

Chapter 4: ENRICHING THE SPATIAL QUALITY

4.1 Introduction

This chapter investigates aspects that form a sense of place to ensure meaningful qualities and experiences. In order to understand the meaning of 'sense of place', definitions by selected sources are examined to determine the aspects that constitute place. This understanding is then extended by the subdivision of these variables in a discussion that integrates theoretical data with precedent applications.

The variables include: shape and size, scale and proportion, colour, texture, finish materials, light and shade, and views and vistas. Once again the framework for the discussion of variables has been determined according to the terminology for architectural interiors. The investigation explains the congruencies of the terminology within urban spaces.

The aim of this chapter is to establish whether the application of the variables listed can be used to 'furnish' a defined space. The relation between spatial definition and spatial modulation is explored for architectural and urban interiors. The precedents from Chapter 2 are now integrated with theoretical data, interpreting the concepts with visual explanations. Once again, the Constitutional Court is visually analysed and the other precedents are referred to in support of the explanations of every criterion.

4.2 Definition of place

"We lack a city sense. There is nothing to awaken love, affection, interest..." (Rudofsky 1969:16).

Norberg-Schultz (1980:5, 6) indicates in *Genius Loci* that it is the totality of the textures, shapes and colours of materials that add to environmental character. The environment becomes meaningful when one can orientate and identify the self in an environment or place with both physical components and intangible feelings. Bell (1993:106) points out that supplementary to this explanation of *Genius Loci*, or the spirit of place, are the

special characteristics of a place that are often intangible and difficult to identify. The understanding of a sense of place often has an emotional connection in the place perception.

Trancik (1986:112) argues that "...if in abstract, physical terms, space is a bounded, purposeful void with the potential of physically linking things, it only becomes place when it is given contextual meaning derived from cultural or regional content." The emotional content of place is fuelled by the social lives of people, the cultural content and the nature of the defining edges and planes of the environment. The identity of the place is enhanced by physical aspects of material substance, shape, texture, colour, and intangible elements, such as human habitation and the qualities place acquires over time (Trancik 1986:113). The place experience is shaped by the articulation of the surfaces, the local history of the environment, the feelings, needs and traditions of the people, the indigenous materials and natural features and the political and economic environment (Trancik 1986:114).

"Places speak to us. What they say affects us and influences our behaviour. Their messages stem from the underlying attitudes with which places are planned, made, used and maintained." (Day 2002:155). The appearance and underlying spirit of a place is influenced by the following: atmosphere, smells and light, materials, colour and the physical form, as well as the people and the physical surroundings. Day (2002:158) then confirms the discussion: "Forms and spaces, colours and light; sounds and smells, work on us, as we know." These are the ingredients of what places communicate to the users. It is important that these variables be integrated and brought together as a "oneness"; the experience is made possible by the movement and "journey of arrival" through a space. The physical "body of the place" and the "life of the place", the activities, movement and change are mutually responsible for the creation of place (Day 2002:158-159). The integration of the variables for spatial modulation is supported by Motloch (1991:188), indicating that an integrated spatial edge, strong perceptual qualities of this edge, a relation between the visual elements and principles of visual form shape the quality of a spatial environment.

Visual appropriateness is a quality that adds to the meaning of a place that deals with the visual appearance. This is essential in public spaces, as these are frequented by a variety of people. A responsive design that acknowledges legibility, variety, robustness (flexibility), and the detail content of the space becomes meaningful to the users (Bentley et al 1985:76). A responsive design is developed with the incorporation of three components: firstly, the contextual content that makes place legible to the user, secondly, the possibilities in use and the variety offered therein, and thirdly, the experience and motivation for using the space (Bentley et al 1985:78). These environmental cues establish the meaning that contributes to the experience. Richness is another quality creating meaningful place and includes sensory experience. "We must make the remaining decisions in ways which increase the choice of sense-experiences which users can enjoy..." (Bentley et al 1985:89).

Behrens & Watson (1996:v) explain that place-making involves the structuring of public places in a system of hierarchy and legibility. There should exist a response to the cultural context and the local landscape, as well as symbolic content of communities. The natural characteristics of the environment add to the form and qualities of the land and add to the spirit of the place.

A place needs to have the capacity to develop and change over time. Richness is added to the content of a place in the layers of experience and history created in the modifications demanded by the community (Trancik 1986:114). People feel comfort and familiarity where the environment can be controlled in guaranteeing continuity in daily living patterns. Order is an added advantage in the creation of meaningful place, as structured order provides clarity and legibility of places that are easy to understand. Spatial definition makes possible this legibility, as nodes, paths, landmarks, edges and connecting elements are identifiable in the urban environment (Trancik 1986:115, 116).

An environment is enriched when the unique forms and details of the setting, the history and context are integrated with human needs and cultural aspects. It is argued that the creation of place includes the social and cultural values. The visual perception of the place and the control of the environment are as important as the sense of enclosure and

degree of linkage through the space (Trancik 1986:97). Spatiality, one of the three aspects of Soja's (1996:71) trialectics of spatial thinking, emphasises the importance of static physical space that creates the container in which human life occurs.

Rudofsky (1969:118) makes clear the importance of a sense of place, the creation of a special atmosphere in urban environments: "...a communal living room, so to speak – not a decorative empty lot or a barren 'civic center', but a lively, populated historical setting. And not for parades, rallies, but for the daily assertion of solidarity on their ritual stroll." This approach points out the emphasis on contextual content, historical significance and the meaning created by occupying the space.

Jacobs (1993:11) supports this in the search for what adds to the essence of public spaces. The existing community, the history of the place, access and entertainment are mentioned as qualities that encourage people to use a place. These elements carry a public memory that is shared collectively. Motloch (1991:188) lists aspects of importance for a successful sense of place: an integrated spatial edge, strong perceptual qualities of this edge, a relation between the edge and elements within, creating a harmonious unity. The response to place is a mental process that is fed by perceptual and direct messages. These messages shape the spatial feeling that is created and is emphasised through the spatial edge (Motloch 1991:188).

The character and quality of the static physical model of space are investigated. The influence of variables that shape the experience of place as observed with the senses is investigated.

