Chapter 2:   REVIEW OF RELATED LITERATURE

2.1   Understanding the role of the review

The review of related literature provides an opportunity to investigate theoretical sources to achieve a broader understanding in the field of creating 'space' and 'place' within architectural and urban interiors. The elements for spatial definition are investigated together with the variables (principles) to modulate and create place. In addition, the role of the review is to comprehend the terminology that is used within a specific context in order to make appropriate interpretations.

A theoretical search is conducted and is supplemented with the analyses of a selection of precedents to identify the vocabulary used to describe and analyse place. Investigations allow for an exploration into the various interpretations of terminology within specific contexts and situations. The precedents are of an architectural and urban nature, including local and international examples. This selection aims to explore and illustrate the universal terminology with the use of a common vocabulary to define space and create place.

2.2   The purpose of the review

Within the review of related literature, theoretical and precedent sources are selected that form the basis for examination in this study. The purpose of the review is to introduce sources, indicating the data essential to the investigation related to specific chapters. A starting point is provided for anyone who wishes to investigate the aims set out by the sub-problems and hypotheses.

The review includes the opportunity to identify a spatial vocabulary that will be interpreted in later chapters as criteria or guidelines to define space and create place. These criteria may or may not turn out to be collective when applied to architectural and urban interiors.

Main sources are identified that serve an integral role in the investigation and that deal with the central aspects of the study. Additional sources are indicated to provide anyone with an overview and background to the topic at large that is meant to inform the researcher of aspects that are outside the scope of this study, but that are important to acknowledge within this investigation, to comprehend the totality of the context of the problem.

2.3   Relatedness of literature to research

The data and sources for investigation for every chapter are set out clearly. Precedent analyses and theoretical investigations are undertaken in order to obtain data regarding the various chapters in the study.

Chapter 2, Review of Related Literature, is divided into sections according to the sub-problems, where sources are introduced and the relatedness of that particular source is indicated. The sections are discussed according to the chapters in which the data are investigated.

Analyses into the terminology (spatial elements) that are used to describe spatial definition, are conducted to establish criteria that can be used for spatial definition.   This sets out the aim for Chapter 3, Spatial Vocabulary, indicating the data relevant to this investigation for both architectural and urban interiors. The integration of precedent analyses aids in the application and translation of theoretical data, visually explaining the explorations of the elements.

Chapter 4, Enriching the Spatial Quality, contains data that can be applied to the creation of a sense of place and that once applied, enrich and add meaning to a space. The aim is to identify the variables (principles) that can enrich spatial structures. The term variables is used, as the contexts and applications of every space are determined by the nature of the articulation and will vary accordingly. The emphasis falls on creating a sense of place as a result of the spatial

modulation. An understanding of place-making or a sense of place is established to comprehend the full spectrum of static physical aspects of what constitutes place.

Chapter 5, Spatial Criteria / Guidelines, deals with a search in finding the relation between the previous two chapters to establish a set of criteria determined from the analyses of spatial definition and place-making. The terminologies are grouped together as guidelines and the interpretation or combination of the vocabulary is meant to guide in the design of both architectural and urban interiors.

Chapter 6, Case Study – Donkin Reserve, deals with the evaluation of an existing urban interior, the spatial definition and sense of place. This chapter sets out to determine the success of it as 'space' and 'place'. The guidelines established in the previous chapter are utilised as a framework to conduct the evaluation. The aim is to determine the current situation through a process of observing and describing the space. As case study of the urban interior, the Donkin Reserve in Central Hill, Port Elizabeth, has been specifically selected for evaluation

2.4 Background orientation

The following sources are selected to orientate the researcher in terms of a wider understanding of the production of space and place but have been excluded from the investigation of this study. The importance of mentioning these sources here is to provide the researcher with knowledge of aspects that could have had an influence on the production of space. But within the scope of the present study it can only be considered as areas for further investigation and recommendations can be made in that regard.

Social, political, economic, cultural and historical aspects are addressed, together with the philosophy behind the use of words and the meaning these contain. The dynamic model of the production of space is mentioned, as well as the influence of perception on space within the scope of environmental psychology. Methods of obtaining data are suggested.

2.4.1 Literature analysis: Literary sources for background data

a)   Augé, M. 1995. *Non-places: introduction to an anthropology of supermodernity*. (Tr. Howe, J.). London: Verso.

The concept of place and non-place of Augé is used as premise in this investigation. However, the anthropological aspects regarding the creation of place are excluded from the study.

b)   Canter, D. 1977. *The Psychology of place*. London: The Architectural Press Ltd.

The Psychology of place deals with environmental perception and cognition of spatial surroundings and the stimuli that distinguish between various places. Layout patterns, organisational principles, arrangement of furniture and circulation all have an influence on the environmental aspects that deal with the dynamic spatial model which is excluded from the focus of this study.

c)   Canter, D, Stringer, P, Griffiths, I, Boyce, P, Walters, D. & Kenny, C. 1975. *Environmental interaction*. London: Surrey University Press.

Environmental psychology deals with the interaction and relationships between people and the spatial environment. This interaction can be improved with the creation of appropriate environments that accommodate human needs (Canter et al 1975:2). The spatial definition and character have an influence on human behaviour and interaction with a place. Environmental qualities enrich the perception of individuals and either encourage or prevent interaction between

people and the spatial environment. The influence of the physical environment and spatial character of this interaction is recommended as a further area of investigation and is not addressed in this study.

d)   Casey, E.S. 1998. *The Fate of place: a philosophical history*. Berkeley: University of California Press.

