

Theoretical Investigation

Chapter 3

"Rather than attempting to provide spacious gardens or solitude in search of some impossible pastoral existence, building design should encourage healthy, lively contact among neighbours"

Freedman, 1975:28

Introduction

Zorbaugh (1929: 232) states that there is no phenomenon more characteristic of urban environments, as contrasted with rural communities, than that of segregation.

This is even more evident in cities that have a history of apartheid such as Pretoria. All South African cities continue to be overwhelmed by their apartheid history (Morris, 1998: 764). The city remains segregated and social activity within the urban environment is uncommon between different groups of people. African urban environments are in desperate need of a new understanding and interpretation of the conditions concerned within an African city (Manau et al, 2005: 62).

The environment that we move and live in can completely change the way in which we behave (Cave, 1998: 1). When researching the effect that the built environment has on behavioural patterns and how people act within the social sphere, numerous theories can be referred to.

Within this chapter, two of the main theories with regards to social design within the built environment - environmental psychology and new urbanism - will be explored. The theories will be illustrated with precedents found in Post-Apartheid cities such as Pretoria and Johannesburg in an attempt to determine their applicability to the local context.

Environmental Psychology

Environmental psychology is an interdisciplinary field examining the relationship between environments and human behaviour (De Young, [1999]). The field incorporates relevant theories and methods from related fields which include architecture, psychology, sociology, anthropology, biology and ecology. Within the field of environmental psychology, the term environment is defined very broadly and incorporates all that is natural on the planet, the built environment as well as informational and learning environments (De Young, [1999]).

Gifford (1997: 1) argues that when people change their environment,

it influences their behaviour and experiences. This sentiment is echoed when Stewart Brand, an American author, states “first we shape our buildings, then they shape us and then we shape them again - *ad infinitum*” (Brand, 1994: 3). Resources available within the environment may contribute or be detrimental to social interaction (Brebner, 1982: 143).

While environmental psychology might offer several principles with regard to different settings and can be applied to numerous applications, this investigation focuses on how changes within the environment directly influence social activity.

Sociofugal + Sociopetal

In his book *Environmental Psychology in Building Design*, Brebner (1982: 129) divides space into two categories. The terms sociofugal and sociopetal spaces are originally attributed to Humphrey Osmond (1917 - 2004) where sociofugal refers to space that isolate people within them from one another and the term sociopetal is used to describe space that encourage people to come to them and promote their interaction within them.

There is a definite role within the built environment for both sociofugal and sociopetal spaces but within an architecture that aims to promote social interaction, the characteristics of sociopetal space may prove valuable

(Gifford, 1997: 115). The placement of people and how it promotes eye contact, non-verbal communication and expressive gestures along with spatial characteristics such as orientation, distance and relative height are the main attributes which determines the sociofugal or sociopetal nature of space (Brebner, 1982: 129). As an example, Humphry stated that corridors are sociofugal and that circular spaces tend to be sociopetal in nature (Gifford, 1997: 115).



Fig. 3.1: Isivivane sociopetal space



Fig. 3.2: Isivivane sociopetal seating



Fig. 3.3: S'khumbuto sociopetal main gathering space

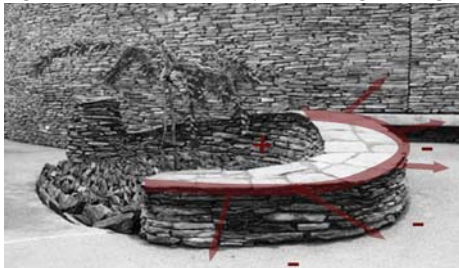


Fig. 3.4: Isivivane sociofugal seating



Fig. 3.5: Wall of names - sociofugal corridor



Fig. 3.6 : Gallery of leaders sociofugal space

Precedent

Freedom Park, Phases 1 and intermediate is located on Salvokop, Pretoria and serves to illustrate the use of sociofugal and sociopetal space within the context of Pretoria.

