HUMAN BEHAVIOUR
IN PUBLIC SPACES

By

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THESIS

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I hope that the effort invested in this study by myself and others is productive in that it becomes used as a resource by professionals and decision makers who have a direct role in affecting the shape of public spaces.

List of Abbreviations

AS	Australian Standards
AustLII	Australasian Legal Information Institute
BCA	Building Code of Australia
CPTED	Crime Prevention through Environmental Design
DA	Development Application
DCP	Development Control Plan
DEM	David Evans Morris
DOP	Department of Planning
EP & A	Environmental Planning and Assessment Act
HREAP	Human Research Ethics Advisory Panel
LEP	Local Environmental Plan
NSW	New South Wales
UK	United Kingdom
USA	United States of America

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1.0 Introduction: The Study of Human Behaviour in Public Spaces

Human behaviour, experiences and social interactions in public spaces are believed to be the result of the processes of the mind that are influenced by the different features of these spaces. These features may be physical, social, cultural or sensory but what they share in common is the power to affect people's behaviour in, and experience of the public realm.

Those responsible for designing, producing and maintaining the form and feel of public spaces are professionals such as planners and designers. Public authorities such as local councils, law enforcers and other decision making bodies also have an important role. These figures dictate what public spaces will look like, where they will be located, how they will be enclosed, and in effect, how they will be experienced by the users.

At the same time, the users of these spaces are also capable of influencing their form and feel, by introducing social characteristics and elements such as culture, gender, sexuality, ethnicity and age. These elements, together with the physical and ambient (or non-physical) features of the public space, are capable of having a profound effect on the way that people behave, experience and interact in public spaces.

In a journal article entitled *A Theory of Human Motivation,* the behavioural theorist Abraham Maslow (1943) identified a number of factors that are essential in motivating people and steering people to behave in certain ways. The theory which came to be known as *Maslow's Hierarchy of Needs* suggests that the essential factors in motivating behaviour are the physiological, biological or aesthetic needs, the need for safety, the need for love and belonging, and the need for self-actualisation, status or esteem (Lang 1991; Maslow 1943).

By drawing from Maslow's *Hierarchy of Needs* and considering the relationship of these factors with the built environment, it is reasonable to hypothesise that certain aspects of human behaviour are capable of being affected by the presence of the physical and ambient features of public spaces. The physical features of public

spaces may include elements such as buildings, streets, land forms and other people, whereas the ambient features may include elements such as illumination, sound and temperature.

This interest in the complex relationship between human beings and their surrounding environment is not new and is referred to as environmental psychology. It is a field of interest that is not only shared by psychologists, sociologists, geographers and anthropologists, but also by planners, designers and public authorities. Environmental psychology studies how people relate to the built environment, by examining how their mental processes and behaviour affects, or is affected, by their surroundings.

The fundamental concern of environmental psychology is that of the quality of life and the quality of the built environment. The role of the planner, designer and public authority in all of this is ultimately to improve human environments, by devising practical methods, policies and planning, design and educational techniques (Zube & Moore 1987) that are receptive to the findings of environmental psychology.

1.1 The Problem

Despite the fact that people are essentially the most important and only clients of the built environment, the figures who are responsible for designing, producing, and making decisions about the built environment, do so without critical consideration of how developments will affect the experiences of their most important clients – the users of public spaces.

While the decisions of designers may be influenced by primary factors such as the paying clients' desires and limitations on time and budget, the decisions of council planners may be influenced by the requirements of planning legislation and government policies. Often the matters that are most significant in terms of their impact on people are the most difficult to manage through policies and controls. Consequently, matters such as how the physical and ambient features of public spaces affect behaviour, may receive the lesser attention or critical consideration by professionals.

By understanding how people respond to their surrounding environment, decision makers would be better able to think critically and simultaneously, rather than detachedly, about the impacts of their designs on the behaviour and experience of people.

1.2 Research Question

My personal interest in this study area has stemmed from a lifetime of curiosity and observations made of people and their use of public spaces. I have based the study on the central hypothesis that certain visible and non-visible elements of public spaces which can be shaped by built environment professionals and public authorities are capable of influencing the way people experience public spaces, the way they use public spaces and the way in which they interact with others. The curiosity about the interplay of these elements has led me to the research question that is central to this study:

> What are the physical and ambient features of the built environment that shape public spaces, and how do they affect the behaviour and experience of people in public spaces?

In order to answer this question, the thesis also explores the following questions:

- How do people respond to the physical and ambient elements of public spaces? This will be explored in Chapters 3 and 5.

- What are the roles of built environment professionals such as planners, designers and public authorities in shaping and producing public spaces, within the context of the New South Wales (NSW) Planning System? This will be examined in Chapter 4.

- How can the design of public spaces effectively take into account the natural human responses to the physical and ambient settings of public spaces, at both the early design stages and the final development proposal stages? This will be considered in Chapter 6.

1.3 Purpose and Objectives of the Study

The purpose of this study is to explore how public spaces influence human behaviour in order to gain an appreciation of the significant role that public spaces play in the daily lives of people. This will enable built environment professionals and public authorities to comprehend the effects that planning, design and development decisions are capable of having on the social, psychological and emotional wellbeing of people.

Whilst the primary focus of this thesis is on how human behaviour is affected by the physical and ambient features of public spaces, consideration has been given to the external features of private buildings that face onto, encroach or enclose public spaces. It is considered that the presence of the external features of private buildings also have the potential to impact on people's behaviour. These external features may include the height of buildings, the extent of overshadowing, the location of architectural features and natural elements such as landscaping.

The aim of my research is to achieve a meaningful and practical understanding of how spaces can be shaped by the professionals in order that they are more successful, provide for the psychological needs of people and do not conflict with people's natural responses. The specific research objectives of this study are:

- to explore the features of public spaces that are significant, incidental or destructive within a social, environmental and physical context,

- to investigate the matters that professionals take into consideration when designing and making decisions about the shape of public spaces through their responses to an original questionnaire,

- to identify and analyse the human responses to the physical and social setting of public spaces in Fairfield through a community focus group, and

- to recommend alternative ways in planning for, shaping and designing public spaces by taking into consideration the behavioural sciences and the human responses to the physical and ambient environment.

1.4 Significance of this Topic

Considering that people are the most important element of any environment, it is crucial that professionals of the built environment are aware of how people respond to the environment. This study is significant in that it provides professionals with a practical guide that can be utilised to assist in the design of places that are sensitive to the natural responses of people.

Development planners, strategic planners, architects, designers, local governments, councillors, the police, social workers and even psychologists will find this study informative and useful. Individuals who are curious about the processes of their own minds and biological responses will also find this study insightful.

1.5 Research Methodology

Later in the thesis I will discuss in greater detail the research design and methodologies adopted for the study. A combination of both quantitative and qualitative methods of collecting data has been used. The quantitative methods consisted of questionnaires sent to designers and local council planners. The qualitative methods consisted of a community focus group and an interview with an urban designer.

Many of the underlying ideas that form the basis of this thesis have been drawn from the current literature in the fields of behavioural sciences and built environment, from planning and legislative debates, the works of government and non-government organisations, reliable internet websites and local and regional media. This multi-methodological approach to collecting data has enabled an understanding of not only how public spaces are shaped by the planners, designers and public authorities, but also how certain issues impact on, and influence the users of public spaces.

1.6 Scope and Limitations of the Study

It is important to note that this study is not without its limitations. While the study has focused on a phenomenon that is extensive and complex, there has been an effort to narrow its scope. Nevertheless, given the constraints of time and wording, this has in effect resulted in only passing reference to other research areas that are associated with the present study. Research areas such as personal space or the effects of crowding make important contributions to the behaviour of people in public spaces, however each are capable of forming a separate research project. Although this might be viewed as a limitation of the present study, at the same time it provides an advantage in that it can lead to future in-depth research on this topic.

1.7 Structure of the Thesis

The structure of the remainder of this thesis will be as follows: **Chapter 2** provides a critical review of the literature on urban design and public spaces with particular emphasis given to the concept and significance of public spaces, how public spaces are made, and the design ideologies that have influenced their shape.

The literature on environmental psychology and behavioural sciences is examined in **Chapter 3.** The chapter concentrates on the theories of human behaviour as well as the ambient and physical features of the built environment. The final part of the chapter discusses the application of environmental psychology to public spaces.

In **Chapter 4**, the role of built environment professionals is identified and the findings from the questionnaire are presented. These are discussed in the context of the NSW Planning System. In contrast, **Chapter 5** focuses on the themes that emerged from a community focus group and from an interview with a local council urban designer. The findings from these interviews are discussed in the context of the literature reviewed in Chapter 2 and 3.

Chapter 6 offers ideas for alternative ways in planning for, shaping and designing public spaces by taking into account the concepts drawn from the literature and the findings from the questionnaire, focus group and interview. Finally, **Chapter 7** concludes the thesis by summarising the key arguments and findings of the study.

2.0 The Public Realm: An Examination of Concepts in Urban Design and Public Spaces

This chapter begins by exploring concepts of public space, their significance, the urban design ideologies that have affected their evolution and their relationship with the study of human behaviour.

2.1 The Concept of Public Spaces

The popular notion that public space is a stage, and that there is an audience watching is reminiscent of Shakespearean times. Not unlike Shakespeare, French (1978), Whyte (1988), Carr *et al.* (1992), Engwicht (1999) and more recently Cousseran (2006) also describe public spaces as theatrical stage-like settings. This notion is based on the idea that public spaces by their very nature allow for the unfolding of real-life human dramas and the freedom of personal and social expression for both individuals and community groups, such as that which is depicted in Figure 3 below.

Figure 3. A street entertainer at a pedestrian mall in Perth, Western Australia, draws attention from passers-by (Ray Kasho 2006).

The public spaces of a city, such as its streets, footpaths, waterfronts, parks, plazas, town squares and laneways give form to the ebb and flow of human exchange and interaction (Carr *et al.* 1992). They are often where people find some of the most stimulating, exciting and worthwhile experiences of their lives (Beattie and Lehmann 1994). The Oxford Dictionary (1978) defines the term 'public' as:

of or concerning the people as a whole;
representing, done by, or for the people;
open to or shared by the people;
open to general observation, done or existing in public.

Accordingly, public spaces are places that are provided by public authorities for the shared use by all people regardless of their personal, social or cultural differences. Public spaces should be free to use and access, and should not impose discriminatory burdens on the types of people who can access them nor the purpose for which they can be used.

Madanipour (2003) agrees with the statement of what a public space should be but argues that like all other definitions, the statement is generalised. While the general definition represents the ideal public space, it does not necessarily reflect the true nature of public space. For example, some spaces that are assumed to encompass all of the ideals of what a public space should be have certain restrictions on how they can be used, are locked and inaccessible at night, are partially used for private purposes, or have inhospitable design features such as seats the prevent people from resting.

It is interesting to note that the definition of 'private' as defined by the Oxford Dictionary is the opposite of 'public', in such a way 'private' is defined as being:

not public, not open to or shared with or known to the public;
not official, reserved for or belonging to or concerning the individual;
secure from observation or intrusion.

It would appear from this definition that private spaces are spaces that are in private ownership and impose restrictions on who can access them and the purposes for

which they can be used. Accordingly, the private spaces of cities include the majority of its residential, commercial and industrial areas. In contrast to public spaces, these private spaces should ideally enable people to carry out their private lives and daily activities, free and 'secure from observation or intrusion', however again this does not necessarily reflect the reality of all private spaces.

This thesis focuses not only on public spaces that are consistent with the definition of 'public', but also examines the external features of private spaces and private buildings where they happen to adjoin, overlook, or have visibility from a public space. This is because public spaces do not exist as separate entities and need to be considered in the context of their adjoining and surrounding spaces. It should also be clarified that this thesis focuses on outdoor public spaces and not on institutions such as libraries or hospitals that may also be defined as 'public spaces'.

2.2 The Significance of Public Spaces

Most people have a need and desire to maintain links with the rest of the world (Carr *et al.* 1992). Public spaces are significant because they are able to bridge that link. Carr *et al.* suggest that aside from bridging this link, public spaces are important because they provide avenues for movement, a means of communication, and a common ground for enjoyment and relaxation. The ability of public spaces to educate and offer knowledge is also a significant aspect, particularly when those spaces play an important role in the history of the city and the social life of its citizens (Madanipour 2003).

Overtime many public spaces have been the epicentre of social life by providing people with opportunities to gather and socialise, to celebrate, for children to play in, and for the undertaking of economic, cultural, religious and political activities (Engwicht 1999; and Beattie and Lehmann 1994). An examination of the patterns of historical urban settlements such as that of the Ambo people and the Omarakana Village depicted in Figure 4 below show that the most significant places of their settlements were literally located at the centre (Beattie and Lehmann 1994).

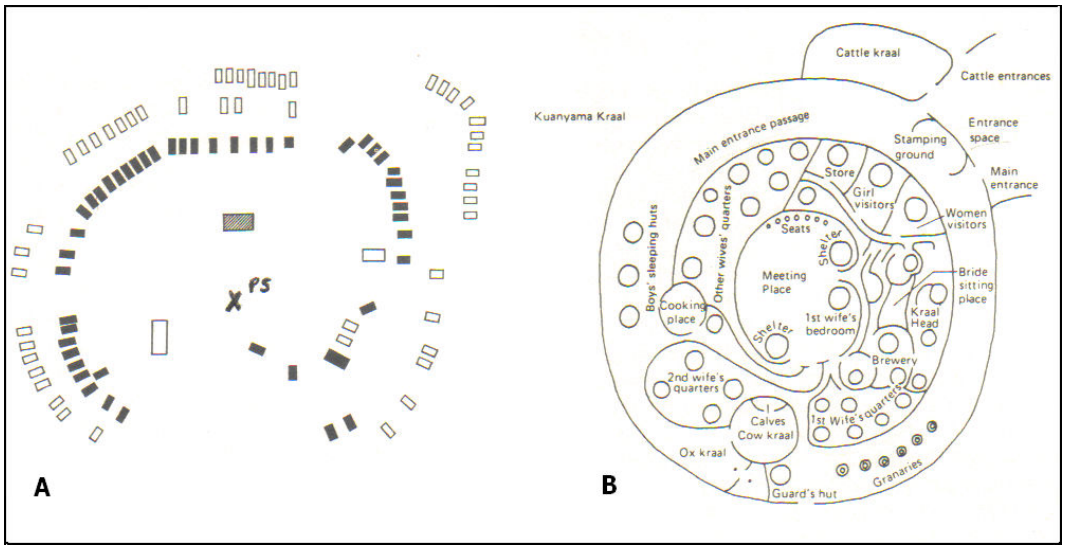


Figure 4. A) Plan of an Omarakana village depicting the public space at the centre, and B) plan of the Ambo people's settlement depicting the Meeting Place also at the centre (Lawrence 1989).

Despite the changing nature of modern neighbourhoods and communities, public spaces are still an essential part of life because they provide opportunities for different people – young, old etc, to experience a variety of human encounters. Engwicht (1999) uses the term 'adult play' to describe the types of social activities that adults often indulge in, and states that it is in public spaces where people's minds and imaginations are able to react to the infinite stimuli that they are faced with. A form of adult play described as 'people watching' by Engwicht and also by Whyte (1988) is made possible by the arrangement and orientation of physical features, such as the outdoor seating of the café shown in Figure 5.

Cadman and Payne (1990) and Short (1989) assert that the wealth of a city is in the individual and collective creativity of its inhabitants, and that creativity is facilitated through the opportunities that public spaces offer different people. Short notes that creativity enables a city to progress in terms of its economic, social, cultural and political position. In the context of this assertion, the words of *Gratz* (1994:n/a) convey a truth about the value of public spaces:

The street, in fact, is the most important thread in a city's fabric.
It knits the city together as a city.
To kiss the street goodbye is the kiss of death for a city.

Figure 5. An outdoor café at the main street of Noosa, Queensland, enables 'people-watching' of passers-by, through arrangement of seating to face the street (Ray Kasho 2006).