The philosophical approach to the production of space according to the arguments of various philosophers is excluded from this investigation. Casey (1998) discusses the philosophies of Bachelard, Foucault, Deleuze and Geattari, Derrida and Irigaray. The historical production of space and the transition from place to place are further acknowledged, but not addressed in this investigation.

e)   Duany, A. & Plater-Zyberk, E. 1992. *Towns and town-making principles*. 2nd edition. New York: Rizzoli.

The use of charrettes has been investigated and considered in the d ata gathering process, but is excluded from the study. Sufficient data were retrieved with the use of interviews and questionnaires in the Case Study of Chapter 6 The use of charrettes would create unrealistic expectations in the participants, as the study does not aim to make design proposals regarding the problem under investigation. This is an important step within the charrette process, as the community is encouraged to participate in the data gathering and processing phase, as well as in the design development. The idea of charrettes is to facilitate an informed inclusive process of all relevant parties, from municipality level to the daily users of the space. This is a process that needs to be followed by the Madiba Bay Development Agency, the local designers and GAPP Architects and Urban Designers that are involved in the redevelopment of Port Elizabeth.

f)   Hillier, B. 1996. *Space is the machine: a configurational theory of architecture*. Cambridge: Cambridge University Press.

Space syntax has been developed as an analytical tool, using computer software in graphic representation and output of spaces in architecture and urban design. Configurational analysis is central in investigating patterns within the dynamic model of space in the urban context. Hillier (1996) uses a machine as a metaphor for space. It contains form, function and a system of differentiated parts, and moves in a sequential method in order to manufacture a product. Space Syntax has specifically been excluded, as this method of spatial formation is a dynamic system. The terminology has been considered, but the study addresses the static physical containment and not the processes that can be used to produce space.

g)   Hillier, B. [s.a.] The Common language of space: a way of looking at the social, economic and environmental functioning of cities on a common basis. *Internet:* http://www.spacesyntax.org/publications/commonlang.html Access: 7 April 2004.

Space syntax illustrates physical and spatial complexities in the built environment and urban design, and is a tool in analyzing the dynamic systems of space, patterns and configurations. "Movement and land use patterns, social and economic performance, crime patterns, and many other aspects of function have all been investigated using this method…" (Hillier [s.a.]:2). Movement studies with the use of axial maps inform movement flow patterns in the urban grid, but are not addressed in this investigation.

h)   Lefebvre, H. 1991. *The Production of space.* (tr. Nicholson-Smith, D.) Oxford: Blackwell Publishers.

"The spatial practice of a society secretes that society's space: it propounds and presupposes it, in a dialectical interaction; it produces it slowly and surely as it masters and appropriates it." (Lefebvre 1991:38) Spatial practices of a society shape the space that is used, within the daily routine and the existing networks and routes. *The Production of space* provides an opportunity to understand the

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appropriation of space and place within social interaction and participation. This discussion falls outside the scope of this study, as this particular approach addresses the dynamic model of spatiality.

i)   Low, S.M. & Lawrence-Zúñiga, D. 2003. *The Anthropology of space and place: locating culture*. Oxford: Blackwell Publishing.

The anthropological perspective on the production of space provides an overview of the philosophy behind the study of human-beings of various societies and cultures. The human body, spatial perception and the language used to describe these are explained. Various influences that shape the way space is produced are argued, including social-political aspects, power and tactics (Foucault) and manipulations within everyday life (De Certeau). This approach is excluded as this study focuses on the static, physical model of space and place.

j)   Megill, A. 1985. *Prophets of extremity: Nietzsche, Heidegger, Foucault, Derrida*. Berkeley: University of California Press.

Foucault's ideas of power are discussed according to the production of space, as control over space, spatial organisation and enclosures is politically determined and as a result influences the behaviour of people in places.   Foucault's arguments are noted, but the political aspects are not for discussion in this study.

k)   Proshansky, H.M, Ittelson, W.H. & Rivlin, L,G. 1970. *Environmental psychology: man and his physical setting*. New York: Holt, Rinehart and Winston, Inc.

Space use and the nature of activities influence the proximity and adjacency of spaces to one another. The organisational planningand layout considerations of spatial environments relate to the dynamic aspect of activity and the appropriation of place. This is extended by the psychological implications of spatial definition and space-use that are not addressed in this investigation. Note is taken of the implications of space and place on the perception and understanding, but the study focuses on the static spatial enclosure.

l)   Soja, E.W. 1989. *Postmodern geographies: the reassertion of space in critical social theory*. London: Verso.

Soja discusses the socio-spatial relationship in the production of place and includes the philosophies of Foucault and Lefebvre. The philosophical approach to spatial definition and place-making is recommended for further study.

m)   Soja, E.W. 1996. *Thirdspace: journeys to Los Angeles and other real-and-imagined places*. Cambridge: Blackwell Publishers.

Soja's trialectic thinking includes spatiality, sociality and historicality which are integrated within human life. Sociality and historicality have a dynamic character as these aspects involve social practices and interaction and are therefore excluded from this investigation. Spatiality is the aspect that is addressed in this study, as the static spatial model of place is under investigation.

n)   Viljoen, H, Van Staden, H, Grieve, K. & Van Deventer, V. 1988. *Environmental psychology: an introduction*. Johannesburg: Lexicon Publishers.

The psychological aspects deal with the conception and perception of spaces and environments which are aspects that are recommended for further study.

2.5   Introduction to Chapter 3

The sources selected for Chapter 3 (Sub-problem 1) provide information to identify criteria that can be used to determine a vocabulary for spatial definition. An investigation into the elements for spatial definition regarding architectural and urban interiors is discussed. Aspects under discussion include: design elements and principles, spatial organisations, ordering principles and proximities. The aim is to establish the criteria and determine whether the vocabulary is applicable to both types of interiors.