The project was designed by Gapp Architects in joint venture with Mma Architects, Mashabane Rose Architects and NBGM Landscape Architects.

The first phase entitled the Garden of Remembrance, makes use of sociopetal space surrounding *Isivivane* - a symbolic resting place. The circular space with

surrounding sociopetal seating serves as accidental meeting space and encourages interaction, and discussion.

The second phase - *S'khumbuto* - includes the main gathering space in sociopetal arrangement as well as the wall of names and gallery of leaders, both which forms sociofugal corridors. Sociofugal space discourages social interaction when moving through the wall of names and may lead to discomfort in the gallery of leaders where in conjunction with the sociofugal nature of the corridor the roof weighs down oppressively.

Interpersonal Distances

There are numerous aspects which contribute to successful social interaction.

Based on the original theory on communication channels by Edward Hall, Gifford (1997: 97) relates four main interpersonal distances. The distances are defined as intimate distance, personal distance, social distance and public distance. The distances reflect the relationship between the participants and offer varying amounts of sensory information.

Within public environments these distances tend to be influenced by different factors including culture, fear, security and status.

The built environment plays an integral role in the perception of interpersonal distance. Examples of architectural influence on interpersonal distance

include the effect of dimmer lighting, which contribute to make close distances appear uncomfortable and influence people to move further apart and narrow, wide space, which encourage closer distances between participants.

Gifford (1997: 104) further states that within a public setting, people tend to inhabit space in corners of rooms or public squares as opposed to the centre and that when the amount of physical space is low interpersonal distances increase.

As Brebner (1982: 131) notes, personal space cannot be used as a standard unit of measurement within the built environment. This is unachievable due to the changeability of interpersonal distance. Design should however, take into account acceptable distances required for successful interaction within a particular setting.

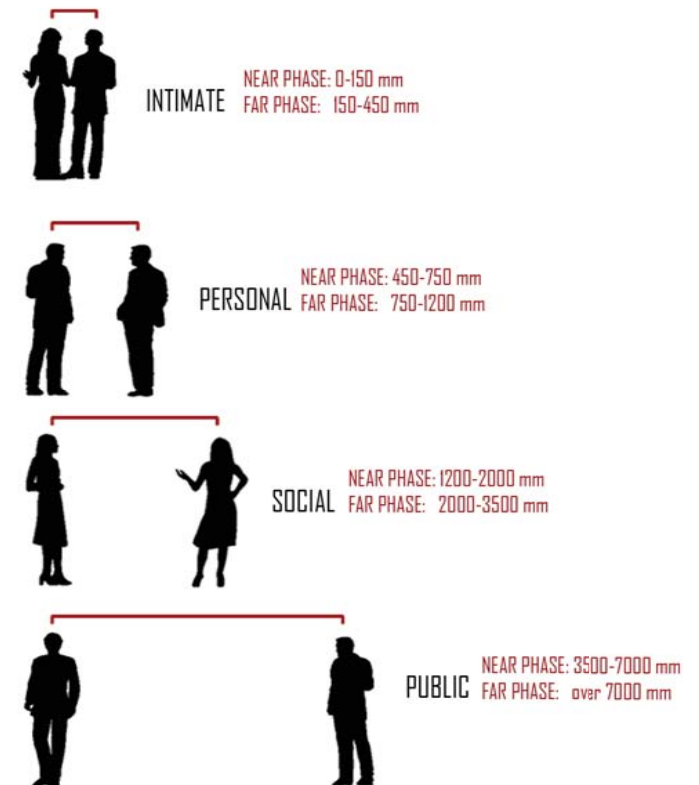


Fig. 3.7: Interpersonal distances



Fig. 3.8: Sammy Marks Square with empty central space and inhabited sides



Fig. 3.9: Empty centre



Fig. 3.10: Inhabited side



Fig. 3.11: Formal garden with empty central space and partially inhabited sides



Fig. 3.12: Urban rooms



Fig. 3.13: Urban rooms

Precedents

These principles are clearly illustrated in Sammy Marks Square situated on the corner of Church and van der Walt street, Pretoria, designed by Staunch Vorster Architects in joint venture with Uys & White Landscape Architects.

