

ARCHITECTURAL INTIMACY | AN URBAN RETREAT

where there is no vision, the people perish [The Bible, Hebrews]

ARCHITECTURAL INTIMACY - AN URBAN RETREAT

Submitted by Cobus Bothma (9901787)

Mentor: R van Rensburg

Study Leader: K Bakker

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Summary

The purpose of this study is to investigate ritual in order to establish an intimacy between architecture and its users. The liturgy of the Roman Catholic Church is used as a point of departure, but the study is especially concerned with personal secular ritual.

Intervention

The intervention will function as an urban retreat. It consists of a series of contemplative spaces that facilitate a spiritual journey. The Retreat is based on ideas surrounding the traditional Roman Catholic Convent, which informed the accommodation schedule to a great extent. The study recognizes the new approach of the Roman Catholic Religion, which entails a holistic ministry that plays an increasingly critical and social role. The Retreat will therefore function as a base for religious and social organizations to work from in the inner-city of Pretoria. The retreat will also offer limited social facilities such as counselling and seminar rooms.

Site

The site is situated in the inner-city of Pretoria, in the block directly north-east of Church Square. The site consists of two properties: the northern consists of the National Library of South Africa (NLSA), with the southern being a pan-handle erf that functions as a service courtyard for commercial ventures on Church Street. The Noordvaal Thoroughfare runs parallel to the site on its western edge, linking Church and Vermeulen Streets. The site exists unnoticed by pedestrians using the arcade, because of a boundary wall. Of further importance is the 2,8 m slope of the site from south to north over a distance of 140 m.

Design

The project directly addresses urban issues as well as spatial and emotional ones. The intervention is seen as part of a process of architectural proliferation. It takes the existing fabric and current conditions and rather than replacing them, creates a synthesis of elements so as to evolve a new urban condition; i.e. how to grow a piece of city rather than how you build it. Design decisions were influenced by Pallasmaa's ideas on fragile architecture: it is concerned with real sensory interaction instead of conceptual manifestations. Problems and opportunities are identified on a small scale and the response is focussed on these: it is an architecture that grows and opens up.

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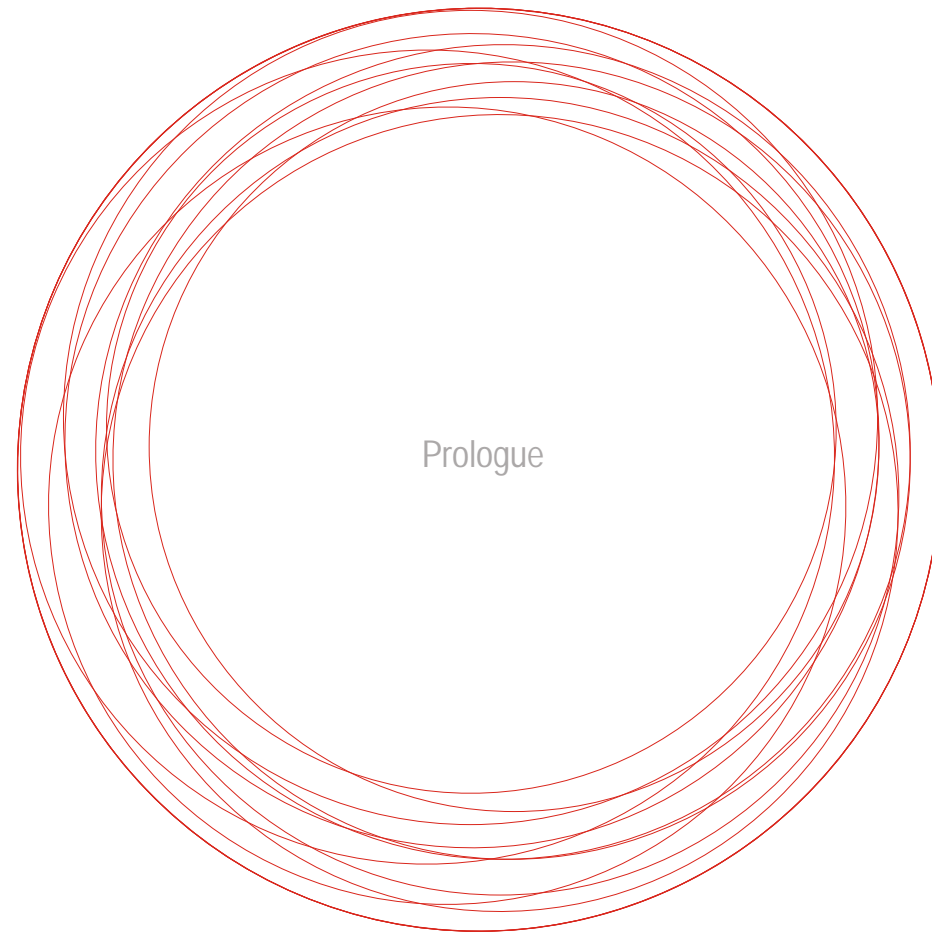
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Study proposal

