URBAN DESIGN METHOD - THEORY AND PRACTICE
A CASE STUDY IN MALAYSIA

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Thesis submitted to the University of Nottingham Institute of Urban Planning

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for the degree of

Doctor of Philosophy

December 2000

DEDICATION

This thesis is dedicated to my family, my wife Shuhana and my children Ahmad Fikri, Fatima Zulaikha, Ahmad Syukri, Fatima Zahra and Muhammad Al-Mustaffa.

ACKNOWLEDGEMENTS

I would like to express my gratitude to Universiti Teknologi Malaysia for their support throughout this study. I am greatly indebted to my former supervisor, Professor J C Moughtin for his guidance and invaluable comments in the preparation of this thesis. I also appreciate the contributions of Dr Taner Oc, my new supervisor for his comments on the final draft of the thesis. Thanks are also due to Dr. Tarek Shallaby for his contributions in the earlier stages of the research and the administrative staffs of the Planning Department, namely Linda, Jenny and Sarah in facilitating my communications with the department.

The fieldwork and data collection would not have been easily conducted without the support of the members of Persatuan Arkitek Malaysia (PAM). I am thankful to my nephew Radzuan Razali, his wife Norazlah Abu Bakar of Universiti Telekom Malaysia for their proof reading of this thesis and Affendi Ahamad of UTM for his help in preparing the illustrations.

Last but not least, I wish to thank my wife Associate Professor Dr. Shuhana Shamsuddin for her comments and suggestions in the development and completion of the research. Together with my children Fikri, Zulaikha, Syukri, Zahra and Al-Mustaffa make up the very purpose of this endeavour, may Allah bless you all.

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ABSTRACT

This research sets out to investigate methods to design urban spaces in Malaysia by studying the approach adopted by architects. The primary concern is the design of exterior spaces with the assumption that the poor urban spaces found in Malaysian urban areas is due to the weaknesses in the design method adopted by designers. For this purpose, the research addressed these objectives:- (1) To identify the reasons why the design of urban spaces is neglected by architects that produce poor continuity in the design of urban spaces, (2) To examine the process adopted and the information used by architects in the design of urban ensemble and (3) To investigate the ways in which the architects responded to the needs of the user and the public.

The techniques used for data collection include literature review, discussions with experts, content analysis, author's experience in practice, recognisance, observation, survey and in-depth interview. The information gathered was analysed qualitatively and quantitatively.

The weaknesses of the design process and limited use of important information were due to: (1) poor recognition of urban design, (2) limited time allocated, (3) economic pressure, (4) quick commissioning of the project and (5) professionalism.

There was also insufficient public involvement in the design process due to poor public awareness, client's attitude, financial constraints, professionalism and the attitudes of the designer. As such design was mostly related to marketing strategy.

The main theory adopted in the organisation of the exterior spaces is mostly related to circulation (line) and centres (dots). At the same time, the traditional urban spaces and forms were influential element used in design. The recommendations that follow were geared towards improving the design methods adopted by architects in producing better design of urban spaces.

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GLOSSARY OF TERMS

Persatuan Arkitek Malaysia (PAM) – Malaysian Institute of Architect

Padang – field

Bumbung – roof

Kaki-lima – five foot walkway

Bandar – town

Perbandaran – township

Quartier – quarter

Madrasah – a small prayer place/building for Muslim sometime also function as a small religious school

Shophouse – building/shop lot where at ground level function as shop whilst people live apstairs

SPSS – statistical package for social sciences

Lembah – valley

Panjang – long

Lima – five

Attap – thatch

Majallah – journal/magazine

Kris – a wavy dagger

JKR – Jabatan Kerja Raya – Public Works Department

MPMBB – Majlis Perbandaran Melaka Bandaraya Bersejarah – Malacca Historical City Municipal Council

Jemuran – part of the traditional house which is used for drying cloth and other things

Rumah ibu – main part of the traditional house usually where the bedrooms can be found

CHAPTER ONE

1.0 INTRODUCTION

This research examines urban design method in architectural practice in Malaysia. The primary concern is to examine the methods adopted by architects and the information used in the design process.

This chapter presents the overall structure of the research and framework in which the results of the inquiry are presented. The issues under investigation will be presented in the first section. The second section outlines the purpose and significance of the research. The third section discusses the research agenda followed by the research methodology and techniques in the fourth section. The fifth section presents the relevance of the research while the overall structure of the thesis will be presented in the final section.

1.1 RESEARCH PROBLEM

The main purpose of this research is to investigate the practice of urban design in Malaysia by focussing on the architects' method of designing urban spaces and their related structures. It is concerned with establishing the factors contributing towards poor design of urban spaces found in the context of Malaysian towns and cities. This is done by identifying the design process undertaken by the architects and the major theories adopted by them. At the same time, the recognition of the problem and the information used by them in designing these spaces will also be investigated. The study is limited to the architectural practice due to the current scenario in Malaysia where most projects involving urban design problems were designed by architects.

In urban areas, the relationship between man and his environment is ever changing in response to the technological development brought upon by designers. The introduction of new technology and the changing living pattern

require some changes to be made on the existing behaviour and the quality of the environment. These changes should be properly managed; otherwise, it could result in an environment that is inappropriate for the needs of the user. In the rapid development that is currently taking place in Malaysia, there are many changes that have been made to the urban environment. The pressure for new settlements is a result of the country changing from agricultural to industrial-based economies. Recently (1997 to 1999) there is a slow down in this industrialisation process due to the economic crisis where previously Malaysian economic growth sustained at the rate of 8.9% per annum from 1980 to 1996 (Muhammad, 1999). However, change will still occur in the built environment to cater for the new trend in economic activities. The National Urban Policy drafted in 1993 has recognised the importance of the quality of the built environment in Malaysia to be improved as a result of this phenomenon. In 1996, one of the resolutions of the Malaysian Senior Planner meeting was that planners should give more attention to urban design. This is due to the disappointing design of urban spaces and the insensitively designed urban areas in relation to the culture and the people of Malaysia (Muhammad, 1996 and 1999). Zainuddin Muhammad who is the Director General of the Federal Town and Country Planning Department of Malaysia in 1999 suggests that the over zealous effort to attain economic gains has caused deterioration of the living environment which include poor aesthetic and lack of civic spaces within the towns and cities.

The ever-changing physical, social and psychological characteristics of the built environment demanded that suitable approach to designing and practices must be continually developed to meet the new situation. The theories that are the basis to all good practices must also be updated accordingly. Reviews made on the subject of design process revealed that the application of appropriate method would help to reduce the number of design errors.

Gosling (1984) also emphasises this scenario when he suggests that there is an urgency to find appropriate techniques and models of urban design. This is in response to the scale of urban development programmes taking place in the industrialised countries and an accelerating rate of urbanisation process in the

developing countries like Malaysia (Economic Planning Unit, 1993, Salleh, 1999 and Muhammad 1999). Salleh (1999) suggests that the rapid growth has put pressure on urban economy, facilities, infrastructure and environment. Techniques must also be developed to solve the new environmental problem and the speed in which those problems are to be resolved. Thus by understanding the cause of the current weaknesses in the design method, it will be possible to suggest future actions to overcome the situation.

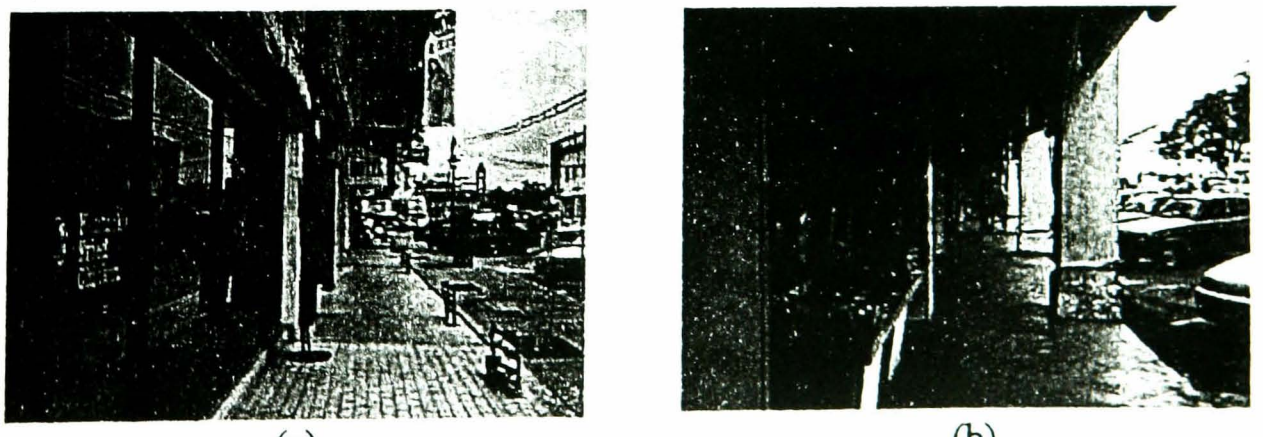
In Malaysia, there is a demand to build new settlement to cater for the people that are migrating to the towns and cities in search of jobs and a better living condition. The urban population is expected to be about 58.5% by the year 2000 from 34.2% in 1980 (Muhammad, 1999). It is assumed as suggested by Gosling (1984) and from observation of the current practice in Malaysia the architects and planners are more concerned with the solution of economic issues and social injustices than that of urban design. The pressure for quick design and implementation to meet the financial, economic and social goals greatly influence the manner in which those designs are conceptualised and constructed. There are many mistakes that have been made and there are also some good solutions.

Based on observations of existing trend of design (namely housing, new towns and urban in-fill projects) in Malaysia, an assumption of this thesis is that the problem with current urban design practices is the method adopted by architects. They mainly focused on individual building design with little emphasis given to the design of exterior spaces that surround those buildings (Sulaiman and Shamsuddin, 1997). The spaces in-between buildings such as roads, streets and paths were not suitable for the pedestrian and other activities that previously took place in those spaces. The need of getting from one building to another is seen by architects mainly as a technical and legislative problem that have to be provided in order to obtain planning permission (Sulaiman and Shamsuddin, 1997).

The characteristics of the place -either physical or non-physical- that relate to the locality are mostly lost in the process of change. Thus continuity and unity in the

existing urban areas are replaced with new settings that lacks sensitivity to the sense of place. The sense of place is a phenomenon that makes a particular place unique and memorable to the people using it (Relph, 1976).

In the new shop-house design for example, the existing semi-enclosed 'five-foot' walkway along the shopping street has been replaced with a less defined over-hang or none at all (see figure 1.1). On the other extreme the streets are enclosed altogether to form indoor air-conditioned shopping arcades and malls with artificially controlled environment. The air-conditioned and artificially lighted areas are very appropriate for pedestrian use especially in the hot and humid climate condition like Malaysia. The buildings generally are inward looking where the design mainly focuses onto the interior layout of the building and façade treatment of the exterior (see figure 1.2). In many cases the problem of designing exterior spaces that links them to the adjacent buildings in the area is more complex to scale of the development as compared to the existing shop-houses. Tibbalds (1993) observes similar problems when he commented on the devastating impact of shops and shopping on many towns and cities. He further argues that from the banal fascias and huge, bland glazed display areas which bear little relationship to the building in which they are set, to the ubiquitous indoor shopping mall, out of town centre and one-off cash and carry facility, they generally exhibit mediocre standards of design.



(a) (b)

Figure 1.1: The new open five-foot walkway (a) and the old enclosed type (b)

Source: Fieldwork 1999

Figure 1.2: The new fully air-conditioned shopping mall.

Source: Fieldwork 1999

The common practice of urban design in Malaysia is linked to the field of planning and architecture in which the design of the exterior spaces are mainly done by architect or considered as left over spaces. The planners' main concern on the other hand is the distribution of services, land-use and circulation pattern.

1.2 SCOPE OF THE RESEARCH

The field of study falls into the realm of urban design theory and practice. It has been categorically described as dealing with aspects of the physical environment, man-made and natural, in conjunction with the human functions that their designs are intended to facilitate as described by Bechtel, Marans and Michelson (1987). The study deals with the design process of creating exterior spaces that contributes toward making an ensemble that is responsive to the needs of the people. Taking the central theme of design as the conception and planning of the man-made elements in relation to existing condition that is, the thought that guides the making of all products; then urban design study is a reflection on the

conception and planning of the man-made physical environment. It seeks to make explicit the diverse assumptions that guide design as suggested by Buchanan (1990). Madanipour (1996) suggests that urban design can be seen as the activity that shapes the urban space. Therefore by studying the process by which architects design urban spaces, it will reveal the urban design method as practised by architects in Malaysia.

The research studies firstly the nature of the problems, the design process and the information used and finally the design thinking or theory adopted that are associated with the design activities. This is an attempt to identify the causes for the failures of the urban space design done by architects in Malaysia. It is an examination of the practical organisation (value free) of information, analyses and selections of information based on theories that resulted in the emergence of a satisfactory design. The research focuses on the process where the objective is to arrive at a framework of procedures within which imaginative and creative ideas could be freely generated as put forward by Reekie (1972). These ideas are responsive to the specific environmental factors and the needs of the people. The study reveals the processes by which the existing design solutions are derived at in an attempt to outline the weaknesses of the current urban design practice and to suggest a comprehensive approach to rectify the problem.

As the study will outline the reasons for the weaknesses in the design of urban spaces in Malaysia a model of technique or approaches for the design of urban spaces that is more responsive to the situation in Malaysia is proposed to overcome the existing weaknesses. The study addresses aspects of urban design theory and practice with a common concern of efficiency and reliability of the design process in the face of the increasing complexity of the design task. The main objective of design should be to provide a socially responsible and responsive environment within a given financial constraint. In the study, theories adopted by architects in the organisation of the exterior spaces are also investigated. It is widely accepted that there are five phases of the design activities as described in Persatuan Arkitek Malaysia (Malaysian Institute of Architects) or P.A.M and Royal Institute of British Architects (R.I.B.A)

conditions of engagement that architects must fulfil. These are the pre-design phase, schematic design phase, design development phase, contract-documentation phase and contract management phase. The research looks into the first three phases that greatly influence the outcome of the design.

By studying the design practices that relate to exterior public spaces, it will be possible to outline the nature of urban design problems, the design processes, the information used and the different participants in the practice by which the solutions has been generated. It will also reveal the urban design method used. The study also reveals the nature of the design practice that will outline the theoretical framework as the basis of the design activities.

Alexander (1972) emphasises on the importance of the approaches and developing appropriate processes for good design. He suggests that, in general, designers and other people responsible for making things do not fully appreciate the extend to which the end product is governed by the processes that are governing events behind the scenes.

Leonardo da Vinci as quoted by Kemp (1981) elaborates the embodiment of theory and practice when he suggests that the absence of formal education have not stopped him from discussing about any subject matter. He argues that design could be better illustrated from experience and therefore he always relates practice to theory. It is important therefore, to establish that practice assists the development of theories and in turn those theories are the foundation for future practices.

In the practice of urban design, mistakes are very difficult to amend due to large-scale development. Sometimes it takes years before any development could be demolished economically. On the other hand, the influence of the built environment on behaviour is difficult to detect and prove. This is due to the adaptable character of the human kind. The traditional view is that the environment will determine the behaviour of those affected by it (Rapoport, 1977). Rapoport (1977) suggests that current view is more towards the

environment acting only as facilitator or possibly, inhibitor to activities. These may act as a catalyst for activities to occur but do not determine or generate activities. These arguments suggest that the environment that we build could have some influence on the way we use those spaces or our behaviour will determine the fitness of the space.

Thus it is very important to make a comprehensive appraisal of the setting to establish the sense of place before any development is committed. The main purpose of developing appropriate techniques or processes of design is to reduce the amount of design error, redesign and delay, and at the same time to make possible more imaginative and advanced designs (Jones as reported by Cross, 1984). This will result in a more appropriate design seen from the different perspectives related to it such as economics, social, culture, environment and behaviour.

In any environmental design exercise, the most important criteria to be fulfilled are the human aspects and the physical characteristic of the place. It is assumed that the main purpose of the design is to satisfy the different form of human needs, for example, the need for shelter, security, comfort, self-expression and many others. Many of the design theory deal with the geometrical and quantitative factor but omit human factors as suggested by Preiser, Visher and White (1991). The human factors are those related to the various aspects listed above and they are mostly qualitative in nature.

It has been commented by various researchers (Canter, 1976; Lee, 1976; Moughtin and Shalaby, 1985) about the needs for the environmental designer to adopt tools that take into consideration man's response to the environment in the design approaches. The study on human response to the environment is still new and few studies could be found related to the area of concern (Madanipour, 1996; Moughtin 1992). In this area the designers are mostly guessing and at best based their judgement on unsubstantiated theories. Others simply use findings, which are formulated and tested, in different environment and for different cultural group (Rapoport 1977).

The study addresses aspects of urban design theory and practice and a common concern with efficiency and reliability of the design process in the face of the increasing complexity of the design task (Gosling, 1984). The main objective is to provide a socially responsible and responsive environment within the financial constraint. At the same time political aspiration could also put more pressure on to the design process. In the study the reasons for non-compliance to recognised method of design is investigated so that it could be addressed in future practices. Why, for example, the human aspect of the built environment has been mostly neglected in practice (Rapoport, 1977)?. Is it because of the lack of understanding about it or due to other factors such as limited or wrong type of information used?. Appropriate methods will be suggested to address the number of errors. The study stresses on the need to characterise theories of urban design based on the design of urban space and hence expand the boundary of knowledge specific to Malaysian practice.

1.3 RESEARCH AGENDA

1.3.1 Research Aims

The aim of this research is to investigate the urban design method by examining the approach of designing urban spaces by architects in Malaysia.

1.3.2 Research Questions

The key research question is why does the Malaysian architectural design method produce poor urban space design?

The subsidiary research questions are:

1) Why is the design of urban spaces neglected which resulted in poor urban design?
2) What are the stages and the types of information used by architects in the design process?

3) How did the architect respond to the needs of organising the urban form that is responsive to the needs of the user?

1.3.3 Research Objectives

In order to answer the research questions, the following objectives are formulated:

1) To identify the reasons why urban spaces are neglected by architects that produce poor continuity in the design of urban spaces.
2) To examine the stages undertaken and the information gathered by architects in the design process.
3) To investigate the ways in which the architects respond to the needs of the user and the public in the design process.

1.4 RELEVANCE OF THE RESEARCH

The subject of the study, Urban Design Method – Theory and Practice - a Case Study in Malaysia, is a new territory and there is no similar study known at the outset of this study. In the Malay language (the Malaysian national language) there is no direct translation to the word 'urban', in its place the currently used terminology is 'bandar' which means town and 'perbandaran' that is translated as township. The lack of definition suggests that the discipline is still in its infancy in the context of Malaysia.

The subject - urban design - is a new field in the Malaysian context in which previously only individual buildings and their architectural design were given due attention. On the other end of the field the planning and landscaping exercise. The spaces in-between buildings are seen as left over spaces for circulation and other planning requirements as required by the building bye-laws.

The design of individual buildings involves a program of satisfying the criteria for their uses, construction, services and images that can be identified fairly

clearly. The design of urban spaces is much more complex, where it deals with the general public. Their influence is more than just a means of communication channels as can be seen in many urban setting in Malaysia today. It is an expression of the society it serves; acting as a setting for cultural display apart from fulfilling their functional requirements. This need is clear in the design of a housing scheme or an urban centre where the design of individual houses or shop-lots is fairly standard. The exercise is complex in which the agent that is directly responsible for their design is not clear.

As a result, the study of urban space design method and approaches will reveal the processes involved and also the theory of design in the Malaysian context. This will contribute to the body of knowledge on design method, design process and urban design.

The research aims to elucidate the basic theory of urban design by exploring the skills and techniques used by practitioners to create places for people. This will contribute towards creating a better sense of place in towns and cities in future urban design practice in Malaysia

1.5 RESEARCH METHOD AND DATA COLLECTION TECHNIQUES

The research adopted a mix methodology which is a combination of quantitative and qualitative method of analysis. There are three main phases in this research that is literature review, sample survey and in-depth interview.

1) Literature review

A review of literature is conducted to establish the theoretical framework of the research. There are two aspects of the research that are reviewed; design method and urban spaces. The literature discusses and evaluates the existing theories pertaining to these two key concepts of the research.

2) Sample survey

In this phase some information are collected using postal questionnaire that addresses the research questions. The respondents are drawn from the registered architectural practice in Peninsular Malaysia in which 473 questionnaires has been distributed.

The information needed in the research are:

i) To establish the reasons why urban spaces are neglected and why there is poor continuity in the design of those spaces?

The information collected are the types of urban design projects handled by the architects and the nature of the problems faced. The consideration of the context and other data relating to the surrounding area in the design process are examined.

ii) The stages undertaken and the information gathered in the design of urban spaces.

The information collected are the various stages that the architects have gone through in their design process. These stages are compared to the stages established in the literature review to highlight the discrepancies in the design process adopted that would affect the quality of the design of urban spaces.

The survey also establishes the types of information used in the design process and comparing it to the information needed as suggested in the literature review of recognised design process.

iii) Response to user and public needs in the design process.

This information is gathered by examining the procedure followed by the architect that involves the needs of the user and the public. The needs of the public and user will be determined by checking their involvement at every stage of the design process.

3) Focus interview

The focus interview has been conducted to establish the detail processes that the architects undertook in solving their design problem and at the same time to ascertain the theories that they adopted as the basis of their design activities.

These techniques enabled qualitative and quantitative data to be obtained. The data from the questionnaire survey is coded, processed and analysed using SPSSX-PC (Statistical Package for Social Sciences). The survey data is analysed quantitatively using descriptive statistics, namely, frequencies and percentages. The data from the in-depth interview on the other hand were analysed qualitatively by creating themes and categories.

1.6 STRUCTURE OF THE THESIS

This thesis is made up of four main parts. The first part consists of the literature review that provides an introductory background to architectural practice in Malaysia. The chapter focuses on the theory of design, design method and urban space design. The general theory of design is elaborated on and the method related to the design was outlined, together with the theoretical outline of all the relevant steps and stages of good design practice. The characteristics of design and design methods are examined in relation to architecture, planning and urban design.

The chapter also examines the important stages in the practice of urban design and the theories associated with it. The process of design is outlined in relation to the design activities. The review outlines the need for human aspects such as

locomotion, sensation, self-expression and territorial requirements that are associated with the physiological, biological and socio-psychological limitation of humankind.

Part two of the thesis consists of four chapters that are devoted to the research objectives and analysis of the case studies. Chapter three outlines the scope, purpose, objectives and hypothesis of the study. It discusses the problem under investigation and the research method. The technique for data collection and their treatment in the analysis is also elaborated.

Chapter four describes the analysis of the collected data especially from the postal questionnaire. The chapter describes and outlines the practice of urban design in Malaysia. Emphasis is made on the nature and the definition of the urban design problems. How they vary or relate to the normal architectural design problem is explored to provide an overview of the use of design method and their understanding in Malaysian practice. Other aspects such as the parties involved in the design process and their role in the outcome of the design is also outlined.

Detail process of urban design is discussed in chapter five. The chapter outlines the steps taken in solving a particular urban design problem. The various agencies involved in the process is described and how their roles hinder or assisted in the formulation of the problem and their eventual solution. The chapter discusses the information used in the current design methods and their practice that includes the participation of the user at certain stage of the design. The human aspects of the design process is also revealed and outlined. The most common theories from which the practice are based and new theories developed as a result of the exercise are reviewed in chapter six.

Part three of the thesis consists of one chapter where the conclusion to the study is made. It begins with the main findings of the research that addresses the research questions which includes the urban design methods and theories as practised. The recommendations to the urban designers and authorities associated

with the practice are outlined before recommendations and suggestion for further research priorities are made. Part four includes the research bibliography and appendices.

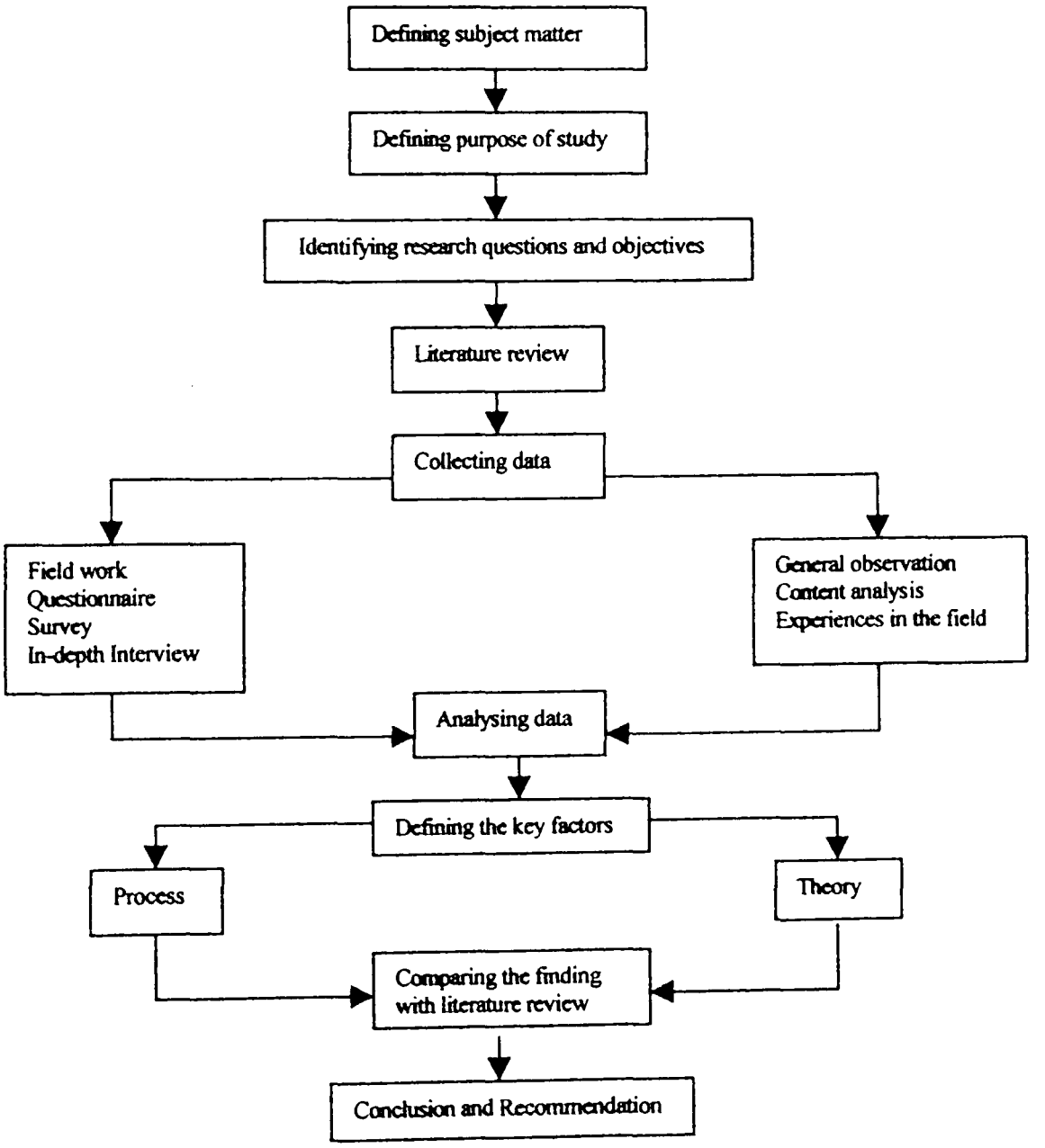


Diagram 1.1: Structure of the thesis

PART ONE

CHAPTER TWO: DESIGN METHOD AND URBAN DESIGN

2.0 INTRODUCTION

This chapter sets out to examine the existing theories pertaining to design method and the design of urban spaces. The main aim is to identify the design method that are known to produce good result or those that has been proven theoretically as appropriate techniques through secondary data and experiences in the field. It will also establish urban design theories adopted with regard to urban space design. It will be divided up into six sections where the first section discusses the concept of design and other related concepts and their area of concern. The second section reviews the nature of design method in the process of design where the purpose was to examine the framework for good design method.

The third section will review the nature of design activities by outlining the stages involves in the practice of design from the theoretical perspectives. The fourth section discusses the information that is needed in the design process. The fifth section reviews the theory of urban design and the concept of urban spaces. This section will highlight the relation between urban space design to the general theory of design. The final section provides a conclusion to this chapter.

2.1 DEFINITION OF KEY CONCEPTS

The key concept in this research is design and therefore discussion of this concept will clarify the issues addressed in the study.

2.1.1 Design

The Encyclopaedia of World Art (1970) suggests that design is a means of ordering visual and emotional experience to give unity and consistency to a work

of art and to allow the observer to comprehend its meaning. The logic is felt 'intuitively' by the designer, harmony, rhythm and movement are often 'sensed' rather than worked out primarily on a rational level. This definition can be used to describe designs other than the work of art.

The architects' role is that of a creative artist which distinguishes him or her from a technician (Danby, 1963). An architect expresses his ideas through design by arranging physical materials such as timber, stone, concrete and others to form spaces and surfaces that are pleasing to the people experiencing his building. There is also a range of practical requirements of a client that must be fulfilled.

Design can also be seen as the means we employ to satisfy some of our many and increasingly intricate needs (Mayall, 1979). It covers many aspects of our life such as cities, factories, schools and houses with all those products we use within them.

Thus, the simplest definition that can be given to design activities is an act of changing existing situations or things. Other authors expand this further by suggesting that design activity is about changing existing situations or things for the preferred ones (Granath, 1991). The Oxford English Dictionary (1989) defines design as a mental plan, a plan conceived in the mind and intended for subsequent execution. It is a conception of an idea to be carried into effect by action such as a project. In a weaker sense it is an aim, purpose, intention or an adaptation of a means to an ends. Practically, design is the search for and to use the essential, that is the character of life and their need as suggested by Hurwitz (1964).

Since architects are the main forces that influence the changes in the urban environment of Malaysia, the main aim of the research is to investigate the method of designing urban spaces in architectural practice. The design of exterior spaces is used in this study as the vehicle to outline the urban design practice as stated before. The following concepts will elaborate the theory further that will be used to explore the findings from the research.

2.1.2 Other related concepts

The following related concepts to design would be examined in to order to highlight the importance of understanding the concept of design and its area of concern. The related concepts that are important to the discussion of design are design structure and design principles. On the other hand the area of concern of design can be divided into six: problem solving, decision making, articulation of feeling, compromise, user participation and communication.

(i) Design Structure

Design structure is an organising principle through which parts and pieces are brought together into a unified shape and form (Dober, 1969). The unity in urban areas could be achieved by creating strong centres and through manipulating lines of circulation or transportation system. Centres are created or recognised in an effort to impose some kind of visual order on the environment. The other common feature of design structure is the hierarchical ordering of parts.

Architects compose the environment by referring to the context; these are the space, colour, texture, proportion, scale, perception, climate, social and economic needs of the user. The quality of space will be acknowledged when it is enclosed, that is created in three-dimension with shapes and forms. The spaces can be defined or created by walls, buildings, trees and other elements that are associated with it. External spaces are also important for ventilation, lighting and aesthetic consideration. Thus good urban design involves a pleasant and efficient way of arranging buildings and the spaces in between them. The main feature of the environment will be elaborated further.

In generating design, colour plays an important role where it can be regarded as the quality of light reflected from a particular object (Danby, 1963). Colour is a sensation which helps Man visualise the physical world that influence their perception of the quality of the spaces and is very flexible (Bevlin, 1963). Hence,

in the design process the consideration of colour should be one of the influential factors.

Texture plays an important role in design where it is an aspect of colour that not only influences the sense of sight but at the same time the sense of touch (Danby, 1963). The texture is directly related to the finishes and material of the building. Isaac (1971) suggests that the distinction between pattern and texture is one of size or scale. Texture becomes pattern when it increases in scale and the actual shapes becomes readily identifiable and is repeated.

Proportion as suggested by Danby (1963) is the relation of height to width to length that can be in three or two dimensions. Scale, on the other hand, is the comparison of one set of proportions and dimensions with another set of proportions and dimensions. He further suggests that perception is the process that goes on people's minds when they try to form a unified conception of the environment. Downs and Stea (1973) argue that perception is closely connected to events in the immediate surrounding and is linked to immediate behaviour. Danby further suggests some principles associated with perception such as proximity or nearness, similarity and continuity.

Man's first dwelling were constructed to provide shelter from the climate and protection from wild animals or other enemies. This basic need is related to the needs of safety and comfort. There must also be other needs to satisfy mans' desire that is related to social activities to give impetus to create buildings and exterior spaces which may be in the form of an individual or group of peoples. The economics, on the other hand, is the means by which the design is translated into physical reality (Danby, 1963).

(ii) Design Principles

For the purpose of this study the following principles as suggested by Mayall (1979) and many others will be used as a basis for the measurement of a good design process. These are related to totality, time, value, resources, synthesis,

iteration, change, relationship, competence and service. Mayall offers the following definition to the concepts.

The principle of **totality** can be seen as that which bonds together the different elements that forms part of the design problem. The different characteristics of the various elements will interact to create the whole. The interrelated aspects can be of different form such as physical, social, performance, aesthetic and others. This will introduce a sense of unity for the whole design.

The boundary of the whole can be the object of the design alone and can also include those that may interact with it outside its own boundary. The other important aspect is that the characteristics of these elements may change as a sequence of time or circumstances.

Time will influence the features and characteristics of all products. A good designer will always consider the effect of time on their product so that its usefulness will be of considerable length of time. The characteristics of all products have different relative **values** depending upon the different circumstances and times in which they may be used. Some authors judge a product in terms of its 'use value' which is the basic purpose of a product such as a chair for seating and 'esteem value' which is the value of a product over and above its basic purpose such as the appearance of the chair.

The design, manufacture and life of all products depend upon the materials, tools and skills that are the **resources** available at the time. In all design activity the designer **synthesises** to make sure that all features of a product must combine to satisfy most, if not all the characteristics we expect. At the same time consideration must be given for the resources available to make and use it. This must be viewed in the context that compromise may have to be exercised.

In the design processes there is an evaluation stage that begins with the first intention to explore the need for a product or system. These will continue throughout the stages of the design and development to the user himself, whose

reactions will often cause the **iterative** process to continue with a new product or system. Design is also a process of **change**, an activity undertaken not only to meet changing circumstances, but also to bring about changes to these circumstances by the nature of the products it creates. Design work cannot be undertaken effectively without establishing working **relationships** with all those activities concerned with the conception, manufacture and marketing of products and, importantly, with the prospective user, together with all the services he may call upon to assist his judgement and protect his interests.

Design **competence** on the other hand is the ability to create a synthesis of features that achieves all desired characteristics in terms of their required life and relative value. The approach is to use available or specified materials, tools and skills, and to transmit effective information about this synthesis to those who will turn it into products or systems.

The principle of **service** is where a design must satisfy at least the majority of the user if not everybody, that is not just those for whom its products are directly intended. In practice not all the aspects stated above could be effectively considered in which case a compromise is necessary. However, at least the majority of the desired characteristics can be achieved.

Using these as the guiding principles for good design process, assessment could be made on the approaches taken by those architects in practice. The research is aimed at examining whether the designers in practice follow the principles as stated above in their quest to design good urban form. The strengths and weaknesses of the practice could then be identified and changes could be suggested for future practice.

2.1.3 Design areas of concern

This section will define areas of concern that will be used to describe design in more detail. Aspects that should be part of the designers' activities in producing appropriate solution will be explored.

(i) Problem Solving in Design

Rowe (1987) sees design as a fundamental means of inquiry by which man realises and gives shape to ideas of dwelling and settlement. This view is related to architecture and urban design where it is a practical form of inquiry that is concerned with making a certain commonplace useful, quite apart from its more obscure benefits. Generally design exercise begins with a problem where Rzevski in Jacques and Powell (1981) looks at design as the solution of a problem that will create new problems similar to the process of evolution. He argues that design is a class of problem solving. It began with the identification of a problem as perceived by the client and ends with a solution of the original problem as perceived by the designer. However as soon as it is put into use, changes will establish new relationships among existing components of the world and thus create new expected or unforeseen problems. To limit the impact of these new problems the client and the user must be carefully represented in the problem solving equation.

(ii) Decision Making in Design

Granath (1991) suggests that apart from problem solving, design could also be seen as a decision making process, as a communicative process and as an aesthetic, creative process. At different level of design stages decision has to be made and problems will have to be solved. The communication aspect occurs at all level of the process. Since urban design is dealing with the physical and the non-physical aspects of the environment, the creative and aesthetic judgement will have to be made at some levels.

From the arguments stated above it can be seen that design is a process that depends on the ability of the designer to make decisions and to be able to understand the problem. It also depended upon the sensitivity of the designer towards the surrounding, the client, the user and his or her ability to make aesthetic and creative judgement. Controlling all this is the emotional status of the designer, which is value laden and greatly influenced by their cultural

upbringing. Design is not only a product but also a process towards achieving and fulfilling the needs that it was created for in the first place. Design, it has been argued is a solution for a given problem and also the creation of a new problem, which in turn requires a new design to solve the newly created situation. As such it is an evolution that keeps the designing process going. For this very reason design is very much influenced by the physical and social environment.

(iii) Articulation of Feeling in Design

Design has also a direct bearing on the emotional and cultural needs of the people. Some writers attributed the function of art (design) as the articulation of feeling, and therewith the concern about and support of emotional life and the presentation of inward reality for our self-knowledge, which is the true measure of culture (Langer, 1966 in Pipkin et. al., 1983). From this argument it can be said that design is culture specific, an expression of the culture group and a representation of the emotional status of the designer or the group or both. It is also related to the technological competency of that cultural group, the availability of the materials, needed to produce the end product and also the skill of the labour needed to construct it. In most cases however, financial status of the client will greatly dictate the outcome of the exercise.

Following the above argument it can be concluded that the responsibility of the designer is very complex in which he or she must constantly synthesise the total range of personal knowledge and experience and continually assume the risks and commitments of action. He encounters the world as a totality. There is no place for the compartmentalisation of experience and knowledge. Science in a professional episode does not divide neatly into taxonomies or typologies. The totality includes apart from those aspects mentioned above, the dimensions of space and time. The historical successor of each concrete situation, the objective understandings and subjective consciousness of each participating personality, and the encapsulating social structures of the culture in which the event unfolds are also included in design (Bolan, 1980 as reported by Pipkin et. al., 1983).

iv) Compromise in Design

The complexity of the problem and the demand on the designer will lead towards a compromise in the design and execution of the solution. This compromise could be minimised by the application of certain guidelines in the process of design. This in turn will need to be modified and changed as new situation arises. Hence at the very best design is a compromise that requires some form of framework for it to be effective.

Parameters for design keeps on changing with the generation of new ideas. For example, architects have historically relied on interpretative framework, avoiding for the most part the relevance of the social sciences for architectural design. But recent experience has shown that more and more people make use of social science data in order to reduce the number of assumptions. In a situation where compromise has to be made this reduction of assumptions will reduce the chance for error to be made. Where the more tools the designer have at his disposal to establish the needs of the user and the environment, there will be fewer assumptions he or she will have to make.

v) Participation in Design

Papanek (1985) suggests that meaningful designs are designs that fulfil aesthetic, socio-cultural, functional and environmental requirements. In practice it is almost impossible for the architect or designer to establish and fulfil these needs without the involvement of the client group, that is through some form of participation or consultation. The designers in most cases would be able to interpret the aesthetic, functional and environmental requirements. However, in these cases user participation will increase the validity of the design. The social-cultural requirements on the other hand require an interpretation of the social and psychological needs of the user. These are some of the frameworks that must be characterised before any design method could be applied meaningfully.

Moughtin (1992) suggests that an aspect of the designer's skill is the development of a menu of techniques for incorporation into the design process to elicit people's view. The elicitation can be done by getting the people involve in the process. There are various techniques and level of public participation proposed by Arnstein as reported by Moughtin (1992). These are summarised in the table below.

	Techniques of Participation
1	Community Administration
2	Self Build
3	Community Planning and Design
4	Political Manifesto
5	Public Meeting
6	Public Enquiries
7	Planning Appeals
8	Exhibition
9	Press Release
10	Planning Survey
11	User Study
12	Anthropological Study

Table 2.1: Techniques of public participation.

Source: Moughtin, 1992, p.14

Arnstein (1969) in Moughtin (1992) on the other hand suggests the following ladder of participation:

	Levels of Participation	
1 2 3	Citizen Control Delegated Power Partnership	Degrees of Citizen Power
4 5 6	Placation Consultation Informing	Degrees of Tokenism
7 8	Therapy Manipulation	Non-Participation

Table 2.2: Levels of participation

Source: Moughtin, 1992, p. 14.

The practitioners are often in situations demanding decisions that have both intended and unintended consequences and the later are frequently more important (Giddens, 1979 as in Pipkin, 1983). In the design of the built environment, designers cannot avoid making decisions which affect others indirectly. For example, buildings that are designed and built not only fulfil the clients need but also changing the topography of the place which later affect the light and air quality of the surrounding area and also influence the behaviour pattern of the people using the area. Apart from that, the aesthetic composition of the place will also be affected which could be intentionally or unintentionally achieved. Thus in the process of making decisions, the designer must be well informed of most if not all the relevant information about the problem. In this approach, initial studies such as the contextual, precedent, nature of the problem and other related studies must have been made.

vi) Communication in Design

In order to be useful a design as a product must be able to be understood by those who are affected by it. During the process itself the design needs to be clearly communicated in such a way that all those different disciplines involved will understand what is going on and be able to contribute meaningfully. Mistakes will normally be made when there is a breakdown in communication within the

design team. The same applies between the design group and the client group, where a misunderstanding may result in inappropriate design due to wrong information being communicated between the two groups. It may also be the case where the right information is transmitted but wrongly understood. This aspect is emphasised by Cornice (1991) when he suggests that there are evidence showing that many problems in relation to quality in the construction are the result of poor communication in the design process.

He continues to argue that the problem caused in modern buildings is due more to deficiencies in managing communication during the design process than to merely technological factors. As such, communication is a very important aspect in the process of design. Many forms of communication have been developed in order to reduce the amount of errors either in the process of design or in the implementation stage. Traditionally, drawing on paper and model have been used effectively. Recently computers play more roles either in the form of two-dimensional or three-dimensional modelling. The new surge in information technology will affect all stages of design activities. From the arguments above, design is an activity which includes the following processes: (1) Decision making process (2) Problem solving process (3) Creative process and (4) Communicative process.

Designers therefore must address the various aspects of design process as mentioned above. It has also been established that the user plays an important role in the process in order to produce appropriate solution generated from the design activity.

2.2 DESIGN ACTIVITIES

Design activities are based on the formulation of a prescription or model that represents the intention to create some artefacts and must include some creative steps (Cross, 1984). The Oxford English Dictionary (1989) describes designing as the action of design, marking out nomination, planning and preliminary sketching that is characterised by constructive forethought. The Encyclopaedia of

World Art (1970) suggests that designing is any act in the creative process that presupposes a fairly clear idea of the final work of art, which furthers its execution that is based upon existing means of achieving the objective which is brought to a clearly documented conclusion.

This review reveals that there are as many definitions of design as there are writers on the subject. The above description of design activities will be focused in the research to see whether the designer's views on design converge on the same theme. This is very important in an effort to identify whether it is a deliberate act of design or just doing a job. This is in an effort to answer the question whether or not the designers see the exercise as a design activity or merely implementing the wishes of the client. It also reflects the stages undertaken by the architects in the design process which would meet the second objective of this research. Jones (1970) lists eleven definitions and descriptions of designing as suggested by various authors that appear below.

{PRIVATE }Alexander, 1963	Finding the right physical components of a physical structure
Archer, 1965	A goal-directed problem-solving activity
Asimow, 1962	Decision making, in the face of uncertainty, with penalties for error
Booker, 1964	Simulating what we want to make (or do) before we make (or do) it as many time as may be necessary to feel confident in the final result
Farr, 1966	The conditioning of factor for those parts of the product which come into contact with people
Fielden, 1963	Engineering design is the use of scientific principles, technical information and imagination in the definition of a mechanical structure, machine or system to perform pre-specified functions with the maximum economy and efficiency
Gregory, 1966	Relating product with situation to give satisfaction
Jones, 1966	The performing of a very complicated act of faith
Matchett, 1968	The optimum solution to the sum of the true needs of a particular set of circumstances
Page, 1966	The imaginative jump from present facts to future possibilities
Reswick, 1965	A creative activity - it involves bringing into being something new and useful that has not existed previously

Table 2.3: Definitions and descriptions of design. Source: Jones 1970

From the descriptions above it can be seen that designing activities is about both the process and the product. In most circumstances both are closely related and have influence on each other. The study is similar to Evans (1982) who makes an assumption that designers shape the environment by imprinting their personality, values and priorities in their creations. Hence, the designing activities will reflect these aspects of the designer. The study is also based on the assumption that the criteria for the design of habitable new environments should be based on the evaluation of existing environment. Modifications will be made if necessary based on detection of fitness, user satisfaction, building performance, importance of health and safety features as suggested by Preiser (1991).

2.3 DESIGN METHOD

Method according to Oxford English Dictionary (1989), is a special form of procedure adopted in any branch of mental activity, whether for the purpose of teaching and exposition, or for that of investigation and enquiry. It may also be defined as a way of doing anything, especially, according to a defined and regular plan.

Methodology is in turn seen as the science of method, that is the study of the direction and implications of empirical research. Cross (1984) uses the sense of methodology as the general study of method. Gregory (1966) on the other hand defines methodology as a study or extended development of method in some sphere of activity. Design methodology may then be described as the study of the principles, practices and procedures of design. The main concern is with how design is and might be conducted. This concern therefore includes the study of how designers work and think; the establishment of appropriate structures for the design process; the development and application of new design methods, techniques, and procedures; and reflection on the nature and extend of design knowledge and its application to design problems (Cross, 1984). This study is contributing to the development of design methodology in an effort to improve the practice of urban design in Malaysia.

For the purpose of this study, design method, as defined by Gregory (1966) among others, is intended to imply that the general approach to solving problem which is likely to lead to a successful solution. It must be backed by a certain amount of imagination and intuition with a systematic investigation of the problem, including the use of helpful techniques. It is geared towards solving problems of design decision making.