4.3 Variables for enriching the spatial quality

The variables that have been explored have been identified from a range of sources. These aspects suggested the strongest influence on spatial modulation in architectural interiors. The aim here is to determine whether the vocabulary is applicable to urban interiors and if this terminology could be collective in describing and interpreting urban spatial qualities.

The search further indicates the link between these variables and the creation of richness to achieve a sense of place. To establish an understanding of a 'sense of place', definitions by selected authors are explored. Only then can the different variables for discussion be addressed. These visual properties are not constant and change according to variants in contextual conditions as variables in a space (Ching 1979:51). The framework for this chapter constitutes: shape and size, proportion and scale, colour, texture, finish material, light and shade, views and vistas, and sensory experience.

4.3.1 Shape and size

Shape is the vehicle by which forms are identified. Forms are created by contour lines as the outlines of planes and boundaries of three-dimensional volumes. In each application the surface articulation of the lines or planes distinguishes forms from the surrounding background (Ching & Bingelli 2005:93). Interior spaces are concerned with the shape of defining elements: planes, openings and silhouettes as shapes are made visible by the edge contour of the plane that defines the volume (Ching 1979:52). Similarly, Cheatham et al (1983:48) state that shape is defined as boundaries or outlines of two-dimensional components, and form as three-dimensional mass or volume.

Form in urban space is made possible when surrounding building facades define the edge (Curran 1983:104) and (Hedman & Jaszweski 1984:76-77). Both architectural and urban interiors use the word 'edge' to define the boundary of the spatial form. Krier (1988:72-73) and Hedman & Jaszweski (1984:77) argue that simple forms elicit the most comprehension in a space with the use of most recognisable shapes to articulate a unified whole.

Simple recognisable forms are identified as linear and cluster spaces. Curran (1983:71, 103) indicates that shape, scale and the organising of the defining surfaces as variables affect the spatial quality of urban space. The form of the space suggests the use message the space projects. Linear spaces, due to the linkage of various areas and

spaces created are associated with access and movement. Cluster spaces, in turn, are related to activities and interaction of people, because of the containment and nodal qualities of the size and shape provided as public space (Curran 1983:103). Cluster spaces function as containers: "...while the basic containing space of the room can be described as the most elementary extension of the human body..." (Curran 1983:103).

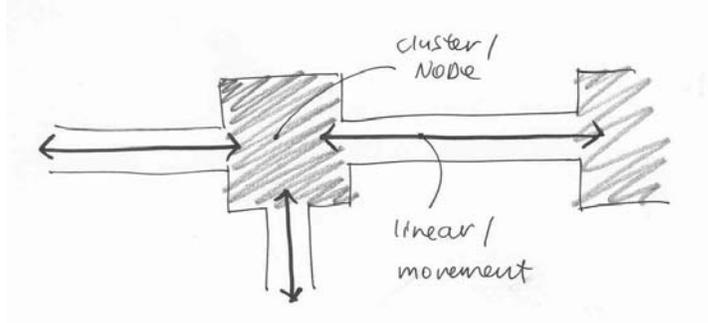


Fig 4-1: Cluster and nodal spaces
(Grobler 2005)

The spatial form at the Constitutional Court combines both linear and clustered spaces. Movement and circulation of the Great African steps outside and the exhibition steps on the interior illustrate the composition of planes in a linear fashion. The courtyard and foyer, in turn, are examples of centralised spaces that allow for nodal interaction and the gathering of people. Both these architectural and urban interiors are located on the axis of the linear spaces and thus strategically positioned to best create interaction.

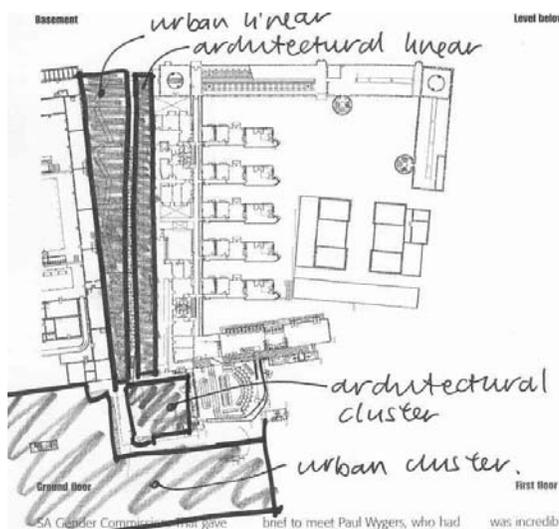


Fig 4-2: Constitutional Court plan – architectural and urban linear and clustered spaces
Adapted from (Makin & Masojada 2004:10)

The integration of “planar shapes with three-dimensional forms can produce interesting results.” (Bell 1993:55). This interaction between two and three-dimensional forms allows for added richness to the spatial experience. The compatibility of shape and form is important in establishing design unity in landscape spaces. Shape is identified as the lines and edges of surface planes defining volume or form; form is the three-dimensional equivalent of shape. Contrast in the application of form and shape can however be used to create emphasis in a composition. (Bell 1993:50).

Size can be described as “the real dimensions of form.” (Ching 1979:50). The dimensions of length, width and depth determine the size and scale of an object or space, as well as the proportion of the form created. The contrast achieved by a significantly larger or smaller size draws attention and dominates a composition. This principle is useful in the organising of spaces, as well as creating focal points, points of emphasis in a room. Ching (1979:351) points out that size, together with shape and placement is used to create emphasis amongst elements or spaces within an environment. According to Hedman & Jaszweski (1984:72), the creation of a three-dimensional effect is more difficult within a large space. The width-height ratio is essential in the establishment of scale and proportion.

The contemplation space at Sendero del Pinar de la Agaida becomes a focal point in the landscape because of the contrast in shape, size and position. The angular qualities contrast with the natural lines, but remain sensitive to the environment. The size is small in relation to the context, but at the same time stands out as it is isolated. The location and placement are angled to the natural flow of the river for one to admire the view. Even though this structure is within a vast landscape, the size and scale of the enclosure relate to human scale and create a place that allows for shelter.