2.3 How Public Spaces are Made

The creation of public spaces can be driven either directly as a result of a government decision, or indirectly, as a result of private developments; the need to provide better services; or by urban redevelopment. Direct decisions to create new public spaces occur infrequently (Mossop and Walton 2001; Winikoff 2000).

Regardless of what drives the decision to improve an existing public space or create a new one, the figures involved in the complex process will generally be the same. The process will need to involve communication between planners, designers, builders, place managers, policy makers, and the public users.

The initial stages of the process will include the gathering of information, evaluation and consideration of alternative options. This is then followed by transferring the information into a concept design plan which is followed by the decision-making (Carr *et al.* 1992). Accordingly, the early stage of the process is the most critical time for considering and understanding the potential impacts of the designs on the experience of users of public spaces.

2.4 Urban Design Ideologies and the Evolving Nature of Public Spaces

In the following section, I discuss the significant movements and ideologies that have influenced the shape of the built environment and the form of public spaces since the late nineteenth century. The movements suggest, at the very least, that the practice of urban planning and architecture is constantly motivated by the desire to enhance urban areas and improve quality of life in response to changing circumstances.

2.41 The City Improvement and City Beautiful Movements

The City Improvement and City Beautiful movements of the 1900s emerged from debates amongst built environment professionals who argued that Australian cities were ugly, uninteresting, lacked civic pride and did not offer any pleasurable vistas, public squares or open spaces (Hamnett and Freestone 2000). Although the movement recognised that "beauty had to be more than skin deep" (Hamnett and Freestone 2000:31), it appreciated that the beautification of public spaces had positive impacts on tourism, attraction of capital and property values.

Beautification schemes of this period were expressed in the form of elaborate arches, ornamentation along public streets and emphasis on gateways, landmark features, parks, gardens, fountains and public art (Hamnett and Freestone 2000). The movement emphasised that public spaces should be formed by order, harmony, formality and symmetry (Hamnett and Freestone 2000).

2.42 The Garden City Movement

The Garden City movement of the 1910s was founded by the urban planner Ebenezer Howard, who designed a template for how cities and suburbs should be designed. The key principles of the movement were based on limiting the size of the population in each neighbourhood, the creation of radial avenues, the provision of a central public space in the centre of the city surrounded by impressive public buildings, and the provision of a 'green belt' to define the boundaries of the neighbourhood and contain development (Hall and Ward 1998).

Howard's designs influenced the establishment of suburbs in the United Kingdom (UK) and Australia (Hall and Ward 1998) and many of the principles can be seen in the design of Australia's capital city, Canberra, and in Daceyville in Sydney (Hamnett and Freestone 2000). The features advocated by this movement emphasised the form that public spaces should take and where they should be located in relation to the private spaces of neighbourhoods. In order to signify their importance, the public spaces inspired by this movement were located at the centre of neighbourhoods.

2.43 The Myth of Architect as God Period

Architectural ideologies of the twentieth century have also influenced the shape of the built environment. Modernist architects of this time, perceived themselves as designers, not just of buildings, but of utopian societies (Short 1989). These architects replaced the dominant notion of 'god as architect' with the myth of 'architect as God' (Short 1989).

In 1927, Le Corbusier, who was one of the most influential architects inspired the notion that architecture is an art, and that the architect as an artist should be free from the demands of the population (Short 1989). Le Corbusier also believed that a "building was a machine for living in" (quoted in Short 1989:42). He aimed to reflect this in the built environment, through his visions of monotonous and repetitive, concrete residential and office towers with roof gardens, set in vast open spaces (see Figure 6 below). This ideology of the time saw a shift away from client preferences to architectural fashion.

The projects that were built at this time became symbolic of the mechanisation of architecture. The move away from a 'humanistic' environment at a 'human scale' produced an alienated built environment that detracted from the attractiveness and desirability of the surrounding public spaces (Short 1989).

The utopia envisioned by Le Corbusier and his followers may have been a popular architectural trend at the time, however it failed to acknowledge the preferences of not only the inhabitants of the buildings but also the impact of those buildings on the public realm and the public users. Little interest was paid to the needs of pedestrians or to how users would interact in that environment (Baldwin 1999). Subsequently,

many of these projects failed, were abandoned and eventually demolished because of the social problems that they created (Short 1989).

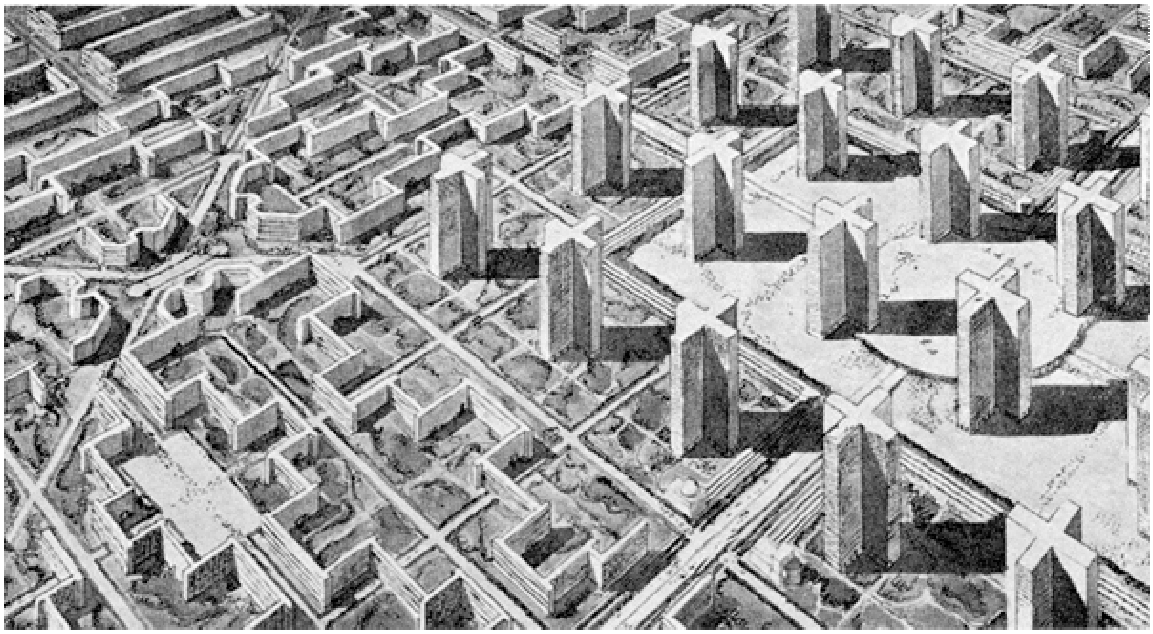


Figure 6. Le Corbusier's vision for Paris: city of three million inhabitants (DEM 2006).

Predictably, the rise of post-modernism also produced a trend of high rise towers with a focus on the aesthetic appeal of their construction materials and their dominance over the public realm. The buildings of this period were characterised by flat roofed, glass boxes and simple, boring and repetitive styles. They have been criticised for lacking any consideration of their site, location or context and for disregarding their proximity to other older and significant buildings (Short 1989).

As a result of community backlash to the modernist and post-modernist architecture and its impact on the quality of public spaces, Australian governments introduced legislation and regulation to control how the built environment and public spaces can be shaped (Nankervis 1996). This shows recognition that despite architecture being concerned more with the form and function of individual buildings; it is capable of significantly influence the shape of the built environment at a wider urban scale.

2.44 The New Urbanism Movement

In more recent times, the emergence of the American New Urbanism movement has not only influenced the field of planning, but also the fields of urban design and architecture (Gleeson 2006). Essentially, it is a design-based approach that focuses on promoting development that is compact and contained, provides a diversity of housing options, provides central public spaces and reduces reliance on private cars by locating all essential services within a five-minute walking distance (Southworth 2003; Talen 2003).

Although the main objective of the movement is to rebuild cities in the shape of traditional towns, in the United States of America (USA) it has been criticised for producing designer style communities that attempt to conjure social interaction. The influence of New Urbanism in Sydney can be seen at places such as Cape Cabarita which is depicted in Figure 7 below.

Figure 7. A view of Cape Cabarita depicting highly-maintained central public and recreational spaces surrounded by residential developments (Cape Cabarita 2007).

The New Urbanism movement is of particular interest to this study because its advocate's emphasise the significance of urban design in affecting the way that people interact with the built environment. For instance, it somewhat naively assumes that neighbourly looking and narrow streets, and well-designed public spaces foster social interaction between people, and somehow entice people to communicate with their neighbours (Southworth 2003).

However, this assumption is naïve in its reminiscence of traditional neighbourhoods, because modern neighbourhoods and cities are radically different in comparison to 50 years ago (Southworth 2003). Their changing nature is attributed to new methods of transportation, technologies, communications and changes in social structures.

While the principles advocated by the movement convey an appreciation for public spaces, the agenda to revert pretentiously to the urban design of the past can be problematic. The reliance on urban design to accomplish such things as encourage people to be more social, by literally reducing the distance between them, particularly in a residential neighbourhood, is unlikely to work. There needs to be an acknowledgement of the changing nature of society, and an understanding of how people behave and respond to the environment, before measures such as narrow streets are applied to public spaces.

2.5 The Relationship between Public Spaces and Behaviour

People have a significant relationship with public spaces because they use and experience them on a daily basis. The urban ideologies suggest that the attention given to the form of public spaces has ultimately been driven by the desire to improve the quality of life. As the modernist and post-modernist influence of architecture has shown, this desire has not necessarily always been achieved.

Built environment professionals and public authorities, particularly local councils, recognise that public spaces are significant. They understand that creating attractive, well-designed and maintained spaces that provide a variety of opportunities for users can promote a sense of community as well as generate economic benefits. When these figures refer to the built environment in terms of being 'humanistic' or at a

‘human scale’, it shows that they understand that the environment can have a fundamental impact on how people feel in, and experience the environment.

Terms such as ‘feel’ and ‘experience’ convey the complexities of the human mind and emotions. In order to appreciate how the environment impacts how people ‘feel’ and how people ‘experience’ the environment, it is necessary to understand people’s physiological and psychological processes. Perhaps when built environment professionals and public authorities appreciate how the environment affects people’s behaviour, only then can a truly ‘humanistic’ environment be seen.

2.6 Conclusion

This chapter has discussed the meaning of public space and has shown that public spaces are an essential part of people’s lives. It has also identified the key urban design and architectural ideologies that have influenced the shape of the built environment, and has discussed how each has perceived the value of public spaces. The next chapter provides an overview of the relationship between people’s behaviour and experience of public spaces, from an environmental psychology perspective.

3.0 The Nature of Human Nature: An Examination of the Behavioural Sciences

This chapter examines the literature on environmental psychology and theories of human behaviour. It also explores the ambient and physical features of the built environment. In doing this, the chapter addresses the central research question: *what are the physical and ambient features that shape public spaces, and how do they affect the behaviour and experience of people?*

Rather than discussing behaviour in relation to public spaces, the chapter refers to behaviour in terms of the 'environment'. This mirrors the way in which it is discussed in the literature. The final parts of this chapter draw together the behavioural theories and discuss how they can be affected by the features of the environment.

3.1 What is Environmental Psychology?

The relationship between the environment and human behaviour has been recognised for a long time. In order to explain its significance, psychologist Kurt Lewin (1951) argued that behaviours (B) are not only a function (f) of personal factors (P), but also of the environment (E) in which they take place. Lewin expressed this relationship in the formula B = f (P, E). At its core, the study of environmental psychology is concerned with understanding the dynamic relationship between human and environmental factors (McAndrew 1993).

The study of environmental psychology does this by drawing from the research findings of behavioural scientists, psychologists, sociologists and ecologists who have been able to demonstrate that the built and natural environment can facilitate, modify or hinder certain human behaviours (Speller 2006; Canter 1977). The relationship between people and the environment is examined by focusing on how the physical and ambient stimuli (or features) of an environment affect behaviour and emotions (Mehrabian and Russel 1974).

3.2 Theories of Human Behaviour

In contrast to most other scientific fields that are based on theories and scientific models, the study of environmental psychology lacks a unifying theory that can be applied to all types of environments consistently (Gifford 2002; McAndrew 1993; Bell *et al.* 1996; Pomeranz 1980). The term 'environment' alone is so vast, and the techniques that are used to study it so varied, that it is considered to be resistant to any theoretical unification (McAndrew 1993).

In spite of this, behavioural theorists and psychologists have speculated on various environment-behaviour models. A review of the literature suggests that these can be summarised as five main theoretical perspectives. These are as follows:

1. arousal theory,
2. stimulus load theory,
3. behaviour constraint theory,
4. adaptation level theory,
5. environment stress theory, and
6. perception or cognition theory

These theories are relevant to the query of this thesis and will be briefly examined in the following section.

3.21 The Arousal Theory

Arousal theories relate to how psychologically aroused people are as a result of environmental stimulation. Bell *et al.* (1996) explain that "arousal is a heightening of brain activity by the arousal center of the brain, known as the reticular formation" (Bell *et al.* 1996:116). It is characterised on a scale which features *sleep* at one end, and *excitement* at the other end (McAndrew 1993; Mehrabian and Russel 1974).

Theories of arousal have generally been concerned with the relationship between a person's state of arousal and their behaviour or performance. This relationship is referred to as the Yerkes-Dodson Law and is usually depicted as a curvilinear relationship as in Figure 9 below (McAndrew 1993). According to this Law

performance is at its best when arousal levels are at a moderate level. Performance progressively worsens as the arousal levels either fall below, or rise above the optimum level.

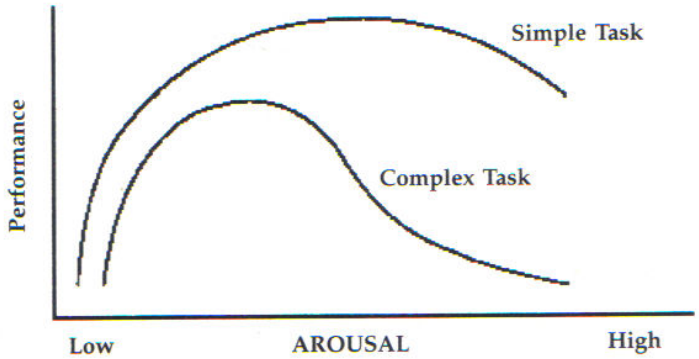


Figure 9. Yerkes Dodson Law – arousal above the optimal leads to decrements in performance (Veitch and Arkkelin 1995).

The relationship between arousal levels and behaviour and performance has been shown in various studies (Bell *et al.* 1996). In a study of personal space (the comfortable distance between people) in the men's lavatory, it was found that where personal space invasions occurred, close interpersonal distances caused delays in urinating (Middlemist *et al.* 1976). This study suggested that arousal associated with personal space invasions produced physiological changes in heart rate, respiration rate, blood pressure and adrenaline secretion (Middlemist *et al.* 1976; Mehrabian and Russel 1974).

3.22 The Stimulus Load Theory

The Stimulus Load Theory conceptualises the environment as a source of sensory information (referred to as stimulus or stimuli), that provides people with psychological stimulation (Gifford 2002; Veitch and Arkkelin 1995). These stimuli can range from simple ambient features such as light, sound or temperature, to complex physical features such as buildings, streets, land forms and the presence of other people.

The Stimulus Load Theory is based on the notion that people have a limited capacity to process environmental stimuli. When faced with an excessive amount of stimuli,

or 'stimulus overload', people have a propensity to ignore some features and give more attention to those that are perceived as more important to the task at hand (Bell *et al.* 1996; Veitch and Arkkelin 1995).

In a physical environment, a similar situation may occur when a person is in a crowded situation, in an unfamiliar city with towering buildings and lost. Attempts at trying to find the way may be hindered by an overabundance of stimuli such as signs, street patterns, people, cars and buildings. In situations where the more important stimuli are ignored, in this case finding the way, rather than concentrating on getting through the crowd, a person's performance is rendered suboptimal. Veitch and Arkkelin (1995) explain that the behavioural after-effects may include errors in judgement, decreased tolerance and frustration, and ignoring others who may need assistance.