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Understanding ritual

Anthropologists have argued that space is culturally produced as an integral part of material culture. It is intimately bound up in daily life, social activities, and personal rituals. The relationship between the social and the spatial is an interactive one, in which people make places and places make people [Borden, 2001; 5]. The relationship between individual and place acquires ritualistic characteristics.



When designing to initiate or accommodate ritual it becomes important to identify different types of ritual. Rituals can be divided into two major categories: public and personal. These two categories can then be further divided into sacred and secular ritual. This classification is necessary in order to establish a common ground that will inform a basis from which to start the intervention.

Of these categories, sacred public ritual is the most written about and the most easily identifiable. A definition of sacred public ritual could be: Ritual is formulaic spatiality carried out by groups of people who are conscious of its imperative or compulsory nature and who may or may not further inform this spatiality with spoken words [De Coppet, 1992: 18].

From this definition the following is established: ritual can't exist without movement; there must be an expression of spatial orientation and movement through social space. This action can only be understood as bodily movement toward or positioning with respect to other bodily movements and positions [De Coppet, 1992: 22]. This doesn't

imply only physical movement. The spatial idea of ritual must be extended to the human body, which can be regarded as subject to journeys and passages even when it remains in one position.

If ritual is fundamentally made up of movement, words are optional or arbitrarily replaceable. The widespread anthropological view is that words and actions are inseparably inscribed in each other; language penetrates the social [De Coppet, 1992: 12]. Movement was used to facilitate communication long before words formed part of human communicational skills. Ritual can exist without words but not without communication.

Ritual don't need to be structured precisely. No value is added or lost if a specific ritual isn't performed exactly as it was previously. Rituals are also always partly being made up as they are carried out [De Coppet, 1992:

19]. Error and confusion are part of ritual and every participant has his or her own reasons, viewpoints and motives for taking part in a ritual.

The relationship of rituals to each other and to participants and outsiders is important. The question arises if there exists an interdependence of the elements of a ritual and whether a line or lines can be drawn from one rite to another in a society's rituals. Different rituals or rites can be interlinked; often fragments of one ritual is found in another. This is explained through music; different human or instrumental voices answer each other in certain fugues and it is said that these voices enter in imitation [De Coppet, 1992: 32].

This thesis is especially concerned with personal secular ritual. The liturgy of the Roman Catholic Church is used as the structured form of ritual, which individuals can choose to partake in or only observe. Individuals make up their own rituals suggested by existing religious rituals or by intimate experiences suggested by the architecture. Ideas concerning movement, choice,

unexpected incidences, and legibility will inform the design process. The interaction of non-users with the architecture and their degree of ritual involvement will be investigated.



Images of Pretoria - in time

Distinct natural features, rivers and ridges influenced the development of the urban layout of Pretoria. Pretoria is very much a city in nature, but it has been neglected.

When one looks at the history of Pretoria and its surroundings, it can be gathered that its history includes a multitude of layers, cultures and influences. By deconstructing South African history as it is reflected in Pretoria, a layering of styles and materiality is discernable. These layers reflect the contexts in which they were created. The Pretoria central business district (CBD) may be considered as the hybrid metropolis, where new realities were added to the existing, creating a richer, more complex reality [König, 2002; 4].

The brick tradition inherited from the Dutch played a fundamental role in the construction of ZAR-buildings on Church Square (e.g. the Nederlandsche Bank and the Palace of Justice). The aesthetics of the square were altered as British buildings from the Baker School were erected to illustrate British identity and power (e.g. the Standard Bank and the Old Reserve Bank). The British buildings are characterized by monumental styles and the use of heavy materials, e.g. stone blocks.

When the Afrikaner gained power in 1948, a new materiality evolved as the Nationalists were ready to embrace the International Style. An Afrikaner Modernist aesthetic was created, incorporating the Dutch brick tradition into modernist facades (e.g. the Nedbank building in Church Street) [König, 2002; 4]. The Modernist tradition of Martienssen and the Transvaal group cannot be ignored either. This style was followed by the regionalist architecture of Norman Eaton. These buildings were progressive in style, if not in their use of materials [Bothma, 2000; 16].