The study will give a special emphasis on the method aimed at the area between intuition and experience (traditional) on one hand and rigorous mathematical and logical treatment on the other (as suggested by various authors such as Cross, 1984).

In order to be able to understand and describe the nature of design method a review has been made on the description of different types of design method that are known in the field. Shirvani (1985) proposes six groups of design methods based on his review of the subject. These are:

(i) Internalised (Steinitz, 1979) Methods

Commonly described as intuitive design that may also be subjective, personal, creative and sometimes almost irrational. The designer initially develops a design for a project in his or her mind with the benefit and assistance of memory, training and experience. The vision and background of the designer (cultural awareness and creativity) determine the degree of success of the design.

The method is currently more commonly and readily applied in developing countries where the opinion of the designer in the decision making process is held in a higher esteem as compared to that in the more developed nation. However, there is now a change of this opinion where politician, economist and developer began to exert influence on the designer.

(ii) Synoptic (Hudson, 1978) Methods

Commonly described as rational or comprehensive where a consistent form of comparability between alternative designs can be made. The following example shows the various steps taken in a synoptic method:

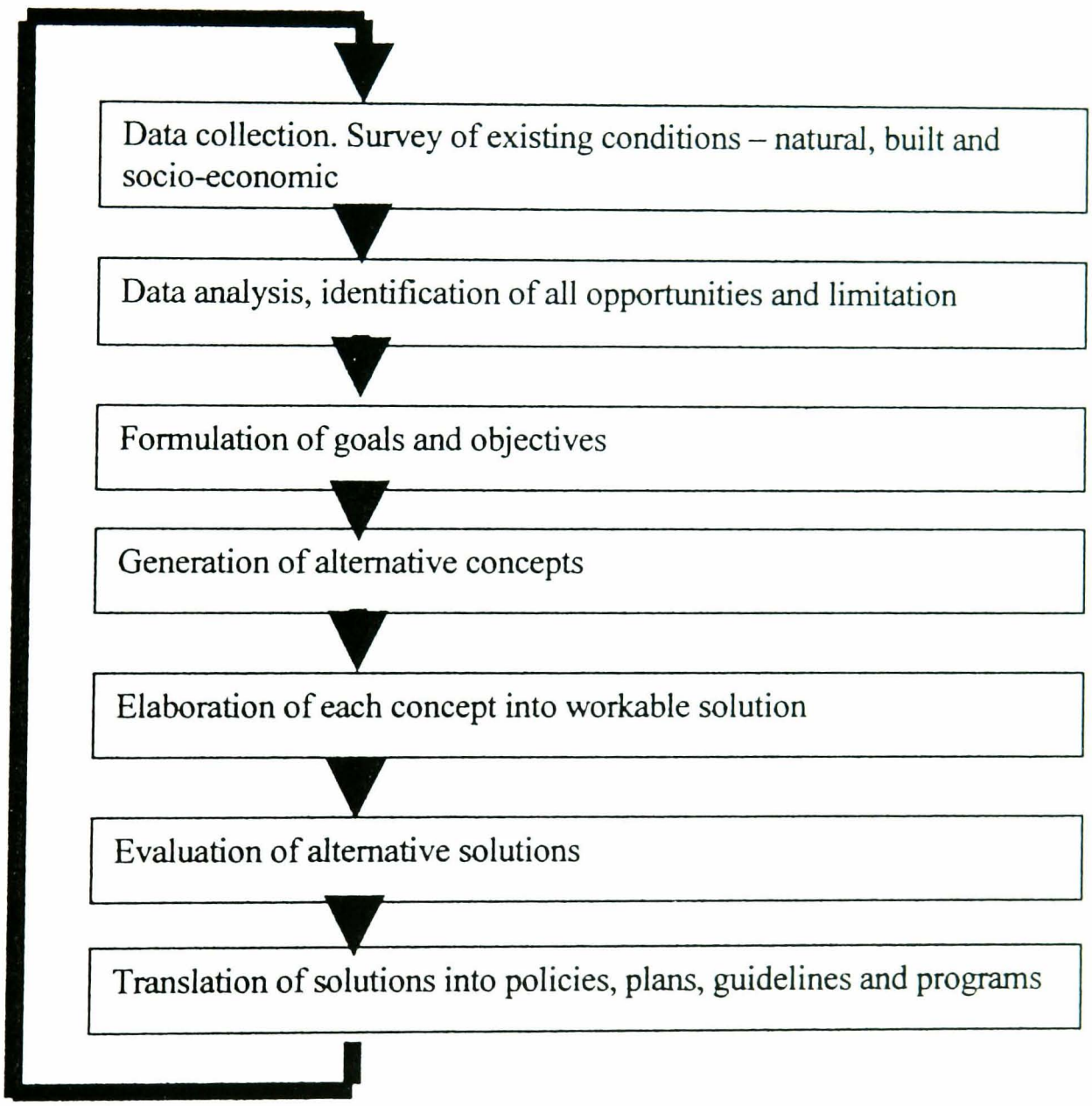


Diagram 2.1: Synoptic Method

Source: Shirvani 1985.

(iii) Incremental Methods

Essentially, another version of the synoptic method where an overall framework is developed and then incremental plans and programs are formulated to achieve the main goals and objectives. The method is cyclical in an effort to reach the ultimate goals and objectives which are applicable to individuals, groups and organisations in the decision making process.

(iv) Fragmental Methods

The process is similar to the synoptic process except that it is incomplete where steps are omitted in preference to intuition. This method is a mixture of synoptic and intuitive methods.

(v) Pluralistic Methods

The approach attempts to incorporate into the design process the functional/social structure of an urban area as well as the inhabitants value systems. The method attempts to avoid operating within a controlled design tradition, where open-ended design, with some framework that links and relates the parts, is used to produce design for a dynamic system (Rapoport, 1977).

(vi) Radical Methods

The process has its roots in Marxist theory where the concept is that, in order to understand and design for a complex urban setting, social processes must be understood first.

This review has highlighted that there are several descriptions of methods that the designer in the field could adopt in their quest to come out with the best solution. There are also variations in terms of the use of social and cultural data.

Since the product of this study is a recommendation of a set of characteristics for a design method that may produce a better result in the context of Malaysian practice, some of its specifications are reviewed here. Rzevsky in Jacques and Powell (1981) suggest the following specification for the design of design methods. The specification consisted of three parts: requirements, constraints and criteria for the assessment of the design and methods.

At present and in the foreseeable future no design method could be expected to guarantee highly original design solutions. This is apart from the fact that design is an exercise of compromise. However the main purpose of design method as suggested earlier is to reduce error in design. The use of design method should be seen as a subroutine, which is laterally applied with other approaches that the designer is adopting. A good method should, however, ensure that (1) the design tasks are easy to perform and (2) the design solutions do not create more problems than they solve and are easy to implement, test, modify, maintain and use. They should also contain a small number of design errors.

The result should be a reduction in costs of design, manufacturing and maintenance of products, which resulted in a considerable improvement in product reliability. The study will look at current methods used by designers in practice with the aim of assessing their appropriateness and proposal will be made to improve the performance of the design activity based on the judgement of the established methods reviewed in this chapter.

2.3 DESIGN PROCESS

It is widely accepted that the design process includes five phases of the design activities as described in PAM and RIBA conditions of engagement that the architects must fulfil. These are the pre-design phase, schematic design phase, design development phase, contract-documentation phase and contract management phase. The research is looking into the first three phases that greatly influence the outcome of the design.

The different phases described by Loo (1981) as: Pre-design phase, which involves the set up of the main objectives of the design and to produce a brief. If a site for the project has not been identified then in this phase site selection will be made. Schematic design phase involves site survey and analysis and producing conceptual design in accordance to the accepted brief. Preparation and submission for the outline planning permission will then be made. Design development phase involves detail design of the scheme that produce documents and drawing for the approving authorities such as fire, planning, drainage, electricity, water and others. These activities do not reflect the full extend of the processes that the designer follow in creating spaces and places.

The Royal Institute of British Architects (RIBA) practice and management handbook describes the design process as having four phases:

Phase 1: Assimilation

The accumulation and ordering of general information and information specifically related to the problem in hand.

Phase 2: General study

The investigation into the nature of the problem. The investigation of possible solutions or means of solutions.

Phase 3: Development

The development and refinement of one or more of the tentative solutions isolated during phase 2.

Phase 4: Communication

The communication of one or more solutions to people inside or outside the design team.

Lawson, 1980 and Moughtin, 1992.

These are then subdivided further into twelve stages of logical course of action.

1	Inception
2	Feasibility .....BRIEFING
3	Outline proposals
4	Scheme design .....SKETCH PLANS
5	Detail design
6	Production information
7	Bills of quantities
8	Tender action .....WORKING DRAWINGS
9	Project planning
10	Operations on site
11	Completion
12	Feed-back .....SITE OPERATIONS

Markus (1969) and Maver (1970) as in Lawson (1980) develops the above into the following sequence:-

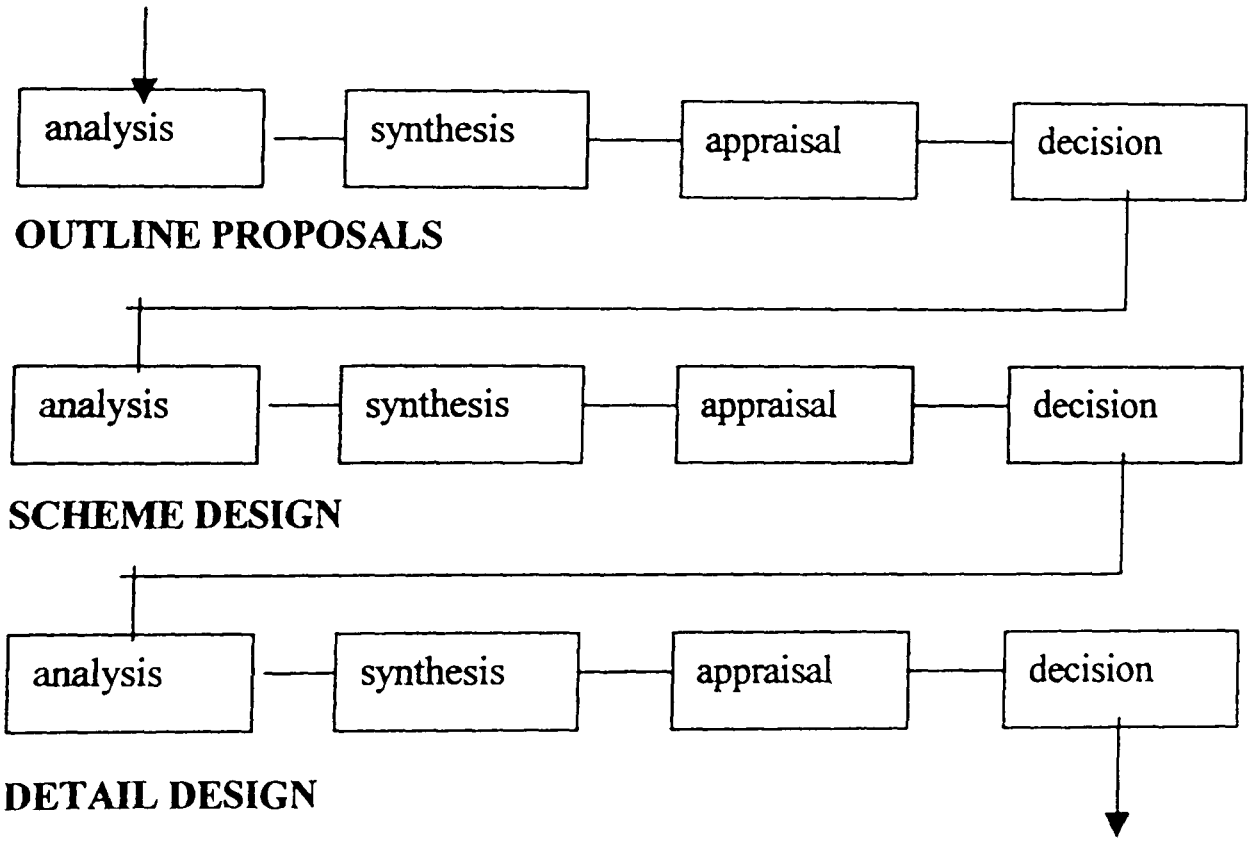


Diagram 2.2: The Markus/Maver map of design process
Source: Lawson, 1980 p.26

Moughtin (1992) suggests that the process as outlined by Markus and Maver above can be extended to include urban design, town planning and regional planning. The process actually links the decision on the higher level to the stage below it such as from regional to town planning.

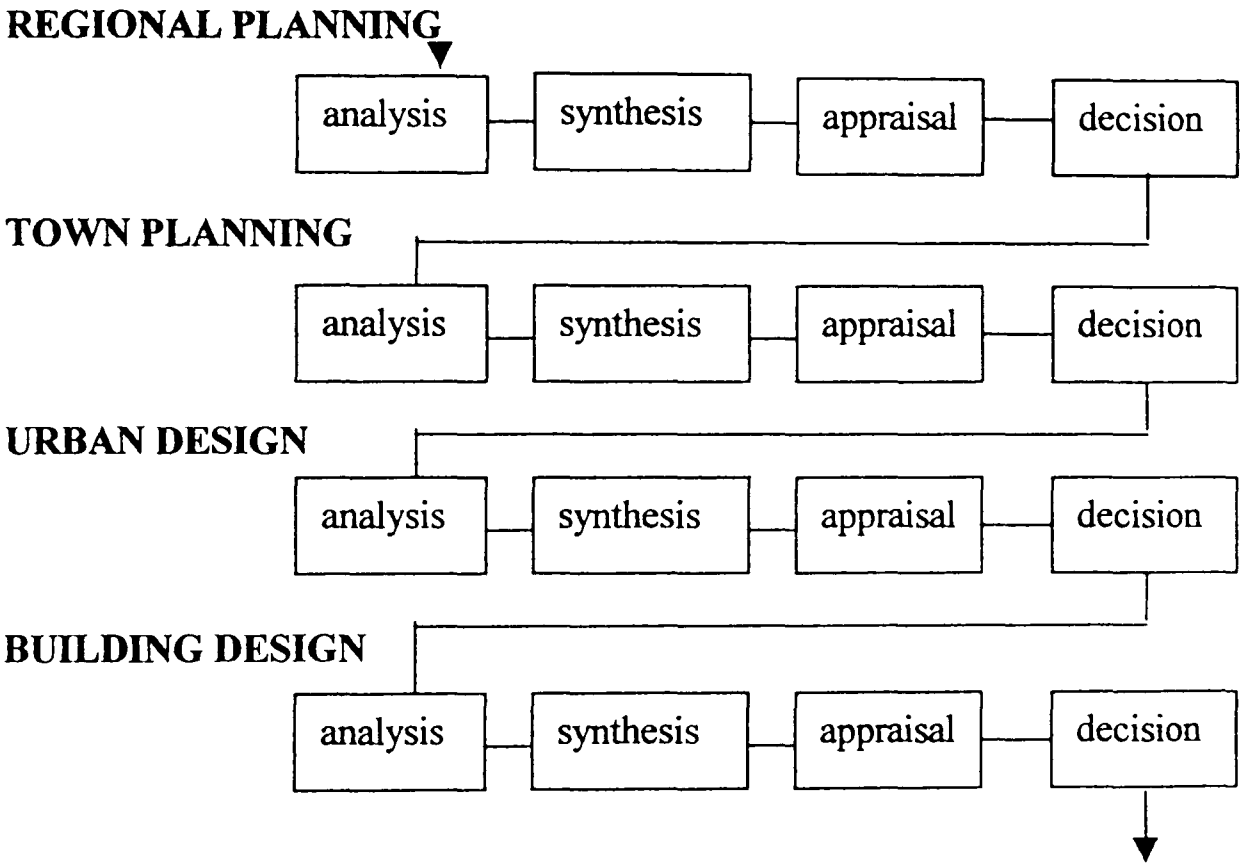


Diagram 2.3: Design process (Moughtin).

Source: Moughtin, 1992

The figure shows that the process is cyclic and should be applied at the different stages of the design activity.

Previously Jones (1970) suggests that the simplest and most common observation about designing is that it includes the three essential stages:

1. ANALYSIS - breaking the problem into pieces
2. SYNTHESIS - putting the pieces together in a new way
3. EVALUATION - testing to discover the consequences of putting the new arrangement into practice

Mackinder and Marvin (1982) also suggest similar model that is most commonly recognised by theorists and teachers in all fields of design and decision making:

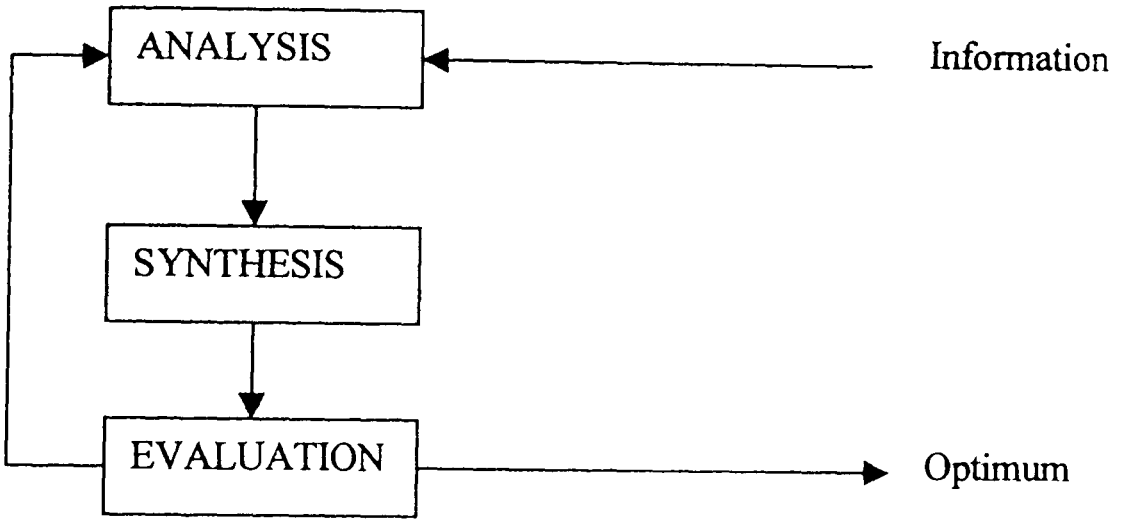


Diagram 2.4: Designing Model.

Source: Mackinder and Marvin (1982)

The model is only partially accurate because it ignores any possibility of blind trial or intuitive action.

Asimow (1962) and Watts (1967) as reported by Lawson (1980) suggest that not only the cycle repeated many times during the process but also each cycle is progressively less general and more detailed than the one before it.

The terms analysis, synthesis and evaluation are also referred by Jones (1970) as divergence, transformation and convergence.

DIVERGENCE	Testing for stability or instability in connection with the problem. Decision deferred until next stage. Involve both rational and intuitive actions - common error is to be too speculative at this stage.

To de-structure or destroy the original brief while identifying these features of the design situation that will permit a valuable and feasible degree of change.

TRANSFORMATION The stage of pattern making, fun, high-level creativity, flashes of insight, inspired guesswork; everything that makes designing a delight.

This is a stage where experience and sound judgement are necessary to avoid costly mistakes.

Value judgement and technical decisions are made which should reflect the political, economic and operational realities of the design situation.

CONVERGENCE The aim is to reduce the secondary uncertainties until one of the many possible alternative designs is left as the final solution.

Archer as in Cross (1984) suggests the following phases of design and process which is similar to those put forward by the other authors except that he uses a different term to describe the three phases mentioned above. He uses the stage executive phase to describe the process after the analysis and synthesis is made which actually is the translation into design solution. Evaluation is not a phase in itself but part of the creative phase which also includes the synthesis.

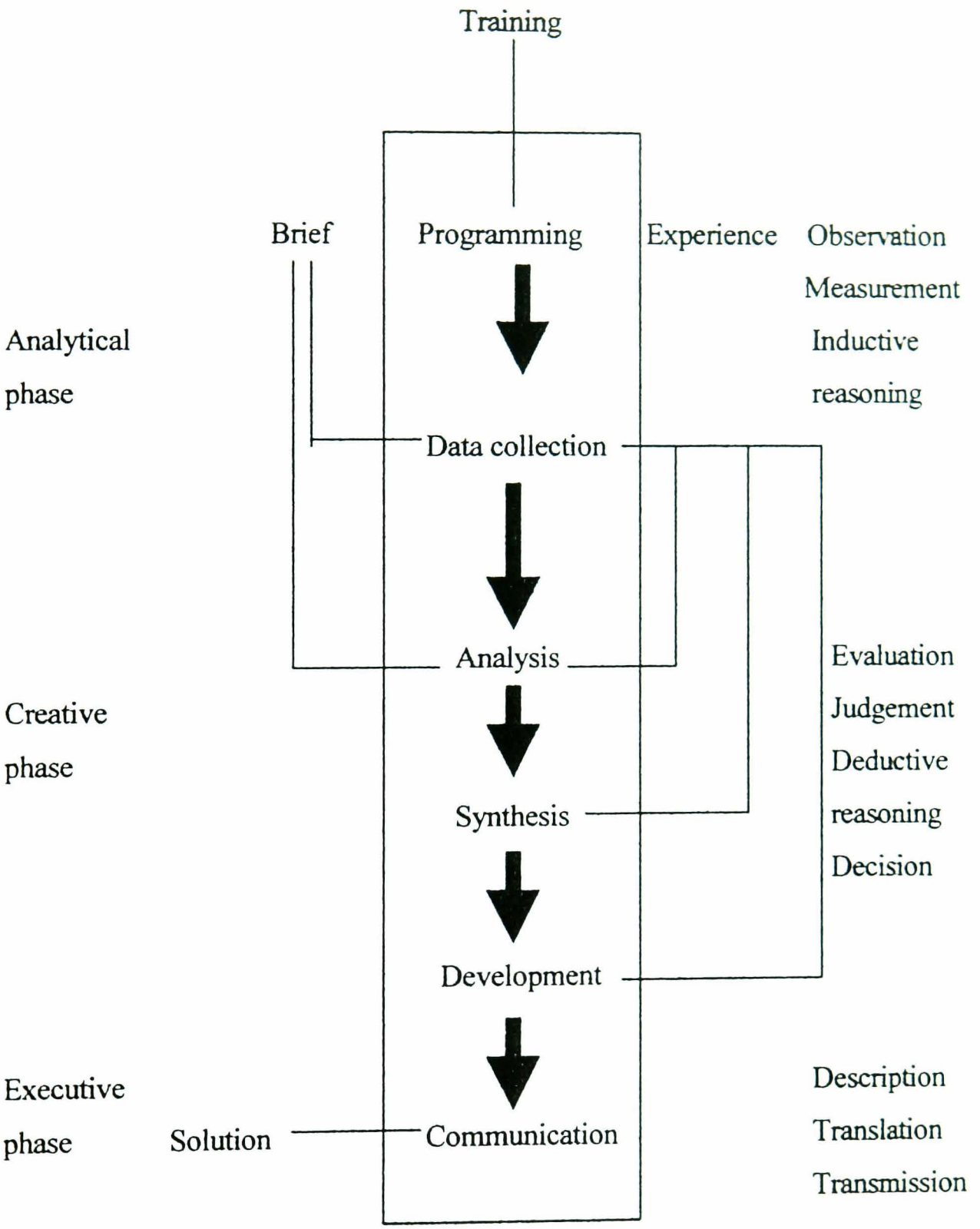


Diagram 2.5: Design Process (Archer).

Source: Cross, 1984

The following chart describes the process put forward by Zeisel (1975) as reported by Green (1990). In this situation it is important to outline the process of determining the proper design alternatives and weighing the importance of various criteria that forms the heart of the design process (Zeisel, 1975 as

reported by Green, 1990). In this model, there is a post-diagnostic evaluation stage which is used to influence the pre-design process of subsequent projects. Thus, the design process can be seen as a chain linking one project to another.

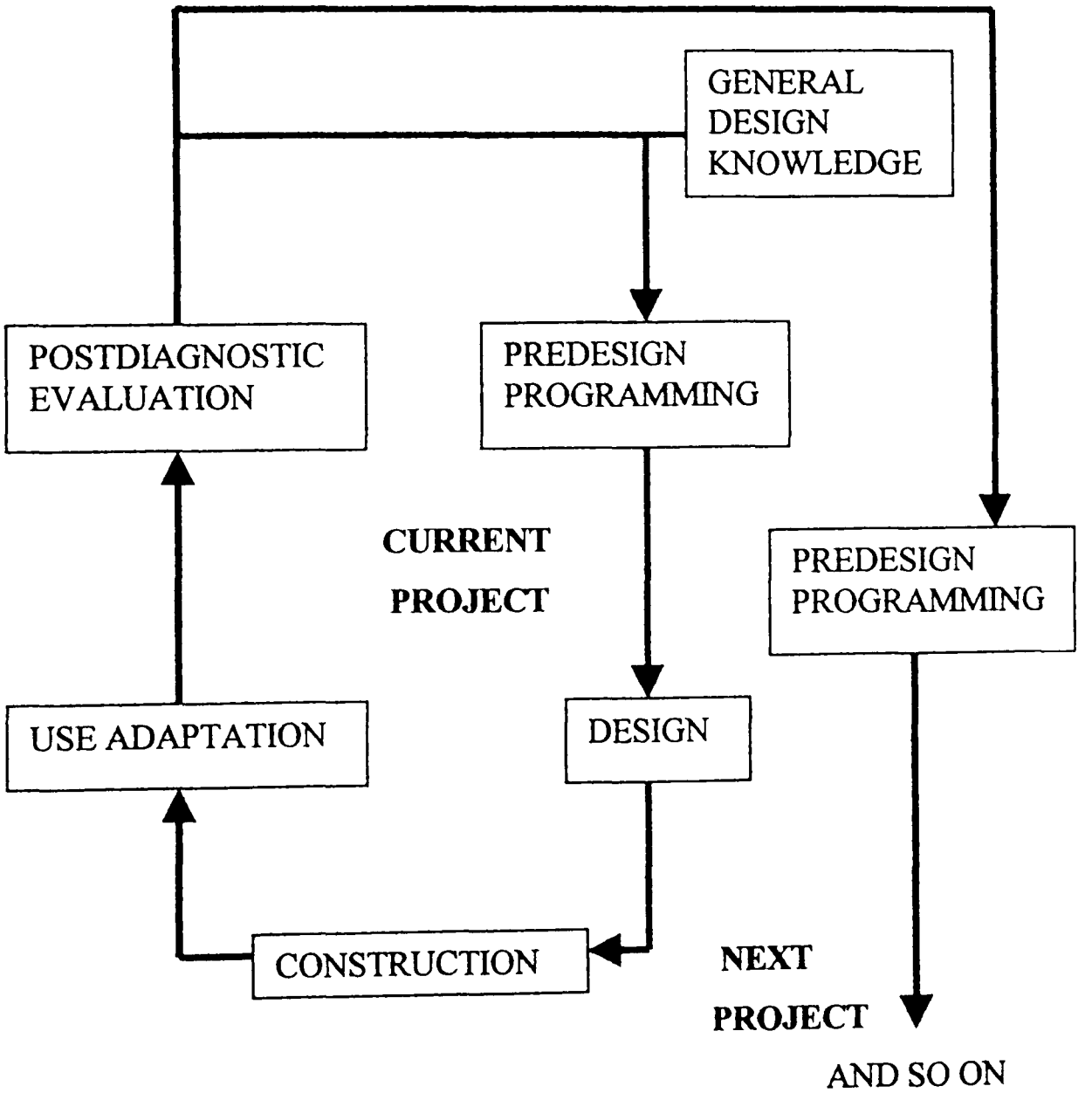


Diagram 2.6: Design process (Zeisel).

Source: Green, 1990

Wallace (1978) as reported by Moughtin (1992) however suggests a design process that adopts scientific thinking which will allow entries into the design process at three different points. These are from design theories, ideas, or at the investigation stage. He produces a scientific design process as represented in the diagram below.

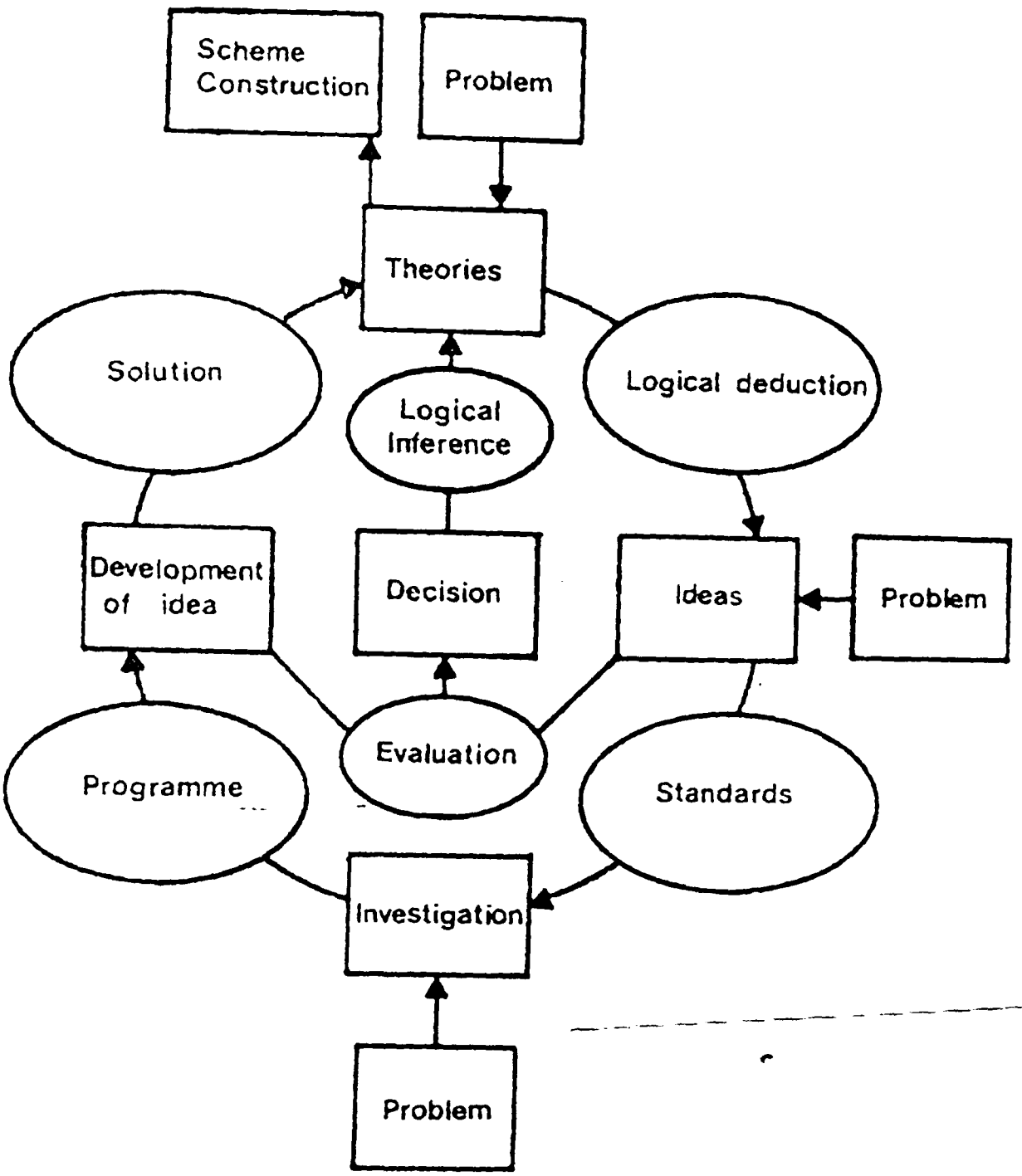


Diagram 2.7: Scientific design process
Source: Moughtin, 1992 p. 21

Nonetheless it is also important to point out here that designers could not simply copy the scientists' method since designers and scientists have radically different interests and goals . Gregory (1966) also noted that the scientific method is a pattern of problem-solving behaviour that has been employed in finding out the nature of what exists, whereas the design method is a pattern of behaviour employed in inventing things of value which do not yet exist. Hence, science is

more towards the activity of analytic and design, on the other hand, is bias towards constructive activities.

The review reveals that most of the authors see design process as a sequential action and not iterative. Thus a design could be seen as a weakness if retraction or missing phases is detected. This is generally emphasising the importance of completing each phase before starting the next. However, there are authors such Lawson and De Bono who prescribe to the idea of lateral thinking where the phases are not clearly distinctive of each other. Lawson (1977) for example suggests that the process is a spiral moving towards a certain goal. In the process it is suggested that aspects of the design is taken into consideration at any time without a proper sequence. Thus, it is concluded here that the important phases described above that is analysis, synthesis and evaluation is essential to produce good design. However, the sequence of the phases is not really an important factor.

This study is based on the assumption that design strategies are guided by theory where the lack of design theory results in the apparent confusion and desperate search for guidance as suggested by Preiser (1991). The aim is to outline a practical theory as suggested by Foque (1976) as in Evans (1982) which is produced in and by practice. In order to make the design method generally applicable, this study will stress on the design strategies that are concerned with process-orientated innovations as with form oriented innovation. It has been assumed that the general failure of the Malaysian practice is due to poor design process which do not go through all the necessary steps and ignoring some of the most important data.

2.5 INFORMATION FOR DESIGN CONSIDERATION

It has been proposed earlier that the quality of the design and design process depends greatly on the information available at the time. The main concern of this research is to examine the type of information used by architect that relates people to the built environment. The effort is to bring the human aspects into the

design process that requires certain kinds of data to be made available. From the literature review the ways of obtaining and using it can be summarised as follows:

(i) **Cultural** (Rapoport, 1977, Porter, 1980)

Culture is something that has been cultivated in the process of time. The cultural approach to social data is most removed from practical application to the planning or design field. The approach stresses that human being imparts meaning to the environment, design it, modify it, and control it.

People acts in accordance to their reading of the environmental cues which at the same time let them know what kind of setting they are in: public or private, men or women and who does what, where, when, how, and including or excluding whom (Rapoport, 1982, p. 56 & 59). He argues further:

"....eikonic, symbolic, physical and social cues should all be congruent and consistent and reinforce each other."

Rapoport, 1977, p. 363.

The cultural data can be obtained only through direct contact with the people, for which the design is intended. These data will give some ideas to the designer about the spaces that is needed to be considered and how those spaces are used.

(ii) **Cognitive** (Proshansky, 1978, Kaplan and Kaplan 1982)

This approach views cities as geographical and physical systems as well as social, political, cultural and economic ones. Proshansky, Ittleson and Rivilin (1976 p. 491) suggest that it should be based on the study of human behaviour and experience in relation to the urban setting. The key issues are:

(i) The physical quality of the environment

(ii) Identity such as place identity

It is also based on the theme that behavioural characteristics of urban environments are functional and that the urban experience is unique.

La Gory and Pipkin (1981) identify three aspects which influence urban social life, These are: (i) Complex patterns of interaction (ii) Exposure to strangers and (iii) Exposure to unconventional norms.

They further recommend general guidelines or goals for design as follows: Providing for diversity of spatial experience; promoting permissive over coercive design; understanding the cognitive and social function of boundaries; and diversity, social boundaries and scale.

(iii) Behavioural (Zeisel 1981, Porteous 1977)

The data gathered through anthropological approach is an attempt to find out what people do, what they want and what they expect from the environment. The behavioural orientated planners or designers are interested in the human needs such as their verbal needs; underlying social meaning of behaviour and their perception as user (Zeisel, 1981).

These data will represent the user which the design is intended for and is very important to use in generating appropriate setting for them. In the process of design it is important to learn from past experiences to measure the appropriateness of the implemented schemes. There are many ways by which these data can be obtained and Table 2.4 below summarises their methods and collection techniques.

Shirvani (1985) suggests that the criteria for judging urban design projects could be grouped into three types. Firstly, measurable criteria where technical orientated persons tend to view design as a matter of function and efficiency. Secondly, non-measurable criteria whereby the criteria are not usually concrete

and based on judgements by their peers. Thirdly, generic criteria where the emphasis is on social justice, equality and equity, which is to a large extent non-measurable. The research will look into the designers' awareness to all these criteria as an approach to design where it is seen as learning from experience. The level of judging former experience will eventually reveal the completeness of the method used.

Type of data	**Method**	**Technique**
Cultural	Surveys	Questionnaire Interview - telephone - personal
	Observation	participant observation hidden observer naïve observer professional observer
Cognitive	Survey	Questionnaire Interview
	Observation	Participant Hidden Naïve Professional
Behavioural	Survey	Questionnaire Interview Diary
	Observation	Behavioural mapping Time lapse

Table 2.4: Methods and techniques of data collection

Source: Zeisel, 1981

(iv) Urban Aesthetic

The research will also be looking at the design quality of the urban environment in terms of the physical characteristics. It is important to review the basic elements that make up this characteristic in order to outline the aspects that should be appraised by the designer.

J. C. Nasar in Altman & Zube, 1989 (eds.) suggest that urban aesthetic is the effect or the perceived quality of the urban surrounding. The most influential dimension of environmental assessments such as pleasure or beauty have been identified by Oostendorp & Berlyne (1978). However design professionals have been found consistently to differ from the public in their appraisals of the built environment e.g. Devlin (1976) & Nasar, 1989). The research will concentrate on the physical quality rather than the perceived quality of the urban aesthetic. Thus, in order for the architects to design appropriate urban spaces aesthetic some means must be used to find out the perception of the user on the quality of the spaces rather than totally dependant on their personal judgement.

Aesthetic value of the environment has been described as related to four classes of physical variables: collative, organising, psychophysical, ecological/content, and spatial (Kaplan, and Kaplan 1982, Wohlwill 1976).

Collative is the comparison between elements such as complexity (a comparison of information), novelty and surprise (comparisons between the object and expectations for the object), and incongruity and ambiguity (comparisons of meanings).

Organising is to provide structure and reduce uncertainty such as order, unity, coherence, clarity and compatibility.

Psycho-physical is to involve intensity such as size, brightness, colour, or contrast.

Ecological/content is to include such variables as naturalness, architectural style, and environmental nuisances, such as traffic, poles, wires, sign and non-conforming use.

Spatial are variables that includes prospect (the openness of the view), refuge (the protection of the observation point) and mystery (the promise of additional information).

The study will established whether these physical variables are forming part of the information used by the designer in practice. This will be used to gauge the appropriateness of the method used by architects in the design process.

(v) Urban Culture

Culture can be described as a set of behaviours and ideas that are generally accepted by members of a particular society. According to Rapoport (1969) given the constraints of the natural environment, availability of materials and technology, what finally influenced the form of a dwelling, spaces and their relationship is the culture of the people. The environment reflects beliefs and social structure of the community.

More emphasis has been given on information about the physical character than on the more abstract aspect of the relationship between people and their physical surrounding as suggested by Sanoff (1991). However Rapoport (1990) warns that culture and the built environments could not be linked in general terms. He suggests that it is impossible to design for a specific culture. It is only feasible to consider how the different components of life-style and activities relate to system of settings and environmental quality.

2.6 URBAN DESIGN AND URBAN SPACES

Since this research deals with the relationship between design method and poor design of urban spaces, this section will review the literature regarding urban

design and urban spaces. It will also relate the general theories on design and design method to urban design practice.

Urban design is an integral part of the process of city and regional planning. It is primarily and essentially of three-dimensional design but must also deal with the non-visual aspects of the environment such as noise, smell or feelings of danger and safety, which contribute significantly to the character of an area. Its major characteristic is essentially external (RIBA, 1970 as reported by Gosling and Maitland, 1984) in which the main elements are the squares, the streets and the buildings that make up the face of our towns and cities (Moughtin, 1992). It mainly deals with the spaces in-between building which is termed as urban spaces in this study.

Madanipour (1996) suggests that urban design can be seen as a socio-spatial management of urban environment using both visual and verbal means of communication and engaging in a variety of scales of urban socio-spatial phenomena. He further argues that urban design can be defined as the multidisciplinary activity of shaping and managing urban environment where it is concerned with both the process of shaping the space and the space that is being shaped. Thus it is part of the process of the production of space as previously suggested by Moughtin. The activity is related to economic, political and cultural process.

Urban design has far-reaching consequences to the environment beyond their immediate surroundings. The built environment will influence the behaviour pattern of the user apart from solving or fulfilling their basic needs. Generally there is a failure to recognise the practice of urban design. In dealing with design for human needs, there are three important principles to be recognised as suggested by Preiser, Vischer & White (1991): (1) No design can simultaneously maximise satisfaction of all basic needs. Intelligent design involves making trade-offs to serve those needs deemed most important while doing the least to frustrate satisfaction of other important needs. (2) The relative importance of needs is not fixed. Needs vary as a function both of the different groups who will

use the environment and of the purposes and activities for which they will use it. (3) Whereas needs are universal, the means for satisfying them are not. Privacy, for example, can be accomplished in many different ways. The designer must be aware of the culture or subculture for which a structure is being built in order to create an environment that is suitable with the group's typical or preferred ways.

The three basic principles stated above are related to the people and the environment for which the design is intended. They are culture specific and environmental specific, this is obvious from theoretical point of view since the different environmental factors like climate, topography, availability of materials and technology and many others require different techniques of design. It is also true from the cultural point of view whereby different culture see things in different ways. At present most theories related to environmental design are universal that create similarities in term of style and design the world over. Examples of this are the modern architecture, the post-modern style and many others.

Since urban design involves some aspects of planning and architecture the following sections will briefly discuss their activities to show their similarities and differences.

2.6.1 Planning Activities

Urban design involves the field of planning. Therefore it is important to define the planning activities at this juncture. Planning involves the distribution of resources and the organisation of land-uses, transportation and infrastructure networks. In many circumstances the planners are dealing with the distribution of resources in the form of services and infrastructure networks, identifying development areas and many others. In cases where the planners are deeply committed to the redistribution of resources in favour of the disadvantage groups of the society, the role of planning is then elevated to the political arena (Moughtin, 1992). Whatever the definition chosen by the planners in respect to

their role, it is not free from the act of distribution and allocation of resources, which is part of the activity of the Government.

The planning periods are normally long, some of which may reach up to twenty years. On the other hand actions plans which cover a smaller area could have a shorter time scale of about five to ten years.

2.6.2 Architectural Activities

Architecture, on the other hand, is concerned with the design and construction of individual or a small group of buildings. In the design of the individual buildings the architect normally has a client with a clear set of requirements or objectives. The design normally begin with the conception of the internal spaces and grow outwards into the streets and squares which is usually given less attention. On a bigger projects covering larger ground areas such as a campus design, housing scheme, school or hospital which may take ten or more years to complete, the knowledge and expertise of the planner are as necessary as well as the professional skills of the architect (Moughtin, 1992).

This is an area in the building industry where in most cases, is not clear who is responsible in terms of the overall design of the spaces linking the various buildings together. The role of urban design is to fill this gap which concentrates mainly on the external spaces which support the activities outside in relation to the activities inside the individual buildings.

2.6.3 Urban Design Activities

The city is Man's greatest invention; an intellectual powerhouse, a store of learning and of the most diverse energies. Cities and civilisation are synonymous. Nothing can replace the essential civilising function of the individual and group contacts, the face-to-face meeting, the different groups, societies and associations that make up the most valued part of each individual's life. Only a city provides a sufficient cross section of society for everyone,

however specialised, to find a friend. In short, while in a village or suburb you may know everybody, the people you want to know can only be found in the city.

The city, too, has the virtue of providing a proper relationship between private and public life. In a city one is not anonymous for very long. There is a fine network of public involvement with local tradesmen and neighbours, greetings, nodding and occasional exchanges, while the basic privacy of the individual is undisturbed. Public life is further extended in work and recreational association, so that an individual is always within a web of contacts, of infinite variety and degree, each of which produces responses and involvement. The public involvement ultimately creates social responsibilities and will be a most valuable social education. Unless each citizen is able to participate fully in this complex world, to feel as part of it, and responsible to it, his or her life is lonely and he or she remains undifferentiated. Theo Crosby (1965) suggests that every individual in a society aspire to be recognised with unique identity. He suggests that identity is a very complex phenomenon that one acquires by virtue of action, appearance as well as involvement in the activities of the society. The city is also seen as a great stage with the citizens acting out their life with the different role they play in a great drama (Crosby, 1965).

In order to fulfil their everyday needs, people have to alter the environment to meet those needs through design. The scale of this design exercise can span from the creation of a single element to a massive ensemble of an urban environment.

Urban design is closely associated to architecture and planning in which the knowledge and skills of both disciplines are required for its practice. Moughtin (1992) suggests that urban design is the application of accumulated technical knowledge by Man to control and adapt the environment for social, economic, political and religious requirements. The method is learned and used by people to solve the total programme of requirements for city building.

Rapoport (1977) on the other hand describes urban design as the organisation of space, time, meaning and communication that is concern with the relationships among elements and the underlying rules than with the elements themselves. The main objective of urban design can then be seen as the arrangement of the physical and thus perceived form of the city (Spreiregen, 1965). This can be seen as the organisation and creation of the external spaces or spaces in-between buildings which link the different buildings together. The link is a complex matter because traditionally these spaces support a lot of activities that reflects the cultural tendencies of the society. As discussed above it has an association to the meaning people give to the place. These expressions can be clearly seen where in a Muslim town these spaces are used to control behaviour and in the Italian town these spaces are mainly for public display.

Apart from the aspects mentioned above, the field of urban design is also concern with the climatic factors of the environment. The way in which man tries to manipulate and control the environment to support the activities intended within those spaces.

The main objectives of the urban design activities are to provide an urban form that facilitates and maintains a functional balance between human needs, environmental factors and financial constraints (Esser, 1971). This act of balancing requires a discipline that is practised on the basis of a well tested and ever changing theories.

The scope of urban design as defined by Royal Institute of British Architects (1970) is as follows (Gosling, 1984):

"Urban design is an integral part of the process of city and regional planning. It is primarily and essentially three-dimensional design but must also deal with the non-visual aspects of environment such as noise, smell of feelings of danger and safety, which contribute significantly to the character of an area.....essentially external, as distinct from internal space."