In contrast to environments with stimulus overload, monotonous environments that are stimulus-deprived lead to boredom and behavioural deficiencies (Bell *et al.* 1996). This suggests that under-stimulation can be just as detrimental as over-stimulation. Figure 10 below illustrates types of environmental stimulation.

Figure 10. Examples of environmental stimuli in the streets of Hong Kong in the form of buildings, streets, buses, signs, colours, signs, images and other people (Christopher DeWolf 2007).

3.23 The Behaviour Constraint Theory

The focus of behaviour constraint theories is on the real or perceived restrictions that are imposed on people by the environment, and the perceived degree of control that people have, or want to have, on an environment (Gifford 2002; Veitch and Arkkelin 1995). These theories posit that the environment is capable of preventing, interfering with, or limiting the behaviours of individuals (Speller 2006; Veitch and Arkkelin 1995).

Where people perceive that they have lost some degree of control over their environment, their first experience is of discomfort, which is then followed by an attempt to reassert their control (Bell *et al.* 1996). This reaction is described by Veitch and Arkkelin as *psychological reactance*. It can occur in different situations. For example, to avoid crowding, people may erect physical or social barriers to shut others out (Bell *et al.* 1996). In dark and deserted streets people may alter their movement patterns or avoid such places altogether.

When attempts to regain control of the environment are unsuccessful, *learned helplessness* can develop (Gifford 2002; Veitch and Arkkelin 1995). This is where people begin to believe that what they do has no effect on the environment and that whatever happens is out of their control. This can result in a sense of despair and feelings of alienation about the environment. In contrast, when people perceive that they have some control over their environment, it has been found that environmental problems such as littering and graffiti are reduced.

3.24 The Adaptation Level Theory

The adaptation level theory maintains that excessive environmental stimulation, or too little environmental stimulation, can have a detrimental effect on people's emotions and behaviours (Gifford 2002; Bell *et al.* 1996; Veitch and Arkkelin 1995). This suggests that a moderate level of environmental stimulation is the most desirable.

Adaptation level theorists assert that the relationship between people and their behavioural response to the environment is comprised of two processes – adaptation

and adjustment (Veitch and Arkkelin 1995). People either adapt by changing their responses to the environment, or adjust by changing the environment where they are (Veitch and Arkkelin 1995). Either way, the process results in bringing the person back into equilibrium with his or her environment.

To illustrate this concept, an example of adaptation to an extremely noisy street may include physiological responses such as tinnitus ('ringing ears'), constriction of blood vessels, neuromuscular tension (nerve and muscle tension), or vibrations in the ears. An adjustment to the environment may include wearing earplugs or building sound-proof walls or windows as a barrier to the noise.

3.25 The Environment Stress Theory

The theory of Environmental Stress focuses on the role of physiology, emotion and cognition within the person-environment relationship (Bell *et al.* 1996). Environmental features are believed to impinge on human senses, causing a stress response where those features exceed an optimal level (Veitch and Arkkelin 1995; Insel and Lindgren 1978). Pollution, extreme temperatures, traffic, noise and crowding are typical environmental stressors (Gifford 2002; Bell *et al.* 1996).

Environmental Stress theorists believe that once environmental features are recognised as threatening, part of the behavioural response is automatic and begins with an alarm reaction. This reaction causes the affected person to experience alterations to their various physiological and psychological processes (Gifford 2002; Veitch and Arkkelin 1995). What follows is a resistance to the stress and attempts to alleviate the stress by drawing on coping strategies (Bell *et al.* 1996). If there is prolonged exposure to stress, coping strategies diminish and a state of exhaustion sets in. This can lead to mental disorders, lowered resistance to stress or diminished interaction with others (Gifford 2002; Veitch and Arkkelin 1995).

The theory also emphasises the role of 'cognitive appraisal' in a person's psychological or emotional stress response (Gifford 2002; Bell *et al.* 1996; Winett 1987). The term 'cognitive appraisal' refers to how a person assesses the seriousness of the situation. Further, it suggests that behavioural responses to stress

vary from person-to-person due to individual perception. This may be an indication of why some people are better able to deal with stress than others.

3.26 The Perception or Cognition Theory

Cognition theory focuses on people's perception or cognition, rather than the behaviour that they overtly display (Veitch and Arkkelin 1995; McAndrew 1993; Low 1987; Canter and Stringer 1975). Unlike the previous theories, Cognition theory is not grounded in science. It concentrates how people perceive the environment according to their learned experience, cultural differences and personality traits (Veitch and Arkkelin 1995).

Gifford explains that cognition is how "we acquire, store, organize, and recall information about locations, distances and arrangements in buildings, streets and the great outdoors" (Gifford 2002:32). Jakle *et al.* (1976) highlight another aspect of the cognition process to do with assigning meaning to the environment. The concept of 'assigning meaning' has been examined extensively by Amos Rapoport (1982), a prominent thinker on the topic. Due this studies limitation on wording space, the issue of 'meaning' has only briefly been referred to in Chapter 5.

> *Seeing comes before words…it is seeing which establishes our place in the surrounding world; we explain that world with words… The relation between what we see and what we know is never settled* (Berger 1973:1).

Although this quote expresses the concept of perception literally, it can also be considered figuratively. This is because although sight is indeed a primary indicator in terms of perceiving and cognising the visual aspects of city form, visually impaired people are still capable of having a perception of an environment, by drawing on senses other than sight. Accordingly, in addition to perception and sight, the relationship between a person and their environment can also be affected by touch, hearing and smell which are facilitated by the physical and ambient features of the environment.

3.3 The Ambient Environment

The behavioural theories examined in the previous section showed that the built environment is capable of affecting people's physiological and psychological processes. This section now examines people's responses to the ambient and physical features of the environment in order to understand how behaviour and experience is affected by public spaces.

The ambient environment refers to the non-visual and non-physical elements of the built environment such as sound, smell, temperature and illumination. These are experienced through the sensory organs such as ears, nose, skin and eyes. Studies have shown that these elements are capable of having profound effects on mood, behaviour, and physical wellbeing (Gifford 2002; Veitch and Arkkelin 1995; McAndrew 1993; Canter and Stringer 1975; Mehrabian and Russel 1974). This suggests that people's relationship with the ambient environment is three-fold and is linked with the emotions, thought or cognitive processes and physiology.

3.31 The Temperature of Spaces

The influence of temperature on human behaviour is evident from the review of literature and an assessment of everyday experiences. Changes in the weather such as rain, wind, cold and heat affect people's choice about where they will go and what they will avoid doing. A cold, grey sky can render some feeling depressed and unwilling to get out of bed however the context is important. McAndrew (1993) describes an unidentified study that found that pedestrians walked faster in hot or cold climates as opposed to moderate climates.

Veitch and Arkkelin (1995) describe how the English language associates temperature with behaviour. For instance, people are referred to as 'hot', implying how attractive they are. Others may be described as 'hot under the collar', 'hot headed', 'warm and loving' and 'making my blood boil'. Sometimes people are referred to as 'cold and cunning' or they give 'the cold shoulder' and sometimes they are asked to 'cool it'. Deep-rooted in the English language is a relationship between temperature and social behaviours that imply positive and negative social tendencies.

A common theme throughout the literature which draws on the behavioural theory of arousal is that arousal is at its minimum when temperatures are moderate and comfortable (Gifford 2002; Levy-Leboyer 1982). As the temperature increases or decreases beyond the comfortable level, arousal is increased. This leads to a range of changes to physiological and behavioural functions (Canter and Stringer 1975; Mehrabian and Russel 1974). Physiological changes can include discomfort, reduced manual dexterity and tactile sensitivity, sweating, inability to breathe comfortably, increase in reaction time, increase in metabolic rate, shivering, muscular tension or changes in thyroid activity and adrenaline output (McAndrew 1993).

In terms of behavioural changes, heightened levels of arousal resulting from high temperatures and heat discomfort have been found to conflicts in interpersonal relations, attraction to others, aggression, irritability, and a range of anti-social behaviour such as rioting (Gifford 2002; Bell *et al.* 1996; Veitch and Arkkelin 1995; McAndrew 1993; Levy-Leboyer 1982). The United States Riot Commission reported that of all the riots that took place across American states in 1967, all but one began when the temperature was at least 80 degrees farenheight (Gifford 2002). Temperatures have also been linked to crimes such as assault, burglary, collective violence and rape (Gifford 2002; McAndrew 1993).

3.32 The Sound of Spaces

The focus on sounds in the environment is often concerned with how sounds hinder speech communication and social interactions, as well as how they cause increases or decreases in concentration levels. While some sounds overload the senses and reduce memory capacity, other sounds are capable of affecting how people process information about the environment (McAndrew 1993).

Similar to other ambient elements, there is consistent evidence that while sounds can 'arouse' or distract people, the extent to which they are deemed annoying, a nuisance or pleasant depends on individual sensitivity (McAndrew 1993; Brebner 1982; Levy-Leboyer 1982; Mehrabian and Russell 1974). Brebner suggests that while physiologically, the mechanism of hearing is the same; psychologically it differs based on variables such as the intensity, predictability and significance of the sound and other attention getting factors.

Unpleasantly noisy environments are linked with higher arrest rates, aggression, decreased care for the environment, less social interaction and errors in judgment (Veitch and Arkkelin 1995; Mehrabian 1976). In studies where people were asked to do a simple task such as press a button when certain lamps were illuminated, there were more errors in the presence of noisy settings. Similarly, changes in street and traffic signals were more frequently unnoticed in noisy environments (Levy-Leboyer 1982). Other studies also reveal that people may be less likely to help strangers in noisy environments and are more likely to try to escape by walking faster and gazing straight ahead, thus avoiding other people (Gifford 2002; Bell *et al.* 1996; Mehrabian 1976).

Pleasant music, as opposed to unpleasant sound is also believed to affect people's behaviour significantly (Gifford 2002; Mehrabian 1976). In an unidentified study cited by Gifford, shoppers walked slower when slow music was played than when fast music was played. The most interesting finding was that shoppers bought more items when the tempo of music was slower, supposedly because they did not feel rushed (Gifford 2002).

3.33 The Smell of Spaces

Despite the belief that the ability to smell is the most sensitive of human senses (Brebner 1982), the review of literature indicates that aside from sources such as pollution, little attention is given to the effects of smells on human behaviour. Brebner (1982) suggests that while the sense of smell is indeed the most sensitive, it does not function independent of other senses. Indeed often unpleasant smells are first identified by sight, and then identified by their smell (Brebner 1982).

Smells can be derived from sources from the natural, built or human environment. Natural smells may include bushfires, earth, fresh air, rain, water, grass, flowers and trees. Smells from the built environment may include pollution, traffic, industries, and the smell of building materials. Human smells may include smells such as food being cooked, bodily odours, and other smells that result from activities such as smoking.

The degree to which certain smells are 'acceptable' has been linked to culture and convention by Brebner (1982) who asserts that the degree to which smells can be tolerated is enormous. Although mostly, people steer away from locations that they emotionally identify as 'smelly', it has been suggested that if there is sufficient motivation, people tend not only to accept unpleasant smells but adapt to them (Berglund *et al.* 1971). Where there is an absence of a motivating factor to encourage people to adapt to the environment, unpleasant odours are linked to negative effects on moods, attraction to others and avoidance of certain environments (Gifford 2002). The interesting point about smell is it ability to conjure nostalgic memories and reproduce past moods and events (Brebner 1982; Jakle *et al.* 1976).

3.34 The Illumination of Spaces

The belief that sunlight can help regulate people's biological rhythms, alter moods, improve performance, reduce feelings of depression and improve emotional wellbeing is not new. Studies on people suffering from depressive disorders suggest that illumination can indeed have profound effects on people (McAndrew 1996; Veitch and Arkkelin 1995).

It has also been suggested that under the cover of dark or dimly lit settings, people tend to release their social inhibitions, more so than they would in brightly lit settings, by engaging in acts of intimacy, aggression or impulsive behaviour (McAndrew 1996; Mehrabian 1976). This is interesting in that it may explain why people tend to avoid dark public places at night time. Perhaps there is a conscious or unconscious recognition that strangers may behave differently under the cover of darkness and that personal safety may be compromised.

3.4 The Physical Environment

The physical environment refers to the endless visible and tangible features that are largely controlled by planners, designers and built environment professionals. Not unlike buildings, outdoor public spaces can be enclosed by three representational planes: floor, wall and possibly ceiling (Lewis 1996; Beattie and Lehmann 1994; French 1978).

The floors can be represented by street and footpath layouts or by a variety of ground surfaces such as grass, dirt, concrete or paving. The walls can be represented by the buildings that adjoin the space or the existence of any vegetation, significant land form or topography. The ceilings of a public space can be represented by the sky, a canopy of vegetation or natural phenomena such as a persistent fog or shadow (Lewis 1996; Mitchell *et al.* 2004).

Accordingly, the relationship between people and the physical environment is linked not only to vision, but to all the human senses including smell, sound and touch (Gifford 2002; Lewis 1996; Veitch and Arkkelin 1995; McAndrew 1993; Mehrabian and Russel 1974). Although the enclosure of space is perceived three dimensionally through vision, perception is not independent of other spaces and can be modified when other senses respond to the physical surroundings.

This notion of space as a relationship between the physical surroundings and the person who perceives it was first introduced by Kevin Lynch (1960). Lynch, a planner and seminal thinker in this area identified five types of elements of the built environment that are capable of influencing how people experience and evaluate their environment: landmarks, paths, districts, edges and nodes. Lynch described these elements as follows:

- Landmarks are reference points that can be either large scale, such as a mountain, or small scale such as a letter box.

- Paths such as streets, footpaths and cycle routes are the channels for movement.
- Districts are the segments of the cities that are recognisable by a common feature or perceived identity that is distinguishable from other precincts, such as Chinatown in Sydney.

- Edges are the boundaries or barriers such as walls or coastlines.

- Nodes are the focal points of intense activities to where people travel such as a park or commercial centre (Lynch 1960).

These elements which have been studied across different populations and cities have confirmed their consistency (Nasar 2004). This is significant in that it provides an insight into the processes of the mind as it suggests that peoples response to their surroundings are dependant on two aspects, namely the visual aspects of city form, and the evaluative response that results from the human senses (Nasar 2004; Bell *et al.* 1996).

French (1978) who concentrates on the effects of 'edges' on human behaviour argues that while enclosure is the prime function of architecture, most of the time it is only perceived subconsciously. It is the size, scale and quality of spaces represented by shapes, colours and other details, that affects people's psychological reactance to spaces.

French (1978) describes that people feel comfortable only on the edges of spaces, or near areas that offer psychological protection (such as a fountain, sculpture or umbrella). This shows that there is an interconnection between the elements of 'edges' and 'landmarks'. French (1978) further asserts that the walls of public spaces represented by tall and impersonal buildings with glassy facades can evoke a fishbowl feeling in the centre of the space they form. On this basis, French argues that public spaces need other means of enclosure or edges, to provide users with a sense of scale and intimacy that is consistent with their psychological needs.

French (1978) suggests that this can subtly be achieved in public spaces through a step down, a change in pavement, umbrellas, awnings, trees, freestanding screens or benches. He notes that it is not the enclosing walls that direct activities but the arrangement of the space and the ambient features such as lighting and sources of noise.

3.5 The Application of Environmental Psychology to the Design of Public Spaces

The review of literature on environmental psychology has shown that the discipline is concerned with the interactions and relationships between people and the physical and ambient features of the environment. The emphasis has been on how human behaviour and feelings are affected by the environment through the theoretical

perspectives of arousal, stimulus overload, behaviour constraint, adaptation level, environment stress and perception or cognition.

The theory of Arousal has demonstrated that when there is a heightening of brain activity as a result of either pleasant or unpleasant environmental stimuli, such as personal space invasions, it can cause negative emotions in people. Similarly, the theory of Stimulus Load, Adaptation Level and Environment Stress suggest that when the environment produces an overload of stimulation, lacks any stimulation, or produces stressors, it can reduce people's ability to process environmental information – unless they can appropriately adapt or adjust to the environment.