Administrative buildings in Pretoria have a similar aesthetic, although less traditional materials were used as the Nationalists grew more self-assured, and where newer materials had proven their use over time [e.g. Wall cladding and curtain walls]. Unfortunately, most of these buildings were designed as 'object buildings', with little

consideration for the need of urban spaces in the city.

The city centre contains recently-built Post-Modern buildings, in which old and new materials are used in combination (e.g. the Sammy Marks Square with its red brick, concrete blocks, copper sheeting and IBR-roofing).

Architecture has a direct influence on space and the experience of everyday life. It is influenced by and is the visual manifestation of current tendencies and events characteristic of South Africa. In a time of insecurities and a search for correct, the excitement of living lies in processes and experiences - especially in a complex and multifaceted context such as South Africa. The temperate climate of Pretoria indicates an architecture that is environmentally responsive. This idea extends to the use of appropriate materials and technology.



3_ Images indicating different architectural styles contributing to the urban fabric of Pretoria. View from Church Square towards the Raadsaal and the Transvaal Provincial Administration. View from Church Street looking west.

Character

The city exhibits typical characteristics of an Apartheid City, with residential areas for the lower income black population located far from job opportunities and economic activities. The tendencies of urban sprawl and decentralisation are apparent in the current development of Pretoria. The central business district is acknowledged as a primary metropolitan activity node, with decentralisation of offices and retail from the CBD to Brooklyn, Hatfield and Menlyn [Capital Consortium, 1999; 5]. Decentralisation leads to the formation of edge cities.

South Africa is a country in the process of change. There is an ongoing process of integration of the third and first worlds, creating tension and energy. Pretoria proclaims to be part of South Africa, a country that conjures up images of vibrancy, textures, multiple layers of experience, instincts, living life to the full, the fight for survival, and subjection to the laws of Mother Nature. Opportunities should be created for the experience of and interaction among different cultures, which creates a vibrant energy.

In the past, residents of black residential areas utilised local retail facilities, but in recent years a greater utilisation of the CBD by these residents has occurred. An important influencing factor is the fact that the greater percentage of the regular users of the Inner City are dependent on public transport. This implies that there is continuous movement of pedestrians in the precinct, making it one of the areas in Pretoria which is more consistently lively and energetic by day.

The CBD contains retail, offices, service land uses and mixed activity areas. Informal trading is a new occurrence in the area. It is specifically successful along the pedestrianised area of Church Street and should be encouraged. Government and business institutions should exploit their role in the regeneration of the inner-city with new buildings that respond to existing problems (an opportunity was lost with the recent extension of the Reserve Bank).

The energy that used to be contained in the CBD region ought to be revived, instead of allowing the area to deteriorate and remain in a derelict state.



4_ Images of the 1988 Church Street (left and middle) and 1988 Sterland bomb explosions.

5_ Informal trading along Church Street, 2003.

Design Problem

In the city at this point in history differences are so numerous, each one competing for the consumer's attention, that they cancel each other out: all things are worthy of the same attention and nothing lasts [Scalbert, 2002: 59]. Abstract space tries to erase the individual characteristics of class, gender, ethnicity, sexuality, family relations, and age; everything becomes equal [Borden, 2001; 11]. Contemporary architecture is swayed by economic rationalism. There is no room for human emotion. Things are treated as consumer goods; they are manufactured, then disappear [Ando, 1991; 126]. Space of representation (lived experience) includes bodies imbued with culture and symbolism [Borden, 2001; 11].

The proposed intervention is seen as part of a process of architectural proliferation. It takes the existing fabric and current conditions and rather than replace them, creates a synthesis of elements so as to evolve a new urban condition; i.e. how to grow a piece of city, rather than to build it [Bullivant, 2002; 13]. An extension of this, is the idea of puncturing the city, where a number of small scale interventions occur to facilitate wider urban regeneration. Problems and opportunities are identified on a small scale, with a response that focus on them.

Part of this philosophy is to spend money where it counts; focusing on the surfaces people touch and see at close range [Bullivant, 2002; 13]. The city should bring together the micro-architectural and macro-planning scales, the everyday realm and the urban, inside and outside, work and non-work, the durable and ephemeral; it must be situated between the perceived and the lived [Borden, 2001; 11]. This strategy is extended to enhance the visual quality of pedestrian networks with attention to fine-grain built forms; users become more aware of the urban landscape.

Motivation

The custom of refraining from labour on certain occasions exists in many of the world's religions. Rest days are also commonly observed outside the Semitic area. Under these conditions, the cessation of labour merges into a cessation of all the usual activities. The day of rest becomes a day of abstinence and quiescence [Webster, 1916: I].