Fig 4-3: Sendero del Pinar de la Algaida
(Mostaedi [s.a.]:175)

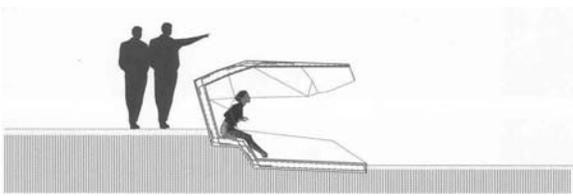


Fig 4-4: Sendero del Pinar de la Algaida – scale
(Mostaedi [s.a.]:174)

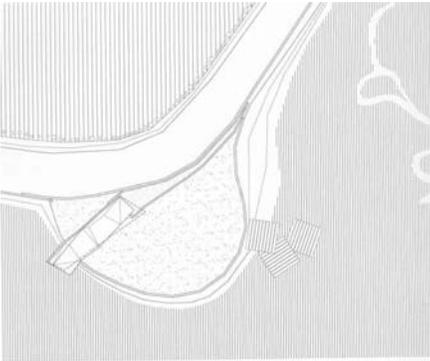


Fig 4-5: Sendero del Pinar de la Algaida plan
(Mostaedi [s.a.]:169)

Monumental spaces encourage public activity on a large scale, as compared with intimate spaces that invite personal social interaction (Curran 1983:84). The scale and proportion of the space will determine the user interaction and the type of use that is established.

The public spaces at the Constitutional Court encourage interaction because of the size. By contrast, the Garden Pavilion is intimate and modest due to the size of the spatial definition.

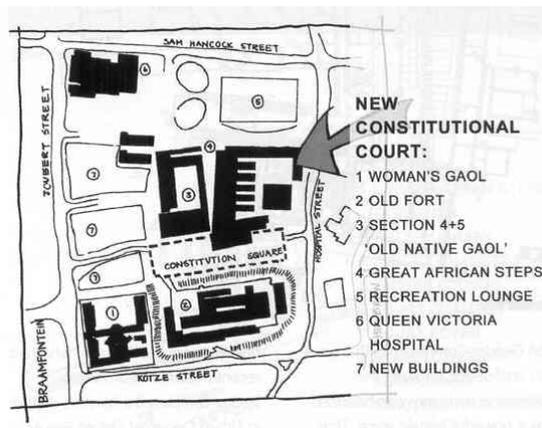


Fig 4-6: Constitutional Court large size
(Makin & Masoiada 2004:9)



Fig 4-7: Garden Pavilion small size
(Garden Pavilion 2000:23)

4.3.2 Proportion and scale

It has been asserted that "...a proportioning system establishes a consistent set of visual relationships between the parts of a building, as well as between the parts and their whole." It is also explained as the mathematical relationship between real dimensions of form and space (Ching 1979:297, 326). The aim of applying principles of proportion is to create order in elements constituting a visual composition. Kilmer & Kilmer (1992:119) add to the definition: "Proportion can be expressed as matters of width in relation to length with which designers seek to balance or relate the parts to one another to create an aesthetic composition." The emphasis here lies on the application of a system of proportion in achieving aesthetic harmony.

Various theories of proportion have been developed. This investigation focuses on anthropomorphic proportions, as architectural and urban interior are inhabited by humans. Anthropomorphic proportioning systems are concerned with the dimensions and proportions of the human body. "They are predicated on the theory that forms and spaces in architecture are either containers or extensions of the human body and should, therefore, be determined by its dimensions." (Ching 1979:324). The dimensions and size of the human body influence the design of elements and spaces for use across all functional areas. The aim of utilizing this theory is to create comfort and add value to the daily functions that need to be performed (Ching 1979:325).

Scale is "a fixed proportion used in determining measurements and dimensions." (Ching 1979:299). Kilmer & Kilmer (1992:120) define scale as "a relative standard or measure outside of an object and related to the size of an object or an environment to man."

Scale can further be divided in two types: generic and human. Generic scale is concerned with the size of building elements in relation to other elements in the surrounding context. Human scale is the relation between the dimensions and proportions of the human body to elements and spaces surrounding it (Ching 1979:326). It can be said that human scale has a strong link with architectural interior spaces, as these spaces are designed with the human body in mind. Urban spaces however, consist of generic space, as the majority of spaces have various purposes

ranging from vehicular transport to sites for skyscrapers. The human face is also incorporated in urban areas by means of public open space. The definition of these spaces poses a challenge in the appropriate selection of scale application.

The appropriate size and proportion for creating comfortable urban spaces should relate to the human body in order to be effective. “Defined spaces are capable of having strong emotional connotations, based on their perceived size, scale, or proportion. The scale of a space consists of two components: the size of the space in relation to the size of its context, and its size in relation to the observer.” (Motloch 1991:110).

The urban interiors of the Philippi public spaces are designed with the human body as reference. Within the urban environment, spaces have been kept to a human scale with the linear structural system that is single storey in height. The urban framework defines space that is meaningful to the community. The scale of public space supports the intended activities.

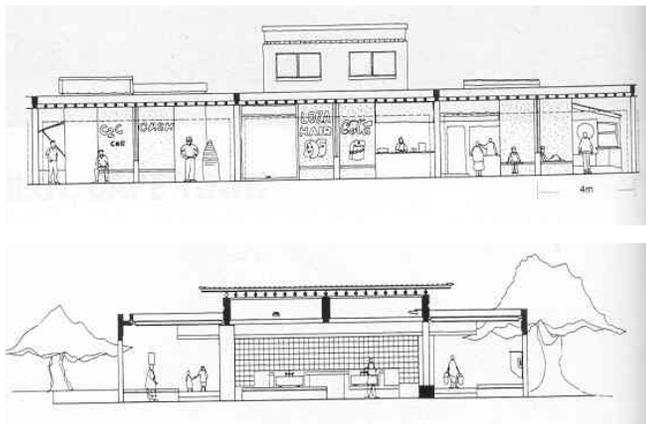


Fig 4-8: Philippi Lansdowne public space – human scale
(Philippi Lansdowne public space project, Cape Town 2003:58)

Dewar & Uytendogaardt (1995:17) emphasise the importance of humanly scaled public spaces for place-making. Scale in the urban environment is determined by the height of the defining facades. The height to width ratio in the definition of street space is critical in the creation of an appropriate scale and “...a relatively uniform height of street space must be defined to give the street cross section the strong unifying proportions of a well composed room...” (Hedman & Jaszweski 1984:60). The viewer should be able to visually determine the height and length, vertical and horizontal properties, of a space.

