

THE CALEDONIAN SPORTS GROUND

Public space as part of inner city regeneration.

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ABSTRACT

This dissertation investigates public space within a South African context as part of inner city regeneration.

The architectural exploration aims to respond to a specific site and neighbourhood needs as identified. Protecting the openness of the site, integrating the site with its surroundings to enhance the potential of social engagement.

The proposal provides a framework for spatial possibility in which architecture is used as a framework through which users influence a building's design.

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1 INTRODUCTION

THE BRIEF REFLECTS A RESPONSE TO RE-ESTABLISH THE CALEDONIAN SPORTS GROUND AS A PUBLIC SPACE IN TSHWANE INNER CITY. THE PROPOSAL IS AN ARCHITECTURAL INTERVENTION AS DERIVED FROM A NEED IDENTIFIED AND A RESPONSE TO THE POTENTIAL OF THE SITE WITHIN A SOUTH AFRICAN URBAN CONTEXT.

The unique character of a city is rooted in the culture of its people, its past, and its natural environment. To retain this unique character that distinguishes a city, these qualities need to be conserved and cultivated. As Bewsher (2005:2) states:

South Africa's natural and cultural heritage resources are continually being threatened as a result of unsustainable development, urban encroachment, and a lack of urgency to protect habitats, species, heritage sites and values.

Tshwane has a large variety of open space resources, from protected areas, ecological and conservation areas, to recreational parks, resorts, sporting facilities, and cultural historical open spaces, which create the opportunity and the potential for developing a high quality environment (TOSF 2005:63). These environments fulfil the need for human connection to nature.

1.1 URBAN FRAMEWORK

The proposed urban framework has the pedestrian – the user of the city – as its core. Cities are experienced by the way people move through and use them. Open green spaces are used as the main ordering device for the city, developing within the city a network of green spaces. The Apies River is a prominent green spine, it serves as a natural border for the CBD (Central Business District) and connects the natural ridges. This framework is informed by the ISDF (Inner City Spatial Development Framework), MDCUIDF (Mandela Development Corridor Urban Design Framework) and the ARUDF (Apies River Urban Design Framework).

1.2 SITE AND USER

The selected site for investigation is the Caledonian Sports Ground, a cultural historical open space located along the Apies River and extension of the Lion bridge heritage site. The site forms a recreational node within the green open-space network. This natural landscape is seen as a primary asset.

The Caledonian Sports Ground is currently exclusively used by the Arcadia Shepherds Soccer Club. Geographically the site is located as a knot between the CBD, Sunnyside and Arcadia, forming an eastern portal into the CBD. The site is naturally closed off by two rivers, the Apies River (west) and Walker Spruit (east) and cut off from its surroundings by high traffic routes: Nelson Mandela Drive, Pretorius Street and Schoeman Street. The buildings that border the site turn their backs to the river and the site, disregarding its potential.

However, the significance lies therein that this site is composed of a natural environment enveloping a cultural event.

The potential exists to use the space to the advantage of the larger context. The site will be developed in the context of potential users. Arcadia lacks park facilities that serve a predominantly high-density housing area with a majority of young residents. There are numerous schools in the vicinity with growing numbers, with limited facilities for sports and or recreation. The site is ideally situated on main routes and a proposed Bus Rapid Transport (BRT) route and station.

1.3 AIMS AND OBJECTIVES

The thesis aims to explore and interpret the relationship between the material world and the quality of human life through examining behaviour, experience, activity and meaning as they happen in the everyday context. Discovering why places are important to people and how architecture and environmental design can be facilitators in place making. Groundswell (2005:16) highlights this point:

An environment rich in texture and colour, enhanced by light and water to create meaningful places. Places that provide a connection to nature as well as social interaction and recreation, for unmanaged and unanticipated activities and places to do nothing. Spaces that are a reflection of our culture.

1.4 DESIGN OBJECTIVES

The design proposal provides an infrastructure solution that can restore a site that has limited civic value, retaining the soccer facilities and combining them with a contemporary public place within the South African context. The solution aims to be a representation as derived from the everyday experiences of citizens as pedestrians, contributors to and inhabitants of the area. The solution provides an environment that is socially engaging and accommodates the changing demands of contemporary culture.

Working in an urban context entails that the project affects a part of the city that has already been constructed. Any intervention has to, in varying ways, relate and respond to what already exists, while establishing new relationships. The solution attempts to integrate what has become fragmented to re-establish connectivity to the urban surroundings.

1.5 THEORETICAL

The theory considers architecture that adheres to a Structuralist philosophy of “spatial possibility” in which architecture is used to provide a spatial framework through which users influence a building’s design (Sharp 1991:53). Architecture that is not an entity in itself but allows for growth, offering infrastructure that support possible programmes. The following architecture theorists will be investigated for ways of perceiving and structuring space and time: Johani Pallasmaa, Herman Hertzberger, Aldo Van Eyck, and Peter Zumthor.

Bernard Tschumi’s principles are used as an approach to work with programme that is not fixed but changes over time.

1.6 METHODOLOGY

The descriptive survey method will be applied to analyse the site and surrounding environment, experiencing it physically at eye level. Activities will be identified and user groups interviewed. Precedent studies of both international and local projects will inform an appropriate working concept, models and methodologies.

1.7 PROGRAMME

The site is divided into three parts. Part one borders the Apies river towards the CBD. Part two is the existing soccer field. Part three borders Walker spruit towards Arcadia.

Proposed for part one is a contemporary public space that supports the following programmes:

- A multipurpose hall for sports and exercise, also equipped with an in- and outdoor stage. The hall can also be used for other organized activities such as lectures, meetings and functions. The hall is linked to the exterior spaces, an amphitheatre and river edge development which comprises cycling and walking routes, stage seating. The existing pavilion and clubhouse are upgraded to form part of this development.

Part two consists of the soccer field, which is kept intact and a new link to part three is established.

Part three is developed as a park with a public swimming pool including kiosk, change rooms, lockers and ablution facilities. This becomes a space for informal play without necessity of apparatus including walking, jogging, cycling, soccer, children's play area.

1.8 CLIENT

The project is financed by:

- Tshwane Municipality,
- Pretoria City Park,
- Contributions from business sector,
- Donations from local businesses, international corporations and the like.
- A Trust will be used to manage the funds.

FIGURE 2: (opposite page)

Image of Tshwane highlighting Green and Open spaces, including Caledonian Sports Ground and Apies River.



2 THEORETICAL DISCOURSE

THE THEORETICAL DISCOURSE EXPLORES THE RELATIONSHIP BETWEEN THE MATERIAL WORLD AND THE QUALITY OF HUMAN LIFE.

2.1 BEING

According to Martin Heidegger the primary purpose of life is to dwell. The way in which “we are” and “I am”, the way in which we humans exist on earth, is through dwelling (Norberg-Schultz 1980:10).

To be able to dwell, a certain environment is required in which to dwell. Heidegger (Norberg-Schultz 1980:5) describes the role of architecture in an existential sense as allowing “for a specific site to become a place”. Christian Norberg-Schultz illustrates this through an understanding that for such a place to be successful, it needs a distinct character. He terms this character the “Genius Loci” of a place. He states that “the specific character of the place thus allows us to dwell within that given space, and it is within this specific area where architecture can mould the physical parameters that human beings can be” (Norberg-Schultz 1980:5).

Juhani Pallasmaa (2005:16) sums up this ongoing task of architecture when he states that “architecture, as with all art, is fundamentally confronted with questions of human existence in space and time. It expresses and relates man’s being in the world”. He then poses the following questions (Pallasmaa 1994:67):

Can architecture define a credible social and cultural goal for itself? Can architecture be rooted in a culture in order to cre-

ate an experience of locality, place and identity? And finally, can architecture re-create a tradition, a shared ground that provides a basis for the criteria of authenticity and quality?

2.2 PHENOMENOLOGY

The intention of the phenomenological research method is to “study the meanings of human experiences in situations, as they spontaneously occur in the course of daily life” (von Eckartsberg 1998:4).

According to Rolf von Eckartsberg (1998:3), the emphasis is on the study of lived experience: on how we read, enact and understand our life-involvements. This existential phenomenological approach is developed from phenomenology as applied to the human consciousness and incorporates a method of lived experience, or existentialism. The purpose of this approach is to examine the essential nature of human experience and existence. Of importance is the key phenomenological notion of intentionality – the fact that all human impulses and actions do not exist unto themselves but are directed towards something and have an object (Seamon 2000:3).

The starting point within phenomenology is the arena of everyday life experience and action (von Eckartsberg 1998:4). Edmund Husserl (1859–1938), the originator of philosophical phenomenology, articulated the metaphor of “life-world”. The life-world is the locus of inter-



FIGURE 3 (top left)

The Kunsthaus Bregenz, Peter Zumthor, 1997.

FIGURE 4 (right)

Brother Klaus Field Chapel by Peter Zumthor, 2007. Wachendorf, Eifel, Germany.

action between ourselves and our perceptual environments with the world of experienced horizons within which we meaningfully dwell together. The life-world is the world as we find it, prior to any explicit theoretical conceptions (Von Eckartsberg, 1998: 2).

A phenomenological approach then works to unmask the life-world's concealment (Seamon 1981:1).

The architect's themes of investigation with respect to the life-world includes the sense of place, or "at homeness", environmental experience and behaviour. According to David Seamon, two key phenomenological notions are that of outside and inside, which are significant as they set up an immediate relationship of fusion between person and world (Buttimer 1977:150).

The central aim of a phenomenological approach is to explore and to interpret the mutual relationship between the material world and the quality of human life through examining behaviour, experience, and meaning in a descriptive, interpretive manner as they occur in their everyday context (Seamon 2000:1).

Communication theories and phenomenology present ways to approach the crisis of meaning within architecture in response to the loss of socially motivated engagement with the world. Phenomenology emphasises nature, place and tectonics. Can there be meaning in form, or only in content? What is appropriate content for architecture? Can ornament, structure or material play significant roles in the construction of meaning?

Phenomenology underlies the post-modern attitude towards site, place, landscape, and making (particularly tectonics). Recent theory has moved towards philosophical speculation by problematising the body's interaction with its environment. Visual, tactile, olfactory, and aural sensations are the visceral part of the reception of architecture, a medium distinguished by its three-dimensional presence.

The bodily and unconscious connection to architecture has again become an object of study. It has begun to displace formalism and lay the groundwork for an emerging aesthetic of the contemporary sublime. Heidegger's writings are motivated by the concern with modern man's inability to reflect on Being. Heidegger argues that this reflection defines the human condition. He maintains that language shapes thought, and thinking and poetry are required for dwelling. Norberg-Schultz considers the principle proponent of a phenomeno-

logical architecture to be concerned with the concretisation of existential space through the making of architecture. Phenomenology requires deliberate attention to how things are made. It recognises and celebrates the basic elements of architecture (wall, floor, ceiling as horizon or boundary). This has, however, led to a renewed interest in sensuous qualities of materials, light and colour and the symbolic tactile significance of the joint (Nesbitt 1996:14-30).

2.3 ANONYMOUS CULTURE

The idea of totality, which is central to the thinking of modernity, and the accompanying notions of an era and of progress, have lost their validity. It is no longer possible to understand reality through a single conceptual construction or representation. Towards the end of our millennium, an universal history has become impossible as history has disintegrated into a multitude of alternative heterogeneous histories, and simultaneously the perspective of redemption has vanished (Pallasmaa 1994:74).

Pallasmaa feels that current trends in theorising, and the verbal explanation of architectural meanings and intentions, reveal an uncertainty of the role and essence of architecture. Architecture is nervously seeking its self-definition and autonomy in the embrace of the culture of consumption, which tends to turn it into a commodity and a form of entertainment (Pallasmaa 1994:75).

Fredric Jameson has emphasised the contrived nature of contemporary cultural production and its fixation with appearances, surfaces, and instant impacts. He describes post-modern architecture by the notion of "contrived depthlessness" (Pallasmaa 1994:76).

The reversion to images of a lost past in architecture is grounded in the very strategy of capitalist economy. The whole of history becomes a market place; local and ethnic traditions and historical settings are fabricated under the guise of a search for roots. Thematisation is the newest strategy of controlled emotional persuasion. When detaching imagery from its spontaneous autonomy, the image is not allowed to arise from within but is rather forced into a preconceived interpretation (Pallasmaa 1994:77).

This is a rejection of the contemporary world, and a reflection of a disoriented, split identity and an alarming cultural escapism (Pallasmaa 2000:78).

Architecture is one of our most fundamental existential expressions, and it communicates on several levels simultaneously. We are usually affected only by the surface message and ignore the unintentional sub-conscious messages, but they are the most significant ingredients in a work of art. In *Touching: the human significance of the skin* (1971) Ashley Montagu writes (Pallasmaa 2001:51):

We in the western world are beginning to discover our neglected senses. Touch, not vision, is the sensory mode that integrates our experience of the world and ourselves. It unites even visual perceptions and integrates them into the extension of the self. Tactile experience evokes the experience of a temporal continuum. Vision by contrast places us in a continuous present.

The role of architecture is not to entertain or thrill us, but to structure our understanding of the world and of our very existence. To use an expression of Maurice Merleau-Ponty, architecture's role is to articulate how the world touches us. Architecture creates frames for action, thought, and emotion. It gives expression to human institutions and establishes a hierarchy for them. It articulates the interplay between background and foreground, normality and uniqueness, greyness and colour, the commonplace and the celebrated (Pallasmaa 2001:52).

2.4 AWAKENING THE SENSES

One prominent aspect of Pallasmaa's phenomenology is his notion of "multi-sensory architecture". He explains that experience of architecture is multi-sensory: qualities of matter, space and scale are measured equally by the eye, ear, nose, skin, tongue, skeleton and muscle. Architecture strengthens one's sense of being in the world, essentially giving rise to a strengthened experience of self (Pallasmaa 1996:28).

Another aspect of Pallasmaa's architectural phenomenology is his emphasis on architectural experience as a verb rather than as a noun. In interpreting architecture as a verb, one focuses on action and movement in perception. This perspective emphasises multi-sensory engagement, since the moving body is typically more open and present to the moment than the static body. He explains how a building is encountered: it is approached, confronted, related to one's body, moved through and utilised as a condition for other things. Architecture directs scales, and frames actions, perceptions, and thoughts (Pallasmaa 2000:60).

There is an inherent suggestion of action in images of architecture, the

moment of active encounter or a promise of use and purpose. A bodily reaction is an inseparable aspect of the experience of architecture as a consequence of this implied action. A real architectural experience is not simply a series of retinal images (Holl, Pallasmaa and Pérez-Gómez: 2009).

In this regard, Pallasmaa criticises three current tendencies in architecture: the commodification of buildings; the self-defeating search for newness; and the hegemony of the marketable image. Instead he contends that architectural theory, criticism, and education must return its attention to the now neglected cultural grounds of architecture, attempting to present a more complete experience of the building grounded in the fullness of bodily encounter rather than merely the experiential limitations of visual interpretation. One example he uses is the visual constriction of computer-aided design. By reinforcing visual manipulation and graphic production, computer imaging further detaches architecture from its multi-sensory essence. As design tools, computers can encourage mere visual manipulation and make us neglect our powers of empathy and imagination. We become voyeurs obsessed with visuality, blind not only to architecture's social reality but also to its functional, economic, and technological realities (Pallasmaa 1996:193).

Authentic architectural experiences can only be achieved by approaching or confronting a building, rather than the architectural façade. One must enter and not simply view the frame of the door, and one must look through rather than at the window itself. The authenticity of architectural experience is grounded in the tectonic language of buildings and the comprehensibility of the act of construction to the senses. We behold, touch, listen and measure the world with our entire bodily existence and the experiential world is organised and articulated around the centre of the body. Our domicile is the refuge of our body, memory and identity. We are in constant dialogue and interaction with the environment, to the degree that it is impossible to detach the image of the Self from its spatial and situational existence. This concept is captured by the poet Noel Arnaud, who states, "I am the space, where I am" (Pallasmaa 2005:64).

Moreover, instead of attending to a one-dimensional, image-based approach to architecture, as Pallasmaa suggests, one should attend to "peripheral vision", which goes beyond the object to perceive it contextually. He suggests that "focused vision makes us mere observers" and that "peripheral perception transforms retinal images into spatial

and bodily experience” which in turn encourages participation (Pallasmaa 2000:84).

Drawing inspiration from Gianni Vattimo’s ideas of “weak ontology” and “fragile thought”, Pallasmaa prescribes “fragile architecture” as a counter to today’s visually-dominant architecture. This is architecture of the “fragile image” which is contextual, multi-sensory, responsive, and concerned with experiential interaction and sensual accommodation. This architecture grows gradually, scene by scene, rather than quickly manifesting in one simple, domineering concept (Pallasmaa 2000:78).

2.5 EXPERIENCE

The discussion revolves around architects and artists who are associated with an approach to inclusionary, responsive environments. These environments are appealing to man’s being in the world.

Peter Zumthor was born in Basel in 1943, and was the son of master joiner. He studied at the Kunstgewerbeschule and at the Pratt Institute in New York. Since graduating he has preferred to live and work in Switzerland near Chur in Canton Graubunden.

Zumthor explores the essence of architecture in buildings that celebrate place and engage all the human senses. Each of his buildings are the result of a deeply considered response to site and programme. Each is clearly the product of sensitivity to place, materiality, space and light, and to human responses to these fundamental elements of architecture (Ryan 1997:42).

Zumthor’s Vals spa recounts the thinking he describes in his essay “Appealing to all the Senses”. The architect choreographs materials according to their evocative qualities. Flamed and polished stone, chrome, brass, leather and velvet were deployed with care to enhance the inhabitant’s sense of embodiment when clothed and naked. The theatrical character of steaming and bubbling water was enhanced by natural and artificial light, with murky darkness composed as intensely as light.

At the Thermal Bath Vals, Zumthor (2006:27) aimed to celebrate the liturgy of bathing by evoking emotions:

To me, buildings can have a beautiful silence that I associate with attributes such as composure, self-evidence, durability, presence, and integrity, and with warmth and sensuousness as well; a building that is being itself, being a building, not representing anything, just being. The sense that I try to instill into materials is beyond all rules of composition, and their tangibility, smell, and acoustic qualities are merely elements of the language we are obliged to use. Sense emerges when I succeed in bringing out the specific meanings of certain materials in my buildings, meanings that can only be perceived in just this way in this one building. When I concentrate on a specific site or place for which I am going to design a building, when I try to plumb its depths, its form, its history, and its sensuous qualities, images of other places start to invade this process of precise observation: images of places I know and that once impressed me, images of ordinary or special places that I carry with me as inner visions of specific moods and qualities; images of architectural situations, which emanate from the world of art, or films, theatre or literature.

Jannis Kounellis is one of the founding figures of the Arte Povera movement, which arose in Italy during the early 1960s.

Poetic, political and historical concerns translate into works that are loaded with metaphor. It is in the contrast between message and materials that a satisfying tension is established, adding depth to the formal beauty of the wood, iron, lead, fabric and paper used in structure, providing glimpses of content beyond structural beauty. Ordinary materials and objects in his work are “imbued with dramatic power, evoking history, memory and the reality of our present day experience” (‘Jannis Kounellis’ :2006).

FIGURE 5 (opposite page, top left)

Kolumba Art museum of the archbishop of Cologne, Peter Zumthor, 2007, Cologne, Germany.

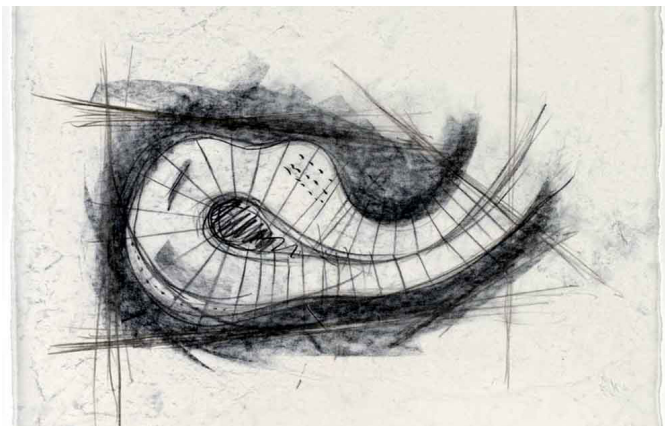


FIGURE 6 (top right)

Interior view Kolumba Art Museum of the Archbishop of Cologne, Peter Zumthor, 2007, Cologne, Germany.

FIGURE 7 (middle left)

Sketch of Brother Klaus Field Chapel, Peter Zumthor, 2007.

FIGURE 8 (middle right)

Bath Vals 1996, Peter Zumthor, Graubünden, Switzerland.

FIGURE 9 (bottom)

UNTITLED 1998, Sculptural exhibition by Jannis Kounellis, ACE Gallery, NYC.

Aldo van Eyck's oeuvre comprises a vast array of tectonic ideas worked out within the programmes of socially relevant structures, contributing greatly to modern architecture's moral core (Chasin 2004:428).

Van Eyck (Chasin 2004:429) intended his work to be based on three great traditions: the classical, implying "immutability and rest"; the modern, implying "change and movement"; and the archaic, implying "the vernacular of the heart". These three traditions can be reconciled in order to develop an architecture with a formal and structural potential sufficiently rich to meet the complex reality of contemporary life. The paradigm of the three traditions united stands for the realm of architecture. This realm is connected with the reality of human relationships. Architecture has to deal with the "constant and constantly changing" human reality: not only with what is different from the past, but also with what has remained the same (Strauven 2007:2).

Van Eyck (Strauven 2007:2) stated in 1962 that:

A past is gathered into the present and the gathering body of experience finds a home in the mind; the present acquires temporal depth; loses its acrid instantaneity; its razor blade quality. One might call this the interiorisation of time or time rendered transparent. It seems to me that PAST, PRESENT AND FUTURE must be active in the mind's interior as a continuum. If they are not, the artefacts we make will be without temporal depth or associative perspective.

Van Eyck's thinking fundamentally proceeded in terms of reconciling opposites such as past and present, classic and modern, archaic and avant-garde, constancy and change, simplicity and complexity, the organic and the geometric. He saw that maintaining the dialectics of these opposing factions was a necessary condition for the development of a genuinely contemporary architecture (Strauven 2007:1-2).

The more Van Eyck came to identify with the new consciousness, the more he recognised that its different manifestations were grounded on one fundamental idea, the idea of relativity. Relativity implies that the world cannot be regarded as having an inherent hierarchical structure stemming from a privileged, absolute frame of reference or subjected to an intrinsic centre. All viewpoints are equivalent: every place is entitled to be regarded as a centre. Far from being a chaos of unrelated fragments, this polycentric reality has a complex coherence in which objects, though autonomous, are linked

through purely reciprocal relations. This implies a coherence in which these relations are as important as the objects themselves. He summarised this view using a statement by Mondrian (Strauven 2007:4):

The culture of particular form is approaching its end. The culture of determined relations has begun.

Van Eyck succeeded in reconciling a great many polarities in the Amsterdam Municipal Orphanage (1955-1960). The Orphanage is both house and city, compact and polycentric, single and diverse, clear and complex, static and dynamic, contemporary and traditional. The classical geometrical order that lies at the base of the plan, the modern dynamic centrifugal space and the archaic biomorphic cupolas which cover the entire building all embody a maximum amount of both closeness and openness. These units are also a striking example of Van Eyck's view that architecture should, just like man, breathe in and out. This balanced, non-hierarchical organism remains linked to the outside world by articulated external spaces (Strauven 2007:5).

Each of the eight compartments is positioned to face a large domed space which serves as a symbolic house. The central organising principle of the design is the idea of the building as a city. The circulation is conceived as an internal street which acts as a continuation of the actual street outside. The courtyards serve as plazas, or gathering spaces for the community of the house.

The entrance courtyard can be seen as a type of gate for the entire complex. Considering van Eyck's "philosophy of the doorstep", one discovers that the entrance court serves as a logical and gradual transition zone between the city and the building itself (Clarke 1985:75).

In the Amsterdam Playground Project (1947-1978), van Eyck used elementary forms that included both architectonic and biomorphic connotations. Low massive concrete sandpits and stepping stones contrasted slender somersault frames, arches and domes made of metal tubing. All of these elements act as enabling structures that lend themselves to various kinds of child's play, while their archetypal forms imply multiple meanings (Strauven 2007:5).

The sandpits, round or square, were simple geometric forms but also constituted receptive bodies, welcoming and sheltering the playing child while remaining linked by an axial path. Through his compositional techniques, all of which were aimed at evolving different forms

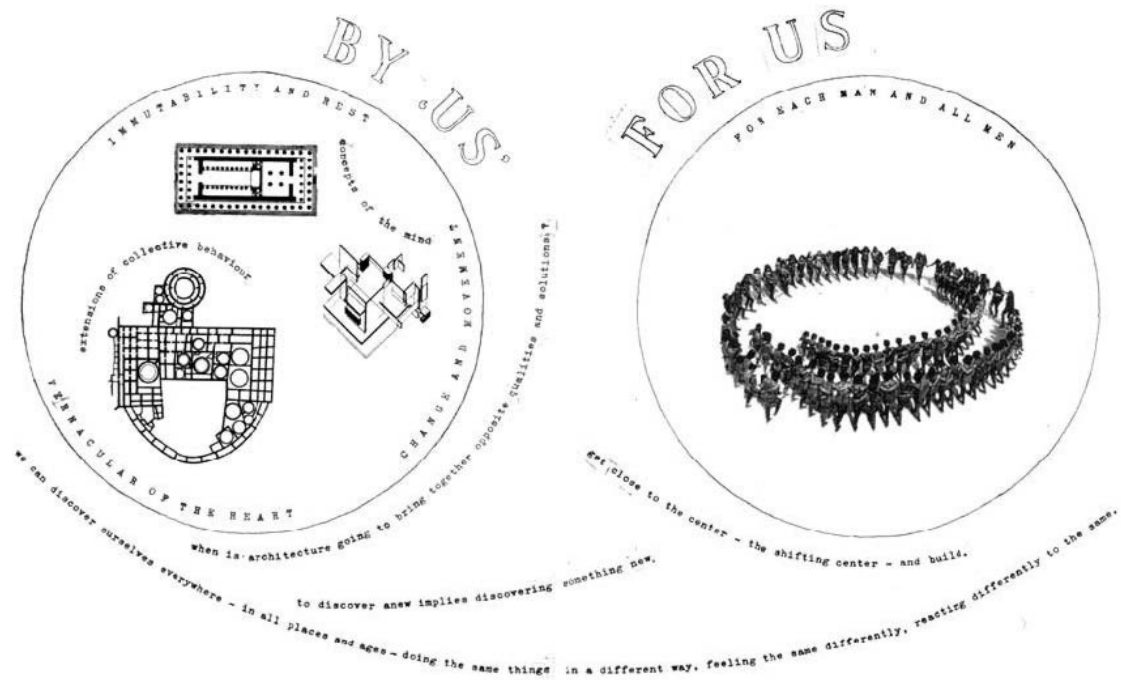


FIGURE 10 (top)

Otterlo Circles, 1959-62. Aldo van Eyck Archive.

FIGURE 11 (bottom left)

Amsterdam Municipal Orphanage (1955-60).

FIGURE 12 (bottom right)

Playground Zaanhof, Amsterdam, Aldo van Eyck, 1948.

of non-hierarchical order, van Eyck sought to realise recognisable places where cohesion lay in reciprocal relations rather than in subjection to a central point (Strauven 2007:5).

Van Eyck conceived of the “in-between” as a place where different things can meet and unite, or more specifically, as “the common ground where conflicting polarities can again become twin phenomena” (Strauven 2007:5). This stems from the insight that real polarities (such as subject and object, inner and outer reality, small and large, open and closed, part and whole) are not conflicting, mutually exclusive entities. Rather, they are distinctive components, two complementary halves of one and the same entity. Conversely a true entity is always twofold. Their in-between should not be considered a makeshift or a negligible margin but something as important as the reconciled opposites themselves. This is the space where contrary tendencies come into balance. This space is filled with ambivalence, and the space therefore corresponds to the ambivalent nature of man. The in-between is “space in the image of man”, a place that, like man, “breathes in and out” (Strauven 2007:5).

Van Eyck succeeded, in the words of Georges Candilis, in creating an architecture of exceptional quality using the most modest of means, an architecture “that consisted not only of hard, tangible materials but also of immaterial materials” (Strauven 2007:5).