It might be thought that such observances, especially those which impose a period of rest, have a rationalistic basis and arise from man's need for relaxation and idleness as a relief from daily toil and the harsh conditions of existence. However, rest days have arisen chiefly as products of superstition or religious beliefs [Webster, 1916: II]. In the last few years this state of affairs has changed and today more people follow a holistic mind-body approach. The Retreat concedes this change and provides for this need with contemplative spaces in a religious context.

In his budget speech for 2003 the Minister of Finance, Trevor Manuel, stated that urban renewal requires greater business investment in the regeneration of inner city areas. He proposed that investment in refurbishment or construction of buildings in certain areas receives special treatment; taxpayers refurbishing a building within these designated zones will receive a 20% straight-line depreciation allowance over a 5 year period, and construction of new buildings will receive a 20% write-off in the first year and 5% a year for a further 16 years. This benefit will be available to owners as users of the building or to lessors/financiers of these investments [Manuel, 2003].

The Inner City contains a number of parks and open spaces, but they tend to be scattered, isolated, neglected and inaccessible. There is a need to create usable public open space. At the moment, open spaces tend to be mono-functional and in some instances blatantly synthetic and harsh (e.g. Sammy Marks Square). The proposed intervention is not seen as an exercise to create usable open space, but rather as an extension of that space.



6_ Historic photographs of Polley's Arcade, Koedoe Arcade and the Noordvaal Thoroughfare.

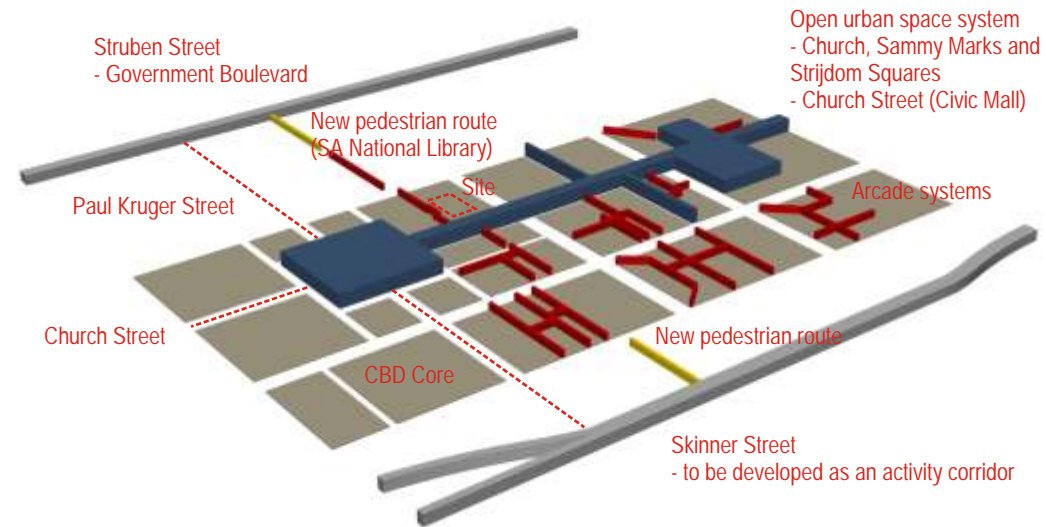
Direct urban influences

A number of the problems regarding the spatial experience of the city can be attributed to the high intensity of vehicle usage and the requirements of large numbers of private motorists. The needs of the large number of pedestrians are neglected to a great extent.

Street blocks in the CBD of Pretoria tend to be twice as long as those in Johannesburg. Unnecessarily long distances have to be crossed between north-south connecting routes. The urban fibre surrounding Church Street indicates a tendency towards north-south mid-block arcades increasing permeability in the Inner City. The resulting permeability is successful in certain areas, but a lack of cohesive planning has resulted in disorientation, confusion and dead ends in many areas.

Burlington Arcade and the Noordvaal Thoroughfare are successful as pedestrian routes and commercial areas. Both these arcades connect directly to the pedestrianised area of Church Street, which is a main east-west movement route. The mid sections of these arcades that are open to the sky, the large skylight in the Noordvaal Thoroughfare, and the generous height of the walkways, create arcades that are inviting. The success of these two arcades is further due to the variety of commercial practices that can be found in them. Arcades in the city have different levels of legibility; Koedoe and Polley's Arcades are examples where level changes and various entrances confuse pedestrians, while Burlington Arcade with a short and direct route is more pedestrian friendly (The exit can be seen from the entrance).