2.5.1 Sub-problem 1

The first sub-problem is to identity and to establish criteria for spatial definition in interiors.

2.5.2 Literature analysis: Literary sources for data

a)   Alexander, C, Ishekawa, S, Silverstein, M, Jacobson, M, Fidsdahl-King, I. & Angel,S. 1977. *A Pattern language: towns, buildings, construction*. New York: Oxford University Press.

"What is needed is a framework which is just enough defined so that people naturally tend to stop there; and so that curiosity naturally takes people there, and invites them to stay." (Alexander et al 1977:350). *A Pattern Language* provides data regarding spatial definition strategies. The discussions on nodes, paths and concentration of people, and the concept of accessibility are important for spatial definition and legibility of spaces. Hierarchy of open space and activity pockets or nodes are considered in terms of legibility of spatial structures. These aspects are integrated into the study.

b)   Behrens, R. & Watson, V. 1996. *Making urban places: principles and guidelines for layout planning*. Rondebosch: UTC Press.

The Urban Problems Research Unit (UPRU) of the University of Cape Town undertook research into layout planning guidelines which are appropriate to the developing of urban areas in South Africa, with emphasis on environmental quality that will "enrich the lives of the people who live in, and experience, those environments" (Behrens & Watson 1996:1)

Important aspects in layout planning include: place-making, space, access, opportunity, efficiency and choice. Planning principles facilitate the creation of spatial definition and place. The organising structure of the city relies on a hierarchical system and public open space is a mechanism in layout planning (Behrens and Watson 1996:68-69). The spatial definition approach is investigated, looking at scale, nodes and hierarchy.

c)   Bell, S. 1993. *Elements of visual design in the landscape*. London: E & FN Spon.

Bell (1993:9, 13-27) lists the elements of spatial definition as point, line, plane, solid volume and open volume. These elements relate to the information provided by Ching (1979), Ching & Bingelli (2005) and Lynch (1960). These elements are investigated, individually and in combination. The data support the discussion on spatial definition for Chapter 3.

d)   Ching, F.D.K. 1979. *Architecture: form, space and order*. New York: Van Nostrand Reinhold Company.

Architecture: form, space and order is relevant to Chapter 3 as the criteria for interior spatial definition are discussed and consist of primary elements for spatial definition: point, line, plane and volume (Ching 1979:18-47). These elements are examined on the basis of the static spatial articulation opportunities that exist in the creation of interior space. The spatial elements are examined individually and combined to determine the opportunities for the delineation of space. The investigation includes the form and shape of spaces, as well as the degree and type of enclosure (Ching 1979:175-190).

The use of organising principles as ordering devices is examined (Ching 1979:332-382). These principles are explored with an understanding of the application of elements that can be used to define space to create various organisational patterns for interior planning and layout. This approach is integrated with the discussions of Lynch in *The Image of the City* (1960).

e)   Ching, F.D.K. & Bingelli, C. 2005. *Interior design illustrated*. New Jersey: John Wiley & Sons.

Ching & Binggeli (2005:3-9) explain the elements that produce interior space; floors, walls, ceilings and interior elements. The elements are related back to point, line, plane and volume and the process of defining space with architectural

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elements. Linear and planar elements and a combination thereof are translated into floor, wall and ceiling planes or surfaces and the creation of spatial form (Ching & Binggeli 2005:10-27). Congruencies between the above mentioned authors are established.

f)   Curran, R.J. 1983. *Architecture and the urban experience*. New York: Van Nostrand Reinhold Company.

Architecture and the urban experience investigates criteria of spatial definition in the urban environment. The possibility of similarities between architectural and urban interior spatial definition is explored. The visual components of public space are shaped by the physical building form and perceived collectively by the users (Curran 1983:24).

Curran (1983:107-110, 145-150) discusses the visual components that assist in organising of defining surfaces with the application of principles of organisation: focal point, hierarchy and towers (verticality) in the urban environment. Two types of spaces in the city are investigated: elements of linear spaces and clustered spaces. These categories form a basis for discussion of linearity and nodal areas (Curran 1983:70-74). These discussions are supported by the work of Ching (1979) and Lynch (1960).

g)   Dewar, D. & Uytenbogaardt, R.S. 1995. *Creating vibrant urban places to live: a primer*. Cape Town: Headstart Developments.

The basic elements of structuring space such as point, line, cross-over and grids are discussed. The information adds to the investigation identifyingthe elements that make possible spatial definition (Dewar & Uytenbogaardt 1995:22-44). This is integrated with the information from sources that deal with architectural, as well as urban space.   Planning and ordering to achieve structure in the definition of space are investigated and related to elements of spatial definition to establish "outdoor rooms" in the urban environment (Dewar & Uytenbogaardt1995:18).

Aspects of space, choice, convenience and opportunity are integrated with the ideas of Bentley et al (1993).

h)   Eckbo, G. 1969. *The Landscape we see*. New York: McGraw-Hill Book
        Company.

"Architecture has a great tradition of bringing magnificent order out of manifold complexities, of putting great quantities of highly variable members and elements together in such a way as to give the result a new and special entity, greater than the mere accumulation of parts." (Eckbo 1969:75). The argument that space is created by the sum total of the parts combined forms the important aspect of this source.   Aspects that shape architectural and landscape space are investigated: material use, scale, and continuity can be noted as the "measures of difference between two space-organizing processes." (Eckbo 1969:78)

i)   Gehl, J. 1987. *Life between buildings: using public space*. New York:
        Van Nostrand Reinhold Company.