The square is a prominent public space within Pretoria CBD yet appears to be ominously empty for large portions of time. In truth the square is not empty; although the space is drastically under used, most of the users of the square remains to the side of the space with the only people to be found in the central area of the square those who move through it on route to a different location. With the amount of space available being too vast for the users to consume, interpersonal space increase thereby giving Sammy Marks square its deserted appearance.

Another example of this is Station Square, Scheiding Street, Pretoria; recently redesigned by KWP Landscape Architects. The central space of the

garden remains largely empty with only the side spaces being used at regular intervals. The central part of the square is lowered with enclaves forming part of the retaining walls in the sunken sections. Apart from the side terraces, the enclaves are the most frequently used part of the space. This is representative of people's tendency to move to the corners or sides of spaces but may also be largely contributed to the subdivision of space into urban rooms.

In addition to its numerous uses, the square serves as an urban waiting room. The design of the garden, with its long, slightly narrow spaces as well as the placement of the enclaves towards the perimeter of the central space where people tend to meet, makes the design perfectly suited towards this purpose. With the lack of shade giving trees and adequate shelter however, the space allows little protection from the elements and therefore remains under utilised to a large extent.

Crowding

Research indicates that small spaces may lead to defensive withdrawal from social interaction (Brebner, 1982: 136) thereby proving the assumption that they promote intimacy and should therefore encourage interaction to be incorrect. Spaces however, may also prove to be too large and promote crowding which is detrimental to successful interaction (Brebner, 1982: 137).

Two of the main pedestrian corridors within Pretoria CBD are the axis along Paul Kruger Street linking Pretoria Station to Church Square and Church Street to the east of Church Square which is pedestrianized up to Prinsloo Street. The lack of programming and management in this section of Church Street, along

with the vast amounts of people moving along this wide pedestrian corridor results in crowding, which in turn contributes negatively to perception of safety and an increase in crime activity within this area. This is true to such an extent that police officers are stationed within this area on a daily basis in order to deter negative effects caused by the mismanagement and improper use of space.

Crowding can also be witnessed along the Paul Kruger street axis just north of Scheiding Street. Crowding along this axis can largely be attributed to the lack of humanised space and the inability of the narrow sidewalk to serve the amount of pedestrians moving through the area.



Fig. 3.14: Crowding in Church Street



Fig. 3.15: Crowding in Paul Kruger Street



Fig. 3.16: Entrance to Sammy Marx Mall

Crowding refers to an individual's experience with regards to the number of people within the vicinity (Gifford, 1997: 143). The physical setting within the built environment has a direct influence on the perception of crowding. Long corridors, curved walls and living in a high-rise building have been found to promote the perception of crowding with the opposite being true with the application of higher ceilings and an increased amount of natural light within a building (Gifford, 1997: 153).

The entrance to Sammy Marx Mall to the east of Sammy Marx Square is clearly indicative of a space where architectural intervention has negated the effects of crowding. Although numerous people move along this corridor, double volume space and ample allowance of natural light successfully counteracts crowding.

Psychological Effect

Defensibility and an improved quality of space within the urban environment are stated to have a positive psychological effect on building users by heightening self-concept and self-esteem (Brebner, 1982: 145).

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Psychological security and heightened quality of space results in an enhanced civic pride thereby, increased use of the public space and defensibility thereof. Spaces within the environment should be designed not to allow a stimulus overload (Brebner, 1982:141). Spaces should be easily understood and readable. The absence of readability and the presence of unexpected information tend to interrupt the smooth sense of behaviour (Brebner 1982: 28). Ambiguities, strange use of

perception or duplicitous environments creates illusions and serves to illustrate the plasticity of interpretation of sensory experience thereby causing psychological distress (Zeisel, 2006: 148).