2.6 CONCLUSION

The task of architecture is not to free buildings from anything but to weave them into an existing cultural continuum that has collective significance. A building moves us when it succeeds in reverberating with something concealed in our humanity, and when it echoes images and sentiments stored in our subconscious. Architecture is not an exposition of novelties. Architecture is not an art form of pure self-expression. Architectural meaning resides in human experience. It is evoked by the acts of occupying and inhabiting space, in one’s experiences of space, matter, gravity, and light. A significant work of architecture is never the product of a single individual. It is always a collaboration of history and tradition with the discipline of architecture (Pallasmaa 2001:52).

3 CONTEXT ANALYSIS

3.1 URBAN FRAMEWORK

3.1.1 METHODOLOGY

To explain the current vision of future development in Tshwane, more than twenty frameworks were reviewed in an initiative by the City of Tshwane and the National Department of Public Works. In support of existing planning schemes a new framework was compiled. The framework is limited to the future expansion of Tshwane's Inner City.

Structuring elements that influence the city fabric are open space (natural ridges, river edges, green open space) and movement (routes and public transport networks). The framework focused on these two structuring elements:

- Open space within a city
- Movement and public transport

3.1.2 INTRODUCTION

The proposed development framework focused on open space and movement so as to anticipate future city expansion. The framework's vision is aimed at creating a "World-class African city", for Tshwane's Central Business District.

In 2001 the National Cabinets finalised the decision that all national government offices will remain or be located within the Inner City

of Tshwane. This was followed by the National Department of Public Works' Re Kgabisa proposal, a planning scheme aimed at developing government owned buildings and property in the Inner City of Tshwane (Inner City SDF 2007:5).

The Re Kgabisa Framework focuses on the development of three major nodal points in the Tshwane Central Business District; the Union Buildings, Freedom Park and Church Square, establishing the Inner City as administrative capital embracing cultural identity (Re Kgabisa Tshwane 2005:33).

The framework allows for future development and maximises social exchange for people using the city. The framework discusses two aspects:

- Open space: natural elements linked through a system of networks.
- Movement & Public Transport: as important structuring element for urban growth.

The approach of the framework is based on the belief that the public urban environment plays an important role in the social and economic life of the City and its inhabitants. This framework sets out guidelines to serve as design principles for the public urban environment of the Tshwane Inner City.



METROPOLITAN STRATEGY

Pretoria is located in the northern part of Gauteng Province, approximately 50km north of Johannesburg. It is one of the country’s three capital cities, serving as the executive (administrative) and de facto national capital.

LOCAL CONTEXT

The Central Business District is located between two ridges of the Magaliesberg, Witwatersrand (north) and Salvokop (south). The development of Tshwane revolves around the Inner City and is fed by satellite district developments.

NATURAL SETTING

Inner City development revolves around church square. North-East expansion occurs towards Arcadia/Sunnyside (east), Marabastad and the industrial area (west). There are two main rivers, the Apies River (east) and Steenhovenspruit (west) that run through the city, forming historical borders.

FIGURE 13 (top left)

Local Context.

FIGURE 14 (top right)

Natural Setting.

3.1.3 STUDY AREA: SPATIAL FORM

The study area is the City of Tshwane Inner City. Rather than being a strictly defined area delineated along clear-cut cadastral boundaries, the Inner City is a loosely defined bowl-shaped area, which on its east-west axis stretches from the Union Buildings in the east to the Tshwane Showground in the west, and along its north-south axis stretches from Belle Ombre Station and the National Zoological Gardens in the north, to Pretoria Station and Salvokop in the south.

The growth of Tshwane was profoundly influenced by such geographical markers as the east-west mountain ranges (Pyramid Koppies, Magaliesberg, Witwatersberg and a whole range of smaller hills to the south), the Apies River and the Pretoria fountains to the south. The most dominant of markers is the Magaliesberg range that stretches from Rustenburg in the west, up to Mamelodi in the east. Over a distance of more than one hundred and thirty kilometers, this mountain range has a number of natural access points, a few of which are regarded as key gateways to the City (such as the Fountains Valley and Wonderboom Poort gateways).

These natural landmarks aid in developing an open-space network for Tshwane as well, which is regarded as the most important structuring element in the City and has a decisive influence on where development can take place and where it cannot. Rivers, mountains, protected areas, dams, nature reserves, wetlands and so forth are all regions that are excluded from areas with development potential, so as to protect the ecological integrity and sustainability of the metropolitan area. These areas have formed physical barriers in the city around which development must arrange itself. This often hampers accessibility and movement in the city, yet adds conversely to the quality of living environment that the city can offer.

3.1.4 DESIGN GUIDELINES

3.1.4.1 OPEN SPACE

The main structuring element of the city is open space. This constitutes natural ridges, river edges, parks, sport grounds, and predominantly green open spaces. The proposed urban framework focuses on these spaces, and they have guided the major proposals.

Tshwane's Inner City is located between two ridges, the framework looked at conserving the natural element/ridges through a network system of open space. The network will shape the character of future growth.

The following "nodes" and "ways" are the major structuring elements within the city:

GREEN ways

These are areas of natural green open space, protected due to ecological diversity:

The first and highest level of structure in the city, Tshwane's natural ridges, shape the predominant character of the city.

Activities in this area focus on ecological research, education, conservation of biodiversity, eco-tourism, trails and guided walks.

Privately owned ridges must be conserved in accordance with the Gauteng Department of Agriculture's Conservation and Environmental Policy on Ridges, 2004.

GREEN nodes

These are destinations with a predominant green/open character. Irreplaceable and unique assets in the city, such as the Pretoria Zoo as a destination within the Inner City, add value, character and significance to the area:

Ecological Structuring Elements focus highly on protecting fauna and flora within the city.

They can be characterised as natural or man-made.

Man-made nodes must be well maintained and provide activities that focus on ecological research, education, conservation of biodiversity, ecotourism, trails and guided walks.

YELLOW nodes

This is the second layer of open space within a city. It should be linked to the Structural Elements of the open-space network.

They are characterised as Artificial city-scapes, Hard surface or Soft landscaping e.g. parks, schools or recreational facilities:

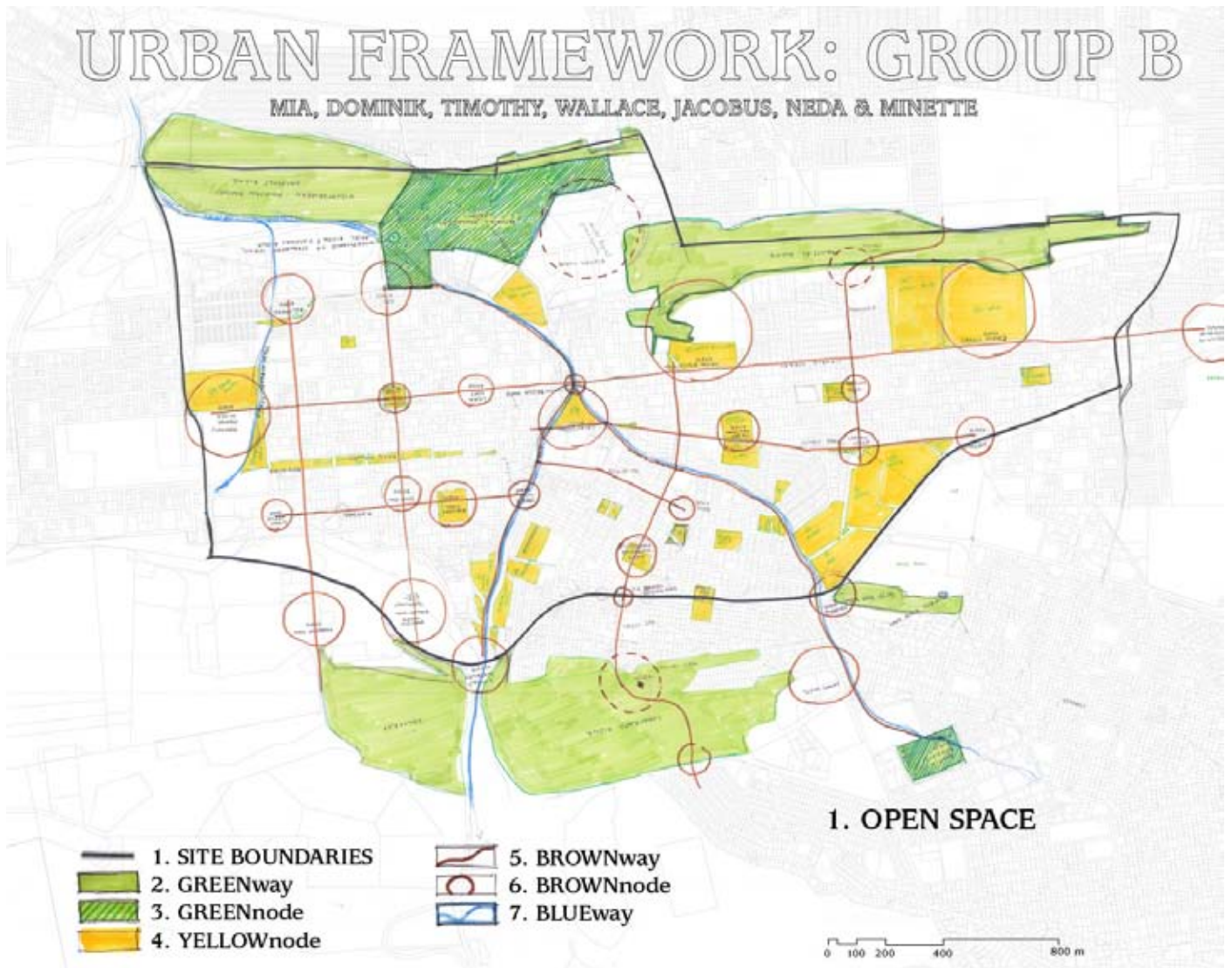


FIGURE 15

Open space.

Hard surface

Hard urban spaces, or squares, should facilitate social interaction. Buildings must accommodate activities and openings linking onto these spaces. Space must be well detailed with urban design elements such as street furniture, setbacks, and decorative trees, and should provide robust and multi-functional elements.

Hard surface - Squares

The development of existing and new squares within the city's cores must be actively promoted. These are significant place-making destinations. Commissioning and installation of public art in these areas are essential.

Cultural Historical Site or Destination

These areas are irreplaceable socio-economic reflections of "historical events" and must be protected at all times, and integrated within the framework. They are actively managed and conserved within the framework.

Soft landscaping - Recreational park

This implies the development of multifunctional regional recreational nodes, relating to neighbourhood needs.

Soft landscaping - Sports facility

The continued existence of already-existing sport clubs and the development of new clubs and facilities within the northern extents of Tshwane must be facilitated.

BROWN ways

BROWN ways are corridors, linkages and/or activity streets, aimed at connecting the GREEN ways (Open Green Space) in the city. They are characterised as linear elements that aim to enhance the spatial character of the city:

Cultivated areas

These areas are characterised by human intervention in terms of formal and informal landscaping elements. Tree planting is the main spatial definition element and support the ecological functioning of the city's open space network.

Pedestrian movement in these areas is encouraged through the provision of well-developed walkways and site furniture (benches, litterbins, etc).

Built-up areas

These areas are characterised and lined by intense activity-generating and typically non-residential land uses, formalised road reserves, street furniture and formal landscaping. Trees define edges of the space together with buildings.

BROWN nodes

Destinations that occur along BROWN ways strengthen and connect all open space within the city. For example, Pretoria station as a BROWN node enhances the spatial character of the Paul Kruger BROWN way and links the open space of the GREEN ways between the northern and southern ridges of Salvokop and the Witwatersrand mountain range.

BROWN nodes range from gateways, to intersections, to monuments. It is important to classify the node in order to use the appropriate guidelines set out.

BROWN nodes are integral and important components to the socio-economic well-being of the city and play a vital role in supplementing ecological functioning of the framework.

Public art should be actively implemented within Brown nodes.

Gateways

Development at gateways must be of landmark quality. New gateways must be developed on important entrance routes to the city in order to announce the visitor's/tourist's arrival and to improve

the legibility of the city.

BLUE ways

BLUE ways are natural waterways.

These include natural, cultivated and built-up watercourses. They are important Ecological Structuring Elements within the framework and must be conserved.

Storm water management and design solutions must be based on ecologically sound principles (water retention, detention, infiltration, quality, re-cycling) complementary to functional and safety aspects.

The canalisation, transformation and exotic cultivation of water courses can no longer be allowed.

Urban agriculture within watercourses should not be supported within the defined 1:100 year flood line area.

The amendment of the 1:50 year flood line by infilling will not be supported due to the resulting cumulative negative impacts on rivulet and riparian systems.

No development will be allowed within the 1:50 year flood line.

3.1.4.2 MOVEMENT

Movement is discussed as an important structuring element.

Gautrain

The Gautrain has become one of the main modal structural elements in Gauteng. Public transport is a problematic area in South Africa, and the Gautrain is a major initiative aimed at linking the larger cities in Gauteng. Gautrain Pretoria Station will bring urban revitalisation encouraging business, tourism and residential growth. Existing land uses must be improved and pedestrian links created to ensure safe passage for commuters.

It is anticipated that around 55,000 commuters will make use of the Pretoria Gauteng Station alone (www.gautrain.co.za).

The Gautrain Stations must be able to sustain this large capacity of people moving between cities and stations. Thus appropriate design considerations are applicable, including active edges, spill-out space, information centres, legibility, and safety measures.

Metrorail

The Metrorail is the existing mode of public transport in and around the city. Pretoria Station is the main Metrorail station within the City of Pretoria. Metrorail transports up to two million passengers daily in the following operational areas: Gauteng, Western Cape, Kwazulu-Natal and the Eastern Cape.

Design of Metrorail stations must provide adequately-sized platforms that can accommodate the movement of people departing and arriving at the station.

Main routes

These are the major throughways within the city. They create a network of main roads within the CBD linking districts within Pretoria.

Red ways

Red ways include different types of movement arteries, the most important being corridors, linkages, activity streets and collector roads. These are elements that connect points of interest.

They give hierarchy in the legibility and experience of the city. Red ways form networks that allow for both vehicular and pedestrian movement. There is potential for commercial activity and socio-economic interaction in these areas.

The character of red ways is cultivated through human intervention in terms of formal or informal activities and landscaping elements. Tree planting is the main spatial-defining element used to define the different routes in terms of scale, hierarchy and districts.

Ceremonial boulevards

Visual and physical links between other higher-order city structuring elements, such as important functional nodes and the public urban are known as ceremonial boulevards.

Church Street and Paul Kruger Street (cardo decumanus) as ceremonial boulevards link symbolic nodes (Church Square, City Hall, the Union Buildings, Lion's Bridge etc.) and informal and formal recreational open spaces (Burger's Park, Church Square, Caledonian Sports Grounds, Sammy Marks Square).

The historic value of Paul Kruger and Church Street contributes towards experiencing the city, place-making and supporting the image of a capital city.

The ceremonial boulevards are lined by intense activity generating land uses and should contain highly formalised road reserves, street furniture and formal planting. Double rows of significant trees define the edges of ceremonial boulevards together with buildings.

Note on guidelines: These guidelines are adapted from the Housing, City Planning and Environmental Management Department (City Planning Division :2007).

In order to enhance the legibility of the city or to create a sense of place, spatial-development frameworks may propose certain themes for different boulevards and civic squares.

Layout

All roads must have a walkway on each side to a minimum size of 1.3 meters wide. Walkways and other pedestrian areas should be separated from driveways and other vehicular areas by means of landscaped strips or other landscaping features for aesthetic, climatic and safety reasons.

Landscaping

All unpaved or non-tarred surfaces must be appropriately landscaped or at least be planted with low-maintenance ground covers. Central parts of bigger traffic circles must be landscaped, unless they are designed as civic squares, markets or other types of squares. Through appropriate landscape design, trees and other plants must be used along roads through residential and other sensitive areas to act as a buffer against noise.

Lighting

The lighting of roads and traffic circles must primarily be lighting that is appropriate for vehicular traffic, but pedestrian areas must also be well lit.

Public furniture

Centres of traffic circles are suitable for the placing of various types of landmarks and decorative or symbolic features. The provision of appropriate noise barriers along very busy roads through residential and other sensitive areas must be considered. Depending on the circumstances, these can be in the form of solid walls (always combined with vegetation to soften the visual impact), wooden or glass panels, specially designed devices, vegetation, etc.

Destinations and points of interests

Points of interest along proposed public transport routes link several important destinations. In determining these places, cognisance was taken of tourism within Pretoria, and it was taken into account that the public connectivity routes could play a very important role for tourism in the city. The following attractions and destinations are important places along and around public transportation routes and, hence, appropriate linkages are to be created to facilitate access and connectivity:

- The proposed Salvokop Village and Freedom Park, where Salvokop will be developed as a high density residential and mixed-use neighbourhood, and Freedom Park is to be developed as a major tourist attraction to celebrate the freedom struggles of the past;
- The Voortrekker Monument;
- UNISA;
- The Museum Precinct, which includes City Hall, the Transvaal Museum and other museums in Visagie Street;
- Church Square;
- National Zoological Gardens and the National Cultural History Museum;
- The Union Buildings;
- Nelson Mandela Development Corridor and the Department of Trade and Industry development;
- The Caledonian Sports Grounds; and
- Loftus

Two categories are dealt with: historic (which is more tourist orientated e.g. Union Buildings) and local places (places where locals frequent but not exclusively e.g. Loftus Sports Stadium). These destinations and places of interest vary, but general guidelines can be set to ensure a general intention:

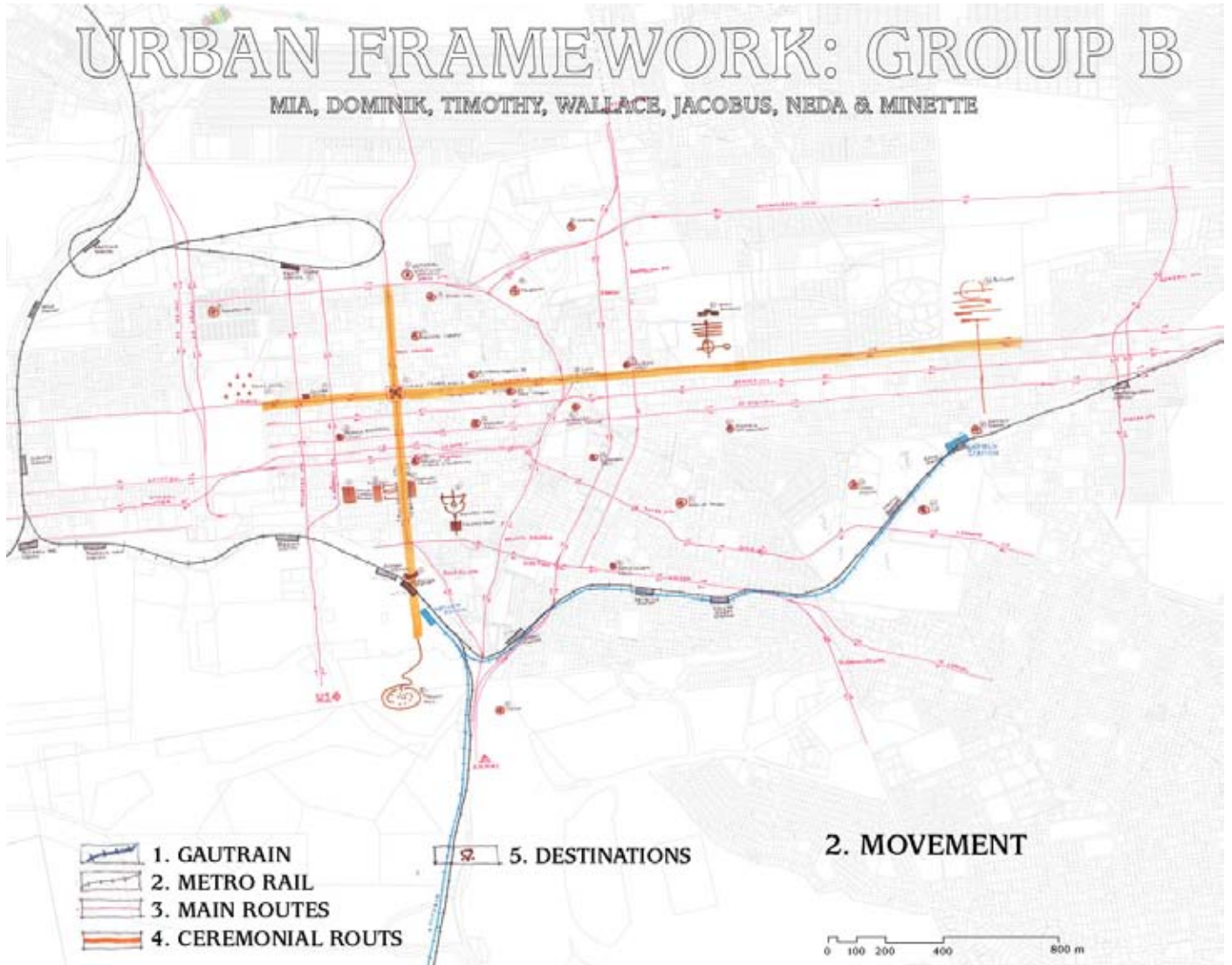


FIGURE 16

Movement.

Interventions must enhance the character of the area. Sufficient, appropriately designed and conveniently placed public amenities, utilities and facilities must be ensured. Vehicular movement, parking, public transport, walking, strolling, gathering and recreation must be considered in designs. Buildings must actively contribute to the spatial definition of hard urban spaces and to their attractiveness, to the street front, and to the surrounding buildings. Landscaping of the property must be appropriate to the public and communal spaces that will contribute to the quality of the site. Appropriate plants and trees must be used according to the site and place.

Heritage guidelines in buildings

The following guidelines are adapted from the document, ‘Former TAFE Site Urban Design Guidelines’, published in August 2006.

A building must be classified as a heritage building in terms of laws, acts and registration under SAHRA.

The building is to be retained and adaptively re-used as part of any new development.

A comprehensive Conservation Management plan should be prepared and should guide the adaptive re-use of the building and the design of its landscape and setting.

Guidelines pertaining to SAHRA must be adhered to.

Uses and the treatment of the building should be compatible with its conservation value and celebrate its history as a significant part of the development.

Any extensions or additions to the building should be designed to complement its style, form, proportions, colours and the overall heritage context of the setting.

Development applications affecting or adjacent to this heritage item must be supported by a Heritage Impact Assessment report.

Restoration of the building should be carried out in accordance with the Conservation Management Plan and overseen by a qualified and respected Heritage Architect.

3.1.3.3 PUBLIC TRANSPORT

The Proposed Bus Rapid Transport (BRT) routes and stations are the main concern in discussing public transport. An alternative route for the blue line was proposed along Park Street, to allow for more adequate growth to occur. The line initially corresponded to the Gautrain route which allows limited growth area as it is restricted to one side because it borders Lucas Rand Ridge.

3.1.4.4 DISTRICTS

In all cases, it is important to retain the existing character of the district.

Residential low density

“Urban” small village character of the centre should be respected and enhanced so as to retain existing character of the district.

Greater height is to be located close to Main Road only in the locations shown on the diagrams.

Taller buildings should be oriented north-south so that the buildings present a narrower frontage to the views from north.

All taller building form should be designed to reduce visible bulk.

Height reduction must provide a transition in scale to the adjoining existing development.

Taller forms should be set back from the street frontage to preserve the existing scale, and relationship to the street.

Residential high density

Active frontages are to be provided to all street edges and to all frontages depending on the zoning.

The visibility, functionality and safety of building entrances must be optimised by orienting the entries towards the public street and by providing clear lines of sight from the entrances, foyers and lift doors. Apartment buildings are to be designed to provide passive surveillance to all public domains including streets, lanes and communal public spaces.

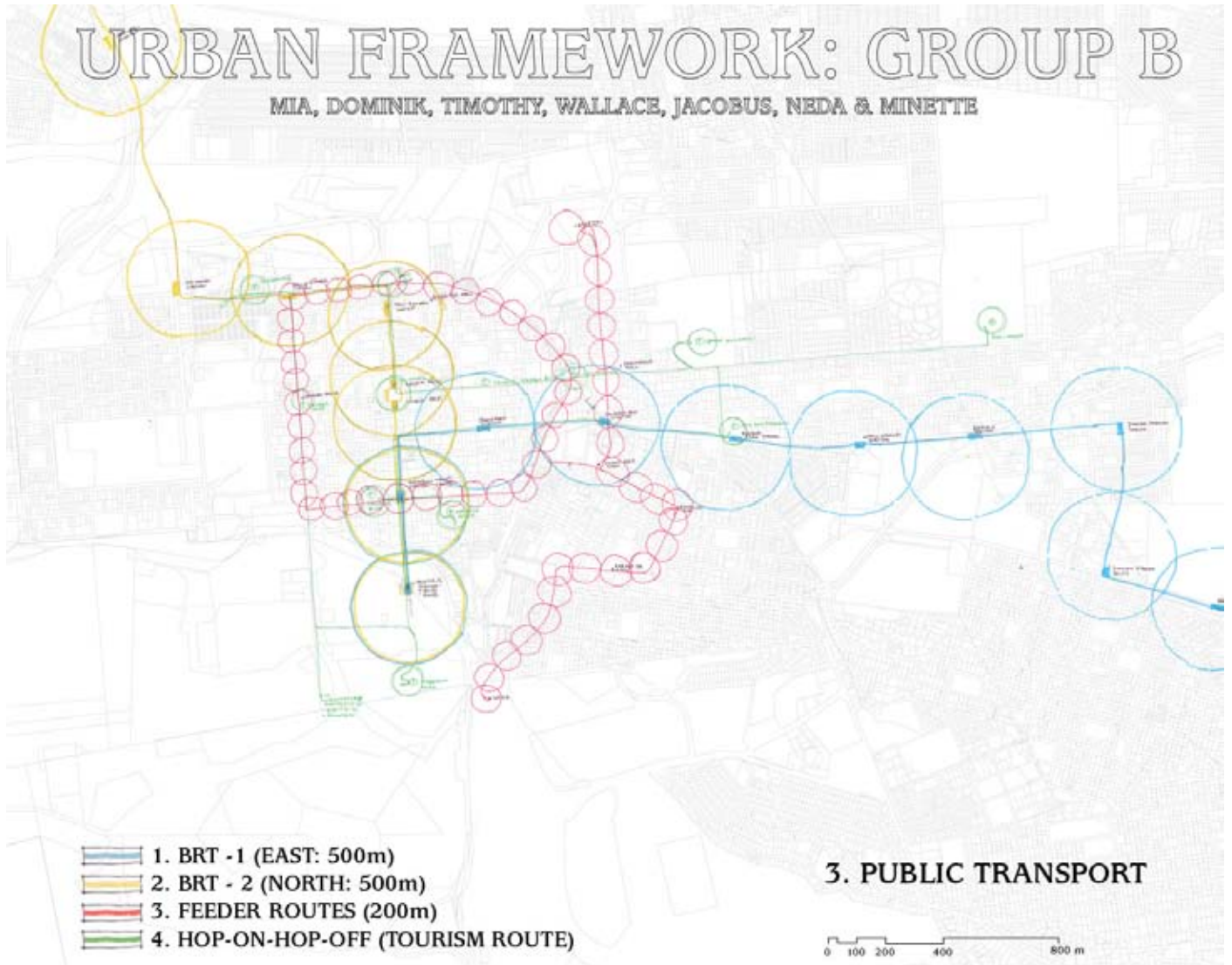


FIGURE 17

Transport.

3.2 SITE

CONTEXT AND SETTING

3.2.1 BACKGROUND TO STUDY AREA

The Caledonian Sports Grounds is geographically located as a knot between the Central Business District, Sunnyside and Arcadia, forming the eastern portal into the CBD. The site is naturally bordered by two rivers, the Apies River (west) and Walker Spruit (east). The rivers are routes that connect the site but are now neglected and fragmented. The other borders are three major arteries: Nelson Mandela Drive, Schoeman Street and Pretorius Street. Thus the site is highly accessible. The grounds constitute 45,000 square meters of recreational area and are essentially the sole public sports and leisure facility within the city precinct.

The Caledonian Sports Grounds form an integral part as node within Open Space Framework. Tshwane's Inner City vision for the capital of culture states the following in the City development strategy under Tshwane Kopanong Crossing (Tshwane integrated spatial development framework 2010):

Vibrant public square establishing a growth node between Hatfield and the CBD while revitalising Sunnyside (also residentially): Negotiate and facilitate the redevelopment of the Caledonian Sports Grounds for purpose of a world class African Centre through a Public-Private Partnership.