Inadequate vertical definition results in an unsuccessfully defined space and loses the sense of closure.

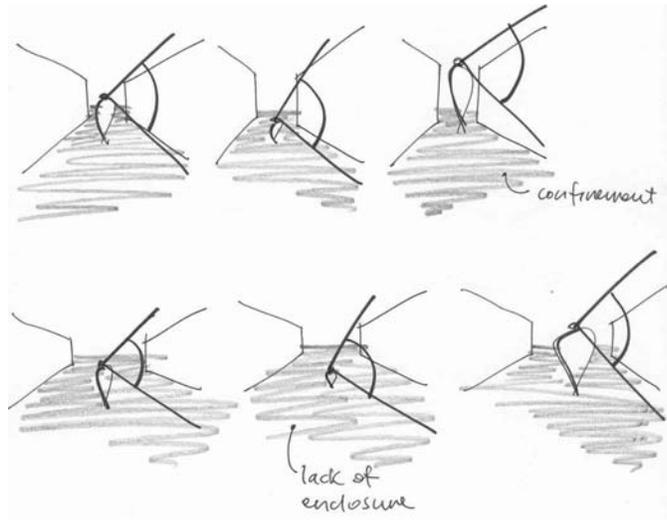


Fig 4-9: Urban scale

(Grobler 2005)

The proportion and scale of the Garden Pavilion addresses human scale that allows for comfort within an intimate space. In contrast, the Melrose Arch square relates to urban scale. The urban interiors that are created provide meaning due to the fact that the containment, hierarchy (of space) and axes are clear and legible.



Fig 4-10: Garden Pavilion residential scale

(An Architecture of discovery 2002:37)



Fig 4-11: Melrose Arch urban scale

(Krige 2002:23)

The scale of public spaces further establishes the hierarchy of the space in the urban fabric (Curran 1983:112).

This has been identified in the scale of the Constitutional Court foyer and courtyard, as well as the Philippi public spaces. Hedman & Jaszweski (1984:58-59) state that the ratio of 1:2 provides adequate spatial definition for street space. The linear spaces of the Constitutional Court, the Great African Steps and the exhibition steps, have been designed with appropriate vertical enclosure as 'streets' with relation to the height-width ratio. This spatial containment enriches spatial quality when the articulation of the space is also enhanced with other design elements.

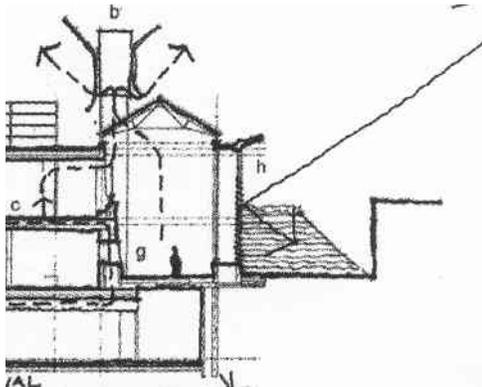


Fig 4-12: Constitutional Court scale and proportion

(The Constitutional Court, Johannesburg 2004/2005:20)

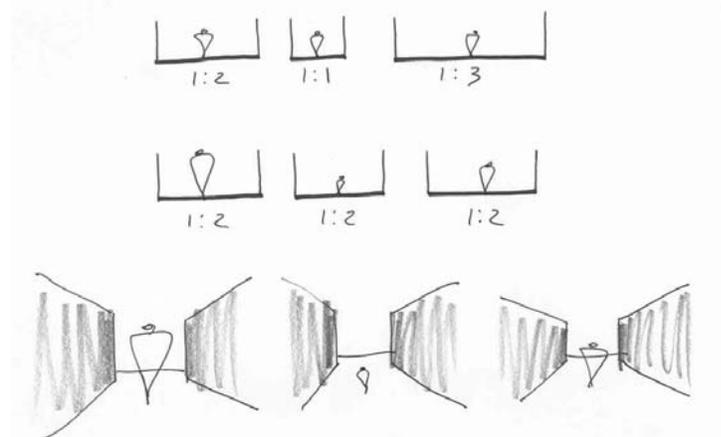


Fig 4-13: Ratio 1:2

(Grobler 2005)

4.3.3 Colour

Light reveals colour as a visual property of form. The three dimensions of colour, hue, value and saturation are interrelated and influence the environment in which these are applied (Ching & Binggeli 2005:105, 107).

Colour has a strong influence on how interior spaces are perceived. Warm and dark hues have the capacity of visually shortening the size and scale of a room. Contrasting this, cool, light colours tend to increase the visually perceived space in size and scale (Ching & Binggeli 2005:115).

The use of colour in the Glass Shutter house is kept light and monochrome according to Japanese tradition. It can be argued that the social practices and inclusion of people and food add to the colour and character.



Fig 4-14: Glass Shutter House colour (Webb 2005:85)

The “spatial effect of colour” is enhanced when spatial boundaries are defined with the use of colour creating lines on surface planes and within enclosed interior spaces (Reekie 1972:22).

The spatial boundaries at the Philippi Lansdowne public space are accentuated by the application of a rich warm earth colour.



Fig 4-15: Philippi Lansdowne public space

(Philippi Lansdowne public space project, Cape Town 2003:57)

The application of chromatic and tonal distribution creates emphasis and points of attention in architectural interiors as light values recede and dark values advance (Ching & Binggeli 2005:119).

The application of colour as emphasis is illustrated in the Constitutional Court architectural and urban interiors. A neutral backdrop is provided to highlight vibrant colour applications in the form of surface materials in the foyer and artwork in the exhibition steps space. The use of strong colour strategically applied creates emphasis. This is visible in the colourful furniture in the foyer and the bright mosaics applied to sections of the slanted columns. Warm earth-like colours are found closer to the base plane and lighter, colder colours to the upper sections. The same principle is applied on the exhibition steps as artworks form accents with colour in a space that serves as a blank canvas.