Finally, certain physical features and ambient features such as illumination, sound, smell and temperature that have been found to cause psychological and physiological responses in people can be explained by way of these behavioural theories. The fact that many of these elements can be controlled by built environment professionals in their design and decision making processes should encourage professionals to attain a better understanding of them. Understanding the effects of these features on people can assist in finding better solutions to address their effects on people in public spaces.

3.6 Conclusion

This chapter has addressed the central research question of the thesis by examining how the environment imposes on people. It discussed the theories of human behaviour and identified how people respond to the ambient and physical features of public spaces. The next chapter synthesises the findings from a questionnaire sent to planners and designers and identifies the role of built environment professionals in contributing to the ambient and physical features that affect people's behaviour and experience.

4.0 The Shapers of Public Spaces: Planners, Designers and Public Authorities

The previous chapters established that physical and ambient features of public spaces are capable of affecting people's behaviour and experience. This chapter explains the role of built environment professionals and public authorities in shaping those public spaces. It also identifies the matters that professionals consider when designing and deciding on developments. It does this by examining the findings from a questionnaire administered by the researcher.

4.1 Built Environment Professionals, Public Authorities and the NSW Planning System

In NSW, almost all development is regulated by the state government or by local councils. State government control takes the form of significant legislation such as the *NSW Environmental Planning and Assessment (EP & A) Act,* 1979, and 'environmental planning instruments' such as state and regional planning policies. These instruments are legal methods that regulate how and where development can occur.

The *EP and A Act* stipulates the legal matters that built environment professionals and public authorities are required to consider when designing or assessing development proposals (AustLII 2007). In summary, Section 79c of the *Act* (see Appendix F for an extract from the *Act*), stipulates that the Council must consider matters such as:

- the provisions of any environmental planning instruments,
- any planning agreement that a developer has offered to enter into,
- the provisions of the *NSW EP and A Regulation,* 2000,
- the likely environmental, social and economic impacts of the development,
- the suitability of the site for the development,
- any submissions made by the general public, and
- the public interest (AustLII website 2007).

Public authorities under the structure of the state government have a significant role in determining the shape of the environment. The NSW Ministry of Transport is arguably the most influential, as it decides on major infrastructure projects and determines the location of transport routes such as major roads, highways, rail lines and bus routes at a state-wide level. Powell (2003) explains that the historical pattern of commercial, industrial and residential development in Sydney has consistently concentrated around transport routes.

The NSW Department of Planning (DOP) is also an important state public authority whose fundamental role is to determine how the environment and resources (such as availability of land) will be managed (NSW DOP 2006). It does this by introducing legislation and planning instruments that apply state-wide. However, the structure of the state government as comprising not one, but several regulating bodies, adds to the complication of the planning system. For instance, the DOP can sometimes be undermined by the decisions of the Ministry of Transport.

In contrast, local councils control and regulate the built environment by producing and implementing statutory planning instruments that only apply to their local government area. Planners, designers, developers, property investors, home owners, communities and any individuals seeking to make physical changes to the shape of the built environment, is required to comply with the relevant council planning instruments (NSW DOP 2006).

Accordingly, local councils are particularly influential in shaping the built environment because their decisions are capable of affecting the lives of ordinary citizens. It is at the local council level that the most site-specific design considerations are dealt with, negotiated, visible and experienced on a day-to-day basis.

Within the NSW planning system, the role of built environment professionals such as planners and designers is to work with the parameters set by public authorities and legislation. As such, they are also responsible for shaping public spaces. Although these professionals are motivated by different purposes, their perspectives are examined in this chapter because they share a common goal: the creation of spaces that respond to the needs of people.

4.2 Research Methodology: Questionnaires

Considering that the decisions of local council planners and designers have a direct effect on people's experience of public spaces, it was decided that the perspectives of these figures would be valuable to the study. Subsequent to obtaining approval from the University of NSW Human Research Ethics Advisory Panel (HREAP) to conduct the research (see Appendix A), the method adopted consisted of sending:

- 200 questionnaires to the 37 metropolitan local councils in Sydney, and
- 200 questionnaires to 200 architectural and design consultancies in Sydney.

The questionnaires were posted in early January 2007 and asked respondents to return them within two weeks. Sweets were also included with the questionnaire as an incentive for participants. The purpose of the questionnaire was to obtain as many perspectives, from council planners and designers as possible.

The questionnaires sent to councils sought the opinions of both statutory and strategic planners – the former comprising planners responsible for the assessment of development applications (DAs) and the latter comprising planners responsible for the council's policy-making. The perspectives of designers were also sought on the same matters. The questionnaires (see Appendix C) related to matters that professionals consider when designing for, and deciding about developments, in terms of their impacts on the behaviour and experience of users of public spaces.

The analysis of the findings involved utilising the Microsoft Excel computer application to enter all the responses into individual fields within the spreadsheet. Separate spreadsheets were used to enter the responses of planners and designers. The spreadsheets enabled data to be collated into synthesised themes and graphs. It also permitted comparison of responses across categories, for instance, it allowed the responses of female planners to be extracted independently of male responses.

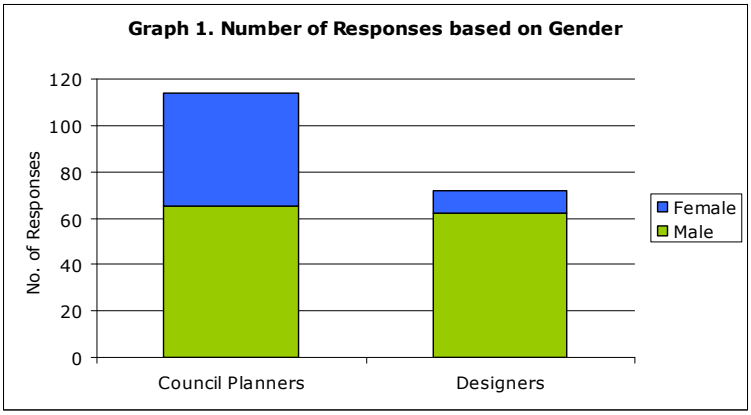
The rate of response was 57 per cent (114 out of 200 questionnaires) for council planners and 36 per cent (72 out of 200 questionnaires) for designers. The lower response rate from designers may be related to the timing of questionnaire distribution. The questionnaires were sent during the New Year period when offices

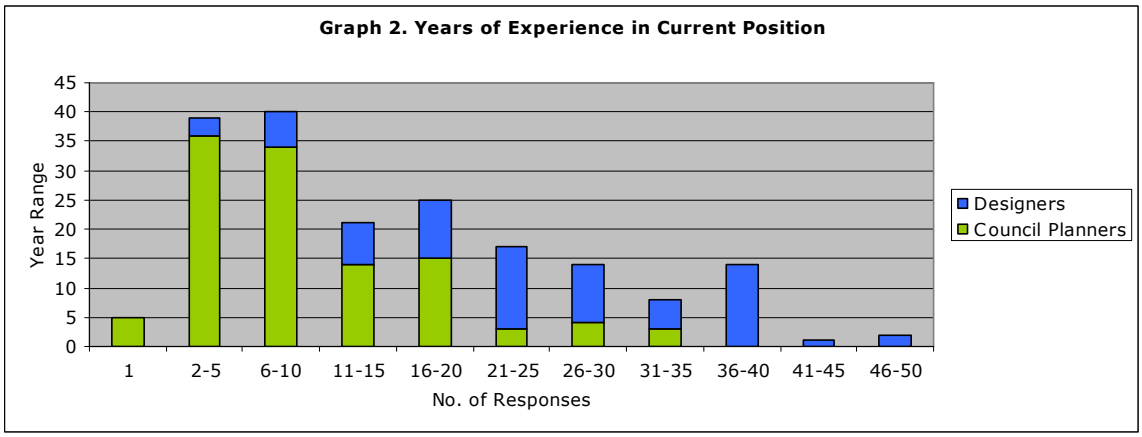
may have been closed. It is presumed that when they reopened in mid January, the period for responding was overdue and that this would have discouraged recipients from responding. Unlike the designers, councils did not close during the New Year period. This may be why a better response was received from council planners.

4.3 Findings from the Questionnaires: The Matters Considered in the Design and Assessment of Public Spaces

This section presents the findings of the questionnaire and discusses the matters that planners and designers consider in designing and deciding about public spaces. It focuses on their perspectives of the impact of public spaces on people's mental and emotional responses; the ambient effects on the human senses, the impact of physical features on privacy and personal space needs; and the incorporation of cues and their effect on people. The focus is given to these matters because although they have significant impacts on people, it was believed that they may be issues that receive less attention by professionals.

The 114 council planners who responded to the questionnaire included 65 male and 49 female planners (see Graph 1). The majority of respondents identified their positions as either assessment planner or strategic planner. In comparison, the designers included 62 male and 10 female designers, and the majority of them identified their positions as either architect or director. Whereas 61 per cent of planners indicated that their professional experience in their positions ranged between two to ten years, 78 per cent of designers ranged between 15 to 50 years (see Graph 2). The next section discusses their responses.





4.31 Perspectives of Built Environment Professionals

It is difficult to disagree that features of public spaces influence human behaviour and experience. When asked what the respondents thought about this statement, the majority agreed. One designer elaborated on the open-ended question and explained that *an individual's experience of public space is more affected by the other people using the space than the physical enclosure of the space.* A planner who did not agree that public spaces impact behaviour stated that *lighting and aesthetics can play on people's emotions.*

Another designer recognised that *the atmosphere created by a public space directly influences the emotions and reactions of human beings.* Another similarly explained that *some spaces are sombre, intimidating, bleak and uncomfortable and make some feel they should leave and others feel they should linger.* Comments by a planner suggest that *colours, textures, openness or closeness of spaces and hard physical items* influence whether people choose to leave or linger.

These comments reinforce that the features of public spaces can influence people to behave in certain ways. One designer explained:

> *The physical makes the emotional possible. The emotional is determined by other matters.*

The reference to 'other' matters implies that emotions are determined by an individual's physiological and psychological characteristics. This highlights the issue

that is central to this thesis, that is, the importance of considering the effects of public spaces on behaviour, by understanding the 'emotional' and psychological responses of people.

4.32 Mental and Emotional Responses to the Built Environment

When asked whether or not planners and designers considered the impact of developments on the users' mental and emotional responses (such as stress, serenity, excitement, boredom and pleasure), 48 per cent of planners and 82 per cent of designers said 'yes'.

Of the designers who said 'no', one argued:

> *I don't wear a white coat and this is not something that I would consciously consider. It's too subjective.*

Other designers stated that consideration of such impacts is *hard to control* and that *architects should not play god.* Another stated that *it's too much for an architect to worry about.* In comparison, the planners who said 'no' argued that considerations of the impact of developments on mental and emotional responses *should not be controlled by development assessment, are beyond the scope of the provisions of DCPs and other planning documents and are not easily prescribed by environmental planning instruments.*

Most of the comments made by the 52 per cent of planners who said that 'no' they do not consider the impact of developments on the user's mental and emotional responses focused on the difficulties of using planning documents to control these issues. In contrast, the 18 per cent of designers who said 'no' commented that this was the province of the social scientist and outside the scope of design and architecture.

A designer who said 'yes' explained that *a space must exude positive responses from people, not create negative emotions.* A planner stated that whilst some public spaces where loud music is played *can excite young people,* it can *deter and stress*

older people. Accordingly, one person's positive emotion may be another person's negative reaction.

Most designers stated that consideration of such matters would depend on the client's requirements for the space.

> *Some spaces need to be calm, others need to be exciting, others functional.*
>
> *If mental and emotional aspects were a priority, I would have the design reviewed by an appropriate consultant.*

In comparison a planner noted that *these matters are best considered either by an expert panel, through better education of development assessment planners or referral to the relevant agency.*

Several designers stated that they used ambient and physical features such as colour, tone, texture, tactile materials, sound, glare, lighting, form, proportion, shape and scale to *play on emotions*. Other designers mentioned that artworks, water features and installations, cultural and heritage references, and measures to preserve privacy and reduce sound were also utilised. In addition, planners noted that they considered materials, signage, planting, landscaping and proximity to adjoining uses.

4.33 Ambient Effects on Human Senses

When asked if planners and designers considered the impact of developments on the human senses of hearing, sight, smell, taste and touch, 58 per cent of planners and 78 per cent of designers said 'yes'. Those who said 'no' stated that they did not know enough about the issue in order to appreciate it. One designer commented that if he had a better understanding of the issue, he would be interested to apply it to his design work.

Several planners suggested that while they did not consider the impacts on human senses during assessment of applications, they believed that it was important for the

designer to consider it at the design stage. Of the planners who said 'yes', several commented that such considerations are *much more difficult and subjective*, and that they would consider them *only in a broad context.* Others stated that *while this is important, it's not something considered in-depth*, [it would be] *difficult to justify to the applicant the extra cost* [and that] *there is likely to be limited expertise on these issues within council.*

The designers had similar views and stated that such considerations were taken into account at the *conceptual design step of the design* point in the design process*.* Several mentioned that they would consider them *if it fits the purpose*, implying that their consideration would depend on the desired use of the space. This is closely aligned with the consistent comments that *it depends on the brief from the client.*

At least four designers expressed some surprise about the question, noting that *people don't eat our buildings as far as I know,* and *I always encourage people to lick my buildings.* Other designers reflected on more realistic 'taste' issues, commenting that *drinkable water features* and *food kiosks are a good way to activate a public space*.

In order to evoke a particular 'sense', designers noted that they used elements such as *stimulating tactile features* and the use of *water fountains to introduce sound and cooling.* Other elements included physical and ambient features such as installation of *railings, paving and walls, contrasting surface textures, colours and lighting* as well as *public art* and *sculptures* to facilitate the senses of touch and sight. Natural measures also rated highly particularly i*nteresting useable landscaping, natural vegetation to screen out traffic, use of colourful plants, scented plants* or a *scented garden,* use of *natural materials where touch is possible* and *tall trees creating rustling background sound by wind.*

In addition, the planners noted that in assessing design proposals, they often recommended that designers utilise *noise mitigation barriers, tactile indicators for those with disabilities* and *use of fencing and landscaping to attenuate noise impacts.* In terms of visual and sensory elements, they stated they would recommend measures to *hide eyesores,* encourage *appropriate lighting and sunshade,* avoid using *rough, sharp or dangerous finishes,* strategically locate odorous land uses such

as *rubbish tips* and they would *have regard to overshadowing, privacy and general amenity.*

4.34 Impact of Physical Features on Privacy and Personal Space Needs

When asked whether or not planners and designers considered the impact of developments on the personal space and privacy needs of users of public spaces, 86 per cent of planners and 61 per cent of designers said 'yes'. The 14 per cent of planners who said 'no' did not elaborate so it is difficult to understand their perspective on this matter. On the other hand, the 39 per cent of designers who said 'no' explained that there was *no special consideration as these issues must be integrated within the design brief.*

> *Good spaces don't satisfy needs, they need to evolve to create new experiences.*

At least 25 per cent of planners stated that they would consider personal space and privacy needs in accordance with *accepted standards* and *established guidelines or books*. In particular, they noted that applications would be assessed using the minimum requirements presented in Australian Standards (AS), local environmental plans (LEPs), development control plans (DCPs), the Building Code of Australia (BCA) and Crime Prevention Through Environmental Design (CPTED) codes. Others also mentioned that they would consider *ergonomic requirements* and their *personal experience of spaces.*

Conversely, only one designer referred to a consideration of personal space and privacy needs by utilising government guidelines. Another stated that such considerations are for landscape architects. Other responses from designers indicated that their consideration would be influenced *only if it leads to a better project financially to the client* or *if it was part of the client's brief* [and that it is] *almost always determined by budget.* At least eight designers and nine planners specifically stated that these considerations would depend on the *purpose of the space, the users of the space and their needs* and the *adjoining uses* to the space.