Rapoport (1977) elaborates this further by defining Urban Design as the organisation of space, time, meaning and communication that is concerned with the relationships among elements themselves. The elements in this argument are taken as those parts that make up a city such as the buildings, the spaces between those buildings, streets, squares, the people and many others.

Gosling and Maitland (1984) suggest eight different strategies or aims of urban design that highlight the above definition. **Urban design may be seen as political statement** which is a situation where the urban designer is the instrument of the society he or she serves in which the validity of his choice and decision has to be tested against the requirements of that society. **Urban design as technique** such as urban simulation, in which the urban designers can perform his main function, presumably seen as to formulate and present the problem as accurately and vividly as possible. Some of the examples given (Thiel, Appleyard, Lynch, Alexander and others) in which the design method or model of design are presented as value-free and neutral technique.

Mediation in urban design is the opposite view of urban design as an essentially neutral technique where the problem of values is recognised by devising design methods that allow conflicts to be expressed and then resolved. In this situation urban design is seen as a 'forum' or 'ring' in which the urban designer acts as a chairman. Most of the techniques are proposed to make the design problems more immediately comprehensible and the design process therefore less paternalistic and remote. **Urban design is also a private display** that sees the city as a battleground of competing private interests as a possible version of urban design as a true representation of the social system and as an expression of user choice. This view of the city can be clearly seen in the new development in cities like Kuala Lumpur. It follows the argument that development control tends to promote unimaginative, conforming solutions whose banality invites further control. This argument identifies the problem of most urban spaces which is not how to control vitality, but how to restore real signs of life.

Urban design as public presence is a difficult concept where some analysts have suggested that (Venturi, 1972) a messy environment immediately loses its characteristic and vitality as soon as attempts are made to regulate or absorb it into a public culture. One attempt at solving this problem is to regard the public presence not as an ordering discipline for the private display, but simply as a third party, a connective theme which surfaces from time to time at significant points in the city. The analogy of the **theatre** is derived from the public presence of a single committed gesture into an extended pattern of actions that a number of designers might develop over a period of time. In this situation the urban designer will play the role of the scriptwriter or producer.

Urban design as the guardianship of urban standards is the case where the city is seen as the source of the solution to urban problems that need not be re-invented but only reapplied. These can be seen in the work of Aldo Rossi, Leon Krier, Kevin Lynch, Camillo Sitte and others that look to the established urban design as the source for future developments. The aim is to draw attention to certain stable formal categories, drawn from the analysis of existing cities, and to use these as the agreed basis for future action.

Further Colin Rowe (1978) as quoted by Gosling and Maitland (1984) lists six different themes for the movement. They are as follows: (a) The physical and social conservation of the historic centres as desirable models of collective life, (b) The conception of urban spaces as the primary organising element of the urban morphology, (c) The typological and morphological studies as the basis for a new architectural discipline, (d) The growing conscience that the history of the city delivers precise facts, which permits one to engage an immediate and precise action, in the reconstruction of the street, the square and the '*quartier*', (e) The transformation of housing zones (dormitory cities) into complex parts of the city, into '*quartiers*' that integrate all the functions of urban life and (f) The rediscovery of the primary elements of Architecture, the column, the wall, the roof, etc.

Urban design as collage is where the city is seen as an assemblage of buildings of different periods and styles, using differing technologies and materials, and gathered over a period of time.

Billingham (1994) suggests the following as some of the programme that is related to urban design:

i) Relationship between economic, political and physical opportunities, constraint and changes.

ii) The physical form of cities that consists of buildings and the spaces between them.

iii) The relationship between physical form and the social forces that produces it.

iv) The socio-spatial relationship that is the physical and social context.

v) The creation, regeneration, enhancement and management of the built environments that is sensitive to their context and sympathetic to people's needs.

vi) The morphology with regards to the context with the assumption that traditional idea of urbanism can help generate socially and ecologically successful urban environment in the future.

vii) Plays an important role in influencing the development of local urban areas.

viii) Have the ability to manage the increasing complex urban space and urban form

The review suggests that urban design is a very wide field that covers all aspects of the built and natural environment. There is no consensus on the definition of urban design. For the purpose of this study urban design is seen as the act of creating external spaces that is as the outcome of arranging a group of buildings with reference to their context. The management aspect of the urban environment is also very important which will influence their design. The above arguments also suggests that good designs are those that are appropriate to varied social, cultural, technical, economic and ecological contexts which is emphasised by

Preiser et. al. (1991). Thus, any solution to a problem in urban design must attempt to balance the different requirements associated with the proposed solution. It can also be concluded that urban design is the application of all the different strategies as reviewed above.

In practice all the urban design activities are generally carried out for the purpose of creating a better environment for people. Hence, as suggested by Moughtin (1992), the central element of urban design must be Man, his values, aspirations and power or ability to achieve them. The main task of the urban designer in turn is to understand and express, in built form, the needs and aspirations of the users and the client group. The client in this case need not necessarily be the user of the place. This adds to the complexity of the problem facing the designer. An example of such a situation is when a new township or housing scheme is to be developed. The people that are normally involved on the outset of the projects are the politician, developers or financier who in most cases are not the users. Their aims and opinion will differ from those of the eventual buyers and users of the place. This definition is similar to that given by Madanipour (1996) where he suggests that urban design is a multidisciplinary activity of shaping and managing the urban environment.

There are many ways in which the needs and aspirations of the client group can be understood in order for appropriate solution can be generated. One of the way is behavioural approach in which Zeisel 1981) identifies six different needs common to all people that can be addressed by a behavioural approach to urban design, these are security, clarity, privacy, social interaction, convenience and identity.

Security which relates to the need to feel safe and secure in the place where one lives is one of the most basic concern of all urban dwellers. It is relevant to all level of design. **Clarity** is where the environment must be legible so that people feel confident about their ability to find their way form one part of the city to another, or even from part of a large housing complex to another.

Privacy relates to people's desire to have the ability to regulate the amount of contact they have with others (Altman, 1975). Although differing activities and locations require more or less privacy, depending on the group for whom we are designing, people require some mechanisms (most directly spatial) to sustain a distinction between the front stage and the back stage (Goffman 1959).

By nature people are gregarious-that is there is a strong tendency to live in a group. Environment cannot create friendships or sense of community. Still, Robert Sommer (1969) has described qualities of certain settings as being socio-petal that is having the abilities to orient people towards one another and to encourage interaction or socio-fugal which is tending to pull people apart rather than bring them together. This phenomenon is termed as **social interaction**.

Convenience is a concept where an urban environment at all level should make the performance of day-to-day and special task as easy as possible. Finally **Identity** which refers to the relationship of self to environment that involves identification with places. People greatly prefer places that 'inspire' or at least allow them to engage themselves emotionally and symbolically with their surroundings (Proshansky, 1978).

The assumption here is that the user group can be identified at the beginning of the project, which is not always the case as discussed earlier. However, the above mentioned aspects are important characteristics of the urban environment which must be addressed. The design of complex systems such as urban design requires the integration of several fields of knowledge in the design process. These are engineering, environmental services, planning, economic, sociology, landscape and others. Granath (1992) discusses the need for new roles and other design methods besides those architects are accustomed to, if their contribution in the design process is to come to full fruition. As suggested earlier, recognition must be given to the planning process as well as the customary architectural process that is currently practised.

This study will make contribution towards the process oriented design approaches besides the more customary product oriented technique. This is very important if we consider that urban design involves many disciplines and requires a longer time scale before the project is completed. Whilst the value people put onto the finish product may change, the approaches in achieving it should not have too much variation.

2.7 The Elements of Urban Space

This study will look into the design of urban spaces as the primary generator of urban design and therefore some definition of the concept will be explored here. Secondly the approach to designing urban spaces will be explored where according to Madanipour (1996) urban design is the activities which shape the urban space. Hence, by looking into the approach to designing urban spaces will reveal the urban design process.

Krier (1979) suggests that if the concept of urban space is to be defined without imposing aesthetic criteria, then all types of space between buildings in towns and other localities could be described as urban space. He further suggests that the space should be geometrically bounded by a variety of elevations. Madanipour (1996), on the other hand offers a more complex definition where he describes urban space as the agglomeration of people, objects and events. He suggests that urban spaces are structured by their social and physical boundaries.

From the literature review most authors (Krier, Madanipour, Moughtin, Sitte (1965) and others) suggest that urban spaces could be reduced into two basic types; the square and the street. However other authors also suggest that park is also an urban space that have characteristics (physically, socially and psychologically) which are different from a street or a square. This differing concept will be explored later in the chapter. Generally the park differs in its characteristics from the square due to its size and landscape characteristics.

Krier (1979) and Moughtin (1992) suggest two basic elements of urban space, the street and the square where they argues that both have similar geometrical characteristics. The difference is on the dimensions of the walls that bound them and the patterns of their functions. The dimension generally differs for both spaces in the proportion of their width and length.

i) The **square** which is also known as the plaza, piazza, forum, place and others, is produced by the grouping of houses or buildings around an open space (Krier, 1979). Moughtin (1992) offers a similar definition by suggesting that a square or plaza is both an area framed by buildings and an area designed to exhibits its buildings to the greatest advantage. In comparison to the street, a square lacks directional quality. Therefore it could be compared to a lake with the street acting as a stream. The activities in the square, though may be similar to that of a street, differ in that they are more of a gathering or congregation in nature such as a political rally or games.

In the Malaysian urban context, the square is not one of the major urban space and therefore seldom considered in design and planning process. The nearest urban space that has similar characteristics is the 'padang'. The 'padang' is a green space (grass surface) that is similar to the village green of the English villages that is normally located in the centre of the town (Shamsuddin and Sulaiman, 1999). The activities within the 'padang' are normally related to sporting activities such as playing football, cricket and formal gatherings like the independence day celebration and others.

Moughtin (1992) offers two main methods of categorising squares that is by function and by form. He further suggests that the activities in a square are important for its vitality and also its visual attraction. This is in line to Vitruvius (1960) idea of a forum where he suggests that it should be proportionate to the number of inhabitants using it. Thus the two main features that give character to the square is the physical quality and the activities that take place within it.

The physical characteristics of a square has been suggested to include the 'sense of enclosure' they provide. This is associated to the psychological feeling of the space where the dimension of the floor of the square is related to the height of the buildings surrounding it. The proportion may cause a person standing within it feel enclosed and engulfed by the surrounding building or less of it (see Moughtin 1992).

The function of a square could be categorised into two broad concepts firstly, a setting for activities and secondly, as a setting for an important building. The first type of square is normally associated with a market place or gathering place such as the 'mosque square' where daily activities occur. It may also support formal activities like a parade or a rally. The second type of square is normally associated with a civic building of some importance to the town such as a cathedral, civic centre and many others. The square is set up to address the building therefore giving it some importance and normally dominates the sense of place.

ii) ii) The **streets** are much more functional in their character as compared to the square (Krier, 1979). Their main use is for the distribution of land and providing access to the individual plots. Due to these characteristics their physical dimensions relate to the means of transport of the time and the human scale. Moughtin (1992) on the other hand differentiates between road and street, where the former is a line of communication between different places that is used by horses, travellers on foot or vehicles. They are principally two-dimensional running on the landscape. Whilst the street also have similar attributes they are commonly associated with towns and villages. This definition of the street have been suggested by Alberti (1955) and Palladio (1965) where they distinguish the two types of street; those within towns and those that run between towns. Due to their function and physical characteristics, the street has a more directional quality to it like that of a river or stream.

In Malaysia, streets play a more important role as an urban space compared to square. The streets support most of the outdoor activities and on occasions some

of them are closed for a certain period of time to cater for their intended or unintended use. The streets are also flanked on either side by a continuous covered walkway locally known as 'five-foot walkway' that provide shelter for the pedestrian. They also act as a place for displaying goods and street vendor activities. However field observations suggest that the streets are slowly being eroded from its function as setting for human activities due to the insensitive design that is more suited for roads which are channels of communication for vehicles (Sulaiman & Shamsuddin, 1997). This has led to a decline in the quality of the built environment as well as sense of place, specifically in the old town centres (Sulaiman & Shamsuddin, 1997).

2.8 Basic Concepts in Urban Space Design

In the context of urban space design the method should assists in the formation of a more suitable urban setting for the user. Suitable in this context is seen as that which allows people to fulfil their needs in that setting. This is the general purpose of the exercise of identifying and proposing the urban design method. In urban design the main aim is to satisfy the needs of people associated with the program and at the same time reducing conflict in the environment.

Several basic concepts which is applicable to urban space design are explored here in order to highlight the factors influencing the urban ensemble. These concepts are drawn from the design concepts used to analyse architectural composition. These are, **Order** - a concept generally acknowledged by designers (Moughtin, 1992) where a part is corresponding with one another. **Unity** - a complete ensemble of elements creating a sense of a whole. **Proportion** - the relation of the parts to each other and to the building as a whole (Moughtin, 1992). **Scale,** as mentioned earlier is the comparison of one set of dimensions and proportions with another set (Danby, 1963, Moughtin, 1992). **Harmony,** - in the New English Dictionary implies a just adaptation of parts to each other so as to form a complete symmetrical or pleasing whole. **Symmetry** - the identical disposition of elements on either side of an axis. In a complex symmetry, it is seen as a proper agreement between the members of the work. The relation

between different parts and the whole general scheme in accordance with a certain part selected as standard (Moughtin, 1992). **Balance** - used as an analogy (Moughtin, 1992) where the apparent weight of the composition is linked to gravitational pull. **Rhythm** - the grouping of elements; of emphasis, interval, accent and direction which is the sense of movement achieved by the articulation of the parts (Moughtin, 1992). Finally **Contrast** - to set in opposition or proud to the existing situation.

2.9 SUMMARY AND CONCLUSION

The main purpose of this chapter is to review the literature concerning the theory of design and urban design and their practice. The aim is to suggest a framework of procedures for assessing the method in use. A number of processes and methods that relate to the practice of design show the complexity of the problem. Generally it has been shown that design is an act which involves many interrelated aspects. Most important of all is the human aspect since the design activities are generally aimed at improving the quality of life. In the design process it has been identified that there are ten basic principles which will guide the design towards a successful conclusion. These are totality, time, value, resources, synthesis, iteration, change, relationships, competence and services as suggested by Mayall (1979). These principles summarise clearly other opinions on the matter.

The review has also outlined design as to involve various other processes such as decision making, problem solving, creative and communicative process. It is suggested that these processes contribute greatly to the quality of the design.

The role of human aspects is established as an important framework for a good design. Thus the weaknesses or strengths of the design activity can be judged from any involvement of the people associated with the project. These are the client, users, financier, authority and others. The approach in getting the people to be involved in the design may include participation, negotiation, consultation,

enquiries and many others. Meaningful designs therefore are seen as those that fulfil aesthetic, socio-cultural, functional and environmental requirements.

The theory of urban design as reviewed in the chapter is less certain and mostly relates closely to planning and architectural theory. It is associated to the three-dimensional exterior spaces that link buildings and the natural elements together. The problem also involves other environmental factors such as noise, smell, ventilation and others. However, the most important ingredient is Man and his socio-cultural needs. Here, as in the general theory of design Man is the focus of any design activities. Hence any practice in urban design which do not address this aspect will be seen as a failure. The information needed to address this problem is associated with the intended activities, the image that people have on the spaces, meanings and others.

The chapter also discusses the process of design, which is based on three essential stages: analysis, synthesis and evaluation. Effort has been made to adopt scientific method into design method. However, the basic principle is that science is seen as finding out the nature of existing phenomena while design is associated with the act of inventing things to differentiate between the two.

The overall assumption of the research is that the process of design is guided by theories. Appropriate design is shown to require management skills to co-ordinate the various disciplines related to the activity. It is also required at the various stages of the design activity. In practising their design skill designers must based their decision on a set of theory. This theory may relate to the process or the product of the designing activity. Ideally it should be related to both aspects.

The chapter reviews the various aspects of design method where differences of opinion can be detected. One school of thought rejects the idea that there is a set of design method that could be followed which will guarantee a successful result. The other refers to a method as the application of approaches and technique that could help to reduce error in the process of design. However it can be concluded

that the application of a method in design may not necessarily produce excellent result but it will avoid big mistakes.

The study suggests that a design method could be formulated with some basic requirements and constraints. These are generally related to detailed study of the performance requirement, and the understanding of all the relevant technical, economic, physical and social requirements. It must also make the design task more manageable and provide logical stages of design.

The study of design method adopted by the practising architect will lead to the exploration of the strength and weaknesses of the practice. It will explain the shortcomings of the urban spaces in Malaysia today. It will also provide clues as to the guiding principles of their practice. These principles will be useful for future practice and contributes to the body of knowledge on the subject.

PART TWO

RESEARCH METHODOLOGY, DATA ANALYSIS AND DISCUSSION

CHAPTER THREE

RESEARCH DESIGN AND METHODS

3.0 INTRODUCTION

An overview of the design processes and methods indicates that there is a need to find appropriate approach or approaches to tackle urban design interventions and also for new urban developments. It is concluded that there is a need to emphasise on the human aspects of urban form in the design process that may lead to better environment. The unprecedented scale of urban development programs that has taken hold in the industrialised countries and an accelerating rate of urbanisation in the developing countries (Gosling, 1984) and the speed of development lend itself to limited study and the use of untested theories. These theories are not only associated with the physical aspects of the environment but also their psychological influences.

In the 1960s and 1970s, social movements, environmental crises, and the apparent failure of technology to solve human or environmental problems caused people to challenge basic values concerning our environment (Preiser, Vischer & White, 1991). People began to look at the psychological effect of the environment on human behaviour. The need to be identifiable with the environment and the importance of identity were highlighted. New vocabulary was being used in the architectural and planning practices such as imageability, defensible space and many others. They continue to argue that the changing political and resource status forced certain value re-orientations and stringent practices for conservation and preservation of the environment - measures that had not been considered seriously up until that time. Even though these factors have already been acknowledged to have some influence on the environment,

their application and why their limited consideration in the development of Malaysian urban centres are still unknown.

Hence, there is a need to evaluate and assess the current practice to identify to what extend those aspects mentioned earlier are considered, and are applied in practice and how their application contributes to the outcome of the design.

In response to the limitation of the 'universal architecture' as propagated by the Bauhaus movement in relation to local condition, theorist began to encourage distinguishable buildings, not uniformity, in designing the built environment (Preiser, Vischer & White, 1991). To address these problems it has been suggested that recognition must be given to different environmental users, each with special requirements concerning the built environment. The characterisation will have to go beyond architectural style in which the contextual aspects will take precedent. These should form part of the consideration that leads to the final design.

Norberg-Schulz poses the question in relation to architectural space as reported by Preiser, Vischer & White (1991), that is, what must we demand from architectural space in order that man may still call himself human? He suggests that we must demand an imageable structure that offers rich possibilities for identification.

The sense of identity in design has also been propagated by other authors, in which they suggest that it would contribute towards making an environment unique to the locality.

Jenks (1971) reinforces this argument by stating that in a pluralistic society the obligation is to recognise the variety of conflicting claims and to articulate the social realm for every different person in every different social situation. The question is how the human factor influences the designer's decision and why there is a general failure in fulfilling the needs.

The problem of maintaining the functional balance between human needs, environmental factors and financial constraints has always been the main objectives of urban designers. In the past, cities and part of the cities have grown in two ways as suggested by Shirvani (1985). Firstly, the natural way (Alexander, 1966), in which people simply start building as in the case of shanty towns (Broadbent, 1990). Secondly, the artificial way in which a master plan is prepared; streets laid out, squares and urban blocks on to which buildings are then placed according to the planners' sense of order (Stanislaski, 1947 as reported by Broadbent, 1990).

In any of the two ways in which the city grows the aspects of design are always present either in the layout of the streets or the simple be the decision as to where the kitchen should be. Some of the earliest city designs are concerned with aspects, prospects and climate. Such examples can be found in Aristotle's suggestion that the healthiest aspect will be facing east.

The problems faced by planners and urban designers today are very complex due to factors influencing their decisions. These factors contribute to the unclear scope of urban design or planning practices. In a pluralistic society, which most cities have to address, there will be variation of needs. To address these problems the study will investigate the processes and methods used by practitioners in tackling the related issues in the design.

This chapter sets out to provide a research framework to this study and explains methods and techniques of data collection, sampling and analysis.

3.1 RESEARCH DESIGN AND METHOD

A review of the literature shows that there has been a limited number of studies conducted on environmental design methods and processes. Most of the studies are associated with architectural design or design in general such as Lawson (1972) - Problem solving in architectural design and Granath (1991) - Architecture technology and human factors (design in socio-technical context).

In Malaysia the concern on the appropriateness of the design of urban spaces has been given little attention and has not been a subject of any study. As such, it is necessary to carry out the study in order to establish the nature of design practice in Malaysia and to identify the appropriate and innovative methods for solving urban design problems that may be used to improve the current weaknesses of the design of urban spaces. The uniqueness of the problem should have been the subject of research that could provide some tools for future designers.

In their effort to understand the processes in which the designers take in tackling their design problems researchers have employed many different methods. Some are in the form of experiment; others are in the form of survey method which is either through observation or interview or both.

Some of the available methods for eliciting knowledge from the designers are as listed below which is adopted from Magee (1987). These are by interviewing and using questionnaire.

1. **Interviewing** - it is the main technique employed by knowledge engineers during the construction of expert systems. The greatest advantage is flexibility and the ability of the interviewer to make sure that the respondent understands the question. Some of the disadvantages are the possibility of bias and inaccurate recall. These errors could be overcame by careful wording of the questions and double-checking the facts through other means.

2. **Questionnaire** – consist of questions in a fixed sequenced with a fixed and predetermined wording which lack flexibility and do not exploit the situation of the meeting.

3. **Attitude scaling** - which consists of statements with which the respondent is asked to agree or disagree. The respondent's score are meant to indicate the respondents' attitude to the subject of interest. The technique is not for providing detailed insights into the attitudes of the individual.

4. **Projective Testing** - interprets responses in terms of dimensions which are different from those held in mind by the respondent while answering. It could overcome some barriers to communication. The validity, reliability, or objectivity of the information elicited using such tests is disputed.

5. **Repertory Grid Methods** - closely related to Kelly's theory of personality, which is based on the notation that all humans are scientists. The method has drawn criticism from the point of view that it is time consuming and arduous for the respondent and has limited applicability.

6. **Protocol Analysis** - where the expert is asked to work through a problem while thinking aloud about what is being done. The method could actually give insights into how experts actually solve problems rather than how they say they do. However, this may involve simulating the observed reports using inferred knowledge.

7. **Observation of Design Behaviour** - which may include the use of gaming and simulation.

Hence, there are various methods that could be adopted by the study in order to fulfil the objectives of the study. This research adopted a mix method as stated earlier (chapter one) and will be explained in detail in this chapter. The following are the outline of some of the research and the methods used as reviewed by Lera (1981).

3.1.1 Observation-Based Studies

1. Lawson (1970); through observation studied strategies used in two-dimensional spatial layout problem solving by architectural students and non-architectural students.

2. Eastman (1970); monitoring of designers' activities in the planning of a bathroom layout.

3. Foz (1972) monitors four subjects of varying degrees of design training during a two-hour architectural sketch design problem.

4. Stansall (1973) uses Kelly's repertory grid technique to elicit the form of designers' internal representations.

5. Henrion (1974) observes designers in order to describe the nature of their plan of action in solving a design problem. He monitors four subjects, two designers and two non-designers, arranging furniture in an office layout. His study of verbal protocols obtained from designers deal primarily with the way constraints operated.

6. Cornforth (1976) combines two approaches - using repertory grid technique and multi-dimensional scaling analysis of the data to elicit designers' internal representations, and observing designers solving a sketch-design problem.

7. Akin (1978) studies the architectural design process to propose a descriptive model of the design behaviour of architects. He provides evidence from protocol analyses of designer behaviour to support the existence of eleven different information processing mechanisms in design.

8. Aish (1974) uses connectivity analysis in the design and evaluation of a control console layout elicited in a word-association test.

9. Darke (1979) interviewes a number of architects about their design process.

3.1.2 Direct Questioning Technique

Apart from the use of psychological measurement techniques of eliciting designers' conceptualisations of problems and the observation of designers' behaviour to study information processing mechanisms in the design process,

researchers have shown the benefits of interviewing designers about their own design process. Added to this is by listening and interpreting the designers' accounts of their own design processes. Although such techniques imply subjective interpretations of the data by the researcher, some aspects cannot be expressed by the method mentioned previously. Lawson (1994) highlights some of the flaws in asking designers about their design process but suggests that it would be a mistake if the designers are not asked how they do it.

Hence, in this research, it is important to investigate the approaches taken by architects in practice, in their effort to solve a particular or general urban design problem by asking them how they do it. Thus, it can be considered as case-studies which serve as an illustration, as an aid to generating hypotheses and generate new theory and as an aid to affecting change (Gummesson, 1985 as reported by Granath, 1991). The study also emphasises on the generation of theory rather than the more traditional research of testing theory.

In their book, The Discovery of Grounded Theory: Strategies for Qualitative Research, American sociologists Barney G. Glaser and Anslam I. Strauss mention about generating theory from praxis as a method of scientific inquiry. The proposed study widens the scope of the inquiry from just one individual case to a group of cases. The assumption is that any practitioner who has a reflective attitude to his work, his knowledge and to the situation at hand generates embryos of theory through his contemplation of what he is doing and why thing happens as suggested by Granath (1991). This inquiry will focus towards verifying and testing the approaches and theories relating to the process and practice of urban design in Malaysia.

The proposed study is based on the experiences of the designers in their efforts to solving existing environmental problems as well as creating new environment. This approach has also been described as a phenomenological approach (Patton, 1980, 1990) in which the structure and the essence of experience of a phenomenon is investigated where the phenomenon may be a program, an organisation, or a culture. According to Patton (1980) a phenomenological

approach makes the assumption that there is an essence or essences to shared experience. In the current study the phenomenon is related to the specialised knowledge and skills in dealing with the design within an urban area in Malaysia. This phenomenological perspective can mean either or both:

(a) A focus on what people experience and how they interpret the world in which case interview can be used without actually experiencing the phenomenon, or

(b) A methodological mandate to actually experience the phenomenon being investigated in which case, participant observation would be necessary.

This research mainly adopts the first approach where the phenomenon is conveyed in the in-depth interview. This will be supported by findings from the questionnaire analysis, general observations and experiences in the field.

Eichelberger (1989) as reported by Patton (1990) characterises the phenomenological study as rigorous analysis of experiences so that the basic elements of the experiences that are common to members of a specific group can be identified.

There are research previously carried out which were based on experimentation (as mentioned above) in which case the designers were given specific problems to solve. The steps taken and the processes were either observed, recorded or both. It is found that such technique is of little significance in real practice due to the lack of motivation which could not have succeed or survive in the real world (Granath, 1991). There is also an element of acting, in which case the designer undertakes or follows a certain procedure just for the purpose of the experiment. This phenomenon can usually be observed when practising architects give critique to students' work where there is a tendency to follow a formal method compared to the more tasks orientated as practised in real life projects. These apparent weaknesses in the experimentation method have to be avoided if the study is to reveal the guiding principles common in most actual practice. Other research approaches which utilise the method of observing designing behaviour

during an actual problem solving session is very difficult to organise, time consuming and reduces the number of cases to be investigated.

The evaluation of the urban design using the qualitative inquiry is done due to its appropriateness. Patton (1990) suggests that qualitative inquiry is highly appropriate in studying process because depicting process requires detailed description; the experience of process typically varies for different people; that process is fluid and dynamic; and the participants are a key process consideration.

He continues to suggest that data from the process permits judgement to be made about the extent to which the program or organisation is operating and the way it is supposed to be operating. It will be revealing the areas in which relationships can be improved as well as highlighting the strengths of the program that should be maintained. The qualitative method will be supported with the quantitative analysis of the questionnaire that mainly uses descriptive statistics.

3.1.3 Selection of Respondents

In Malaysia, the professionals who are involved in the urban design projects are mainly architects, planners or architect-planners. For the purpose of this study a representation of this large group is necessary in order to reduce time and expenses involved. It is suggested that a sample will be selected from the group of practitioners who are members of the Malaysian Institute of Architect (Persatuan Arkitek Malaysia or PAM in short) who have their main office in Peninsular Malaysia. The sample could be seen as representing the situation in Malaysia due to the fact that the majority of the practices are located in Peninsular Malaysia or have an association with it.

The planning laws in Malaysia require that all submission for planning permission must be forwarded by a registered architect who is a full member of PAM. Hence, a sample of the PAM members will represent all urban design practices in Malaysia.

The survey was conducted in two stages, where in the first stage a postal questionnaire was sent to all members based in Peninsular Malaysia, which amounted to 473. This gave equal chance to all the members to be included in the sample. The main purpose of the postal questionnaire is to establish the general background of urban design practice in Malaysia establishing among others, the background of the designers and the nature of the design problems. The analysis will also reveal the common design process. This quantitative assessment will provide a strong background to the qualitative analysis of the interview.

In the second stage a random sample of the same group was selected for a detail interview. These sample, for the purpose of limiting costs and time, were chosen from those firms that have offices in Kuala Lumpur, the capital city. Since most of the firms are located in Kuala Lumpur, the sample is representative of the general practice in Malaysia.

The main objective of the interview is to examine in detail the processes that various architects take in solving a particular scheme or a similar problem. In order to limit the complexity of the analysis and allowing an accurate generalisation, the scheme chosen by the designers will have to conform to a loose guideline of scale and complexity. It is suggested that the choice taken is for the design of urban centre in a new housing scheme. The choice of this type of scheme is based on the fact that they represent the problems of urban design in Malaysia. Housing development in Malaysia is unique in the sense that every housing scheme of considerable size is required to provide their own neighbourhood centre to support the needs of the population of the housing scheme. The community facilities to be provided at the neighbourhood centre consist of shops, mosque or 'madrasah' (smaller praying place compared to the mosque), market place and other community services.

This process of recollection of the designers on the events that take place during the design process is subjected to distortion, such as post-rationalisation and inaccurate recollection for some reason or another. In order to counter-balance

this possible error the question in the interview will generate a triangulation of findings. Apart from that any tangible evidence that could be part of the process such as sketches or notations will also be referred to, through content analysis in order to strengthen the argument.

The overall method is as follows:

1. Generalisation through quantification and analysis by determining the frequencies of occurrence of the aspects considered or steps taken during the different stages of the design process.

2. Cause and effect relationship - designers own assessment.

3. Interpretation of the situation under study by means of the designer's insight into the situation to produce an informed description of the relationship involved.

3.2 DATA COLLECTION TECHNIQUES

Data for the study was collected from both primary and secondary sources. The primary data was obtained from the questionnaire and interviews with architects or designers.

The secondary data was obtained from other sources such as articles, reports and information from various agencies such as planning authorities and others.

3.3.1 Interviewing

From the literature review it appears that interviewing is the main technique employed by knowledge engineers during the construction of expert system (Magee, 1987). The greatest advantage the interview has, at least in the hand of skilled interviewers, is flexibility. Interviewers can make sure respondents have understood the questions and the purpose of those questions.

Seltiz, Jahoda, Deutch, Cook (1962) express the opinion that interview is the more appropriate technique for revealing information about complex, emotional laden subjects or for probing the sentiments that may underlie an expressed opinion. They further suggest that it must be elicited in circumstances that encourage the greatest possible freedom and honesty of expression. Questioning is particularly suited to obtaining information about what a person knows, believes or expects, feels or wants, intends or does or has done, and about his explanations or reasons for any of the preceding. They continue to argue that in asking about present or past behaviour, experience has demonstrated that the most valid answers are obtained by specific rather than general questions.

Festigner & Katz (1953) suggest that the directness, economy, ability to collect data about beliefs, feelings, past-experiences, and future intentions, widened the range of application of interview.

Patton (1990) summarises that the purpose of interviewing is to find out what is in and on someone else's mind. The purpose of open-ended interviewing is not to put things in someone's mind (for example, the interviewer's preconceived categories for organising the world) but to access the perspective of the person being interviewed. The purpose of interviewing people is to find out from them those things that cannot be directly observed. The issue is not whether observational data is more desirable, valid, or meaningful than the self-reported data. The fact of the matter is that it is not possible to observe everything. It is impossible to observe feelings, thoughts, and intentions. It is not possible to observe behaviours that took place at some previous point in time. It is impossible to observe situations that preclude the presence of an observer. It is impossible to observe how people have organised the world and the meanings they attached to what goes on in the world. The people must be asked questions about those things. The purpose of interviewing, then, is to allow us to enter into the other person's perspective. Qualitative interviewing begins with the assumption that the perspective of others is meaningful, knowable, and able to be made explicit.

Limitation of the interview is that it is susceptible to bias, distortion of facts by individuals and the inability of respondent to provide certain types of information - memory bias (Festigner & Katz, 1953). These distortions will be minimised by double-checking and the use of other related materials as mentioned above by means of triangulation.

Patton (1990) suggests four different approaches to collecting data through interviews.

a. The informal conversational interview - relies entirely on the spontaneous generation of questions in the natural flow of an interaction.

b. Interview guide approach - topics and issues to be covered are specified in advance.

c. Standardised open-ended - the exact wording and sequence of questions are determined in advance.

d. Closed, fixed response interview - questions and response categories are determined in advance.

Seltiz et. al. (1962) suggests that in a standardised interview the questions should be presented with exactly the same wording and order to all respondents. The reason is to ensure all respondents replying to the same question. At the same time fix alternative answers can be offered or could be left to the respondent free to answer in his or her own words. The alternative maybe 'yes' or 'no' or degrees of approval.

On the other hand, open-ended question will permit a free response and hence allowing the respondents to express their response in more detail. However the drawback is that the collected data is usually very complex and difficult to analyse.

The field-alternative has the advantage of standardise answers relevant to the enquiry, which can be analysed quickly by coding into categories. The problem may arise when the data may lead to misinterpretation due to limited answers. It could also result in the respondent being led into giving opinion on matters he or she does not have any opinion in the first place.

This research adopts the interview guide approach due to its suitability that increases the comprehensiveness of the data (Patton, 1990) and allows a level of systematic data collection for each respondent. It also has the advantage that the interview will remain fairly conversational, which is important in maintaining an atmosphere for free expression.

3.2.2 Questionnaire

The decision to use postal questionnaire is based on the findings of other researchers where the level and quality of response associated with this type of survey normally is very good. Brook (as in Hoinville and Jowell, 1977) argues that both the level and quality of response are frequently equal to, and in some cases better than, those achieved in interview surveys.

The cost for such a survey is also favourable considering the survey will be done on the total population, that is the whole corporate members of Persatuan Arkitek Malaysia (PAM) who reside in Peninsular Malaysia. In this case there is no need to cluster a postal survey geographically since the postal costs throughout Malaysia is the same.

For the study there is a relative advantage of postal survey where the respondents are allowed time to reflect on the questions (and possibly to look up records) so that they can give more considered and precise answers. Brook (1977) suggests further that the method is extremely useful in situation where it is desirable to ask people to record details of their behaviour as it occurred in order to gain accurate information.

The postal surveys can also be used effectively for screening purposes to identify a particular minority group of respondents for subsequent interview.

3.2.3 Questionnaire Design

The main field survey was conducted between the months of November and February 1993 for the whole corporate members of PAM as described earlier.

The questions used are those related to the main objective of the study, which were classified into the following categories:

a. Background information.

A series of question to elicit information like the age, education, experience, professional qualification and many others which will provide basic data about the respondents.

b. The nature of urban design project.

The main purpose of gathering information in this category is to examine the understanding of urban design in the practice and to estimate the nature of the problem. It will also highlight the problems faced by the designers.

c. The design process.

The questions used in this category are aimed at the way the architect proceeds in their design task for a specific project. The purpose is to gather how they handled the project in detail and whether any specific methods were used and the type of information used in the process. The data will also give an indication as to the state of the art of urban design in Malaysian context.

The categories in the actual questionnaire are however not necessary in the same order. A sample of the questionnaire is included in the appendix.

3.3 SURVEY AND INTERVIEW PHASE

This section describes the pilot survey, the sample size, the survey and interview procedure and interview selection.

3.3.1 Pilot Survey

The pilot survey has two main objectives: firstly is testing the questionnaire and interview schedule, and secondly is the development of field procedures. The pilot survey is an important step in developing survey instrument where it is extremely difficult not to have ambiguous or confusing questions, even for experienced social scientists.

In this research, the questionnaire was pre-tested by sending out fifty samples randomly selected from the Register of Architect on the Building Directory (1993) produced by Pertubuhan Arkitek Malaysia (Malaysian Institute of Architect). The results of the analysis carried out on the pilot survey revealed the need for certain alterations to be made to the questionnaire for the actual survey. The revised version of the questionnaire were then distributed to the architects in early December 1993.

At the same time as the pre-testing of the questionnaire a sample of the respondents were chosen for the testing of the interview schedule to test for clarity. The techniques of questioning were also used then to create an atmosphere of free expression. The results from the exercise were used to modify the interview schedule and technique.

3.3.2 Sample Size

As mentioned earlier, the questionnaire is sent to all registered members of PAM based in Peninsula Malaysia. 473 questionnaire were sent altogether of these 276 were received back, a return percentage of 58.4%. According to De Vaus (1991) the size of population from which the sample is drawn is irrelevant for the

accuracy of the sample. For this study the sample size of 276 respondent gives a sampling error between 6.0% to 6.5% at 95% confidence level. This is a tolerated level considering the nature of the research and the discipline involved.

Sample error (%)	**Sample size**	**Sample error (%)**	**Sample size**
1.0	10000	5.5	330
1.5	4500	6.0	277
2.0	2500	6.5	237
2.5	1600	7.0	204
3.0	1100	7.5	178
3.5	816	8.0	156
4.0	625	8.5	138
4.5	494	9.0	123
5.0	400	9.5	110
		10.0	100

Table 3.1: Sample size at 95% confidence level (simple random sampling)

Source: De Vaus, 1991, p.71

3.3.3 Survey and Interview Procedure

The questionnaires were posted to the respondents that included a return stamped addressed envelope at the end of November 1993. They were allowed two weeks to complete the questionnaire before returning the package back. A grace period of another one week was given before a follow up by telephone were made and a further one week was allowed for the respondent to return the questionnaire.

The interviews were carried out during the data collection period from November 1993 to January 1994. The interviews were tape-recorded and notes were also taken.

3.3.4 Interview Selection

The respondents were selected through a sieving process. Firstly they must be based in Kuala Lumpur (the capital city) as suggested earlier, that is for convenience and due to limited resources. Secondly choice was made based on the type of projects they were involved in. Selections were made from those architects involved in housing, urban in-fill, institution and others that require urban design consideration.

Thirdly, selection was made so that the designers' with different experiences and length of time in practice were included. Fourthly, willingness of the designer to be interviewed at length was also considered where it could take up to four hours.

The respondent consisted of those architects who has been in practice ranging from less than 5 years to more than 25 years and the projects they were involved in ranging from housing and institution buildings to a whole township design.

3.4 OBSERVATION AND ARCHIVE

The observation and archive study were done informally with the aim of generating background knowledge on the urban development in Malaysia, and general attitudes towards environmental quality of the people and the professionals.

3.5 DATA PROCESSING

The data were processed employing both qualitative and quantitative approaches. The two methods were used together to strengthen the findings and allows greater generalisation in the exploratory research through triangulation.

3.5.1 The Analysis of the Questionnaire

The data collected through the questionnaires was processed by the use of statistical package that is SPSS.PC+. The main purpose is to develop the background of the nature of the urban design practice in Malaysia based on quantitative analysis.

The techniques used for the analysis were descriptive statistics with the application of the statistical package SPSS-X.

3.5.2 The Analysis of In-depth Interview

The analysis of qualitative data is a process of making sense, of finding and making a structure in the data and giving this meaning and significance for ourselves, and for any relevant audiences (Sue Jones as in Walker 1985).

Out of the total ten interviews, seven of them were transcribed and a detailed analysis was done. The rest of the interview information was used as a general case. This was done after a point of saturation was reached where the information was repeated many times.

The interviews were analysed in two stages as suggested by Patton (1990):

1. Analysing individual cases - writing a case analysis using data from each interview.

2. Cross case analysis - grouping together answers from different people to common question.

The data were coded into categories, which were relevant to the study. The categories with which to structure and make sense of the data are either decided before the coding is done or developed as the process was progressing. Glaser and Strauss (1967) argue that theory about the social world which 'fits and works'

is that which is generated inductively from the data. Categories emerge out of the examination of the data by researchers who study it without firm preconceptions dictating relevance in concepts and hypotheses beforehand. There is a problem with this method as Jones (1985) points out that categories do not just 'emerge' out of data as if they are objectively 'there' waiting to be discovered. She points out that Kaplan (1964, p.133) emphasises the fact that:

"We always know something already and this knowledge is intimately involved in what we come to know next, whether by observation or any other way. We see what we have reason of seeing."

(Kaplan, 1964, p.133).

Thus, in this research the categories have been formulated tentatively beforehand and as the analysis progresses new categories are added and irrelevant ones were ignored. This is done based on the phenomenon that is common to all cases.

It has been shown earlier that the process of design must at least follow the following stages in order to come out with a successful solution. The stages are assimilation, general study, development and communication.

To test whether the architects in practice follow the procedure stated above in addition to the analysis done to the data collected using the questionnaire, a detail interview was done with a sample of the architects in which they were asked to discuss the way they handled the various project. The data from the interview were than transcribed for further analysis.

In an effort to organise the data in the qualitative analysis, the first was to create thinking units. Ely (1991) suggests that in an effort for the qualitative researcher to shape the collected data thinking units may be employed which is seen as broadly framed sorting files. The data in each thinking unit can then be broken down into categories and sub-categories that are important to the study. For the

purpose of this study the thinking units were project, process, theory, consultation, experience, roles and organisation.

The main aim of the research is to establish a normative theory on appropriate approach to physical and spatial organisation of urban design, which is responding to the practising environment in Malaysia. Various categories were created to focus all the findings towards the stated goals. The following categories and sub-categories were explored.

Project

Building complex, government project and private project.

Process

Precedence study: looking at existing example, book review, discussion etc.

Initial study: site analysis, contextual analysis, appraisal of site condition, economic, politic, culture, neighbour, questionnaire, observation, activities etc.

Consultation: user, client, public, other consultants, local authority and neighbour.

Analysis of existing information: discussion.

Synthesis: intuitive, from experience, prejudice etc.

Proposal: public participation.

Communication: public participation, computer aided etc.

Theory

Concept: physical, behavioural, contextual, spiritual, order, scale, proportion, colour, texture, unity, rhythm, harmony, contrast, symmetry and balance.

Tropical: planning, courtyard, ventilation, structural etc.

Vernacular: details, form etc.

Traditional: roof form, context, image etc.

Modern: functional, image, form etc.

Experience: similar project, finished project, professionals involved etc.

Roles: shared believe, independent etc.

Organisation

3.6 SUMMARY AND CONCLUSION

This chapter discusses the research methodology including research questions, hypotheses, and objectives. The discussion focuses on the case study, data collection methods and data analysis. The field survey consists of four overlapping phases: the reconnaissance phase, the design phase, the data collection phase and data analysis phase.

The primary data was collected during the filed study. A pilot survey was conducted prior to the main survey that was conducted between early November 1993 and the end of January 1994. The sample of the respondents was taken from the register of practising architects in Building Directory, 1993. Out of the 473 questionnaire sent out a total of 276 were received back. During the same period an in-depth interview was carried out with ten architects, a planner and a landscape architect.

The collected data from the questionnaire was coded, processed, and analysed using the SPSSX-PC package. Frequencies table and cross-tabulations were the main statistical techniques used for data analysis and interpretation. The interview data was analysed using thinking units, categories, and sub-categories.

The following three chapters will present the research findings and interpretations.

CHAPTER FOUR

URBAN DESIGN AND THE DESIGN OF URBAN SPACES

4.0 INTRODUCTION

This chapter presents the findings of the research in terms of the nature of urban design problems in Malaysia. It addresses the two main contributing factors towards achieving successful design of urban spaces - the recognition of the problem and the design process adopted by architects.

This research aims to identify the reasons why Malaysian architectural practice produces poor design of urban spaces by examining their design method and processes. This is done in an attempt to characterise the practice and the methods used that influence the quality of the urban spaces produced. This research will also identify why the recent urban developments are not responsive to the existing context where it has resulted in the poor continuity in the design of the urban spaces. The analysis mainly focuses on the general recognition of the discipline and the process that the architects take in achieving their final design goals or objective. From the analysis the strength of the practice and its uniqueness will also be highlighted.

This chapter will analyse both the quantitative and qualitative data to address the research questions listed earlier in order to meet the objectives of the study. It is divided into four sections, in which the first section outlines the background to Malaysian architectural development. The second section examines urban design practice by examining the nature of urban design problems and types of urban design project. The third section discusses the architects' awareness of the problems and in what ways they influence their design. The final section presents the conclusion to the chapter.

4.1 MALAYSIAN ARCHITECTURAL PRACTICE BACKGROUND

This section will introduce the background of Malaysian architectural practice by looking at its historical development and the current scenario of the architectural scene.

4.1.1 A short account of the country's history

The earliest recorded civilised settlement in the Malay peninsular is believed to be in the Lembah Bujang or otherwise known as the Bujang River Valley in the northern state of Kedah (Chan Chee Yong, 1987). This happened during the civilisation of the Indian Kingdoms in the seventh to the fourteenth centuries in the pre-Islamic era of Malaysian history. Through a succession of Indo-Buddhist dynasties, Malacca was established as an important trading post in the Straits of Malacca where Arabs and Indian Muslim merchants came for spices from this region.

In the early part of the country's history the Portugese, initially, came to Malacca to buy spices but later captured it in 1511 after which time they controlled the economic and political affairs of Malacca. They then opened up Penang island in the sixteenth century before the Dutch defeated them in 1641 with the help of the Sultan of Johor. The British came to Malay peninsular in the late eighteenth century by establishing trading posts on Penang Island (1786) and in Singapore (1819).