Fig 4-16: Constitutional Court foyer colour

(Lipman 2004:17)

The effect of light on colour is important in the design of interiors. Lighting intensities affect the apparent value of a surface in the rendering of light (Ching & Binggeli 2005:111). The visual qualities of surfaces are altered, modulating the planes and the overall visual character. Kilmer & Kilmer (1992:122) mention space, light and colour as three effective tools to shape interior space visually. The application of colour is important to the success of an interior, as the surface finish and materials and colours used will set the mood and influence a response by the user of the space (Kilmer & Kilmer 1992:122).

The colour qualities in the Court foyer are continuously changing intensities due to the natural light that streams into the building. This influences the spatial character and consequently the changing emotions of the space.

Bell (1993:72) describes colour in the landscape as it relates to a particular local identity and is mostly limited to the surrounding hues. Natural colours often represent colour combinations for man-made structures within urban environments. Environmental design deals with colours holistically where colour selections are selected from the adjacent colours in the surrounding background.

The colour use at Sendero del Pinar de la Algaida is purely derived from nature. As this is a natural landscape setting, the addition of manmade elements blends into the surroundings. Natural colours, inherent in the materials, add to the sense of place, timber, rusted metal and gravel.



Fig 4-17 and Fig 4-18: Sendero del Pinar de la Algaida colour
(Mostaedi [s.a.]:173, 175)

The colour combinations for the urban interiors of the Constitutional Court represent the colours found in the surrounding landscape with natural colours that blend into the site. Accent once again is created with the bright colours that announce the entrance to the court with 'Constitutional Court' in all eleven official languages applied in red, green, yellow and blue text. The Great African Steps include colour in the form of coloured metal sections that serve as interactive louvres on the exhibition steps wall. Artworks have been included in the design of these elements, as the metal is etched with works of various artists.



Figure 4-19: Constitutional Court courtyard (Grobler 2005)



Figure 4-20: Court entrance (Grobler 2005)



Fig 4-25: Louvres and artwork

(Grobler 2005)

Harmony and contrast are effective tools in the creation of unity and interest within a space. Appropriate and compatible colour choices within the urban are important with urban applications (Reekie 1972:18, 22).

A similar strategy is followed at Melrose Arch. Colour as accent and emphasis creates interest in the courtyard with the application of coloured mosaics on vertical edges and the horizontal base plane. The architectural and urban interiors of the Castelvecchio relate to the urban colour approach. This historical background of the environment has been strengthened by the application of colours that are in harmony with the existing structures. The unity creates visual continuity in the raw and natural use of finish materials. The urban interior of Whiteinch Cross utilises the material integrity of materials for colour application on planes that imply the space and is contrasted with the bright blue light of the vertical tower.

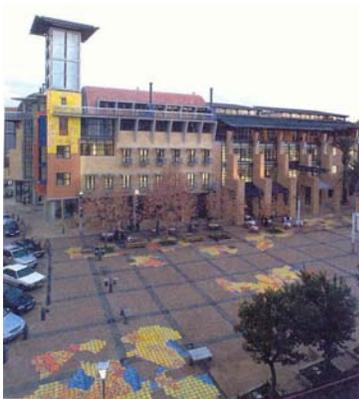


Figure 4-22: Melrose Arch

(Krige 2002:19)



Figure 4-23: Castelvecchio

(Los 2002:82)



Figure 4-24: Whiteinch Cross

(Holden 2003:69)

4.3.4 Texture

Texture can be described as the relative roughness or smoothness, and the characteristics of surface qualities of materials. Ching & Binggeli (2005:97) and Motloch (1991:132) list visual texture as the texture that is observed by the eye utilising value and pattern on a two-dimensional plane, while tactile texture in turn, is made up of the three dimensional surface qualities that are experienced by touch.

The three-dimensional structure of a surface affects the perceived quality and character of a plane or object. The finer the texture, the smoother the surface appears and vice versa (Ching & Binggeli 2005:98). The modulation of textured surfaces is enhanced by direct light horizontally across the three-dimensional surface plane. This method is effective in architectural interior applications creating accents with rough surface treatments (Ching & Binggeli 2005:99). Textural qualities are emphasised by the incorporation of strategic lighting. Shadows and contrasts are achieved with concentrated, directional light and smooth reflecting surfaces are created as focal points and accent (Kilmer & Kilmer 1992:110). The combination of lighting, texture and finish materials can be utilized effectively in shaping the perception of a space.

Natural light falling into the sculpture gallery of the Castelvecchio modulates the rough texture of the enclosing walls. This is contrasted by the smooth shiny surfaces of the exhibition platforms that define the position of sculptures. Pattern is created by the geometric patterns of the metal grills. A strong contrast of texture is found in the Cangrande space, offsetting old and new. Additions have a tactile and visual texture, but that of the historical wall is coarser and rough due to the exposed stone and brick construction.



Fig 4-25: Castelvecchio
(Los 2002:79)



Fig 4-26: Metal grills (Castelvecchio)
(Los 2002:80)



Fig 4-27: Cangrande
(Los 2002:82)

The Constitutional Court foyer illustrates a combination of contrasting textures. Textural qualities are applied onto various linear and planar elements, emphasised by the incorporation of strategic lighting to create depth in the shadows on the planes. Natural lighting from above shapes the textural and spatial qualities of the interior and creates visual interest and variety. Contrast in textural applications causes the eye to move around the space and experience visually, until the viewer can touch to completely experience the richness of the space.



Fig 4-28: Constitutional Court foyer texture
(Lipman 2004:17)

Kilmer & Kilmer (1992:112) further explain that the repetition of texture can produce repetitive form in the application of materials with an inherent texture or grain. The challenge within interior applications is to utilise the natural integrity of a material to the benefit and advantage of a space. However, the selection always needs to remain appropriate to the application, function and conceptual approach of the space. Textures within interiors elicit a reaction of “wanting to feel” (Kilmer & Kilmer 1992:110); this encourages people participation and heightens the experience of the space.

The use of texture in urban environments allows for unity and harmony with the use of a dominant texture that determines the character (Reekie 1972:25). Texture and grain in the landscape are achieved by landforms and the density and size of plant foliage (Bell 1993:61). Coarse and fine textures are observed and the perception is determined by the distance of the plane or element from the viewer (Motloch 1993:78).