One planner suggested that *if the spaces are too small or too large people will not feel comfortable.*

Planners noted that measures to facilitate privacy in public spaces could include *screening to protect privacy* through *landscaping, location and type of fencing, orientation of buildings,* and the provision of *enough seating* and *footpaths for dual users.* At the same time, several responses noted that *spaces should be oriented in such a way to permit surveillance,* and that they *should ultimately be open to ensure that safety and security is maximised.*

Other measures to facilitate privacy suggested by designers included *generous space for circulation, playing with scale, location and placement* of buildings and spaces and studying *angles of views, frequency of use and movement patterns* in order to design appropriate places *for interaction or retreat.* One designer reflected that a public space *must work functionally otherwise people will not use it.*

4.35 Incorporation of Cues and their Effect on People

In response to the question about whether or not planners and designers considered the effect of physical or non-physical cues on the patterns of users of public spaces, 82 per cent of planners and 94 per cent of designers said 'yes'. Several planners who said 'no' argued that *the designer should* or that *this could be in the realm of the developer because having relevant visual cues could enhance the space and improve property prices nearby.*

A designer who said 'no' commented that *if you have to use signs then there is a deficiency in the design.* A designer who said 'yes' also noted that *sometimes signs are necessary, other times layout can indicate direction, or, focal points can pull people onwards.* Another reflected:

> *I don't use non-physical elements because I can never seem to get my hands on them. There are more subtle ways of encouraging or discouraging human behaviour than signage.*

Other designers also agreed that *subliminal cues are more important,* and that they preferred *indirect cues* that were *less literal.* A planner also suggested that cues *should be done inconspicuously.* One designer argued:

> *Space to an extent should be intuitive, but obviously the extent depends on the 'use' of the space. There is nothing intuitive in using a subway, for example, so cues are needed.*

The notion of 'intuition' in public spaces consistently emerged through the responses of the designers who asserted that *good spaces should lead to intuitive way finding.* Others stated that although physical elements were useful elements, they needed *to be used intelligently.* The responses of planners showed that they too shared similar views. One planner explained:

> *I think cues can be used in different ways, consciously and unconsciously. Landscaping, streets and furniture influence the route people will take. I would therefore be thinking about cues as part of movement analysis at an early stage, and using direction signage later where required, depending on context.*

The designers suggested that cues could be used to *pre-empt pedestrian paths and connections and designate central gathering areas* and encourage *circulation patterns, identify entrances, exits, paths and view corridors.* They suggested that this could be done through *the inclusion of nodes and icons to subtly guide users.* One designer stated that buildings should be *created in such a way that they form landmarks and vistas.* Other designers suggested using *light and shade,* engaging a public artist, or using *texture and colour of paving, placement of bollards, trees and planters and paths at different levels.* Planners mentioned similar things, cautioning against overuse of elements.

In terms of how the incorporation of cues in developments is considered, the responses from planners suggest that the majority assess these against the requirements of government planning instruments. Only two planners indicated that they use subjective and personal experience throughout their assessment. One planner stated that consideration of cues is:

> *Not so relevant for 90 per cent of private development. Larger scale development, yes, but this is usually not a specific requirement or assessment criteria.*

The reference to 'specific requirement or assessment criteria' relates to the provisions of planning legislation, which outlines the matters that built environment professionals must consider.

4.4 Discussion of Findings within the Context of the NSW Planning System

The responses to the questionnaire indicate that the majority of planners and designers recognise that the features of public spaces are capable of influencing people's behaviour and experience. Those in disagreement commented that public spaces *cannot influence behaviour directly but they can have an effect on people's emotions.* Such comments fail to recognise that human emotions are a result of physiological and psychological processes. Thus perhaps without recognising it, the planners and designers who disagreed reinforced the central hypothesis of this thesis.

The majority of responses indicated that consideration of matters such as mental and emotional responses, effects on human senses, privacy and personal space needs and the effect of cues were indeed influenced by legislation and planning instruments. However, the responses of designers in particular, conveyed that they utilised planning instruments begrudgingly. Common response from designers reflected that the problem with planning instruments is that they *are not motivators for design and are an ineffective way of controlling incompetent practitioners,* or that their *rules often stifle the creative output.* One designer noted that these are *feeble attempts by planners to control architecture*.

While the designers protested about planning instruments, not one complaint was expressed by the planners. This may be due to the distinct role of each of these professionals. Designers use architectural principles and personal creativity to design developments, while planners assess those designs based on established instruments. While the instruments are perceived by designers to *stifle creativity*,

they are perceived by planners as essential and useful tools that can be relied on to fulfil their professional roles.

Another trend from the responses of planners suggests that greater consideration is given to issues that are relatively easy to quantify and control. Planners expressed the view that issues such as people's mental and emotional responses to the built environment were *too difficult to quantify* and *beyond the scope of the provisions of DCPs and other planning documents.* One planner stated:

> *If any DA planner indicates they assess stress, serenity and boredom I would be very surprised. The reality is that these are design considerations. DA assessment will focus more on acceptable environmental impacts.*

Interestingly, designers argued that *it's too much for an architect to worry about* and that they too should not have to consider these matters. It appears that some of the issues that are arguably of most significance to users of public spaces, are given less attention by professionals, despite recognising that their decisions can affect people's mental and emotional wellbeing.

In terms of the effects of public spaces on the human senses of hearing, sight, smell, taste and touch, it appears that professionals do not have enough knowledge of this area. The majority of responses indicated a tendency to rely on the knowledge of other experts for such matters, but only where a particular situation requires special consideration (such as where an activity is likely to generate unexpected levels of noise).

Some respondents appear to underestimate the benefits that such considerations can have for public spaces. One planner suggested that considerations of the effect on human senses *would be more appropriate to consider for private spaces such as shopping malls*. However, it is argued that if planners and designers consider the effects on people's senses in private spaces, they should most definitely consider them in public spaces. This concept may be appreciated more by local councils which understand the value in creating attractive spaces that promote a sense of community as well as economic benefits for a city.

Comments made by some designers indicate that they may have overlooked the ability of their designs to address the lesser considered human sense of 'taste'. Other designers conveyed their creativity and imaginative thinking by noting that drinking fountains and *food kiosks are a good way to activate a public space.* None of the responses mentioned my personal favourite - incorporating fruit trees, vegetable patches or herb gardens as part of the landscaping features of public spaces. This can be an important element of public spaces, not only because it can fulfil people's hunger levels, but also because it can facilitate more interaction with other people and with the natural elements of public spaces.

Those planners who considered privacy and personal space needs noted that they take the provisions of their councils' planning instruments into account. Again, this reflects the ability of planning instruments to stipulate controls, such as through numerical requirements for building setbacks, appropriate fencing heights and acceptable locations for placing windows.

Although most planners and designers agreed that measures to facilitate privacy or 'personal space' of public users would depend on the *purpose of the space*, conflicting ideas emerged. While some mentioned that privacy could be protected through landscaping, others noted that public spaces should be designed so that they are *open to ensure that safety and security is maximised.* The use of windows that overlook public spaces was noted by the majority of planners as a useful way of maximising 'casual surveillance' by maximising the number of *eyes looking out onto the street.*

In response to the question about whether planners would consider the effects of cues, the majority indicated that they would, and that they would rely on the provisions of planning instruments. Again, they commented that planning instruments addressed this issue by providing uniform controls for signage, landscaping, fencing and location of architectural features.

Some designers noted that their designs would incorporate cues in the form of *pedestrian paths* and *nodes and icons.* Similarly, Lynch's (1960) theory discussed in Chapter 3 maintains the idea that cues and environmental elements such as

'landmarks' and 'edges' in addition to 'paths', 'nodes' and 'icons' influence how people evaluate their physical surroundings.

The findings of this study have shown that planners and designers differ in their approach to consideration of certain matters which affect people in public spaces. There are some issues which are emphasised more by planners, and other issues that are emphasised more by designers. Generally, both professionals agree that public spaces are capable of influencing human behaviour. In view of this, what follows should be a progression towards understanding concepts of environmental psychology and its benefits. Then planners and designers can decide whether or not they should incorporate such considerations into their daily work practices in order to improve the quality of public spaces for people.

4.5 Conclusion

This chapter has synthesised the findings of the council planners' and consultant designers' questionnaires. It has identified the role and perspective of these professionals, as well as the matters that they consider when designing and shaping public spaces. The next chapter provides a different perspective by focusing on the experiences of the users of public spaces.

5.0 The Humanistic Dimensions of Public Spaces in Fairfield

This chapter focuses on the themes that emerged from a focus group session and from an interview with Fairfield City Council's urban designer. I examine the features of public spaces that have been identified by the focus group participants and discuss them within the context of the literature on environmental psychology.

5.1 Why the Focus on Fairfield?

The city of Fairfield is used as the basis for this case study because its public spaces represent a marginal type of space. Unlike major planned and designed public spaces elsewhere in Sydney, such as Pit Street Mall, Hyde Park or Darling Harbour, suburban public spaces in Fairfield are generally 'leftover' or incidental spaces that are not purposefully designed to attract people on the basis of their desirable natural or physical qualities. This does not mean that public spaces in Fairfield are less important. Although they may appear marginal in scale and less significant than other designed spaces in the purposes and people that they serve, they are none-the-less very important for the local community that experience them on a daily basis. Figures 13 and 14 below depict images of two such local groups, taken one the same day, in two separate town centres and within a time difference of one hour.

Figure 13. A group of middle-eastern men enjoying public spaces in Ware Street, Fairfield (Venetin Aghostin-Sangar 2007).

Figure 14. A group of Asian men enjoying public spaces in Freedom Plaza, Cabramatta (Venetin Aghostin-Sangar 2007).

5.2 Research Methodology

It was decided that a community focus group session and an interview with the local Council urban designer would be the most appropriate way of linking key theoretical concepts of human behaviour to the real and practical issues that are experienced by people. Approval from the University of NSW Human Research Ethics Advisory Panel (HREAP) was sought prior to conducting the research (see Appendix A). I describe below how I conducted the research focus group and in-depth interview.

5.21 The Community Focus Group Session

The community focus group involved eight participants from a local ethnic Assyrian community group. Of the participants, five were female (Violet, Flora, Anabell, Vevian, and Valentine) and three were male (Walter, Poulis and Edmon). All participants agreed to being identified on a first-name only basis. Violet, Flora and Walter are in the 50-60 year age group; Vevian, Anabell, Edmon and Valentine are in the 25-35 year age group; and Poulis is in the 35-45 year age group.

The selected group represents an ethnic community that has a significant presence in the Fairfield area. It also represents a group of people with different pursuits, interests, family situations, lifestyles, education and employment backgrounds.

However, the primary reason for the selection was based on the fact that all of the participants have at some stage lived in Fairfield. Six had lived there for more than 20 years, one for 11 years, and another participant had lived there for six years.

The focus group session was conducted at midmorning on Sunday the 28th January 2007, for two hours. The group met at the Dutton Lane car park complex in Cabramatta to be briefed and preceded on a walk through John Street, which is the main street in the Cabramatta town centre. During the briefing, participants were asked to take note of how they felt walking through the public spaces.

At the end of the walk, the group reconvened in a local café (see Figure 15). The ensuing focus group session was audio-tape recorded. It was conducted in the Assyrian language. The participant comments quoted in this chapter have been translated from Assyrian to English by the researcher.

Due to the limitations of the study, the participants were asked four broad questions (see Appendix D) that led to an in-depth discussion of their feelings and perceptions of the public spaces in the Fairfield and Cabramatta town centres. These questions were based on similar themes explored in Council planner and consultant designer questionnaires discussed in Chapter 4.

Figure 15. Participants of the focus group reconvene at a café in Ware Street, Fairfield to commence the session (Venetin Aghostin-Sangar 2006).

5.22 The Interview with Fairfield City Council's Urban Designer

Subsequent to obtaining permission from Fairfield City Council (see Appendix B), a telephone interview was conducted with the urban designer, Allan Cheung, on 28th January 2007. The interview was recorded on cassette for the duration of 30 minutes. During this time, the interviewee was asked a series of questions (Appendix E) relating to the factors that influenced his design decisions, particularly with respect to the streetscape upgrade and improvements at Ware Street. Allan has had more than 30 years of experience in urban design in Australia and overseas.

5.3 Key Themes Emerging from the Community Focus Group and Urban Designer Interview

The themes that emerged from the community focus group and interview which discussed in this chapter focus on the emotional effects of crowding and the importance attributed to personal space and privacy; the desirability for places with a unique character; the effects of the physical and natural features of public spaces; the pleasantness and unpleasantness of the ambient environment; and the behavioural changes in response to perceptions of safety. The focus is given to these themes because they are important factors that influence people's behaviour and experience of public spaces.

It should be noted from the outset, that the Assyrian focus group participants are from a very different cultural group to the Asians in Cabramatta. Had the focus group included participants with an Asian background, indeed it is likely that the responses discussed in the following section may have been quite different. Exploring the responses of people from diverse ethnic backgrounds may reveal distinctions between people's behaviour and experience of public spaces, from culture to culture.

5.31 Emotional Effects of Crowding and the Importance Attributed to Personal Space and Privacy

The issues of crowding (see Figure 16) and the lack of personal space in John Street in Cabramatta were mentioned several times by focus group participants. It was

noted that while some were attracted by the excitement created by the presence of people, others were deterred. Vevian talked about how:

> *In Cabramatta, people don't respect your personal space. They keep coming closer to you even though they don't know you. It's not like that in Fairfield because it's not as crowded.*

Flora agreed but explained that: *in comparison to Fairfield, John Street is tight and congested but that adds to the excitement.* Anabell's response conveyed that crowds can cause and add to stress. She said:

> *Although John Street is definitely fun because it's busy, the crowding is uncomfortable, and it's annoying to constantly bump into someone. If I was feeling stressed or in a bad mood, I would never go to Cabramatta. But I would go to Fairfield.*

The desire for privacy in public spaces also emerged as an important issue for some participants. Edmon initiated the discussion by explaining:

> *If I bought something to eat, I wouldn't sit at a bench in Ware Street and eat it. There's no privacy there. Every third person who walks past is familiar, and the next day you hear that they've been talking about you and describing what you were eating. In Cabramatta I would be relaxed because nobody knows me or cares what I do.*

Allan Cheung recognises these issues of crowding, congestion and density. However, he emphasised that the problem was that physical constraints impeded the Council's ability to appropriately address these issues. He further explained that while widening the footpath would facilitate pedestrian comfort and allow personal space, it would restrict vehicular movement. Although he accepted that *unfortunately urban design sometimes accommodates the motor vehicle first, and pedestrians second*, he explained that the fact was that without proper vehicular access and linkages, suburban town centres such as Fairfield and Cabramatta would decline. The result of greater attention given to motor vehicles is that pedestrian comfort is compromised.

Figure 16. Environmental stimulation in the form of crowding at John Street, Cabramatta (Venetin Aghostin-Sangar 2007).

5.32 Desirability for Places with a Unique Character

When asked about what the group liked or disliked about Ware and John Street, uniqueness, diversity, novelty and character of public spaces were some of the main factors. When asked about the attractors that made those public spaces desirable, the market-feel or retail aspects of John Street were mentioned whereas the recreational, community familiarity, uncrowded and peaceful aspects of Ware Street were mentioned.

The majority of the group agreed that the large numbers of people made the spaces in John Street exciting but that most of them would choose Ware Street over John Street because of their familiarity with the Middle-Eastern presence there. Flora explained that the downside to being amidst so many people in John Street was that *we are constantly bumping into people*. On the other hand, the group agreed that the lack of crowds in Fairfield made Ware Street desirable for its peaceful qualities.

In recognition that the Council has an important role in the creation of desirable public spaces, Allan referred to his work in developing the policies to guide new developments. He said that efforts were made through various studies to look at how public spaces in Fairfield could be utilised for public gatherings and recreation by improving the appearance of pedestrian areas. The Councils investment into pedestrian areas conveyed the importance of these areas. A variety of pavement surfaces, colours, widths, landscaping treatments and new street furniture was enhancing the appearance of footpaths (see Figure 17 below). He indicated that the Council was keen to develop a European type of public space for the Fairfield area.