Britain's Francis Light's (of the British) intention was to establish a naval base on Penang Island to safeguard the route to China. The island eventually developed into another prosperous trading post. The British domination was strengthen when they established themselves in Malacca (Melaka) in 1795 (Vlatseas, 1990, Sulaiman & Shamsuddin 2000). The colonial domination began in earnest after the Napoleonic Wars when in 1824 they signed an agreement with the Dutch dividing the region into spheres of influence separated by the Straits of Malacca.

For many decades after their arrival in the Malay Peninsula, the British took little interest in the affairs of the Malay states. On matters relating to religion, local customs and local laws the Sultan's authority was unquestionable. The Federated Malay States (Penang, Province Wellesley, Malacca, Selangor, Perak, Johor and Singapore) were formed with Kuala Lumpur as its capital in the last quarter of the 19th century.

The early buildings were constructed of timber in which only towards the close of the 19th century did they begin to build in grand style which was later referred to as Colonial Architecture. The architecture of these buildings were influenced by North Indian and Moorish style (Vlatseas, 1990). Some examples are shown here.

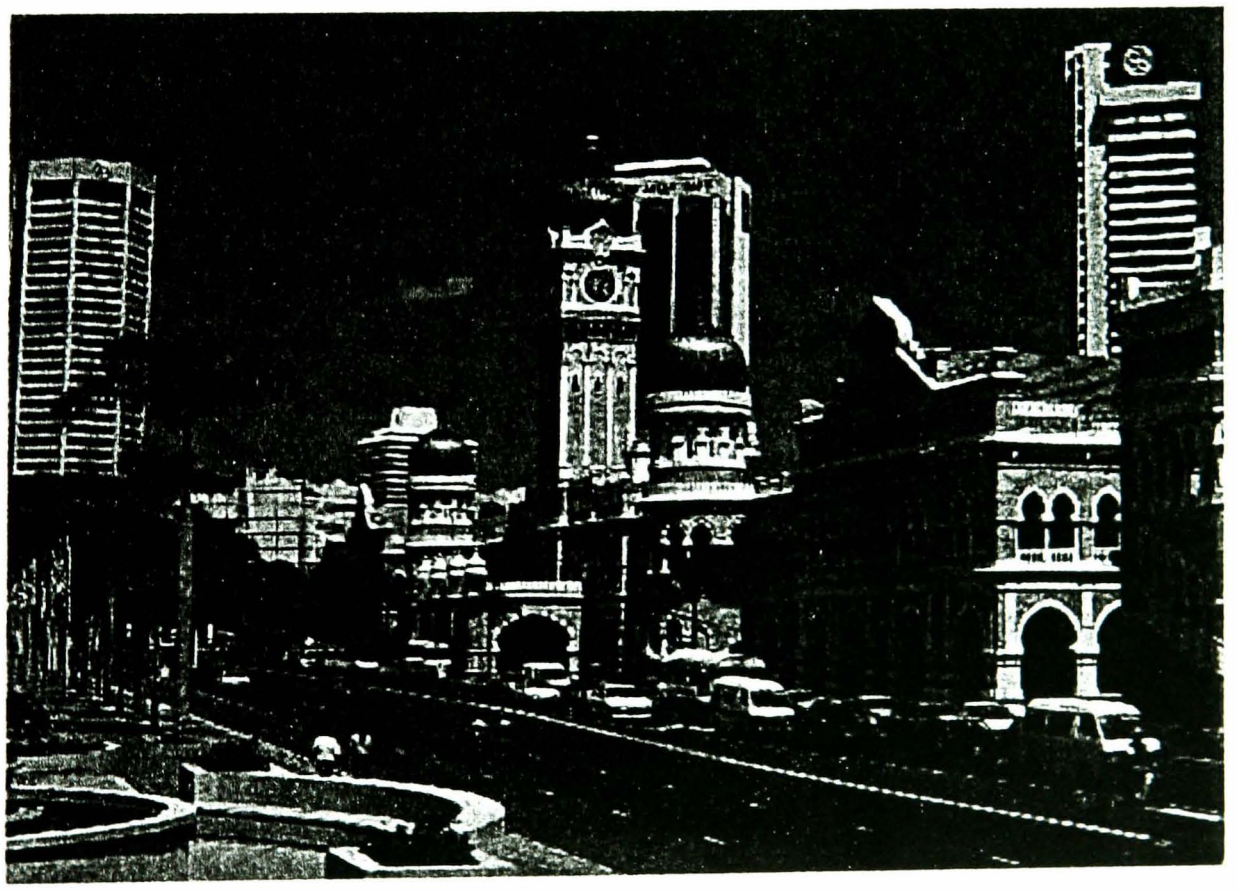


Figure 4.1: **The Secretariat (Sultan Abdul Samad Building), Kuala Lumpur, 1896 by Norman**

Source: Field work, 1998

Figure 4.2: **The Railway Administration Office, Kuala Lumpur, 1900 by Hubbock.**

Source: Field work 2000

Figure 4.3: **The Railway Station, Kuala Lumpur, 1900 by Hubbock.**

Source: Field work 2000

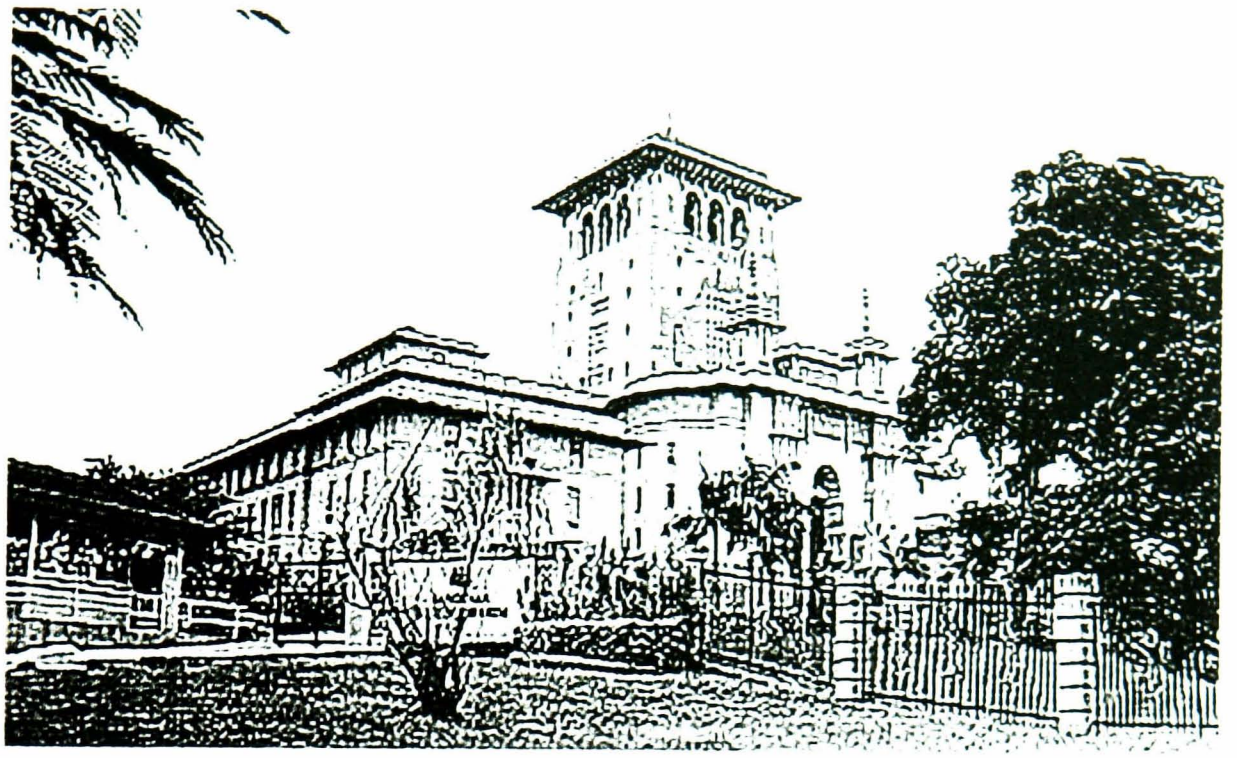


Figure 4.4: The Johor State Secretariat Building, Johor Bahru, 1939 by Palmer and Turner

Source: Field work 1998.

The use of columns and pilasters with Doric, Ionic and Corinthian capitals was the means by which the designer of that period try to create majestic public buildings. The architectural style can be seen on government buildings, hospitals, banks, churches, post-offices, schools, clubs, palaces and private dwellings.

The other great influence on the urbanscape of Malaysia was that from the Chinese. The Chinese merchants had been coming to the Malay Peninsula since the Fifth Century AD. In the middle of 14th century when Admiral Cheng Ho came to Malacca where the king accepted the Chinese sovereign, the expedition then became official (Vlatseas, 1990). The migrant Chinese built temples and houses with the architecture that resembled those from China. Some examples are shown here.

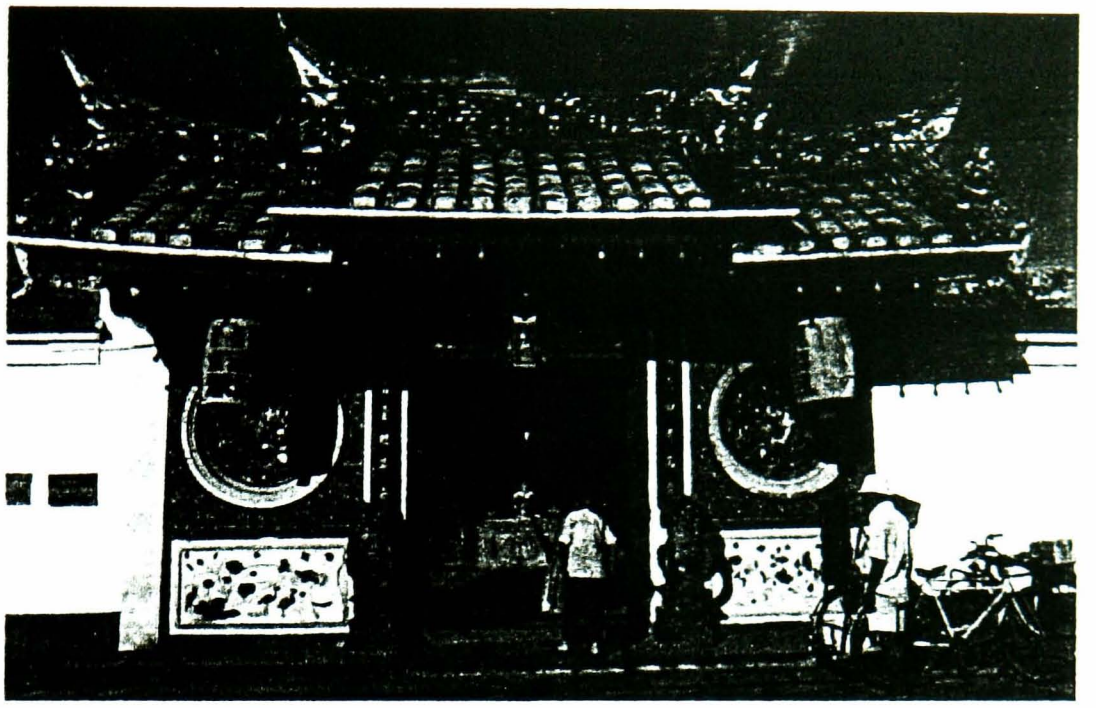


Figure 4.5: Cheng Hoon Teng Temple, Malacca, 1704

Source: Field work 2000

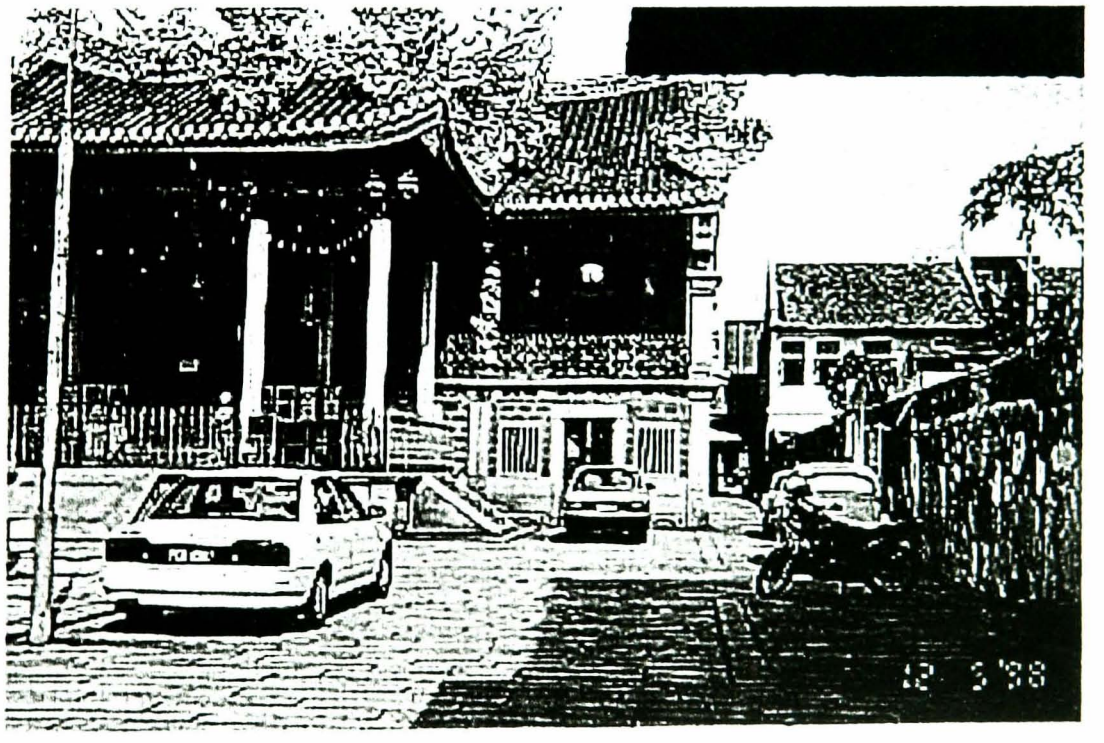


Figure 4.6: The Khoo Kongsi Building, Penang

Source: Fieldwork 1998

The other major architectural influence introduced by the Chinese migrant was the 'shop-houses'. These were two-storey buildings, normally constructed in a terrace of linked dwelling, where businesses were carried out downstairs and

family living taking up areas upstairs. This type of architecture can be found in all urban areas up to today.

The trend of architectural development in the country maintained the same course up to the Second World War. After the war, things began to change where in 1948 the Federation of Malaya was formed and later gained independence from British rule in 1957. In 1963 Sabah and Sarawak joined the federation and Malaysia was born.

4.1.2 Traditional Malay architecture

The traditional Malay settlement consists of houses that are built in timber that is raised on stilt. The basic structural system is that of 'post-and-beam' made from locally available wood. The houses are built to suit local climate, using in most parts different types of ventilation and solar control devices with low thermal capacity of building materials (Yuan 1987).

The house-form are classified mainly by their roof shapes (Yuan 1987) where the most common being the 'bumbung panjang', 'bumbung lima', 'bumbung perak' and 'bumbung limas' (see Figure 4.7). The 'bumbung panjang' is the most common form that can be found throughout Peninsula Malaysia (see Figure 4.8). The roof form has a simple gable supported by king-posts. The most common roofing material used is the 'attap' a thatch made from palm leaves which eventually gives way to zinc.

Traditionally, the most common place for the ingenious Malay settlement is in rural areas and their economic activities are generally related to agricultural (see Figure 4.9). As a result the traditional house forms described above were mostly consist of detached houses that could be found in a rural and urban village setting. Their densities are very low where each house has its own compound. Similar village form can still be found in present day settlements. In the urban areas similar type of development is mainly associated with the expensive detached houses and quarters for top ranking civil servant. The closest example

of mass urban settlement in the traditional form can be seen in the illegal squatter settlement where the houses are built close to each other fronting a common path.

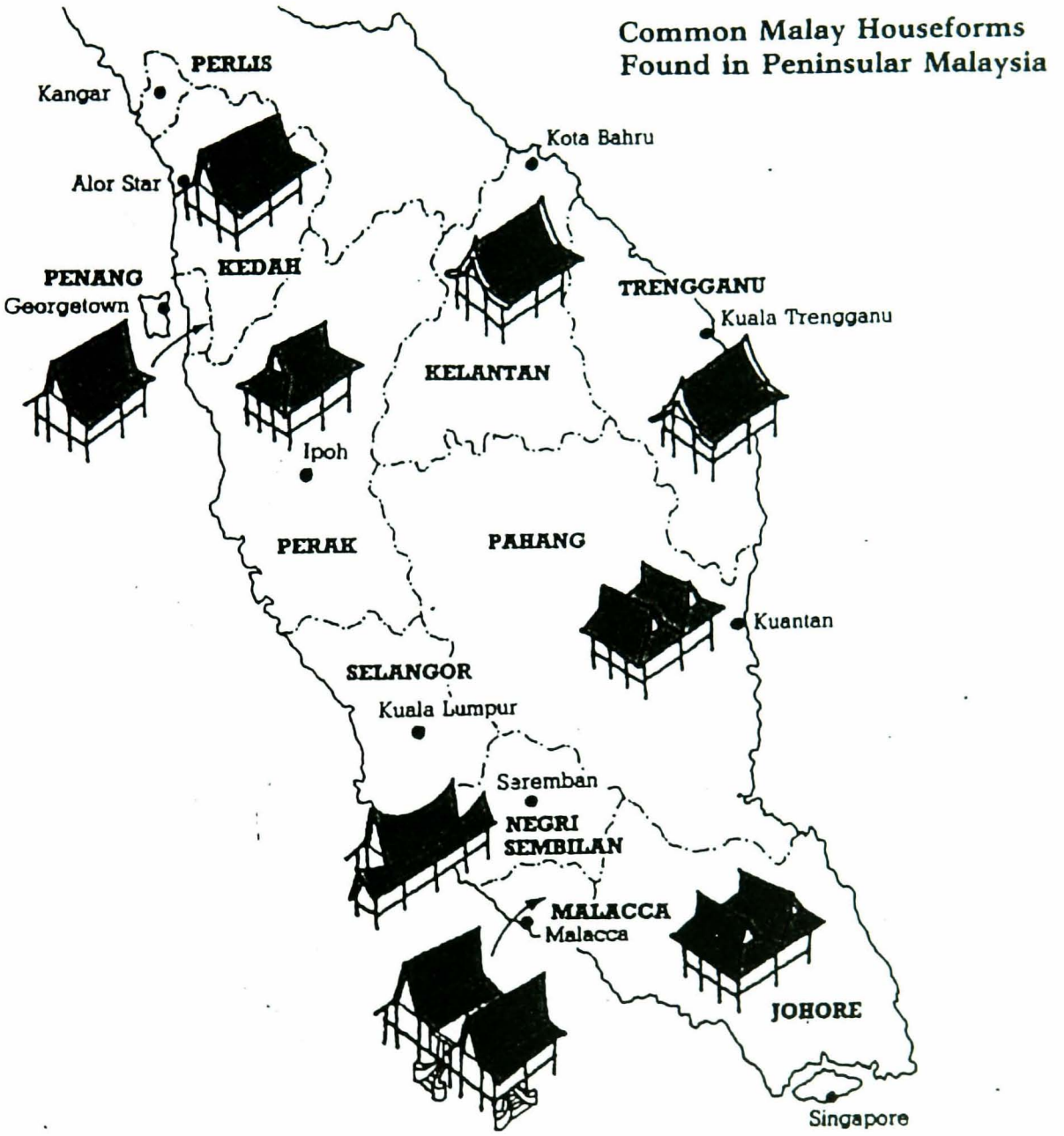


Figure 4.7: **The Most Common Traditional Roof Form of Malaysian Houses**

Source: Yuan, 1987, p.27

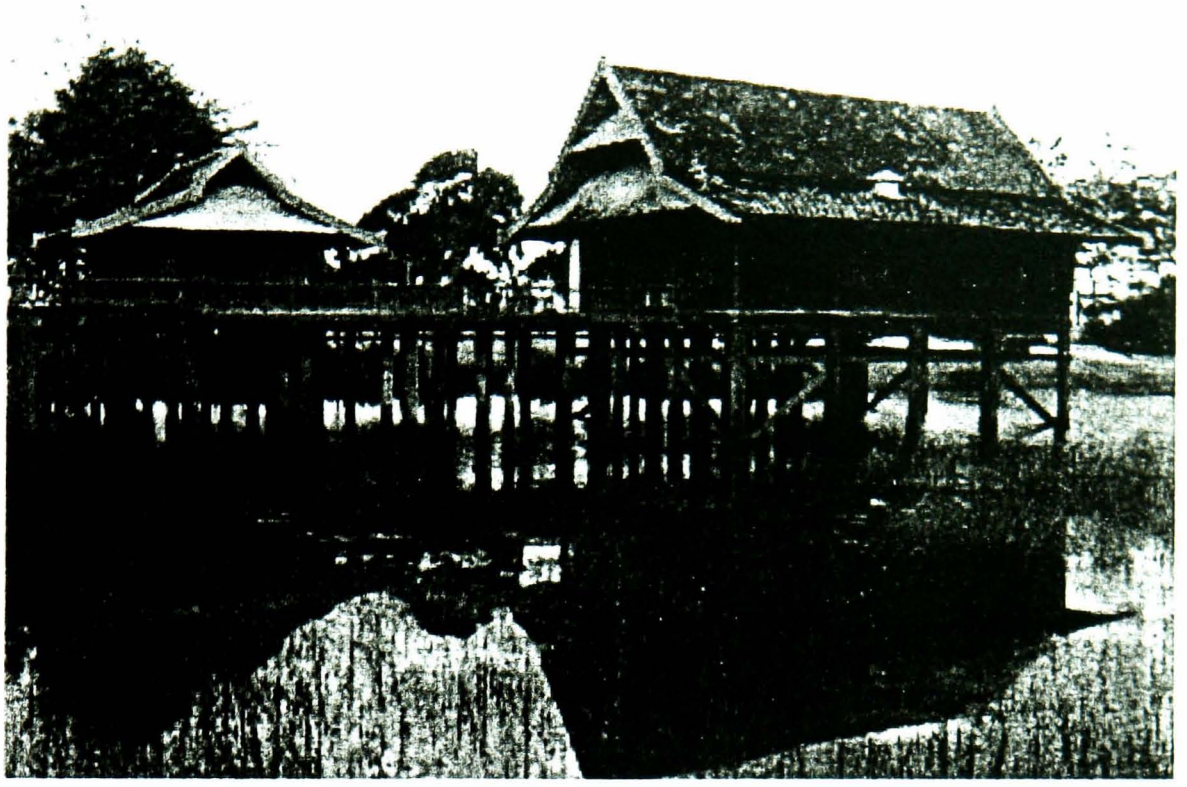


Figure 4.8: **'Bumbung Panjang' (Long gable roof) of the Terengganu House.**

Source: Fieldwork 1997

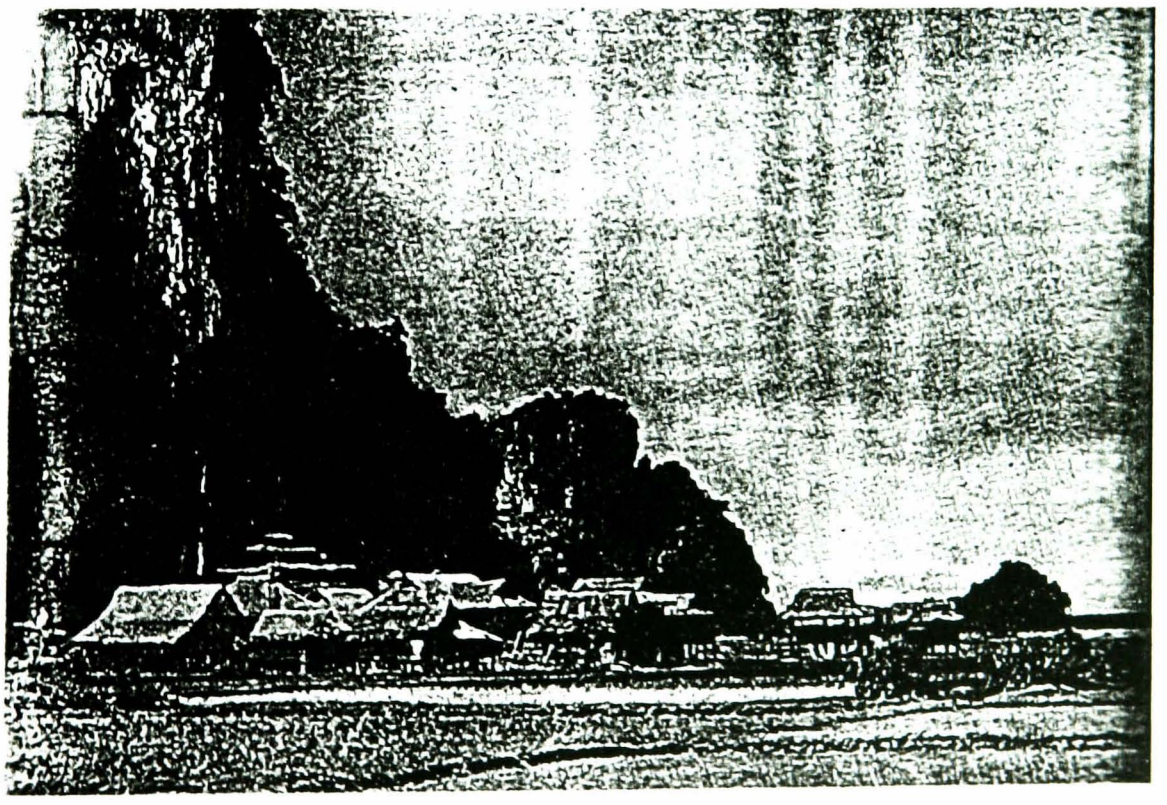


Figure 4.9: **The Village Setting In the Northern State of Perlis**

Source: Hawkins, 1983, p.62

4.1.3 Modern architecture of Malaysia

The Sixties and early Seventies saw buildings being built in a more streamlined appearance that reflected the modern international style of the time brought back by the new generation of architects which were entirely overseas educated. The trend continued into the booming years of the Seventies and early Eighties. During this period buildings were built higher in the race for the best use of space and money. The towns and cities grew both in size and in height that may have contributed towards the current tension in the urban environment.

Figure 4.10: Modern Tall Buildings in Kuala Lumpur

Source: Field work 1998

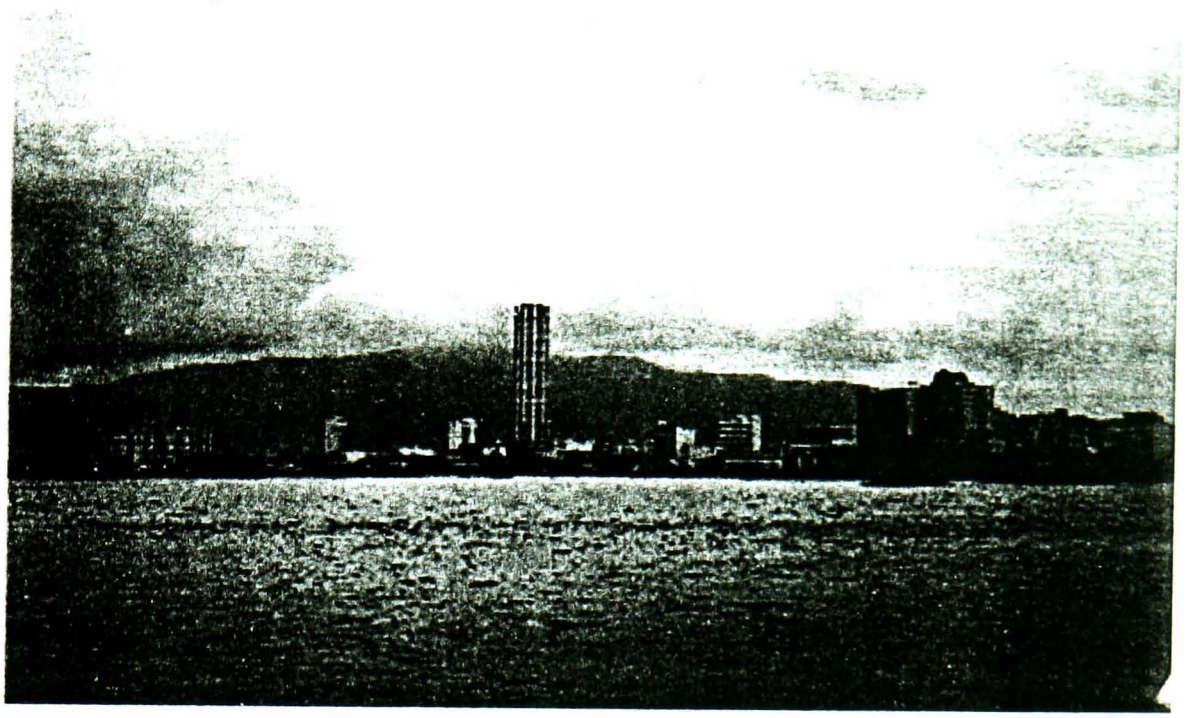


Figure 4.11: Penang

Source: Field work, 1998

In 1884, Sir Frank Swettenham introduced the first known building regulations in Malaysia after the great fire of Kuala Lumpur in 1881. The original 'attap' hut settlement was to be rebuilt in brick or wattle with tiled roofs and allowance for a five-foot covered passageway by the road.

The earliest known organisation of architects was the formation of the Institute of Architects Malaya in the 1930's that lasted until 1941 when the war broke out. The institute was revived after the end of the Second World War in the Pacific, in 1946, which lasted for three years. It was then replaced by the Malaya Society of Architects (FMSA) which was formed in August 1949.

After the independence of Malaysia in 1957 a new institutional constitution was drafted and the Malaysian Institute of Architects (Pertubuhan Akitek Malaysia) or PAM was formed in January 1967. The number of corporate members of PAM that year was 157.

The political and architectural movement in Malaysia have been preoccupied with styles and identity of the built environment for the last two decades. This has generally influenced the opinion of the general public too. In the 1980s 'Malaysian identity' was promoted to generate a sense of identity to the local building industries. This was a direct response to the unimaginative stereotype and sometimes, inappropriate international style that resulted from the modern movement adopted from the West that characterises Malaysian post independent architecture. The main driving force behind the architectural design at that time was form follow function which was brought back by graduates from United Kingdom and Australia.

The great emphasis on the functional aspect of design resulted in architects designing buildings with little regards to the context and socio-cultural aspects of the environment (Shamsuddin and Sulaiman, 1999). Structures were design to satisfy their building efficiency and functional requirement. As a result towns and cities contained building that looked similar throughout the nation. At the same time the buildings were alienated from the surrounding in terms of their composition and missing linkages between them (Sulaiman and Shamsuddin, 1997). The adoption of traditional physical character was seen as an image making in the part of the politician when national pride and uniqueness were being promoted. In that period Malaysia has a very difficult relation with the West during which the 'Look East' policy was introduced. The Government at that time greatly promoted businesses and other venture with nations in the eastern region of the globe such as Japan and South Korea.

The majority of the buildings that promote this sense of national identity are done as roof form treatment that are supposed to project a national image. There is no in-depth study to the architectural style being promoted which adopted the 'Minangkabau' roof form. The style only relates to the shape of the roof and not on the other elements of the building design. It originates from the state of Negeri Sembilan, which has its root from one of the region in Indonesia. Most application of the roof form is done as a cap on top of the building and there is

very little or no sense of scale applied to the composition. This simple application can be seen on many buildings of the time (see Figure 4.12).

This is a reflection of the general understanding of the traditional architecture, which mainly focusses on the roof form. The idea could produce better result if the design is seen as generating contextual setting that has functional and social meaning in the context of Malaysian culture and environment. The whole characteristics of the traditional built environment should have been adopted and adapted accordingly. There are elements of the traditional architecture that could be developed to satisfy their modern uses such as massing, planning, detailing and others. This in turn will relate to the sense of place for the various types of setting.

This architectural style did not developed into a comprehensive setting of the built environment that can be identified as being Malaysian. The momentum dies down in the 1990s. The movement is seen as 'pastiche' exercise, which lacks in-depth understanding of the physical and socio-cultural characteristics of the traditional environment. The identity of the environment should include the internal and external spatial quality that has been associated with meaning of the built environment. It is therefore more appropriate to create an identity to the urban design that provides this contextual setting. In an effort to create an environment that is appropriate for Malaysia, various designs are still evolving. The positive contribution that has emerged in the process of developing the Malaysian identity is that architects begin to look at traditional architecture positively and using some of the traditional architectural languages and details to inspire their new creation. At the same time concerns about responsive architecture that addresses the climatic problems of the locality becomes popular.

However, the notion of a single national identity would dilute the richness of the regional variation in architectural design that could be found thorough out Malaysia today. This is not so in the contextual sense of place where spatial quality is rather constant. To look into this aspect will require a detailed investigation on its own right, which is beyond the scope of this study. It is

suffice to say that the constant elements among others are the street (Figure: 4.13), the five-foot walkway (Figure: 4.14), the green (padang) (Figure: 4.15), the mosque (Figure: 4.16) and the market place (Figure: 4.17) (Shamsuddin and Sulaiman, 1992 and Sulaiman and Shamsuddin, 1999).

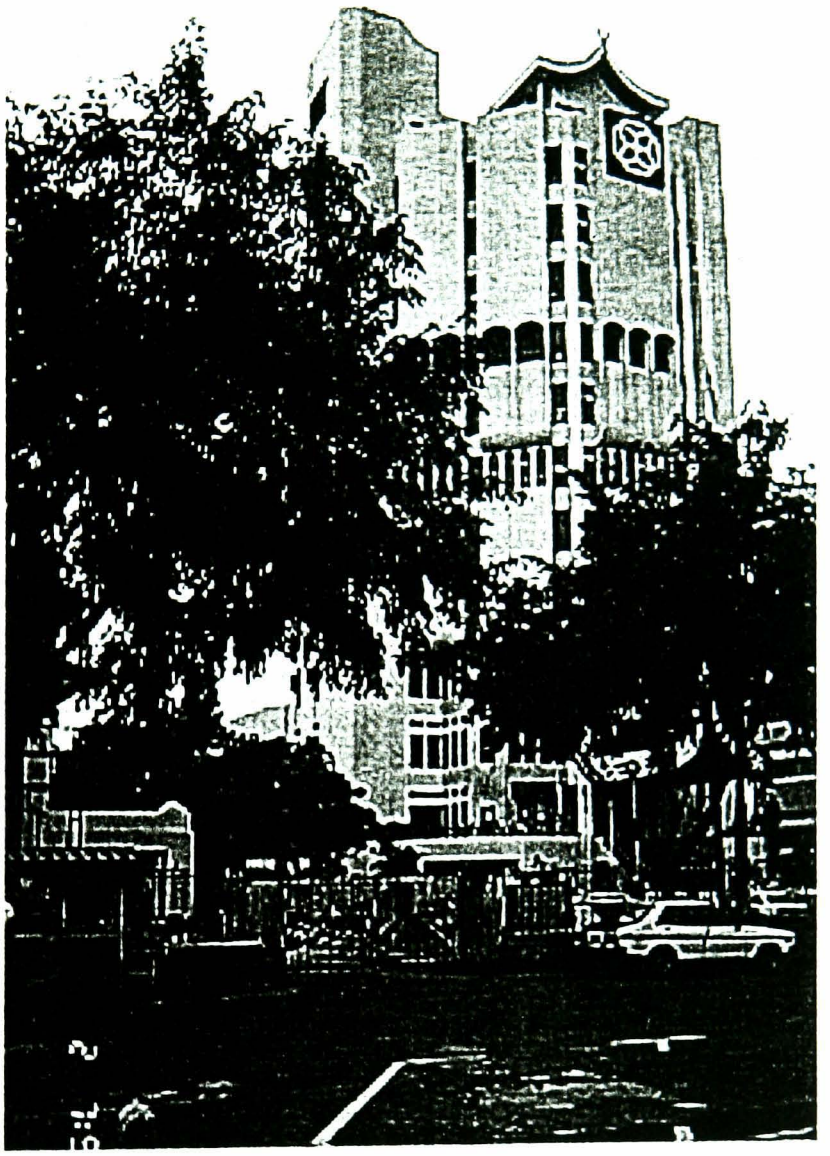


Figure 4.12: The Cap-on Architecture.

Source: Fieldwork 1999.

Figure: 4.13 The Street of Johor Bahru Old Town

Source: Fieldwork 1998

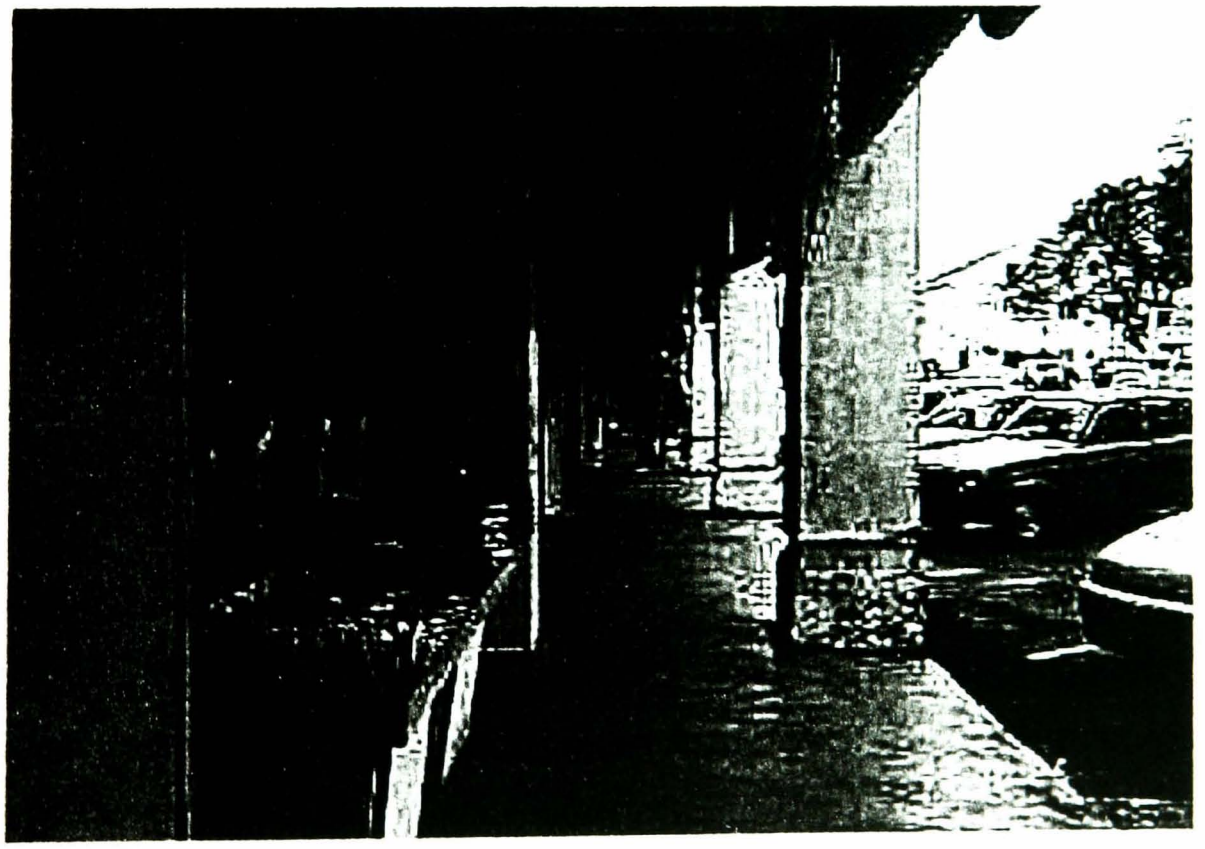


Figure: 4.14 The Traditional Five-foot Walkway

Source: Fieldwork 1996

Figure: 4.15 The Towns' Green Open Space (Padang), Kuantan

Source: Fieldwork 1994

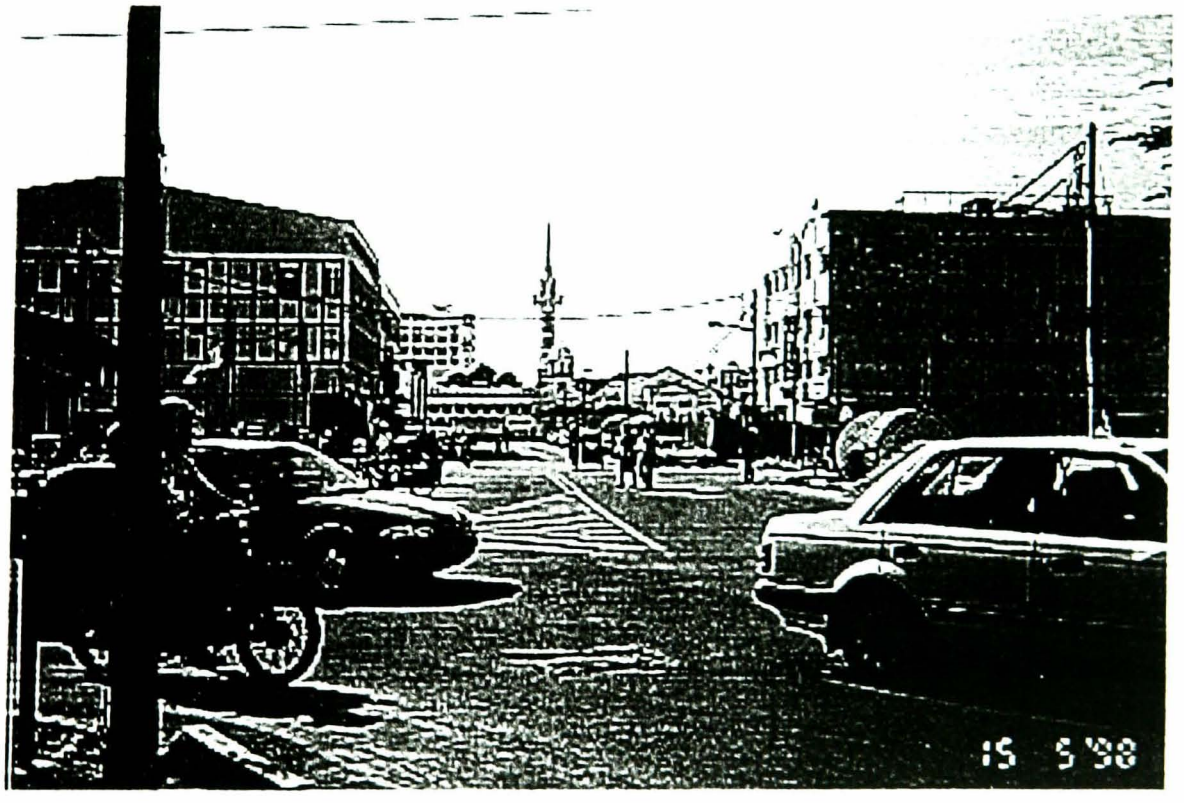


Figure: 4.16 The Mosque of Kuala Trengganu Town

Source: Fieldwork 1998

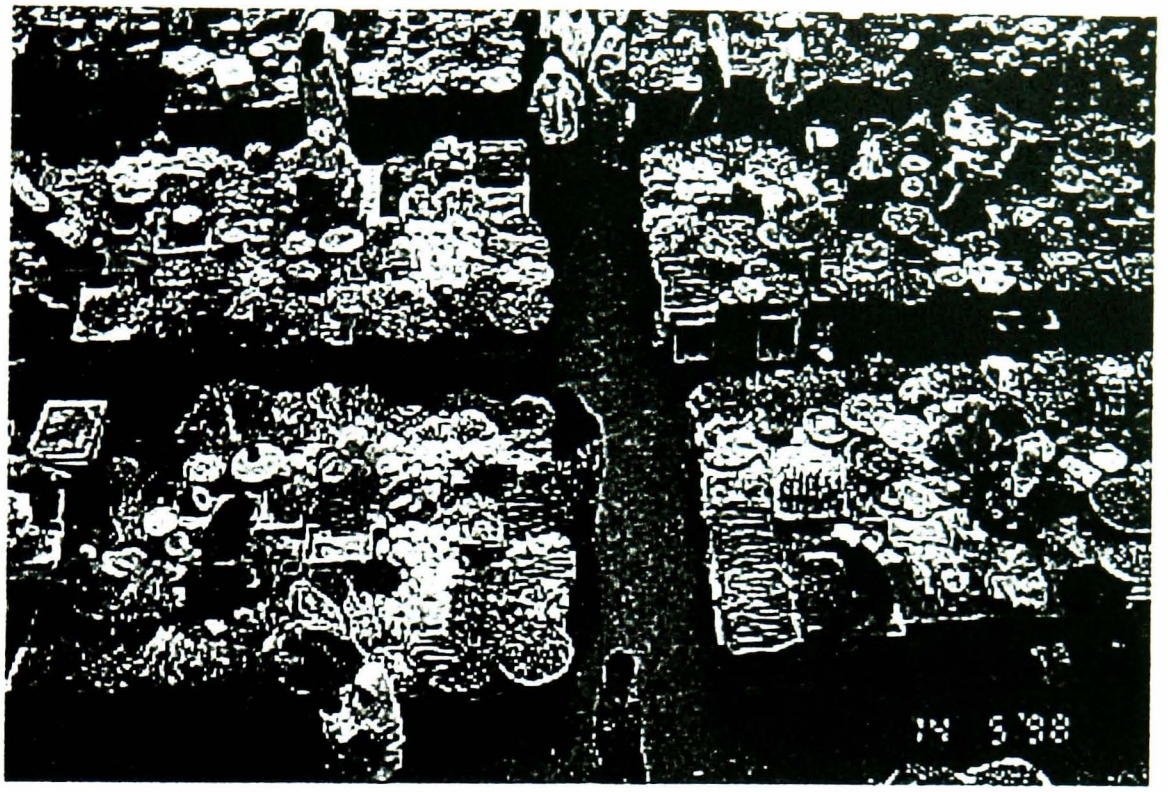


Figure: 4.17 The Market Place of Kota Bahru

Source: Fieldwork 1998

The Malay architecture of traditional Malaysian buildings especially individual houses varies from State to State, which can be identified by the massing, roof form and detailing of the houses (see Figure 4.1). Grillo (1960) suggests that the roof is the most essential part of any building and hence the main element. This is similar with Malay architecture where the traditional buildings apart from the planning of the different house types are generally identified by the shape of their roof form.