Natural vegetation, gravel, stone and water provide the texture and grain in the landscape of Sendero del Pinar de la Algaida. The contrast in textures, smooth and rough, defines edges for circulation and contemplation, with a harmonious effect.



Fig 4-29: Sendero del Pinar de la Algaida
(Mostaedi [s.a.]:168)

Contrast in the use of texture creates lines where different applications of finish materials meet or overlap. “Texture is an intrinsic characteristic of the materials we use to define, furnish, and embellish interior space.” (Ching & Binggeli 2005:102). The combination of colour, texture and finishing materials must be closely considered in the selection of elements of spatial definition.

The application of texture in the Garden Pavilion becomes the ornament in the space. Textured wall finishes, the grain of the timber and pattern created by the tiling all add to the character of the enclosure. The simplicity of the design emphasises the textural effects overall.



Fig 4-30: Garden Pavilion interior (An Architecture of discovery 2002:37)

Bell (1993:61) defines texture as the size of elements and the interval between these that will determine the texture as coarse or fine. The variation and combination of textural application are essential to ensure interest and variety. The scale of the texture

applied to a space should relate and be sensitive to the scale and proportion of that space (Ching & Binggeli 2005:102).

The surface treatments at the Joe Qgabi station square in Philippi have been designed to combine various scale applications that as a result create pattern. A grid is developed that defines spaces for gathering and serves as a reference for the square. Patterns intersect and overlap between the various surface treatments that define areas for sport, circulation, and seating spaces.

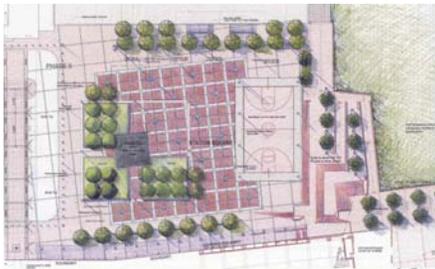


Fig 4-31: Joe Qgabi station square plan
(Klitzner 2005:26)



Fig 4-32: Joe Qgabi station square view
(Klitzner 2005:27)

Texture in general provides an added quality to spaces of various natures and has the capacity to influence the appearance and perception of spaces through the application of specific finish materials on surfaces.

4.3.5 Finish material

“Materials are the basic building substances architects and interior designers use to create built environments and to give form, shape, variety, and distinction to interior spaces.” (Kilmer & Kilmer 1992:358). The physical form of spaces is determined by the selection and use of materials, whether surface treatments, elements or components within a space. The intrinsic qualities of materials add to the quality and the experience of the space. Pattern, texture and colour are included with the application of materials onto surfaces. The composition of floor, wall and ceiling materials, as well as the materials found in the elements, fixtures and furnishings combined to create the final quality (Ching & Binggeli 2005:274).

Curran (1983:52, 140) explains the importance of the treatment in defining surfaces for urban interiors. The appropriate selecting of surface treatments enhances the overall

use from a holistic design approach. Areas are delineated by varying surface treatments, different materials, textures, patterns and level changes, and these imply a change in function. The application of materials needs to support the function of the space, whether activity or circulation, and add to the sensory experience.

The application of materials at Whiteinch Cross acknowledges the industrial heritage of shipbuilding and steel-making of Glasgow (Holden 2003:68). Two parallel walls define the space, one in raw concrete and the other clad in steel. A corner is defined by the right angle created between the concrete wall and a steel frame. The frame is overgrown with wisteria that adds another 'material'. A sheet of water runs off the steel clad wall and becomes yet another 'material' that modulates the space. Polished black reinforced concrete seats and rusted metal grills for water drainage are located on the ground plane paved in sandstone slabs. The greenery of the trees contrasts with the rusted red and orange colours of the metal applications. The sense of place is retained, true to the original character of the space



Fig 4-33: Whiteinch Cross

(Holden 2003:70)

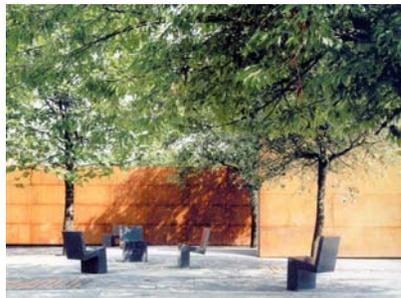


Fig 4-34: Whiteinch Cross seats

(Spens 2003:197)



Fig 4-35: Whiteinch Cross water

(Holden 2003:68)

The perception of finish materials is made possible through light that reveals the qualities. "The result is 'an ambience'...about the character of place..." (Von Meiss

1990:180). Richness and visual interest are achieved with the selection of finish materials.

The main materials in the Constitutional Court are visually observed: concrete, steel, timber, glass and stone. Makin & Masojada (2004:13) confirm the choice of materials and add that light is another important material utilised. Light transforms the visual qualities of the materials: colour and texture. A section of the historical building has been kept in conjunction with the new addition; the varied brown colour and rough texture of the existing brickwork of the original building are offset with bright mosaic sections on the columns. The matt, black floor tiles create a horizontal datum for the Court foyer. The off-shutter concrete structural elements, columns and roof, set a neutral backdrop for the variety in coloured mosaics and furniture. The sensitivity to the site and the reuse of materials from the historical buildings address the quality and sense of place that link old and new with a creative interplay and juxtaposition of materials.



Fig 4-36: Constitutional Court light
(Grobler 2005)



Fig 4-37: Constitutional Court materials
(Lipman 2004:17)

Similarly, the approach to material use at the Castelvecchio indicates enhancement in the spirit of place by means of juxtaposition. The co-existence of old and new is integrated into the restoration. "His (Carlo Scarpa's) ability to weave his new architecture onto the old was accomplished without disrupting the feeling of these buildings and one is virtually unable to articulate the edge between them." (Cal Co & Mazzariol 19986:259). The subdued use of materials adds to the sense of place; slaked lime plaster, rough hewn concrete, stone tiles and steel gratings harmoniously integrated with the historical content

(Los 2002:81). The approach to material use at the Constitutional Court and the Castelvecchio is similar, juxtaposition, but the result varies in the aesthetic and symbolic character.