Precedent

Melrose Arch in Johannesburg serves as excellent example for harbouring civic pride. High quality space and aesthetically pleasing architectural interventions as well as readability on pedestrian level, promote usability and defensibility within this area. Unfortunately, Melrose Arch simultaneously illustrates territoriality where the space is perceived not to be accessible to all members of the public but rather reserved for the higher classes or upmarket clients.



Fig. 3.17: Melrose Arch, Johannesburg

Lively Communities

With regards to creating lively communities environmental psychologist Sidney Brower relates strongly to new urbanist principles. These principles include the activation of street front, providing amenities and services within walking distance, reducing the speed and number of cars and the increase of natural resting spaces that cater to different groups of people (Gifford, 1997: 239). These approaches are said to encourage walkability, social interaction, natural surveillance and safety while promoting activity. The frequency at which strangers meet and the conditions under which this occurs has a direct effect on the probability of them conversing and community formation (Brebner, 1982: 133)



Fig. 3.18: Streetscape activation: Scheiding Str.



Fig. 3.19: Natural resting space: Burgers Park



Fig. 3.20: Natural resting space: Church Square

New Urbanism

New Urbanism is a movement that came to fruition during the 1970's to 1980's and aims to emulate as well as modernise historic urban patterns (Ellis, 2002: 261). Historic urban patterns refer to pre-19th century urban design where as Talen (2008: 55) states, socially mixed settlements were the norm due to economic necessity.

Although the movement is highly criticized there appears to be numerous advantages to New Urbanist principles. One of the most cited advantages of New Urbanist planning is an increased sense of community and social cohesion (Kim & Kaplan, 2004: 313). In truth, it may appear that New Urbanism is fundamentally flawed in certain aspects. Principles employed by New Urbanism may appear to be nostalgic, rigid, boring and overly prescriptive (Sorkin, 2009: 185). It is possible however

to implement New Urbanist theories that have already indicated positive results without ascribing to everything that the movement entails as there are numerous ways to interpret New Urbanist principles (Ellis, 2002: 262).

Where diversity within the social sphere is characterized by a mix between different races, ethnicities, income levels and ages; New Urbanism attempts to sustain social diversity through what New Urbanism practitioners would call 'good urban form' (Talen, 2008: 5). Diversity is seen as the primary generator of urban vitality due to its nature to increase interactions among multiple urban components (Talen, 2008: 35). Diversity additionally promotes economic health and fosters opportunity (Talen, 2008: 37).

Building Typology

Research indicates that building typology plays an integral role in facilitating (or impeding) social interaction.

Studies indicate that architecture based on courtyard typologies better facilitates the development of social bonds through the increased chance of casual contact. By providing an outdoor semi public courtyard, residents have a space to linger within a familiar setting thereby increasing chance of causal contacts as opposed to corridor typologies that favours flow and pedestrian traffic (Julian & David, 1995). Kim and Kaplan (2004: 333) note that higher densities may enhance social cohesion. Higher densities encourage social diversity and the use of public space (Talen, 2008: 128).