In the case of the shop-houses the regional variation is not as obvious as the example for the individual houses shown. This is as a result of the adoption of the classical architectural style that is known as colonial architecture (Figure 4.18). The style, which has been adopted from the western practice, has the influence of creating a uniform urban architecture throughout Malaysia. There are other influences as well, such as the Moorish and Indian architecture. The architectural form that have been adapted to the local climate, like the five-foot walkway, which is a direct result of the building regulation introduced by Frank Swettenham in 1884 as explained earlier in the chapter.

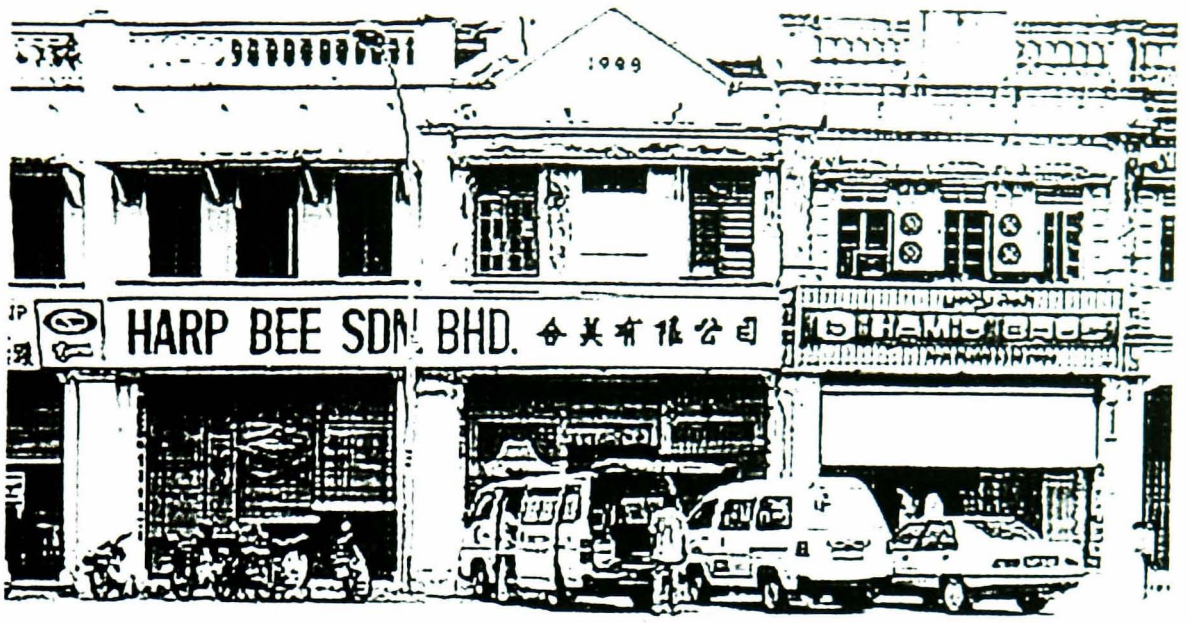


Figure 4.18 Traditional Shop-house Design

Source:Fieldwork 1998

4.2 URBAN DESIGN PRACTICE

In Malaysia as argued earlier, there is no recognised urban design profession. However, some aspects of it are covered in the urban design guidelines included in the local or action area plans. These are general guidelines that have been produced to guide designs that are more inclined towards planning requirements. In practice their designs are left to the devices of the architects especially in cases like those large projects of housing developments, campus design and new township design. In the design of in-fill projects within existing towns and cities, it is not very clear as to the people who are responsible it. Their three-dimensional qualities will depend greatly on the design of individual sites which falls under the responsibility of the different architects to produce.

Thus, in this research the architectural design practice has been used as surrogate to the study of urban space design in the Malaysian context. This part of the analysis focuses on the aspects that should have been considered by architects in their design in order to produce good or appropriate design for their intended uses as suggested by theorists and practitioners in the field.

4.2.1 Type of Urban Design Problems and Their Recognition

It has been reviewed that the recognition of the problem is very important in design. It is part of the problem solving process. In Malaysian towns and cities, it is observed that urban spaces are mostly designed and supervised in their implementation by architects. Thus the architects' understanding of the problem is of great importance to the study, whereby definition will play a big role in the design process.

The recognition of any discipline occurs at many levels, such as: 1) The general definition of the subject matter, 2) Who is responsible for their design, and 3) The legislation or pressure group concerned with the discipline.

One of the problems associated with urban design in Malaysia is recognition. There is no recognised urban design profession to champion this discipline in the building industry. Thus there is no organisation directly responsible to ensure that the needs of the general public is taken care of in the design process. Respondent no: 7 from the in-depth interview suggested that;

"The problem with urban design is that, it is not a recognise discipline. Make it a respectable discipline to speak better for everybody. ...at the end of the day somebody need to champion it."

The problem must first be recognised and given due attention before appropriate action can be taken in order to derive a suitable solution. Findings from data analysis reveal that most of the architects in practice did recognise the field of urban design. They see it as those parts of their design problems, which are related to town and cities. Most of the practising architects surveyed believe that 'Designing town or city' (71.7%), 'Designing building within town or city' (50%), 'Designing group of building' (47.8%), 'Street design' (50%) and 'Square design' (45.7%) as forming part of the urban design problem. The other alternative definitions given were 'High density design' (4.3%) and 'Place making' (2.2%).

As stated earlier the majority of the designers confined their definition of urban design to those design problems that are related to towns and cities environment, which is similar to Fraser Reekie (1972) definition on the subject. He suggests that urban design is the general design of groups of buildings and associated structures, roads and open spaces forming parts of towns.

This definition differs slightly to some of the other definition given by authors on the subject. Generally it has been suggested that urban design is a discipline that is concerned with the design of exterior spaces which is in association to the design of a group of buildings. It relates to physical characteristics and involves other aspects such as sound, smell, light and others that affect the physical and psychological well being of the users. This could be taking place in the context of a town, city or any other settlement that have close relationship between interior and exterior spaces.

Some authors use time as a scale to measure the complexity of the problem such as, urban design problems are those building programs that takes up to five year duration. This is to differentiate it from the longer period of planning programs (generally ten to twenty years) and the shorter period of architectural schemes (one to two years). However this definition as an indicator of complexity is not always useful since many 'turn key' projects that involve the design of a complex of buildings may take a shorter period than five years. There are also architectural projects that involve urban design problems that take more than five years to complete such as a university campus design and city centre design. Some urban design projects may also take many centuries to complete and in most cases the program will never be completed anyway. Towns and cities are 'living' entities that keep on growing and regenerate to meet new needs and demands. Thus, the scale of time as a means to define urban design is considered weak.

However the variation in the definition suggests that there is no simple definition of the term urban design. In the literature review it has been found that even in the more developed nation, the adequacy of the existing definitions of urban

design is still doubted (Madanipour, 1996; Kindsvatter & Von Grossmann, 1994) and could be concluded that it is still at an early stage of development. Thus a more definitive description of the design could not be proposed, but generally there are two aspects of it that is the product (urban settings) and the process (design) as suggested by Madanipour (1996).

The number of different definitions given to the subject area will contribute towards the weaknesses of the practice where the uncertainties will lead to ambiguities. In a scenario where the problem is not clear then the solution offered would not be the best possible. Hence, from the study, the lack of definite definition of the subject could be concluded to contribute towards the weaknesses in the design process that eventually produce poor design.

In Malaysia the problem is slightly exaggerated by the fact that in the national language there is no direct translation of the word 'urban'. Currently it is termed as 'bandar' which is literally translated as 'town'. The current term used for urban design on the other hand is 'rekabentuk bandar' that is translated as 'town design'. This lack of a clear definition may also lead to confusion and contributed towards a weakness of the design in practice.

This lack of definition on the subject also leads to poor description of the requirements for urban design in the planning documents either in the local plan, master plan, action-area plan or building site plan. This is very important where the quality of the environment should be properly outlined in the brief of any development before the project is designed and implemented.

4.2.2 Who is Responsible for the Design of Urban Spaces?

It has been established that urban design is concerned with the design of exterior spaces relating to a group of buildings. Therefore there should be someone who is directly responsible for the building's design. In many cases different architects are given the responsibility of designing separate individuals building within a given site and the co-ordination to produce good urban space design that

links the various building together are left to the planner. However in this study (through the in-depth interview) there is no evidence to suggest that the planners are taking up this responsibility. The role of the planner in the design is mainly limited to checking on the appropriateness of the design as seen from planning policy for the area and other general planning requirement such as access, exits, location of junction and others. Thus in the current practice the planners are responsible only for the layout of the various site but not for the three-dimensional design of the spaces linking the various project together.

From this study it also observed that in practice, the architects do not claim direct responsibility as indicated in the in-depth interview where they pointed out the weaknesses of urban space design among others are due to:

i) The public's lack of awareness or stage of society's development (respondent no: 3, 4, 9)

   Respondent no: 4 suggested that,

   "The trouble with government and a lot of people, they still think about individual building...the space in between, nobody in control."

ii) "The authority should play a more active role" (respondent no: 3, 4),

   "....physical planning is lacking....the prime ministers' department has always been to do with Economic Planning Unit (EPU)."

iii) Unaware of the need.

iv) "It should be championed by somebody."

This study associates urban design to the wider context of the definition as mentioned in the previous section, where it is not only concerned with those problems related to towns and cities. It also covers all those design problems associated with the creation of exterior spaces that is bounded by group of buildings. The concern here is about creating places for people to interact in their everyday lives. This interaction could be staged in an urban square, a market place or street, which is in a town or city. It could also be in a school courtyard, central square of a university campus or hospital complex.

Hence this study revealed that there is no one who is directly responsible for the design of the exterior spaces in a situation where within a given urban setting different architect were designing individual building or project site. The architect's main concern is the design of individual buildings, the planning policy and issues relating to transport planning and management. This lack of supervision and patronage contribute towards poor urban setting as found in many towns and cities. This architectural practice scenario was characterised by Boyarsky (1983), where he commented that architects in Malaysia were using parcel of land in the cities as an island and consisted of separate units by themselves. The existing context and the people were ignored in the process of producing individual buildings.

4.2.3 Scale of the Problem

The types of project done by the respondents can be used to give some idea of the scale and nature of the problem related to urban design. This will give indication to the scale of the problem and some measure of their complexity. Different types of design project relate to different problems and complexity. For example the complexity of a housing project will differ greatly to a design of an office complex. The complexity varies in term of the physical, functional and sociological requirements. The facilities that need to be provided and the composition of the user will results in different approaches and solution to the problem. At the same time the context will also influence the final solution.

The extent of the architects' involvement in urban design projects, can be measured by the number of them involved in those types of work. The distribution of the design work that comprises a large aspect of urban design taking place in the country in the last five years involving the designers is as shown below:

	DESIGN	PERCENT	FREQUENCY
		(out of a total of 276 respondents)	
1	Housing	93.5	258
2	Shopping complex	71.7	198
3	Holiday resort	60.9	168
4	Complex of offices	58.7	162
5	Township	39.1	108
6	Town/city centre	32.6	90
7	University campus	28.3	78
8	School complex	28.3	78
9	Hospital complex	17.4	48
10	Square	17.4	48
11	Street	13.0	36

Table:4.1 Types of Projects undertaken by respondents between 1987-1992

Source: Fieldwork 1993/94

The data suggests that current urban design projects in Malaysia generally involves the following types of settlement: (a) New housing area, (b) Development within existing towns and cities, (c) Development of new towns, (d) Institutional and office complex and (e) Holiday resort development.

A majority of the respondents deal with projects that have large portion of exterior spaces such as those mentioned above. Thus the problem demands a high degree of consideration on the exterior spatial quality of the ensemble. The approach to design will require articulation beyond the requirement of the individual buildings where the arrangement of those buildings plays some important role. These projects require some urban design consideration in the process to create better settings for people. The projects are responding to the growing demand for those types of facilities that is the result of the urbanisation process where more people are migrating to the towns and cities in search for jobs and better living environments. The shift from rural based economies such

as agriculture and mining to urban based economies like manufacturing and the service industries which means that there are more jobs on offer in the towns and cities.

Comparatively the process of urbanisation in Malaysia is not as rapid as those found in other developing countries, where it is projected that only 44% of the population will be urban based by the year 2000 (United Nation Urban - Rural Projections from 1950 - 2000, quoted in Cohen, 1984). This is small when compared to countries like Argentina (89.1%), Mexico (78.1%) and South Korea (69.3%).

The figure also gives an indication of the current trend of the practice and the nature of the design problem that they are facing. This is the reason why urban design issues are becoming very important in the building industry. In fact the findings suggest that in recent years urban design problem is the main problem faced by architects in their design works. This fact is further emphasised by respondent no.4 in the in-depth interview where he suggested that he experienced more and more problems relating to urban design. These figures strengthen the argument formulated for the research that urban design problems must be the top agenda in building design in Malaysia.

The rapid urbanisation process means that as more people are migrating to the towns and cities, the demand for housing, shopping, offices and other facilities is getting bigger. The service industry is closely associated with urbanisation and their demand increases as the town or city expands hence the need for more office complexes. These office complexes which are normally situated in the heart of the towns and cities, cause great strain in the demand for land for development. The situation resulted in higher density development and less allocation of land for exterior uses. This view is echoed in the comment made by Yoong (1987) in his article about post-independent architecture in Malaysia. He suggested that the forces of rapid urbanisation bring new built intensities into locations that eliminates almost all that were there before, not just architecturally and environmentally but also socially and culturally.

It has been suggested that buildings in a city are the three-dimensional representation of the economic value of land in the city. The higher the building grow the higher is the value of land on which the building sits. Thus in this scenario the contextual issues relating to urban spaces and places will not be a major consideration. Unlike in America where tall buildings sometimes donate part of their land as public spaces, in Malaysia this is not happening.

The problem was also confirmed by Boyarsky (the former head of the Architectural Association School of Architecture) as reported in the Majallah Akitek (1983) when he commented on the new urban setting in Kuala Lumpur. He observed that there was a kind of defamation of domain in the sense that two enormous buildings that did the same thing and were just 50 feet apart were not linked in any way that people could not go from one to the other without getting into their car. He also suggested that it was useless to talk about context in the design of the enormous size shopping centre compared to the existing two-storey shop-houses. Thus economic aspect also plays a big role in determining the design of the urban spaces and context.

These statements highlight the increasing densities of urban development and the lack of sensitivities on the part of the designers and other private and public agencies associated with the development to existing architecture, environment, social and cultural aspects of the context. Old buildings are demolished where existing people and their trades are moved somewhere else or destroyed altogether. In their place new structures are erected which are inward looking and do not linked externally to each other either in terms of the buildings or spatial design. This is the general trend in practice today that contributes towards producing poor urban spaces and places.

4.2.4 Influence of the Bye-laws

The survey also reveals that the architects' understanding of the nature of urban design problem is very limited. Their main concern is to provide the spaces required by the local authorities as stipulated in the bye-laws or local authority

guidelines without due regards to their design qualities. Respondents in the in-depth interview do not respond to the question on public spaces in their design. In the case of a housing project, Respondent no: 2 highlights the point by giving the following comments :-

"...frankly speaking I only try in the sense that to comply to government requirements.....as long as open space 10% the client is happy."

Respondent no: 1 also suggested similar approach by relating that:

"Local authority, we just comply with whatever requirement"

Thus in the study the provision and design of the urban spaces are done mainly to full-fill the requirements as stated in the building bye-laws and other guidelines produced by the local authorities.

4.2.5 The Role of the Local Authority

Urban design as discussed earlier is part of the planning and architectural practice and until recently it is not recognise as a separate profession. Currently, there is no recognised urban design profession in Malaysia, the role and responsibility in their design and implementation is shared between the architects, planners and landscape architects. There is only one university in the country that offers a Masters degree course in this field at the moment.

The planners' role in this area is found to be mostly concerned with making sure that the proposal meets the requirements as stipulated in the building bye-laws and other local planning policies. There is no specific input related to their design as stated by the majority of the respondent (fieldwork, 1993/1994). In most cases it is observed that the issue is covered in the urban design guidelines as stated in the Structure Plan, Local Plan or Action Area Plan. This was only prominent after 1995, when the amendments to the Town and Country Planning Act (Act 172) were made which requires local planning authorities to consider

conservation and urban design in their development plans. It is also found that references made by architects to the guidelines are very limited (field work 1993/1994). Most architects (89.1%) in some way do refer to local authority in the process of their design. As suggested in the in-depth interview mentioned above, this is due to meet their specific requirement for the purpose of planning approval.

The landscape architect's role, on the other hand, is seen as that related to beautification process, which is done after the spaces have been designed as related by a respondent (architect/landscape architect) in the in-depth interview (fieldwork, 1993/1994).

4.3 TYPES OF URBAN DESIGN PROJECTS

This section will outline the nature of the practice relating to specific urban design project cases.

4.3.1 Housing

Housing has always been the major problem facing developing countries. The demand for houses outstrips supply and this has resulted into a situation where housing projects are being hurriedly commissioned. In this situation many important aspects of the design has not been given adequate attention. Agus as in Chew Lay See (1997) suggests that the rapid urbanisation and industrialisation during the New Economic Policy (NEP) era (1971-1990) saw a tremendous transformation of the need for housing in the urban areas. During this period, housing programmes undertaken by both public and private sectors have been directed towards meeting the specific needs of the population. Under the Fifth Malaysian Plan 1986-1990 (one of a series of Five-Years Development Plans), housing begins to be implemented along the concept of human settlement where the provision of social facilities such as schools, community facilities and open spaces are to be provided (Agus as in Chew Lay See, 1997).

The increase workload and short delivery time generate large pressure on the architect, which resulted in many information not collected and stages of operation being neglected. The development of new housing area, known locally as 'taman' and translated as 'garden', surged in the late 1960's and reached its peak in the late 1970's (Mohamed 1985). This trend continued to the middle of 1980's when during that period, large housing developments were constructed with total area of five hundred acres and above. In June 1982 the Housing Development (Control and Licensing) Regulations were introduced to control and regulate the rapid growth of private housing development (Yeang, 1992. The regulation covers the economic and other financial aspects without reference to design or environmental consideration.

Before the introduction of structure plan and local plan, the main legislative document to govern private developers is the National Land Code such as the conversion approval from agriculture land to building and industry. The code is largely concerned with the division of land for houses, shops, industries and the road layout that provide accesses to them (Mohamed 1985). This administrative set-up has great influence on the design of new housing area in terms of zoning and road layout.

In normal circumstances housing project is one of the most difficult design work. Housing is not just about shelter but it is about an environment that has to sustain different uses and satisfies the needs of the resident. The most difficult is to satisfy the socio-cultural needs of the people. In a society with many different ethnic groups - Malay, Chinese, India and many others, the complexity of the problem is great. Adding to that is the need of the different income group. The behavioural needs of these people are different that relate to different life style. Studies on the needs of the various racial group in terms of housing are very limited and seldom given any emphasis. This is evident from the standardised house design where variations are only noted in terms of cost.

As a result, the housing schemes in Malaysia do not reflect the multiracial character of the society. The design takes a neutral direction that is providing

shelter without due regard for the different cultural needs. Hence, the needs of the different cultural groups are ignored and the most economical building types are adopted. For example, the traditional Malay house reflects the Muslim sensitivity towards segregation between the sexes. There are different entrances for male and female if they choose to. In the new house design this is all lost. So too are the complex plans defining the various parts of the house segregating the household from the visitors. The trend of the new housing development is the repetitive terrace houses, which maximises the number of units at the expense of real creative design that reflects the people with their social and cultural tendencies. This is one aspect of the house plan that has been ignored.

In Malaysia, a majority of the housing projects are undertaken by the private developers compared to the Government. During the Sixth Malaysian Plan (1991-1995) the total number of units completed was 647,460 of which 248,460 units were done by the public sector and 399,000 units completed by the private sector (Agus, 1997). As in any business venture the main concern of the developer is the amount of profit they can make out of the project and in the shortest time. It is very difficult to find a developer that has a civic responsibility in providing the best housing design possible with the given resources. This is of a rarity. Apart from the apparent shortage of houses (actual figure produced by the Statistics Department based on housing census of 1991, there were 4,060,900 units catering for 18.379 million people), there are other factors that contributes to the high demand for housing. There are many people who see buying houses as an investment either for renting or direct resale at a higher price. There are cases where houses change hands before they are even completed and the initial owner just have to pay the booking fees.

The situation generally produces housing schemes that are poor in design in terms of the design of the individual houses and especially the design of the individual spaces that links those houses together and any other public realm. This is as a direct result of maximising the number of units where only the minimum legal requirements were allocated for open spaces and other urban

spaces. It is not uncommon to find housing layout consists of rows and rows of the same block design.

Aspects related to the project	Unimportant	Less Important	Quite Important	Important	Very Important
	Percentage out of 276 respondent				
Personal Satisfaction	7.9		31.6	23.7	36.8
Client Satisfaction		2.6	15.8	28.9	52.6
User Satisfaction		2.8	2.8	25.0	69.4
Economic Viability			7.9	26.3	63.2
Aesthetically Pleasing		2.7	21.6	43.2	32.4
Contextually Pleasing			18.4	34.2	36.8
Environmentally Pleasing		5.6	22.2	38.9	33.3
Authority Aspiration	8.6	5.7	31.4	25.7	28.6
Ecologically Responsive		50.0			50.0

Table: 4.2 Aspects of a Project that Contribute to Their Success

Source: Field work 1993/94

The figures above, which represent the percentages of those responding to the various aspects that are important to the project, reveal that a significant number of respondents think that client's satisfaction, user satisfaction and economic viability are very important. The other aspects such as personal satisfaction, aesthetic context and the environment are next in line in terms of importance.

The provision of public places also depends greatly on the ownership of the land. Data from the interview reveals that for privately sponsored speculative developments where the land is acquired at market price, the room for design manoeuvre is very limited. In cases like this the developer normally demands the

most number of units possible and providing the minimum open spaces possible as required by laws. To make sure that the space could be used for some activities the design normally results in a central green lung. However in cases where the development is initiated and sponsored by the government or semi-government agencies there is some flexibility given and the demand for economic returns does not necessary play the driving force. Even in this case it is observed that the outcome of the design is similar, where only the minimum open space requirements is allocated. In the inner city areas, blocks of flat are built stacked against each other with little regards for environmental quality.

The time given to the architects to produce the design is also reduced to a minimum before launching in an effort to reduce cost. This has often resulted in poor design due to less thought being put into it. The evidence can be seen where the outcome is a repetition of housing layout and design. There are cases where the designer will reuse previous workable design regardless of site condition and without trying to put forward new ideas.

The evidence has also been found in the in-depth interview where the design goal is mainly based on the economic needs of the developer. Hence, the developers or their agent, usually the marketing personnel, will decide on the number of houses, house type, layout and the style of the facade design. In this case the architect acts as a facilitator with limited role in design such as environmental and aesthetic considerations.

Many housing schemes are done without regards to the contour of the site where it is flattened to allow for maximum number of houses. The reasons normally put forward are that it is too costly to maintain the topography. In many cases the architects simply do not have the time to do a proper analysis of the site. Thus the design does not responding to the existing conditions of the site.

The current trend of negotiating fees also adds to the gravity of the problem where architects produce design very quickly in order to reduce cost. Many architects blame this inappropriate practice which is forcing them into a situation

where they are acting as a facilitator rather than the designer of the project. This fact is highlighted by respondent no. 1 when he said that:

"....I am a developer, I have five architects working on a scheme....so I will choose the one that give me the best thing and the best fees, that is low fees. Between the five, we can select anyone."

In this case it is the question of ethics of those involved in the architectural profession, which is currently not properly regulated. Here the right attitude of the architects, the professional body (Malaysian Institute of Architects) and the government agency related to it (such as the Council of Malaysian Architect) must play a more positive role.

The other procedure that might contribute towards the weakness to the system is that the houses are sold to the public before they are built. In this situation the buyers are buying the houses based on the image that are projected by the presentation artist and most of the time it does not represent the actual environment. Even though potential buyers may opt for buying the houses after completion, this way will normally cost them more and they will have less choice. This situation coupled with the profit margin made by the developers, resulted in buying a completed house to be economically unattractive option.

In the situation where everything is being done very quickly the local authorities are also under great pressure to grant permission for development. In many cases not enough time and consideration are given to planning applications where they are mostly seen as individual development. In this scenario, context is not taken into serious consideration in which case there is not enough time to do a proper study. In most cases the planners too are looking at the building regulations as the only guidance for granting permission. The situation is made worst when the number of qualified planners in any one state is very limited. In most states the planners are based in the capital cities or towns and they are responsible for all the development in that state. In some cases the approving authorities are not familiar with the site and never been to it before making any decision.

This situation arises due to local government structure where employing qualified planner is almost impossible. The public service scheme in Malaysia is based on the qualification of the personnel. In a district council, the highest-ranking officer is the District Officer who is a bachelor degree holder, which is in most cases a super-scale category. His assistant will be the secretary who is generally not a degree holder and will be in charged of all the sections in the council such as planning, water, sewage, rubbish disposal and others in the district. However, the individual section is in the charge of the technical assistant (category 'B' salary scheme) which is a diploma holder. Thus, the planner cannot fit into this hierarchy, hence the current situation of planning applications has to be dealt with at the central state administration.

4.3.2 Shopping Complex

Shopping complexes are new ideas on commercial buildings that are catching on very fast in the urban development in Malaysia today. These are totally self-contained shopping places that house individual premises to cater for most needs which is fully controlled in term of their environmental comfort. They are almost always fully air-conditioned streets and squares that create a complete urban centre on their own. Theories are not emerging yet on these types of spaces that demands a new approach to the design of the public spaces within an enclosure. The spatial quality of the circulation routes sometimes can be associated with that of an enclosed street and square.

The main concern in this case is the relationship between the buildings and their exterior spaces. These type of development by nature are inward looking and very difficult to relate to the adjacent development. The observation made by Boyarsky (1983) again highlighted the problem where he observed that the buildings were designed like an island fortresses that is impossible to link properly. One of the most difficult aspects of these complexes is the scale of the building, which is very big compare to the traditional shop-houses that characterise existing towns. Shop-houses are one of the major building types in Malaysian towns and cities. The early shop-houses were two storey buildings

where shops could be found on the ground floor and living areas above (see figure 4.19).

Aspects in design	**Unimportant**	**Less Important**	**Quite Important**	**Important**	**Very Important**
	Percentages out of 276 respondent				
Personal Satisfaction	7.1		28.6	17.9	46.6
Client Satisfaction		2.4	14.6	29.3	53.7
User Satisfaction			2.6	25.6	69.2
Economic Viability			7.3	28.6	60.7
Aesthetically Pleasing			18.5	40.7	40.7
Contextually Pleasing		7.3	17.9	39.3	32.1
Environmentally Pleasing			26.9	34.6	38.5
Authority Aspiration	11.5	3.8	30.8	26.9	26.9
Ecologically Responsive		50.0			50.0

Table: 4.3 Ranking of Important Aspects in Design by Architects

Source: Field work 1993/94

Figure: 4. 19 Traditional Shop-houses in Malaysian Urban Setting

Source: Field work 1998

The new commercial buildings with a floor area of 100,000 square feet or above are equivalent to superstores in the British town development. They are convenient in terms of car park facilities and almost everything can be found in one building. In order to conserve energy in terms of active air-conditioning the buildings generally have a solid outer skin with very small amount of openings. This massive blank wall poses great problem to the architects in term of scale and form. In an effort to reduce the sense of scale the architects generally resorted to mural painting to soften the impact (see Figure 4.20).

Vehicular circulation is one of the major problems that need to be addressed in this type of project. In cases where the building is located within the tight fabric of existing town, the number of vehicles generated from the scheme will demand careful consideration.

The scale of the architects' involvement in these types of projects provides an indication of the growth of towns and cities in Malaysia. In that situation the urban design problem is becoming more important as compared to aesthetic consideration such as identity and style that is normally related to the architectural environment.

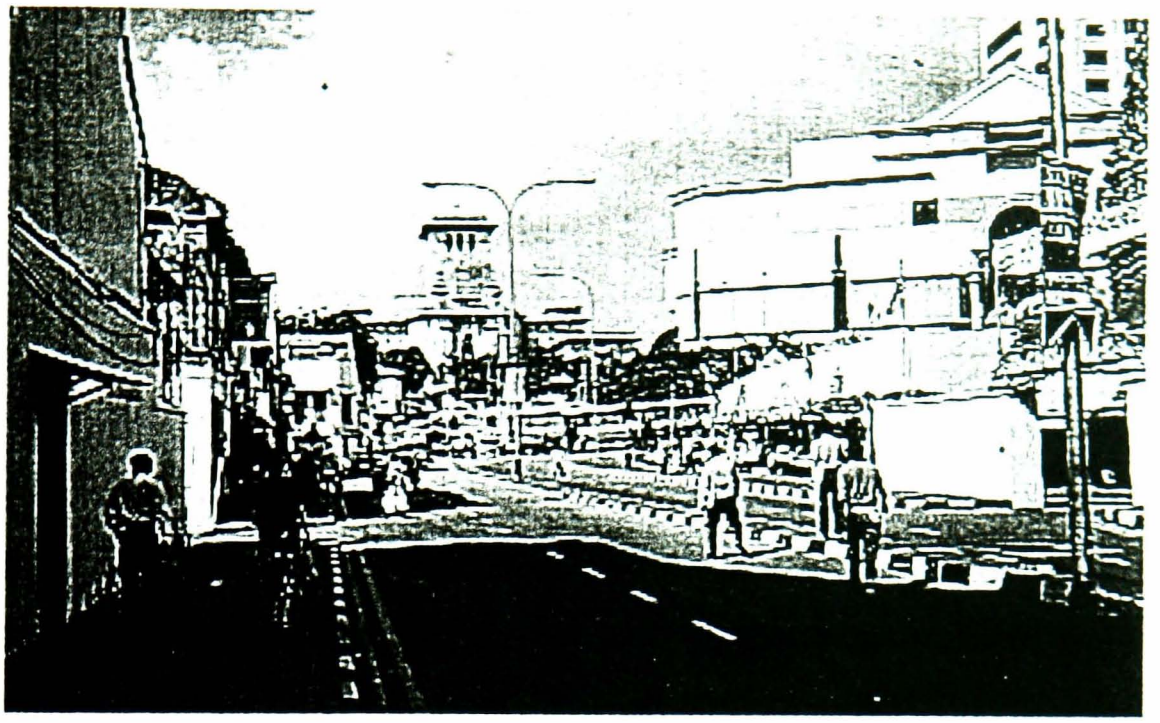


Figure: 4. 20 Large Scale Modern Shopping Complex in the Traditional Urban Setting

Source: Fieldwork 1999

The emergence of these shopping complexes also poses danger to the shop-houses which are only suitable for small businesses. There is a tendency to replace these shop-houses with much larger buildings. This trend is going on in every towns and cities in Malaysia (Sulaiman and Shamsuddin, 1997).

In terms of the building design, these large complexes tend to be formed around an indoor streets and squares. The covered central spine of corridor normally radiates from a central atrium that is naturally lit.

4.3.3 Office Complex

Office complexes have been slowly emerging in the urban scene since Malaysia gained independence from British rule in 1957. During the colonial times these are mainly low densities with low-rise buildings where the height rarely go beyond two storeys. They are usually organised around a courtyard and spread over a large area with ample amount of green spaces. Typical examples are the courthouses and district offices that may be found in most towns (see Figure 4.21

below). They respond to the climate very well with large overhang and wide colonnade. They also sits comfortably in the town centre without being too dominant.

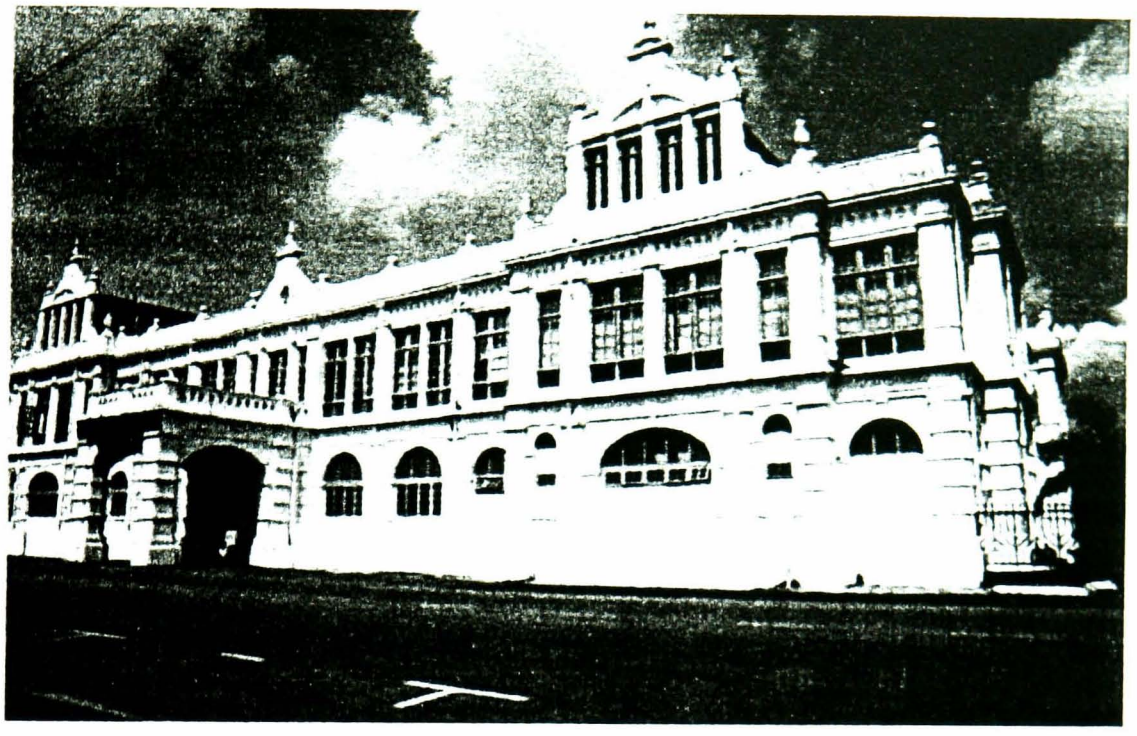


Figure: 4. 21 Low Density Government Building
Source: Field work 2000

Recent development in this area is very much the same as those found in other towns and cities of the world. These offices tended to be concentrated in certain areas like the 'golden triangle of Kuala Lumpur' which have resulted in the demand for land to intensify that their price increases many folds. This resulted in high-density development that has led to high-rise buildings. By their inventions, these buildings are to maximise floor space that is only limited by the engineering capability of the structure and cost. The scale of these buildings is a contrast from the existing shop-houses (see Figure 4.22).

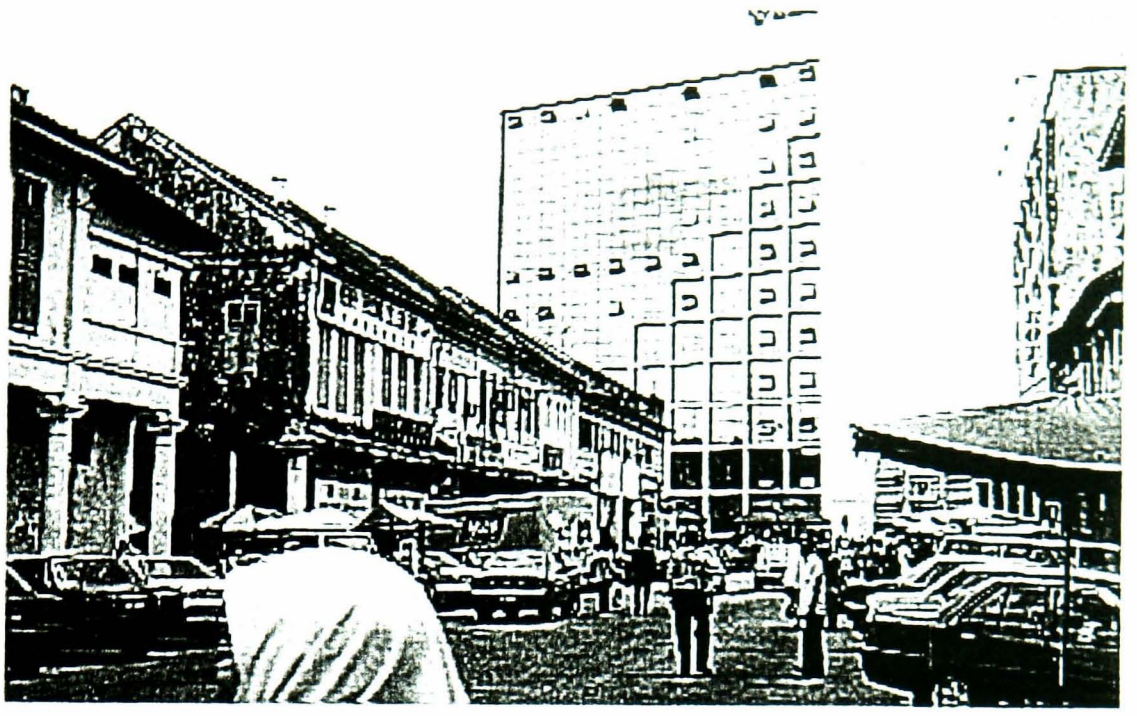


Figure: 4. 22 High-density Office Developments Contrasting the Traditional Low- density Shop-house.

Source: Field work 1999

In many cases, issues related to the physical or social context, are mostly ignored by the designers because they were difficult to relate to. This difficulty is also related to the higher densities demanded on the development which has not been experienced before, that is in traditional office complexes. The scale of the structure is humanly impossible to be associated with. Thus, the practice adopts the international modern solution to the problem. Yoong (1987) observes that the buildings are built in every known international style of the time. The international modern design is also seen as portraying the commercial and corporate success. Boyarsky on the other hand compares the development to Chicago in the 1950's. Since a large number (58.7%) of the practices are involved in this type of project, they are forming a large part of the urban design problem in Malaysia.

Current trend in the design of office complexes in Malaysia tends to concentrate in the styling of the facade. It is because the variation in terms of internal planning is very limited in a high-rise building. The facade design may take on the traditional or totally modern image. Post-modern architecture is the favourite

language because some elements of the traditional architecture can be adopted. There are many variations of these and emphasis is given to them in any documentary or discussion.

The other favourite aesthetic language persistent in the high-rise design is analogy. Examples are numerous such as the Maybank Tower in the heart of Kuala Lumpur which has been likened to a 'kris' (a Malay dagger). The massing and spatial aspects of the development are not given due attention, which result in the poor environment. This has led some authors to question whether there is another role of the architect than simply working for the client.

Many of the office design are organised around a central courtyard, which is generally created for the lighting purposes without regards to the other uses that may enhance the place. The situation is much worse in a high-density development. The general problem is that the lack of sensitivity or awareness to the idea that spaces in-between buildings may generate better environment and will be much more appreciated in the later years of the development.

The authority is not playing effective role in monitoring the trend of commercial developments in Malaysian cities. Most City Halls approved developments based on the two-dimensional development plans that only define permissible land-use, plot ratios and residential densities (Yoong, 1987).

Hence, the nature of the problems related to the design of office complex in an urban environment is one of scale, form, style and densities. These are in association with the clients preconceived idea about corporate image, economic constraints and the lack of awareness on the environmental qualities on the part of the authorities.

4.3.4 Holiday Resort or Complex

The other sector in the building industry that is growing very rapidly is tourism. Accommodations for tourists have to be provided either within the towns and

cities or outside them. The holiday resort complex can be categorised as an urban design problem due to the similar nature of the design problem. It only differs in the social composition and the needs of the people which are generally for leisure activities. The complexity of the problem faced by the designer will be the same - the physical and psychological aspects of the place. However the transient nature of the user will give an added complexity to the problem.

The development within towns and cities tends to be high density and the scale is almost similar to the office complex development. The major different is in the residential aspect where considerations have to be given to relaxation and leisure activities.

Generally in the Malaysia, a better example of spatial inventiveness on the urban scale can be found in this type of development especially those outside the urban centres. Due attention and care are given to the exterior spaces that make up the complex. This is mainly due to the very nature of their uses where the exterior spaces are very much the environment that visitors are looking for. Hence, ample considerations are given at the design stage for those spaces where funds are also readily available.

The other reason for this attention to exterior spaces seems to be due to people relating space to leisure. A larger space creates less tension and allows people to relax better.

4.3.5 New Township

This type of project is normally associated with housing development where in the Malaysian scene almost every housing scheme will have their own community centre or shopping area. Therefore every housing project is like a satellite town, that it is self-contained with all the amenities such as shops, wet market, mosque, recreation area and others. Some of these developments are huge to cater for a population of ten of thousands and others are for much smaller scale.

Until recently (1995), most of these larger project layout plans can be submitted by the architect without the involvement of a planner. Today however, the layout plan for a certain size of development, must be submitted by a qualified planner. It is hoped that the marriage of the two professionals will result in a better design.

The problem faced by the designer in this case is very complex and requires the support of many associated professionals such as urban designer, landscape architects, planners, engineers and many others which includes the local authorities. This is not only at the formal level that is for approval purposes but also at the design stage, but evidence indicates otherwise. This will be discussed at a later stage in detail.

From the cross-tabulation of township design and professional qualification it is indicated that the majority are qualified architects (72.2%) while the others are planners (5.6%), architect/planner (5.6%), architect/ urban designer (5.6%) and planner/urban designer (11.1%). Hence, the majority of the projects have been undertaken by architects who do not possess other relevant qualifications. Normally in this kind of situation the architects will require the support of other associated professionals either within the firm or consultants from outside.

4.3.6 Town or City Centre Development

Many of the housing or township projects are too big for just one architect firm to handle; therefore resulting in the project being divided into various parcel. Each parcel is given to an architectural firm which is fully responsible for its design and construction. These parcels are either a vacant plot with no restriction or an area where the planning layout has already been done.

There are many cases where the architects are responsible for the design of the town centre (32.6% of the respondent). Thus in the Malaysian case the town or city centre design is normally associated with a housing project. However there are cases where architects have to design a new town centre either to

accommodate the expansion of an existing town or a totally new town development.

In cases where the design is not associated with a housing scheme, the planning of the town centre is done by the local authority or consulting firm under their supervision. This is slightly different to housing projects, which is normally a speculative venture.

4.3.7 University Campus

Currently there are eight public universities in Malaysia and this is definitely an area which will be expanding in the future. This is not only in terms of new campuses but also an expansion of the existing establishments. Like the holiday resort this type of development is unique in that the scale of the built up area is of urban proportion but the composition of the user is very selected. This is because they are associated with teaching, learning and other support groups.

The development of the university campus in Malaysia generally is on a green-field site. Here the site planning is done according to a certain concept of the designer and generally the designer is in control. In this type of project there many good examples of urban design that can be found where the spatial quality is the paramount importance in the designer's approach towards achieving the ultimate design solution. For example, in the Universiti Teknologi Malaysia campus in Johor Bahru, the massing radiates from the centre (academic and administrative core) where a central square can be found. The square is defined by the mosque, the administrative block, the library, the great hall and the science faculty.

Other campus design may not be as strongly defined in terms of the massing but still maintains a certain kind of order. In this type of project the planner or architect are able to explore new ideas in terms of planning or design.

4.3.8 School Complex

In the past, these types of project was done by architects or engineers from the Jabatan Kerja Raya (Public Works Department) resulting in a distinctive building type which is similar throughout the country. During the colonial times the school complexes are normally designed around courtyards with the various buildings linked by external corridors. After the nation's independence this character still continues except that the classical detailing and elements are replaced by a more basic structure with no decorations.

This is now changing with the introduction of privately funded schools and colleges. Government departments are also beginning to set up their own training centre with the outcome that more architect firms are getting involved in this kind of project.

This type of project is normally situated in a green-field site and in most cases includes the design of teaching facilities, administration and living accommodation for staff and student.

4.4 DESIGNERS AWARENESS OF THE PROBLEMS

It is important to note that quite a big majority of the designers (65.2%) thinks or considers themselves to be urban designers. This further supports the argument that the architects are fully aware of the urban design related problems and they are consciously dealing with it in their practice. Like many other developing and some developed countries, there is no recognised urban design profession in Malaysia. The discipline is very difficult to distinguish since there is an overlap of architecture and planning. Thus those designers that deal with urban design problems may or have called themselves urban designers.

Generally these claims are made because of the urban nature of the design problems that they face. The big majority that say they are urban designer also indicate the scale of the design problem that relates to urban development. Yeang

(1981) observes that issues of spatial, contextual and building relationships have been raised and are being recognised by architects. Commentators like Yeang, Teh, Boyarsky, Lim and many others have also raised the issues relating to urban design; which is mainly associated with high-rise buildings.

Traditionally when planning was part of the architectural discipline, urban design was not a subject of dispute. Today however, it is difficult to identify who is responsible for it. The situation is much more acute in an environment where the practice is generally governed by legislation. Things are done because of the requirement of the law rather than a conscious awareness of the people's needs and the environment or a strong belief in that need. There is very little presence of pressure groups or adherence to code of conduct compared to many developed nations. The 'Badan Warisan', which is an organisation that is concerned about conservation, was only founded in 1982.

The general public is also quite ill informed and unaware of the importance of a well designed urban spaces. Many references are made towards this aspect by practising architects where it is blamed for the poor design produced. This may be due to the relatively new urban living in Malaysian culture especially to the Malays. Traditional Malay settlements are mainly in villages that consisted of individual houses dotted along an important path that can be in the form of a river or road. The closest example of this type of settlement in urban areas is the squatter settlement that can be found in many towns and cities. The high density in relation to small land area resulted in the houses being built close to each other but remain detached. Perhaps a new urban form could be developed, by studying this type of settlement especially in relation to housing.