Arcades were also formed due to the fact that most erven in the CBD run longitudinally north to south, and the resultant frontage formed is insufficient for commercial use. The development of arcades improved the efficiency ratio of frontage to sidewalk.



7_ Diagram indicating the existing arcade and open space systems in the CBD Core. The diagram further indicates possible extensions of the arcade system, creating a pedestrian route from Skinner Street to Struben Street, that runs adjacent to the site.

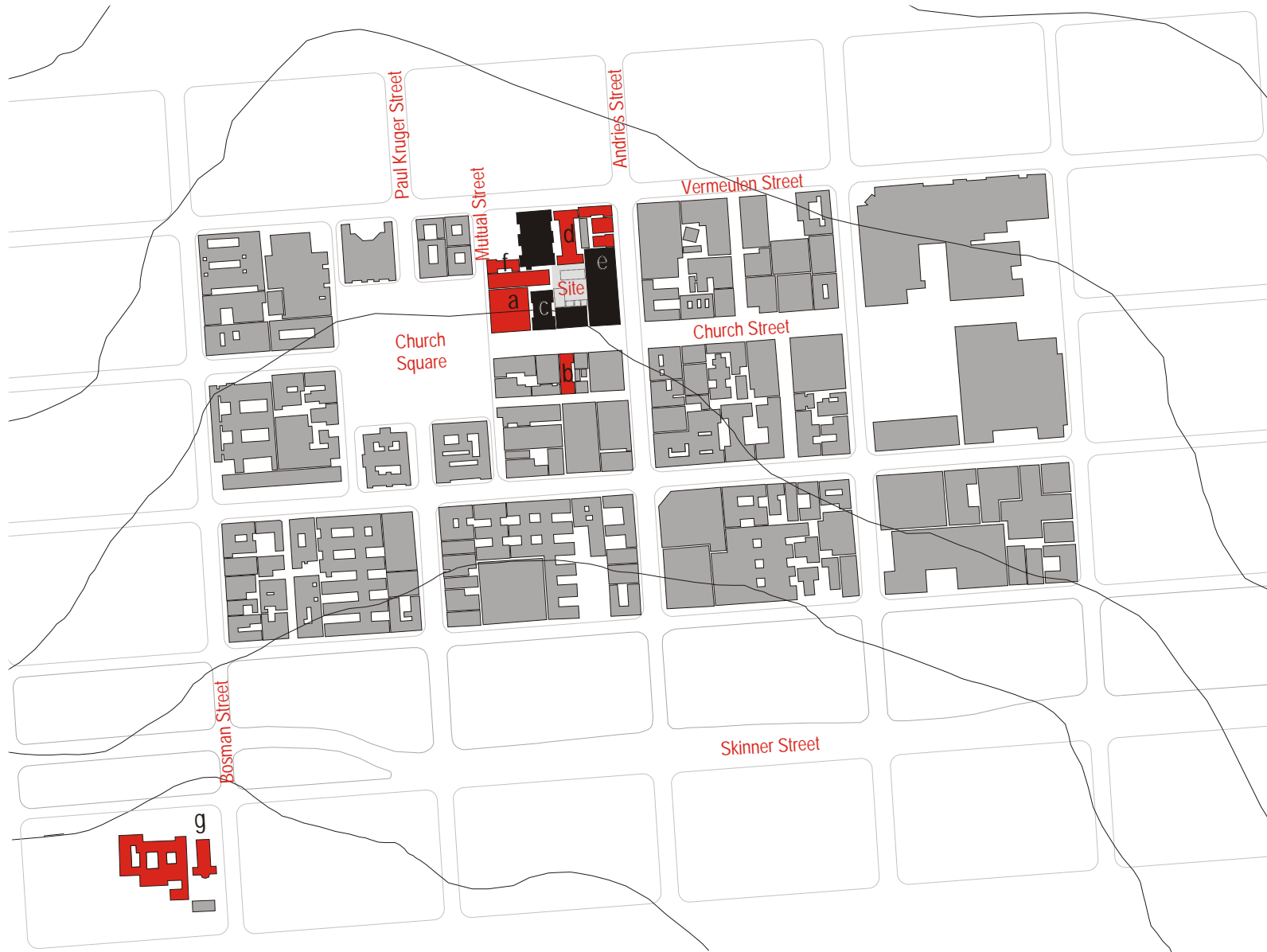
The Integrated Spatial Development Framework (ISDF) is a document compiled by the Capitol Consortium. The ISDF is aimed at providing a set of guidelines for the management and comprehension of the nature of the changing inner-city of Pretoria. Its aim is to focus the growth and development of the Inner City in a positive manner, which will deal with both realities and perceptions prevalent in the area. The ISDF allows for flexibility; it therefore cannot be seen as a blueprint, but rather as an innovative and dynamic tool.