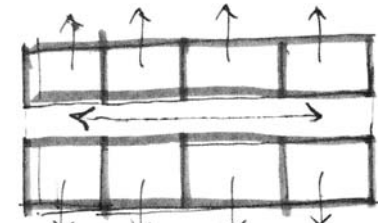


Fig. 3.21: Corridor typology



Fig. 3.22: Unicrest, Hatfield - corridor typology

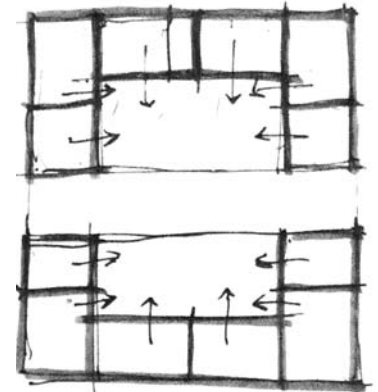


Fig. 3.23: Courtyard typology



Fig. 3.24: Apartheid Museum courtyard, Johannesburg



Fig. 3.25: Schubart Park illustrating residential blocks and courtyard

Single Use + Multi Use

According to Julian & David (1995), residents in mixed use areas are inclined to experience a greater sense of community and social cohesion. Residents in mixed use areas tend to walk between destinations as opposed to residents in single use areas whom according to study, would rather make use of vehicular transport. Julian & David (1995) deduced that increased pedestrian movement would increase chances of casual contact, thereby increasing chances of interaction between residents and a higher probability for scenarios in which social cohesion can develop.

Precedent

Schubart Park on the corner of Schubart and Vermeulen Street, Pretoria, designed by Joubert Owens and Van Niekerk, was completed in 1976.

Although now in a serious state of dilapidation, the project illustrates numerous new urbanist principles including the benefits of multi-use areas.

The high-rise apartment blocks included office space, retail and a day care centre organised around a raised plinth with roof gardens and offered residents a mixed use, humanised environment where pedestrian activity enjoyed favour over vehicular modes of transport. Vehicular access to the building is completely hidden from view thereby promoting walkability.

Severe crowding became characteristic of Schubart Park, with up to 20 people living in one unit (Basemjondolo, 2008). Unfavourable living conditions in combination with years of neglect and lack of service delivery, followed by a series of fires forced the buildings to be evacuated.

The buildings are now seen as hazards that not only prove dangerous to human health but to safety as well (Stuijt, 2010). Although this may be true, the design functioned well and promoted social interaction during its lifetime.

Natural Features + Open Spaces

Natural features and open spaces include Church Square, Burgers Park, and the Union Building gardens, with the area in front of the Reserve Bank along Church Street and entrance behind the Department of Public Works on the corner of Vermeulen and Bosman Street forming part of the CBD's examples of humanised streetscapes.

Although Pretoria CBD contains these spaces within the city are vastly outnumbered by streetscapes that do not encourage walkability. To a large degree, these spaces are not connected or barricaded from the public, thereby prohibiting them from forming a network. As a result these spaces do not define or connect neighbourhoods and districts as New Urbanists propose and contribute to non coherent urban form.

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Fig. 3.26: Church Square



Fig. 3.27: Reserve Bank garden



Fig. 3.27: Paul Kruger axis



Fig. 3.28: Department of Public Works entrance



Fig. 3.29: Scheiding Street taxi rank



Fig. 3.30: Bloed Street taxi rank

Fostering Pedestrianism

Urban landscapes have been noted to be hostile to pedestrians (Ellis, 2002: 265). According to Kim and Kaplan (2004: 317) a sense of community may be enhanced where the community has access to needed services within easy walking distance. It is further noted that adequate public transport systems may also encourage social cohesion. It can be deduced, as has been done by numerous social theorists, that a dependency on privatised motor transport reduces the chance of social interaction and is one of the main attributes to the lack of social cohesion in numerous cities (Julian & David, 1995). The New Urbanist ideal of fostering pedestrianism further translates into pedestrian scale streets and street side activity. Kim and Kaplan (2004: 317) states that humanised streetscapes may make residents comfortable enough to interact socially and participate in street

side activity. Increased importance with regards to pedestrianising would further entail the discreet placement of garages and parking spaces to avoid vehicular dominated environments (Ellis, 2002: 262).

According to New Urbanist theory, street side activity results from walkable cityscapes with access to needed services. Street side activity within Pretoria, rather stems from the lack of needed services within the area and entrepreneurial possibilities resulting in an abundance of informal trading stalls. This is illustrated where vendors erect stalls supplying fresh produce and food close to transportation nodes such as the taxi ranks in both Bloed and Scheiding Street. Informal trading stalls, in accordance with new urbanist theory, serves as spaces where social interaction occur spontaneously.