The subject of urban design is related to both planning and architecture but in many cases these two factors are ignored due to the vagueness of the responsibilities. At the same time nobody wants to accept the responsibility due to their financial implications in terms of their design, implementation and maintenance. It is not seen as a challenge that is forming part of the design programme. In cases where the designers main concern are the design of a

building within an ensemble, the spaces in-between buildings are ignored by them and left to the devices of the planner or to satisfy the requirement of the building bye-laws. In most cases they are properly designed and resulted in unattractive and poorly utilised spaces. This is so even though the majority of the architects in practice think that they are urban designers.

The planners, on the other hand, are normally concerned with general planning of the towns and cities but they are not in the position to produce the detailed design of a specific site. The recent amendments to the town planning act that requires layout planning that is greater than certain acreage to be submitted by a qualified planner may improve the situation slightly. However, from experiences in practice, the main concern of the planner is adherence to building bye-laws requirement such as cross roads, sight lines, provision of open spaces and others. The three dimensional quality of the spaces is seldom seen as part of their responsibilities and beyond their capabilities.

The situation is slightly better in circumstances where the architect is responsible for the design of a group of buildings within the site. Since the design of the spaces affect the quality of the overall design, due attention is given and in most cases has resulted in a better design attempt. Examples of this type of project can be seen in the design of university campus, school complex, condominium and many others. All the respondents in the in-depth interview chose this type of project as those that they found to be most successful. In fact the discussion actually evolved around the site planning and the design of the exterior spaces rather than the design of the individual buildings. The other problem that has also emerged from the interview was that the exterior spaces were seen as two-dimensional entity. The three-dimensional quality of the spaces is almost always not been discussed.

Analysis of the interview transcript shows that the main concern of the designers in the design process is related to economic factors and building regulations. The way in which the design problems is conceptualised is based on economic

returns and styling of the facade. The main activity is geared towards management and negotiation in relation to providing the minimum requirements.

4.4.1 Economic Factors

It has been argued that economy is one of the factors that influences the architects in their efforts to compose the design solution. In this aspects it is concluded that the designers in practice do not appreciate their role in design; that is constrained by the budget. The financial constraint is seen as a hindrance to quality design. The design quality is reflected by the amount of money available. The complexity of the problem is seen in terms of economics returns to the developer and landowner where space provision is made just enough to meet the local authority's minimum requirements.

Recurring economic aspects in the study are (1) economic returns (2) minimum space requirement (3) location (4) value system (5) market forces and (6) image or styling.

Economic return is one of the main objectives of speculative development. This is the reason why the developers get into the act in the first place since there is no public funding especially in housing. However, as reviewed earlier, the financial factor must be balanced against other factors such as comfort, safety and other basic human needs. The problem faced by designers to maximise profit has resulted in a compromise being made through the time spent on the project and omitting some of the fundamental stages in the process such as site analysis, contextual analysis, precedence study and others. The normal procedure for designing is also compromised where only a pragmatic approach of meeting the client's brief is made. In other words, design is approached as a problem solving exercise.

Evidence gathered from the interview respondents, showed that the design is seen as a business opportunity in which a better economic climate will produce good quality design. Evidently this is not necessary true as can be seen in the

office design where good economic situation do not produce good design. Terrace houses for example, were found to be a money spinning idea in housing. Clients (developers) were found to dictate the design based on the amount of profit they can make from the project.

Due to economic pressure designers find themselves moving away from the ideals of design and are influenced by the market forces. One of the interview respondents was quoted as saying:

"..the worst case is the power of money where all ideals were totally forgotten because of market forces".

Another respondent cited the expertise of the client in marketing so that;

"..do not try to influence client because of cost where client knows better".

Some respondents cited the loss of many potential projects due to economic demands from developers such as lower professional fees and cutting corners in design.

Minimum space requirement is directly related to economic return, where meeting minimum legal requirement is a common practice. In housing development some of the reasons cited apart from maximising profit are the buying power of the public and the low cost houses requirement. Buying power influences design in that greater buying power will allow designers to experiment and be generous with interior or exterior spaces. At the same time the economic returns are not based on the number but on the market value of those units.

Low cost houses are housing units, which must be sold at maximum prices as fixed by the Government. This varies from state to state that ranges from 22,000 Ringgit to 25,000 Ringgit (£3,300 to £4,160 at current 1:6 rate of exchange). Developers claim that it is not possible to sell all theses units at these prices

without having to cross-subsidise by the medium and high cost houses. In having to do this it is claimed that a compromise has to be made in terms of space.

Locations plays a big role in the marketability of a project. A good location where there is a higher demand enables the designer to put more emphasis on design and provision of better spaces. Respondent no: 2 emphasised this point by saying that:

"..design depends on location. Good location results in better house design and better environment. Bad location, less cost more houses to be built resulted in poor environment".

The interview has also shown that the same type of house design and environment but in different locations will fetch different prices (respondent no:2, 1993/94).

Value system is a phenomenon that relates to comparative importance of things as judged by people. Evidence from the field work suggest that people value design in terms of the image that is generated by facade styling. Designers find that their clients dictate design based on cost of certain style and finishes. This is done through a marketing strategy, which is based on the response of the buying public especially in housing. Respondent no:5 highlights this point where in one of his housing projects he:

".. dress up old plan and sell at higher price".

Market force is the most important factor in any speculative development. Many of the decisions on design are a direct result of supply and demand study made by the developer. In housing for example the market forces influenced the location of the project, type of house development, cost, type of finishes, façade style and design, the quality of the exterior spaces and provision of amenities. All these factors will have an influence on the overall design of the scheme.

For example, in a high cost development, the client may decide to built a complex of condominium instead of the normal houses as the case cited by one of the respondents. In this type of development the provision for open spaces is very lavish as in the case for respondent no:3 where it is more than 30% of the overall site. There are more attention given to these exterior spaces as indicated by the designers' description on the spatial quality which usually have conceptual framework. This is more than can be said for a normal housing project where none of the designers describe in any detail on the spatial quality of the design.

In any speculative development it is found that the marketing personnel is very important in the set-up. The marketing strategy is mostly dependent on the location of the project and the style of the design. Thus they will have the greatest influence on the design of the scheme.

Image or styling as mentioned earlier is one the influence in decision making. Apparently most of the decision on facade treatment is based on the style that is currently in the market. It is more towards decoration as emphasised by respondent no:3 (field work 1993/94) when he described his facade treatment as;

"...some would prefer Spanish, some would prefer Mediterranean and so on, because in marketing all these is called gimmick....just one of their marketing language".

The research shows that financial constraint is the sole major factor that influences the designers approach to the problem. Designers are found to equate directly between available financial resources to good design. Evidence from the research suggests that their attitude towards design is that of image making concept where it is mostly related to marketing strategy. The attitude is also reflected in the thinking of PAM, in which one of the respondents was quoted as saying that the design awards were always given to the most glamorous and expensive buildings.

4.4.2 Building Regulations/Bye-Laws

The main aim of any building regulations is to make sure that the health and safety aspects of any development meet the minimum standard to protect the people and the surrounding environment. The purpose is to help designers in providing a safe and healthy environment for the people to use. Evidence from the practice suggested that meeting these regulations became the main design issue and limiting the design efforts. The public spaces are not designed but allocated as required by the planning authority or building regulations. The evidence are numerous where exterior spaces are provided as required by the laws. These are generally done to avoid wasting a lot of land that could be developed to generate larger income to the developer.

4.4.3 The Client

The client is one of the most important factors in any design problem. In urban design it is important to establish the ways in which the client influence the nature of the problem from the perspective of the designer. From the analysis, clients can be categorised into four group: the developer, private individual, private corporate and government agency.

Developers are usually involved in speculative housing and office developments with the main objective of making a profit. In most cases it is their sole objective that they have. The analysis implies that in their effort to maximise profit they are willing to compromise on design and the professional conduct of the designers. Their main target is to sell all of the property as soon as possible at the highest profit. It has been shown that their main marketing strategy is location and image. Location as mentioned earlier will determine the demand for the property. Image has been used greatly to attract the buying public. Many cases have been quoted where the developers have already a fixed idea about the type of facade and environment of the proposed buildings. In this case the designers role is to facilitate their idea which is based on the market trends.

It is found that the environmental quality is not part of the marketing strategy. There is evidence to suggest that the demand for better design depended on the financial status of the developer. However for the majority of cases, it is found that the developer is going for designers that can maximise profit at the lowest costs as suggested by respondent no:1:

"...developer are exploiting the situation by going for those architects who can maximise profit at the lowest fees".

Fieldwork 1993/94.

Thus, the evidence suggests that the attitude of the developer from architects point of view is one of the major obstacle in their effort to produce better environmental design. The **private individual client** is relatively small where the interview evidence suggests that they are less concerned about exterior environment.

The **private corporate clients** are associated with big companies developing a larger scale central headquarters. There is no evidence that this type of client imposes constraint on contextual aspects except in terms of the building's image. This overwhelming concern contributes to the island development where the main concern is their imposing image on the environment. Such examples can be seen like the headquarters of LUTH, PNB, Bank Bumiputra, IBM, Mahissa, Selangor Dredging, MAS Tower and others (Yeang, 1992).

There is a sizeable contribution from the government to the building industry that is largely in the form of institutional buildings and office headquarters - like schools, university campus, hospitals, law courts and others. Examples of large office headquarters, on the other hand, are like the JKR, army, police, central administrative offices, fire station, clinics, colleges and schools. The complexity of the design problem associated with these government agencies buildings are mainly related to building costs. Previously most of these types of buildings were

designed by the Public Works Department (JKR) that were based on standard plans as suggested by Yoong (1987).

Respondent no:6 (fieldwork 1993/94) also made similar observation where he suggested that the JKR design that was based on standard office blocks for every project regardless of function and terrain.

This was further substantiated by respondent no:5 who concludes that political thinking was deeply associated with economic thinking. The problem can be characterised from the development structure where the development is controlled and planned by the Economic Planning Unit (EPU) and not by the Town Planning Department (respondent no:4, fieldwork 1993/94). It was further suggested that the physical planning were not given proper emphasis by the Government, whose policies were more towards social and economic planning.

4.4.4 The User and the General Public

The important role played by the user in urban space design process has been reviewed earlier, therefore it is important to establish the opinion of the designers on their attitudes towards design. The problems associated with the user or general public as seen by the designers are: (1) ignorance of good design and (2) value system.

The majority of the respondents conclude that the general public or the user of the building and spaces are not really aware of good design where most of them are only attracted to cosmetics. This was emphasised by respondent no:5 (fieldwork 1993/94) when he said that:

" ...public attracted to cosmetics design and willing to pay for it."

These designers are in the opinion that the general public in Malaysia is not ready to demand good environmental design and therefore do not see the point in consulting them on design issues. This they relate to the level of expectation

from design activities and value system. The expectations on design requirement generally are associated with basic shelter and image rather than demanding for a better environment.

The poor attitude of the user and the general public towards environmental design make it difficult for the designers to influence the developer, Government or other financier of the project to produce better design or to spend more time on designing. This factor is seen as contributing towards the limited design consideration, maximising profit at the expense of quality environment and poor professional ethics.

4.5 SUMMARY AND CONCLUSIONS

The research reveals that the nature of urban design problem faced by designers in the context of the Malaysian practice is associated with two major aspects; the image of the built environment and the treatment of exterior space. These are generally related to housing, office complexes, institutional buildings and many other grouping of buildings. The stage of development in the country meant that most of these were very large complexes that demand a new kind of building type compared to existing environment.

The major urban design projects are those related to housing, office complex, shopping complex, schools, university campus, new township, town and city centre design, and holiday resort complex.

By far the majority of the practices are dealing with housing design which is under great pressure to accommodate the increasing number of migrating population to the towns and cities.

Due to the large demand for houses, housing development are focused more towards making profit at the expense of environmental quality. The designers were found to capitalise on the indifference and desperate attitude of the general public. The designers also tend to ignore the important aspects of environmental

design such as user satisfaction, spatial and contextual unity and others. The professional ethics of the designers are also compromised where it is seen to affect their ability to do a proper job by going through the process as stipulated in professional guidelines.

Office complex introduces high-rise development in the context of traditional low-rise shop-houses. The main objective of this type of developments is commercial viability and reflecting corporate image. In most cases the design create an island site that lacks linkages between them. The scale of the buildings is changing the pattern of urban development in Malaysia towards high density design.

Shopping complexes are mainly self-contained air-conditioned buildings that are inward looking and poorly linked to the existing structures. The problem arises when these types of buildings are introduced into the existing fabric of the towns and cities. Their scale and harsh facade treatment is a contrast to the low keyed two to three storey shop-houses.

Schools, university and colleges campuses, and other institutional buildings make up a big portion of the design practice. These projects are financed either by the Government or the private sector. This type of projects is found to be more responsive to exterior space design where emphasis on a central court is a common feature.

There is a considerable number of projects that involved new township and town or city centre design that reflects the growing number of people moving to the urban areas. These emphasise further the need to recognise urban design problems.

Holiday resort complex is a departure from the normal urban design problem but it is included here due to their success in addressing the spaces in between buildings. Their success is a measure of the designers' ability to produce good result if proper emphasis is given to the design of those spaces.

The research reveals that the main guiding principles to design in practice are economic factors and building regulations. The recurring aspects of the economic factor are that of economic returns, minimum space requirement, location, public's value system and market forces. The overwhelming pressure to meet these criteria resulted in design to be seen as meeting the marketing demand of the project. Currently this is more towards the right kind of image for the building with little emphasis on the surrounding environment.

The main factor that safeguards the needs of the public is the laws. Designers are found to be addressing the minimum standards in terms of provision as required by the building bye-laws and other guidelines introduced by local authority. This is especially true in the case of exterior spaces requirement where the main aim is to meet the minimum area required.

The research reveals that the amount of information the designers gather about the user and general public is very limited. Most of the information are found to be collected informally and generally synthesised by the designer using their own intuition. There is a lack of trust by designers on the ability of the user and public to contribute towards the design. This is based on their observation that the public's understanding of design is from image point of view. Thus the problem with existing urban design problem is significantly influenced by the designers' view of the public.

Overall there is an imbalance in the decision making process where the main aim was to meet the business needs of the development at the expense of the environmental quality and the needs of the user and the general public.

Recommendations will also be made as to whether a different approach to the architectural design process is needed in order to produce a better urban environment. The main concern is about place making which is appropriate to the context and the users' need.

The next chapter will focus on the urban design process in architectural practice.

CHAPTER FIVE

URBAN DESIGN PROCESS

5.0 INTRODUCTION

Urban design, as reviewed earlier is part of the architectural practice that the designers have to fulfil along side the building design and their other roles such as an agent of the client on design and management of the project. The unique skills of the architect are those concerned with space (Broadbent, 1988) particularly for visualising or generating the three-dimensional forms of building, interior spaces and the spaces around buildings. This research is focusing on the last aspect where the main concern is about creating spaces for the public in physical environment.

It has been noted earlier that the end product of any design depends greatly on the route taken by the designer in the design process. There are many aspects that the designer must consider in order to satisfy the given project brief. In some cases the brief itself is not clear in which case the process will start from the problem definition and setting out the objectives of the exercise.

In an effort to characterise the method used by the architect it is important to understand the processes that he or she takes. This characterisation will eventually lead to some of the reasons for the poor urban design consideration in the practice.

It has been shown earlier that many authors see design process generally consists of assimilation, general study, development and communication. This is based on the acceptable cyclic process of analysis, synthesis and evaluation that is related closely to decision making process.

This chapter will analyse the information used by the designer in their design processes. The aim is to see whether there is enough information being used. The

necessary information pertaining to the physical environment are culture, perception, behaviour, images, symbolism and others as suggested by Rapoport (1969).

5.1 BACKGROUND OF THE PRACTICE

It is important at this stage to establish the background of the architectural practice in Malaysia in determining, among others, the composition of the professional set up, the basic training, general awareness to urban design and their practice.

5.1.1 Who are Doing the Design

It is very important to identify the actors in the design process in order to establish if there is a relationship between the involvement of certain agencies related to the building industry to the outcome of the design. As stated in the argument put forward previously, the experience of the designer and those involved in the design process also contribute to the outcome.

5.1.2 Qualifications

Formal training of the designer will play a role in the way they approach their design problem. For example an architect with planning qualification will be able to appreciate the problems faced by those who are responsible for the overall development of an area. This knowledge may also be gathered through good practical experience.

The range of professional qualifications of the respondents are as follows:

Qualifications	Frequency (out of 276 respondents)	Percentage
Architecture	222	80.4
Town Planning	6	2.2
Architecture and Town Planning	18	6.5
Architecture and Urban Design	18	6.5
Town Planning and Urban Design	12	4.3

Table 5.1: Professional Qualifications of the Respondents
Source: Fieldwork 1993/94

It was found that the number of architects with an alternative training such as Town Planning and Urban Design is very small indeed (13%). The extra qualification could contribute to the success of the approaches and appropriate consideration taken in urban design. It was revealed from the interview that architect planners were using design languages that show awareness and concern about people and their response to the built environment. Their discussion focused on the needs of the user which is highlighted by respondent no:4 when he suggested that the user involvement will make them proud of the development (source: fieldwork 1993/94). In his approach to designing two university campuses the important steps taken were to get the deans of the faculties to be involved in the design process and to look at the needs of the students.

To see whether their professional qualification influenced their approach to design a cross-tabulation between qualification and contextual analysis was done with the following results:

Contextual Analysis by Qualifications	Frequency/Percentage of the group			
	Yes	No	Do not Know	Sometime
Architect	126/56.8	24/10.8	30/13.5	42/18.9
Planner				6/100
Architect/Planner	18/100			
Architect/Urban Designer	12/66.7		6/33.3	
Planner/Urban Designer	6/50			6/50

Table 5.2: The use of contextual analysis according to the respondent's qualifications.

Source: Field work 1993/94

The finding reveals that architects with alternative qualification such as town planning or urban design are more concerned about contextual analysis.

Further evidence shows that a significant number (66.7%) of the architects with urban design qualification consulted the public in their design process whilst only a small number (19.4%) of the designers with only architectural qualification did it. On consulting the user all the architect/planners, 66.7% of architect/urban designer, and 56.8% of architect did it. These figures suggest that architects with alternative qualifications such as planning or urban design are more inclined to follow procedures that are important in urban design.

This is further supported by the in-depth interview where architects with alternative qualification were able to express ideas that are important in urban design process. These are issues relating to order; public participation; looking at the way people do things which have design implication; the importance of user's involvement which will make them proud of the product; and others.

Respondent no:4 suggested that architects with planning education were able to understand the overall development better where the architect's perspective alone was difficult to understand the whole problem (field work 1993/94). He further argued that planners had better perspective on social, economic and physical aspects.

The following extract from the cross-tabulation table (table 5.3) shows the nature of work involved and the qualifications of the designer.

PROJECT	FREQUENCY/PERCENTAGE (out of 276 respondents)				
	Arch.	Planner	Arch/Plan	Arch./UD	Plan./UD
Housing	204/73.9	6/2.2	18/6.5	18/6.4	12/4.3
Hospital complex	42/15.2	0/0	0/0	6/2.2	0/0
Township	78/28.3	6/2.2	6/2.2	6/2.2	12/4.3
Town centre	48/17.4	0/0	12/4.3	12/4.3	12/4.3
University campus	54/19.6	0/0	12/4.3	6/2.2	6/2.2
School complex	66/23.9	0/0	6/2.2	6/2.2	0/0
Holiday resort	132/47.8	0/0	12/4.3	12/4.3	12/4.3
Office complex	132/47.8	0/0	6/2.2	12/4.3	12/4.3
Square	36/13	0/0	0/0	12/4.3	0/0
Street	18/6.5	6/2.2	0/0	6/2.2	6/2.2
Shopping complex	144/52.2	6/2.2	18/6.5	18/6.5	12/4.3

Table 5.3: Types of projects undertaken based on qualifications of the respondents.

Source: Field work 1993/94

These figures reflect the overall involvement of the various professionals, the figures represent the distribution of the respondents involved in those projects.

It has been acknowledged locally (Malaysia) that the schools or country from which the architect received their formal education have some influence on their approach to design. For example, it is known that those who were trained in the United Kingdom are much more conservative in their approach.

The purpose of looking into the educational background of the designer here is to see the variation of the formal education that the Malaysian practice consisted of. It is not an attempt to make a generalisation on the quality of their educational background. The findings reveal that irrespective of their educational background, their approach to design do not reflect any significant differences.

The countries from which the designer graduated from are as follows:

School	Frequency (out of 276 respondents)	Percentage
Local (Malaysia)	24	8.7
United Kingdom	72	26.1
USA & Canada	12	4.3
Australia	120	43.5
New Zealand	12	4.3
Singapore	36	13.0

Table 5.4: Countries where the respondents obtained their architectural training.

Source: Field work 1993/94

The large majority of the architects practising in Malaysia are those graduated from overseas. Only 8.7% of them are locally trained. The majority either

graduated from Australia or United Kingdom. These countries have a very good tradition in architectural training and are known to have given the students ample exposure to urban design problem in the course of their study. This may have some influence as to how they approached the design and their sensitivity to the local problem. However, it must also be said that any formal education will train the student to be sensitive to the context.

In order to investigate whether there is any relationship between the place where they acquired their formal education and an approach that they take into consideration of local situation, a cross tabulation between these two factors were done. The following are the results:

Qualifications	**Contextual analysis**			
	Frequency/Percentage			
	Yes	**No**	**Do not know**	**Sometime**
Local/Malaysia	6/**25.0**	0/**0.0**	6/**25.0**	12/**50.0**
United Kingdom	48/**66.7**	0/**0.0**	6/**8.3**	18/**25.0**
USA/Canada	6/**50.0**	6/**50.0**	0/**0.0**	0/**0.0**
Australia	60/**50.0**	18/**15.0**	24/**20.0**	18/**15.0**
New Zealand	6/**50.0**	0/**0.0**	0/**0.0**	6/**50.0**
Singapore	36/**100.0**	0/**0.0**	0/**0.0**	0/**0.0**

Table 5.5: Relationship between qualifications (place) and contextual analysis.

Source: Field work 1993/94

The figures reveal that a large number of those in practice do not know about contextual analysis or only do it occasionally. It has been shown that contextual considerations, in terms of physical, social, cultural and economics aspects play a very important role in the outcome of the design. They will determine whether the proposal is appropriate in these terms. These figures reveal a general weakness in their appreciation of the context. Only 25% of the local graduates do

the contextual analysis in their design, which reflect the general trend of the practices that influenced their training and attitude towards the environment.

The result of the cross-tabulation shows that only a small number of the local graduates take the effort to do a contextual analysis in their design process. Since it is known that the local schools of architecture do stress on the importance of contextual analysis on any given project, it can only be explained by the experience that they have gone through. Whilst the public and architectural practices in places like United Kingdom, USA, Australia and others are very concerned about context, the same cannot be said of Malaysia. The analysis highlights the necessity to stress on the designers to emphasise on the contextual analysis.

The general trend in Malaysian building industry in the past decade or so has been towards image making as discussed earlier. There has been little emphasis on the environment as a whole where old, new, man-made or natural will exists in harmony. With this kind of exposure the local students find it difficult to appreciate harmonious continuity in the built environment.

It is important to stress here that, irrespective of the country where they received their education, the number of cases where contextual analysis are not done is very high. It has been reviewed that sensitivity to the context is a prerequisite to a successful intervention. Without detailed knowledge of the local context it is very difficult to see how the sense of place can be achieved.

5.1.3 Experience

As revealed earlier many of the designers depended on their experience on design rather than following text book approaches, therefore their experience in practice would have a significant effect on the quality of their design.

Age	Frequency	Percentage
25-29	6	2.2
30-34	60	21.7
35-39	48	17.4
40-44	60	21.7
45-49	36	13.0
50-54	24	8.7
55-59	30	10.9
60 and above	12	4.3

Table 5.6: Length of experience of the respondents. Source: Field work 1993/94

The majority of the respondents are between 30 to 49 years of age. More than 60% of the respondents are under 45 years of age. Normally the architectural students graduated at the age of 24 to 25 years old, therefore the majority will have less than twenty years experience. Thus many of the designers will not have the experience to see their work completed. The following table shows the number of years the designer has been with the firm they are working at the time of the survey.

Experience (years)	Frequency	Percentage
0-4	30	10.9
5-9	60	21.7
10-14	54	19.6
15-19	66	23.9
20-24	18	6.5
25 and above	48	17.4

Table 5.7: Length of time with the firm. Source: Fieldwork 1993/94

Quite a significant number of the respondents (32.6%) have less than ten years experience within the firm. These designers will most likely do not have the experience yet in seeing their design perform after completion.

The types of design project that the designers are involved in will indicate the work experience of those in practice. The table below shows the distribution of the jobs:

Project	Frequency (out of 276 respondents)	Percentage
Individual building	234	92.9
Group of buildings	198	78.6
Housing scheme	222	88.1
Township	102	40.5
Master planning	102	40.5
Landscape design	78	31.0
Interior design	138	54.8
Industrial design	24	9.5

Table 5.8: Types of projects undertaken by the respondents

Source: Fieldwork 1993/94

5.2 Nature of Firms

The types of firms that the respondents are working within is as follows:

Firms	Frequency (out of 276 respondents)	Percentage
Architect	192	69.6
Architect/planning	60	21.7
Architect/interior design	12	4.3
Architect/planning/int. design	6	2.2
Architect/planning/landscape	6	2.2

Table 5.9: Types of firms that the respondents are involved in.

Source: Fieldwork 1993/94

The majority of the respondents (69.6%) who has been involved with project that entails some aspects of urban design are those working within architectural firms. Thus the nature of the firms is not a prerequisite for doing urban design project. The practice seems to be well adapted in handling that kind of project without having to specialise in it. This also gives an indication that the architects are well trained to work on urban design projects.

There are quite a number of the respondents (21.7%) who are working with the architect/planning firms. This type of practice is thought to be most appropriate to deal with urban design problems. Since urban design works demand expertise from both fields, architecture and planning, the 'architecture/planning' firm should be able to deal with it efficiently.

The other type of practice that should be in a much better position is the 'architect/planning/landscape' firm. This is so because the nature of the urban design works involves architecture, planning and landscape aspects. The finding indicates only a small number of firms (2.2%) in the survey falls into this category. This is perhaps the result of poor recognition of the complexity of the problem.

5.2.1 Composition of Firms

The composition of the firms responded to the questionnaire is as in Table 5.10.

The majority of the firms surveyed do not have other consultants such as planner, landscape or architects and others within the set-up. Thus, these area of concern are filled by consultants brought in from outside. This will slow down the process and in cases when the project need to be completed urgently consultation during the early design stage will most likely not happen. The overall thinking of the design will also be affected by the lack of in-house expertise; for example, planning aspects that influence design such as user participation, provision of open spaces and others will be rank lowly in the process.

Number of Professional	1	2-5	6-9	10 above
	Frequency/Percentage (out of 276 respondents)			
Architect	72/27.3	126/47.7	12/4.5	54/20.5
Town planner	48/18.2	12/4.5	6/2.3	
Architect/planner	24/9.1	12/4.5	6/2.3	
Engineer	6/2.3	6/2.3		
Landscape architect	36/13.6	6/2.3		
Interior designer	30/11.4	12/4.5	12/4.5	
Quantity surveyor	12/4.5	6/2.3		
Building technologies	12/4.5			

Table 5.10: Composition of professionals involved in the firm.

Source: Fieldwork 1993/94

The number of firms with professionals that are appropriate to handle urban design works are small. These are planners (25%), architect-planners (15.9%) and landscape architects (15.9%). From the analysis it can be concluded that the focus of most architects in any design is the building design rather than any other area of concern such as contextual, environmental and others.

5.3 DESIGN PROCESS

It has been established in the previous chapters that the process of design consists mainly of three stages - analysis, synthesis and evaluation. In this chapter these stages will be looked at in detail in an effort to identify the strength and weaknesses of the approach.

5.3.1 Pre-design

Analysis involves the process where the designer is trying to understand the design problem that he or she faces. There are many ways this could be achieved, such as breaking the problems into small pieces as suggested by Jones (1970). The purpose of doing this is to see how the parts are put together in creating the whole. In urban space design it has been established earlier that the two most important aspects are the user and the context.

i. Contextual Consideration

It is in the architecture and urban design discipline that the context of a particular site must be considered in the design process. This is in an effort to secure a better result of any intervention in the existing built environment, which is aimed at creating places suitable for the people. In an architectural design project, which deals with more than one building either as an in-fill or in a totally new site, the architects will have to consider some aspects of urban design such as the context, massing and many others. The design should be about spatial linkages, settings, continuity and many others, which are associated with making a place useful and habitable. Billingham (1994) emphasises that urban design is concerned with the creation, generation, enhancement and management of the built environment that are sensitive to their physical and social contexts. The following table presents the respondents' answer to question on whether they do contextual analysis in the design process.

Value label	Frequency	Percent (out of 276 respondents)
Yes	162	58.7
No	24	8.7
Do not know	36	13.0
Sometimes	54	19.6
Total	276	100.0

Table: 5.11: Whether contextual analysis was done?

Source: Fieldwork 1993/94

The finding shows that not all the architects did the contextual analysis in their design and in the in-depth interview it was found that sometimes the contextual analysis were only done in the design office. The assessment was done only by looking at the photographs of the site and the land surveyor report were used to determine its topography. Clearly this is inadequate in an attempt to create a better setting. The fact that a significant number of the respondents (41.3%) responded 'No', 'Do not know' and 'Sometimes' on the question whether contextual analysis was done, suggests that this is not automatically a part of the design process. The appropriateness of the design from social perspective is also questionable.

a) Site and Contextual Analysis

Contextual analysis provides the designer with information about the environment surrounding the proposed project such as building type, activities, scale, topography and others. The sense of uniformity, continuity, proportion, scale, unity and others depend on the information related to the context made available to the designer.

The analysis reveals that the concern for the context was not strong where only a small majority had done contextual analysis as a standard practice. This situation results in a design that does not respond to their immediate context that is very important in urban design.

Further evidence suggests that the designers are aware of the importance of contextual aspects. This is shown by the large number that finds them 'Very important' (26.7%) and 'Important' (57.8%) where the rest either think of it as 'Unimportant' or 'Ignorant' of it altogether. However their effort to address the problem was not enough. Those designers who did contextual analysis identified these aspects that was of concern to them.

The evidence suggests that the majority of the designers look at the physical characteristics of the context such as scale, form, street pattern, aesthetics and

others. Activities and socio-cultural aspects are also analysed but the number of respondents who do so are relatively low (21.7% and 27.3% respectively).

Aspects analysed	Frequency	Percentage
	Out of 276 respondent	
Scale	42	31.8
Form	36	27.3
View and vista	30	22.7
Continuity and connectivity	18	13.6
Soil condition	6	4.5
Land ownership	6	4.5
Local needs	6	4.5
Street pattern	18	13.6
Aesthetic	18	13.6
Character of existing environment	36	27.3
Activities and uses	30	22.7
Circulation pattern	30	22.7
Political and social aspects	36	27.3
Financial viability	18	13.6
Overall situation	12	9.1
Landscape	6	4.5
Neighbourhood	12	9.1

Table 5.12: Aspects analysed in contextual analysis

Source: Fieldwork 1993/94

b) Precedence Studies

The importance of the precedence study is related to the theory that it can introduce new ideas for a given problem. This is in relation to the idea that the

information used in any design process will influence the outcome of the design (Rapoport as in Broadbent and Ward 1969). New ideas cannot be generated without a thorough study of existing solutions to the problem. It has been suggested by Middleton (1967), that a creative act is one that is based on an ordering of existing knowledge. Here the past is seen as a major influence to the design. Many commentators have identified that the current urban development in Malaysia is reminiscence of the 1950's and 1960's development in Western Europe and North America.

It has been found that the majority of the firms do not embark on a precedence study to the project in terms of their cultural values. The studies that have been done are related to their uses and the patterns (planning) that fulfil the needs of the intended activity.

c) Traditional Architecture

Other forms of precedence study are related to traditional architecture. In the design process references must be made to the existing environment to generate continuity in term of building and spatial design between the old and the new development. One of this is the traditional architectural environment. It is found that 51.1% of the respondents actually refer to traditional architecture in the process of their design activity. The aspects of the traditional architecture that is being referred to can be summarised as in table 5.13.

The physical aspects of the environment observed are overall form, massing, scale, elevation treatment, material and structure. The next element observed belongs to the behavioural aspects of the environment such as activities and spaces. The highest percentage of respondents referred to the overall form of the traditional architecture (57.9%) in their design process. Further evidence supports this finding where the designer uses the following as one of their guide to their design.

Elements	Frequency	Percentage
Overall form	66	57.9
Activities	30	26.3
Spaces	54	47.4
Decoration/detailing	6	5.3
Courtyard	6	5.3
Scale	42	36.8
Massing	18	15.8
Elevation treatment	36	31.6
Material and structure	36	31.6
Skyline	6	5.3
Street architecture	6	5.3
Context	12	10.5
Planning concept	12	10.5
Landscape aspects	12	10.5

Table 5.13: Elements of traditional architecture referred to by the respondents.

Source: Fieldwork 1993/94

Guide	Freq.	Percent.
	Out of 276 respond.	
Aesthetic composition	222	80.4
Contextual composition	144	52.2
Building height	180	65.2
Construction and material use	150	54.3

Table 5.14: Guidelines used in design.

Source: Fieldwork 1994/93

The interview also reflects that the designer uses aesthetic aspects of the traditional architecture to create an image that preserve the continuity to the immediate or overall context. Immediate context is the neighbouring context of the building. Overall context is the context of the city, region or state.

Respondent no:1 suggested that the scale of the MPMBB (Melaka City Council) building that he designed reflected the surrounding buildings whilst the image of the roof was from the traditional Melaka roof form. The introduction of a colonnade on the other hand was to capture the essence of the traditional palace that he perceived as having a similar function to the Town Council. He further suggested that many of the architects were not observing the traditional values by simply copying the style (fieldwork 1993/94). Respondent no:2 in his attempt to generate a recognisable space adopted the Islamic influence of traditional architecture where courtyards were introduced.

Colour was suggested by respondent no:5 as an alternative to looking at form in the traditional architecture. The colour may be used to reflect traditional environment as was used in one of his selected projects. Respondent no:6 on the other hand suggested that the success of his chosen project was because the composition reflected the traditional environment and its architecture. The design of the exterior spaces was based on traditional architectural spaces of the region where it reflected the hierarchy of the offices.

d) Traditional Spaces

Traditional space and architecture are differentiated for the purpose of this research to highlight the point that in practice the designers associate these as two distinct character of the environment. It is also aimed at evaluating separately between the character of traditional buildings and the exterior spaces that the designer referred to. The analysis revealed that a majority (55.6%) of the practitioners referred to traditional spaces in the process of their design. There was a large number (35.6%) who did not make any reference to those spaces whilst a small number (8.9%) responded 'Do not know'.

The elements of the traditional spaces that were referred to are listed in table 5.15.

Elements	Frequency (out of 276 respondents)	Percentage
Axis	12	5.3
Point	12	5.3
Enclosed space	12	5.3
Traditional street	24	10.5
Traditional square	24	10.5
Traditional mall	12	5.3
Courtyard	12	5.3
Scale	30	13.2
Pedestrian movement	18	7.9
Landscape	12	5.3
Play area	6	2.6
Colour	6	2.6
Harmony	6	2.6
Activities	18	7.9
Material	6	2.6
Construction	6	2.6
Form	42	18.4
Social aspects	18	7.9
Architectural style	18	7.9
Open space	12	5.3
Historical aspects	18	7.9
Barrier and segregation	6	2.6
Transition space	6	2.6
Hierarchy	6	2.6
Orientation	6	2.6
Economic	6	2.6
Market place	6	2.6
Five-foot walkway	6	2.6
Massing	12	5.3
Segregation	6	2.6

Table 5.15: Elements of traditional spaces referred. Source: Field work 1993/94

These elements can be regrouped to form a cluster of aspects that will allow generalisation.

Aspects	Elements	Freq.	%
		Out of 276 resp	
Physical	Scale, Material, Form, Construction, Style, Massing, Walkway, Landscape, Orientation, Harmony, Colour	150	69.7
Spatial	Axis, Point, Enclosed Space, Street, Square, Mall, Play Area, Open Space, Market Place, Courtyard, Transition Space	148	60.6
Socio-Cultural	Social Aspects, Historical, Hierarchy, Segregation, Economic	54	23.6
Behavioural	Pedestrian Movement, Activities	36	15.8

Table 5.16: Grouping of traditional elements referred to in the design.
Source: Field work 1993/94

The research reveals that traditional spaces referred to by designers are those related to the physical and spatial characteristics. These characteristics further reflect the importance of those spaces in the process of design.

ii. User Participation

Part of the act of urban design involves the art of negotiation between the various aspects of the environment either man-made or natural that have to be considered. Some authors have shown that negotiation plays a central role in the process of design. Bucciarelli (1984) and Phillip Sargent (1994) among others suggest that there are two kinds of negotiations, which are about meaning and between competing goals.

It has been suggested earlier that meanings in a built environment could be established by how that environment is perceived by the user. There are many ways to see an environment such as a means of controlling behaviour, expressing political beliefs and others. At the same time, it is also influenced by the physical, psychological and cultural background of the user. Goals, on the other hand, are the purpose of the whole design exercise, which may varies between different users. Generally not everybody's view of the setting can be fulfilled in a single design in which case negotiation and compromise cannot be avoided.

a) The user

Various authors suggest that the central element in any urban design is Man. Their needs and aspiration are one of the major forces that push urban design forward. There are new environments that must be created to meet new and existing demands of Man. Hence, any design process must consider the user as an essential parts of the equation.

The following table indicates the involvement of the user in the design process:

User	**Frequency**	**Percentage**
	(out of 276 respondents)	
Public	36	13.0
User	138	50.0
Client	258	93.5

Table 5.17: Involvement of the user in the project.

Source: Fieldwork 1993/94

The survey also reveals that consultation done by the respondents of those directly affected by the project is as follows; client (100%), potential users (58.7%) and the general public (22.2%). Both these sets of figure suggest that user involvement in the design process is still considerably low since only half of

the potential users are consulted or involved in the process. This is because it is of utmost importance for the potential users to be involved in the design process as stipulated by the literature review.

The technique used for consultation of the different groups were as follows:

Method of consultation	**Client**	**User**	**Public**
	Frequency/Percentage (out of 276 resp.)		
Local media	6/2.2	24/12.1	12/11.8
Meeting	258/95.6	138/69.7	18/17.6
Observation	114/42.2	108/54.5	66/64.7
Questionnaire/survey	54/20.0		12/11.8
Planning appeal	24/8.9	18/6.1	
Exhibition	12/4.4	24/12.1	6/5.9
Self build	12/4.4		
Community design/plan	12/4.4	18/9.1	6/5.9
Planning survey	8/6.7	18/9.1	
Guidelines			
Enquiries		30/15.2	12/11.8
Lecture			6/5.9

Table 5.18: Methods used for consulting the public.

Source: Fieldwork 1993/94

The main techniques used by the designer on the different groups are meeting and observation. Further evidence from the in-depth interview reveals that the

consultation with the public and user group are done superficially where the designers do not believed that it is contributing positively to the design.

b) User Consultation

The interview reveals that there is some concern about the needs of the user in relation to a particular project especially in housing. This is in the form of information gathered by the use of observations and meetings to see the users' demand. Further evidence from the in-depth interview suggests that this concern is only in relation to marketability of the property. In many cases especially speculative housing, shops and office development very little attempt is made to gauge the aspirations of the user. The designs are based on standard plan that conform to building regulations and a facade that is of current trend in the market.

In institutional buildings design it is evident that more effort are put into the needs of the user. However, the case is similar to other design problems where no proper studies are made. For the majority of the cases, the designers are making personal assumption about the needs of the user without direct consultation. In the majority of cases especially housing developments, the exterior spaces provided are the minimum as required by the local authority.

In the preference scale analysis it was found that 69.2% of the designers thought that user satisfaction was important and 25.6% of respondents thought it was very important. These figures suggest that users satisfaction is highly regarded but appropriate approach are not done to secure knowledge of their needs. In this case trial and error is also the main technique used where experience will improve the understanding of user needs. The practice currently gauge user satisfaction by looking at marketable style of facade treatment and not the overall environmental quality of the development. Thus the main approach in practice is that of manipulating building façade style to suit the current trends as set by the market.

c) Public Consultation

In any form of negotiation it is crucial to understand and consider all the variables that are part of the equation. Should there be a missing link in the equation, the chance of making a mistake is higher. In urban design it has been shown in the literature review that the people and the environment play a very important role. At the same time available technology and skills will also influence the outcome of the design.

The research reveals that current practices do not address the problem in relation to the general public needs and aspiration. This is evident from the survey as shown above and also from the in-depth interview analysis. The majority of the designers do not see any role the public can play in the design process except on their demand for housing, offices or other amenities. They believe that the public is not interested in any development unless there is a crisis as a result of it. At the same time the designers believe that they know better in terms of design and public participation will only result in mediocrity. This is highlighted by respondent no:3 when he says that:

"....never talk to the house buyer and do not see the point, professional knows better." and "...the consultants within the industry is well equipped to answer for all"

The research reveals that those designers that have an inclination towards consulting the public only did their consultation by doing casual observation and deducing from personal feelings of the situation. The following figures of public consultation indicates the low priority given to them: housing = 23.8%, Township = 29.4%, Town/city centre design = 42.9%, Square Design = 50%, Street Design = 66.7%, and Shopping Complex = 28.1%. With the exception of the square and street design, the other types of projects have lower priorities for public consultation.

These attitudes towards the level of public awareness reveal that the contribution of the public in current urban design practice is not that significant. This is a contrary from the current thinking in designing for the public realm as reviewed previously.

The research has shown that there has been limited effort put into gathering information about meanings in the built environment. The analysis of the data quantitatively and qualitatively shows that there is no evidence to suggest that data collection on users' perception is carried out by the architects. The meanings is only that which the designers has perceived and synthesised through their experiences where the majority of the architects (64.7%) admit to consulting the public only through observations. Since the majority of the architects have less than twenty years experience it can be concluded that the meanings are not representative.

d) Other Consultation/Participation in Design

Consultation is a technique for determining the nature of the problems and providing clues to the possible solutions. The consultation process allows designers to assess the existing situation by gathering relevant information about man and their environment. By analysing the consultation process and their technique it will be able to determine the level of participation and the nature of information used by designers. The following table (table 5.19) shows the distribution of the various types of people consulted by the designers in the design process.

The consultation figures revealed the general concern of the designer where it was found that the main concern is the client, local authority, other consultants and potential users. These figures confirm the earlier findings where the designers focus their design activities on the end product in which limited efforts are used to meet the demand of the neighbouring people and the general public. These findings can be confirmed by studying the ways in which the various agencies are consulted (table 5.20).

Agent	Freq.	Percent
	out of 276 respond	
Clients	276	100
Local authorities	246	89.1
Public	60	22.2
Neighbours	48	17.4
Consultants	210	76.1
Suppliers	12	4.3
Potential user	162	58.7
No consultation	6	2.2

Table 5.19: The types of people consulted by the designers.

Source: Fieldwork 1993/94

Ways of consulting agencies	Frequency/Percentage out of 276 respondents)					
	Client	Local authority	Public	User	Neighbour	Consultant
Through local media	6/2.2	12/4.3	12/4.3	24/8.7		
Meetings	258/93.5	234/84.8	18/6.5	138/50	12/4.3	240/87
Observation study	114/41.3		66/23.9	108/39.1	18/6.5	
Conduct questionnaire	54/19.6					
Planning appeal	24/8.7	78/28.3			24/8.7	
Exhibition	12/4.3	12/4.3	6/2.2	24/8.7		
Self built	12/4.3					
Community design	12/4.3	6/2.2	6/2.2	18/6.5	6/2.2	6/2.2
Lecture			6/2.2			
Enquiries		24/8.7	12/4.3	30/10.9	42/15.2	
Planning survey	18/6.5	36/13	12/4.3	18/6.5	12/4.3	6/2.2

Table 5.20: Means of consultation with the agencies

Source: Fieldwork 1993/94

The research reveals that the most common method of consulting clients, local authority, and users was through meetings. The next common approach is observational studies. Sources from the in-depth interview suggested that these are done superficially where it is a form of tokenism in Arnstein term.

e) Goals and Objectives

Design has been defined as creating a solution to a particular goal, objective or need (Bacow, 1995). The formulation of goals and objectives has also been identified as a crucial stage in the developing a solution to a particular problem. Thus a measure of the success of any design would be the goal or objective. In the case of public spaces a designer should formulate their goals and objectives in accordance to the aspirations of the public apart from meeting the needs of their client.

The analysis of the data indicates that the design produced mainly reflect the goals and objectives of the developer or client (see Table 4.1). This is measured by the involvement of the various people in the design process. The analysis reveals that involvement of the general public (13%) is very low and therefore could be concluded that their needs are not be addressed in the design. The goals of the user and general public are only represented by the perception that is held by the architect, as there is no evidence that they are gathered in the design process. This is also supported by the data from the in-depth interview where none of the architect solicit information from the public. Respondent: 5 iterated that in the design of a market place definition of the problems and the goal of the design are decided by the city hall. Those that are consulted their opinions are catered for. However, the public is not included in the consultation.

The finding shows that meaning and goals in the urban design are misrepresented. The architects blame the general publics' lack of awareness as the main reason for not allowing them to participate in the process. This reason is very weak and indicated that the architects either do not want to solicit the

opinion of the public or do not have the capacity or time to conduct such an enquiry.