The Apies River Framework, together with the Nelson Mandela Corridor proposal, provides the opportunity to develop a social space. The Apies River has become a lost opportunity because of its degraded state but provides a significant asset that runs twenty kilometers through the city and becomes an important connector route.

3.2.2 URBAN GREEN AND OPEN SPACE NETWORK

The project will engage with the existing landscape as part of a series of social spaces, promoting collective urban life.

According to Dewar & Uytendogaardt (1991:59), creating networks of interlocking linear activity systems, and accommodating a mix of intensive and social activities and facilities across the city, is dependent on:

- The densification of the city, combating low density sprawl, creating a public ethos which establishes land as a valuable commodity, and imploding growth within the existing urban area.
- Establishing a Grid of continuous direct public transportation channels across the metropolitan area. By creating choice, density contributes to viability.
- Reinforcing spatial logic of transportation by incorporating rhythmic systems of urban public spaces. Public spaces should coincide with points of greatest accessibility. Larger spaces should be created

along the intersection of two major transportation channels.

- Locating public facilities and social services around public spaces. Public places should celebrate the facilities and the facilities should be used to give a sense of scale, definition and enclosure to the spaces. Hierarchical correlation between the order of a facility and the order of the public space are also important.
- Transformation of transport channels to activity systems, achieving a degree of activity mix. This provides opportunity for very small-scale (informal) entrepreneurs.
- Maximising the potential of the best-located land parcel systems. Including higher-order social services, recreational facilities and active environments actively combats the tendency of these centres to gravitate towards the higher income areas.

Tshwane has a large variety of open space resources, from protected areas, ecological and conservation areas, to recreational parks, resorts, sporting facilities, and cultural historical open spaces. This creates the opportunity and the potential for developing a high quality environment. However, the majority of open spaces in Tshwane are lacking in the following regards (TOSF 2005:63):

- Open spaces do not conform to the standards of development and comfort, do not offer any protection against the elements (sun, wind, rain), and do not offer opportunities for relaxation or recreation.
- They are not integrated within a network to facilitate movement.
- There is no triangulation of open space. Triangulation requires that a variety of facilities and activities overlap to create interest, choice and variety.
- The open spaces are generally mono-functional, thus only attracting a section of the community at certain times.
- Hard open spaces, such as streets and activity spines, are mostly dominated by cars.
- Civic spaces are non-existent.
- The majority of open spaces are perceived as, and in many cases are, harbouring criminal activity, vagrancy, etc.
- Most open spaces are under-funded, neglected, inaccessible, and without the necessary infrastructure and amenities

Interface

Interface refers to the handling of the relationship between a development and the open space along the river, with reference to two components, namely:

- The boundary interface; and
- The building interface.

The interface should support the following principles:

Provide for maximum visual access to the open space to ensure informal surveillance and safety of the Apies River.

Provide for maximum physical access to activities along the Apies River.

Support and enhance the spatial qualities of the character of the open space within a specific precinct.

	BOUNDARY INTER-FACE WITH APIES RIVER	BUILDING INTER-FACE WITH APIES RIVER
VISUAL ACCESS	No visual obstructions along the length of the boundary may be created.	Windows looking out on the space should be provided over the whole length of the building.
PHYSICAL ACCESS	Direct access along the whole length of the boundary should be possible.	At least one main entrance should be provided to each building.
SPATIAL QUALITIES	Space should flow freely over the boundary and around the building. The boundary could be defined by trees but not in a straight line.	Transitional space should be created through at least 80% of the length of the building.

.....
FIGURE 18 (top)

Guidelines for the creation of an appropriate interface are defined by the following.

3.2.3 CONTEXT

Historically the precinct has been used as a node for recreation. The precinct functioned as a recreational area, dominated by three activities.



FIGURE 19 (top left)

Apies River regeneration project.

FIGURE 21 (top right)

NAME: Department of Trade and Industry.
FEATURES: Redeveloped city block with scattered heritage buildings on the peripheral edges of the development.
No of storeys: Four.

FIGURE 23 (middle center)

NAME: Oost Eind School.
STREET: Meintjies street.
FEATURES: Main School building and fragmented school terrain.
SIGNIFICANCE:
The building is one of the few remaining historically significant buildings in Trevenna.

FIGURE 25 (first 3 bottom left)

Features along Walker Spruit.

FIGURE 20 (top center)

Apies River brick column.

FIGURE 22 (middle left)

Kirneels Young-wandelpad along Walker Spruit for jogging, walking and cycling.

FIGURE 24 (middle right)

NAME: Department of Minerals & Energy.
HISTORY: The site was previously part of the Oost-Eind School grounds
STREET NAME: Meintjies Street.
No of storeys: Six.

FIGURE 26 (bottom right)

Empty site 1 Taxi rank & bus stop.
STREET NAME: Jeppe Street.



FIGURE 27 (top left)
Caledonian Sports ground.



FIGURE 28 (top middle)
Curved stone wall along Pretorius Street.



FIGURE 29 (top right)
NAME: Lion Bridge.
FEATURES: Four Lion statues on sandstone podiums.
SIGNIFICANCE: Geographically the bridge pronounces the transition from the urban grid to city grid. Of significant historical value.



FIGURE 31 (bottom left)
NAME: Kruisweg Koffiehuis
FEATURES: Small residential building on the corner of Beatrix and Schoeman street
SIGNIFICANCE: This insignificant single story building does not contribute to the architectural language of the vicinity.

FIGURE 30 (middle right)
NAME: Lion bridge Island.
FEATURES: Triangular piece of land, bordered by two rivers and a road.
SIGNIFICANCE: The piece of property is the node where the Apies river and Walker spruit meet, and is of considerable geographic importance.



FIGURE 32 (bottom third from left)
NAME: Sonstraal
FEATURES: U-shaped residential block
No of storeys: Five.



FIGURE 33 (bottom second from left)
NAME: Sterland.
FEATURES: Sterland movie complex and Hotel.
SIGNIFICANCE: Sterland is one of the few remaining movie and entertainment buildings located outside a mall complex.

FIGURE 34 (bottom right)
NAME: Emanuel Christian Church Building.
FEATURES: A double story triangular building.
SIGNIFICANCE: The building is one of the few remaining heritage structures in the vicinity.
No of storeys: Two.
STREET NAME: Pretorius Street.

3.2.4 HISTORY

3.2.4.1 SITE HISTORY

Historically the precinct has been used as a node for recreation. The precinct functioned as a recreational area, dominated by three activities:

Sentraal swimming pool complex (now demolished) across from the Caledonian Sports Grounds; the Oost-Eind School (currently proposed for office redevelopment); and the Caledonian Sports Grounds.

Pressure to develop the precinct as an urban node resulted in the repossession of land occupied by the school and swimming pool. In 1992 a City Lake (an urban design proposal to dam the Apies River) was proposed for the study area. However, the proposal never materialised, following a number of objections from various people and organisations.

From Earthlife Africa (1995):

- Apart from the symbolic value of water in cityscapes, the water surface of a city lake will serve no function to residents. (Earthlife Africa 1995:15).
- It is doubtful whether tourists will visit Pretoria for the sake of a lake and retail activities that are no different to those in their own countries. Developments such as these are inappropriate for developing countries (Earthlife Africa 1995:15).
- Instead of building a lake, which does not allow much freedom of movement, parks could be considered as spaces for recreation. Parks are more versatile since they support a wide range of activities (Earthlife Africa 1995:16).
- The existing Apies River canal can be enhanced and, if possible, form a green belt through the entire city. Many residents have long been calling for the provision of recreational space along the existing canal (Earthlife Africa 1995:16-17).

From the Sunnyside East Residents' Association, who viewed the whole of Sunnyside as (Cronje 1993:1):

A distinct Secondary Business District containing primarily small to medium-sized retail, as well as flats and houses. Large-scale development [would] blur Sunnyside's separation from the Central Business District and Sunnyside [would] lose its special identity.

The following prerequisites were determined for any development in the proposed development area (M & R Properties 1993:9):

- The original Oost-Eind School is a national monument and would be retained as an integral part of the development.
- The Meintjies Street houses, located from Skinner Street up to Voor Street, formed a pleasant visual whole with the school and would be preserved.
- The bowling clubhouse was architecturally re-usable.
- The curved stonewall in Pretorius Street was of historical value and would be preserved.

The Pretoria public has used the Caledonian Sports Grounds for over 90 years. In recent years, the grounds have been used mainly for soccer, but before that they were used for rugby, athletics, bowling, netball and for other celebratory occasions. The grounds are currently used regularly by the Northern Transvaal Central District Soccer Association and for final matches of high schools and primary schools in the area.

The government proposed the development of the Department of Trade and Industry, which was completed in 2002. The DTI was designed with arcades linking pedestrians to the CBD and access is now security controlled.

3.2.4.2 ARCADIA SHEPHERDS

The Precinct is currently home to the Arcadia Shepherds Soccer Club.

The Arcadia Shepherds were formed in 1903 in Pretoria, when a group of about 30 young soccer enthusiasts gathered on the corner of Du Toit and Vermeulen Streets (where the Dutch Reformed Church stands today) in the casual proceedings of a football match. Many of them had been intrigued by the football skills of the British troops stationed in and around Pretoria at the time and at the suggestion of one of the enthusiasts, Bobbie Sinclair, the club name was agreed upon as Arcadia Shepherds, as most of the football lovers hailed from the nearby suburb of Arcadia (History of the Arcadia Shepherds 2006:1). Arcadia is a Greek derivative for "a rustic life" characteristic of the countryside, with a pastoral existence of shepherds tending sheep. With this in mind, the club attached the word "Shepherds" to their name. Their home base, the Caledonian Stadium, was originally registered in the names of Sir John Wessels and a Mr. Esselen in 1894.

FIGURE 35 (opposite page)

Aerial photo of Pretoria, early 1900's: UP Space.

1. Theosophical society (music hall).
2. Pretoria central Swimming pool.
3. Caledonian Sports Ground.
4. Soccer Pavilion.



Two years later it was sold to the Caledonian Society of Pretoria, an organisation committed to fostering and maintaining links to their Scottish heritage (History of the Arcadia Shepherds 2006:1).

In 1916 the Pretoria Municipality purchased the property for £8,500. The Northern Transvaal Football Association (NTFA), now referred to as the Football Association of Pretoria, have had their headquarters at the grounds since 1903. During the early part of the 20th Century the grounds mostly comprised of an oval that served as a pitch for such sports as football, cricket and hockey. The perimeter track also served speedway and greyhound racing, as well as athletics, with the current car park being situated where a bowling green once stood (History of the Arcadia Shepherds 2006:1). The Caledonian was later redeveloped in the 1950s to cater exclusively for football.

During the 1960s football became a professional sport in South Africa and the Arcadia Shepherds made history when they declared themselves the first professional club in the country. They played in the first ever professional game in South Africa, which was hosted in Johannesburg – only after prompting the Pretoria Municipality, who had prohibited the hosting of professional sports events at the Caledonian, to allow for this (History of the Arcadia Shepherds 2006:4).

At this stage of their history the club had gained a fan base of over 2,000 so-called “non-Europeans” – more than any other Transvaal club at the time (History of the Arcadia Shepherds 2006:4). They were admitted into the Caledonian free of charge, where they sat in a specially designated fenced-off area in order to beat the apartheid ban. In 1965 the apartheid government decided to act against black supporters, requiring the club to acquire special permission from the Department of Community Development in order to allow these followers into the Caledonian. This did not last long and from 1966 onwards police granted only “Europeans” entrance to the Caledonian, diminishing and consigning supporters to a non-multicultural fan base (History of the Arcadia Shepherds 2006:6).

During the 1970s, through a number of successful campaigns and shrewd contract negotiations, Arcadia Shepherds became one of the wealthiest clubs in South Africa (History of the Arcadia Shepherds 2006:13). In 1973, on the club’s 70th anniversary, the Arc’s reached a pinnacle in their colourful history, being the first team in South Africa to successfully complete a “treble” tournament campaign, securing the Coca-Cola Shield, The Castle Cup and the Embassy Cup (History of the Arcadia Shepherds 2006:15).

When the idea of playing professional football matches was being considered, the Arcadia Shepherds became the first club in South Africa to field a multi-racial team. On July 1, 1974, Arcadia Shepherds were banned from using the Caledonian (History of the Arcadia Shepherds 2006:19). This ban was imposed to prevent black fans from viewing matches from outside the venue. The council had all the trees felled around the perimeter of the stadium. This decision effectively deprived the club of its home ground - preventing them access to the Caledonian for the next nine years. The Super Stadium in Atteridgeville and H. M. Pitje Stadium in Mamelodi became their new headquarters, yet this “homelessness” drastically diminished their local fan base. Arcadia Shepherds were eventually obliged to sell their First Division franchise to Dynamos in 1990 (History of the Arcadia Shepherds 2006:19). To survive, management were forced to sell their star players such as Mark Fish, who was sold to Jomo Cosmos in the early 1990s, for about R75,000. When negotiations with the council and government over the return to the Caledonian eventually failed, it signalled the end of a great football era at Arcadia Shepherds (History of the Arcadia Shepherds 2006:22).

In 1997 a five-year development programme was initiated. The first step was to have the ban on the Caledonian Stadium lifted and in 1998, professional soccer returned to the Caledonian when PSL club Supersport United played Hellenic (History of the Arcadia Shepherds 2006:22).

The history of the Arcadia Shepherds is a lively account of one of South Africa’s oldest football clubs and illustrates the influential role they played in the development of soccer in this South Africa.

This history is a legacy not only to the community who support Arcadia Shepherds and it is a significant part of Tshwane heritage that is worth preserving and celebrating.

FIGURE 36 (opposite page)

Image depicting the Arcadia Shepherds at the Caledonian Sports Grounds in 1974.

FIGURE 37 (pages 40/41)

Apies River timeline.

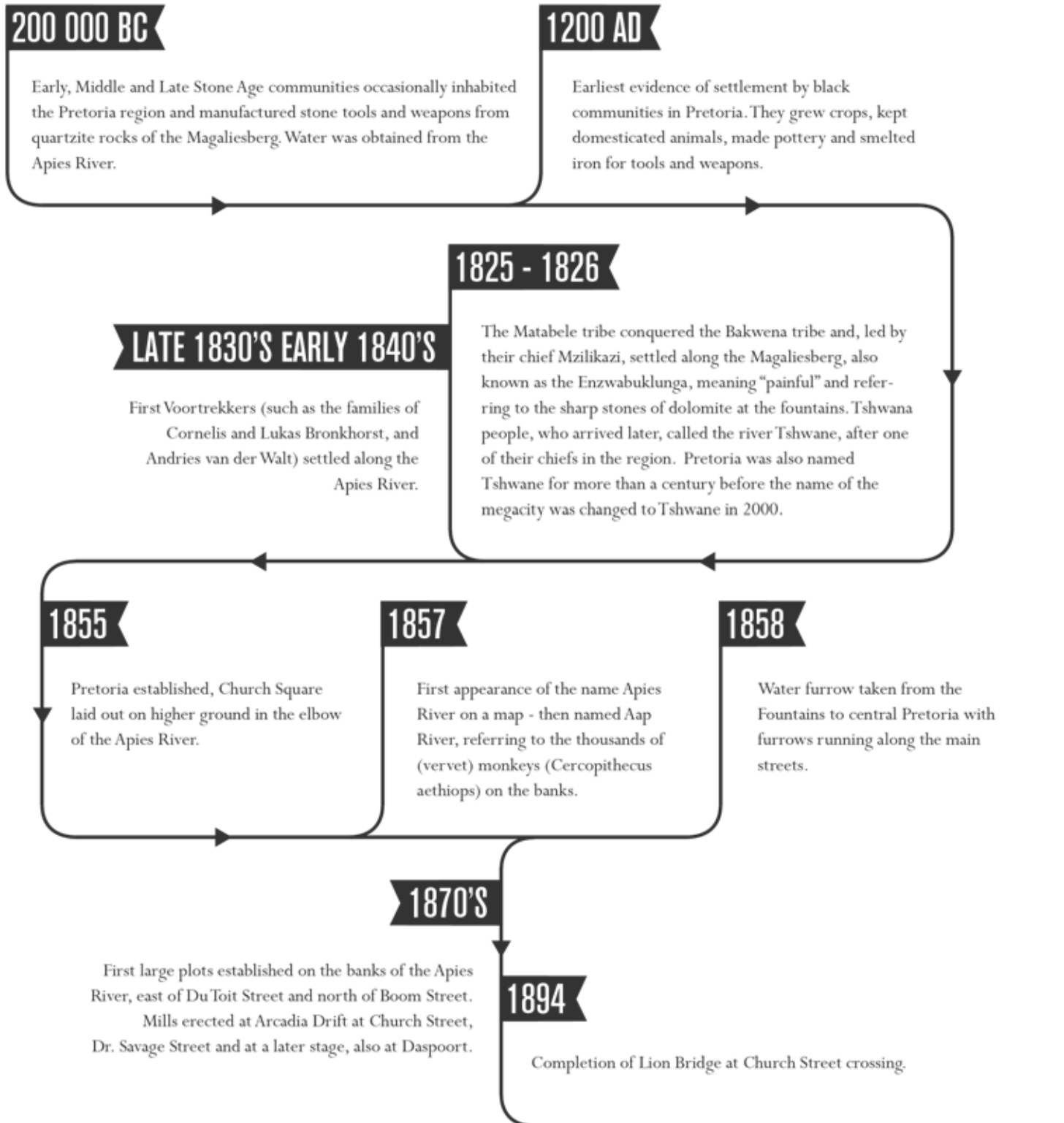


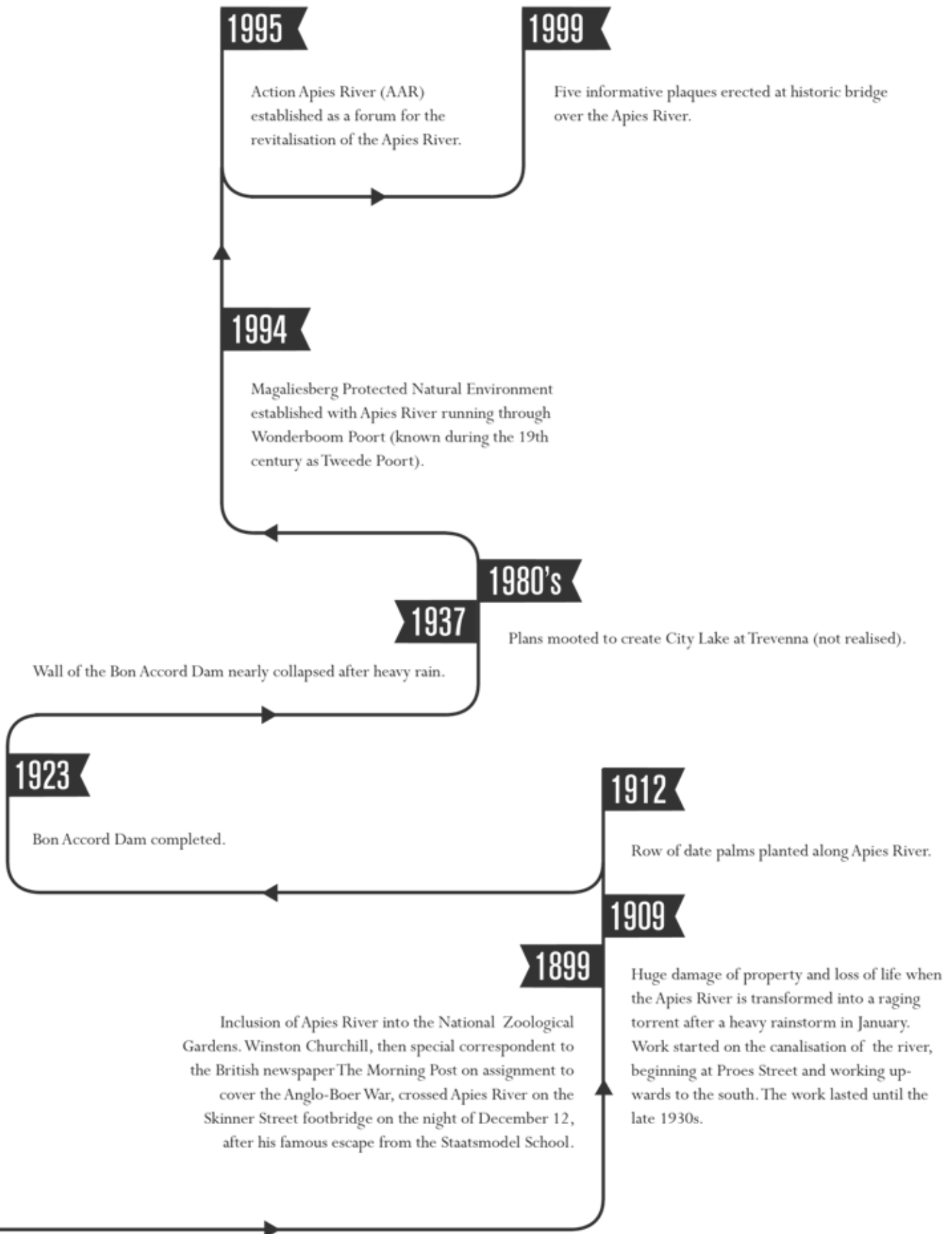
STAN LAPOT, the Arcadia Shepherds captain, watches **ROBERT MITCHELL** blast a free kick towards the Florida Albion goal in their recent cup game.



3.2.4.3 APIES RIVER

Time line illustrating history of the Apies River (Van der Waal and associates 1999):





3.2.5 SITE SIGNIFICANCE: HISTORIC ELEMENTS ON THE SITE

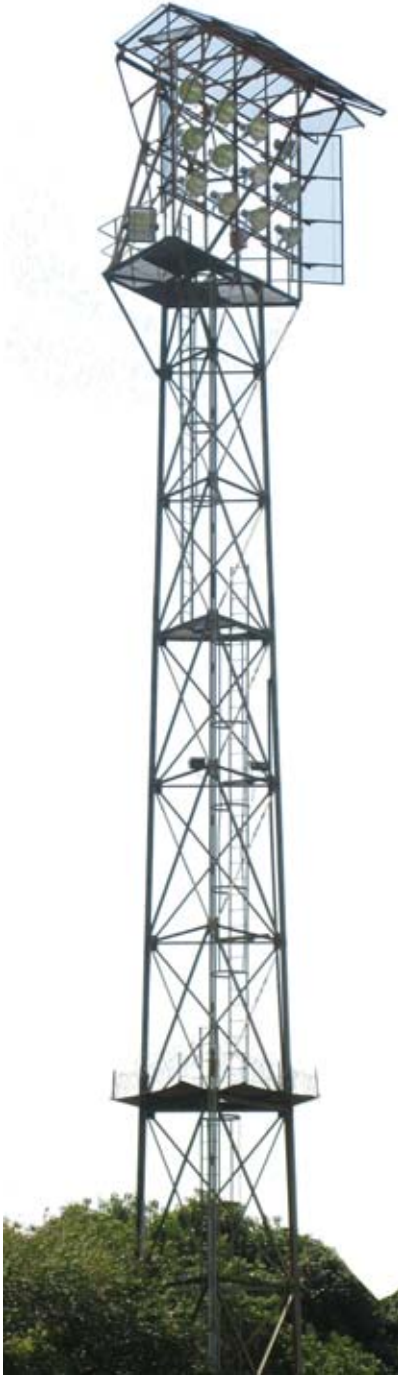


FIGURE 38 (left)
Floodlight structure.



FIGURE 39 (top right)
Clubhouse, Pergola structure covered with Banksias (rambling rose).

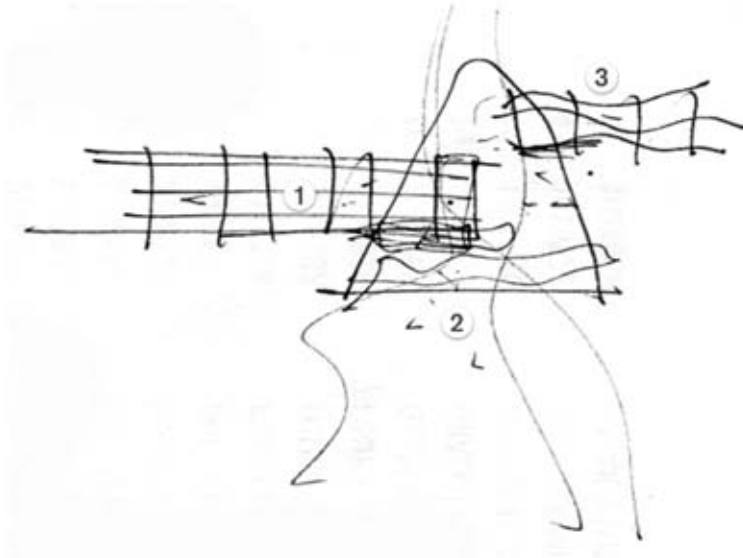


FIGURE 40 (middle right)
Pavilion structure.



FIGURE 41 (bottom right)
Curved stone wall along Pretorius Street.

3.2.6 USER GROUPS



1. Work

The CBD offers a mainly commercial component to consider

- Commercial
- Institutional
- Mixed use residential
- Hotels
- Hospitals
- Schools

2. Life & play

Sunnyside comprises a finer grain high density residential component and is renowned for its night and day entertainment. Commercial activities are both formal and informal

- Institutional
- Commercial
- Mixed use residential
- Schools

3. Life after work and play

Arcadia represents the main residential component, and feeder area to the site.

- High density residential
- Hotels
- Hospitals
- Schools

FIGURE 42

Possible user groups identified.

4 PRECEDENT ANALYSIS

4.1 1925-1932 NEW SOCIAL CONDENSERS

The Workers' Club

What was meant by a “club” in the USSR of the twenties, a country in which the word had previously been applied only to private rooms reserved for the use of a group of nobles or wealthy bourgeois. This club was exactly the opposite of what is implied by a “club” today (Kopp 1967:116).

Urbanisation

Originally, this new urban building, the expression of a new social function, was the response to a spontaneous demand. This became a centre for creative activity and diffusion of culture. It corresponded to a conception in which the home tended to become merely a place for the individual to rest, while life in all its social and cultural aspects developed in collective centres and collective forms (Kopp 1967:116).

Ownership and collectivity

Imperative to a club is that the mass of the members must be directly involved. They must not approach it or be channelled into it from the outside merely as a means of being entertained. They themselves must find in it the maximum of self-expression (Kopp 1967:116).

The role of the club is to serve as a sort of “School of culture”. Within its walls workers of every age should be able to find rest, relaxation, and a renewal of energy at the end of the working day. There, outside of the family, children, adolescents, adults, and the elderly should be made to feel as if they are members of a collective group (Kopp 1967:116).

Flexibility

The basic functions of what were essentially visualized as theatres became increasingly diversified. Functionality became more progressively integrated into the plan, thus modifying the classical rules of composition and opening the way for new possibilities.

The central element of the composition remained the theatre. The members were themselves the creators, instructors, and moving spirits. The stage was placed at the disposal of a variety of amateur groups rather than touring companies. This meant providing rehearsal rooms, modifying the capacity of the hall according to the size of the audience and the nature of the production, and tearing down the barrier between audience and actor. Thus the architect, faced with the problem of flexibility and adaptability, not only in relation to the theatre itself, but also in relation to the other rooms that together composed the club, was led to design spaces that could be isolated or combined in various ways depending on the schedule of activities (Kopp 1967:120-121).

The Zuyev club, built on Lesnaya Street, Moscow, in 1928 by the architect, Ilya Alexandrovich Golosov, was conceived as a series of intercommunicating spaces, overhanging galleries and staircases. The landings offer choice observation points, without resorting to mechanical devices of any kind. Spaces could be adapted to form a series of auditoriums of different sizes suitable for a variety of occasions (Kopp 1967:121).

Materials used

A skin of glass and a supporting structure of reinforced concrete were the primary materials. Due to modern technology the wall can be more than merely an insulating barrier, but can be made of transparent glass, widening our grasp of the dynamics of the world around us (Kopp 1967:121).