From an urban design point of view, the principles to be followed are primarily those of a multi-functional approach toward streets and urban spaces, robust building forms, vitality through diversity, sustainable neighbourhood structures, continuity in open space, and environmental management.

The following principles are of specific importance regarding the precinct and the proposed redevelopment of the site:

- All interventions must be of an integrated nature. Redevelopment must place special emphasis on spatial and pedestrian qualities
- Promote a vibrant and lively city by providing facilities for a wide variety of possible users and uses
- Create an awareness of the environment by designing places with an understandable layout. This entails having the ability to see and understand what is around and what is ahead
- Ensure development that enhances the city-wide open space system by defining a continuous edge
- Establish a clear civic presence in the city by developing a civic spine, i.e. a series of links at mid-block between significant civic spaces, arcades, squares and building atriums

One of the major problems in the Inner-City is its short active life. The majority of its users reside in peripheral areas, far from the Inner City. Promoting the development and densification of residential support areas will help to ensure the extension of the active life of the city. The Urban Retreat is not seen in the traditional sense of housing but addresses the problem to an certain extent.



8_Figure ground study of CBD Core.

Church Square and Church Street - Civic Mall

Church Square is the most prominent and symbolically important public space in Pretoria. The edges of the square offer no street level interaction, due to the presence of a high number of state owned buildings whose only response to the square is their symbolic facades. The layout is symbolically successful but not functional; streets isolate large areas of the buildings [Botes, Le Roux, 1992; 54].

Church Street predates the history of Pretoria when, it served as a trade route between Delagoa Bay and Potchefstroom. Together with Paul Kruger Street, previously known as Market Street, it became the pivot and reference point for the grid layout of the inner city during Pretoria's formative years [Van Rensburg, 2001; 5]. Since then, Church Street, with its exceptional historic connotations, has become the commercial artery of the city, at the very heart of the city centre and running the length of the city.

A section of Church Street, between Prinsloo Street and Church Square, was pedestrianised in an attempt to revive the inner city. This area is known as Civic Mall and is traversed by extensive pedestrian traffic during the daytime. Church Street has a short active life; recent recycling of office space into residential units, in the John Orrs and Kerkade buildings, started to address this problem. Informal traders are concentrated around this part of Church Street. There is a definite need and potential for increased commercial activity in the area.

Moving west on the walkway created in Church Street, a rich historic and vibrant fabric unfolds.

The First National Bank Building (a) (SEE FIG. 8) forms part of the north-eastern edge of Church Square. This eight-storey building was completed in 1939, and was then known as Barclays Bank. The architect was Gordon Leith. Materials used for the walls are sandstone and granite. The building forms a strong corner to the square, recalling the architectural language already used on other parts of the square, by the use of giant columns on the first floor, the corner pavilion, the materials employed, and the fact that the main building rests on a podium (SEE FIG. 9) [Botes, Le Roux, 1992; 72].

Burlington House (b) (SEE FIG. 8) is situated on Church Street, and contains an arcade connecting Bureau Lane with Church Street. The building was completed by Gordon Ellis in 1934 as one of the first commercial buildings in Pretoria. Burlington House shows a combination of styles, i.e. Art Deco, Art Nouveau and Modernism. The use of granite and a tidy facade gives the building a sense of stateliness, that starts to compete, also in scale, with the abundance of state architecture that surrounds it (SEE FIG. 9).

The biggest contribution made by the building to the architecture and urbanism of the inner city is its arcade. It marks the beginning of an arcade system which continues with Koedoe Arcade to the south and the Noordvaal Thoroughfare to the north. Entrance to the arcade is marked by a high street roof. The arcade was designed to inform users of the building's main entrance which is situated within the arcade. Noteworthy are the large shop fronts, produced by Frederick Sage & Co, which are made of brass [Botes, Le Roux, 1992; 85]. The middle section of the arcade is open to the sky, a fact which contributes to the success of the arcade.

The Noordvaal Thoroughfare (c) (SEE FIG. 8) is situated on the northern side of Church Street, directly opposite Burlington House. Office buildings form the northern and southern sections of the arcade. An older office building, of which the main facade is on Church Square, forms the western edge. On ground level this edge consists of similar copper shop fronts to those of Burlington House (SEE FIG. 10). When seen from the entrances to the arcade, only glimpses of this softer interior is possible.