Involvement	**Frequency**	**Percentage**
	Out of 276 respondents	
Client	258	93.5
Local authority	234	84.8
Consultants	192	69.6
User	138	50.0
Contractor	60	21.7
Public	36	13.0
Politician	6	2.2

Table 5.21: Involvement in the Design Process

Source: Fieldwork 1993/1994

Weaknesses are also detected in the balancing act between competing goals. The majority of the architects interviewed are found to focus their attention on achieving maximum profit and marketable buildings. One of the respondents even suggested that the façade treatment should be left to the marketing manager since he or she knows what style will sell in the market. Others suggest that most of the time they are working towards the economic goals of the project. The reasons given are due to overwhelming pressure for economic returns and limited time available to develop a solution.

f) The Time Factor

The time factor is a consequence of the developer wanting quick design and at the same time the architect cannot afford to spend the time on developing

comprehensive solution due to limited budget. There have been cases where even site visits are not done in the process. The site analysis and synthesis are done based on the available site plan and photographs.

g) Experience or Qualification

The findings of the research suggests that the discipline of urban design must be given due attention. It is found that any architect could claim to be an urban designer even without any training in relation to it. The findings revealed that 59.5% of the architects; all of the planners, architect planners and planner/urban designers; and 66.7% of architect/urban designers claimed they are urban designers. It could be concluded that all practitioners in architecture claim to be capable in handling urban design project. This shows that practically there is no clear recognition to the urban design practice.

5.3.2 Schematic Design Phase

In this design phase, the aim is to develop the preliminary solution to the problem. The main purpose in this part of the analysis is to see how the designers develop the initial idea on the organisation and design of the exterior space.

a) Idea Generation

The findings of the research reveal that due to limited time and resources in the project, solutions are offered before enough information are made available. Evidence shows that there are limited studies made to establish a deeper understanding of the problem as presented previously. In this phase the designers generally try a possible solution by testing it against the requirements of the project. This is highlighted by respondent no:1 in the in-depth interview where he suggests that:

"Basically we do not have an approach to the extent of doing a study...just design and then discussion with the marketing personnel".

This approach is similar to the 'generate and test' method as reviewed earlier where solutions are offered and then tested to destruction. In the limited time available it has been shown that the 'trial and error' technique of developing a solution is the best approach.

The use of patterns is also evident in the findings where proven layout are reused to generate new solutions. An example is the use of the courtyard as a recurring theme and the application of style on the facade treatment. The pattern is developed through experience that is proven functionally and readily accepted by the clients. Respondent no:2 suggests that the idea of a central courtyard was introduced as a 'trial and error' approach and once it has proven to be workable, the system is reused again in later projects.

The findings reveal that facade treatment is generally seen as pattern making, where evidence suggest that in majority of the cases the choice of facade treatment is dictated by the market forces. In housing projects for example, the choice of the style is decided by the marketing personnel, who based their decision on the current trend in the house buying market. Thus, in the schematic design phase the process is primarily concentrated on making decisions between alternative solutions.

b) Exterior Spaces

Exterior space can be regarded as architectural space without a roof (Ashihara, 1981). Whilst architectural space is structured by three planes; floor, wall and ceiling, exterior space is only bounded by two dimensions; floor and wall. The elements of these exterior spaces are scale, texture, planning and hierarchy of spaces.

To the question whether special emphasis has been given to the exterior spaces, a large majority (86.7%) indicated that they did. It has been argued earlier that a good approach in urban or architectural design is the special emphasis given to the spaces in between buildings. It has been observed that the major weakness in

the newly built environment is that these spaces tend to be neglected by the designers, in which the end products are found to be left over spaces. It is interesting therefore to see that so many of the designers actually give emphasis to these spaces when the results suggest otherwise.

Further evidence from the detail interview however suggests that in most cases the exterior spaces are not given proper attention. The attention given is generally related to the planning for either vehicular or pedestrian access. The other quality related to spaces is that the three-dimensional aspects are not given due attention. This is against the idea of continuity as suggested by Krier (1972) where the building should be meaningful within its historical context, appropriate to its location and of the correct typological register for the surrounding space. It is important to note that consciously the designers do know and acknowledge the importance of the exterior spaces in terms of function and as required by the laws and regulations.

The designers also put a high priority to the context and the surrounding environment in assessing their design. Most will argue that a successful project is when it is contextually pleasing (70.7%) and environmentally pleasing (74.3%) which fall into the category of 'important' and 'very important' in their ranking of 1 to 5.

The aspects of the exterior spaces that are emphasised are as listed in table 5.22 below:

ASPECTS	FREQUENCY	PERCENTAGE
Context or cityscape	24	8.7
Streetscape	18	6.5
Pedestrian movement	24	8.7
Unique feature	6	2.2
Spatial relationship	30	10.9
Create the exterior spaces as links	18	6.5
Facade treatment	18	6.5
Landscape	36	13.0
Parking and traffic flow	24	8.7
Scale	24	8.7
Activities	6	2.2
Circulation and services	12	4.3
Mix uses	6	2.2
Treat as room	12	4.3
Orientation	6	2.2
Open space as play area	18	6.5
Economic aspects	6	2.2
Create landmark	6	2.2
Form	18	6.5
Privacy	6	2.2
Shade and light	12	4.3
Noise	6	2.2
Permeability	6	2.2
Readability	6	2.2

Table 5.22: Aspects of exterior spaces that are emphasised by the respondents.

Source: Fieldwork 1993/94

There is little generalisation that can be made from the figures above except that it indicates the range of aspects that are referred to in the process of design. The complexity of exterior space design is shown here where there is a wide range of elements that could be considered. These however can be grouped into four areas as suggested by Portillo (1994).

a **Compositional** (61.4%) which is to create unity, emphasis or manipulation of form and space.
- context
- streetscape
- facade treatment
- landscape
- orientation
- form
- shade and light
- noise

b **Symbolic** (37.0%) which represents design concepts.
- spatial relationship
- exterior space as links
- scale
- exterior space as room
- privacy
- permeable
- readability

c **Behavioural** (32.6%) which is to meet activity needs.
- pedestrian
- parking and traffic flow
- activities
- circulation and services
- mix-use
- open space and play area

d **Preferential** (24.4%) which is to reflect individual preferences or market trends.

- economical
- facade treatment
- unique feature
- mix uses

The majority is concerned with compositional (61.4%), symbolic (37.0%) and behavioural (32.6%) aspects of the exterior spaces. To investigate whether there are relationships with the data used, this information can be reclassified into the following:

Aspects	**Freq.**	**%**
Physical Context, city, streetscape, unique feature, link, facade treatment, landscape, scale, landmark, form, shade, light	180	67.9
Behavioural (socio-cultural) Pedestrian, activities, mix-use, spaces as room, play area, privacy, permeability, legibility	84	30.5
Technical Parking, traffic flow, circulation, services, orientation, shade, light, noise	60	19.5
Contextual Context, city, streetscape, spatial relationship, linkages, landscape, permeability, legibility	138	50.0
Economic Activities, economic	12	4.4

Table 5.23: Reclassification of aspects of exterior spaces.

Source: Fieldwork 1993/94

The analysis reveals that designers appreciate the various data needed for design and emphasis is given on the important aspects of exterior spaces. Physical characteristics are the main data recognised by the designers.

Findings from the in-depth interview revealed that the organisation of exterior spaces was based on the need for access and meeting the authority's requirements. The spaces were designed to meet their functional requirements where the cost of maintenance is one of the main considerations. The other factor that influenced their design and provision was the economic demand of the project.

5.3.3 Design Development Phase

In this phase of the process the designers are mainly concerned with developing the initial ideas to convince the clients in terms of their viability. In speculative development it is revealed that the developer's main concern is the financial returns and marketability of the properties. Respondent no:3 of the in-depth interview stressed the point that in this stage marketing personnel would dictate the finishes of the building such as the use of tiles or primary colours.

The phase is found to be mainly evolving around decision making especially the choice of different alternatives in terms of style, finishes, materials, structures and others.

5.4 URBAN DESIGN METHOD

The research is using the approach to designing urban space in architectural practice as the vehicle to characterise the urban design method.

5.4.1 General Approach to Urban Design

Since there is no recognised urban design profession in Malaysia, and a majority of the urban design works are done by architects, the architectural practice is

used here as a surrogate for the study. It is therefore very important to establish at the beginning that the architects are fully aware that they are dealing with urban design problems. This has to be a conscious effort rather than an unintentional act. The finding in the last chapter has established that the architects are dealing with urban design projects.

The study also shows that the designers are well aware of the urban design problems and recognise some of the problems associated with it. The finding shows that many of them (65.2%) consider themselves to be urban designers. The designers are also aware of the complexity of the problem that they are facing. This is indicated in the finding where the designers are able to give a rating of the complexity of the problem. They find that the problems related to urban design are 'neither easy nor complex' (47.8%) and 'complex' (43.5%).

The finding also shows that some of the architects do differentiate urban design problems from the normal architectural design problem. The analysis shows that 47.8% of the architects employs architectural design approaches in solving the design problem. At the same time, 23.9% of them do not use the architectural approach and the rest either use it sometimes or do not know. Those who do not use the architectural approach suggested some aspects that are different from this, which are as follows:

Aspects considered	Frequency	Percentage
marketing	18	33.3
moral aspects	18	33.3
relate building to exterior space	6	11.1
follow bye-laws requirement	6	11.1
functional aspects	12	22.2
forming brief with clients	18	33.3
liase with government department	12	22.2
environmental aspects	6	11.1

Table 5.24: Aspects considered in design other the architectural approach.
Source: Fieldwork 1993/94.

This special emphasis is closely related to the process of solving architectural design problem. Thus it can be concluded that they are using similar approaches with minor variations. The differences stated above are the special emphasis given to the various projects which are found to be necessary in order to solve the problem successfully. These figures also indicated that the problem related to urban design is seen as part of the architectural design problem. However special emphasis should be given to generate better solutions.

Most of the designers confirm that design consist of various actions such as 'decision making' (71.1%), 'problem solving' (89.1%), 'creative process' (80.4%), and 'communicative process' (52.2%). These are generally in agreement with theories related to the process of design. The other alternative actions are of negligible percentages such as 'meeting clients' dream' (2.2%) and 'cost monitoring' (4.3%). These two definitions can be discarded since generalisation cannot be made from them. It is important to highlight here that the highest number of people see that design is a problem solving activity which implies that in any design there must be problem(s) to be solved. Generally the solution to the problem will be addressed first before other aspects are given due attention.

The next important step is the creative process in which most designers like to be associated with. This process will differentiate designing from the normal problem solving activities. Designing is not just a process where problems are solved but also a process where innovation and new ideas are put forward and tested. The ideas could contribute positively to the solution of the given problem. At the same time it could create more or a different problem to the designer or the user. At the very least the users have to adapt to the new design.

Decision-making comes third in the statistic where in any process, decision will have to be made between different approaches and at the end of the process, between different solutions. Decision also comes very early in the process where choice between alternatives must be made in order to progress to the next step.

The analysis of the in-depth interview reveals that the designers approach the problem by focusing on alternative solutions. These solutions are offered in the process of solving the problem. This is similar to conjecture and reputation technique where ideas are generated freely without restriction and then tested to destruction before putting them into practice. This finding is supported by the evidence which shows that the designers adopt a focused approach solution to design. The concepts to the solutions are generated very early in the process. In some practice these are adopted as an approach by the firms. Examples of these are the courtyard, central square, traditional form and others.

The reason for the approach as suggested by Cross (1984) is that the problem is very difficult to define which will only be completely understood without relating it to a potential solution. The finding suggested that the practitioners in Malaysia do understand the primary concept of design activities.

The next stage is to investigate whether the designers have approached the problem using the reviewed theoretical model as presented earlier.

5.4.2 Awareness to Design Method

It is important to establish whether the designers are aware of any theoretical method to design that may influence the outcome of their design. The response shows that about half (46.7%) of the practitioners are aware of some form of design method, however quite a large number of the respondents (42.2%) are not familiar while 11.1% of them do not really know. This suggests that specific method is not really a necessary prerequisite for any designer to embark on a design problem solving exercise. The situation may be one of the reasons that contribute to the weaknesses in the solution as mentioned earlier.

The figures reveal that a large number of the architects do not follow any specific method or an approach of close resemblance to the formal method known to them. This gives an indication that there is lack of attention given to the design method in the general practice. The finding also suggests that there is limited

application of any formal method by the practising architect. It also reflects the overall lack of application of acceptable design processes that may contribute to poor urban space design in practice.

It is found in the detail interview that the architects tend to focus mainly on the end products in the design process. The reason given for the situation is that the client's interest is generally in the outcome of the design and it is difficult to be concerned with other related subjects matter. The practices in Malaysia generally, see the project as a business venture and, mainly, from a financial point of view. The amount of design effort that is done in exploring new ideas and developing a better solution is found to be limited. Thus, for most parts of the design, the consideration given is mainly to solve technical problems and fulfilling the building bye-law requirements.

The trend is to generate an acceptable image that is based on the style of facade treatment. Focus on the exterior spatial quality is found to be very limited where they are more concerned on the circulation pattern.

One of the respondents, for example, was asked to outline the way public circulation was considered in the chosen project. He responded by saying that he looked at it just as a requirement for getting the planning permission. He referred to the pavement as a kerb, that is by referring to it as a technical entity 'kerb'. However, pavement may suggest a physical element that is not merely a technical detail but that which have direction, orientation, texture, meanings and others. There was no further discussion as to the quality and other uses related to the pavement. For the same project he mentioned that the street's layout and open spaces have been done by another firm, that was also responsible for the planning of the whole town. There was no discussion on the layout and the quality of the urban spaces between the two architectural firms. This evidence suggests that the decision on planning requirement is detached from the process of creating the three dimensional form of the layout.

The lack of application of systematic method is further highlighted by the outline given on the process and approach taken by them. There is no general consensus where there seems to be as many approaches as there are the architects. Apart from that none of them really describe the method as formally described in writings on the subject. The finding suggests that in the context of Malaysian practice there are poor references to theory or adoption of good design practice as outlined in the previous chapter. The general practice is that of the trial and error process and learning through experience. Since many of the architects (76.1% have less than twenty years experience) are lacking experience they are not in the position to learn from it.

The findings revealed that the designers generally approach a design problem by employing a specific method where a large number of the respondents (65.2%) acknowledge they do so. Relating this to the method used, again the evidence shows that there is no consensus as to the approach used. Here too the list of approaches are as many as there are the architects. Thus the specific approach is that, which is developed by the architects themselves. This finding supports the theory reviewed previously that approaches to design problem are a reflection of the personality, values and priorities of the designer.

The methods listed below are those as described by the architects. There are many variations in the understanding of the method in architectural design. These are approaches that they are aware of. The methods mentioned above consist of those that are appropriate for architecture as well as planning. Some of the methods mentioned are very specific like pattern language which is promoted by Alexander whilst others are less clear like CAD (computer aided design) which is more of a technique. It is obvious from the finding that architects find it difficult to differentiate between method and approach.

The list of methods that they are aware of are grouped as follows:

	METHOD	% (out of 90 res.)
1	Social experience	6.7
2	Client or user need	20.0
3	Moral obligation	6.7
4	Functional and practical plan	26.7
5	Acceptable form	6.7
6	Fulfill brief	20.0
7	CAD	6.7
8	Form follow function	13.3
9	Minimalist where less is more	20.0
10	Environmental and contextual constraint	33.3
11	Follow local authority guide	6.7
12	Pattern language	6.7
13	Matrix of function versus circulation	6.7
14	Cost constraint	20.0
15	Future expansion requirement	13.3
16	Problem solving	6.7
17	Co-ordination	6.7
18	Axial planning	6.7
19	Crucial flow	6.7
20	Linear planning	6.7
21	Grid planning	6.7
22	Modern method	6.7
23	Classical and conventional	6.7
24	Avant-garde approach	6.7

Table 5.25: Methods that designers are aware of.

Source: Fieldwork 1993/94

These methods can be grouped further into four areas of concern. These are as follows:

Group-1 **Subjective** (60.2%)

Social experience

Moral obligation

Client or user need

Problem solving

Co-ordination

Modern method

Avant-garde approach

Group-2 **Rational** (73.5%)

Functional and practical plan

Axial planning

Linear planning

Grid planning

Future expansion requirement

Crucial flow

Matrix of function versus circulation

Follow local authority guide

Group-3 **Intuitive** (73.3%)

Acceptable form

Form follows function

Environmental and contextual constraint

Cost constraint

Group-4 **Radical** (13.4%)

Pattern language

Classical and conventional

Table 5.26: Regrouping of methods designers aware of.

Source: Field work 1993/93

The analysis suggests that the most frequently used approach is the rational (73.5%), intuitive (73.3%) and subjective (60.2%) approach.

There is nearly twice the number of architects using specific approach in their design (65.2%) compared to those who do not approach the problem in any specific way (32.6%). There is no indication that those who do not follow a specific approach do not have an approach to the problem. Rather they tend to look at the urban design problems in a general manner that is like other architectural design problem. This is confirmed by only very few respondents (2.2%) who responded do not know.

5.4.3 Approach Used by the Designer

In any design process the majority of the designers will adopt specific approaches to solve the problems as indicated above. Table 5.27 shows some of the approaches adopted by architects in the Malaysian practice:

The figure suggests that in design there are variation of approaches and sometimes a combination of approaches are adopted by the architects. It also indicates that for the majority of the designers, formal design method is not important and most of them associate method to the approach of the design.

Their knowledge and application of any known design method are also limited. This finding reveals that in practice specific methods were not adopted in the design process.

A large majority of the designers (60%) approach the problem by relating it to its nature and context. This is also reflected by the findings made earlier. This approach should have resulted in a better solution to the environmental problem, however this is not the case as commonly seen in the towns and cities throughout the country. Thus there must have been other contributing factors to the problem.

The finding suggests that the next larger group (32.0%) actually approaches the design from the financial constraints of the project. This may be set by the client or from an economic viability study. Hence, this is one of the major factors that influenced the design.

Approaches used	**Frequency (out of 180 respondents)**	**Percentage**
Analyse existing situation	6	4.0
Focus on future needs	18	12.0
Meet authorities requirements	6	4.0
Use form follow function	18	4.0
Relate to nature and context	90	60.0
Use financial constraint	48	32.0
Avoid gimmick	6	4.0
Meet clients needs	30	20.0
Practicality	6	4.0
Focus on circulation pattern	6	4.0
Use pattern language	6	4.0
Use matrix	6	4.0
Focus on socio-political needs	18	12.0
Meet personal needs	6	4.0
Fulfil functional requirements	36	24.0
Focus on aesthetic expression	18	12.0
Focus on construction and material	24	16.0
Use axial planning	6	4.0
Use linear planning	6	4.0
Base on density	6	4.0

Table 5.27: Approaches used by designers.

Source: Fieldwork 1993/94

The next aspect is the functional requirement of the design where 24.0% of the respondents approach their problem by focusing on it. The functional performance of the solution is a criterion for measuring the success of any design.

Clients' needs are an important aspect of any design, in-fact it should be one of the primary goals of any design activities. The study shows that 20.0% of the designers approach the design from the clients' point of view. However in many cases the client is not the user and therefore the client's needs may not be the right thing for the user. Thus the designer will have to balance between the two needs.

Some designers approach the design problem only purely from technical point of view. The findings revealed that a large number of them (16.0%) focus on the construction and material aspects of the design. The construction and material play an important role in defining the final design where they contribute to the building's fitness and its continuity in the context of the built environment. One of the main aspects of the context is material and construction. Thus it is a crucial factor in any design.

The other important issues that are chosen by some of the designers to focus on are future needs (12.0%), socio-political needs (12.0%) and aesthetic expression (12.0%). Future requirements of any development are an important consideration in any design process. The building will have to adapt to expansion and changes to its immediate environment.

Politics and the society at large always play an important role in any urban design project. If there is no political will in any urban development, it will be difficult to achieve the set target. This is because urban design will always involve different culture and different groups of user. Thus the political power must be in tune with the proposed development. The society is the major motivator in any urban development because the aim of any urban design is to fulfil the needs of the whole society; not just the user of the space or that of the

local authority. Thus the political climate and the opinion of the whole society must form part of the process.

The aesthetic expression must always be in any designer's mind when the designer sets out the work on any project. To most of them, this is the aspect that differentiates between a good and bad design.

It is important to note that a large number of designers (52.9%) who do not use any specific method in their design actually use past solutions and examples as an approach. Generally this is acceptable where a successful solution will be used again with some modifications.

There is a large number of those who do not use any specific method in practice, approach their design problem by using their own intuition and past solution (35.3%). This is generally the case in a situation where the designers do not have enough time and money to do a proper study for the project. This point is highlighted further from the in-depth interview and other sources as described earlier.

5.5 SUMMARY AND CONCLUSION

The findings reveal that the majority of the designers are trained overseas such as United Kingdom, America and Australia. This suggests that their formal training are generally the same as those practitioners in developed nations, therefore any short-coming in the practice will be the influenced of the local situation. With the basic training acquired, the designers should be familiar with aspects of urban design and able to recognise the problems associated with it.

The findings show that the number of designers with qualification that is advantageous in dealing with urban design problems such as architect/planner or architect/urban designer, are very small. For the majority of the cases architects develop their skills in dealing with urban problem through their experiences in practice. Thus, the majority of the projects that have a large component of urban

design issues, are dealt with by architects without alternative training related to urban design.

The findings indicate that regardless of where they have obtained their formal training, the number of designers specifically looking into the contextual aspects of the projects were low. This reflected the general trend in practice where context and hence urban issues are ranked low in the priorities.

The findings reveal that there are some variation between urban design process and the architectural design process. The use of architectural design approaches is found to be the main approach that designers used in solving urban design problems.

The main design processes are found to include decision making, problem solving, creative process and communicative process. The research also reveals that the use of specific design method are uncommon where designers are found to be relying on their experiences to solve the design problem. This Beaux-art tradition of designing may influence the outcome of the design. The findings reveal that the majority of the designers are not aware of any formal method to designing and therefore are not employed in the design process. This confirmed the theory that designers approach design problem from a personal point of view.

The research also reveals that there are as many approaches to design as there are architects which implies that there is no common approach in the practice. This is similar to the findings made from the literature review. The methods could be grouped into main categories such as subjective, rational, intuitive and radical. The main factors that are focused in the approaches are nature and context, financial constraints, functional requirement, construction and materials and others.

The approach taken by designers in solving their problems are found to be focused on the end product where the 'generate and test' and 'trial and error' approach are the most commonly used. These are based on the experiences of the

designers with limited reference to theoretical works on the subject. The results have been expected to be mediocre due to limited experience of the designers in which a majority of them has less than twenty years of experience.

Those who do not use specific approaches mainly use past solutions and their own intuition especially in cases where there are limited time and funds to do a proper study. Hence, the study suggests that in cases where there are pressing need to produce design quickly without ample time to do a proper study, the fragmental method is most suitable. The method allows intuition to develop possible solutions. At the same time 'conjecture and refutation' technique to problem solving will fit into this method.

In the pre-design stage, information regarding the user, public, client, and the context are crucial in building up the scenario of the problems and may suggest possible solutions. The study reveals that there are limited studies carried out in practice. As suggested earlier solutions are offered at the outset, before tests are made using the available data.

Public participation as an approach to determine peoples' perception of the urban environment is not used, in which designers are found to depend on their own judgement of the people's needs. The designers are also found to be dependent heavily on the marketing personnel for their information on the public preferences.

The study reveals that during the schematic design phase of the process most of the architect either use 'trial and error' technique to produce a design or using known workable solution developed through experience. It also reveals that the design is mostly dictated by the marketability of the idea rather than good design solution. However in the process the majority of the architects put a lot of emphasis on the context and exterior spaces such pedestrian linkages and the overall composition. The process continues into the design development phase which are mainly concerned with convincing the client on the viability of the proposed design.

The method used by architect in designing urban spaces are generally similar to the method they use in solving architectural design even though the majority of them recognised the problem associated with urban design. Generally the architects see designing as problem solving, creative thinking and decision making process. Initially the architects focus on the alternative solutions rather than developing new solution. Even though a significant number of the architect are aware of design method but many do not used any specific method in their design especially in cases when not enough time are given to them. In these cases the architects relies on past solutions.

CHAPTER SIX

URBAN DESIGN THEORY - PHYSICAL AND SPATIAL ORGANISATION

6.0 INTRODUCTION

This research has adopted the position that theory is the basis of all action. Theory can mean different things to different people in which Lang (1987) suggests that there are at least four different associations given to the definition of theory. A theory can be defined as a **system of ideas** to describe or explain a phenomena or a group of phenomena which is either tested scientifically or just an act of faith. This is known as 'positive theory'. It can also be referred to as a **model**, a **prediction** of a certain outcome as a result of a certain action, and it is also a **prescription** for action. These are known as 'normative theory', such as design principles, manifestos, and standards in architecture.

Rapoport (1977) suggests that all urban settings have organisation of space, time, meaning and communication. Thus theoretical framework should influence the outcome of those aspects.

6.1 THE SPATIAL ORGANISATION OF URBAN SPACE

It has been reviewed earlier that theoretically the two basic elements that influence urban design are the street and the square that relate to the concept of 'line and centre'.

The research reveals that a number of the designers see urban design as those activities related to creating external spaces. These are related to street design (50%), square design (45.7%) and place making (2.2%). The way these spaces are conceptualised conformed to the general theory of line and centre. Evidence shows that line of communication, that is roads and pavements, are the main concern of the designer in all stages of the design. The road layout is seen as the

most important aspect in relation to site planning and overall organisation of the ensemble. In many cases the designers choose to describe their design in terms of access and land division.

The findings suggest that this pre-occupation with spatial organisation has resulted from efforts made to maximise land use and reduce wastage of space. Geometry in this case plays a very important role, which is evident from the designer's explanation of his or her scheme where design is seen as an organisation of lines. This is based on the sketches made by the designers in their effort to explain the design.

6.1.1 Centre

Centre is found to be the main organisation element in majority of the cases, especially the design of institutional buildings and shopping complexes. The centre is conceptualised in the form of courtyard, open space, atrium and other central spaces that become the focal point of the arrangement. One of the respondents highlighted this point when he suggested that in his office practice, the courtyard had been developed as a pattern for the planning of the complex. The courtyard was found to be the best solution in terms of the security, ventilation and lighting. It was seen as responding to the tropical environment and reflects the image of Islamic organisation.

In other cases the square is used as a focus for activities that ties together all the passage leading to or generating away from it. In most of the layout a large central square has been preferred against a number of smaller ones. This preference is based on the pragmatic approach to design where the cost to maintenance is the main concern. The consequence is the creation of a central focal point for the overall planning of the complex.

Thus for better maintenance, a large central square or space is preferred. At the same time it will increase the impact of the space to the whole arrangement. This will introduce a hierarchy of spaces that may be used to generate a sense of

procession moving from one space to the other. Krier (1979) expresses an opinion that:

"In all probability the square was the first way man discovered of using urban space..... the arrangement afforded a high degree of control of the inner space".

Krier, 1979, p.17.

The practice reveals that in cases where some form of control is needed such as in a school complex, condominium and large public institutional building, the square become the main design generator. The designer will relate the building to this central space and became the main concern of the design exercise. In this case the buildings were arranged around a central open space. The result is a well-protected space in terms of privacy where it discourages outsiders from entering it. This aspect of the design has been used effectively in the marketing of the scheme where it provides an attractive and protective environment.

Within the central space, subdivisions are further afforded by the zoning of activity types that generally range between two extremes: active and passive. In housing schemes these could be seen in the form of segregation between the children play area and seating areas where a pond or garden is to be found. In a city centre setting this could be between areas where foods and drinks are served to that of seating provided around a fountain.

6.1.2 The Line

The line can be in the form of a path, canal, street, road, and other linear linkages between two points. Their main function is as a means of communication and subdivisions. In a naturally expanding urban areas the line will most likely start as a means of communication that give access for pedestrian and vehicular movement.

The research reveals that there is significant influence of the line on the design of urban form. This is evident in housing where the streets or roads are used to subdivide the land into smaller parcel for house development. This is done using the standard sizes that is found to be most economical where it is possible to generate the highest number of units. In many cases land is subdivided using this rule with little regards to the natural feature of the area such as topography, vegetation, streams, and others. In this case the designer does not associate the organisation of the roads and streets as a line that is part of the natural environment.

In many cases finding the means of access to the site is the first step in generating the solution to the design problem. The line or roads could be on the outside of the site that eventually dictate the orientation of the whole layout. It has been revealed from observation and the case study that this feature of the design will have more impact on the layout than the natural feature of the site. There are many cases where designers have described their design in terms of access especially that of the vehicular movement.

Therefore in design it is revealed that the line does have economic and organisational influence on the design.

6.2 THE PHYSICAL ORGANISATION OF URBAN SPACES

The physical organisation of an urban environment is generally realised using theories that are related to architecture. Some of the earliest writings on the subject of built environment like Vitruvius two thousand years ago, referred to the physical quality. These are "utilitas", "venustas" and "firmitas" which was paraphrased by Sir Henry Wotton in 1624 as 'commodity, delight and firmness' (Lang, 1987). The concern over the physical aspects of the building is an advance from man's first endeavour to build structure to protect them from the climate and their enemies. The research findings suggest that the practice of design in Malaysian context approach the problem from first looking at commodity and firmness, and the delight usually comes at a later stage.

This situation develops into a grouping of buildings where each building in turn is subordinated to the overall plan in terms of scale, building type and architectural vocabulary that is in harmony with existing architectural fabric as suggested by Krier (1979). Design usually begins with some forms of design concept either developed from analogies, pragmatic or any other mental images that the designer has after getting involved in the problem. This step will assist the designer to focus towards a certain acceptable solution.

6.2.1 Generate and Test approach

The research reveals that in an environment where the end product is very important as reflected by the role played by the developers, solution generation in advanced of thorough understanding of the problem is found to be the most common approach. In this approach solutions are offered to test the acceptance of the client before detail considerations are made. This is closely related to generate and test procedure as suggested by Rowe (1987). Solution generation normally develops from previous experiences gathered by the designer. For those designers without former experience in similar type of project, a trial-and-error approach is adopted without any reference to precedence of similar project.

6.2.2 The Stylised approach

The research reveals that **image** of the building is an important consideration in the design practice that is a reflection of the general trend of people's perception of the building design. There is a general association of style to enhance the image of the buildings since it has an added advantage of being readily acceptable to the buying public. Style, as suggested by Smithies (1981), may be considered as the collective characteristics of building where structure, unity and expressiveness are combined in an identifiable form related to a particular period or region or even to individual designer or school of design.

In the context of Malaysian society roof form has been the main generator of image where traditionally buildings were recognised by their roof form. Vlatseas

(1990) suggests that whilst the roof element is common in function and origin, it distinguished the house styles from one region to the other. The style is associated to the different states such as Melaka, Kelantan, Trengganu, Pahang and others as revealed earlier.

This pre-occupation with style by the general public has influenced the designers' approach to design where the main concern of design is styling. The image is normally generated from an association to climate such as tropical, traditional, Mediterranean, Spanish and others. This approach has been adopted in the search for Malaysian identity that was popular in the 1970s and 1980s. This transient influence has been termed by Smithies (1981) as fashion. This research is looking at the underpinning factor that influences these fashions.

The research also reveals that there are symbolic associations made by designers especially from traditional architecture such as the use of analogies of the palace as the seat of power and others. This is an attempt at developing architectural language that is easily understood by the public. The findings also reveal that the general public highly value the building façade style as reflected by the efforts put by designers and marketing personnel in meeting their demands. These approaches also influence the design of exterior spaces in which designers were found to associate the exterior space design to certain image such as tropical, Islamic, traditional, colonial and others.

This image making processes translate into the design of the spaces where the building's reflects the essence of traditional living spaces of the house or palace. For example respondent no:6 approach the organisation of the exterior spaces of his office complex by adopting the traditional space called 'jemuran' which is roughly translated as a 'drying space'. This is a unique feature of the local architecture that is readily accepted by the client. Other symbolic association of space is also successfully adopted by the designer and accepted by the client.

Image or style in this context relates to one aspect of delight or 'venustas' that was promoted by Vitruvius. Evidence suggests that the idea has not gone further

in the context of building design in which the main concern of majority of the cases is visual style. Positive result prevailed in cases where this has been used to reflect the functions of the interior spaces. The following description by respondent no:6 highlighted the point.

"....how the main house, 'rumah ibu' and various other annexes are all connected by this 'jemuran' where they used to dry their paddy. So that has been done with the assembly hall as the 'rumah ibu'.

Source: Field work 1993/94.

The findings revealed that this has a deeper meaning in urban space design where it translates the traditional spaces into modern usage.

6.2.3 A Sense of Unity approach

Unity has been revealed to be the most common theory adopted by designers in an effort to generate a sense of belonging that were generally used to unify the buildings within the same complex. The findings show that designers try to link together the various part of the complex in terms of the architectural finishes. The most common way is the use of colour and facade treatment. The finding shows that designers use colour and scale to capture the imagination of the people, where they are used to generate the sense of belonging and association.

There is no evidence to suggest that designers are trying to create a sense of unity to existing environment surrounding the site. However, there have been attempts at generating a sense of unity for the whole country where identity is used to generate a common target as revealed earlier. The vehicle used for this purpose is the traditional roof form. As revealed in the study, roof form is the most noticeable feature of traditional architecture and has been employed to create a sense of belonging that generates uniqueness associated with the region. Together with scale the roof forms of domestic architecture are used in larger

scale buildings such as assembly hall, office headquarters, council offices, university campus and others.

Continuity is utilised in many instances where detailing and spatial sequences are the main elements used to achieve it. There are references where in the design of the five-foot walkways, columns are introduced to reflect the traditional walkway and the same time breaking the monotony of the space. Continuity is also revealed in the designers' approach in responding to the traditional settings. The evidence shows that a significant number of the designers (55.6%) refer to traditional spaces in their design approach.

6.3 THE THEORY OF PRACTICE

The research reveals that the practice of urban design in Malaysia is forming an important part of the architectural design practice. Currently, it is not given proper attention by the designers. However theories are emerging from practice on approaches to designing those urban spaces.

The process of design is found to be very limited in practice where in most cases designers spend between 10 to 15 percent of their time on it. Most practitioners spent more time on management where it is seen that in order to do well in practice more time must be spent on it.

The main factors that influence design are political, social and economic. The influence of economic and social aspects on design have been discussed before where they affect the process used by the designers. The economic demand is revealed to influence the roles played by architects where it is found that they have acted as a facilitator to meet the client's needs. The findings also reveal that in many cases the designers are not fully aware of the economic consequences of their design especially in housing. This led to a situation where the expert client dictates what is appropriate from the economic point of view.

Social aspects mainly relate to marketability of the design that is based on the location of the project and the building style. Due to rapid changes of house design style the decision is left to the developer as suggested by the respondents in the in-depth interview. This is in response to the attitudes that the designers and developers have of the public. It is revealed that these attitudes are based on the value system of the public that responds mostly to style in design. Traditionally domestic architecture as revealed earlier was recognised by their style especially in terms of their roof form. Thus an appreciation of the style must form part of the theory of practice.

In a society where style plays an important component of design, urban space designing must adopt a method that links spaces to style. Some of the successful approaches are based on traditional space that is then translated to modern use. In this respect, the use of analogies will be the most effective design method where unique characteristics of the various regions are utilised to develop a stylish concept of urban space. This results in a deeper association and meanings to the spaces. The findings indicate that an association of spaces from traditional domestic architecture to that of a larger scale office complex is acceptable.

A good design will also depend on the political willingness. As an example, the low cost housing requirements have to be supported by the politicians to make them workable. In a society where politics influence the trend in building design such as Malaysian identity, corporate image and others, the practice of urban design must get into the political agenda. This could be in terms of sustainable development, green design, green lungs, environmentally responsive spaces, culturally responsive spaces and others to promote the issue of urban space design. The study reveals that when the practice adopts a political agenda such as regional uniqueness, heritage and others, the ideas developed by the designers are more readily accepted by the clients.

The research reveals that professional practice in relation to privately funded speculative development, has been moving further away from the ideals of design due to the need to survive in the commercial world. Intense competition

and unethical conducts mean that design is seen as a business venture where cost will dictate the success of the design. In this situation the application of method will be the best approach where the risk of design errors are less compared to existing trial-and-error procedure that was found to be most commonly used.

6.4 SUMMARY AND CONCLUSION

The research findings reveal that the theory of urban space design relates to the spatial and physical quality of the built environment. The spaces are generated by the organisation of line and centre which influences the overall layout of the scheme and the hierarchy of space within the composition. The centre that initially is developed through the pragmatic approach to design where the needs for cheaper maintenance, better control and meeting the building bye-laws requirement offer a strong statement about the sense of place. The central square or courtyard become the focus of the development that offer a strong sequence of spatial hierarchy.

The line on the other hand is developed from the strong pressure to maximise land use and ease of communication that reflects the economic priority of the design. The line also can be generated into a geometrical scheme, which eventually becomes the main generator of the urban space design. However, the main concern is the two dimensional aspects of the design.

The theory on the physical quality of the built environment is generally related to style where it is found that the main concern of the designers is to produce an acceptable image of the buildings in terms of style. In order to introduce continuity and a sense of identity the pre-occupation on style by the people should be exploited where the essence and characteristics of traditional spaces be adopted into modern organisation. The unique feature of these spaces will evoke a strong and positive image to the people.

The theory to practice generally relates to the needs to appreciate the strong economic demands on the development and the value system of the people. The

end product is the most important factor of the design process where the main concern of the client and the general public is the finished building. The 'generate and test' approach to practice is found to be most suitable to the existing climate of the practice. The trial and error approach by the inexperienced designer should be assisted by a comprehensive precedence study to avoid making too many mistakes.

The following chapter will present the main findings and recommendations of the research.

PART THREE

CHAPTER SEVEN

MAIN FINDINGS AND RECOMMENDATIONS

7.0 INTRODUCTION

The main aim of this research is to suggest the method and process of urban design in practice that will achieve a better urban design solution in Malaysia. For this purpose the research has attempted to answer the key question; which is why Malaysian architectural design method produce poor urban space design? In the process of unravelling the key question, subsidiary research questions have been addressed that is (1) Why is the design of urban spaces neglected that resulted in poor design of urban spaces? (2) What are the stages and the types of information used by architects in the design process (3) How did the architect respond to the needs of organising the urban form that is responsive to the needs of the user?

The underlying assumption is that the answers to these questions will assist in making recommendations for the right approach to urban design problems.

Data analysis in this thesis was carried out to examine the nature of design problem and approaches to design in the architectural practice of Malaysia. In addressing the research objectives stated in chapter one, this thesis has attempted the following :

(1) to determine the type and complexity of projects that designers undertaken in the last five years (2) to examine the factors that influence their design (3) to determine the people involved in the design processes (4) to examine the elicitation of information from those who were associated with the project (5) to determine the use of social and cultural data in the design process and (6) to

determine any association designers made to the traditional buildings and space design.

7.1 SUMMARY OF THE MAIN RESEARCH FINDINGS

In an attempt to establish the reason for the poor quality of urban spaces, this research has focused on the nature of problem related to urban design and their practice in the context of Malaysian architectural practice. In order to develop an understanding of the related issues the approach to urban space design was used as a measure of their practice. The main concern is with the attitude of the designers towards the problem, the data used and elicitation of information from the people involved in the project.

7.1.1 The Nature of Urban Design Problems in Malaysia

The research reveals that the most pressing aspect of architectural practice experienced is that related to urban design. The discipline is not given adequate recognition in terms of the professional role as well as the need to address their design. The overall planning of development in Malaysia is done by the Economic Planning Unit, whose main concern is on the financial aspect of the development. It is found that for most Government projects, funds were not allocated for the design of spaces between buildings. The main concern is in the building design where a similar pattern has been found in the private sector. Exceptions are for projects where the design of the exterior spaces is part of the attraction for marketing purposes such as holiday resorts and condominium development.

Urban in-fill, large-scale housing projects and township developments are the current trend of the architectural practice. Urban in-fill project are inevitable as towns and cities grow. The main problem in this case is that of continuity and scale. New urban developments are generally found to be larger in terms of scale than the existing urban fabric. The current scale of the two to three storeys shop-houses have been broken by the high rise office development and large volume

shopping complexes. There is no precedent for this type of development in the local context and therefore the trend is to adopt the modern international building types. The totally controlled interior environment is also a departure from the existing smaller scale buildings that are naturally ventilated.

The problem associated with continuity generally relates to design language and technological development. As mentioned earlier urban design language has not been given any emphasis in the post independence architectural development. Recent building technology means that new building types are possible to design with a taller and larger span. As a result, there is a tendency to experiment on new building types that in many cases are alienated from the existing context. The problem also relates to the limited appreciation of the context and the people. The research finding shows that for the majority of cases, appraisal of the context is not done but is based on the perception of the designers.

Housing pose the greatest challenge in urban design practice in Malaysia. There is a large number of architects who are involved in this type of project. The problems with housing development are generally associated with economic demands and the general view on design. The designers find that their efforts to produce good design are being subdued by the need to maximise the profits and marketability of the scheme. The maximisation of profits leads to compromise on designing effort, detail design, and environmental consideration. This is reflected by the provision of better environment in expensive housing developments, unlike the medium and low cost projects. The attention to details and the needs of the people are also neglected in order to save time and cost. The economic demands also lead to unethical practices where the professional fees are reduced in order to secure a project. This effectively compromises the ability of the designers due to the reduced time and resources spent by the architect on the project.

The research reveals that the main driving force in the design activities are the value system that the people have which are generally related to cost and image. Marketability in the context of Malaysian housing market, relates closely to the

houses style where the current style is accepted as good design. The practice becomes one of the means of selecting the different architectural style to meet the market demands. In the majority of the cases, these are decided by the marketing personnel, who knows the trend of the buying public.

There is no thorough public consultation or user participation in the design process to establish their needs. For the majority of the cases, the designers do not believed that the people could contribute positively to the design.

The four conditions as suggested in the literature review for communication with the public are not met. They are; comprehensible, sincere and trustworthy, appropriate and legitimate and accurate and true. There is no evidence in the practice that these are the concern of the designers. The participating methods could have been used for defining as well as solving problems of urban design (Shirvani, 1985). There are some form of consultation done but only for a limited purpose.

The local authorities are found to play a limited role in determining a better environmental design. Their main concern on the design generally relates to the bye-laws requirements and other policies of the local authorities. This is the impression that is given by these designers in practice. Detail discussion with the planners reveals that they are too busy to look into detailed design and it is left to the discretion of the designers. Their main tasks are to look into the distribution of resources and social justices.

Office complex is the emerging building type in the post independence urban scene of Malaysia. The main problem is that of scale and the predominant image making. The scale is very difficult to relate to, in existing urban texture and form. Evidence indicates that the designers produce buildings that are totally out of context and follow the modernist tradition of form follows functions. The main concern is that of image making and maximising floor area. Contextually, these buildings tend to be alienated from the surrounding buildings, which is not in harmony whether in terms of building design or the provision of pedestrian

linkages between them. This problem arises as a result of the scale of activities expected in these structures. The number of people working within a small space is new and needed to be addressed. The amount of vehicular circulation generated results in the building site being turned into an island with difficult access except by cars.

Institutional buildings and tourist resorts also face similar problems but to a lesser degree. There are many cases where the designers are able to integrate good quality exterior spaces between the buildings. The reason for this is due to the budget, image and marketability factors. In the case of institutional buildings such as schools, university campus and others, the clients are less concerned with economic returns. Thus, the designer is able to explore many possibilities without having to justify economically to the client. The client at the same time is less certain of the building type that makes the designer having the upper hand. The budget too is not as tight compared to privately funded projects where the economic calculation is not based on the floor area. Tourist resorts, by nature of their use, are much more concerned about the environmental aspects and their image. Hence, many of the projects are able to explore on the exterior spaces in relation to leisure activities. There is a growing number of new township design in Malaysia where a whole new town is privately sponsored. These are speculative developments that consist of housing, shops, factories and other uses. The problem associated with these types of projects encompasses all discipline related to building industry such as politics, planning, architecture, urban design and others.

7.1.2 The Practice of Urban Design in Malaysia

Urban design is currently the most important aspect concerning building design that must be addressed by architects in practice. The nature of work faced by the majority of the practitioners such as housing, urban in-fill, commercial complex, institutional complex and holiday resort demand careful consideration in terms of their environmental and human relationship. The urban design problems are represented in five different types of human settlements; new housing area,

development within existing cities, development of new towns, institutional and office complexes and holiday resorts.

The general problem related to urban design in architectural practice is the design of exterior spaces. Currently, it is found that proper emphasis is not given to these spaces due to the lack of understanding of their importance and the over emphasis given to the design of individual buildings. It is also found that the main concern of the architects is the building design. The exterior spaces are generally allocated as required by the bye-laws or other requirements of the local authorities. This is generally found in the housing design where the main concern of the developers is to maximise profits.

There is only a small number of architects with other relevant qualifications in practice (19.6%) to deal with issues related to urban design. Hence, the general concern of the profession as a whole will be biased only towards building design. This can be gauged by the award-winning schemes chosen by the PAM which are generally given to good building design and not considering the overall environmental impact.

The experience of the designers is also very limited where a majority of them (76.1%) are have less than twenty years of experience. Many do not have any completed projects to refer to. The composition of the firms is lacking in terms of supporting expertise to do a proper study related to urban design issues. The number of firms with planners, architect planners or landscape architects is also very small. Thus, all these professionals which may positively contribute to the design process are not a part of the permanent team.

Since there is no professional recognition given to urban design, the practice is not addressing the problems adequately. Exterior spaces are treated as left over spaces that only fulfil the circulation requirements as required by the authorities. There are negative attitudes towards the urban spaces, where they are seen as a requirement needed to secure planning permission. However, the design of these spaces contributes positively to a situation in which it is seen as an organising

element of the ensemble. These are normally in the form of courtyards, squares and circulation patterns.

(a) The Role of the Architects

A large number of architects in practice consider themselves to be urban designers and to practice the design of urban spaces. The lack of recognition of the profession means that the issues associated with urban spaces are mainly dealt with by architects. It is found that there is no specific approach adopted by the designers in designing urban spaces.

(b) The Role of the Planners

The planners in the context of Malaysian practice do not contribute positively to the practice of urban space design. This is revealed in the research where the design aspects of the urban spaces are left entirely to the devices of the architects. Their main concern is to make sure that the design fulfils the bye-laws requirements and the proposals as seen by the architect's description of the situation. One possible reason for this is due to the lack of local plans available that may provide some guidelines to the urban design issues. A large majority of the designers are consulting the local authorities on matters relating to approval but not for input in terms of design. The planners are generally concerned with circulation pattern and means of access only.