Accessibility + Proximity

Where access and attachment to valued spaces has been severed residents develop feelings of alienation and distress (Ellis, 2002: 266). It can therefore be stated that public open spaces need to be highly accessible.

Increased use of parks and open spaces has been noted where they are open to the streets (Kim & Kaplan, 2004: 335). Ball-Rokeach, et al (2001: 397) notes that the layout of public space as well as the proximity of social and civic buildings has a direct influence on the use of public space. Connections to community organisations can directly enhance perceived levels of belonging and interaction (Ball-Rokeach, et al, 2001: 397).

Barnett, Krieger and Saunders (2009: 106) are of the opinion that by ignoring

the civic component of urbanism, sidewalks and public spaces are merely utilitarian places that only serve to provide passage, light and air.

Freedom Park within Pretoria is a civic space that received high levels of press during recent years. The civic space is however separated from the city and major pedestrian corridors by barriers which discourage pedestrian activity to the park.

The location of this iconic national public space, prohibits it to fulfil its function optimally which is “to act as memorial of South Africa’s pre-colonial, colonial, apartheid, and post-apartheid history and heritage” (Freedom Park, [2011]) since access to the site is limited. The community receives limited benefit from inaccessible civic space.

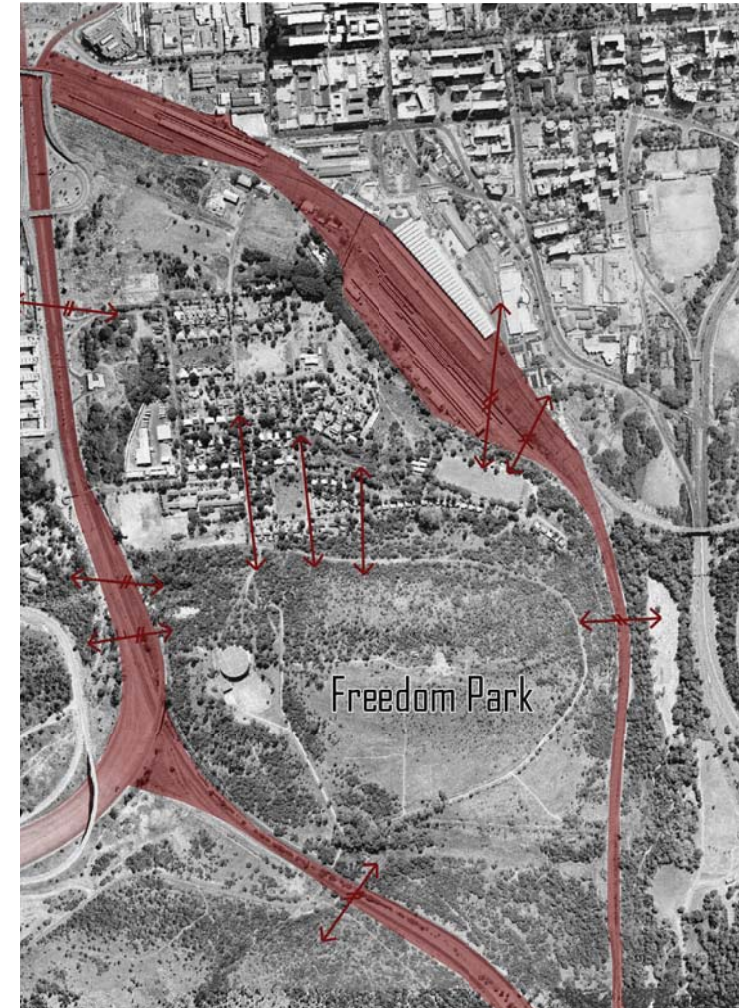


Fig. 3.31: Freedom Park aerial view

Conclusion

Social design is not always needed in the design process...[such as] where everyone works together in a time-tested architecture. These traditions, called preindustrial vernacular, evolved an architecture that already fits community and cultural norms, individual interests, local climate, geography and materials quite well (Gifford, 1997: 384).