9_ First National Bank, Burlington House, SA National Library, Old Mutual Building.

Vermeulen and Andries Streets

The SA National Library (d) (SEE FIG. 8) is situated on the corner of Andries and Vermeulen Streets. The complex is made up of five neighbouring buildings which form the northern edge of the proposed site.

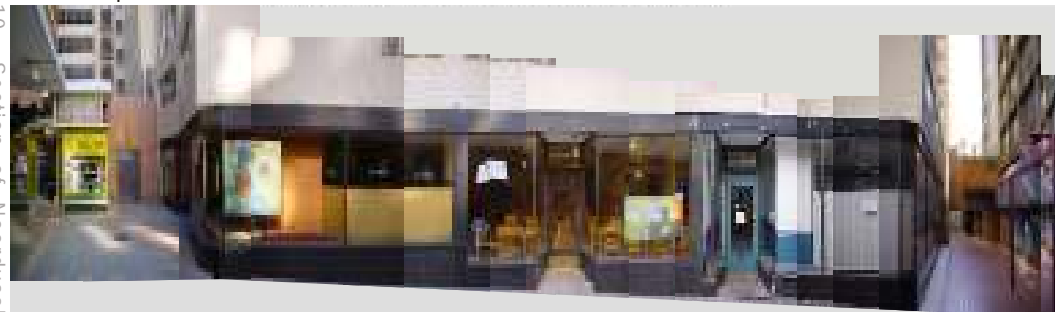
The building directly north of the site used to be the Extra-Curricular Building of the University of Pretoria and which became the State Library. It was constructed in 1918 - 1919 by the Public Works Department (PWD), with several extensions done to attain its current state. The building is classically symmetrical and adorned with eclectic detail [Botes, Le Roux, 1992; 72]. This three-storey building is stepped back from the street edge and makes no attempt to engage with pedestrian or vehicular movement along Vermeulen Street; it is unnoticeable within the city block.

The southern most building in Andries Street is a double storey with a central rounded gable. The building has historical value and adds a religious continuity to the context of the site. It was built in 1899 as a Baptist Church, but in 1933 it was sold to the State. The building responds to pedestrian movement along Andries Street with columns and a street roof [Botes, Le Roux, 1992; 72].

None of these buildings were designed to accommodate a library or its associated functions, which is the main reason why the SA National Library is in the process of relocating. An opportunity exists for the future use of these buildings to be more pedestrian orientated and to act as an extension of Church Street Mall.

A new site was identified on the corner of Struben and Andries Streets, which forms part of the ISDF's proposal for establishing government institutions along Struben street (Government Avenue) [Capitol Consortium, 1999; 48]. The design for the new building, by Jeremie Malan, proposes a pedestrian walkway mid-block between Struben and Proes Streets; this, together with the arcade system already in place, will effectively establish a pedestrian route between Struben and Skinner Streets (SEE FIG. 9).

10_ Section of Noordvaal
Thoroughfare, with copper shop
fronts, formed by the back of
Prudential Assurance.



The Old Mutual Building (e) (SEE FIG. 8) on the corner of Andries and Church Streets is a modern office block. An 18-storey tower rest on top of a podium. The podium consists of small commercial enterprises on the ground floor, with three levels of parking above. It forms a 12m high off-shutter wall with the neighbouring site, runs the length of the site and has no openings. The importance of the tower in relation to the site is the privacy consideration it poses and the shadow it throws on the site (SEE FIG. 9).

Mutual Lane

Mutual Lane forms the eastern street edge of Church Square. The eastern facade is formed by the First National Bank Building (SEE ABOVE), Prudential Assurance and the Reserve Bank offices.

The Reserve Bank Offices (f) (SEE FIG. 8) were built in 1930, designed by either Collett or Gordon Ellis. The building is a rectangular double storey, constructed mainly of red Kirkness bricks, and has a steep clay tile roof. Window frames are made from Oregon Pine. Of note is that the entrance to the main hall and the stairway is not placed centrally, but is situated on the right-hand corner of the building (as seen at the Old Netherlands Bank) [Botes, Le Roux, 1992; 17]. The Building is currently used as offices for a law firm (SEE FIG. 11).

The building is of historical value; it forms part of the initiative taken in the 20's to strengthen the Afrikaner economy and culture. It was built as a banking institution, Ons Eerste Volksbank, which was one of many similar institutions on Church Square, forming the centre of Transvaal banking [Botes, Le Roux, 1992; 17].