(c) The User and Public

The practice of design related to urban spaces shows the lack of concern to involve the users and the public in the design process. The designers are making very crude judgements of their needs and aspirations through informal discussions and observations.

The main consideration given by the designers to the needs of the user and the public is related to marketability and style. This is an exploitation of the

weakness in the market trend in Malaysia where the general public is only attracted to styles. The designers blame this attitude of the user and the public, especially on housing design, for the lack of environmental quality in their design. This is due to a situation where public demand cannot be used to counter the developers' over emphasis in maximising profits at the expense of good design. Comments are reduced in the design process and shorter time is allocated to designing.

The situation can be measured by the amount of alterations done by the owners to new houses that are certified save for habitation. This is observed to be the general trend in Malaysian housing schemes and is not found in countries like Britain. This is the case of building design and the situation is worst for urban spaces. This is because the information of the user needs and meanings imparted on the urban spaces do not form part of the design criteria.

7.1.3 Urban Design Process

This research is aimed at investigating the method of designing urban spaces in architectural practice. This effort is made in an attempt to characterise the urban design practice and to recommend the design methods for the practice of urban design. The main objectives are to look at the strategies of design in the process, the elicitation of information regarding the people involved in the project and the major actors that contribute to the design process.

There is a growing concern on the importance of urban design in architectural practice as shown by the findings that relate to the recognition of the discipline and general awareness to different approaches to their design.

(a) Design Strategies

The research reveals that the main strategy in the design process is to meet the financial constraints and marketability of the design. The financial constraints are generally given by the developers in their effort to maximise profit and sell all

the properties as soon as possible. In this situation it is found that the best approach adopted by the designers is to develop an acceptable pattern to the development. The pattern will then be tested to see how it performs in practice. This 'generate and test' method allows the designer to develop ideas before all the information about the project is known.

The main problem in practice is that the necessary information is not collected as the design progress. The information such as site context, user needs, socio-cultural background of the users, physical and behavioural aspects of the context, and others, are mostly superficially addressed by the designers. In majority of cases, these are based on the perception of the designers and the developers without any substantiated evidence.

Most of the issues covered are those related to market demand such as the buying power of the public and the image that is seen as trendy. As for office head quarters design, corporate image is the most important aspect where the buildings are seen as a status symbol for the corporation. The main approach is to be different and contrasting to the surrounding area. Government sponsored institutional and office buildings on the other hand generally reflect the image of national identity; that is through the adoption of traditional form in the building design.

The findings revealed that the 'trial and error' procedure is also commonly used by designers. In this procedure the lack of concern for the urban context and the public result in poor urban space design. Both of these aspects are known to be important by the designer but other circumstances, as suggested earlier, limit their application.

The market demand is the most important factor that influences speculative developments. Most designers who were involved in this type of development generally paid a lot of attention to the marketing personnel in the process of their design. The current trend is that the public demands are mostly based on building design and less on the environmental aspects. In the building design, efforts are

mainly put into meeting the practical needs and the building's image that is based on style.

The concern on the environment is found to be associated with the cost of the development where in higher cost projects the designers pay more attention to exterior space design. This factor also relates to the prestigious status of the development. The main concern here is to provide ample spaces for activities and landscape feature.

(b) Elicitation of Information from the Public

It is revealed in the literature review that urban space design is an organisation of space, time, meaning and communication (Rapoport, 1977, Spreiregen, 1965) which is an organisation of the perceived form of the spaces or city. The most important aspect in this case is the perception of the people. The findings reveal that in practice the people's perception is concluded from limited studies such as general observations based on the people's preferences. The most common approaches are to design for the environment as perceived by the designers.

The main method used was that of observation and informal meetings that is in the form of consultation aimed at meeting the practical needs and financial constraints. These are some of the information needed in relation to building design and spatial organisation.

(c) Other Consultants

The main aim of this research in this aspect is to establish the contributions made by the people that are important in the process of urban space design such as the planners, landscape architects, politicians and urban designers. The research reveals that the contributions from these professionals in the process of the design are generally in the form of consultation through meetings. Further evidence suggests that these were mainly to confirm what have already being done by the architects.

7.1.4 Urban Design Theories

The research reveals that the main theories that are used and developed by the designers are that of line and centre in association with a sense of unity. The centre was generated from the pragmatic approach to design that are influenced by the building regulations, local authority guidelines and the practical needs of maintenance, security, natural lighting, natural ventilation and others. The centres are created into a square, courtyard, atrium and others.

The line is generally seen as communication channels mainly for the vehicular movement. These sometimes result in the creation of an island site where it is only safely accessible by car. Pedestrian linkages are neglected and very limited time and money are spent on their design.

Theory concerning the physical aspect of the buildings generally relates to the style of the facade design and the roof form. The style is developed from the marketing efforts of the developers that capitalised on the demands from the general public. The roof form is seen to have generated from the traditional building design of the different regions that are known from their roof style. The influence of the search for national identity is also apparent.

The practice of urban design is found to be limited in their application even though the majority of the practices are involved in it. This is evident from the lack of efforts put into the design of exterior spaces. The main concern of those in practice is the economic demands on the project. This situation results in the limited resources put into environmental design and more on the selling point of the project such as the finishes and style.

The existing climate of the practice has resulted in the design to be seen as a business venture where unethical practices result in mediocrity in design solutions.

7.2 RECOMMENDATIONS

The recommendations are aimed at improving the current situation in the practice of urban design in the Malaysian context. The case study has shown some of the weaknesses which exists in the current situation as a result of various factors that are directly or indirectly influencing the outcome. These factors are listed as follows:

1 Recognition of the problem

2 The role of the architects in practice

3 The role of the local authority or government

4 The role of the public

5 The role of the Persatuan Architek Malaysia (Malaysian Institute of Architects)

6 The role of the local schools of architecture

7.2.1 Recognition of the Urban Design Problem

In any problem solving exercise the first step is the recognition of the problem. In this case recognition of urban design should be given by (1) Recognising the importance of the discipline (2) Recognising the skills needed to tackle the problem.

(a) The Urban Design Discipline

Before any approach to the solution of the problem can be recommended, the problem must first be recognised. Urban design is currently not fully recognised by the professionals such as planners and architects. The research reveals that a

large number of the architects are not aware that they are dealing with urban design. The special consideration needed by the exterior spaces are not a common practice such as contextual analysis, user perception, socio-cultural association to exterior spaces, sense of unity and others.

The main objective is to champion the cause of urban design either by planners, architects or politicians. The research has shown that a large majority of the architects in practice are dealing with urban design problems. Thus the aim is to place urban space design on top of the agenda before individual building design. The concern must be to organise the buildings externally before interior spaces are designed in which their influence should be in the form of spatial continuity and creating settings for the buildings.

The introduction of urban space design guide is highly recommended in a practice environment that is limited in both time and money on the part of the designers, and lack of expertise and resources on the part of the planning authorities. The danger of uniformity in design as a result of the guidelines is tolerable compared to mediocrity due to neglect as revealed in the study.

The study also reveals that there is little emphasis given by the local planning authorities, to the design of urban spaces in their consideration of any projects. Thus, the local authorities needs to promote better environmental design by giving attention to those spaces in between buildings as well as the actual building design. The main concern is the creation of a public realm that is currently neglected by the designer due to economic demands on the project.

To further acknowledge the problem, will need the recognition of urban design profession and the insistence of their consideration in any planning applications. Currently, this is not required statutorily and is left to the devices of the architects. Standard procedures should require that the designers appraise the existing situation and the way it will be addressed in the design.

(b) The Urban Design Skill

The practice should acknowledged the skills needed to appraise fully the aspects related to urban design in which case the context and the perception of the user are some of the important ingredients. The research reveals that architects with alternative training such as planning and urban design are in a better position to understand the need to consider aspects related to exterior space design.

(c) The Role of the Architect in Practice

The architect has been shown to be the most important person in the design and implementation of any urban design. Since in the context of Malaysian practice there is no recognised urban design profession with the role being taken up by the architects, it is important to recommend an improvement to that practice.

7.2.2 The process

The research reveals that there are gaps in the process adopted by designers in projects relating to urban design discipline. Due to economic demands, time allocation, professional ethics and the ability of the designers, many aspects are not given due attention. These are: contextual analysis, elicitation of information from the user and the public, precedence study, using design principles that are known to produce good results and application of the theoretical framework of design process.

In a situation where the designers are under great economic pressure to reduce the amount of time spent on designing, the application of appropriate techniques would reduce the number of errors.

a) Contextual analysis

It has been shown that the contextual analysis is one of the most important parts of any urban design work. One of the main concerns of urban design is to make

sure that any new intervention must be appropriate to the surrounding area. It must be responsive to the climate, topography, vegetation, buildings and the people living in the vicinity of the project.

The findings reveal that there is a significant number of cases where contextual analysis is not done. It is therefore recommended that designers do contextual analysis to increase the level of information available for consideration in the process that will influence the outcome of the design. These should include an appraisal of the natural environment, building conditions surrounding the site, aspects relating to economics, social, politics and others.

It is difficult to see how any project involving the design of a series of buildings that is not responding to the immediate environment will be appropriate for the setting. In many cases architect simply responds to the general environment of the nation where it is seen as one nation, one architecture. This is proven by the lack of discussions relating to the regional architectural context among the architects as seen in the case study. In cases where this is the prime concern of the architect, the result is very commendable such as the Kota Darul Naim project of Kota Bahru, Kelantan and the Tanjong Jara Tourist Resort in Terengganu.

i) The architect in practice

It has been shown in the previous chapter that one of the weaknesses of the current practice is the limited resources allocated for giving the right information of the site. In fact it has been uncovered that in many cases the designer has never been to the site or be properly informed of the site conditions in terms of their context. In this situation the designer is not able to respond to the environment properly and hence may produce a design that is not appropriate to the neighbouring environment.

This is the case in spite of the introduction of the Environmental Impact Assessment (EIA) as forming part of the required procedures before a proposed

development can be granted permission. The legislation concentrates mainly on the impact of proposed development on the natural environment in terms of erosion and vegetation.

In order to overcome this apparent weakness in the practice, it is recommended that a special requirement on urban design be made or to legislate through acts of parliament. One way is to require the architect to produce a site or contextual analysis during the outline planning application stage. The amendments to the Town and Country Planning Act (1976) in 1995 have required that developers submit a development proposal when applying for planning permission. Permissions on conditions attached will be based on the report. Thus, contextual analysis can be the main requirement of this report which developers or architects have to comply in order to obtain planning permissions. An emphasis on this aspect will lead to architects being more sympathetic to the existing environment. The analysis should produce an inventory of the site conditions that covers the physical and socio-cultural aspects. The following should be included in the inventory:

1 The location map.

2 Site plan which includes the physical details of the site as currently required by the planning authority together with colour photographs to show the detailed view of the site and its surrounding area.

3 A report which outlines the social and cultural aspects of the locality. These should include:

- the history of the site
- the economic status of the people living in the neighbourhood
- the ethnic group of the locality

4 The physical description of the context which describe among others:

- the massing
- the architecture of the surrounding buildings
- the landscape aspects
- lighting and ventilation aspects

The inventory will not only ensure that the architects familiarise themselves with the contextual aspects of the site but will also contribute to the historical records of the existing environment. There is a lot that could be learnt from studying a before and after record of the site. This will form an ongoing learning process.

ii) The Local Authority

In the current practice it is also acknowledged that planners are not fully aware of the environment in their area especially in terms of the architectural context. The legislation will ensure that these planners pay extra attention to aspects relating to the public and the environment. They must be made aware of the three dimensional aspects of the plan rather than looking at it in a two-dimensional way.

It is also acknowledged that there is a lack of expertise within the local authority in order to appraise the environmental aspects of any proposal. There is no doubt a need to address this problem either by creating the necessary post or by sending the planners currently involved in the process to short courses or retraining course.

Contribution from the planners in terms of the physical characteristics and quality of the urban environment is vital in an effort to maintain a sense of unity. The planner is the only official that could protect public interest in terms of public spaces in newly proposed development. The research has shown that guidance is badly needed by the designers in areas related to public spaces.

b) Precedent Studies/Continuity

It has been shown that an understanding of the existing situation is an important step in producing an appropriate and sympathetic intervention in the environment. This is because the success of any design can only be made based on an assessment that refers to the existing situation either in terms of performance, efficiency, beauty and many others. Without knowledge of the existing situation or requirements, it is very difficult to make any meaningful assessment. Thus, precedent studies are not only for a stylisation process but also as a process of performance measurement.

i) The Practice

Currently the architects look at the context in an effort to produce an acceptable style rather than an exercise of maintaining continuity in the existing context of the built environment. The precedent study on the style must relate to the immediate environment in order to generate a sense of belonging. At the same time, appropriate settings can be designed by studying similar development.

ii) The Authority

Since the precedent study will generate continuity and a sense of belonging, it is recommended that the study form part of the assessment procedure by the authority in the process of granting planning permission. This procedure will ensure that designers do not produce design based purely on their whims and fancies.

7.2.3 The Marketing

The main aim here is to generate interest and appreciation of good traditional urban form or architecture through marketing. Any good design must be a marketable product; or else it would be difficult to sell the idea. In the move towards market economy, any form of urban or architectural development must

conform to the economics and other sociological needs of the user. There is no point in developing something that a client could not afford no matter how prestigious the development is. Hence, the desired form must be affordable.

This is where marketing will be able to promote good design. Through marketing strategies, as shown in the case study, the continuity of the urban form should be portrayed as a desirable and attractive commodity. This marketing strategy has been employed in many cases to a great success where it has been promoted that traditional style such as Mock Tudor, Georgean etc. is an indication of a better living environment.

Many tourist developments such as the Impiana Resort at Cherating by CSL Associates, which uses traditional domestic architecture as a reference produces positive result. However, it must also be stated here that the trend in Malaysia is that vernacular style is for the rich and famous. It is seen as an elitist preoccupation. This is measurable by the number of expensive condominium and luxurious hotels that have been built using the traditional domestic architecture style.

The research has revealed that style is one of the most important factors that influence the acceptance of a design. In promoting better exterior space design it must be associated to the language of style as seen in many high cost development. Thus, it is recommended here that in the cultural context of Malaysia, urban design should be promoted in terms of their image and style.

7.2.4 Urban Design Method

One of the main aims of this research is to recommend urban design method that should overcome the weaknesses detected in the current practice and to utilise the positive contributions revealed in the findings. The method addresses the three early stages of the process (1) The pre-design phase (2) The schematic design phase and (3) The Design development phase.

The main findings of the research suggested that the most commonly used method of design is that of the fragmental method where some steps in the process are omitted due to limited time and resources. Generally the approach is to use personal intuition and past examples to fill in the gaps.

It is therefore recommended that a similar approach be used in cases where it is not possible to go through the various stages to derive to the solution. One approach is to use the 'generate and test' procedure where possible solutions are offered from experience or precedence studies of similar project. These solutions are then tested against all the possible requirements related to the design such as the intended uses, site context, public participation, authority guidelines and others.

In the pre-design phase the method will need as much examples as possible on past solutions to the problem which will become the base for the initial proposal. This process will also build up an understanding of the problem and suggestions for possible solutions.

In the schematic design phase, solutions should be acquired by using the pattern that is based on the manipulation of line and centre. The centre that is in the form of courtyard, square, green space and others should be organised in such a way that there will be a central space to become the focus of the whole arrangement. This will create a hierarchy of spatial sequences and at the same time, is very pragmatic where the sense of security could be established. In addition to that, there will be lower maintenance costs.

In the design development phase, further application of pattern on the facade design will generate a possible acceptable solution to the problem. The aim is create an image that is based on the use of style and form that should be generated through precedent studies. In this phase it is recommended that the 'generate and test' procedure be carried out to develop an acceptable proposal.

7.2.5 Role of the Local Authority/Government

The role of the local authority is very crucial as revealed from the findings where many of the designers provide public spaces in their design in order to meet the building regulation and other guidelines produced by the local authority. Thus, the current trend in the provision of urban spaces is closely related to the role played by the local authority. In this respect the authority have a crucial role to play to safeguard the needs of the general public. Theoretically this is the role that the planners should adopt. However, it is found that in actual practice the planners are not fulfilling that role. Thus, it is recommended that the planners in the local authority organisation adopt the role of arbitrator on behalf of the public.

In cases that involve two adjoining developments, only a third party could co-ordinate their responses to each other and in this type of case, the local authority's function is very crucial.

a) The Local Authority Organisation

It has been stated before that the role of the local authority is to safeguard the interest of the public. This awareness must be created within the organisation and must always be part of the decision making process. It is recommended that within the structure of the local authority organisation, there are personnel who will be looking into the physical planning and design of the built environment. This is to balance the existing nature of planning activities that is more towards resources distribution and social justice.

b) The Authority in Practice

From the study it has been identified that the role of the authorities, especially local authorities in terms of design, has been very minimum. Many designers are looking up to the authorities in their fight to provide better environment for the

public. Many of these designers are at the mercy of the developers in trying to provide a better public realm.

There is a strong argument that the developer will only provide the minimum space as required by the local authority in order to secure a planning permission in their effort to make maximum profit from the project. This thinking as adopted by the developer cannot be judged wrong because they are not really directly responsible for the well being of the environment. The reason is that they are there for the business, otherwise they will not be interested in investing their money for the venture.

In a market driven society, the developers are there to exploit the demands for housing. Their target is to sell the houses as soon as possible and the housing standards are not their concern. In this aspect, the role of the local authority is to safeguard the interest of the society in respect of the environment. They should exercise their power to make sure that the development is responsive to the current and future needs of the people. This role has been outlined in the Local Government Act and the Town and Country Planning Act 1976.

The public is not fully aware of the quality of the built environment as revealed by the attitude of a majority of the architects in practice, which makes the role of the local authority to be more important. In a developing country like Malaysia, considerations for housing needs are of utmost importance due to the migration of the population from the rural areas to the urban area in search for better living. The rate of housing development in the urban area is very slow compared to this urban migration in such a way that demands outstrip supply by a big margin. In their quest for shelter, aesthetics and quality of the public spaces do not ranked high in terms of priority. Given this situation and the unscrupulous developer, who wants to make a quick profit, the authority will have to take a greater role other than land distribution, and economics and social considerations.

In all of the cases reviewed in this study the role of the local authority has been limited to making sure that the developments are not in conflict with the building

bye-laws. There is little input in terms of the desired environmental qualities and the design of public spaces. Whilst in country like Britain, the planning authority plays an active role in the design process by providing guides lines and ideas about aesthetics, in Malaysia the role is very passive and almost no input about aesthetics. Thus, it is recommended that the role of the planning officers be widened to make sure that the public interests are cared for in any development.

In order to realise this recommendation there must be sufficient number of planners to carry out the role properly. Studies must be made in order to provide the necessary numbers. The study must also include a restructuring of the district offices so that a planner can be employed. In this case the local planning authority will be less dependent on the central planning agency and therefore able to response appropriately to local matters.

c) The Authority and the Public

The role of the local authority is to safeguard the interest of the public. They act as the carer of the public in terms of the services and facilities needed to ensure a better living standard in the area. It is recommended that the authority encourages public participation in any development by taking an active role in planning inquiries. At the same time the authority could further demand that any development that involves the creation of public realm must have some form of public participation before planning approval can be granted.

The authority could also encourage the formation of interest group in the locality to represent the people's views in any inquiries.

7.2.6 Role of the Public

It has been discussed earlier that people is one of the most important aspect of any urban design. Thus, to satisfy their needs is one the central aim of any design exercise. Hence there are many roles that the public must play in order to make sure that the designer is doing the job properly.

a) Pressure Group

It has been suggested previously that the public in Malaysia is not well conversant with the design aspects of the built environment. There is limited number of pressure groups that could mobilise the public opinion. At present, 'Badan Warisan' (Heritage Group) and 'Sahabat Alam' (Friends of the Earth) are the two groups that concerned themselves with the environmental issue, in which 'Badan Warisan' is the only independent body that concerns themselves with architectural heritage. However, their main concern is the conservation of old buildings, therefore not really related to the public facilities and spaces in the urban environment. Hence, the public must be made aware of the importance of urban design that is the provision of public places in the built environment.

It is recommended earlier that the authority could encourage the formation of local interest group to express their views and opinions collectively.

b) The Public Education

The awareness of better environment can be started from the lower years of the children education, which is just beginning in the new national curriculum. However the curriculum concentrate more on the natural environment rather than on the built environment. Thus there is scope to add the man made environment to the existing curriculum as a long term measure. In the short term however it is more urgent to encourage the people to demand more public places to be introduced in the housing and township project from the developer. Program on television and other mass media on good design can be a starting point. In this case the government will have to play a greater role in providing the finances for such a venture.

It has been revealed in the research that design language in the society was found to be limited to the appearance of the buildings and the provision of services. The quality of the environment is a new phenomenon that must be developed through

concerted effort by the government. At present only the government or local authority are capable to champion the needs of the public.

c) The Public Awareness

Currently the public is mainly aware of good buildings and knows very little of good built environment as indicated from the study, or at least that is the perception of the practising architects. This is an intriguing fact because the outdoor activities of the urban population in Malaysia is wide ranging and large in scale. For example the 'pasar malam' (mobile night market) where people go to buy food, clothing and other everyday needs, can be found in almost any housing projects. These markets are temporal and have no purpose - built location, occurring at convenient locations, normally of central location and almost always on a public road. The ingenious use of space is very encouraging; however, the situation should be taken a step further where it should be given special consideration in the design process. Yet this is not the case as none of the architects interviewed referred to this activity in their design.

This temporal aspect of the city life can also be highlighted by the 'gerai' (stalls) which operate at certain time of the day, normally at night. These stalls sell foods, clothing, tools, luggage and many others. They are normally located on the busy roads, occupying spaces that are not designed purposely for these activities.

Thus the designers are highly recommended to look into the activities that occur in the urban spaces and generate new ideas in the proposed new developments. The public awareness on the use of urban spaces must also be studied and exploited for future design.

7.2.7 Role of the Persatuan Akitek Malaysia, PAM (Malaysian Institute of Architects)

The main aspect concerning the institution is related to the finding that reveals the architects' awareness to urban design issues and practice. The findings indicate that a large number of architects consider themselves to be urban designer without any additional training that may prepare them to do the job properly.

In any organisation peer group is very important where the members can keep an eye on each other. PAM could actively get involved in promoting urban space design to their members by organising conferences specifically looking at the theory and practice of urban design. Awards should be given to urban design related projects in order to generate awareness to the discipline and at the same time providing examples that could be used as precedence.

The limited awareness to contextual analysis as revealed in the study should be promoted as part of an undesired practice. The building design awards that are currently being awarded should also take into account the aspect of context in the building appraisal and not simply looking at those buildings as an island site. The building design should also promote better exterior space relationships that address the needs of the general public.

a) The General Architectural Practice

The study reveals that the general practices are found to be focusing on the building design with little emphasis on the exterior spaces. Their contextual relationship to other buildings and public spaces are not given due attention in terms of design. Hence, the contextual relationship should be given special attention by the institute as a promotion of good practice.

In relation to public awareness and participation the institute should encourage the members to involve them in the process especially those projects related to

housing and urban in-fill. The attitude should be changed to adopt methods that allow the public as the user to participate in the design of their environment. Some form of public participation must be encouraged where their perception of the built environment could be clearly understood as compared to current practice where it depends solely on the perception of the designer and the marketing personnel.

The other main concern here is related to the findings that the ethics of those in practice are found to be questionable. There are also many architects who do not follow the PAM fee structure hence forcing them to cut corners in their approach to design. The study reveals that this is one of the reasons cited by the designers that influences the outcome of their design. Thus the limitation on the budget means that they do not spent enough time and resources to fully understand the public demands, the design and contextual aspects of the problem.

Hence it is recommended that the institute pursue this matter to prevent further occurrences of the unethical practices. At the same time developers must also bear some of the responsibilities.

b) The Public Relation

PAM should also have a role to play in educating the public as well as their members. At present the promotion of good public design do not exist in the activities of PAM. There is no awards given to projects that produce a good solution to the public needs, such as a plaza, square and others.

Currently it is observed that PAM plays a limited role, in fact, to date, they do not really generate any public awareness campaign. The activities of PAM at the moment, is more towards the promotion of their members that have little interest to the general public.

7.2.8 The Roles of the Local Architectural School

There are currently six public schools of architecture in the country; Universiti Teknologi Malaysia, Universiti Sains Malaysia, Institute Teknologi Mara (Universiti Teknologi Mara), International Islamic University of Malaysia, Universiti Putra Malaysia and Universiti Malaya. They all offer courses in architecture leading to Part II PAM which is equivalent to the Royal Institute of British Architects Part II qualification. All of the schools introduce some aspects of urban design at some stage of the course. However urban design is not yet a familiar language being used by the students. Currently even the term urban design is translated to 'rekabentuk bandar' which means town design.

Thus it is recommended that the language of urban design be expanded in their research and use in the schools.

The finding that only a small number of those who graduated from local universities did contextual analysis in their approach to design gives some reflection on the local schools of architecture and the professional practice in general. It is recommended that the schools emphasise on urban design rigorously in the design projects to develop an early appreciation to its importance. The area of concern should include contextual analysis, precedent studies, studies of traditional urban form, socio-cultural and behavioural analysis of urban form and case studies of existing towns and cities.

Research into the area is highly recommended to develop further understanding of the phenomena especially in relation to behavioural and socio-cultural implications on the physical characteristics of the urban environment. It is revealed during the process of this research that there are limited studies related to urban design available to the designers as reference.

7.3 SUGGESTIONS FOR FURTHER RESEARCH

There are several ways in which future research on urban design and design in general could be expanded through the effort of this research in the Malaysian context. Firstly, through further analysis of the data collected in this research. One area is to examine why the professionals and the developers have such perception about the public general attitudes on design. Hence, it is recommended that future research should look into the public perception on environmental design. These findings will have implications on the approach that designers use in their design process.

Future research should also look into the role of the local authority and other government agencies which have significant effects on the design method used by the designers. In this research the role has been analysed from the designers' point of view and how that influences their approaches. It will be revealing to see the attitude of the government agencies on the role of the designers in providing better urban environment.

The role of the traditional spaces and buildings in future design is very important to maintain the continuity in the built environment. In this research some observations are made about their influence in design. However, this aspect deserves a study on its own to develop an in-depth understanding that may influence future design. Patterns can be developed for future design using the traditional spaces as a precedent. It is revealed that some designers used the concept of traditional spaces in their design approach and are able to show their usefulness. However, the success of this approach is not revealed. Thus future research could go further by looking into the results of such approach from the users perspective.

Another area of concern is the public participation in design and its contribution to the design process in the context of Malaysian practice. The findings in this study will have significant contribution to the methods adopted by the designers in their design approaches.

This research has established the importance of pattern in the spatial and physical design of urban form in Malaysia. Thus future research should develop this concept further by generating the factors and characteristics of such pattern for their future application. The pattern should relate to peoples' perception of the urban form.

7.4 IMPLICATION AND CONTRIBUTION TO EXISTING KNOWLEDGE

The main aim of this research is to characterise the practice of urban design in Malaysia by looking into the method and approaches to the design of urban spaces in architectural practice. The findings reveal that there is limited application of design method in practice where designers are found to be using the trial-and-error and generate-and-test approach in most of the cases. The limited time available for designing, means that, a direct and less elaborate approach have to be used. In this situation the method adopted is fragmented where certain important stages in the design process are omitted in preference to intuition.

The theory on design approach suggests a cyclic process of analysis, synthesis and evaluation or other version that is based on the three stages. This is commonly used in practice though they tend to merge with no clear boundary between the three. The research reveals that the analysis stage in the design process is mainly done in order to look for possible solutions that could meet the objectives set by the design brief. This is similar to the 'conjecture and refutation' method where alternative solutions are offered and tested to destruction.

The study reveals that by using patterns that have been tested in previous projects an acceptable way of overcoming the limitations imposed by the project's economic demands is possible. The patterns are used in both the planning stages and the detail design of the facade. The usefulness of this approach is apparent in the housing design in which there are repetition of house design regardless of

location and context. The finding of the research shows that in most of the housing projects the role of the architects is to decide on the organisation of spaces in terms of line and centre and the application of facade design. In urban design, the detail interior layout of the houses will not significantly influenced the arrangement of the exterior spaces except in relation to entrance and exit, and view from the various rooms.

Thus the use of pattern in planning and facade design will reduce the time for designing and the errors made in the finished project. Experimentation is also found to be related to pattern where for example respondent no:7 from the in-depth interview suggested that new urban form could be created by changing the existing pattern of the housing layout. This finding contributes to the theory on technique for urban space design where the use of pattern is a possible solution to a situation that demands quick response by the designer.

The research has established that the people's perception is mainly associated to style that reflects the general classification of traditional houses that relates to their roof form. Thus, in the Malaysian context style and roof form are the main design features that will create a strong image by the people. It is also a major design generator that is strongly reflected in the practice.

The research also reveals that the main planning concept in practice is the use of line and centre. The designers are mainly concerned with the two-dimensional aspect of the urban spaces in their search for a better alternative. This confirms the theories reviewed earlier that the main elements of urban design are the streets and squares that are similar to those applied in other parts of the world. This also relates to the theory on pattern of design as mentioned above.

The two elements of urban space that is streets and squares and the use of pattern in seeking out possible solutions could be used to good effect. The pattern generated for design should also consists of its two elements that is the line and centres.

The research reveals that in the current climate of Malaysian practice where the end product is the main concern, the use of formal theories are limited where designers tend to use their practical experiences and 'trial-and error' procedure to generate solutions to their design problems. Solutions are also repeatedly used when found to be successful. Thus, it implies that the design process in Malaysian practice is product based which reflects the value system of the general public.

7.5 CONCLUSION

This research has made an attempt to focus on the practice of urban design in Malaysia and the method that has been adopted to generate solutions to the problems related to urban space design. Specific emphasis has been laid on the nature of urban design problem and the way in which the problem is addressed by the designers. The primary concern of this research is with the method and theories used by the designers in creating the urban setting through the design of exterior spaces. This is done by studying the types of information used by the designers in the design process and how the information was obtained.

It is found that urban design is one of the major problems addressing the building industry. The current problems related to urban environment in Malaysia are due to the gaps in design process adopted by the designers. The economic demands and the perceived attitude of the general public are found to be the main reason for their occurrences. Professionalism should also be up hold in such a way that most aspects relating to the design process will be carried out.

It is therefore recommended that, in order to achieve urban setting that is appropriate for the intended uses, a comprehensive approach to design must be adopted where information about the context, heritage, users and general public must be obtained. In connection with it a general method for urban design in Malaysia which includes essential changes in the approach to design, public participation, role of the local authority and general public, information to be gathered, and general principles to be used in design, is recommended. This

research hopes that these measures would achieve a greater appreciation of urban design and produce a better setting for the public realm.

It is also recommended that the design process adopted and generated should be focused on the end product and not stressing on the design of the process itself. This is due to the value system of the general public who is more concerned with the end product than the process of getting it. Thus the development of acceptable pattern in relation to spatial and physical quality would be highly recommended for future research. Design guidelines produced by local authority should also cover the same aspect.

Finally, it is the intention of this research to focus on areas of concern to be addressed by the designers for future urban design practice. While the findings contribute to an understanding of the importance of the discipline and the current approaches to the problem that highlighted their strengths and weaknesses, it provides limited detailed solutions on how to create good urban design in the future. The next step is to test the approaches suggested in future design practice.

PART IV

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APPENDICES

Note

Whenever you are requested to provide your own answer, you may give your answer either in **English or Malay** and you may attach additional sheet(s) of paper if so required.

Please tick one box for every question untill when you meet with the instruction "**please tick**" you may tick as many boxes as you feel appropriate.

Please make sure you **answer all the questions** before sending it back.

THE NATURE OF DESIGN PROJECT

---

1. Which of the followings do you consider to be urban design (please tick)?

   [ ] 1. Designing town or city
   [ ] 2. Designing building within the town/city centre
   [ ] 3. Designing group of buildings
   [ ] 4. Street design
   [ ] 5. Square design
   [ ] 6. Others (please state)

   .....
   .....
   .....

2. Do you consider yourself to be an urban designer?

   [ ] 1. Yes
   [ ] 2. No
   [ ] 3. Do not know

3. Which of the following design projects were you involved in the last five years (please tick)?

   [ ] 1. Housing
   [ ] 2. Hospital complex
   [ ] 3. Township
   [ ] 4. Town\city centre
   [ ] 5. University campus
   [ ] 6. School complex
   [ ] 7. Holiday resort
   [ ] 8. Complex of offices
   [ ] 9. Square
   [ ] 10. Street
   [ ] 11. Shopping complex

a. How do you find the problem relating to above design project(s)?

[ ] 1. Very easy
[ ] 2. Easy
[ ] 3. Neither easy nor complex
[ ] 4. Complex
[ ] 5. Very complex

b. Do you approach the design of the above project the same as that of normal architectural design project?

[ ] 1. Yes
[ ] 2. No
[ ] 3. Sometime
[ ] 4. Do not know

If 'no' in what way is it different?

.....
.....
.....

4. In the design of the project(s) [question 3] did you give special emphasis to the exterior spaces?

[ ] 1. Yes
[ ] 2. No

If yes how?

.....
.....
.....
.....

DESIGN PROCESS

---

5. Which of the above design projects do you think is the most successful?

Project:.....

Client:.....

Cost:.....

Date of beginning:... .....

Date of completion:.. .....

6. What are the aspects of the project that makes you decide that it is most successful?
(Please rank the aspects chosen in order of important)

Aspects :	Rank: unimportant	1	2	3	4	5	important
a.	Client satisfaction	[ ]	[ ]	[ ]	[ ]	[ ]	
b.	User satisfaction	[ ]	[ ]	[ ]	[ ]	[ ]	
c.	Economic viability	[ ]	[ ]	[ ]	[ ]	[ ]	
d.	Aesthetically pleasing	[ ]	[ ]	[ ]	[ ]	[ ]	
e.	Contextually pleasing	[ ]	[ ]	[ ]	[ ]	[ ]	
f.	Personal satisfaction	[ ]	[ ]	[ ]	[ ]	[ ]	
g.	Environmentally (noise, light etc.) pleasing	[ ]	[ ]	[ ]	[ ]	[ ]	
h.	Meet local authority or political aspiration	[ ]	[ ]	[ ]	[ ]	[ ]	
i.	Others (please state)	[ ]	[ ]	[ ]	[ ]	[ ]	

.....

7. Are you aware of any method for designing?

[ ] 1. Yes
[ ] 2. No
[ ] 3. Do not know

If yes, please list the type of design methods that you are aware of.

.....
.....
.....
.....

8. Do you used any specific approach in your design?

[ ] 1. Yes
[ ] 2. No
[ ] 3. Do not know

If yes please describe briefly the method used.

.....
.....
.....
.....

9. If the answer for question 8 is 'no' how do you go about doing the design?

[ ] 1. Use own intuition
[ ] 2. Use past solutions/experiences
[ ] 3. Do not know
[ ] 4. Others (please list)

.....
.....
.....

10. Is the method used for the design project (question 5) similar to your normal architectural design project?

[ ] 1. Yes
[ ] 2. No
[ ] 3. Do not know

11. In your opinion and through your practice which of the following form part of the process of design (please tick)?

[ ] 1. Decision making
[ ] 2. Problem solving
[ ] 3. Creative process
[ ] 4. Communicative process
[ ] 5. Others please state

.....

.....

.....

Note

The following questions are related to the design project for **question 5**

12. What are the agencies involved in the design process? (Please tick)

[ ] 1. Other consultants
[ ] 2. Local authorities
[ ] 3. The public
[ ] 4. The contractor
[ ] 5. The client
[ ] 6. The user
[ ] 7. Others (please state)

.....

13. Do you do any contextual analysis related to the design?

[ ] 1. Yes
[ ] 2. No
[ ] 3. Do not know
[ ] 4. Sometimes

If is 'yes' what are the aspects of the context that you particularly look for

.....
.....
.....
.....
.....
.....
.....

14. How important is the contextual analysis in your design process?

[ ] 1. Very important
[ ] 2. Important
[ ] 3. Not important
[ ] 4. Do not know

15. Do you consult any of the following persons in the process of design (please tick)?

[ ] 1. Your client(s)
[ ] 2. Local authorities
[ ] 3. General public
[ ] 4. Potential users
[ ] 5. People living in the vicinity of your site
[ ] 6. Other consultants
[ ] 7. None
[ ] 8. Others (please state)

.....

16. If the answer to question 15 is 'yes', please explain how?

i. Your client(s)

[ ] 1. Advertise in the local media
[ ] 2. Through meetings
[ ] 3. Through observations or user study
[ ] 4. Through questionnaires or enquiries
[ ] 5. Through planning appeals
[ ] 6. Through exhibition
[ ] 7. Self-build
[ ] 8. Community planning and design
[ ] 9. Through planning surveys
[ ] 10. Others (please state)

.....

ii. Local authorities

[ ] 1. Advertise in the local media
[ ] 2. Through meetings
[ ] 3. Through questionnaires or enquiries
[ ] 4. Through planning appeals
[ ] 5. Through exhibition
[ ] 6. Community planning and design
[ ] 7. Through planning surveys
[ ] 8. Others (please state)

.....

iii. General public

[ ] 1. Advertise in the local media
[ ] 2. Through meetings
[ ] 3. Through observations or user study
[ ] 4. Through questionnaires or enquiries
[ ] 5. Through planning appeals
[ ] 6. Through exhibition
[ ] 7. Community planning and design
[ ] 8. Through planning surveys
[ ] 9. Others (please state)

.....

iv. Potential users

[ ] 1. Advertise in the local media
[ ] 2. Through meetings
[ ] 3. Through observations or user study
[ ] 4. Through questionnaires or enquiries
[ ] 5. Through planning appeals
[ ] 6. Through exhibition
[ ] 7. Self-build
[ ] 8. Community planning and design
[ ] 9. Through planning surveys
[ ] 10. Others (please state)

.....

v. People living in the vicinity of your site

[ ] 1. Advertise in the local media
[ ] 2. Through meetings
[ ] 3. Through observations or user study
[ ] 4. Through questionnaires or enquiries
[ ] 5. Through planning appeals
[ ] 6. Through exhibition
[ ] 8. Community planning and design
[ ] 9. Through planning surveys
[ ] 10. Others (please state)

.....

vi. Other consultant

[ ] 1. Through meetings
[ ] 2. Through questionnaires or enquiries
[ ] 3. Through exhibition
[ ] 4. Community planning and design
[ ] 5. Through planning surveys
[ ] 6. Others (please state)

.....

16. Do you use the traditional urban spaces as a reference to your design?

[ ] 1. Yes
[ ] 2. No
[ ] 3. Do not know

If yes please list three aspects or elements.

1. .....
2. .....
3. .....

17. Do you use the traditional architecture as a reference to your design?

[ ] 1. Yes
[ ] 2. No
[ ] 3. Do not know

If yes please list three aspects or elements.

1. .....
2. .....
3. .....

18. Which of the following statement do you agree?

[ ] 1. The end product is more important than the process
[ ] 2. The process more important than the end product
[ ] 3. Both the end product and process are important
[ ] 4. Both the end product and process are unimportant
[ ] 5. Do not know

19. Which of the following do you regularly used as guide to your design (please tick)?

[ ] 1. Plot ratio
[ ] 2. Building height
[ ] 3. Plot size
[ ] 4. Aesthetic composition
[ ] 5. Contextual composition
[ ] 6. Building cost
[ ] 7. Development budget
[ ] 8. Clients aspirations
[ ] 9. Economic demands
[ ] 10. Local authority/government aspirations
[ ] 11. Construction/materials used
[ ] 12. Others, please list

.....
.....

20. Which of the followings do you regularly have to face in the design process (please tick)?

[ ] 1. Decision making
[ ] 2. Aesthetic/creative judgement
[ ] 3. Communication/presentation process
[ ] 4. Problem solving
[ ] 5. Others (please list)
.....

BACKGROUND OF THE RESPONDENT AND FIRM

---

21. Name of respondent:

22. Sex:

[ ] 1. Male
[ ] 2. Female

23. Race:

[ ] 1. Malay
[ ] 2. Chinese
[ ] 3. Indian
[ ] 4. Sikh
[ ] 5. European
[ ] 6. Others (please state)

.....

24. Age:

[ ] 1. Below 20 years
[ ] 2. 20 - 24 years old
[ ] 3. 25 - 29 years old
[ ] 4. 30 - 34 years old
[ ] 5. 35 - 39 years old
[ ] 6. 40 - 44 years old
[ ] 7. 45 - 49 years old
[ ] 8. 50 - 54 years old
[ ] 9. 55 - 59 years old
[ ] 10. 60 and above

25. Experience (practising):

[ ] 1. 0 - 4 years
[ ] 2. 5 - 9 years
[ ] 3. 10 - 14 years
[ ] 4. 15 - 19 years
[ ] 5. 20 - 24 years
[ ] 6. 25 and above

26. Professional qualification

[ ] 1. Architect
[ ] 2. Planner
[ ] 3. Architect/planner
[ ] 4. Architect/urban designer
[ ] 5. Planner/urban designer
[ ] 6. Landscape architect
[ ] 7. Architect/landscape architect
[ ] 8. Planner/landscape architect
[ ] 9. Others, please state

.....

27. School graduated from (Part II PAM or equivalent):

[ ] 1. Local institution (Malaysia)
[ ] 2. United Kingdom
[ ] 3. USA & Canada
[ ] 4. Australia
[ ] 5. New Zealand
[ ] 6. Singapore
[ ] 7. Others, please state

.....

28. Name of firm:

29. Nature of firm:

[ ] 1. Architect firm
[ ] 2. Planning firm
[ ] 3. Architect and Planning
[ ] 4. Landscape Architect
[ ] 5. Interior Designer
[ ] 6. Local authority
[ ] 7. Developer
[ ] 8. Academic institution
[ ] 9. Others (please state)

.....

30. How long has been with the current firm:

[ ] 1. 0 - 4 years
[ ] 2. 5 - 9 years
[ ] 3. 10 - 14 years
[ ] 4. 15 - 19 years
[ ] 5. 20 - 24 years
[ ] 6. 25 and above

If less than five years please name the previous firm.

Name of firm:

No of years:

31. The type of projects personally involved in the last five years

	Type of Project	No.
1.	Individual buildings	[ ]
2.	Group of buildings	[ ]
3.	Housing scheme	[ ]
4.	Township	[ ]
5.	Master planning	[ ]
6.	Landscape	[ ]
7.	Interior design	[ ]
8.	Others (please state)	[ ]

32. The number of designer and their profession in the firm

	Designer	No.
1.	Architect	[ ]
2.	Planner	[ ]
3.	Architect Planner	[ ]
4.	Engineers	[ ]
5.	Landscape Architect	[ ]
6.	Interior Designer	[ ]
7.	Quantity surveyor	[ ]
8.	Others (please state)	[ ]

.....

INTERVIEW SCHEDULE

DESIGNER

1. General views on urban design/urban intervention in Malaysia
   What urban design is about?
   Strength and weaknesses of current Malaysian practice
   Problem associated in their practice
   Is there a need for special skill?
   If yes - why?
   If not - why not?

2. How the view on urban design has changed over the time.

3. The job history of the chosen scheme - e.g commercial centre for a housing scheme
   Could you please choose a most recently completed scheme (such as a commercial centre for a housing scheme) which you have been responsible for:

   a) Who the client was (specifically)?

   b) With whom did you deal during the design development?
      How the relationship can be described?

   c) Were other professionals involved in the design?

   d) What were the design criteria for the project?
      Who established those criteria?
      Who decided finally what would be included in the project?
      Why were these things included?

   e) Were there any special considerations or restraints imposed which were uniquely important to the final design? (funds, city codes, etc.)

   f) Design evolution -

      processes
      How would you describe the design process?
      What are the processes involved?
      Was it based on any theory of design practice?
      How was the design evolved?
      What were the steps taken in the process?
      - analysis
      - synthesis
      - evaluation

      Would change the process in future practices?
      Why do you think it is necessary?

      theory
      Did you have any specific theories for the design?
      Where did they come from?

Have you developed new theories in the process? What are they and how do you decided on them?

method Did you use any specific method for the design?
If yes please describe it
How did you generate ideas for the design?
How did the initial idea come about?
Whose idea was it?

g) Did you have an image of future users?
How were they formulated?
Who did you expect to use the project? Why?

h) Did you have an image of the built environment of the project?
How were they formulated (or the sources of it)?

i) What is your attitude towards traditional images of the built environment?
How were these incorporated in the design?

j) The development of the brief and the functional requirements

k) Any particular objectives for the design of public spaces?
How much of the project costs were spent on these spaces?
e.g lighting
street furniture
car parking
sculpture/fountains etc.
employ any artist

j) Would you describe how you expected people to use the various parts of the site?
How was this established?

k) Any form of user participation and why is it necessary?
- if it has been carried out, how it was done and how the outcome influence the design
- if not, why not

l) The use of socio-cultural data
- what is it and how they were obtained
- if not, why not

m) Any attempt at behaviour study
- if yes, how?
- if no, why not and what are the factors which inhibit such a study

n) Contextual analysis
- how is it done and their influence on design
- if not, why not?

o) In the design what is more important, the interior spaces or the exterior spaces?
Why?

p) How important is the circulation layout for the project?
How does it influence the overall design of the environment?
Any special attention to disable access?
If yes - in what way?
If not - why not?

q) Is there any emphasis for sustainable development?

4. Whether the design was the work of a single designer or a team.
- if a team outline how they work together

5. Disaggreement with
- clients
- superiors
- local authorities
- public/user

6. Have you been to the site since it has been completed?
Were people using it as you had anticipated?

7. How do you feel the site as built?
How do you think the user feel about the site?
How did you come to the conclusion?

8. What parts do you think function best?
Worst?

9. Future actions if faced with the same design problem.
If you had the opportunity would you change any parts of the site? Why?

10. Would you change your design process if you were commisioned to do another project like this one?

11. Any specific theories developed during practice or the use of any other existing theories.
Can you tell what are the most important aspects to be considered in the process of design?