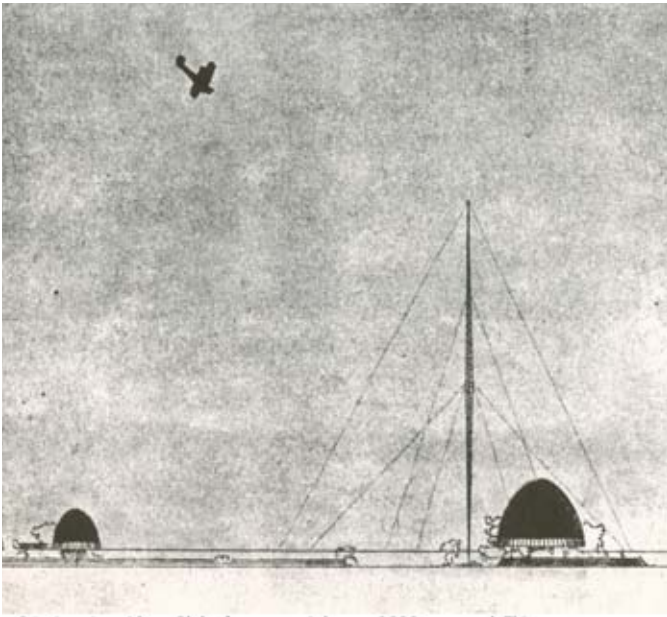


FIGURE 43 (left)

Ivan Leonidov: "Club of a new social type," 1929, proposal. This was a new conception of what a workers' club should be, no longer merely a single building but an entire urban zone reserved for cultural activities.

FIGURE 44 (right)

I. Golosov: Zuyev club, Moscow, 1928. The multipurpose hall during a meeting for young people.

4.2 CHATSWORTH YOUTH CENTER

The centre in Chatsworth, Kwazulu Natal, designed by architect Sue Clark, was built as a means of addressing social problems amongst the youth in Chatsworth. The aim was to provide an alternative recreational place for youngsters other than clubs, shopping centres and streets, where they are often exposed to drugs, alcohol and violence. The centre offers a pleasant, light-filled place that attracts the youth.

Structure

The structure consists of a steel portal frame (flexible robust structure), independently filled with glass, masonry or lightweight composite panels.

Programme

The centre offers the many activities and attractions, including a pool, arcade gaming, computers and sporting amenities. It contains a multi-purpose hall that doubles as theatre space. It also provides educational and counselling facilities that support a learning culture. The spatial relationship established between the more vibrant activities and the

more serious facilities make them accessible and user friendly. Most spaces extend to the exterior as open gathering or private counselling spaces.

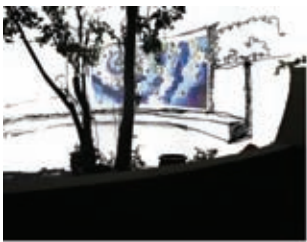
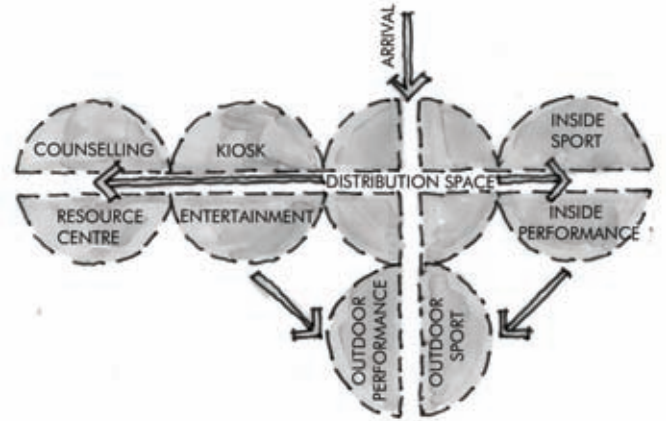
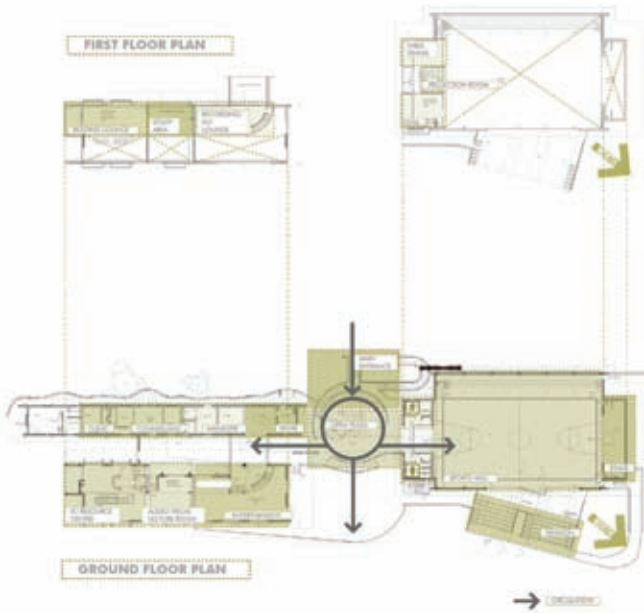
Funding

Donations were made by Irvin and Johnson foods, Nandos, Daimler Chrysler and Debis fleet management.



FIGURE 45

Photograph taken of Chatsworth Youth Centre, sports hall.



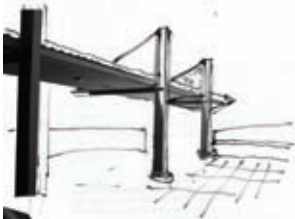
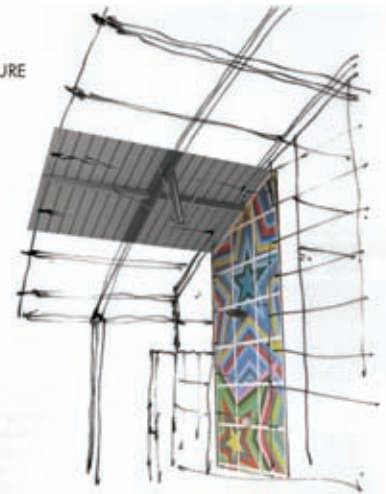
SURFACES



PROGRAMME

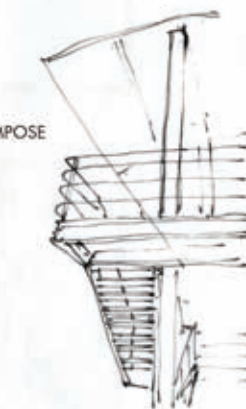


STRUCTURE



LINES

DECOMPOSE



SURFACE & LINES



EXTEND

FIGURE 46 (top left)
Ground and First floor plan.

FIGURE 47 (top right)
Functional organisation.

FIGURE 48 (bottom)
Collage depicting manipulation of space and connections.

4.3 REGIONAL TECTONICS – ENRIC MIRALLES

The design philosophy of Enric Miralles and partner Carne Pinos originates from the integration of pragmatic conceptualism with poetic metaphor, and holds a strong reference to nature in architecture that develops into a site specific tectonic expression.

Olympic archery pavilions (1989-1992), Barcelona, Spain.

Miralles describes the archery pavilion as mediation between athletes, spectators, and the sports hall that rises above the playing field as a visage that surveys the sports field (Arcidi 1992:74).

LeCuyer (2000:29) aptly describes architecture’s effect on the individual in the public realm:

In addition to the enhancement of individual experience, its architecture is directed towards the creation of shared social landscapes, rather than being an esoteric private dialect of the elite, the richly expressive language of the art of construction, is firmly engaged in the public realm.

Massive metal gutters correspond to the contours in the landscape, highlighting articulation and tectonic expression where different materials meet, especially where weightlessness is achieved. The finishes

are utilitarian, the lighting exceptional: curved walls of cerulean blue tile are silhouetted by the perforated concrete walls (Arcidi 1992:78).

LeCuyer (2000:30) states that “tectonic” suggests:

a preoccupation with materiality and a championing of craft that respects the trace of the hand and the expressive potential of construction.



- 1 THRESHOLD
- 2 BAR
- 3 SHOWER
- 4 CHANGING ROOM
- 5 REFEREE CHANGING ROOM
- 6 PUBLIC TOILET

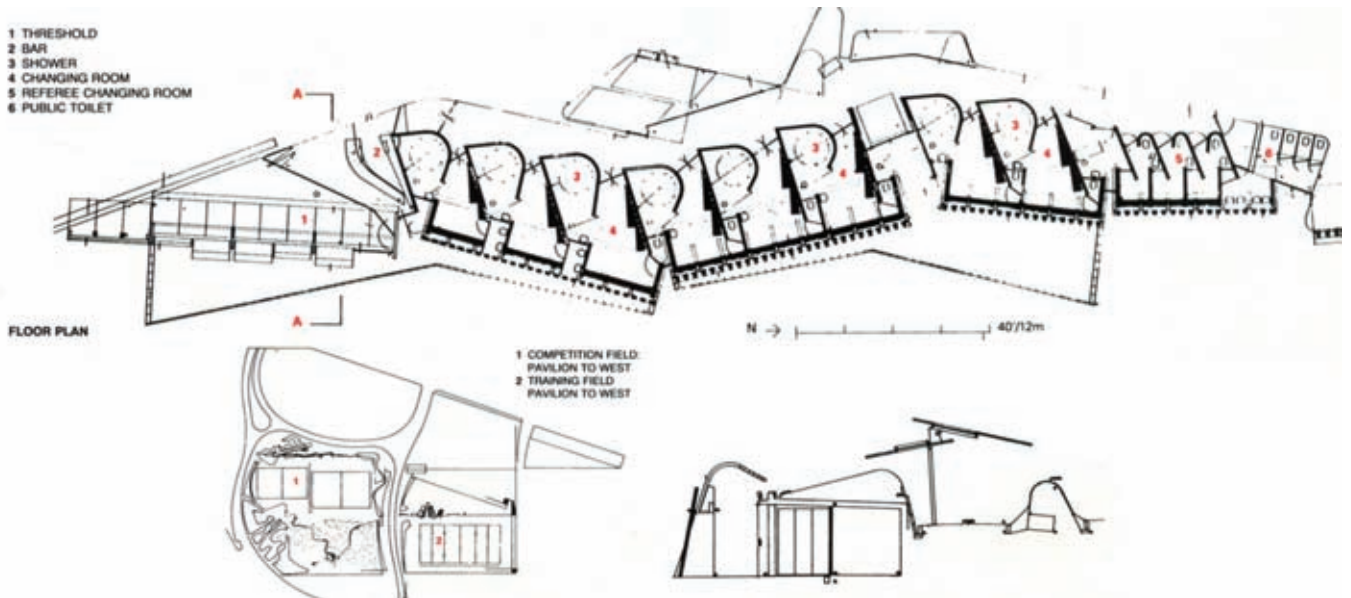


FIGURE 49 (top)

The lockers lined with grated doors that fold on the horizontal. The curved roof is integrated with the wall and perforated.

FIGURE 50 (bottom)

Plans and section showing the folding retaining wall that encloses locker rooms, Miralles & Pinos’s concrete archery pavilion lines and competition grounds.

4.4 BARCELONA'S URBAN RENEWAL

Barcelona's struggle to reinvent itself in the post-Franco years resulted in a commitment to urban renewal. It achieved transformation by creating public open spaces that include plazas, parks, playgrounds, and refurbishing streetscapes. Using an approach that Richard Serra termed "darning urbanism", emphasis is placed on making repairs to the existing urban fabric and on improving the quality of life city wide. The expression of a focus on specific local urban design needs was manifested in 76 different open spaces, rather than through the outcome of a broad master plan. A variety of areas reflect various responses to different neighbourhoods and programmes, and existing conditions. This reinforces the individual characters of the city districts.

The object was to revitalise neighbourhoods that formed the basis of the city's traditional social structure. The need to satisfy multiple requirements has resulted in a fairly consistent design strategy, often featuring spacious paved areas for sports set off from equally large landscapes of grass, shrubs, and trees. These are indented for refuge and leisure, and share a design vocabulary of distinct regional features and materials (Beardsley 1985:76).

Sculpture plays a significant role in the success of these open spaces. *Woman and bird* by Catalan sculptor Joan Miró is one such example. It is the focal point of parc Joan Miró and rises from a pool on a terrace that overlooks a shaded landscape of vine-covered trellises set between contrasting rows of palms and irregular groves of pine trees.

Barcelona's parks are generally defined by strong edges. They are divided into discreet parts, such as a strong grid, which dissolves into serpentine paths.

Sculptures are situated at crucial points. For example, one marks the entrance.

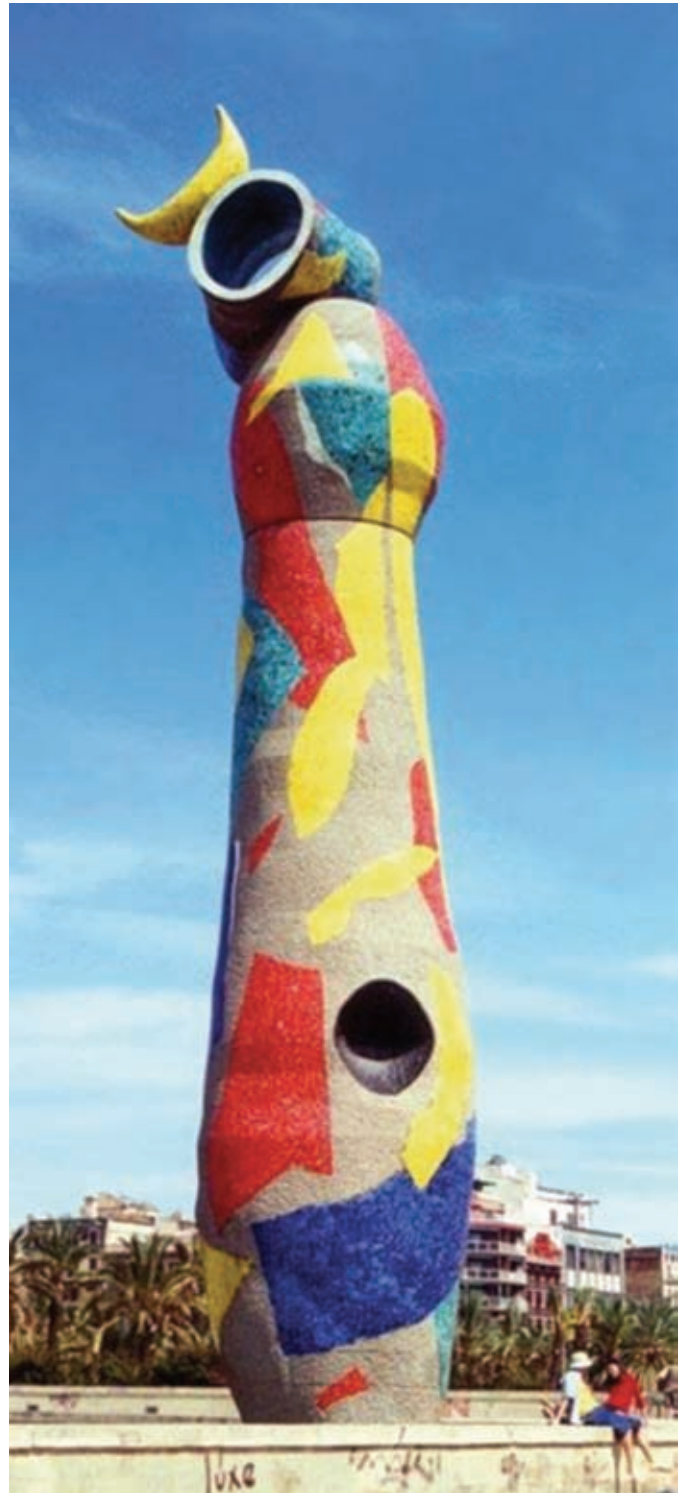


FIGURE 51

Woman and bird by Catalan sculptor
Joan Miró.

4.5 LEÇA DA PALMEIRA SWIMMING POOLS - ALVARO. SIZA
1966

Designed by Alvaro Siza in 1961, Leca de Palmeira tidal pool illustrates the seamless integration of building and landscape.

The programme includes a café, changing facilities and two swimming pools. The café and changing facilities are level with the road and located in a linear structure orientated parallel to the road. The existing terrain was accommodated so as to limit construction costs and preserve the landscape. The entrance descends into a maze of concrete walls, obstructing the view leaving the visitor only audibly aware of the ocean. This acts as a transitional feature between that which is man made and that which is natural. The maze creates different paths to use and discover.

The materials used blend into the landscape; rough concrete for the walls and smooth concrete for the walkway. Viewed from the ocean, the structures appear as carvings in the landscape.

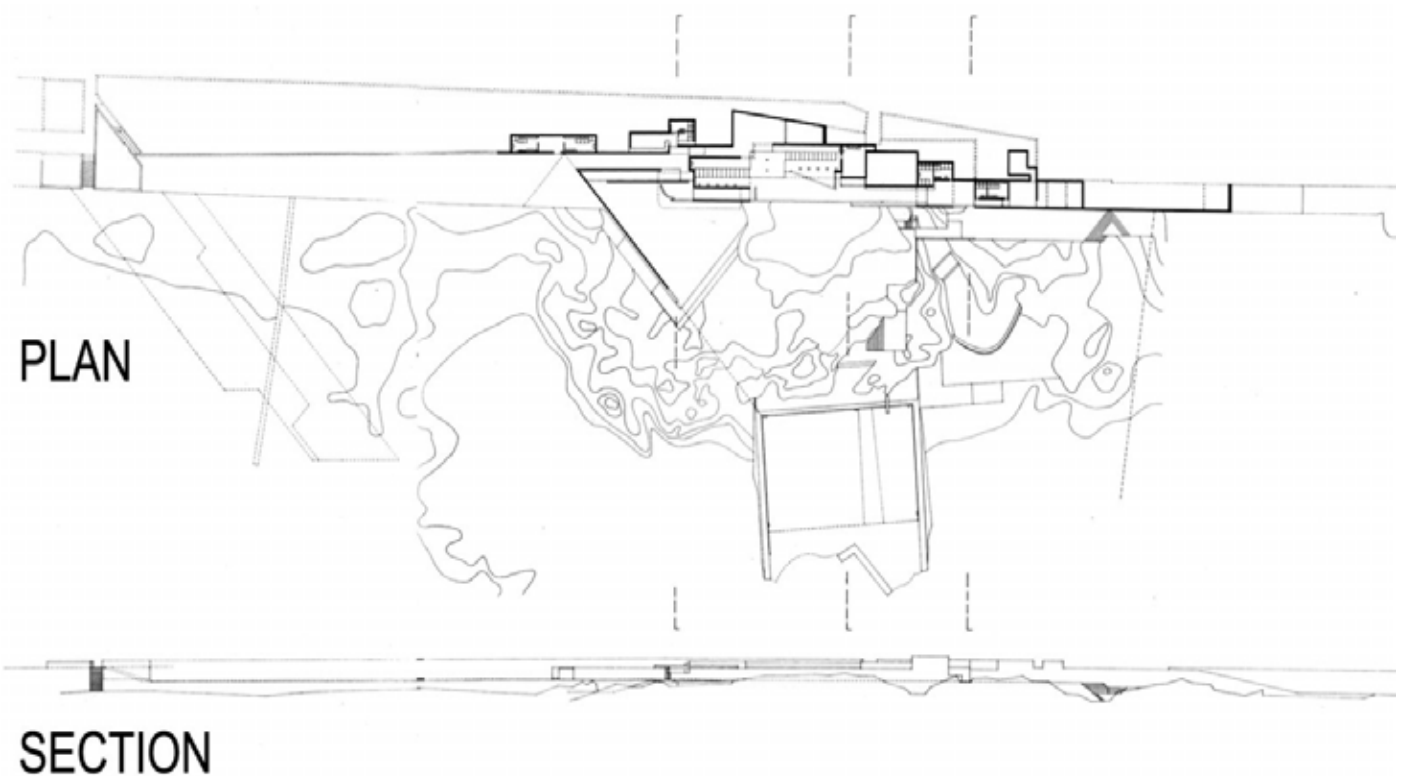


FIGURE 52 (top)

Site plan with section.

FIGURE 53 (bottom)

Bridge over entrance to –childrens pool at a height as to deter grownups.

4.6 HILLCREST MUNICIPAL SWIMMING BATH

Located in Hatfield, Pretoria, the residential setting forms the backdrop to the municipal pool.

The modernist building is disguised on a residential scale facing the outside with only low level walls, the only extraordinary feature being four flood lights. From the outside it appears as a conventional building, while the inside comprises a steel column grid layout for adaptable interior configurations.

A front arcade leads to the symmetrically laid out entrance. The building structure is designed around the main programme i.e. the swimming pool.

The pool is two meters below ground level and surrounded by concrete terraces. This feature serves an organisational function. The terraces are used as seating, leaving a 3 meter threshold between the pool and seating. The terraces lead to recreational surfaces on the east side and a pavilion on the west side.

Regional elements include the use of red bricks and corrugated iron, both of which was manufactured in Pretoria during the time of construction.

The edge bricks have rounded corners to prevent injury against rough surfaces.



FIGURE 54 (top)

Towel drying area.

FIGURE 55 (middle)

Secondary open changing room servicing the more formal/closed changing rooms.

FIGURE 56 (bottom)

Perspective view of Hillcrest swimming pool.

5 DESIGN DEVELOPMENT

IN THE ARCHITECTURE OF "SPATIAL POSSIBILITY", ARCHITECTURE IS USED TO PROVIDE A SPATIAL FRAMEWORK THAT IS CAPABLE OF ABSORBING CHANGE, ACTING AS A HOLDING STRUCTURE TO DEFINE THE PARK EDGE AND ORGANISE ACTIVITIES.

5.1 ORGANIZATION OF SPACE

An enabling structure at the periphery of the site encourages pedestrian movement and interaction along and through the site. The structure becomes a facilitator for potential activities to take place and adapt over time. This establishes directional permeability, ease of access and multipurpose use programming. Recreational amenities, tuck shop and ablution facilities are combined within a porous lattice that is tied to its surroundings. This establishes a highly visible environment where scheduled events and festivities modulate daily practices. This makes the space a terrain in continuous flux.

Tschumi (1994:11) states that:

Avoiding the pre-eminence of the formal or visual, deals with ideas and strategies. His projects begin from an urban condition and a programme, trying to uncover the potentialities hidden in the programme, site or circumstances, whether economic, social or cultural. Dynamic forces or intensely public spaces are encouraged.

5.2 STRATEGIES AND DEVICES

Architecture acts as generator, playing a role in the making of the city. Architecture is both about space and about the events that take place in that space (Tschumi 1994:12).

Projects, due to their programmatic adversity and complexity, function as small cities.

Programme and Event (Designing conditions rather the conditioning design).

The programme exists as a determinate set of expected occurrences. A list of required utilities, often based on social behaviour, habit or custom, is recorded. The event occurs as an indeterminate set of unexpected outcomes revealing hidden potentialities or conditions in the programme (Tschumi 1994:13).

Modes of organization:

Movement

Movement vectors are used as the major organising device.

Space

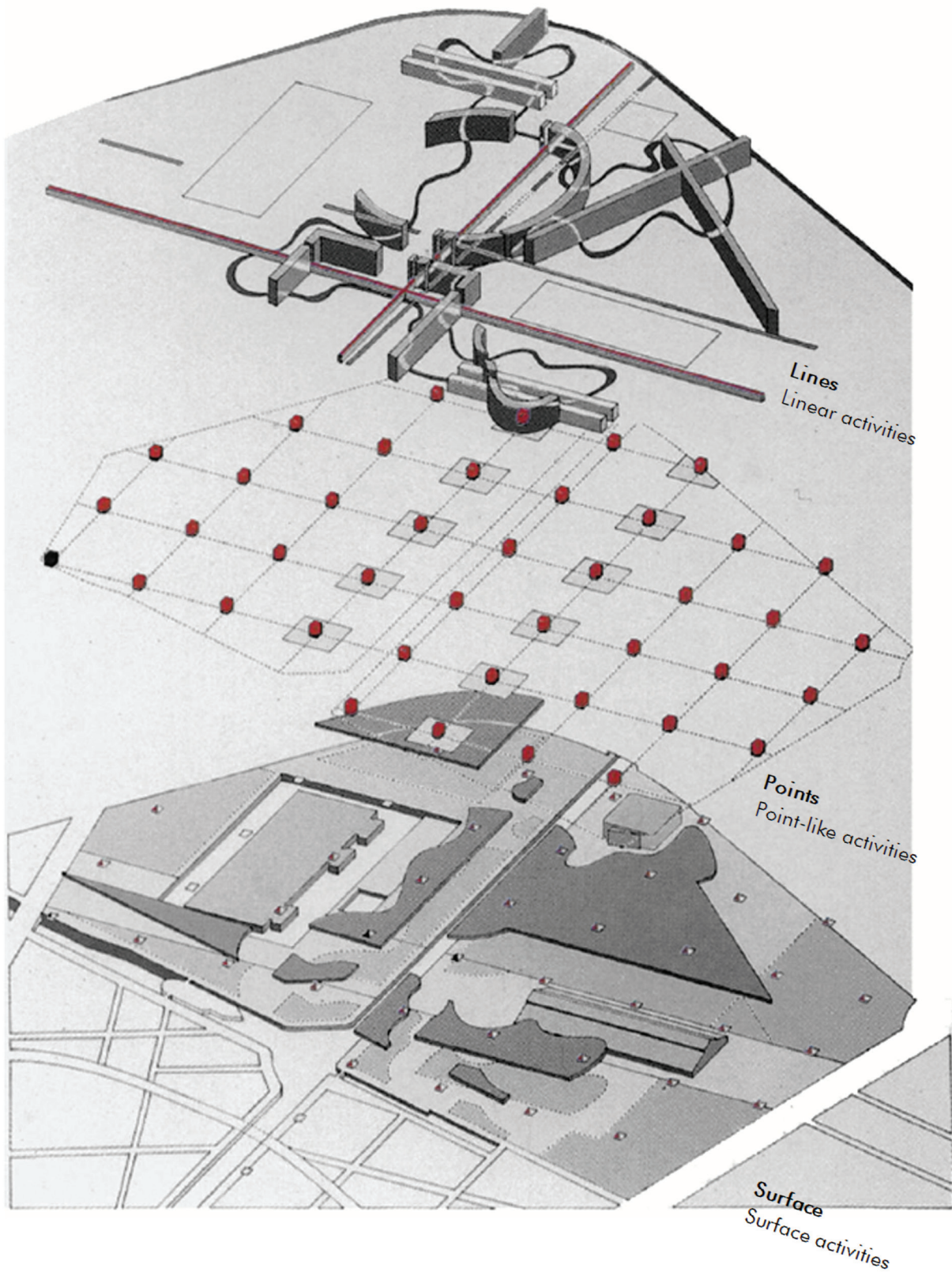
Voids, un-programmed space and solids become programmed. Voids are activated using public activities to intensify the density of movements.

Event

Activators generate intensity. Promote dialectics and heterogeneity. Envelope as enclosure.

FIGURE 54 (opposite page)

Plan for Parc de la Villet of superimposed lines, points and surfaces.



5.3 PARC DE LA VILLETTE, 1982-98

The Parc de la Villette, Paris, is directed at revitalising, and uses superimposition, juxtaposition and permutations to organise complex territory. The project illustrates maximum programmatic flexibility and invention through the superimposition of three separate structures – a point system, a line system and a surface (Wall 1983:29).

Line

Orthogonal routes mark high density movement. North-South and East-West with a five meter-wide open structures next to various points (follies), including City of music, restaurants, Square of the Baths, arts and science, children’s playgrounds, video workshops and sports centres. The path of thematic gardens links various parts of the park. Intersecting axes provide unexpected encounters and link various parts of the park (Tschumi 1994:57).

Point (grid)

The programmatic requirements are exploded throughout the site onto a regular grid of points of intensity (Tschumi 1994:58). These points of intensity also known as follies are both singular parts and anchoring points of possible future constructions (Tschumi 1994:59). The follies act as condensers that through programme generate events. The grid establishes territorial recognition, easy maintenance, and simple orientation. The neutral space created in-between the points of intensity can be transformed and elaborated as required (Tschumi 1994:57).

Surface

Large surfaces are deliberately left open creating expanses of horizontal space for playing games, body exercise, mass entertainment or markets. The left over park space is covered with materials such as earth and gravel for complete programmatic freedom.

The preceding structuring elements are implemented at the Caledonian Sports Ground in the following manner:

Line

the Main orthogonal pedestrian route (Schoeman Street) activates the edge of the public space. Secondary routes perpendicular to the main route, that link Sunnyside to this public space, are emphasised by defined entrances. The Apies River edge is developed as walking, jogging and cycling route, while Walker Spruit becomes a river garden route,

hosting informal recreational activities. The clubhouse and pavilion sight line is emphasised by an opening in the earth mound pavilion.