Gehl (1987:131-159) discusses the importance of spaces to sit, walk, stand and to be able to see, hear and talk in public environments. This is integrated with the spatial aspects of enclosures and the definition that takes place in interiors. The quality of space is integrated with sensory experiences.

j)   Hedman, R. & Jaszweski, A. 1984. *Fundamentals of urban design*.
        Chicago: Planners Press.

Hedman and Jaszweski (1984:57-69, 78) discuss the linearity and effective definition of street spaces. Capturing and defining plaza space and the importance of floor configuration on an urban scale are investigated in relation to the information provided on interior spatial definition and organisations. The definition of planes, as freestanding elements and level variations, is included in this investigation (Hedman and Jaszweski 1984:53, 60,70-79).

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k)   Kilmer, R. & Kilmer, W.O. 1992. *Designing interiors*. Fort Worth:
        Harcourt Brace Jovanovich College Publishers.

Kilmer & Kilmer (1992:98 -101) explore space in terms of spatial relationships for successful design by means of defining spatial boundaries, physical and non-physical concepts. This is related to the defining planes of interior structures that are necessary for spatial delineation. The discussion includes the provision of functional areas by means of spatial arrangements. The data are considered in conjunction with Ching (1979) and Ching & Bingelli (2005).

l)   Lynch, K. 1960. *The Image of the city*. Cambridge: The MIT Press.

Lynch discusses five types of elements in the urban landscape which are used to improve the legibility and imageability of a place: paths, edges, districts, nodes and landmarks (Lynch 1960:46-90).

Paths are related to the spatial element, line and organising principle, axis. Edges are read as boundaries and barriers in the urban landscape and are used as an organisational element. Districts have a strong character and users "enter inside of" these medium-to-large sections of the city. Nodes create gathering areas in the city, a point of concentration. Nodal points are found at the convergence of paths at strategic spots (Lynch 19606:46-90). The study examines the possibility of finding similarities between these elements for architectural and urban applications.

m)   Motloch, J.L. 1991. *Introduction to landscape design*. New York: Van
        Nostrand Reinhold.

Line as a visual element of design is described as a space defining element. Motloch (1991:76) argues that linear elements are useful in the organisation of landscape spaces utilizing plants. Various plant forms and the character of the plants determine the quality of definition and enclosure. The advantages of spatial enclosure, spatial type and spatial depth are discussed. This is extended by the enframement opportunities in landscape design (Motloch 1991:82-83).

The use of figure-ground principles is discussed with the use of line that strengthens the ideas for delineation found earlier.

n)   Norberg-Schulz, C. 1980. *Genius loci: towards a phenomenology of architecture.* New York: Rizzoli International Publications.

The structure of place deals with spatial organiations and space defining elements. Norberg-Schulz (1980:11-13) discusses the figure-ground relationship of activities in spatial surroundings, and the properties of concrete space.   The boundaries in terms of spatial enclosure are established as floor, wall and ceiling in the built-environment, and ground, horizon and sky in landscape. These similarities are investigated according to the appropriateness for architectural and urban interior spatial definition.

The influence of openings on enclosing structures has an impact on the perception of the space, as the density and degree of enclosure will be manipulated. The nature of extension, direction and rhythm in the enclosing structure is investigated to   identify similarities with linkages and spatial articulation and the influence on character of place (Norberg-Schulz 1980:13).

o)   Trancik, R. 1986. *Finding lost space: theories of urban design*. New York: Van Nostrand Reinhold Company.

The idea of line as axis that connects areas or nodes in the urban environment is explored (Trancik 1986:157-158) and is related back to the architectural application. The idea of containment of urban space is investigated, by focusing on the various types of spaces, cluster and linear, and also looking at the application of solid and void characteristics. These data are integrated with Ching (1979) and Ching & Bingelli (2005).

p)   Von Meiss, P. 1990. *Elements of architecture: from form to place*. London: Van Nostrand Reinhold (International).

Von Meiss (1990) and Ching (1979) reflect a comparative view regarding the elements of spatial definition. Design elements and principles are ingredients for creating comprehendible order. Composition of objects, surface articulation, as well as spatiality of objects as the relationship between objects and elements defines a spatial field. Elements of spatial definition and the creation of edges and boundaries necessary for spatial comprehension are discussed. Spatial criteria that add richness to a space are explored (Von Meiss 1990:102-110).

2.6   Introduction to Chapter 4

The sources identified for Sub-problem 2, deal with aspects that are useful in the modulation of interior space. These are seen as variables, as the nature and result of the application are related to the type of spatial definition provided and are changeable in the application and spatial effect. The variables are selected by the potential for creating meaningful place. The aim here is to identify the variables and ways of combining these to achieve meaningful place in both architectural and urban interiors that will add value to any environment.

The understanding of the theories and data for place-making is important before variables to achieve it can be identified. The integration of aspects needs to be considered to create meaning in any spatially defined area seeking to create 'place'.

2.6.1 Sub-problem 2

The second sub-problem is to identify the variables used to modulate meaningful interior place.

2.6.2 Literature analysis: Literary sources for data

a)   Bacon, E.N. 1992. *Design of cities*. London: Thames and Hudson.

"Awareness of space…engages a full range of senses and feelings, requiring involvement of the whole self to make a full response to be possible." (Bacon 1992:15). This illustrates the importance of a sensory experience in the creation of 'place'. Richness and variety add to the realisation of place and are important for spatial definition and character. Rhythm, texture and other elements contribute to achieving this (Bacon 1992:17-18). Space-time in the experience of place is strengthened by the sequencing of spaces and the relationship between it that influences the emotional response to the harmony of the space (Bacon 1992:19).

b)   Behrens, R. & Watson, V. 1996. *Making urban places: principles and guidelines for layout planning*. Rondebosch: UTC Press.