Figure 17. Varieties in ground surfaces, well-maintained landscaping and spacious footpaths at Spencer Street, Fairfield (Venetin Aghostin-Sangar 2007).

5.33 Recognition of the Effects of the Physical and Natural Features

Landscaping and Greenery

The presence of well-maintained landscaping and greenery emerged as a desirable element of public spaces. The group generally agreed that there was not much landscaping observed in Cabramatta. Anabell noted that:

> *Because the landscaping in Fairfield is well-maintained, I get the sense that there's someone taking care of this place. But when all I see is*

concrete such as in Cabramatta, it makes me feel as though they've tried to do the job quickly with minimal effort.

Anabell went on to mention that it is not enough to plant trees without any other form of vegetation such as flowers and garden beds because:

Trees can grow without being nurtured by people. But when I can see that someone is taking the time and effort to maintain the flowers and hedges, I know that someone values this place so I appreciate it and value it as well.

When asked why landscaping was valued, Violet explained that:

It makes people feel better. When you're stressed it gives you relief. Especially if there is a fountain, the sound of the water has a very soothing effect on mood.

Edmon correctly observed that:

Landscaping in Fairfield is good because it has been designed in such a way to show you how you can get in and out of that space.

When referring to the Ware Street streetscape improvements, the urban designer confirmed that he had been consciously aware of the effect of elements such as landscaping in serving as cues to divert people from one place to another. He said:

We used landscaping at the new intersection of Ware Street and Spencer Street to channel people to go into that area. We do this type of thing all the time (see Figure 17 above)*.*

Built Form and Building Variety

In Cabramatta I sometimes lose my sense of direction because everything looks the same, the buildings, the shops and the people.

The group agreed with Violet's comment that similarities in the physical features in Cabramatta created confusion and a loss of sense of direction. They added that it also created boredom. When asked to expand on the observed similarities, Anabell described that the building styles, colours, structures and features such as windows were of similar styles and shapes. In contrast, the group observed that the physical features in Fairfield were varied and created visual interest. Vevian said:

> *In Fairfield the new residential flats have different heights, styles and colours, and the shops are more varied in their appearance. I found that I look around more when I am in Fairfield* (see Figure 18)*.*

When asked about the quality of public spaces in Fairfield, the urban designer expressed the view that while substantial investments had gone into infrastructure and streetscape improvements, the built form of development adjoining public spaces was slow to respond. While there has been some major redevelopment of sites in the Fairfield town centre where mixed-use (i.e. commercial and residential) towers have been built, he noted that smaller shopkeepers were quicker to respond to the streetscape improvements than developers. Council's initiatives had encouraged shopkeepers to take care in maintaining the public spaces that adjoin their shops. These shopkeepers had also been motivated to further invest in private space improvements that have contributed to the overall pleasantness of the area.

Figure 18. Towering residential flats with retail and commercial units at the bottom provide stimulation in the form of a variety of physical features (Venetin Aghostin-Sangar 2007).

Streets and Footpaths

The desire for wide, spacious streets and footpaths also emerged from the group. Walter emphasised that although the streets and footpaths in John Street were wider than in Fairfield, they were narrow in comparison to the population density.

> *I could hardly walk comfortably on the footpath in John Street because every few metres it was blocked by someone selling things on the footpath or on the benches. Instead of selling his items in a proper shop, one man was selling herbs laid out on the concrete floor.*

Walter suggested that the local Council should prevent such people from selling items in public spaces where they block pedestrian thoroughfare (see Figure 19). He suggested that the Council provide them with rented carts positioned at certain locations within the public spaces.

> *This would add to the market appeal of John Street without interfering with pedestrian movement.*

Figure 19. Ladies selling herbs from their informal store on public benches in John Street, Cabramatta (Venetin Aghostin-Sangar 2007).

Pedestrian Linkages

Edmon and Walter pointed out that both in Cabramatta and Fairfield there were several arcades that provided a quick pedestrian link from one street to the next. The group agreed that these links made getting around the town centre quicker and easier. Poulis and Edmon who both currently live in Fairfield pointed out that some of the arcades in Fairfield are closed after business hours on weekdays, and on Sundays and so access is often limited.

Public Furniture, Art and Installations

Walter mentioned that the public seating in John Street was not usable because of the informal shopkeepers who had set up their displays on the seats. Violet added that the shade sails covering public benches in Fairfield kept the seats clean and usable, whereas seating in John Street was not useable because they were covered in bird-droppings.

The urban designer was asked if the general public have a say about what streetscape improvements they want in the area. He explained that as a result of discussions with the local community, large amounts of money were spent on shade sails to cover the public seats in Ware Street. This acknowledged the needs of a group of elderly men who used the public seating on a daily basis (see Figure 20).

In terms of public art, Edmon talked about how he liked the statues scattered across John Street and the images of historical figures standing upright in the footpath in Fairfield.

> *In all that unpleasant smell, it was nice to see the statues because they are different. I haven't seen something as interesting as those statues in Fairfield, aside from the images of people at the corner of Nelson Street and Barbara Street.*

When the urban designer was asked about the rationale behind the public art he explained that their purpose was to serve as a visible cue to visitors. It was believed

that the project would arouse people's interest in the town centre and its links with the past.

Following Edmon's comments about the public art in Fairfield, the group reminisced about a historical clock (see Figure 21) that use to be located in Ware Street, but had been relocated to Canley heights about ten years ago by the Council. Flora commented:

> *The clock was the central gathering place for passing information and gossipping. If you wanted to know about the latest happenings, you would go and mingle with the people standing under the clock.*

It became evident from the discussion about physical features of public spaces that the participants attached meaning to certain features. The discussion about the clock aroused memories of fun times and social gatherings. It has continued to symbolise the tight knit nature of the community, even though a decade has passed since the clock was seen in the Fairfield town centre.

Figure 20. An Assyrian group of men who use this public space in Fairfield every day, for social and recreational activities (Venetin Aghostin-Sangar 2006).

Figure 21. The focus group participants assigned meaning to the 'clock' (Venetin Aghostin-Sangar 2007).

5.34 Pleasantness and Unpleasantness of the Ambient Environment

The Sound of Spaces

When the group was asked to take notice of the sounds that they heard in the streets, the main sounds mentioned were those of cars, recorded and live music from local cafes, noise from people speaking Asian languages in John Street, and the sound of dice rolling made by the elderly men who play cards and checkers in Ware Street. Past conditions were also remembered, as Walter recalled:

> *…many years ago, the young people in Fairfield would drive their cars around and around the block with such loud music playing that we couldn't hear each other talk. It was frustrating, but now it's quiet and peaceful.*

Edmon, Vevian, Anabell and Flora had also observed this change. Flora associated the lack of youngsters playing loud music in their cars to the belief that:

> *There used to be more younger people in Fairfield than there is now. They've scattered further away to other areas. It is sad.*

Violet noted that when she had been walking through John Street earlier that morning, the distant sound of a harmonious Asian tune has been pleasant to her. However, she described that when she drew closer to the source of the music and saw the elderly man sitting on the side of the footpath with a bucket of coins beside him, she became upset. She said:

> *The music player upset me because he was begging for money and that was his way of living. From a distance I thought the music was lovely, but when I saw him, the music disheartened me.*

In spite of Valentine pointing out that the musician provided a form of free public entertainment (which she noted was absent in Fairfield) and Walter pointing out that the musician was only showing off his talent, Violet maintained her perception of him as a beggar, which, for her, ruined the pleasantness of the music.

The Smell of Spaces

Everyone in the group unanimously agreed that Cabramatta *smells unpleasantly*. Valentine mentioned that *in Cabramatta it smells badly everywhere but in Fairfield it only smells around the garbage bins*. When asked what it was that bothered the group about the smells, Violet said: *the smells are annoying and bad for our health*. When Walter made mention of the unpleasant strong scent of a particular fruit called Durian that is sold in the fruit shops in Cabramatta, the group began a discussion about how each culture has its own smelly foods that other cultures find unpleasant or intolerable.

Violet mentioned that some years ago, several second-hand stores opened in the Fairfield town centre area and caused a predominant unpleasant smell from the used goods to emanate into the streets. She observed that this smell had lessened since

some of the stores were replaced by new retail activities. Walter also talked about the smell of urine that was prevalent in some parts of the streets.

> *There were some places in Ware Street where people use to urinate. It used to smell bad but it's better now. Across from the train station there was a laneway passage leading to the Fairfield Chase shopping centre and because there was very little movement there, it was dark, and the passage was not visible from the street, it was easier for people to urinate there in private without being caught.*

During my interview with the urban designer about the effect of smells in public spaces, he agreed that smells can either entice people to a certain area, or deter people from that area. He gave an example of a delicatessen near Ware Street:

> *During lunch hours the deli serves delicious smelling Spanish sausages at the shop front and you can smell it before you see it, and if you are a meat eater, you want to go there and try it.*

The urban designer also described a *dirty, smelly and untidy back alley* in Fairfield that was discouraging people from using the space. He noted that since the Council had initiated a regular clean-up of the alley, surrounding shopkeepers had also been encouraged to improve the appearance and cleanliness of their shopfronts.

The Illumination of Spaces

During the discussion about the emotional effects of crowding in Cabramatta, Vevian mentioned that the congestion and in particular the darkness of the Dutton Lane car park complex made her feel unsafe. When asked if she would feel safer if the car park complex was brightly illuminated, she responded:

> *Yes I think everyone would. It would make me feel safer because I can see where I'm going and I can see where other people are going.*

The rest of the group agreed. Concern about dark or bright settings is shared by both women and men. The key issue appears to be the element of visibility. The

feeling that illumination provides good visibility was not only associated with perceptions of personal safety, but seen to deter deviant and undesirable behaviours (such as urinating in public spaces). Good lighting is also important in helping participants to find their way around the area. Violet said:

> *At night time even if I'm in a familiar street, I would still get confused because the things I notice during the day that help me get around are not as noticeable at night. The look of the streets is different not just because my vision is poor, but because colours and shapes are less obvious. During the day, everything looks better and it helps me to remember the direction that I need to head toward.*

5.35 Conscious Behavioural Changes in Response to Perceptions of Safety

When asked about how safe participants felt in Ware Street and John Street, Valentine stated that:

> *Because I knew I was coming to Cabramatta today, I swapped my normal handbag for a bum-bag so that I can secure it to my body and worry less that it might get stolen.*

This action was not necessarily because Valentine had ever experienced theft of her personal belongings, but because her perception of her safety caused her to change her normal behaviour. Everyone in the group generally agreed that attacks on one's personal safety could occur anywhere but that the media focus on Cabramatta had caused people to be much more afraid than usual. Poulis stated:

> *For all we know John Street might be the safest place in Sydney but because it's so congested the first thing I thought to do was to secure my wallet to keep it safe.*

Edmon argued that in fact, John Street is probably safer than anywhere because there are large numbers of people providing surveillance over public spaces. He also

mentioned that the elderly group of men who play cards at the public benches in Ware Street also provide surveillance in the Fairfield area late into the night.

Violet commented that the visibility and presence of other people in Ware Street also made her feel safer because she was not alone. Anabell stated that in spite of the fact that safety is an issue everywhere: *at night time I may go to Fairfield but there's no way I will go to Cabramatta*. This is partly associated with the belief that there are fewer people who use public spaces there at night, but also because people may feel safer in places with which they are familiar.

Safety from vehicles was also raised as an issue. Anabell mentioned that crossing the streets in Cabramatta was easier when compared to crossing the streets in Fairfield. She associated this with the presence of speed humps along John Street and the pedestrian dominance which causes vehicular traffic to slow down.

5.4 Discussion of the Key Themes and Issues of the Study

Many of the themes that emerged from the focus group and interview with the urban designer reinforce findings from the literature. There are obvious links between the participants' experiences and the behavioural theories that were examined in Chapter 3. For instance, one of the prevailing themes in terms of the effects of crowding was that while some people were attracted to the stimulation created by crowds, while others were deterred by it and altered their movement accordingly (Bell *et al.* 1996; Veitch and Arkkelin 1995).

Anabell's comments about how she would avoid Cabramatta if she was in a stressed mood can be linked with the environment stress theory which posits that crowding can impinge on human senses and cause adverse psychological and physiological responses (Veitch and Arkkelin 1995; Insel and Lindgren 1978). Anabell recognised that over-stimulation from the environment in the form of crowds would not assist in calming her mood.

The participants of the focus group accepted that the qualities of spaciousness, variety in building form, landscaping and wide, uncluttered footpaths, outdoor café settings and public entertainment made Ware Street pleasant. It was agreed that

maintained landscaped areas were particularly desirable. From the participants' comments, it is presumed that their desirability is partly attributed to their health benefits (Kaplan and Kaplan 1989), and partly because they convey a degree of control over the environment. Gifford (2002) and Veitch and Arkkelin (1995) assert that this perceived control is more likely to encourage people to appreciate their environment (see Figure 21). This supports the urban designer's comments that subsequent to the Council asserting its control over neglected parts of the town centre, shopkeepers had been encouraged to do the same.

Figure 22. A Fairfield City Council employee tending to the landscaping (Venetin Aghostin-Sangar 2007).

In terms of the ambient environment and the effects of noise in John Street, Violet's ability to hear the musical sound (which she first thought was pleasant), was overwritten when she saw the musician making the sound. When she was 'confronted' by the source of the music, it caused her to change her psychological acceptance of the pleasantness of the sound. This supports the notion highlighted by Brebner (1982) that human senses are not independent of each other and rely on other senses such as sight.

With respect to the effects of smell, everyone in the focus group recognised that while they may have felt uncomfortable amidst the smells in Cabramatta, the inhabitants of Cabramatta may well enjoy the smells. This notion that acceptable smells are determined by culture and convention was highlighted by Brebner (1982). Further, the suggestion made by Berglund (*et al.* 1971) that if there is sufficient motivation, people tend to not only accept unpleasant smells but adapt to them is consistent with Flora's comment:

> *I don't care about the dirty state of the public seats, the uncomfortable crowds, or the bad smells; I just go there to enjoy the shopping.*

It would appear that in this case, Flora's motivation is the experience of shopping, which allows her to ignore the unpleasantness of her ambient surroundings.

The urban designer has suggested that some consideration is given to the effects of the features of public spaces on human behaviour. However, he noted that the primary motivation behind public space improvements is to attract commercial investment to the town centre. The emphasis is on exposing the commercial areas to passing vehicular and pedestrian traffic by creating better links from one place to another.

When asked if, and how, the urban designer incorporates cues to influence the patterns and movements of people, he confirmed that his design work involves a conscious effort to incorporate landscaping to divert people to different areas of the street. The urban designer's response to whether or not his design work took into consideration the effect of smell and sound in a public space implied that this was out of his control. Instead, he explained that smells and sounds result from activities that occur in public spaces and are not controllable by the Council.

The findings of my focus group highlights how the different features of public spaces are capable of influencing the behaviour and experience of people from a practical perspective. It has demonstrated that the physical and ambient design of public spaces facilitates crowding, affects personal space needs, creates places that are desirable and attract people, deters people through unpleasant sounds and smells and can cause behavioural changes in response to perceptions of safety. These are

all issues that should, to some extent, be considered and addressed by urban designers, planners, designers and public authorities - not only to attract commercial investment, but to create public spaces that people can take pleasure from.

5.5 Conclusion

This chapter has presented a discussion of the experiences of the participants of the focus group, and has identified how their experiences of public spaces in Fairfield are linked with the theories found in the literature. It has also touched on some of the matters that were taken into consideration by Fairfield City Council's urban designer. The next chapter will draw together the theories derived from the literature; and the themes that emerged from the questionnaires, focus group and interview in order to suggest alternative ways for planning and designing public spaces.

6.0 Ideas for the Design of Successful Public Spaces

This chapter encourages built environment professionals to adopt a more sensitive approach when dealing with issues that can affect human behaviour. It does this by suggesting methods by which professionals can ensure that the design of public spaces is receptive to people's behavioural responses.