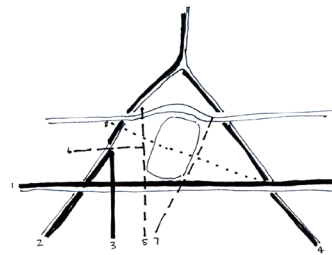
Point

Condensers considered are: the multifunctional events hall, the public swimming bath, the tuck shop, ablution facilities and the children’s play area. Points also include the existing Clubhouse and pavilion on the site.

Surface

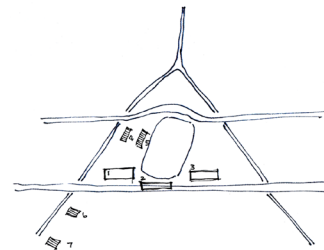
From the soccer field as point of reference the surface bordering the City edge becomes a contemporary urban hard surface. This surface contains a skate park, amphitheatre, parking area, and theatre seating area. The opposite edge bordering Arcadia is a multi-use recreational park area.

lines movement



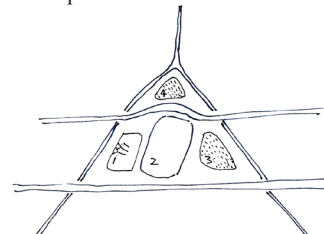
- primary
- 1 schoeman street
- 2 apies river
- 3 main entrance
- 4 walker spruit
- secondary
- 5 sunny side - amphitheatre - site entrance
- 6 bridge to pergola sight line
- 7 visual to physical connection

event point



- new
- 1 multifunctional events hall
- 2 trading
- 3 public swimming bath, amenities
- historic
- 4 clubhouse
- 5 pavilion
- 6 pool house
- 7 theological society/ music centre

surface space voids



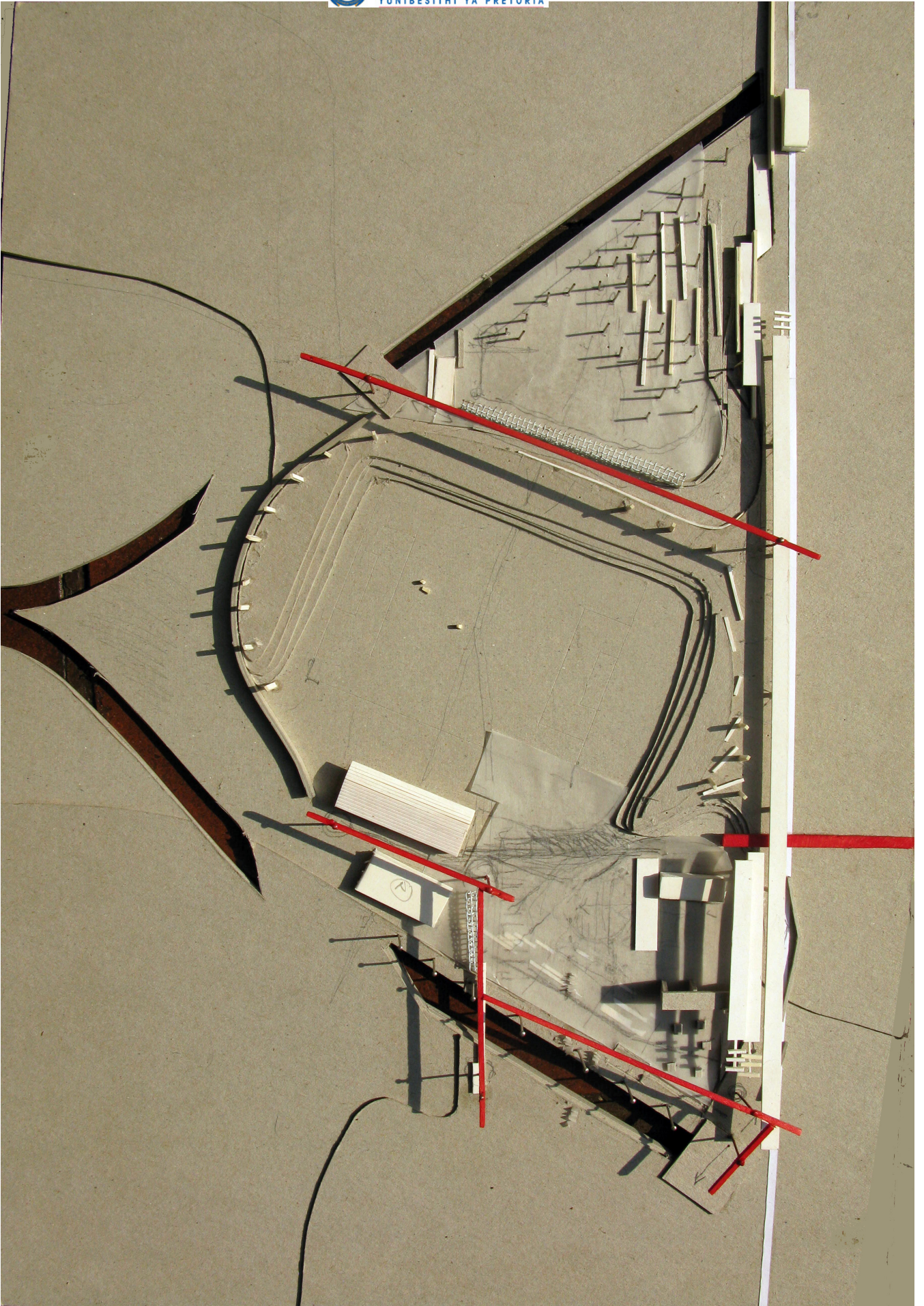
- 1 contemporary urban hard surface
- 2 soccer field
- 3 multi-use recreational park
- 4 park

FIGURE 55 (top)

Scenario for points, lines and surfaces.

FIGURE 56 (opposite page)

Model illustrating points, lines and surfaces.



5.4 PROGRAMMING

The aim of the programming is to:

- Preserve existing use patterns currently on site (English soccer league for primary schools, soccer club league).
- Re-establish activities associated with the site historically as recreational facilities (basketball courts, swimming pool, events hall).
- Re-establish connectivity to activities from the surroundings by opening up the site to continue routes along Apies River and the Kir-neels Young-wandelpad along Walker Spruit for jogging, walking and cycling. This will also be done by introducing dedicated cycling and pedestrian lanes along the rivers.
- Introduce new activities (skate park, amphitheatre).

The western border of the site towards the city edge is converted into a hard surface, accommodating skateboarders, markets, theatre and gatherings on a multipurpose surface, which is adjacent to the multi-function events hall. The core remains a soccer field to be integrated into the site at strategic places. Towards the east, bordering Arcadia, the site is developed into a park that extends towards the triangular piece of land at the meeting of the Apies River and Walker Spruit. The open terrain behind the street edge remains predominantly un-programmed but adequately serviced to establish viability and functionality. For this purpose ablution facilities, showers and a tuck shop serve as enabling infrastructure for the open space.

Public amenities (soccer field, covered event space and park) are thus provided to the surrounding residential areas, Arcadia and Sunnyside. The presence of government institutions (Department of Trade and Industry, Department of Minerals and Energy and the Department of Arts and Culture) necessitate entertainment facilities.

Illicit activities are curbed by the twenty-four-hour presence of people on the site. Tuck shops are placed next to entrances for passive surveillance and physical barriers define and protect semi-private spaces.

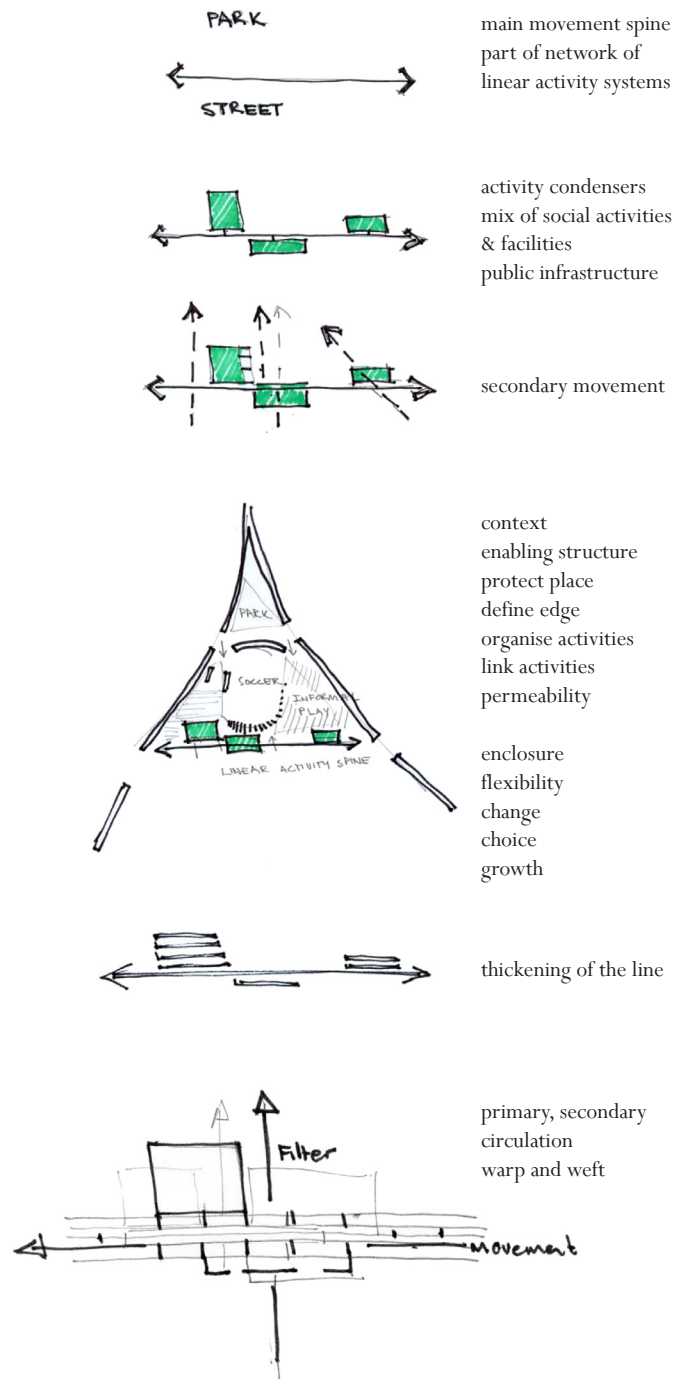


FIGURE 57

Diagram of Concept in context.

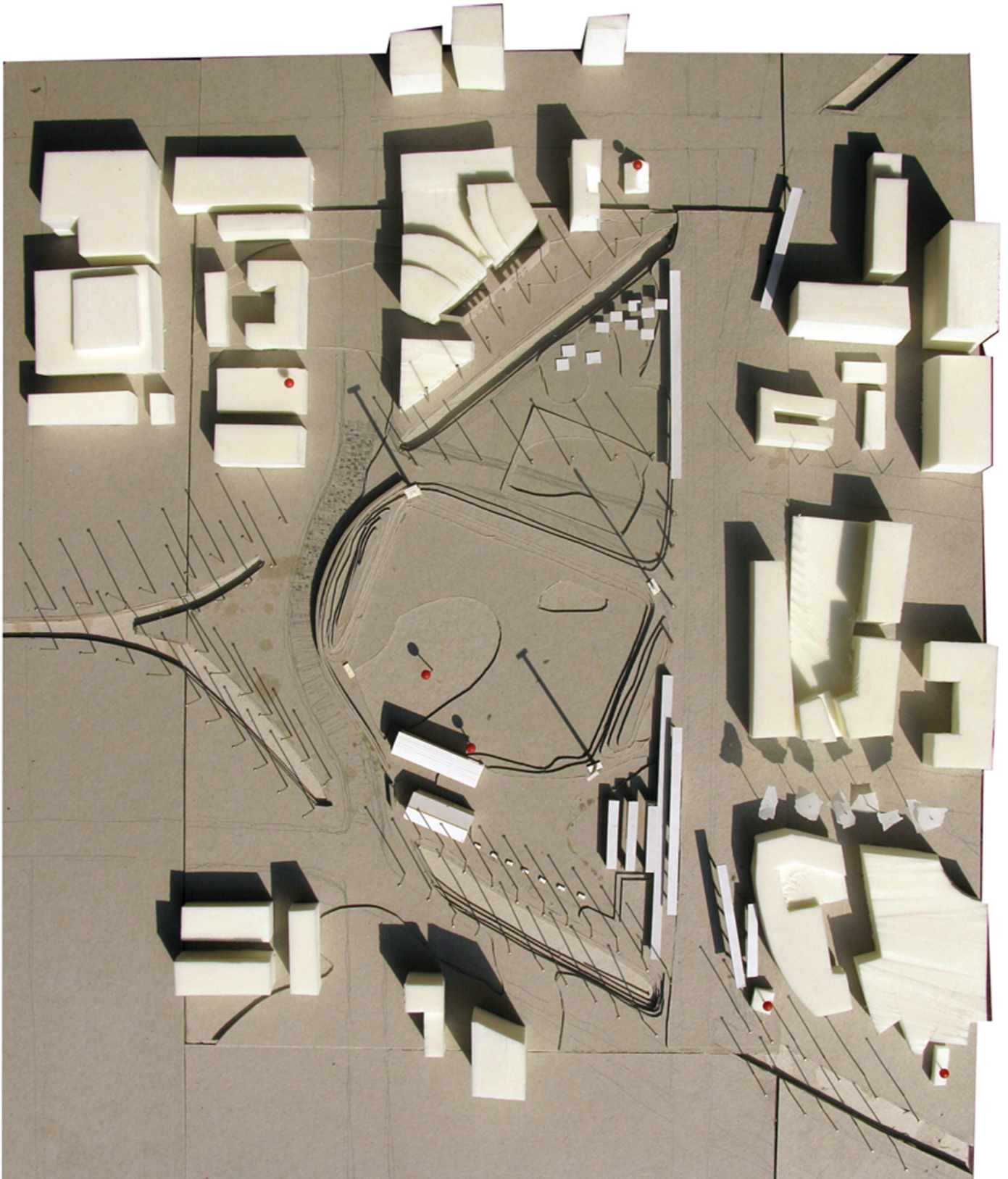


FIGURE 58

Model of context development.

6 TECHNICAL INVESTIGATION

THE DESIGN CONCEPT MANIFESTS IN THREE OVERLAPPING COMPONENTS: LIGHTWEIGHT ROOF STRUCTURE, HEAVY WEIGHT WALLS, AND GROUND SURFACE. EACH IS INVESTIGATED SEPARATELY, PRIOR TO THEIR COMBINATION INTO THE REALISED FORM.

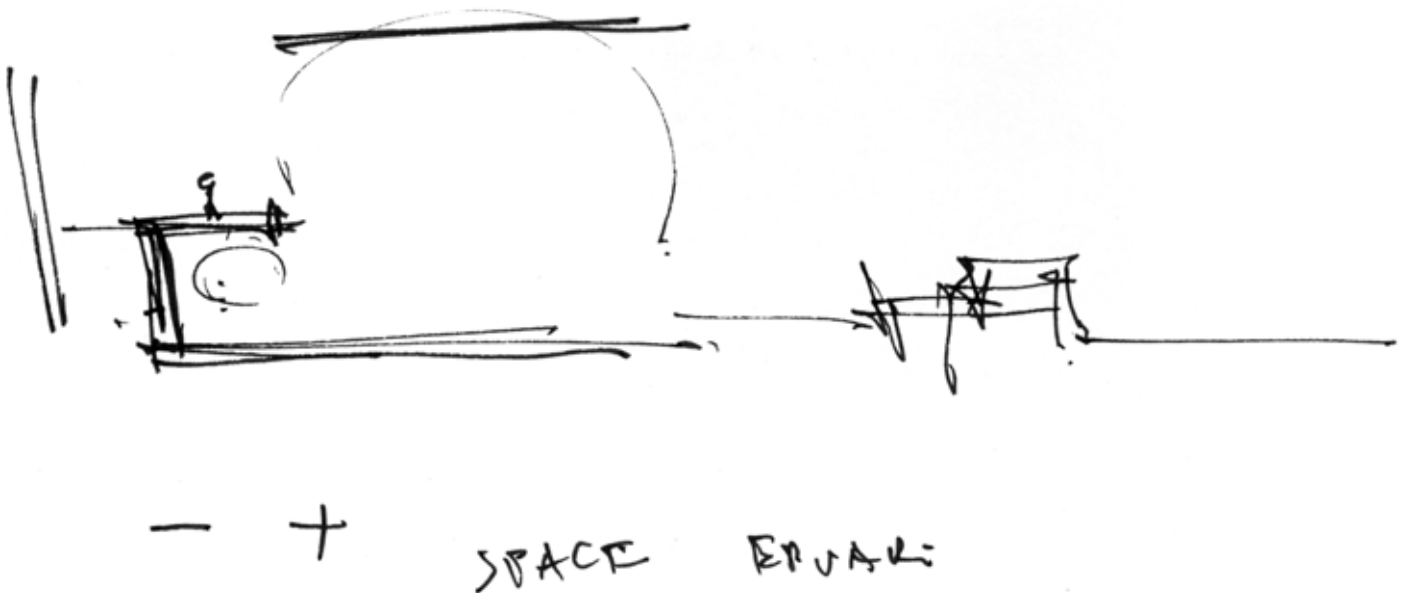
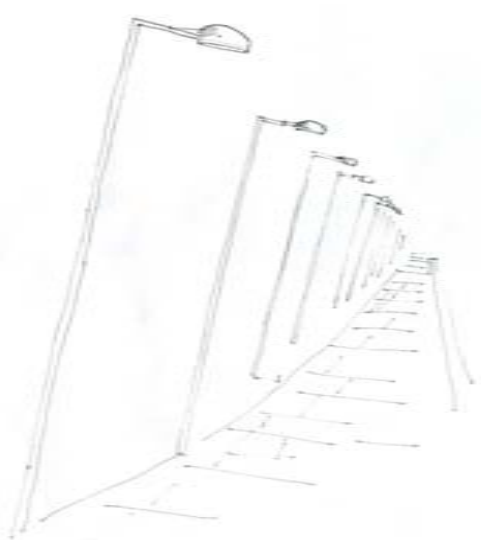
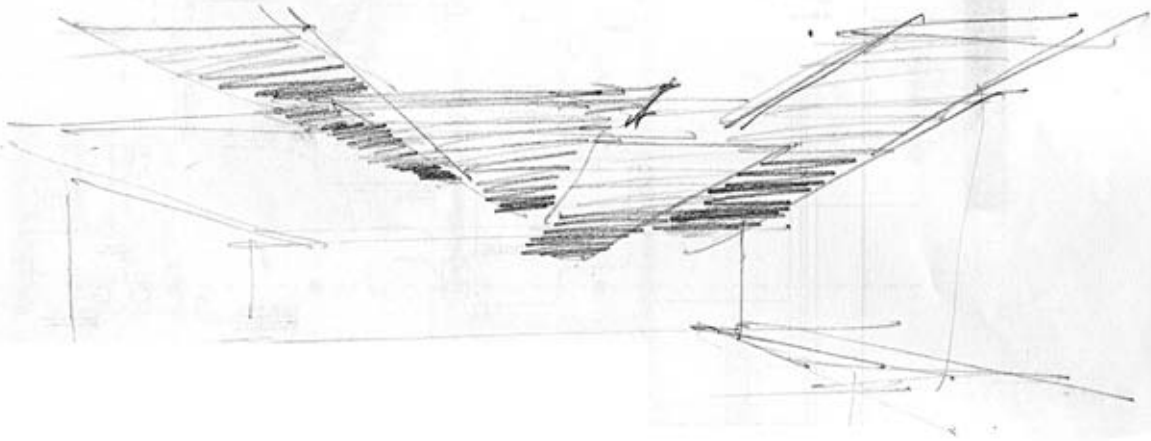


FIGURE 59

Diagramme illustrating positive and negative spatial experience.



Framptom (1995:5) describes the art of tectonics as follows:

Tectonics is the art of joining material, most successful when there is unity in form and structure. Semper would classify the building crafts into two fundamental procedures: the tectonics of the tensile timber lightweight frame and the stereotomics of the load bearing stone earthworks. The cosmic associations they evoke is that of affinity of the frame for the immateriality of sky and the propensity of mass form not only to gravitate towards the earth but also to dissolve in its substance.

6.1 TOP STRUCTURE, ROOF

The top structure comprises of a linear steel lightweight construction accommodating various planned and unplanned activities along the route. The structure becomes a unifying element used to organize the activities of the site. The structure is derived from shading elements encountered in the area, offering a sense of enclosure and protection against rain and sun, retaining an unobstructed visual connection to the site. The roof structure is an adaptation of a portal frame used repetitively. In its singular line form it is used in areas where taxi shelter, informal trade, and storage facilities need this protection. The singular line (structure) is thickened to gather larger spaces while allowing for height variations, making light and ventilation possible.

The roof covering is lightweight steel sheeting, with a corrugated polycarbonate sheeting siding to provide natural lighting. Rainwater is collected from the roofs that are at a 1:200 slope. All rainwater is stored in water tanks and used for landscape irrigation.

The main roof structure is a modular N-braced girder with diagonal roof supports. Components are manufactured off-site under controlled conditions to ensure structural stability and quality. Smaller steel components are manufactured on site. These structures also make reference to the existing historic steel roof pavilion and industrial steel lighting structures on the site.

Glazing

The covered area that requires waterproofing is protected by establishing a layer of polycarbonate sheeting infill panels between roof edges. The glazing layer allows for thermal control in the building using ventilation. North facing panels, which are made up of 80% translucent

sheeting, allow maximum reflective light. South facing panels of diffuse sheeting enhance light quality and visibility of movement.

Shading

The steel beams are cantilevered, exposed and covered only with angle iron slats toward the edges of the structure, creating a play of light and manifesting the threshold spaces.

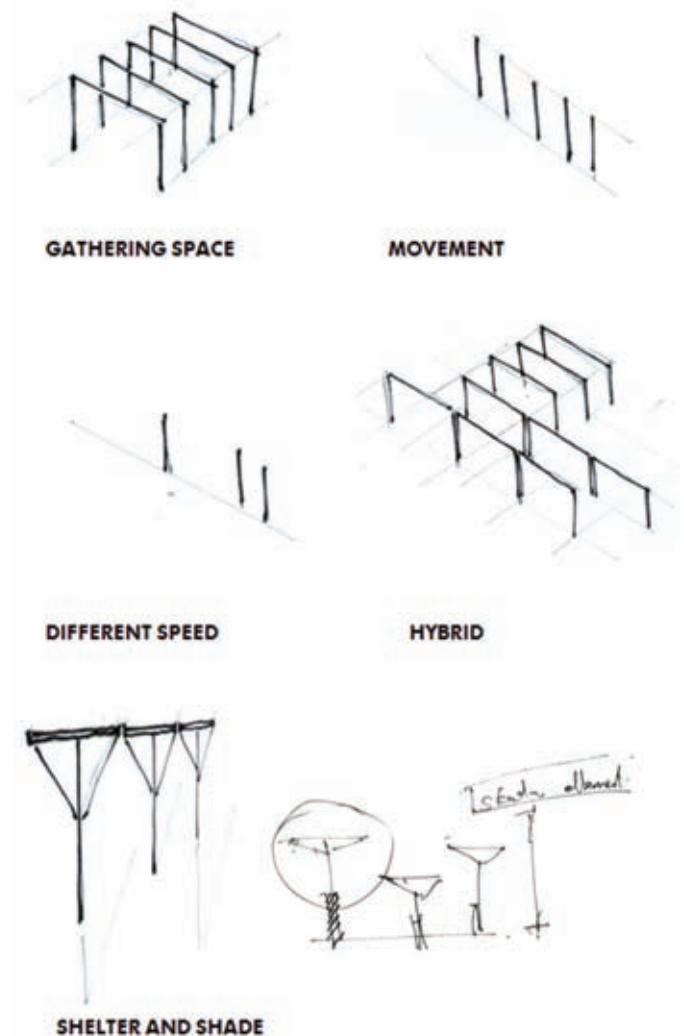


FIGURE 60

Diagram of structure and roof.



FIGURE 61 (top)

Section trough roof structure.

FIGURE 62 (following page)

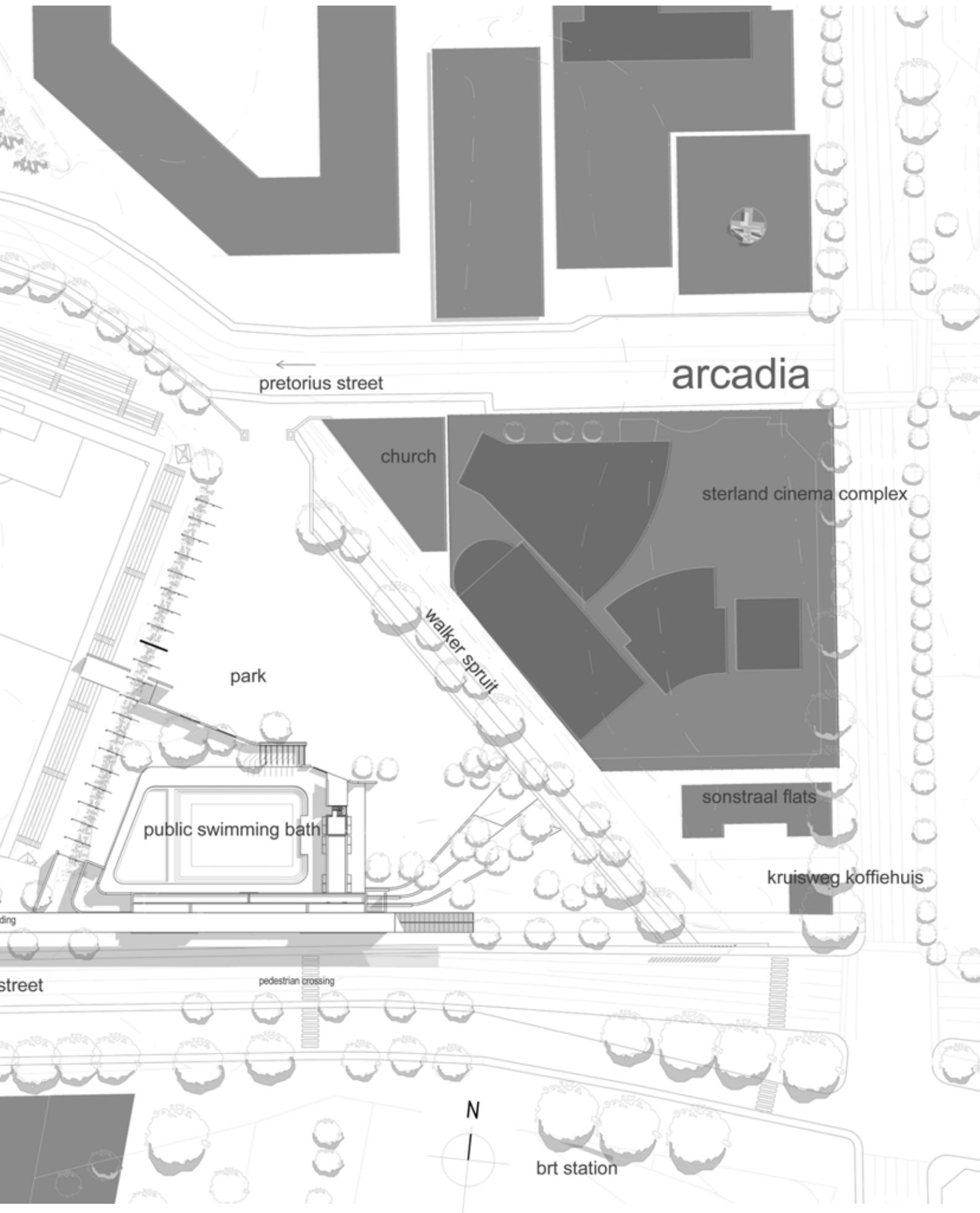
Site plan.

SITE PLAN



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6.2 FLOOR, SURFACE

James Corner (1999:6) states that:

The worst enemy of modern architecture is the idea of space considered solely in terms of its economic and technical exigencies indifferent to the ideas of the site. Site must instead be seen as a means to resist the homogenisation of the environment by also heightening attributes and a collective sense of place.

The manipulation of surface aims to encourage diversity in use and experience of the terrain. The halls exploit the existing mounds created for the sports fields to establish a linear pavilion along the edge of the terrain, resulting in an amphitheatre abutting the mounds of the main soccer field. The pavilion becomes a continuous entity with varying degrees of openness and enclosure, seating and platforms.

Hunter (1979:624) states that:

Noguchi's Play Mountain was the kernel out of which have grown all his ideas relating sculpture to the earth. It was also the progenitor of playgrounds as sculptural landscapes.