Relationships between the sources discussing "sense of place" are analysed to identify similarities in the application of space defining elements on different levels: architectural and urban interiors. Place-making in urban environments seeks uniqueness in the characteristics of place. These characteristics need to enrich human needs and accommodate a collective interpretation and experience. The development of a "spatial structural language of place" increases legibility and user orientation (Behrens and Watson 1996:67).

c)   Bell, S. 1993. *Elements of visual design in the landscape*. London: F & EN Spon.

Bell (1993:9) lists variables in the creation of a sense of place that are investigated: size and shape, texture, colour, time and light. Size and the effects that can be created in landscape spaces are investigated. Shape and form continue this discussion of the effect on spatial quality. The tangible and visual qualities of texture are integrated with the aspects of the use of texture in interior spaces (Bell 1993:47-68). This is supplemented by the discussions by Ching & Binggeli (2005) and Kilmer & Kilmer (1992). The effect of light and shade on spatial qualities is investigated (Bell 1993:77-82).

d)   Bentley, I, Alcock, A, Murrain, P, McGlynn, S. & Smith, G. 1993.
        Responsive environments: a manual for designers. Oxford: Butterworth
        Architecture.

This source lists various aspects that can influence the visual appearance and sense of a place. Visual appropriateness is determined by the general appearance and detail of place. Public open spaces have a need for visual appropriateness as a variety of people will have divergent responses in obtaining meaning for that place (Bentley et al 1993:76).

Richness is the quality that increases sense-experiences and is achieved through appropriate materials and construction techniques. Richness adds quality and character, and is comparable to the place theory by Trancik (1986).

e)   Broto, C. [s.a.] *New urban design*. Barcelona: Arian Mostaedi.

The design approach of Kathryn Gustafson is investigated, the idea of integration and multi-layered qualities in the creation of place. The integration of old and new within a holistic design, even if in the landscape is considered (Broto [(s.a.]:47).

f)   Ching, F.D.K. 1979. *Architecture: form, space and order*. New York:
        Van Nostrand Reinhold Company.

The properties of form and shape and the relationto space are examined (Ching 1979:50-54, 112-113). Proportion and scale are defined according to the human dimension of anthropometrics and ergonomic requirements. The importance here is essential in creating meaningful places for people in which to dwell comfortably (Ching 1979:324-329). Investigations regarding the sensory experience are supplemented with data obtained from Trancik (1986) and Von Meiss (1990).

g)   Ching, F.D.K. & Binggeli, C. 2005. *Interior design illustrated*. New
        Jersey: John Wiley and Sons.

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Form and shape are further defined to add to the discussion of Ching (1979).
Other elements that have influences on spatial qualities are investigated in this
source: texture, colour, scale and proportion, lighting and surface materials. The
investigation explores the influence of these on the sense of place and the spatial
experience. Texture and the qualities achieved spatially, visual and tactile
characteristics are all explored. Colour and the effects on space and space
perception are investigated in the application of colour in interior spaces. Scale
and proportion add information to earlier investigations   and define the use of
these elements in creating appropriate scaled spaces for human habitation
(Ching & Binggeli 2005:97-127).

Data regarding illumination and lighting of interior spaces are considered. The
effect on interiors is examined as well as the subsequent spatial qualities that are
achieved through intensity, diffusion, reflection and contrast of light. The effect of
light is clearly visible in the application of surface materials and finishes for
interior planes, surfaces and elements (Ching & Binggeli (2005:234-245, 274-
275).

Framing of the view is an interesting tool in the focus of attention onto a specific
space or element. Ching & Binggeli (2005:180-181) list size, shape and
placement of openings as important aspects in the effective channelling of vistas.
The result of integrating these aspects is assessed in the success ful creation of
meaningful place, with strong enriched qualities for spatial experience.

h)   Curran, R.J. 1983. *Architecture and the urban experience*. New York:
        Van Nostrand Reinhold.

The use of scale and positioning of openings creates character and also
establishes links between adjacent areas, both visual and functional.
Expressive and supportive qualities of the public domain are further enhanced
through the choice of materials, textures and patterns in ground treatment and
furnishing. Furnishing of public places encourages social interaction and

participation in these spaces in the sense that it creates a sense of place (Curran 1983:173). The data listed here are integrated with those provided by other authors listed.

i)   Day, C. 2002. *Spirit and place: healing our environment*. Oxford: Architectural Press.

A sense of place according to Day (2002:155-159) constitutes components from a physical environment that add to the spatial quality. This argument is integrated with the physical aspects of place theories by other authors.

j)   Dewar, D. & Uytenbogaardt, R.S. 1995. *Creating vibrant urban places to live: a primer.* Cape Town: Headstart Developments.

The discussions on spatial aspects in the urban environment, in particular human scale, are integrated with other sources that deal with data of both an architectural and urban nature (Dewar & Uytenbogaardt 1995:17)

k)   Hedman, R. & Jaszweski, A. 1984. *Fundamentals of urban design*. Chicago: Planners Press.

The variables, shape and size, are addressed together with the investigations of the scale of buildings that articulate urban space. The subsequent proportions in terms of height to width ratios are explored (Hedman & Jaszweski 1984:60, 76). These variables of spatial modulation are considered in conjunction with Dewar & Uytenbogaardt (1995), Ching & Bingelli (2005) and Kilmer & Kilmer (1992).

l)   Jakle, J.A. 1987. *The Visual elements of landscape*. Amherst: The University of Massachusetts Press.