6.1 The Mutual Concerns of Planners and Designers

Planners and designers are officially the modifiers and creators of physical spaces (Canter 1977) but the distinct difference in their roles causes them to differ in many perspectives. While designers tend to be highly visual people who generally concern themselves with aesthetics and practical problem-solving (Sommer 1984), planners are trained to be highly verbal and abstract.

The common goal shared by planners and designers is to create spaces that do not detrimentally impact other people, and at the same time respond to the context of the surrounding environment. As this thesis has explained, it is widely accepted that the physical and ambient features of the environment, can impinge on human behaviour to a certain extent. These features can constrain behaviour, cause mental and emotional overload or cause environmental stress (Bell *et al.* 1996).

Considering that planners and designers have some control over these features, it is reasonable to suggest that they should have a good understanding of the psychological dimensions of the environment. Planners, designers and public authorities should draw from, and apply the principles of environmental psychology in order to create legible public spaces that yield more favourable outcomes (Bell *et al.* 1996; Weiss and Baum 1987).

6.2 Applying the Behavioural Sciences to the Design of Public Spaces

The practice of social design is described by Sommer (1984) as the method by which designers and planners can link the gap between design and behavioural science, in order to humanise the process of designing, deciding and building public spaces. The focus of this practice is on identifying not just the clients' preferences but also the values of the users of the environment. Involving people in the design and planning process (referred to as *participatory design)* is believed to be an effective way of demystifying planning processes and teaching designers to design *with* people rather than *for* people (Sommer 1984).

In the process of designing, deciding and building public spaces, built environment professionals have an abundance of codes, guidelines, national standards and government policies to work with. In view of the extensive information base available, there is little information available about the behavioural dimensions of the most important clients of the environment – human beings. Although there is an extensive body of research that studies the relationship between people and the physical and ambient environment, this information is not available in a summarised and practical form that can readily be used by planners and designers (Deasy 1985, Brebner 1982).

In spite of this, it is possible to design sensitively, in a manner that safeguards the users of public spaces from the ambient or physical effects which may interrupt, inhibit or make interaction more effortful (Brebner 1982). There are various procedures currently available to professionals that also aim to encourage consideration of psychological effects. One approach described by Brebner (1982) requires designers to consider the physical dimensions of space, and the ambient elements such as illumination, sound and temperature at three different levels:

1. the physical effects on the users,
2. the control of those effects exerted by the design of the building, and
3. the control of those effects through special installations if needed.

Another approach suggested by Kaplan and Kaplan (1982) encourages planners and designers to consider the physical and ambient dimensions not just by relying on their own expertise, but rather through directly involving the public. They emphasise that collecting information on the needs of the users and not just the desires of the paying client is highly important. Kaplan and Kaplan (1982) advocate the following principles of participatory design:

- involve the public users at an early stage of the design and decision making process in order that their opinions and suggestions can be fairly integrated into design alternatives;

- present the public users with several solid alternatives to react to; and

- Present to the public users the design possibilities in a format that is comprehensible and in a format that is meaningful.

Whilst it is acknowledged that the theoretical issues of behaviour such as perception, perceived control, behaviour constraint, ambient stress and crowding can be difficult to apply, certain dimensions of the built environment can relatively easily be considered. As a final note to this chapter, I propose two simple suggestions to encourage planners and designers to incorporate aspects of the behavioural sciences into the design and decision making process, as follows:

1. Planners and designers should undertake training on behavioural matters in order to expose them to critical issues that they may need to consider throughout their day-to-day work practices. It is not enough to rely on other experts for such information. Every built environment professional should have a basic understanding of how the environment impinges on human behaviour.

2. Planners and designers should identify and think critically about how the physical features and ambient features such as temperature, sound, smell and illumination may affect the users of public spaces. In order to do this, professionals should be open to the suggestions and opinions of the ultimate users of public spaces.

6.3 Conclusion

This chapter has argued that professionals should adopt a sensitive approach to dealing with matters affecting human behaviour. It has focused on how they can incorporate psychological considerations into their designs and decisions by improving the process of information gathering and decision making. It is believed that through further education and training, professionals can be more sensitive to people's needs. The final chapter will present a conclusion to this thesis by drawing together the ideas established in the earlier chapters.

7.0 Conclusion to this Thesis

This thesis has established that human behaviour and experience of public spaces can be influenced by the physical and ambient features of the built environment. It has been identified that physical features may include buildings, streets, landscaping, land forms and architectural elements, and ambient features may include sound, smell, temperature and illumination. It has also been identified that other factors such as age, gender, culture and ethnicity are also capable of affecting the way people respond to the environment.

The review of the literature on environmental psychology and the theories of behaviour have revealed that the features of public spaces affect behaviour because of people's physiological and psychological processes. Mehrabian and Russel (1974) showed that physical and ambient stimuli affect behaviour and emotions in predictable ways, but the details of how it does this vary from theory to theory. The prevalent theoretical perspectives suggest that behaviour is associated with people's:

- levels of arousal (heightening of the brain activity),
- capacity to process physical and ambient stimuli,
- real or perceived degree of control over the environment,
- ability to adapt or adjust to the environment,
- responses to environmental stress, and
- perception of their surroundings

Many of the themes that emerged from the focus group demonstrate obvious links between the participants' experiences and these behavioural theories. The focus group established that the physical and ambient features of public spaces can facilitate crowding, affect personal space needs, create places that are desirable and attractive, deter people through unpleasant sounds and smells, and cause behavioural changes in response to perceptions of safety.

In addition to identifying the perspectives of the users of public spaces through the focus group, the study also identified the role and perspectives of council planners and consultant designers. These built environment professionals have a significant role in shaping public spaces. Whereas the designers design the environment,

planners assess their designs and the councils decide on those designs. The decisions of these professionals can have considerable affects on the behaviour and experience of people.

The responses of planners and designers indicated that the majority recognised that public spaces can influence people's behaviour and experiences. However, the weight given to considerations of the impacts of their designs on people's mental and emotional responses, biological senses, privacy and personal space needs and patterns of movement differed. The difference in the weight given to certain matters may be attributed to these professionals' perceptions of their roles.

This thesis has focused specifically on public spaces because these spaces by their very nature provide the settings for the freedom of personal and social expressions, for a diversity of people. It has been suggested that it is in public spaces where people find some of the most stimulating, exciting and worthwhile experiences of their lives (Beattie and Lehmann 1994). As has been revealed by the themes that emerged from the focus group, the features of public spaces are indeed capable of contributing to desirable and attractive places.

In conclusion, this thesis has emphasised the importance of attaining a meaningful understanding of the practical implications of design and development decisions, from an environmental psychology perspective. When planers and designers understand the effects of their decisions on the behaviour and experience of people, they can then apply that understanding to their daily work practices. It is considered that a deeper appreciation and understanding of the application of environmental psychology to public spaces will ultimately improve the quality of the built environment.

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Appendices

Appendix A: Approval from the UNSW Human Research Ethics Advisory Panel (HREAP) to conduct research

THE UNIVERSITY OF NEW SOUTH WALES

FACULTY OF THE BUILT ENVIRONMENT

HUMAN RESEARCH ETHICS ADVISORY PANEL

18 January 2007

Application No: 75001
Project Title: **Human Behaviour in Public Spaces**

Attention: Venetin Aghostin-Sangar
Student No: 3060483

Dear Venetin,

Thank you for your application requesting approval to conduct research involving humans. The Panel has evaluated your application and upon their recommendation, has attached the decision below.

Please be aware that approval is for a period of twelve months from the date of this letter, unless otherwise stated below.

We wish you success with your research project.

Decision

Approved	Cleared to proceed. Meets with criteria. No need to resubmit anything.

Any approval to conduct research given to the applicant Researcher is done so on the condition that the applicant Researcher is at the date of approval: (a) a Student undertaking an approved course of study in the FBE; or (b) a member of Academic Staff in the FBE. If, at any time subsequent to the date of approval and prior to completion of the research project the applicant Researcher ceases to be either of (a) and (b) above, then any prior approval given to the applicant Researcher to conduct will be deemed to be revoked forthwith. The applicant Researcher must inform the FBE HREA Panel immediately upon any change, or possible change, to the applicant's status that may affect any prior approval given by the Panel to the applicant Researcher to conduct research.

Evaluation Authority:

Graham Fletcher (Convener)
FBE HREA Panel

Approving Authority:

Jim Plume
Head of School
Faculty of the Built Environment

Copy to: Susan Thompson, Supervisor

Appendix B: Permission from Fairfield City Council to conduct interviews

FairfieldCity
Celebrating diversity

Fairfield City Council, Administration Centre, 86 Avoca Road, Wakeley 2176
Tel: (02) 9725 0222 Fax: (02) 9725 4249 ABN: 83 140 439 239
All communications to:
Fairfield City Council, PO Box 21, Fairfield NSW 1860
Email address: mail@fairfieldcity.nsw.gov.au

In reply please quote: TA 194
Your Ref:

Contact: Diane Cuthbert on 9725 0843

17 January 2007

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

On behalf of Fairfield City Council, permission is given to the researcher, Venetin Aghostin-Sangar to undertake interviews with Council's Urban Designer, Allan Cheung, and Landscape Officer, Louise McKenzie who are within Council's City Services Department.

The Council has been informed by the researcher that the face-to-face interviews will be undertaken during the month of January, 2007 and will be recorded on cassette. Upon completion of the research, the recorded interviews will be stored in a safe and secure location by the researcher and under no circumstance will be distributed to other researchers or organisations.

It is understood that the interviews will form part of the thesis which the researcher is conducting on *Human Behaviour in Public Spaces*. It is also understood that the researcher's selected interviewees will be questioned about their design role within the Council, and asked to offer information with respect to the aspects of design that they take into consideration when designing public spaces that are located in the Fairfield Local Government Area.

Should you require any further information regarding this letter, please contact me on 9725 0843.

Yours faithfully,

DIANE CUTHBERT
EXECUTIVE MANAGER – ENVIRONMENTAL STANDARDS

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Appendix C: Sample questionnaire sent to planners and designers

PROJECT INFORMATION STATEMENT

THE UNIVERSITY OF
NEW SOUTH WALES

FACULTY OF THE
BUILT ENVIRONMENT

Date: 2 January 2007
Project Title: Human Behaviour in Public Spaces
Approval No.: 75001

Participant selection and purpose of study

You are invited to participate in a study of human behaviour in public spaces. You were selected as a possible participant in this study because your perspective and background experience in this field would add value to the research. The research will form part of an academic thesis that will be submitted in partial fulfillment of the Bachelor of Planning degree.

Description of study

If you decide to participate, we request that you complete the attached questionnaire and post it back to us via the reply-paid envelope by **Friday 12 January, 2007**. Upon receiving your response, we will compile and analyse the results and include them as part of the research which will be an ongoing task over the next four (4) months.

Should you wish to receive a summary of the results obtained from the responses of built environment professionals across Sydney, please complete Question No. 8 on the questionnaire, and provide an email or postal address to which you would like the results to be sent to. Please note that we cannot and do not guarantee or promise that you will receive any benefits from this study, however your participation in this study will offer a valuable perspective.

Confidentiality and disclosure of information

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission, or except as required by law. If you give us your permission, we plan to discuss the results obtained through the questionnaire, and where they provide an insight into the study of human behaviour in public spaces, we will publish them within the body of the thesis.

Recompense to participants

There is no cost to you as the participant, in participating in this study. All that is required of you is the volunteering of a short amount of your time to complete the attached questionnaire.

If you have any questions or would like to discuss the research, please contact me on my mobile: 0422 352 184, or by email to venetin@student.unsw.edu.au. If you have any additional questions that you would like to direct to the Course Authority, please contact Associate Professor Susan Thompson on telephone: 9385 4799 or by email to: s.thompson@unsw.edu.au.

Yours faithfully,
Venetin Aghostin-Sangar

THE UNIVERSITY OF NEW SOUTH WALES

Questionnaire

What this questionnaire is about

The purpose of this questionnaire is to understand how council planners assess public spaces and the extent to which they think public spaces affect the behaviour, experience and social interactions of people. The results of the questionnaire will be used in my thesis on public space which I am undertaking in my final year of the Bachelor of Planning degree at UNSW.

The questionnaire is being sent to built environment professionals across Sydney to help me understand their views and current practices. I really appreciate you answering the questions for my research.

Who should complete the survey?

Given the nature of the study, it is requested that the Council officer to complete this questionnaire be a planning officer who has involvement in either development assessment or strategic planning work.

What you need to do

Step 1: Make yourself a cup of tea,

Step 2: Complete all 8 questions (this should take no more than 20 minutes),

Step 3: Return the completed questionnaire to me in the reply-paid envelope enclosed or send to PO Box 408, Fairfield NSW 1860, by **Friday, 12 January 2007**.

Important information that you should note

For the purpose of this study:

- A ***public space*** is any space that is in public ownership and may include streets, walkways, parks, town squares, waterfronts, etc.
- The ***LEP*** is your Council's Local Environmental Plan.
- The ***DCP*** is your Council's Development Control Plan.
- The ***EP&A Act, 1979*** refers to the Environmental Planning & Assessment Act, 1979.

What if there is a problem?

If you cannot understand a question or would like to discuss the research, please contact me on:

Mobile: 0422 352 184, or
Email: venetin@student.unsw.edu.au

I will ensure that all your queries are answered on the same day.

Thank you very much for your participation
Venetin Aghostin

1. Please indicate your gender:

   ☐ Male
   ☐ Female

2. How many years experience do you have in planning?

   _____

3. What is your current planning position?

   _____

   _____

4. To what extent do you agree or disagree with this statement:

   The physical and non-physical features of a public space are capable of affecting an individual's behaviour, experience and social interactions in that public space.

   ☐ Strongly agree
   ☐ Somewhat agree
   ☐ Somewhat disagree
   ☐ Strongly disagree
   ☐ Unsure

   If you would like to make any comments about this statement please write them in the space below:

   _____

   _____

   _____

   _____

   _____

   _____

   _____

5. Throughout your professional practice in Sydney, which of the following apply to you (tick any that apply):

   ☐ I have been involved in the assessment of applications for the design of a *public space*.

   If built, please provide the location of some good or bad examples:

   _____

   _____

   _____

   _____

   _____

   _____

   ☐ I have been involved in the assessment of applications for the design of a *private building*.

   If built, please provide the address of some good or bad examples:

   _____

   _____

   _____

   _____

   _____

   _____

   _____

   ☐ I have **not** been involved in the assessment of applications for the design of a *public space* or the design of a *private building*.

6. To complete the table below, imagine that you were asked to assess an application for the design of a public space; or an application for the design of a private building. Then do the following:

   Firstly, in the middle column indicate whether you would consider the issues that are listed in the first column during your assessment of the application.