After Apartheid the social and cultural norms within South African cities have changed. The way that architecture and the urban environment is approached however, has to a large extent remained the same.

Urban practices in South Africa are having difficulty in living up to new sets of social and cultural needs. This can be seen in current ways of approaching urban problems as they bear sad testimony to the identity crisis found in African cities that reflect outdated thinking based on a historic and biased assessment of what is acceptable and needed within a city (Dewar, 2004: 40). Dewar further states

that institutional mechanisms developed during the organization of the struggle during apartheid have not adapted well to becoming mechanisms for development (Dewar, 1998).

The preindustrial vernacular, although still applicable to elements such as climate, geography and materials, has been lost and needs to be re-investigated in order to facilitate the new paradigm – that of a post apartheid environment where integration is preferred over segregation.

The precedents discussed illustrates that the city contains a large amount of social design principles and elements. Nevertheless, by employing these design interventions inappropriately and in isolation within the city, the advantages of social design do not manifest within the local urban environment.

By applying social design principles identified within the theoretical investigation correctly and in combination

with one another, socially conscious architecture and urban environments can be created. Spaces that incorporate social design principles will fit the new paradigm by promoting integration and desegregation.

This is achieved through architectural facilitation of social cohesion and community formation by creating space that is active and vibrant where people are inclined to spend more time thereby increasing the possibility of community formation through accidental meeting.

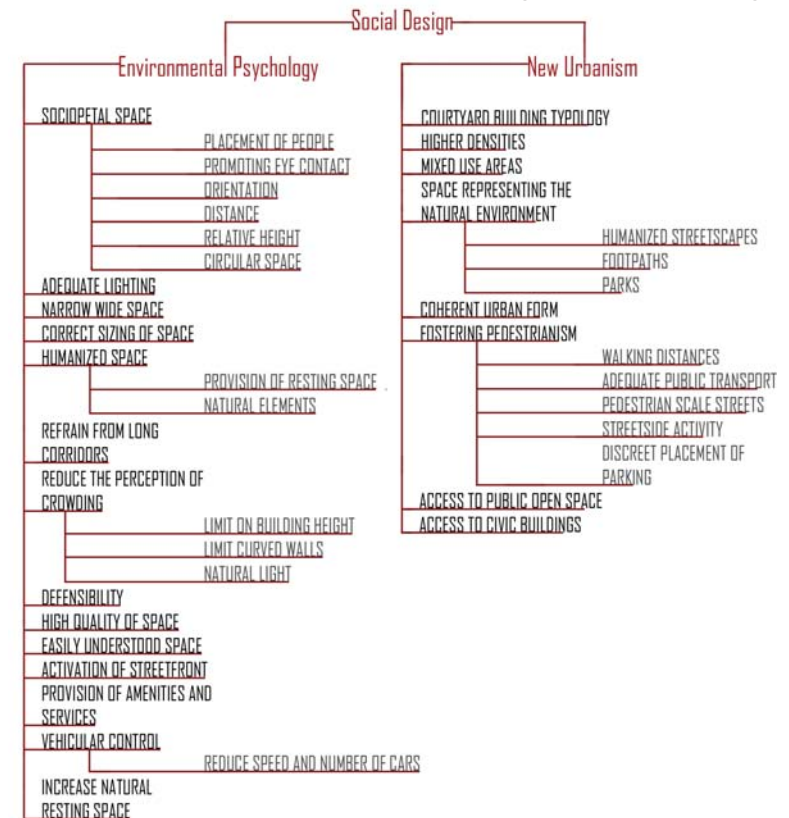


Fig. 3.32: Social design principles