Landscape cognition is possible through visualization of place. The composition of visual elements gives place meaning and influences the perception. The content of these spaces and the ingredients in articulation fuse character and a sense of place (Jakle 1987:18) and are integrated in the discussions on 'place'

m)   Kilmer, R. & Kilmer W.O. 1992. *Designing interiors*. Fort Worth:
        Harcourt Brace Jovanovich College Publishers.

The variables (principles) for the creation of spatial qualities are investigated in this source. Form and shape, texture, scale and proportion, colour, lighting and material selection are examined (Kilmer & Kilmer 1992:102-147). The effect of these on interior space is investigated according to the data provided by Ching (1979) and Ching & Binggeli (2005).

n)   Le Roux, S. & De Villiers , A. (eds.) 2003. *Nine landscapes: essays on landscape in South Africa*, Open lecture series 2002. Pretoria:
        Department of Architecture, University of Pretoria.

Dewar in Le Roux & De Villiers (2003:66-69) makes clear the approach of non-pragmatic planning for urban design. The creation of successful "urban living rooms" is emphasised in the creation of "special places". Access, movement and green spaces, and a strategy for creating place are discussed and will be integrated in the discussions on place-making.

o)   Motloch, J.L. 1991. *Introduction to landscape design*. New York: Van Nostrand Reinhold.

Motloch (1991:127-135) mentions visual elements that shape spatial quality: colour as spatial contrast or harmony, texture as visual or tactile element of experience, and scale and proportion as the relation of spatial form to human size (Motloch 1991:150-153). Aspects of importance to create a sense of place are listed as spatial feeling, appropriateness, spatial development and functions of physical concepts (Motloch 1991:188-195). These are integrated with aspects discussed by various other authors.

p)   Norberg-Schulz, C. 1980. *Genius loci: towards a phenomenology of architecture.* New York: Rizzoli International Publications, Inc.

"Man dwells when he can orientate himself within and identifies himself with an environment, or, in short, when he experiences the environment as meaningful."

(Norberg-Schulz 1980:5). This quotation illustrates the importance of the nature of the physical environment in which people dwell. This source identifies the complementary terms which describes the environment: space and character, and orientation and identification. Norberg-Schulz (1980:5) emphasises the fact that dwelling provides more than shelter, as life occurs in space, thereby making it a place with distinct characteristics.

Genius loci or "spirit of place" is the term that Norberg-Schulz assigns to the concept of creating meaningful places. The structure of place can also be divided into the two complementary terms: space as the "three-dimensional organisations of elements", and character as the "general atmosphere" (Norberg-Schulz 1980:11). These aspects form an essential part of the description of place-making for Chapter 4.

q)   Porter, T. 1997. *The Architect's eye: Visualization and depiction of space in architecture* London: E & FN Spon.

Porter's (1997:27-38) perspective on sensory experience with the use of distance and immediate receptors is considered for Chapter 4.

r)   Reekie, R.F. 1972. *Design in the built environment*. London: Edward Arnold Publishers.

Data on variables for spatial modulation are provided by Reekie (1972:18-29) that add to the investigation by looking at colour and the spatial effects it contains, together with the use of texture to create unity in urban places.

s)   Rudofsky, B. 1969. *Streets for people: a primer for Americans*. New York: Doubleday and Company.

Rudofsky (1969:118) points out the importance of creating "communal living rooms" in the urban environment as places that add value to the spatial experience. This discussion is integreated with data provided by other sources regarding place-making.

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t)   Schwartz, M, Verhagen, E. & Singleton, P. 2003. What are the ingredients for successful public spaces? *Green Places*, December 2003, p. 16.

Schwartz (2003:16) explores the concept of place and the components that constitute spatial character. Personality, character, structure, community, appropriateness and identity are concepts mentioned and considered in this study.

u)   Trancik, R. 1986. *Finding lost space: theories of urban design*. New York: Van Nostrand Reinhold Company.

Place theory is the third theory that Trancik (1986:112) defines: place theory deals with "the cultural and human characteristics of physical space." This theory is important for the understanding of a sense of place in the urban environment. The contextual meaning, unique characteristics and social aspects of the space all add to the creation of place. Elements such as shape, texture and colour are listed as ingredients to achieve this on a physical level. These are meant to enhance the natural qualities on both a physical and   an emotional level (Trancik 1986:112-120). The information links with the aspects illustrated by Bentley et al (1993) and Lynch (1990). The articulation of ground plane through the use of colour, texture and materials again shows correlation with the theories of Curran (1983).

v)   Von Meiss, P. 1990. *Elements of architecture: from form to place*. London: Van Nostrand Reinhold (International) Co. Ltd.

Sensory experience of spaces should involve all the sense modalities: smell, touch, hearing, vision and movement of the body as kinaesthesia (Von Meiss 1990:15-22).   Spaces change in quality during the day as the movement of the sun and people alters the spatial qualities of density, activity and atmosphere (Von Meiss 1990:135). These are subtle variables in the shaping of place and are possible through spatial manipulation, visual connections and place identity.

2.7 Introduction to Chapter 5

Sources for Sub-problem 3 bring together the investigations of Chapters 2 and 3. The aim is to determine the relation between the elements for spatial definition and variables to modulate space. This is dealt with at an architectural and urban interior level so as to find whether the relation exposes congruencies in the application of terminology to create meaning in a specific interior environment.

The guidelines identified in Chapter 5 are applied to an urban interior, the Donkin Reserve in Central Hill, Port Elizabeth, in Chapter 6 to evaluate the compatibility of criteria to define space and create place.