Fig 4-38 and Fig 4-39: Castelvecchio – old and new materials
(Los 2002:85, 89)

The criteria for the selection of finish materials are functional, aesthetic and economic (Ching & Binggeli 2005:274). This investigation places emphasis on the aesthetic criteria, as these contain the visual qualities of colour, texture and pattern (Ching & Binggeli 2005:274). Another aspect in the selection of materials is ecological consideration that deals with environmental impact, recyclability and sustainability of materials as renewable resources (Kilmer & Kilmer 1992:360).

Public spaces in the natural environment, especially Sendero del Pinar de la Algaida in Spain, address sustainability, using recycled materials to aid in the restoration of the previous salt works. The subdued use of materials and colours adds to the “ruggedness and ambiguity of the landscape” which then invites people to visit and contemplate (Mostaedi [s.a.]:168).



Fig 4-40 and fig 4-41: Sendero del Pinar de la Algaida
(Mostaedi [s.a.]:171, 175)

Architectural and urban interiors are all enriched with the use of varying finish materials with added colour and texture that are modulated by light.

4.3.6 Light and shade

“Architectural space exists by the illumination of objects and enclosing surfaces...” (Von Meiss 1990:121). Lighting is the essential element that shapes the character and quality of spaces. Lighting design includes ambient lighting for a general level of illumination purposes, effective task lighting (Ching & Binggeli 2005:260) and accent lighting that establishes focal points, emphasis and variety within interiors. The importance of a successful lighting design is reflected in the organisation of light fixtures that have the capacity to enhance the spatial features of a space (Ching & Binggeli 2005:261, 265).

Light is radiant energy that illuminates in all directions equally. The quality diminishes according to the distance from the source as it moves through a space. The selection of finish materials affects the behaviour of light: opaque surfaces block the transmission of light and create strong shadows. Translucent materials diffuse light to adjacent areas. Transparent materials allow for non-diffuse transmissions according to Ching & Binggeli (2005:234) and shiny surfaces reflect light off the surface plane.

Brightness, contrast, glare, diffusion and colour are factors that influence the way spaces are perceived and shaped by the quality of the light, natural or artificial (Ching & Binggeli 2005:235).

Finish materials have specifically been selected for the Constitutional Court buildings and urban spaces and are enhanced by lighting qualities. Makin and Masojada describe (2004:13): “...surfaces onto which light would fall and reflect in colour, coolness and warmth, and would show scale, volume, silhouette, relief, sort whiteness and smooth undulating shininess.” The effect of light and shade within the Court foyer modulates the space continually throughout the day with the movement of the sun. The interior transforms with the transition of shadows and changing light intensities. Light shining through

the clerestory windows and roof openings transforms the space as shadows from the columns dance on the adjoining planes of the contained volume. Alternating views change the perspectives and depth that alternate between planes, voids, elements, colour and texture. The experience relates to the concept of a tree, as the sun casts shadows onto the ground and filters through the branches.



Fig 4-42: Constitutional Court foyer clerestory
(Grobler 2005)



Fig 4-43: Constitutional Court natural light
(Constitutional Court 2005:33)

Visual interest and richness are added to a space with the patterns of light and shade that are created throughout the day. Three-dimensional qualities are enhanced in the changing modulation of the interior planes and elements (Ching & Binggeli 2005:266).

Similar effects are achieved in the Philippi Lansdowne public space. The linear structural system creates vertical and horizontal lines that define the spaces. Linear elements in the overhead plane are spaced apart. This allows for a rhythm of shadows to move between the linear grids throughout the day. The interplay of light and shade transforms the space and adds to the richness of the experience.



Fig 4-44: Philippi Lansdowne public space
(Philippi Lansdowne public space project, Cape Town 2003:58)

The lighting application at the Castelvecchio includes the arrangement of planes in composition. “With light sources and diffusing surfaces at right angles to each other, as with corner windows, the walls become illumination systems which colour the light through their own material texture.” (Los 2002:40). The water and white reflective walls and coloured surfaces are employed here as diffusers. In addition, the use of the corner window dissolves the edge or angle created at a corner. “The capacity of architecture to take root in places, and thereby bring out the genius loci and make it speak...the role of light is of paramount importance.” (Los 2002:44). The illumination conditions, light-space, light as an object, light from a series of objects and light from surfaces as listed by Von Meiss (1990:121,126) all contribute to the approach illustrated in the Castelvecchio.

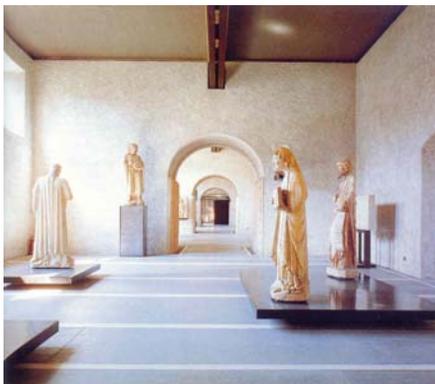


Fig 4-45: Castelvecchio sculpture gallery
(Los 2002:79)



Fig 4-46: Castelvecchio window
(Los 2002:85)

The changing qualities of light, natural or artificial (Von Meiss 1990:121) and daytime and night time add visual interest and richness. The difference between daytime and night time lighting qualities has the potential to change the character or sense of place.

During the day, all elements are equally visible at Whiteinch Cross, exposing the effect of colour, texture and placement. At night time, however, certain elements are emphasised, the tower, steel frame and the water wall become elements of emphasis, as the other objects recede into the darkness. The spatial definition and modulation are transformed between night and day.



Fig 4-47: Whiteinch Cross night time
(Holden 2003:69)



Fig 4-48: Whiteinch Cross day time
(Holden 2003:68)

Material applications physically modulate the static spatial container. The intangible material, light, creates dynamic transformations. All are observed with the senses combined.

4.3.7 Views and vistas

Views and vistas provide more opportunities for sensory observations, as spaces are linked physically and visually. “As we move, our perspective (view) of the place physically changes.” (Motloch 1991:119). Interior spaces allow for multiple views in the organisation of architectural and interior elements and components. The size, shape and location of openings or voids affect the enclosure quality of a room. This has an influence on the degree of enclosure, the amount of light emitted into a space, as well as the vista onto which the view is focused. Windows and doors are architectural measures to create physical and visual links between interior and exterior. Doors allow for movement into a room and determine the movement patterns in a space. Similarly, windows are openings for light, ventilation and emphasise the view onto the surrounding areas establishing the visual relation between interior and exterior spaces (Ching 1979:176).