The playgrounds and playground equipment designed by Noguchi is works of art that instead of being viewed from a distance were meant to be interactive, suggesting activities without precisely demanding them. This led to a physical but creative use of each structure, and invites all levels of participation from the oldest to the youngest visitor (Hunter 1979:625).

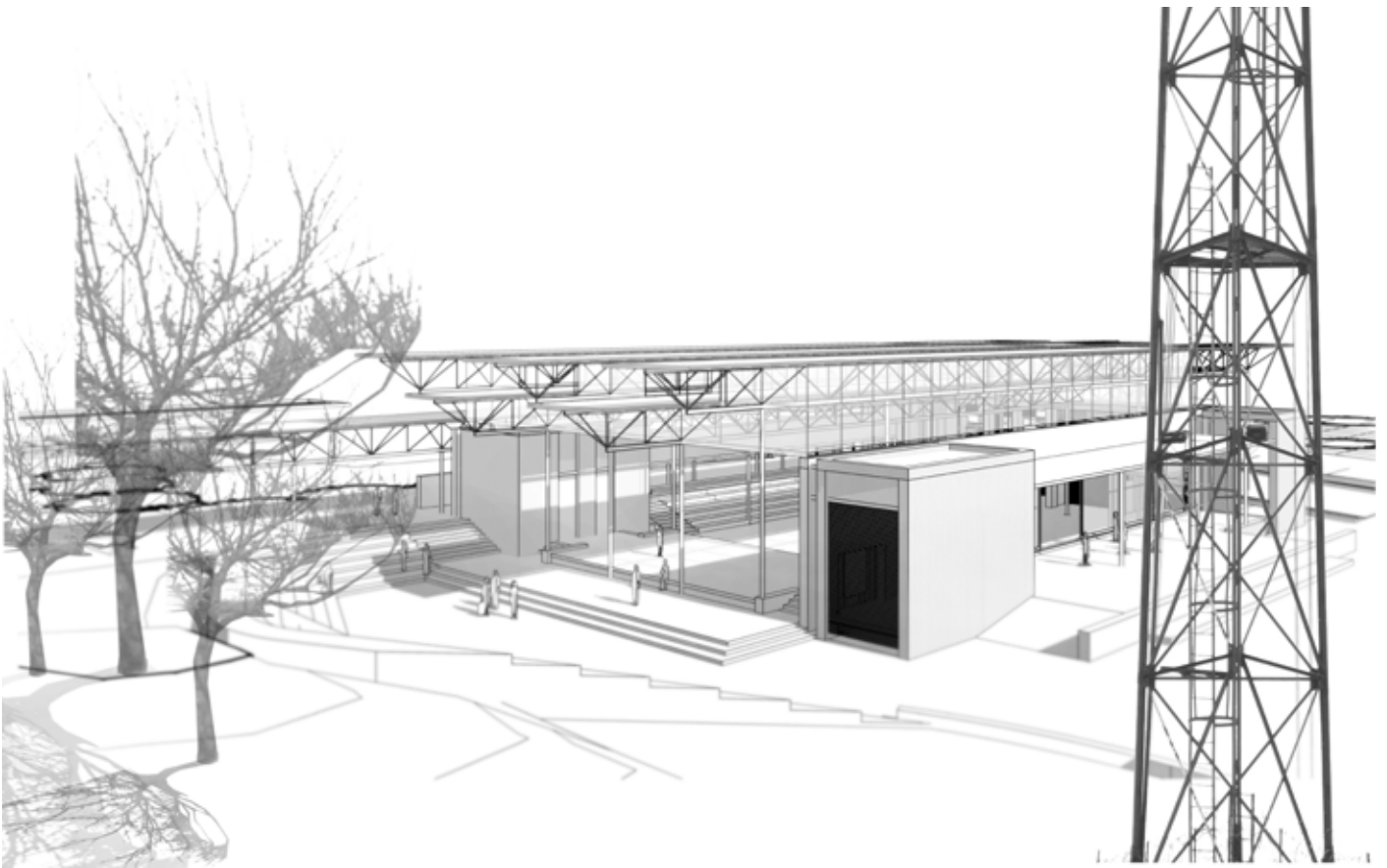


FIGURE 63

Amphitheatre and stage as surface development.

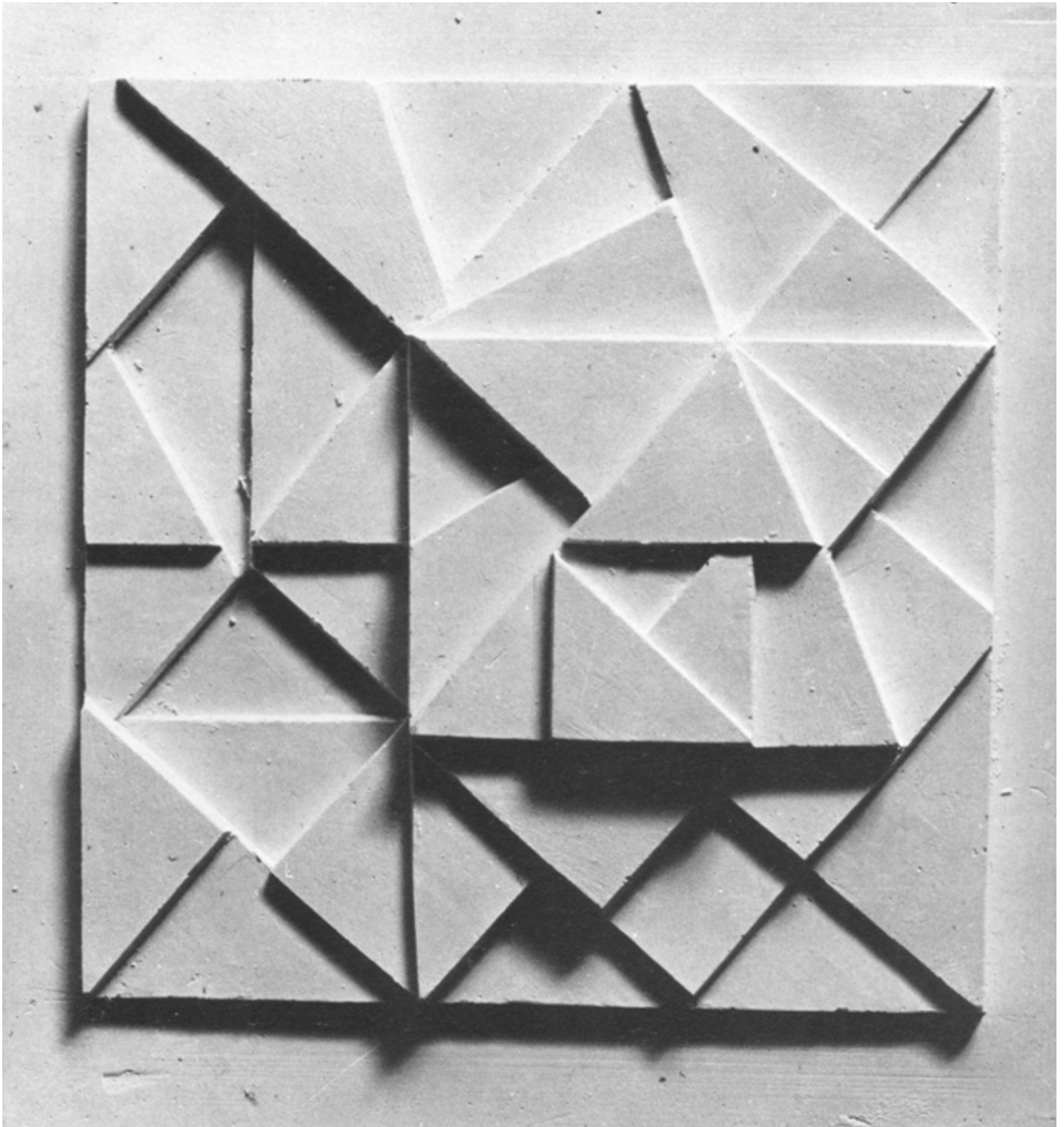


FIGURE 64

Noguchi's Play Mountain.

Walker Spruit is re-established as a natural entity by widening the river edge toward the park with embankments, introducing green recreational areas to the park. See figure 65.

The cycling and walking routes next to the Apies River gradually transform into ramped landforms to accommodate skating as illustrated in figure 66.

Public spaces are defined with porous non-slip pavement blocks to allow ground water recharge. Planters containing trees for shade against the sun interrupt the concrete surface.

Circulation routes are concrete with a brushed finish to aid ease of movement by wheelchair users. The routes are illuminated and where trading occurs water and electricity services are provided.

Bicycle racks are provided along the routes.

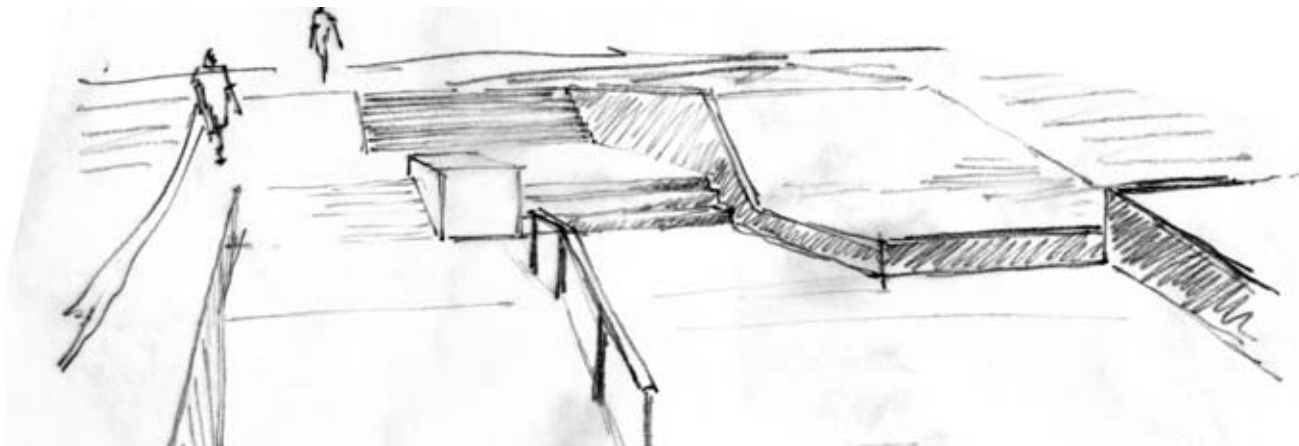


FIGURE 65 (top)

Section illustrating manipulation and development along Walker Spruit storm-water channel.

FIGURE 66 (bottom)

Surface development into skate park.



FIGURE 67

Apies River edge as surface development.

6.3 WALLS, BASE STRUCTURE

Mass for the earthbound structure not only thickens the earth's surface but embodies the connection to earth. Cast in situ slabs on concrete columns, brick perimeter and infill walls house storage and ablution facilities and become the surface for activities and circulation.

The brick walls extend beyond the ground plain as perforated perimeter walls and form light and ventilation shafts, establishing varieties of pattern and light infiltration.

Lightweight prefabricated composite timber and steel support walls are used as infill for adaptable dressing rooms and ablution configurations.

Exposed brick walls, as illustrated by figure 49, woven in a predominant east west direction house the lockable programmes, and resonate with the red brick of the surrounding buildings as part of Pretoria regionalism.

Lightweight prefabricated composite timber and steel panels are configured in various ways as to accommodate for different opening and shading requirements. Both the hall and the pool adopt this approach.

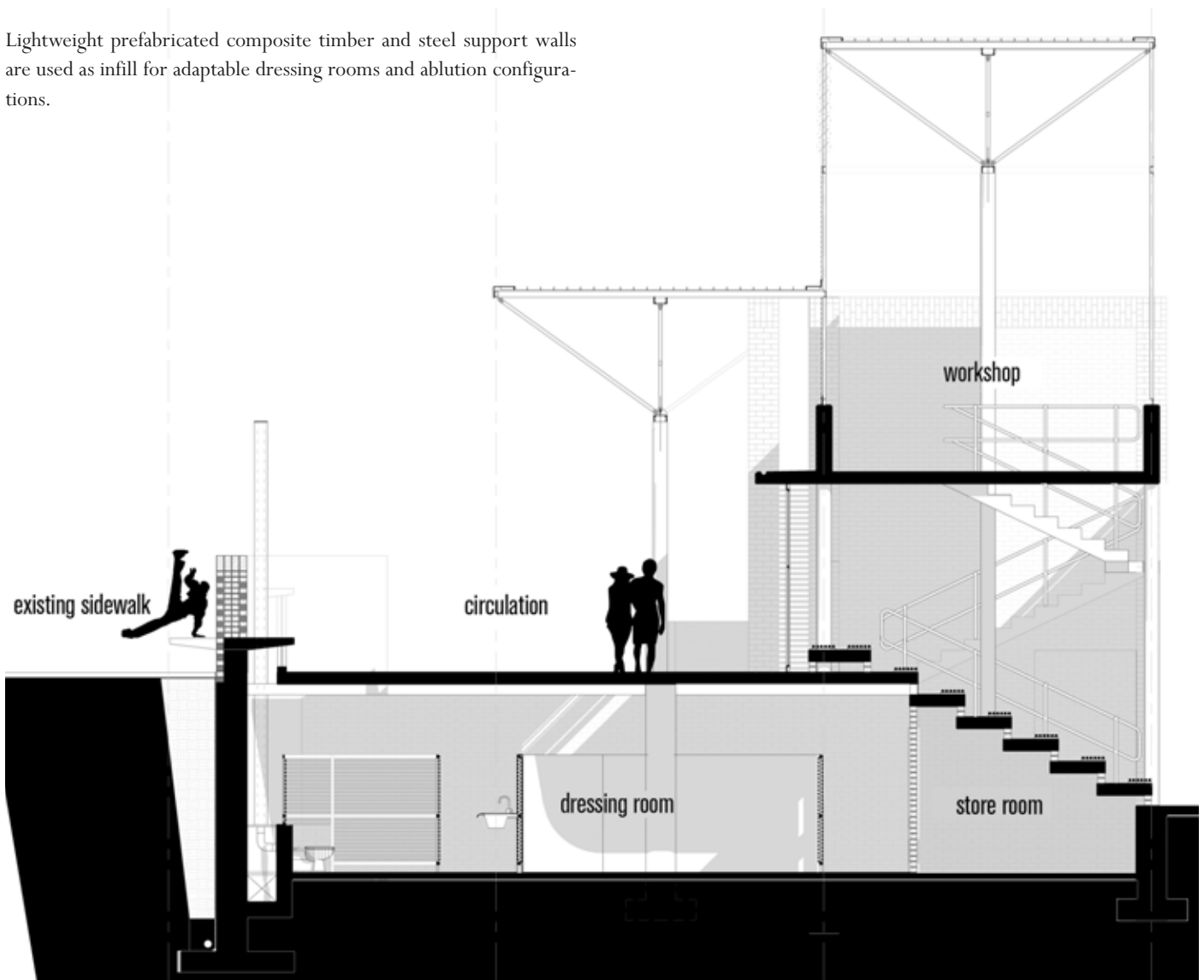


FIGURE 68 (top)

Section through basement.

FIGURE 69 (opposite page)

Model of walls that create the western edge of the building.



6.4 SENSORY QUALITIES

In the design of the buildings, experiential qualities are favoured above form.

Light

Johani Pallasmaa (2005:47) states that:

In great architecture there is a constant deep breathing of shadow and light; shadow inhales and illumination exhales light.

Spaces are articulated by the use of shade and shadow. These spaces are redefined during the day by the different position of the sun, creating different possibilities for usage.

The roof structure of the hall facing the Apies River dissipates towards the edges. As is visible in the top image, the solid roof structure creates a shadowed line defining the entrance of the building.

The top third of the hall is evenly illuminated, emphasizing lightness. White translucent sheeting generates a soft white glow of light. Southern light is enhanced using diffuse sheeting for the exhibition spaces. This light filled space is contrasted with the dressing rooms. Here the user is made aware of light that is focussed from above by means of a light shaft, creating a private and secure area.

Materiality

Concrete and brick work not only refer to Pretoria regionalism but also enhance the sensory qualities and associations with this red palate of brick. Shadows reveal the texture of the walls.

A layered materiality is established through the timber infill panels that mimic the rhythm of the brickwork. Shadow lines are deeper, providing a softer surface on the exterior of the building. The use of timber on the interior is mainly for acoustic considerations.

Exterior concrete pavilions are left bare, in a light grey hue. The seating of the interior pavilion is covered with timber slats reminiscent of the park benches in the area.

Water

In the swimming pool building water is centerpoint of the design. All

structures are orientated round the twenty five by seventeen meters pool. Water is symbolically represented on street level as movement barrier between the street edge and the pool. One enters the structure through the eastern side. Upon entrance the pool of water is revealed.

Water is enclosed through programme, which include braai-facilities, cloakrooms and lawned terraces. The terraces provide seating and integrates the pool with the park.

The street level sidewalk is extended over the site, forming a cave-like structure. The showers are non-structural timber infill so as to ease cleaning, and give a sense of openness.

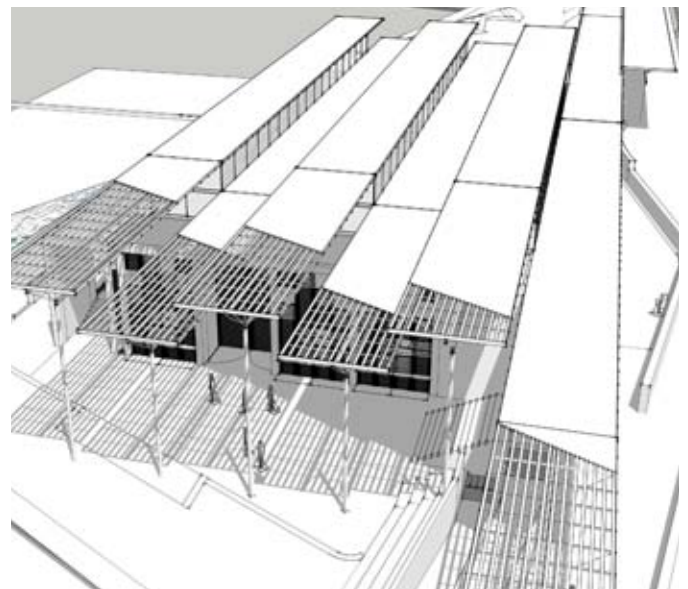
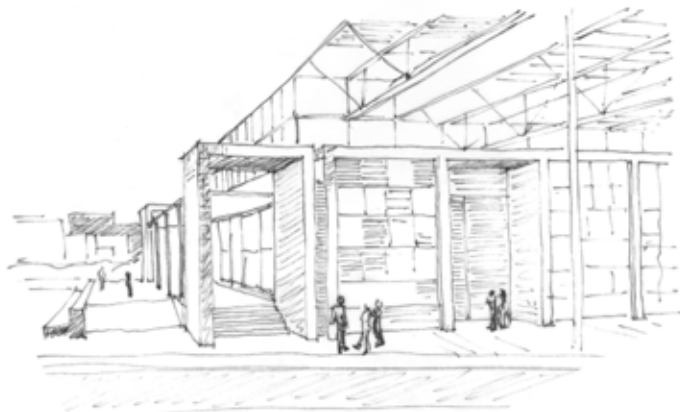
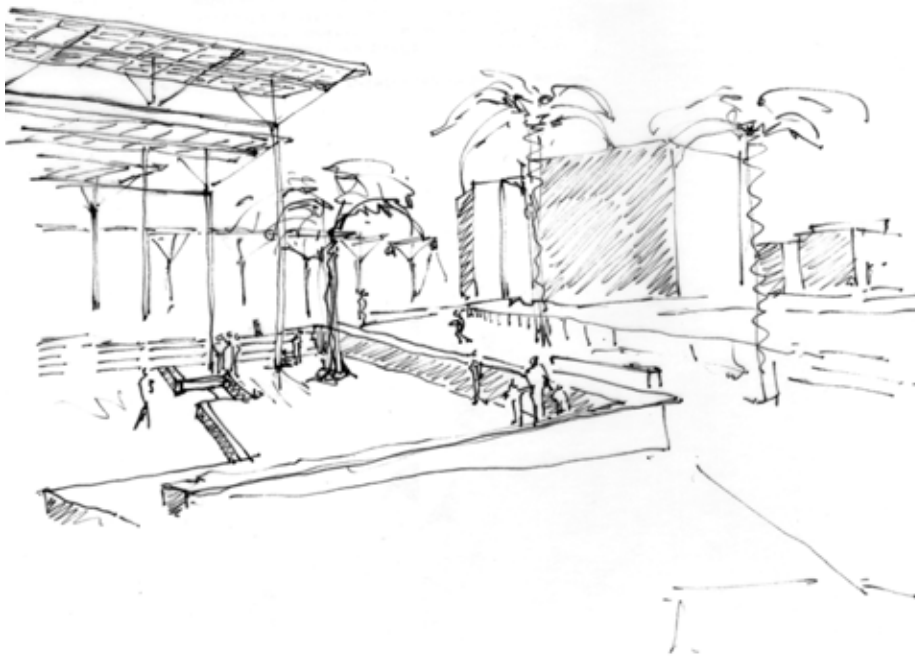


FIGURE 70

Perspective view: Fore court facing Apies river, illustrating roof shadow lines.



7 SCENARIO PLANNING

The way in which the structure becomes a framework for spatial possibility that allows for programmatic flexibility is illustrated in figure 72, 73 and 74.

The design of the hall structure allows for different scenario planning. Strategic thinking allows for flexible organization and long term planning. The structure can adapt for a series of classic spatial organizations. The original design generates situations suitable for sports activities i.e. basketball, table tennis, netball.

Flexible adaptations are provided within the volumetric and spatial organizational of different designated areas.

Diagramme:

The diagramme indicates the main designated areas of spatial planning.
A - 3250m x 20m open space

Scenario 1:

Indoor and outdoor for a large public event, a centrally placed stage allows for access to interior roof space and outdoor terraced lawn

Scenario 2:

Public exhibition/ expo.

Scenario 3:

Event /dance.

FIGURE 72 (opposite page)

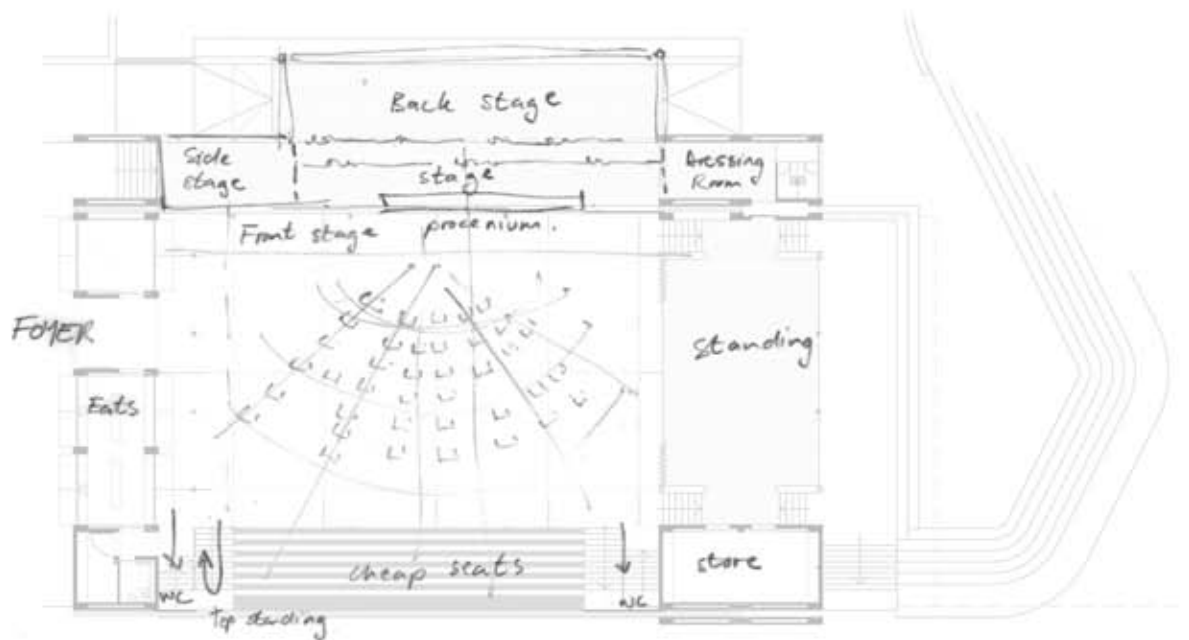
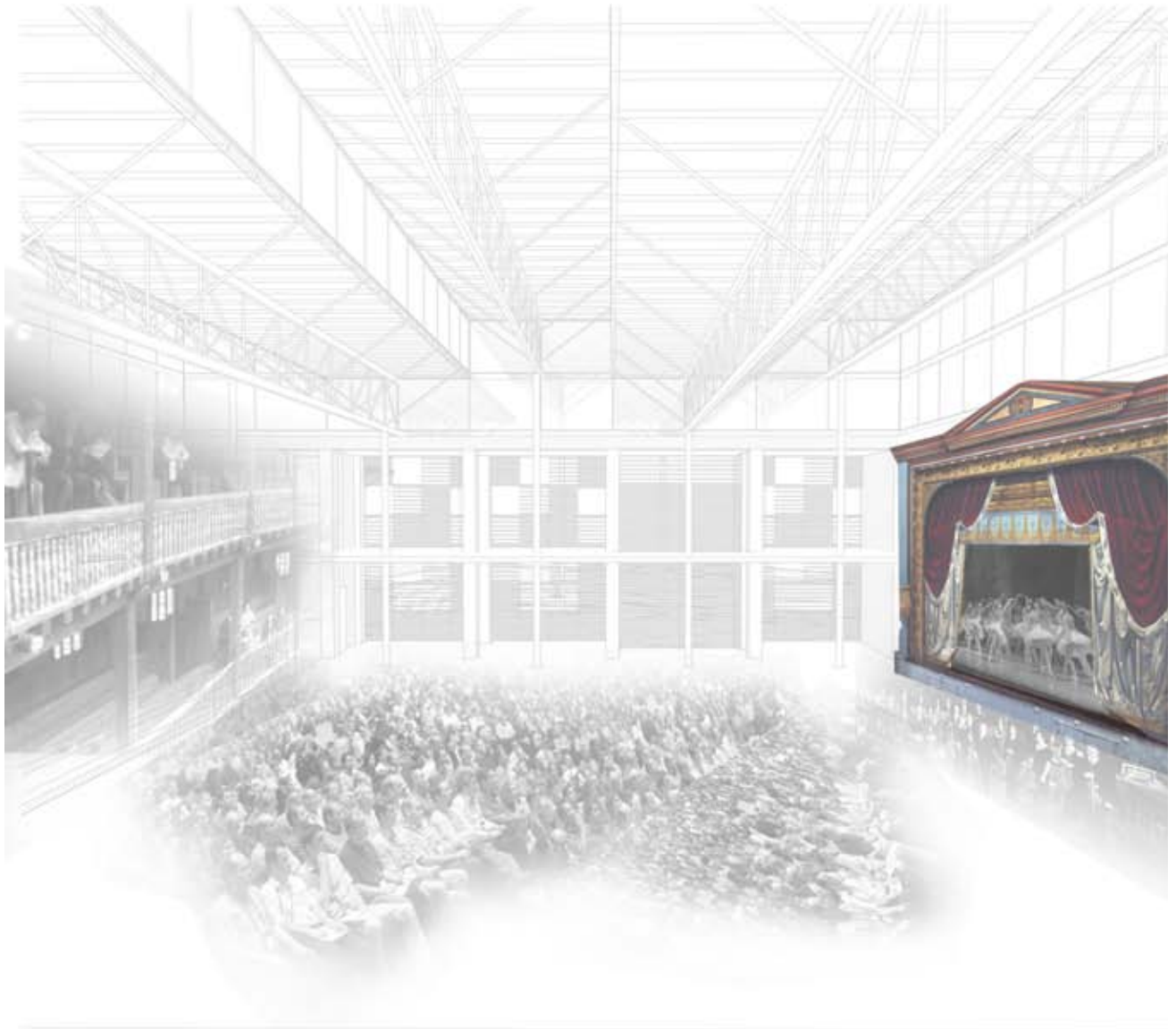
Diagramme illustrating programmatic possibilities: Concert.