2.7.1 Sub-problem 3

The third sub-problem makes use of the first and second sub-problems, investigating the relation between spatial definition and modulation of interiors, and establishing guidelines to create as sense of place.

2.7.2 Literature analysis: Literary sources for data

 Chapter 5 (Sub-problem 3) utilises the sources from Sub-problems 1 and 2 in combination to determine the relation between the criteria that have been developed. This is supplemented by the analyses of selected precedents that have been included in the investigation of Chapters 3 and 4. The application of terminology is explored in this manner.

2.8 Precedent analysis: Sources for data

The aim of precedent analysis is to identify the application of theoretical concepts and principles that are investigated in Chapter 3 and 4 respectively. The investigation will further determine the terminology and vocabulary used in describing the existing places, focusing on local and international architectural and urban interiors that vary in scale, context and location, and user group. This process of analysis can bring forth the successful translation of theoretical

concepts, and also indicate the shortcomings if not adequately or appropriately applied.

Data for Chapter 3 (Spatial Vocabulary) and Chapter 4 (Enriching the Spatial Quality) are examined concurrently in each precedent analysis. The data within this chapter solely focus on a literature investigation, as the process of interpretation is integrated within the following two chapters. The Constitutional Court is selected as the precedent according to which visual analyses are conducted to illustrate the interpretation of elements and variables.

The review of selected precedents allows for the identification of terminology and understanding of the application within a specific environment. Precedents have been selected for a number of reasons; firstly architectural and urban spaces are included, as the study isconcerned with both, determining similarities, differences and overlapping aspects. Secondly, international and local examples are identified that add to the study by examining the collective understanding and importance of spatial definition and place-making. Thirdly, various levels of scale are addressed in architectural and urban environments. The investigation explores the nature of the elements, principles of spatial definition and variables for spatial modulation on varying scales, as the use of these aspects is clearly analysed andexplained. Fourthly, the examples include various functions, in order to explore the nature of spatial definition and to determine the universality of these aspects within spaces for human habitation, regardless of the use.

Criteria	Constitutional Court	Philippi Public Places	Glass Shutter House	Whiteinch Cross	Castelvecchio	Sendero del Pinar	Garden Pavilion	Melrose Arch
Point								
Line								
Plane								
Volume								

Figure 2-1: Spatial Vocabulary Criteria and Precedent Table (Chapter 3)

Criteria	Constitutional Court	Philippi Public Places	Glass Shutter House	Whiteinch Cross	Castelvecchio	Sendero del Pinar	Garden Pavilion	Melrose Arch
Shape and size								
Proportion and scale								
Colour								
Texture								
Finish material								
Light and shade								
Views and vistas								

Figure 2-2: Enriching the Spatial Quality Criteria and Precedent Table (Chapter 4)

a) **Constitutional Court, Johannesburg (OMM Design Workshop and Urban Solutions)**

Lipman, A. 2004. Constitutional Splendour. *Journal of the South African Institute of Architects*, July/August 2004, pp. 16-18.

Makin, A. & Masojada, J. 2004. The Constitutional Court, Johannesburg. *Journal of the South African Institute of Architects*, July/August 2004, pp.8-13.

Noble, J. 2004. Architectures of Freedom. *Journal of the South African Institute of Architects*, July/August 2004, pp. 20-22.

The Constitutional Court, Johannesburg. 2004/2005. *Digest of South African Architecture, 2004/2005* p18 -21.

The Constitutional Court sets an important precedent in the South African context in terms of spatial definition and place-making. The Court has been selected as precedent to visually illustrate the translation and interpretation of the criteria for discussion. The other precedents are referenced to supplement the investigation. The analysis focuses on the principles and elements for

articulation and the variables in spatial modulation of the court foyer and exhibition stairs as architectural interiors, and the courtyard and Great African Steps as urban interiors. The choice of materials, light qualities and spatial organisation are all important in this investigation, the components that create a place to gather.

b)   Philippi public spaces, Cape Town

The open public spaces in Philippi communicate the urban design solutions to urban interiors within a spatial framework. The spaces form part of a series of urban interiors on the Cape Flats and are integrated with principles and elements of spatial articulation and components that creates place, point, line, plane and volume. These are investigated against the context and content of the area, including the integration of variables to modulate place.

Philippi Lansdowne public space project (Du Toit and Perrin, in association with Jacques Theron Architects)

> Philippi Lansdowne public space project, Cape Town. 2003. *Digest of South African Architecture, 2003*, pp.56-58.

Joe Gqabi station square (ARG Design and Lucien le Grange Urban Designers and Architects)

> Klitzner, T. 2005. An urban square – Joe Gqabi Station, Philippi, Cape Town. *Urban Green File: Journal for the Planning Professions*, vol. 10, No. 2, June 2005, pp. 26-29.

c)   Glass Shutter House, Tokyo (Shigeru Ban)

> Webb, M. 2005. Tradition stood on end. *Architectural Review*, Vol. 217, no. 1296, February 2005, pp. 82-85.

The Glass Shutter House is an example of blurring the boundaries between inside and outside within spatial definition. The elements and principles of spatial

definition are investigated, together with the principle of spatial transformation. The sense of place is examined within a contemporary Japanese language.

d)   Whiteinch Cross, Glasgow (Gross Max)

> Holden, R. 2003. *New landscape design*. London: Laurence King
> > Publishing.
> Spens, M. 2003. *Modern landscape*. London: Phaidon Press Limited.