   Finally, in the last column, if you have said YES, you would consider the issues, *briefly* describe what measures you would recommend to address them.

   i. Table 1. Issues that may affect the users of public spaces

Issues that may affect users of public spaces	**Would you consider this issue?**	**What measures would you recommend to address this issue?**
The development's provision of landscaping and natural features	Yes / No	
The aesthetic appeal of the development, to users of public spaces	Yes / No	
The safety and security of the development for users of public spaces	Yes / No	
Cues incorporated into the development to direct or influence the patterns of users of public spaces (e.g. through signage, use of symbolic colours, placement of physical or non-physical elements)	Yes / No	
The development's response to the physical needs of users of public spaces (e.g. public seating, opportunities for physical activity, disability access)	Yes / No	
The development's affect on the biological senses of users of public spaces (e.g. sight, hearing, smell, taste, touch)	Yes / No	

…Continued		
Issues that may affect users of public spaces	**Would you consider this issue?**	**What measures would you recommend to address this issue?**
The development's impact on the mental and emotional responses of users of public spaces (e.g. stress, serenity, excitement, boredom, pleasure)	Yes / No	
The development's effect on the 'personal space' needs, or privacy needs of users of public spaces (e.g. width of footpath, length and placement of seating, overlooking of private activities occurring in a public space)	Yes / No	
The development's effect on the social needs of users of public spaces (e.g. gathering places, people watching places, recreational places, etc)	Yes / No	
The way the development is designed to discourage or prohibit some people from using the space (e.g. homeless people, beggars, children, men, women, elderly)	Yes / No	
The development's control over how the public space can be used (e.g. by using security, CCTV, signage)	Yes / No	
The way in which the development reinforces social status between users of the public space (e.g. symbolic design elements)	Yes / No	
The way in which the development reinforces the boundaries between the private building and the public space	Yes / No	
Please indicate other issues that you may like to suggest, in this box:-	Yes / No	

7. Please indicate whether your consideration of the above issues would be motivated by any of the following (tick any that apply):

   ☐ EP & A Act provisions
   ☐ An LEP provision
   ☐ A DCP requirement
   ☐ A Council Policy
   ☐ Other:_____

8. Finally, would you like to receive a summary of the questionnaire results once all responses have been compiled?

   ☐ Yes
   ☐ No

   If YES, please provide an email address, or the postal address to which you would like the summary to be sent to:

   _____

   _____

   _____

Thank you very much for your help with my research

Appendix D: Community focus group interview questions

1. Can I quote and translate your comments in my thesis?

2. Can I identify you in my thesis by your first name only?

3. What do you like or dislike about Ware Street and John Street? Why?

4. What sounds and smells did you notice in Ware Street and John Street? How did they make you feel?

5. How safe do you feel in Ware Street and John Street? Why?

6. How would you find your way around the Fairfield or Cabramatta town centre?

Appendix E: Telephone interview questions – Fairfield City Council's Urban Designer

1. Can I quote you on your comments in my thesis?

2. How many years experience do you have in urban design?

3. What is your opinion about the significance and purpose of public spaces?

4. Do you think that people's behaviour can be influenced by urban design?

5. Does the Council value the significance of public spaces to the local community?

6. How supportive is the Council in investing in the design, provision and maintenance of public spaces?

7. What has your role as the urban designer for the Council involved?

8. Can you provide an example of a public space in the Fairfield or Cabramatta town centres that has been successful or unsuccessful?

9. What is the history behind the closing and reopening of the Ware Street pedestrian mall?

10. To what extent was there input from the general public?

11. During the design of the Ware Street streetscape improvements were the following issues considered:

    a. Incorporation of cues to influence the patterns and movements of users,
    b. Affect of the space on human senses (such as sight, smell and sound),
    c. Affect of the space on the 'personal space' needs of users.

12. What policies, codes, legislation etc. influenced the Ware Street streetscape improvements?

Appendix F: Extract from the *NSW Environmental Planning and Assessment Act*, 1979

Environmental Planning and Assessment Act 1979

79C Evaluation

(1) Matters for consideration--general In determining a development application, a consent authority is to take into consideration such of the following matters as are of relevance to the development the subject of the development application:

(a) the provisions of:

(i) any environmental planning instrument, and

(ii) any draft environmental planning instrument that is or has been placed on public exhibition and details of which have been notified to the consent authority (unless the Director-General has notified the consent authority that the making of the draft instrument has been deferred indefinitely or has not been approved), and

(iii) any development control plan, and

(iiia) any planning agreement that has been entered into under section 93F, or any draft planning agreement that a developer has offered to enter into under section 93F, and

(iv) the regulations (to the extent that they prescribe matters for the purposes of this paragraph),

that apply to the land to which the development application relates,

(b) the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality,

(c) the suitability of the site for the development,

(d) any submissions made in accordance with this Act or the regulations,

(e) the public interest.

Chapter 1

Introduction: The Study of Human Behaviour in Public Spaces

Figure 1. 30-Days by Friedensreich Hundertwasser (The Artists 2006)

Chapter 2

The Public Realm: An Examination of Concepts in Urban Design and Public Spaces

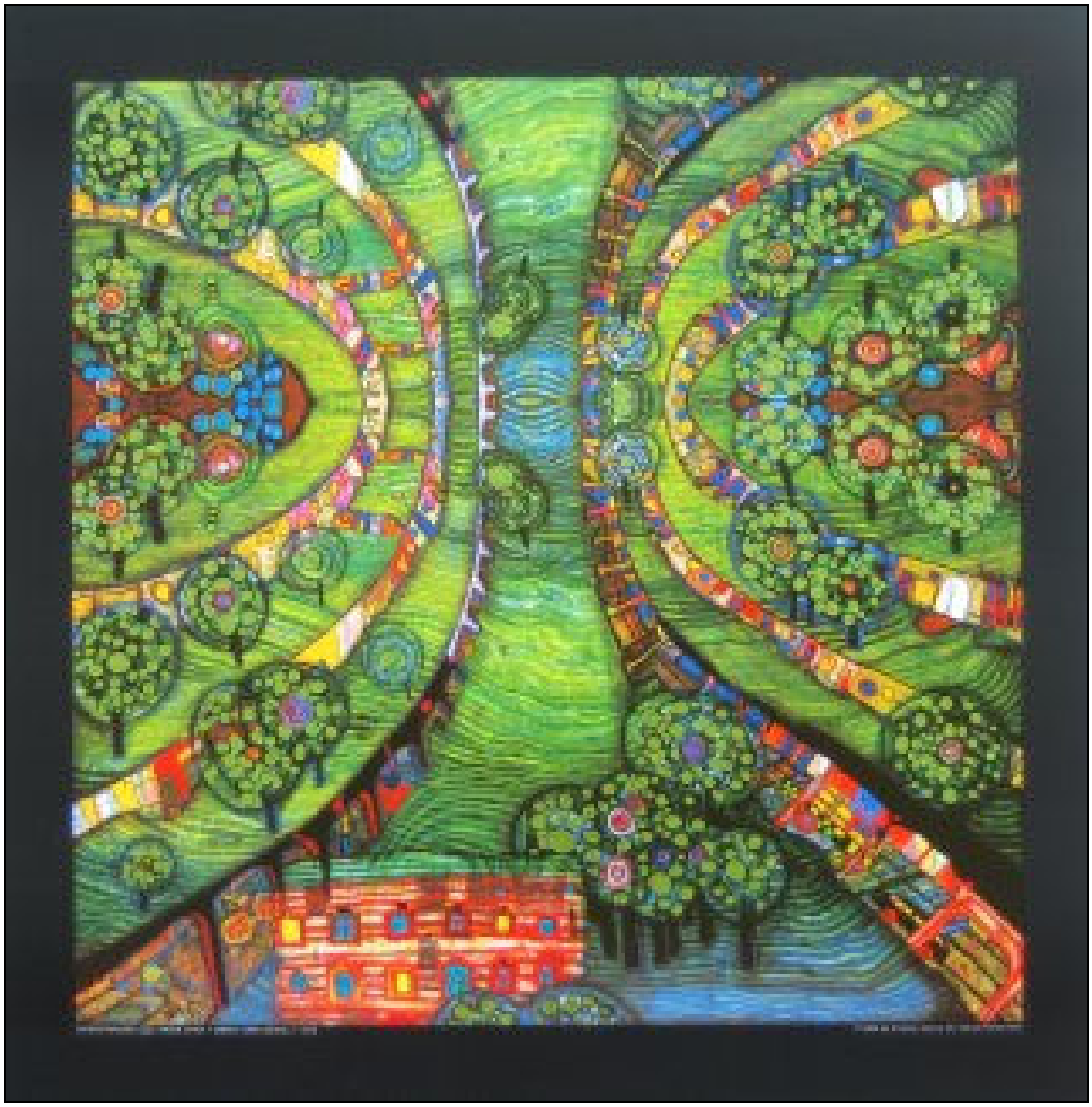

Figure 2. Green Town by Friedensreich Hundertwasser (The Artists 2006)

Chapter 3

The Nature of Human Nature:

An Examination of the Behavioural Sciences

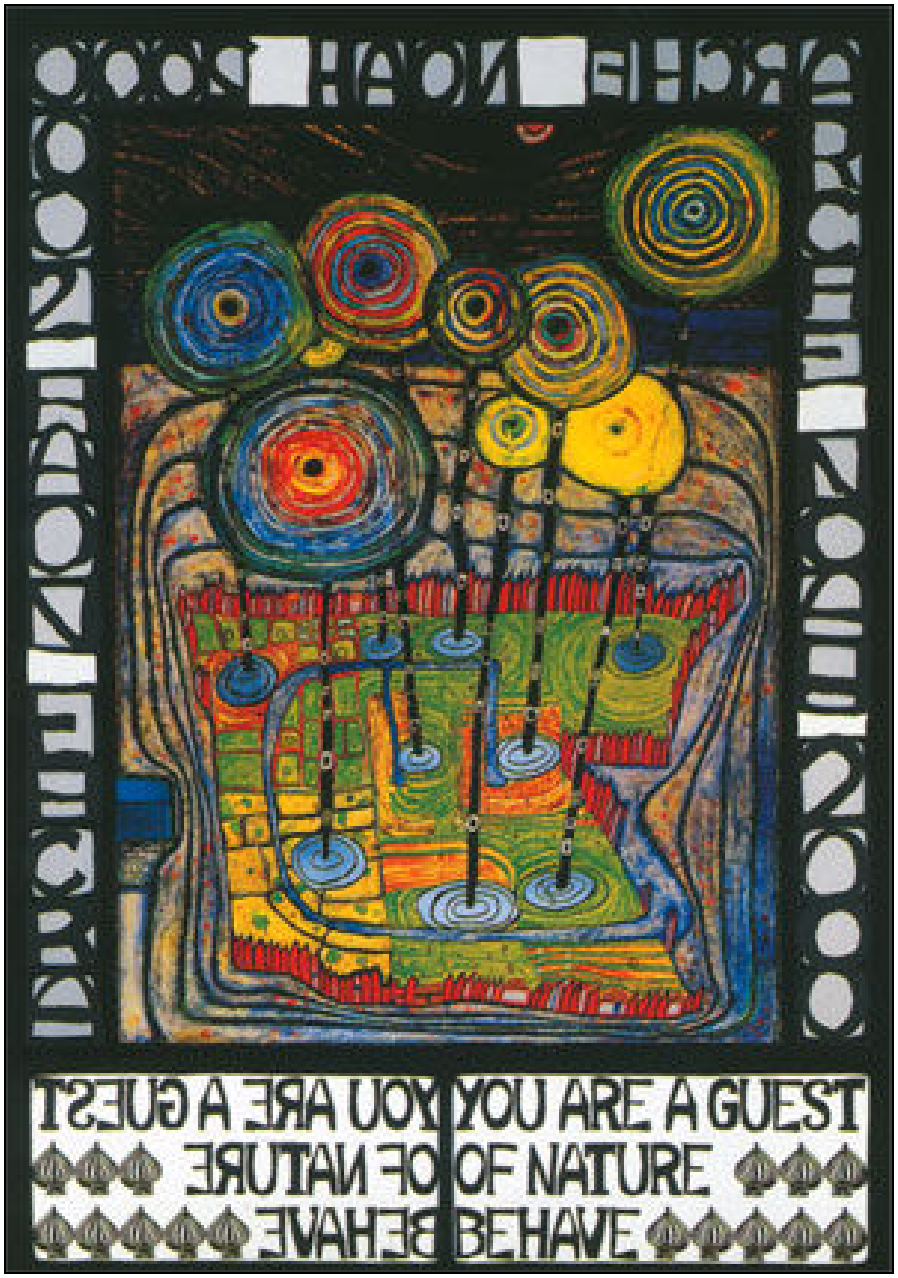

Figure 8. Arche Noah by Friedensreich Hundertwasser (The Artists 2006)

Chapter 4

The Shapers of Public Spaces:

Planners, Designers and Public Authorities

Figure 11. Kreative Architektur by Friedensreich Hundertwasser (The Artists 2006)

Chapter 5

The Humanistic Dimensions of Public Spaces in Fairfield

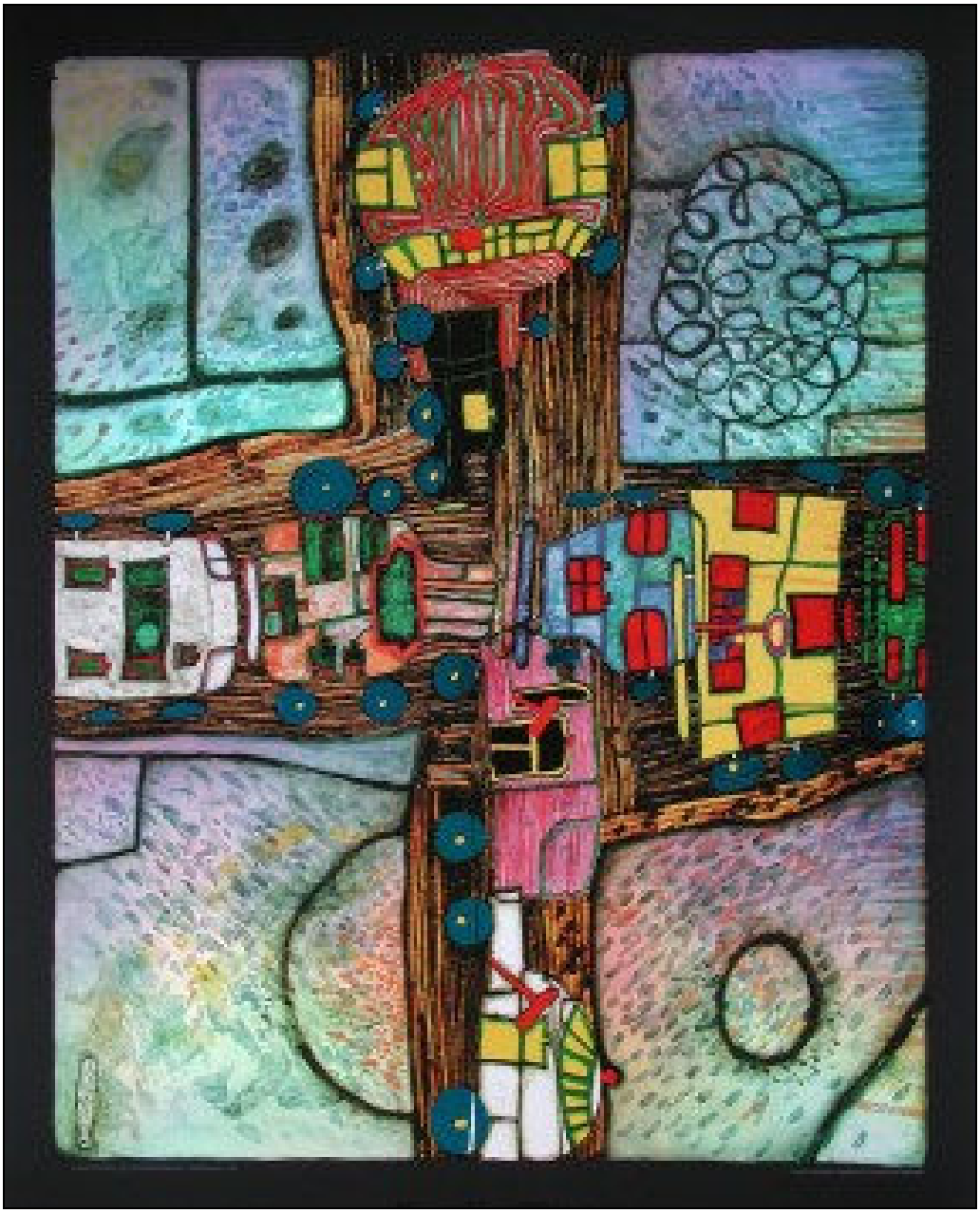

Figure 12. The Crossroad by Friedensreich Hundertwasser (The Artists 2006)

Chapter 6

Ideas for the Design of Public Spaces

Figure 23. Blobs Grow in Beloved Gardens by Friedensreich Hundertwasser (The Artists 2006)

Chapter 7

Conclusion

Figure 24. End of the Waters by Friedensreich Hundertwasser (The Artists 2006)