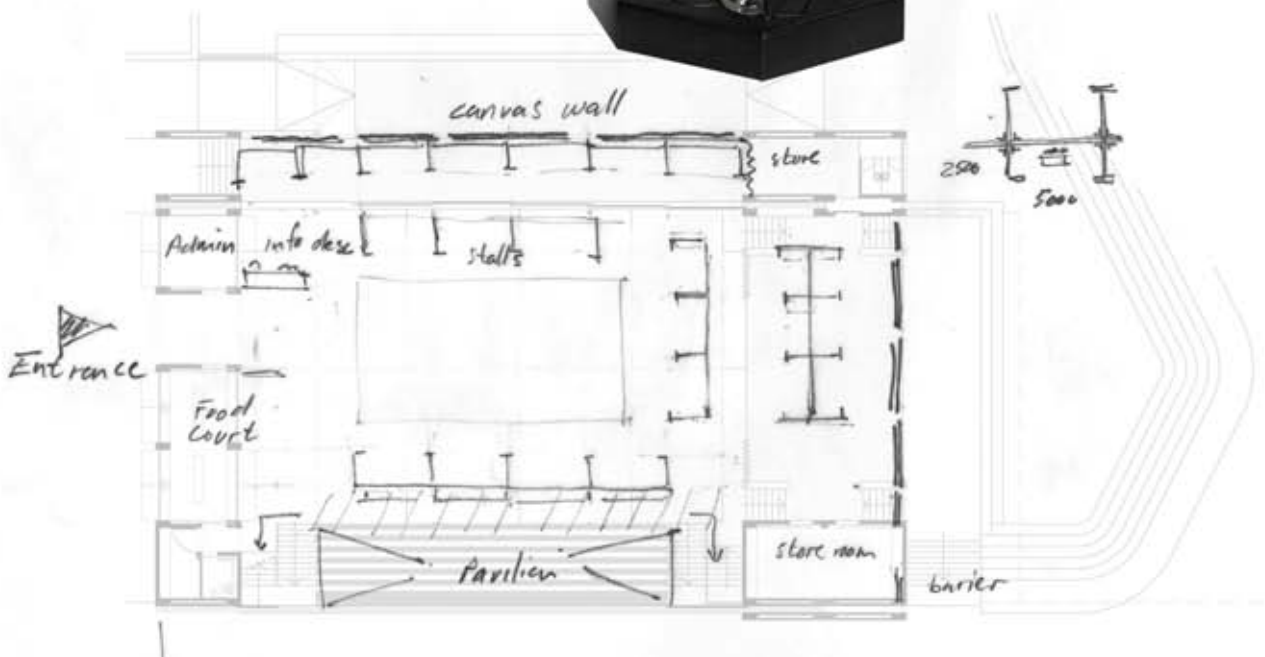
FIGURE 73 (next page)

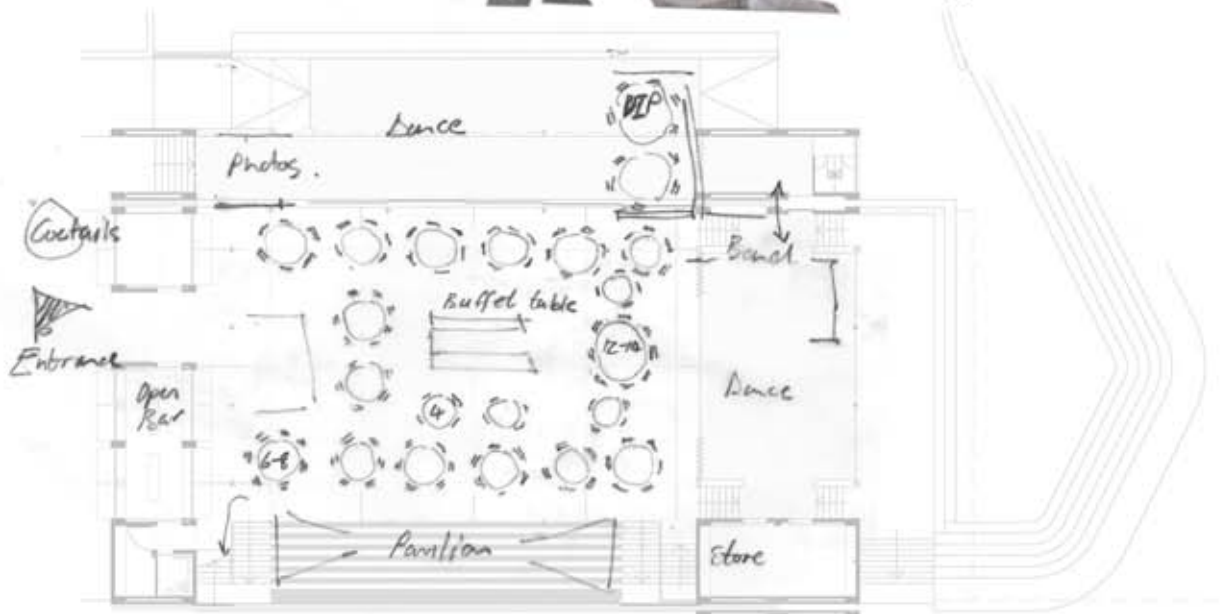
Diagramme illustrating programmatic possibilities: Exhibition.

FIGURE 74 (next page)

Diagramme illustrating programmatic possibilities: Entertainment.







8 DRAWINGS

Van der Waal and associates (1999) give a description of the surroundings before canalisation of the rivers.

Moving down the river, towards the present Lion Bridge, the area was densely covered with reeds and rushes, making a safe lair not only for lions, but also for jackals and hyenas whose roars and cries resounded nightly along the mountains.

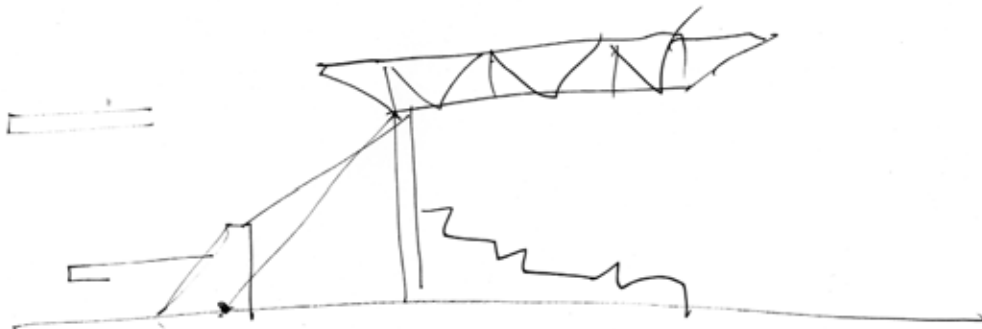
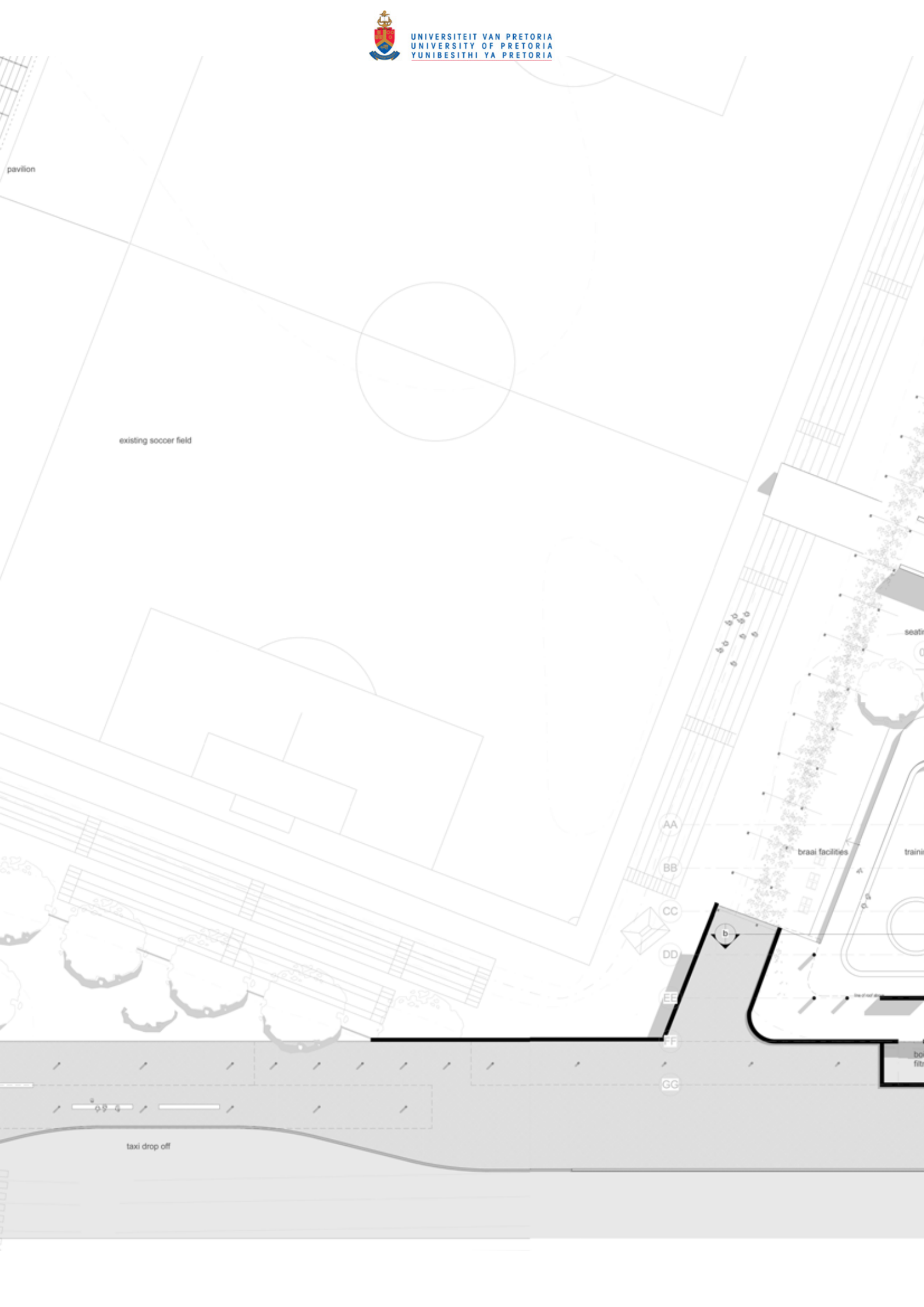
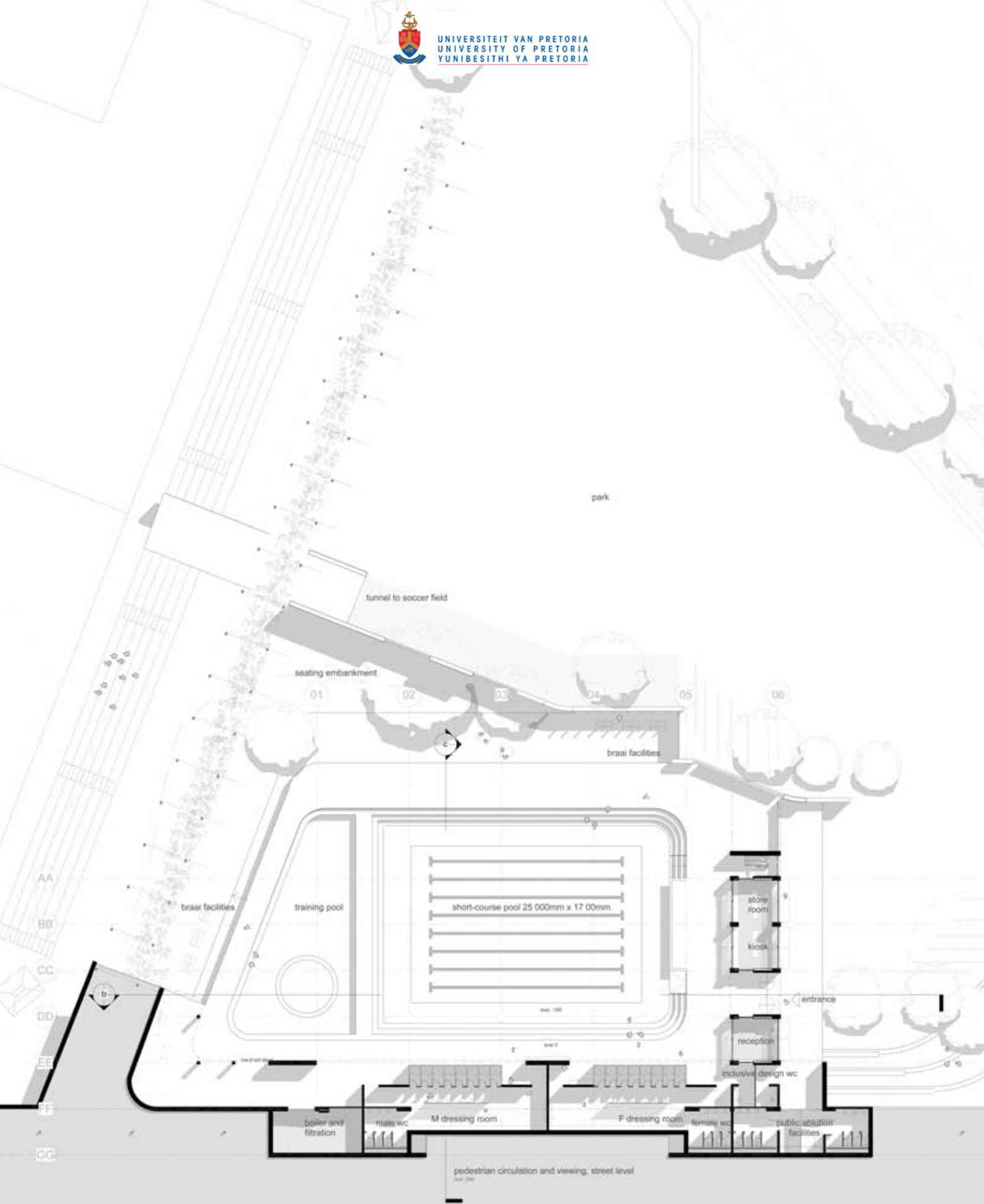


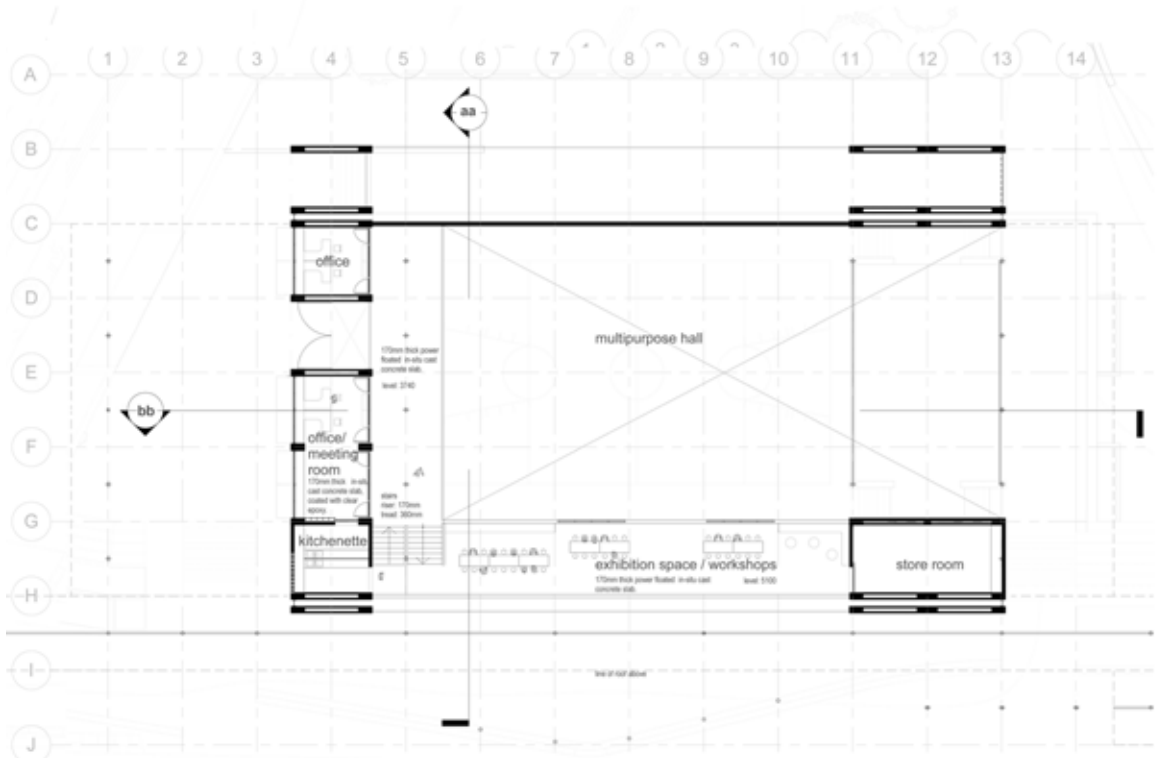
FIGURE 75
Pavilion profile.



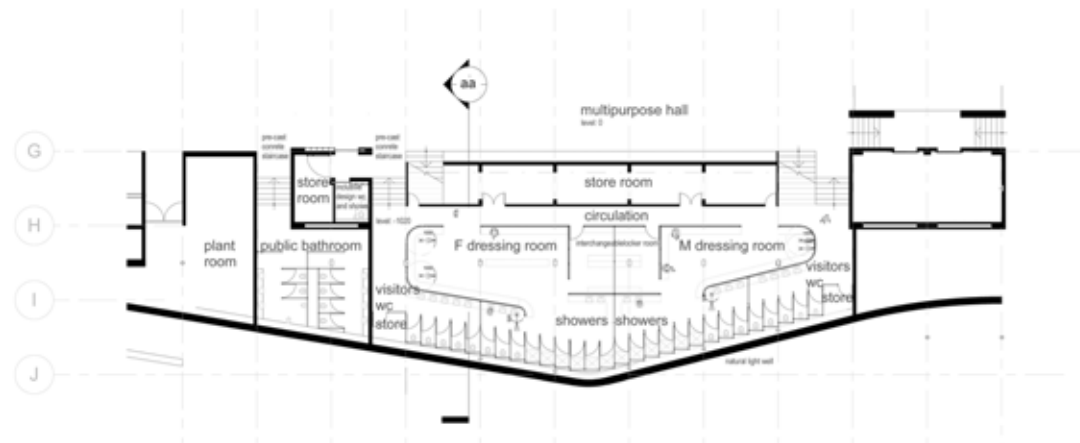




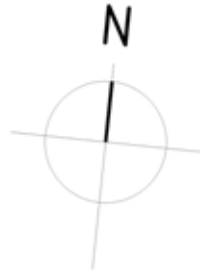
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first floor plan



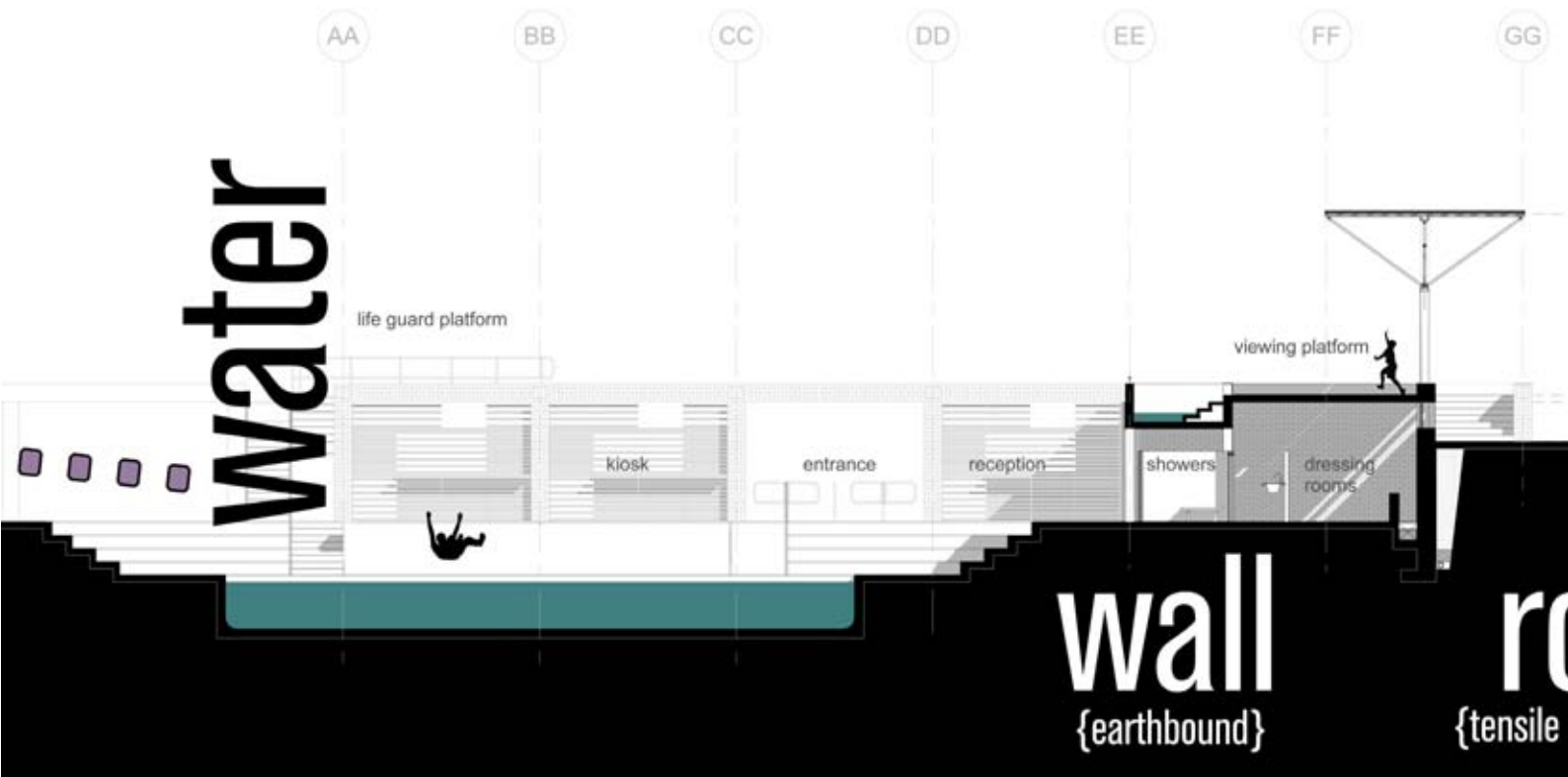
basement plan

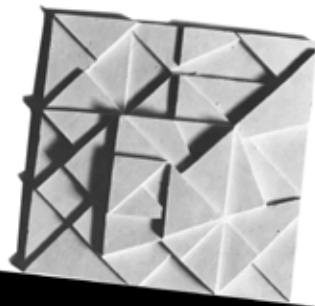


SECTION 3



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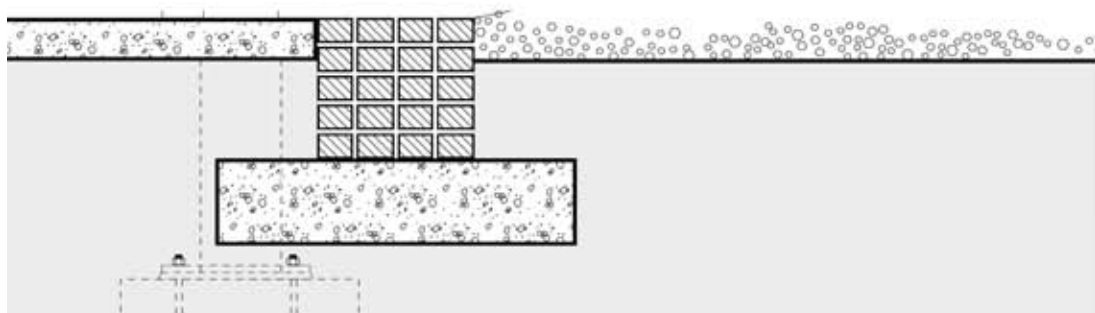
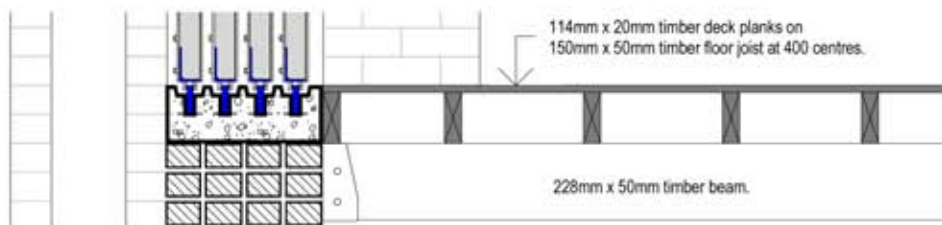
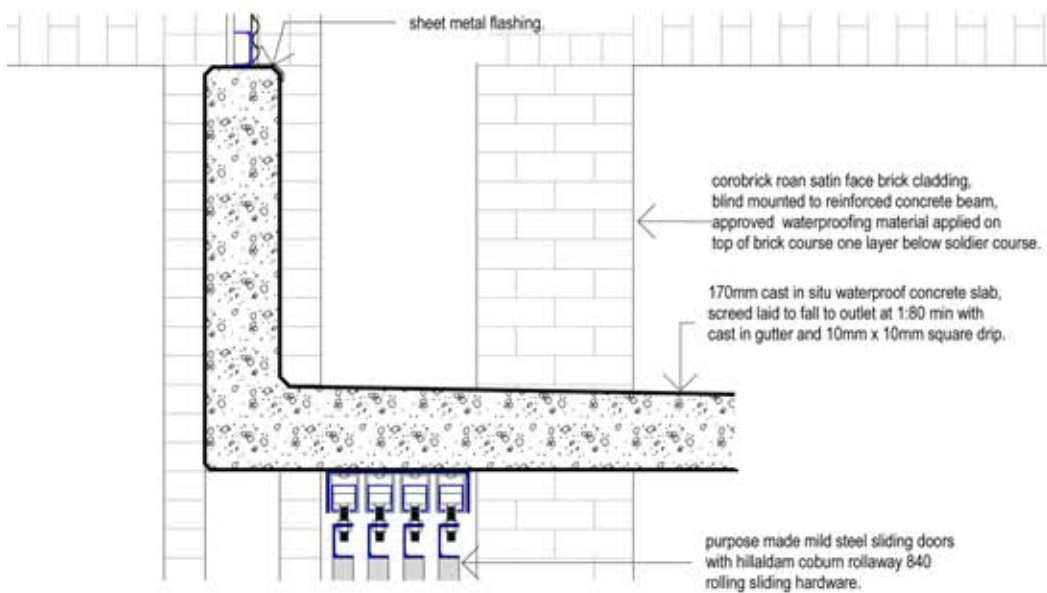
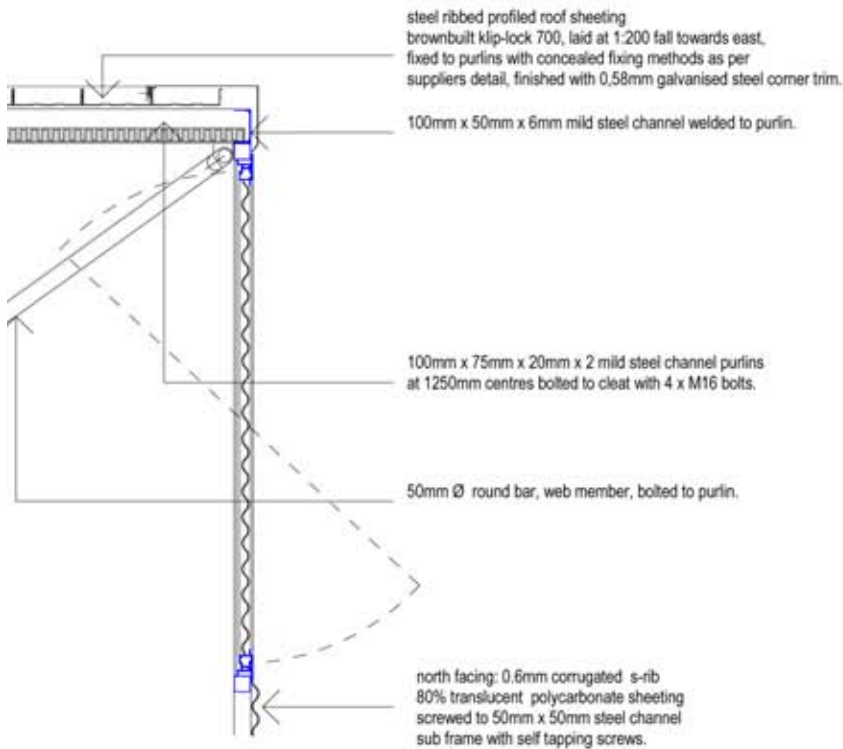




texture 

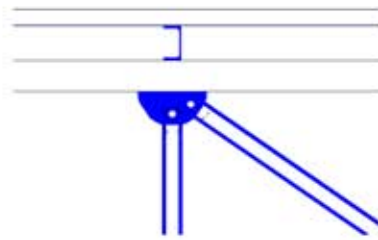
ooof of
{lightweight} {itweight}

surface
{sculpting the earth}

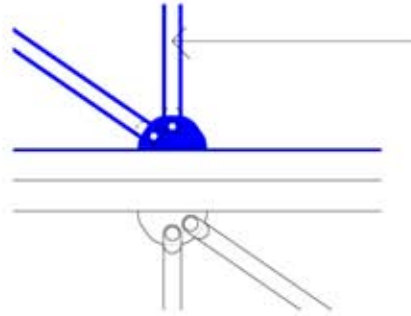


detail a

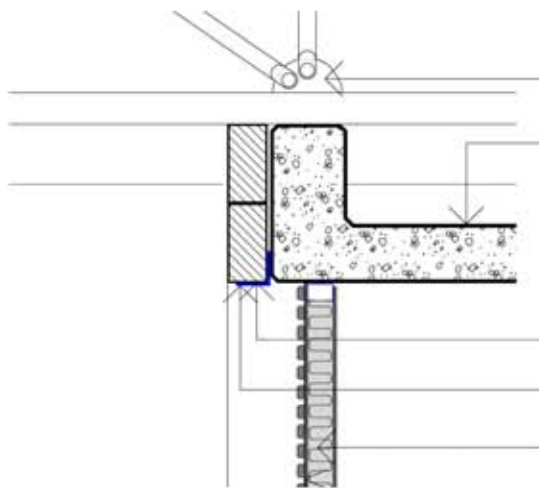
1:20



50mm Ø round bar, web member, bolted to purlin.