The transparent plane of the Constitutional Court, between the exhibition stairs and the Great African Steps allows for visual links as viewed from one interior to the other. This visual link is also found between the Court foyer and the courtyard.



Fig 4-49: Constitutional Court visual link (urban)
(Makin & Masojada 2004:11)



Fig 4-50: Constitutional Court visual links (architectural) (Lipman 2004:17)

The degree of enclosure is determined by the configurations that define the space. The pattern and placement of openings determine the spatial quality of the experience. On the other hand, the spatial quality is diminished with the increase in size of windows in enclosing walls. The emphasis is not on the enclosing planes, but may extend beyond the boundaries of the room (Ching 1979:178).

The linear structural framework that defines Philippi Lansdowne public space, frames views in various directions, linking adjacent areas physically, but also visually.



Fig 4-51: Philippi Lansdowne public space – framing views
(Philippi Lansdowne public space project, Cape Town 2003:56)

Landscape spaces deal with the same aspect to enhance views. The incorporation of enframement with the use of planting material creates focal points with emphasis directed onto (Motloch 1991:83).

At Sendero del Pinar de la Algaida the absence of a framing device allows the eye to roam freely over the landscape. Different areas and spatial qualities are revealed.



Fig 4-52: Sendero del Pinar de la Algaida
(Mostaedi [s.a.]:168)

The Glass Shutter House has strong interior-external connections. The interplay of solid and void, transparency and translucency is all important in this design that addresses a “duality of the layers.” A translucent screen allows for visual contact between inside and outside when the shutters are drawn, but once opened, the quality speaks of lightness, permeability and of “...varying degrees of exposure and enclosure” with the curtains that wave in the wind (Webb 2005:84). The physical transformation of the architectural interior allows for the volume to open up completely to the urban surroundings. The space contains the capacity in this regard to invite physical links and movement, and in turn, if the shutters should be closed, a visual link or view onto the street is maintained.



Fig 4-53: Glass Shutter House indirect link
(Webb 2005:82)



Fig 4-54: Glass Shutter House direct link
(Webb 2005:83)

Curran (1983:104) states that public cluster spaces in the urban environment allow for “the movement of the eye, unlike with linear spaces, is not directed away from the

viewer, but around.” Openings between defined areas are created as “visual leaks” where the “eye is allowed to move out of the space” (Curran 1983:104). Vistas are established in this regard and allow for visual links between spaces in the city. The experience is on a visual level, but also on a multi-sensory level.

4.4 Sensory experience

“Aesthetic experiencing of the environment is a matter of all our senses and there are even some situations where hearing, smell and tactility are more important than vision; they are experienced with extraordinary intensity.” (Von Meiss 1990:15). The experience of the physical environment is heightened by the sensory action of feeling: look, touch, feel, smell, hear and the movement through place.

Bentley et al (1985:89) support that richness is added to spatial environments through sense and kinetic experiences. In addition, Porter (1997:26) argues that the sequential movement from one space to another triggers various spatial impressions on a sensory level. The use of a multi-sensory approach in architectural interiors is advised that allows for a complete kinaesthetic experience in the perception of spaces with the movement of the body through space and time. Porter (1997:38) describes the Gallery Tom by architect Hiroshi Naito to illustrate this point: “...They experience the building by the number of steps, by feeling the light on their skin; they touch the volume of space by sound.”

Distance receptors, hearing and smell, help to orientate and direct in terms of auditory and olfactory space respectively. Immediate receptors aid in the sensory inputs that are perceived by the skin, muscles and membranes, i.e. temperature and humidity (Porter 1997:27-30).

Hedman & Jaszweski (1984:71) confirm that the variables that are applied in the spatial definition contribute to the spatial quality. Shape and size, scale and proportion, colour, texture, finish material, light and shade, and views and vistas are all variables that can physically influence the quality and character of spatial enclosures. The analysis of

variables for spatial modulation illustrated the application opportunities in both architectural and urban interior applications.

4.5 Integrated approach to place-making

The process of integration for place-making includes the variables that have been discussed. The analyses of both architectural and urban interiors combine these aspects holistically in an integrated design as a collective set of criteria.

Martha Schwartz, adjunct professor of landscape architecture at the Harvard University Graduate School of Design, describes place-making as the primary goal. This approach includes identity of place in the visual environment, a place with a strong character (Schwartz et al 2003:16). Landscape designer, Kathryn Gustafson, emphasises the integration of old and new, creating a multi-layered intervention through integration and synthesis. Broto ([s.a]:47) adds that spaces can elicit aesthetic enjoyment with the combination of quality spaces that show respect for the environment, imagination and creativity, sustainability and a vision for the future.

Integration is an ongoing process that develops and grows as people daily appropriate spaces within a local identity. Trancik (1986:219-220) further says that inclusion and integration of the spatial environment, the connections and the sense of place are all important for interiors for human habitation.

The aim with any approach for appropriate design and the creation of identity and place is to ultimately acknowledge the static, physical components of place, together with the people, the context, and the local ingredients.

4.5 Summary

Chapter 4, Enriching the Spatial Quality, explored the terminology that can serve as criteria to modulate spatial enclosures to create place. Shape, size, scale and

proportion, colour, texture, finish material, light and shade and views and vistas, proved all to be variables that are applicable to produce architectural and urban place.

The successful combination of terminology illustrated the appropriate application of a collective vocabulary. The combination of these, however, should be integrated and combined to assure interest and enriched spatial environments. Variables to modulate place must be applied to elements of spatial definition. The relationship has been successfully established as follows: the application and association of elements and variables, combined to define space and create place.

4.6 Conclusion

The nature and modulation of spatial boundaries give meaning to the place and the place experience. The success for place-making lies in the combination and integration of the variables that have been identified and discussed and not in it being isolated.

The compatibility of the terminology to describe the spatial qualities strengthened the investigation with a collective vocabulary. This result provides evidence that the criteria for place-making can be commonly used for both architectural and urban interiors to furnish meaningful places for people to dwell in