Whiteinch Cross has been selected as precedent, due to the design approach of Gross Max and the integration of old and new within the fabric of a city. The elements and principles for spatial definition, together with the variables used in creating place are investigated. The interpretation of materials is another aspect of importance.

e)   Castelvecchio, Verona (Carlo Scarpa)

> Dal Co, F. & Mazzariol, G. 1986. *Carlo Scarpa: the complete works*.
> > London: The Architectural Press.
> Los, S. 2002. *Carlo Scarpa*. Köln: Benedikt Taschen Verlag.
> Murphy, R. 1990. *Carlo Scarpa and the Castelvecchio*. London:
> > Butterworth Architecture.

Carlo Scarpa's work at the Castelvecchio in Verona deals with the delicate interplay of old and new. The material use and design approach in this regard are important as a precedent, as the spirit of the place is enhanced with this juxtaposition. Line and plane as elements of spatial definition are analysed in the spatial application of the sculpture gallery and the Cangrande space.

f)   Sendero del Pinar de la Algaida, Spain (Ramón Pico and Javier López)

> Mostaedi, A. [s.a.]. *Landscape design today*. Spain: Carles Broto &
> > Josep Maria Minguet.

The reclamation of Sendero del Pinar de la Algaida in Spain is selected as precedent, as the space addresses the aspects of rejuvenating a derelict area by

the inclusion of nature in a design solution. The elements for spatial definition are explored, in conjunction with the ingredients that create the spirit of the place. The strong environmental and sustainability aspects inform this study further.

g)   Garden Pavilion, Pretoria (Comrie & Wilkinson Architects and Urban Designers)

An Achitecture of discovery . 2002. *Journal of the South African Architects*, January / February 2002, pp. 36-38.

Garden pavilion, 2000. *Journal of the South African Architects,* July / August 2000, pp. 22-23.

Steenkamp, A. & Van Rensburg, R. 2002. New work in Pretoria. *Journal of the South African Architects*, January/February 2002, p. 31.

The Garden Pavilion in Pretoria has been selected as an example of contextual design, with the application of spatial definition elements and principles, whilst the choice of materials and relation to the site and existing structures form the spirit of place. These aspects are all investigated in the precedent study.

h)   Melrose Arch, Johannesburg (Urban Solutions, with Osmond Lange partnership in collaboration with Paul Murrain)

Hermanson, B. 2002. Johannesburg's latest urban quarter. *IE Magazine*, March / April 2002, pp.22-25.

Krige, L. 2002. Melrose Arch: an urban and architectural landmark. *Leading Architecture*, July / August 2002, p. 19.

Schoonraad, M. 2002. New urbanism or new elitism. *Leading Architecture*, July / August 2002, p. 44.

Melrose Arch, a landmark in Johannesburg, illustrates the application of elements and principles of spatial definition within an urban interior. The aspects that make this articulation possible and the subsequent place-making are investigated within this mixed-use development.

2.9   Summary

The sources introduced in this chapter provide an overview of the data considered for this study. The sources for background orientation give a broad understanding of the entire scope of the production of space and place. Data for this purpose are acknowledged, but are excluded from this investigation.

Discussions on spatial definition in Chapter 3 are mainly informed by a selection of sources that have been introduced. The aim of this chapter is to determine the elements that can be applied to create space. Ching (1979), Ching & Bingelli (2005) and Kilmer & Kilmer (1992) are the major sources for investigation of architectural interior definition. Curran (1983) and Hedman & Jaszweski (1984) are considered for the urban spatial definition approach, together with the landscape perspective from Motloch (1991). The architectural and urban elements for spatial definition are integrated in Chapter 3 in a search for a collective set of terminology that can be used as criteria for spatial definition.

The five elements that Lynch (1960) describes for legible space are combined with the above investigation. Trancik (1986), Von Meiss (1990) and Dewar & Uytenbogaardt (1995) add to the arguments to define space with static physical elements.

The sources that are considered for Chapter 4 deal with the enrichment of spatial quality. The variables (principles) are investigated to determine the criteria that can be used collectively for architectural and urban interiors, to create place. Norberg-Schulz (1980), Trancik (1986) and Day (2002) are important sources to define place. The investigations focus on the physical elements that influence a sense of place.

Ching (1979), Ching & Bingelli (2005) and Kilmer & Kilmer (1992) are investigated to identify variables to enrich place from an architectural interior point of view. This is complemented with the urban approach with the use of Curran (1983), Hedman & Jaszweski (1984) together with Motloch (1991) that

argues the landscape viewpoint. Variables that are investigated include: shape and size, colour, texture, scale and proportion, finish materials, light and views. The concept of richness by Bentley et al (1993) is explored to determine the effect of the variables on a static physical model of space to create place.

Precedent analyses are synthesised throughout Chapters 3 and 4 to identify and interpret the terminology that has been selected as criteria. The Constitutional Court is selected as precedent to visually illustrate the elements and variables (principles) on both an architectural and an urban level and these are complemented with reference the other precedents in support of the explanation.

Chapter 5 focuses on the sources of Chapters 3 and 4 combined to determine the relation between the criteria to produce space and place. This is then applied to the Case Study of the Donkin Reserve in Central Hill, Port Elizabeth, in Chapter 6 to determine whether the criteria can serve as guidelines for the evaluation of spatial definition and place-making.

2.10   Conclusion

The Review of Related Literature has been structured according to the various chapters and the related sub-problems that provide the content for investigation. All the sources for investigation have been introduced.   The major sources and precedents that are considered for this exploration have been identified.   The search for collective criteria for spatial definition and place-making in Chapters 3 and 4, aims to achieve an integrated approach in the discussion of data. The perception and approach of the researcher should be independent and objective to the investigation and focus on the aims that have been described in Chapter 1 and 2.