50mm Ø Mild steel hollow round section
pin jointed between gusset plates acc to ENG's
detail and spec.



10mm Thick mild steel gusset fixing plate welded to
truss acc to ENG's detail and spec.

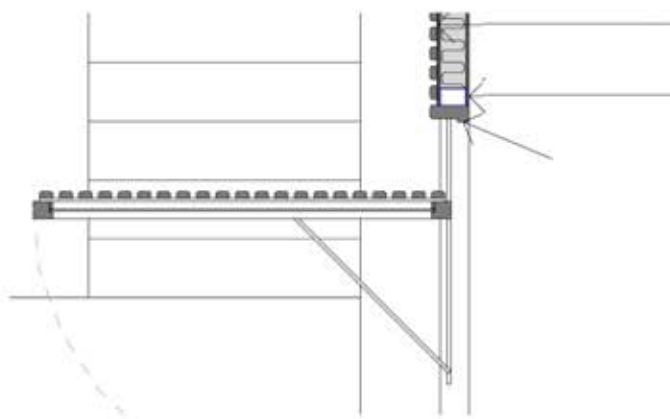
LAFARGE Ultra Waterproof RC Concrete slab and upstand
acc to ENG's design.

Blind mounted 100x100x8mm thick mild steel channel fixed to
concrete beam with chemical anchors to ENG's detail and spec.

Soldier course face brick exterior skin with flush joints.

75mm mineral fibre insulation.

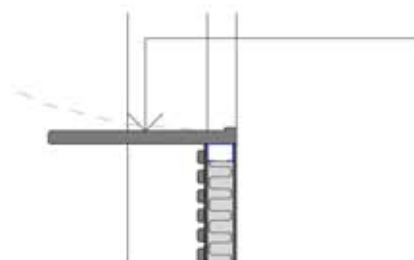
9mm Thick PG Bison commercial plywood fixed to
mild steel frame with self tapping screws. Painted with
Plascon Cashmere (Color: Orchid Bay GR-Y06).



20mm x 38mm Meranti slats fixed to drywall with counter sunk screws.
Plascon Glatex 8 varnish to all exterior new wood.

75mm x 50mm x 2mm cold-formed lipped-channel section frame.

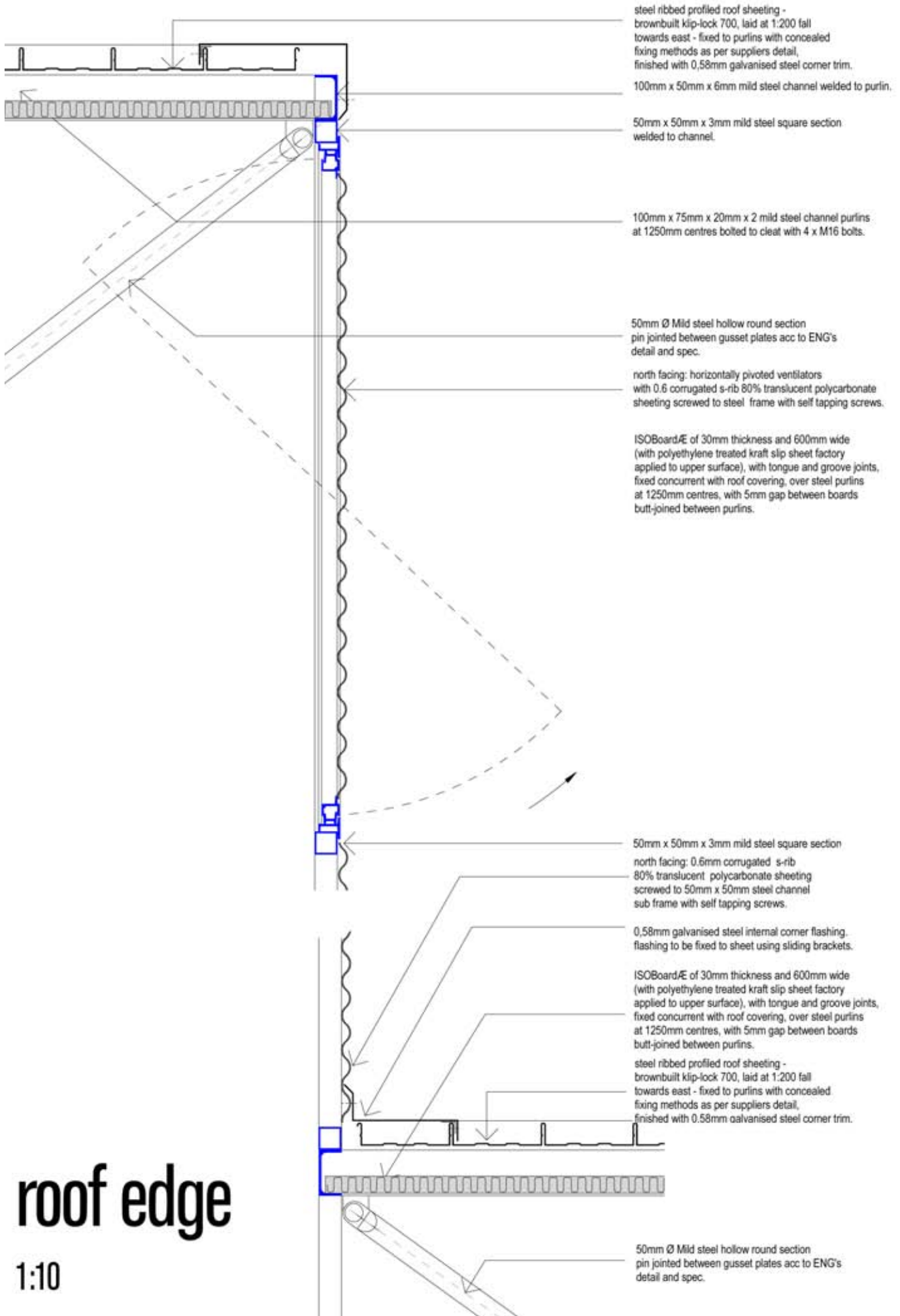
20mm x 38mm Meranti slats fixed to meranti top hung window frame.
Plascon Glatex 8 varnish to all exterior new wood.



38mm Thick meranti counter 1190mm above uffl.
Plascon Glatex 8 varnish to all exterior new wood.

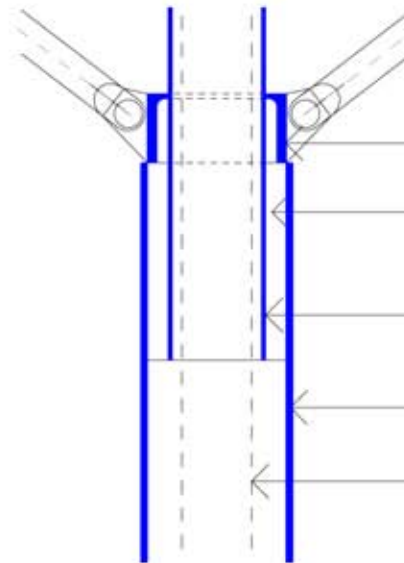
detail b

1:20



roof edge

1:10



200mm x 90mm x 30mm parallel flange channel chord.

150mm x 29mm thick mild steel spacers purpose made by specialist, welded to inside of steel column.

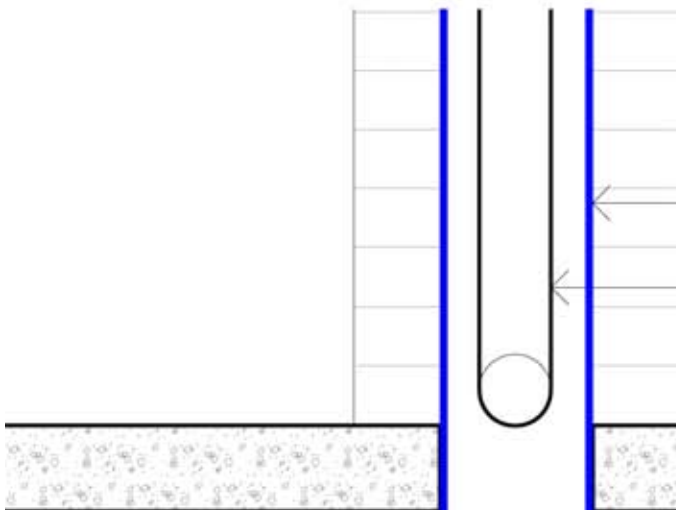
89mm Ø x 5mm steel round, web member, welded to parallel flange channel chord, secretly fixed to inside of column sleeve.

219mm Ø x 10mm steel structural column spaced 5 000mm apart.

100mm Ø HDPE down pipe concealed inside column, to sump.

column/truss fixing

1:10



219mm Ø x 10mm steel structural column spaced 5 000mm apart.

100mm Ø HDPE down pipe concealed inside column, to sump.

125mm power floated concrete surface bed.

steel footplate

grouting

adjustable pocket

20 Ø steel holding-down bolts

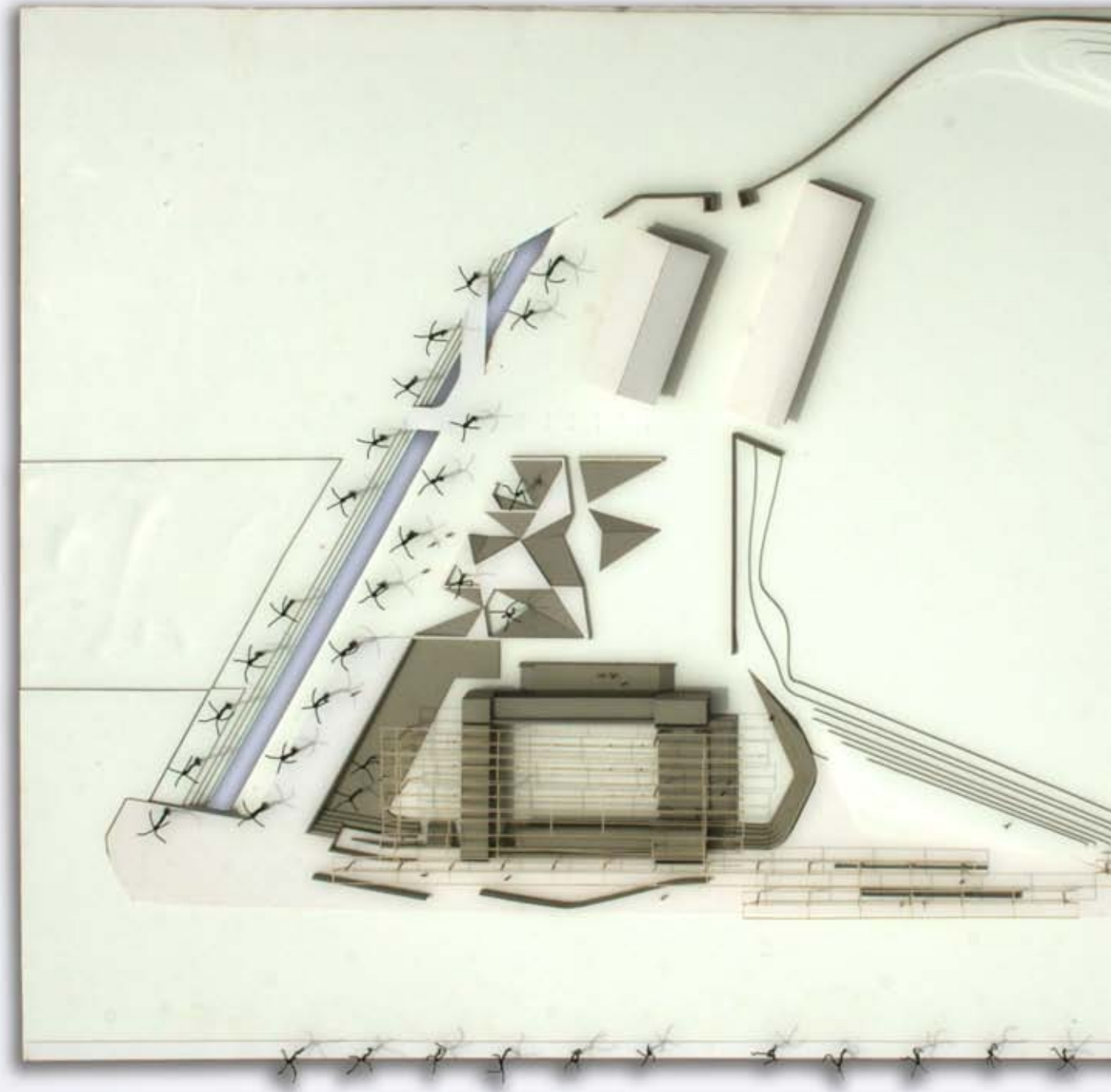
concrete stub column

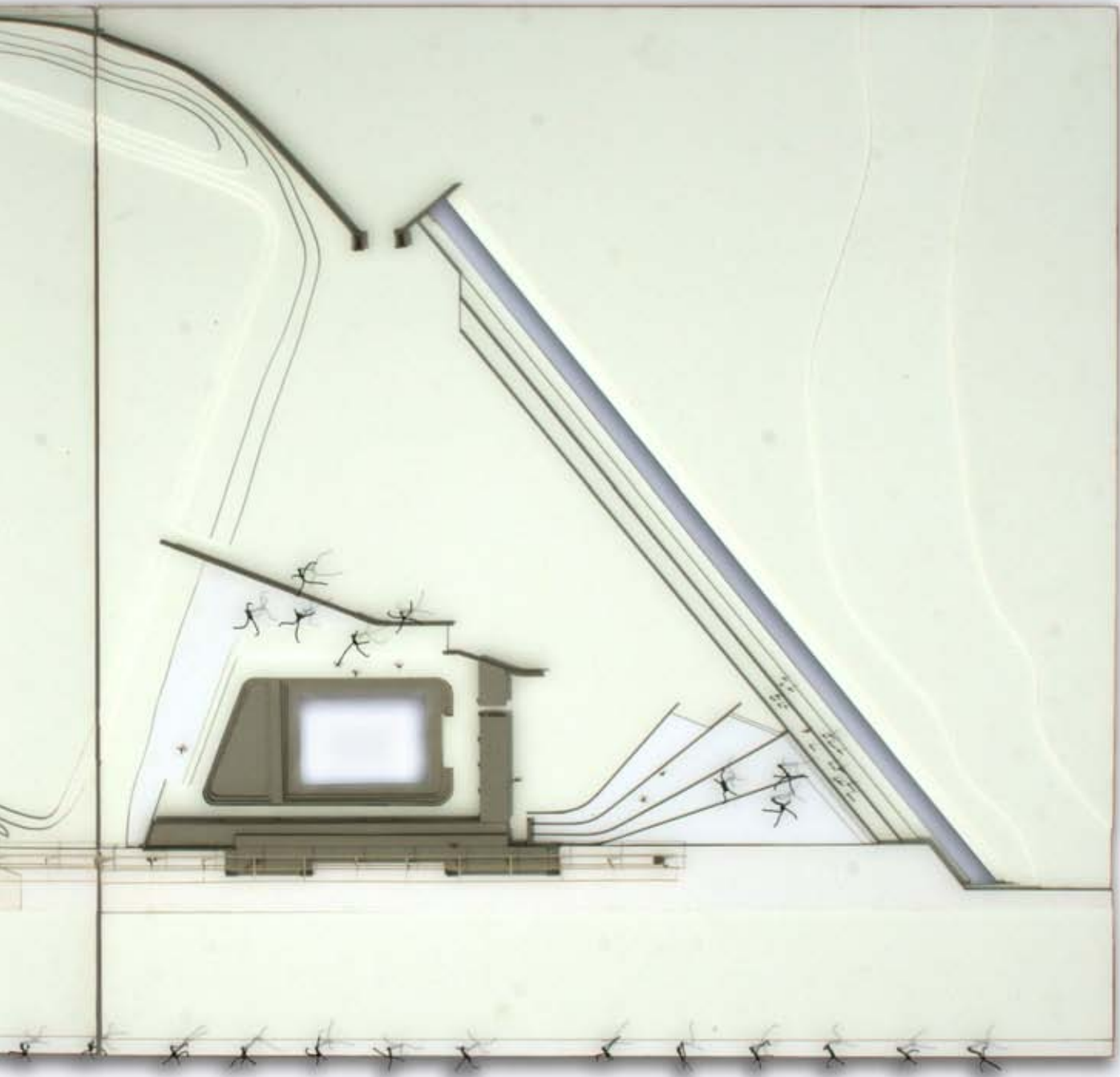
column footing

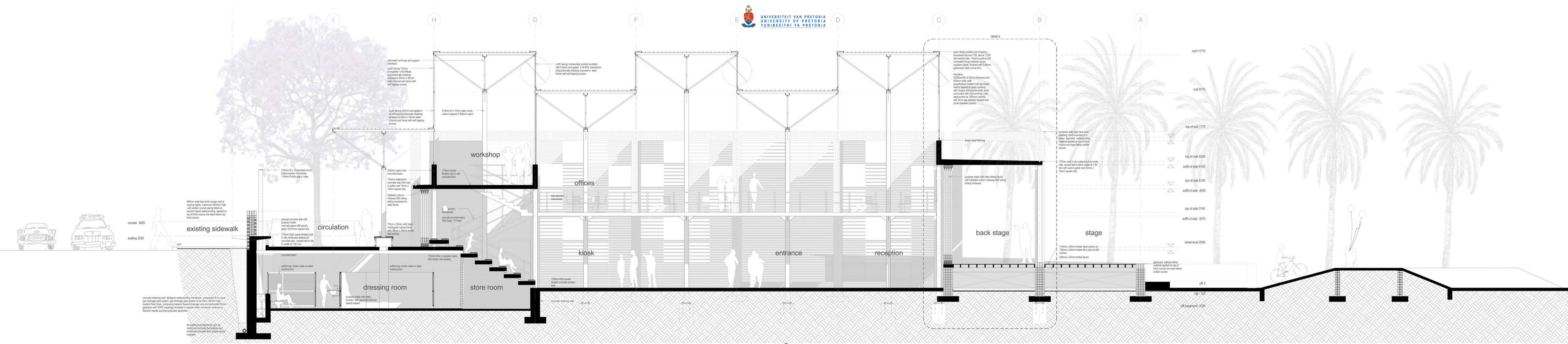
1:10

MODEL

PLAN OF HALL AND POOL





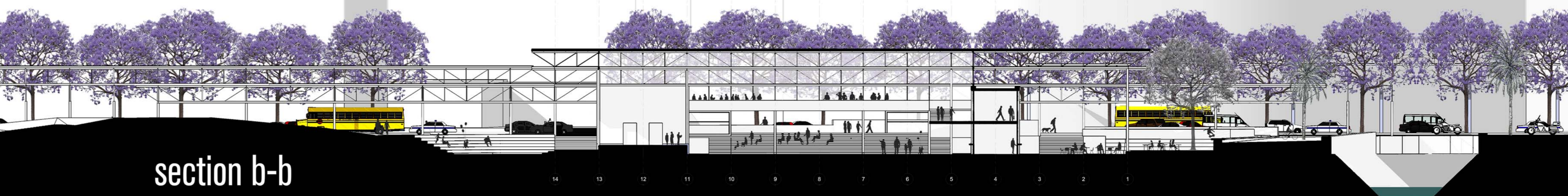
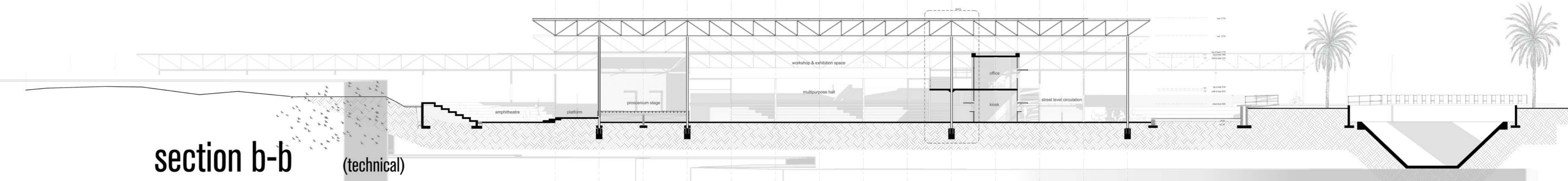
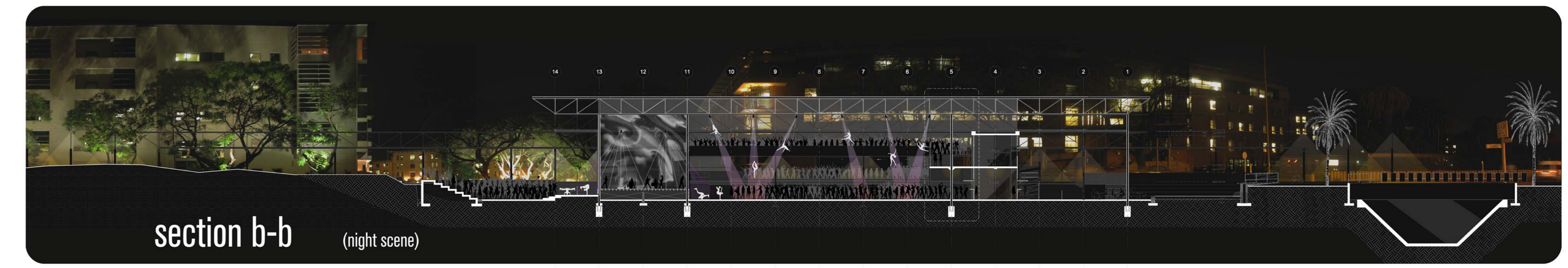


section a-a
1:100



eastern perspective section

western perspective section



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ADDENDUM

The study builds upon several more detailed studies.

The Apies River Urban Design Framework was completed in 1999. The plan was never taken to and approved by Council, but it contains valuable management tools to guide development along the Apies River. The aim of the Urban Design Framework is to provide solutions for the physical upgrading of the Apies River as part of an open space network and mechanisms for the effective management of development adjacent to the river.

The Marabastad Integrated Urban Design Framework was completed in 1999. The aim of the plan is to make proposals for the redevelopment of Marabastad.

The Tshwane Identity and Legibility Framework was completed in 2005. The plan was never taken to and approved by Council, but it contains a wealth of information in terms of creating a unique city from all aspects of development. The main objective of the Identity and Legibility Framework is to: explain the meaning of identity and legibility and promote the concept as integral part of building a unique city; define and identify what is of value to the city in terms of identity and legibility; and provide broad guidelines in order to protect and/or enhance these elements.

The Streetscape Design Guidelines for Different Types of Hard Urban Spaces was approved by Council in April 2005. The document provides urban design guidelines aimed at enhancing the multifunctionality, convenience, people-friendliness, appearance, attractiveness and image of Tshwane's public realm.

The Tshwane Open Space Framework (TOSF) was approved by Council in November 2005. The aim of the TOSF is to establish a thorough understanding on the intrinsic value of open space and to then de-

velop a visionary roadmap towards the creation of an exceptional open space Network for the city and its people. The main objectives are to: create a detailed data and information base on all open spaces within the metropolitan area, including conservation areas and strategically important open space resources as noted within the Gauteng Open Space Plan and the Gauteng Conservation Plan (C-Plan); establish the status of the CTMM's open-space resources as a vital and valuable physical and economic resource within the metropolitan area; develop an Open Space Network based on a defined vision, goals, principles, typologies and categories on metropolitan and regional scale; develop principles and policy statements as a basis for consistent and integrated decision-making by the local authority regarding issues affecting open space resources; provide principles and policy statements as a basis for informing all scales of land use and infrastructure planning and development; provide an institutional and management framework to ensure the effective and collaborative planning, implementation and administration of the Open Space Network; inform the acquisition and disposal of open space; and provide a framework within which development activities within the city comply with the National Environmental Management Amendment Act, 2004 (Act 8 of 2004).

The Tshwane Inner City Housing Strategy was approved by Council in 2006. The aim of the Strategy is to provide development and management guidelines for housing developments in the Tshwane Inner City. These guidelines are applicable to both the conversion of existing commercial buildings into residential units, and the construction of new housing. The aim is to ensure that the residential development that takes place in the Inner City is of an acceptable standard, makes a positive contribution to the overall urban environment, is sustainable and will enable people and their families to live fulfilled and stimulat-

ing lives in the Inner City.

The Tshwane Gateways was completed in 2006 and taken to Council early in 2007. The main purpose of this document is to provide a coordinated policy for the design of gateway features in the city. The objectives are to: provide a logical system of gateways for Tshwane, thus establishing an overall policy regarding gateway features in the city; provide a creative design approach in line with Tshwane's vision as "the leading international African capital city of excellence", thus establishing a coordinated approach and concept for the design of gateway features; and provide guidance for the detailed design of gateway features, thus elaborating on the detail regarding the architectural and landscape design of gateway features to ensure consistency in size, basic forms, materials and colour scheme.

The Inner City Local Open Space Plan (LOSP) was completed in 2006. The plan was submitted to and supported by the portfolio committee in June 2007. The purpose of the LOSP is to: establish a visionary plan indicating all properties to form part of the LOSP in the long term; create a graphically strong and aesthetically pleasing plan that can be used for marketing purposes; and provide management guidelines for managing development of open spaces, as well as development adjacent to it.

The Southern Inner City Gateway (2005) provides a Development Framework based on a Strategic Environmental Assessment for Groenkloof Nature Reserve, Fort Klapperkop, and the Voortrekker Monument / Fort Schanskop Nature Reserve.

Other documents include the following:

The Salvokop Development Framework (2003) with the aim to make proposals for the development and redevelopment of Salvokop in light of its locality at the entrance to Freedom Park.

Tshwane West Park (2006) with proposals to develop high density housing surrounding a multi-functional community open space to the west of the CBD.

The Mandela Development Corridor (2005) providing a framework that could guide development along Nelson Mandela Drive with proposals for precincts with different characteristics, a system of hard and soft open spaces and pedestrian circulation along the Apies River.

Tshwane Crossing (Kopanong) (2005) considers scenarios for the redevelopment of the Apies River - Church Street crossing and the Caledonian Sports Grounds.

Tshwane Inner City Development Strategy (2004) with the aim to make proposals for the (re)structuring and (re)positioning of the Inner

City within the City of Tshwane.

Re Kgabisa Tshwane - NDPW Programme (2005) with the aim to make proposals for the development of the Inner City in terms of the Urban Renewal Programme and to enhance the public environment surrounding national departmental offices.

Tshwane Integrated Transport Plan (2007) and Strategic Public Transport Network (2007).

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