei: You know, if I've got an opportunity to do interview with Leon Krier, is he nice? Smyth: He's very nice. He has a very great of humor. He might laugh. Lei: Oh, that's good. You quite like him, right? Smyth: Oh, yes, he's very nice. One of the things is he's very determined. If you say 'you can't do this, and you can't do that'. He says 'I'm still going to'. Poundbury would be a revolution like it is if Leon Krier hasn't been completely determined. When somebody said 'you can't do this', he said no, not at all. You can't have a narrow street. He said 'I'm going to have narrow streets. His determination really makes him very important. Lei: Okay. Smyth: He's unwilling to follow people's saying. When planning authority said 'you can't do something', he said 'we got to'. We're going to do this because it would be right. Lei: Amazing. Smyth: You know Michael Angelo? Lei: No. Smyth: Michael Angelo is a very important architect in Italian renaissance. He was employed by . He built for Smyth. Leon Krier is a great artist like that, usually quite determined. Without that, he can't get something wonderful.

Lei: Right. Based on your talk, I just feel they're quite helpful. I really appreciate your big help and kindness. Smyth: Not at all. Cheers. Lei: Thank you very much, have a good day. Smyth: All the best to your research. Lei: Thank you. Bye bye. Smyth: Bye.

Appendix C

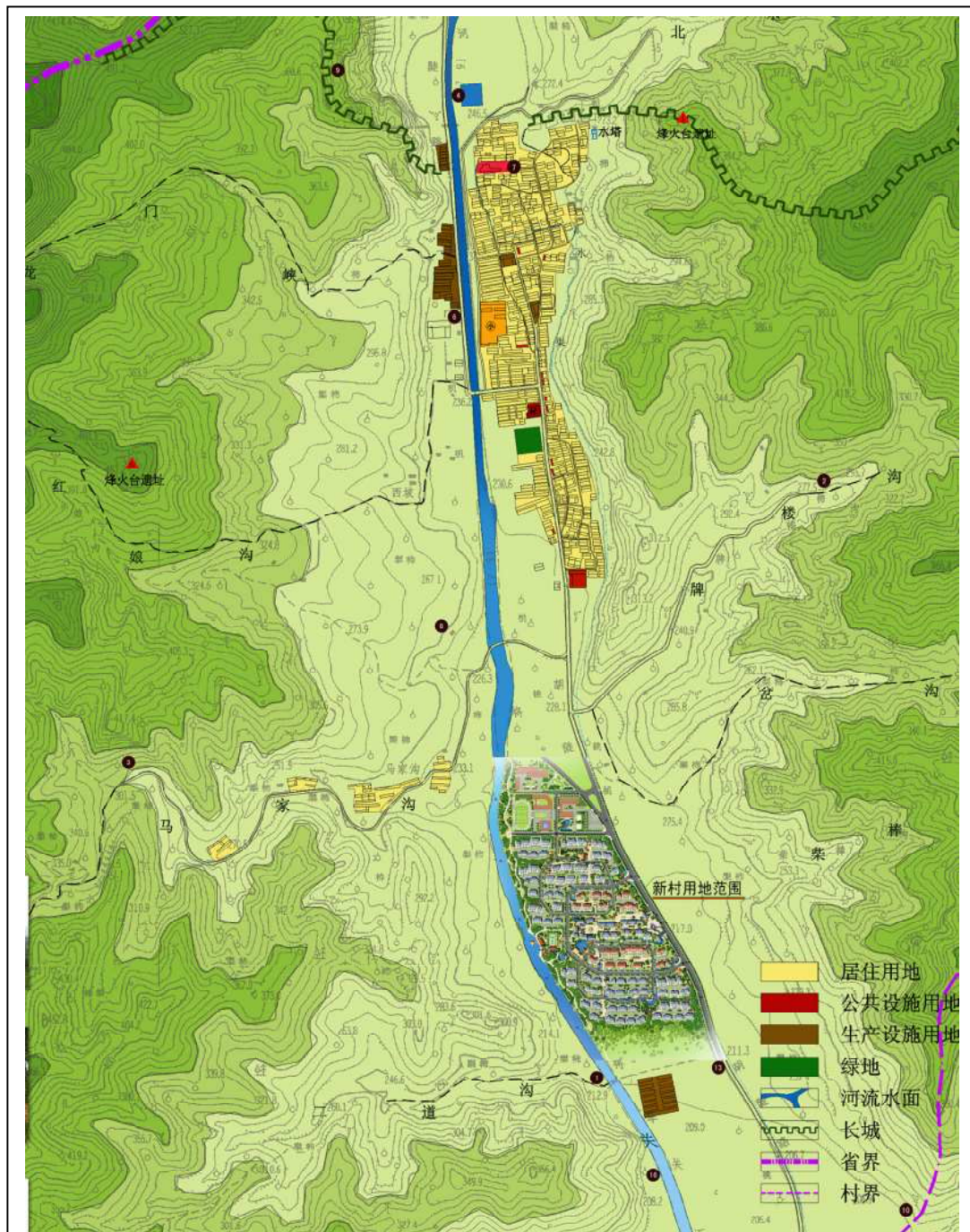


Figure C-1: The extension and its pre-existing village, Jiangjungan – a Chinese ordinary village, Pinggu. Resource from Shan (2011).



Figure C-2: The new development of Guajiyu – a Chinese ordinary village, Beijing. Resource from Zhao (2011).



Figure C-3: The new development of Yingchengzi, Badaling – a Chinese ordinary village. Resource from Shan (2011).