The site of the Reserve Bank offices stretches all the way up to Vermeulen Street, but the building only comprises a small part of the southern edge of the site. The remaining part of the site is fenced-off, with parking spaces for offices. It causes a break in the continuous urban fabric as experienced in the surroundings. This is one of the most important unused pockets that exists in the CBD, with great potential for future development and regeneration of the inner city.

Skinner Street

Skinner Street facilitates mainly east-west vehicular movement through the CBD. Part of the ISDF's proposal is to upgrade this movement route, defining it as an activity corridor. This includes establishing built-to-lines and allowing densification and development of the street edges to define the street space [Capitol Consortium, 1999; 52].

The importance of Skinner Street concerning the proposed intervention is the fact that a Roman Catholic Cathedral is located on its southern edge, and the possibility exists of a pedestrian route connecting it to Struben Street (Government Avenue), that runs adjacent to the proposed site (SEE FIG. 7).

The Cathedral of the Sacred Heart and Loreto Convent (g) (SEE FIG. 8) are situated on the corner of Bosman and Skinner Streets. The cathedral is set back from the corner to form a small open space in front of it and a small walled garden along Bosman Street. The first part of the Cathedral (designed by B J Clinch) was completed in 1932. The current northern facade was completed in 1965 by Hussey and Van Rensburg. The exterior walls are clad in terrazzo tiles, while the interior walls are red sandstone. The building is of great historical value and acts as an urban landmark in Skinner Street (SEE FIG. 11) [Botes, Le Roux, 1992; 17].

The importance of the Cathedral lies both in the fact that it functions as the only Cathedral in Pretoria, and also in its proximity to the proposed site. The programme for the project includes a small chapel which will be used mainly by the subjects of the retreat. The Cathedral will be used to accommodate larger gatherings.

The first part of the convent was completed in 1878. The newest part of the building, finished in terrazzo, was completed in 1962 by Van Rensburg. The original building now forms part of an extensive complex, consisting of numerous courtyards and buildings.

Currently the largest part of the convent is operated as a school. The number of Sisters in the Convent has reduced to only five. The Sisters do not play a prophetic or critical social role in the inner city, although they are ideally situated for this. The need for a structure that could fulfill this role exists in the CBD.

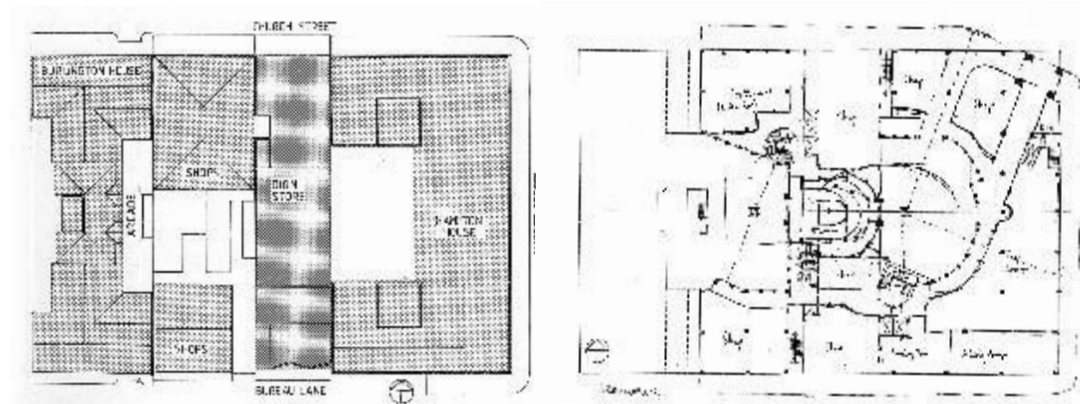
11_ Old Reserve Bank Offices, Prudential Assurance, and Cathedral of the Sacred Heart.



Open space in mid-block interventions:

A spatial analysis, based on figure-ground studies, indicates that the interiors of many of the blocks in the CBD precinct tend to be soft. Individual developments should determine if they are to provide movement routes or semi-public spaces. Mid-block interventions have the potential to either create public space, or enclose pockets of urban space. Existing pockets are enclosed to heighten the definition of existing public spaces and to create semi-public or private spaces in their interiors.

A thesis by Christoph Malan, *Tension and Reconciliation*, creates two public spaces on a site where two semi-public pockets existed. The site is situated on the corner of Church and Andries Streets in Central Pretoria. A under-utilised commercial building, the Old Dion building, runs solidly across the full length of the site; creating a barrier that divides the site into two distinctive parts. To the east lies Hamilton house, forming a courtyard with the Dion building, and to the west lies Burlington House and Arcade. What is significant on the site, is the eastern orientation of the main facade of Burlington House. The impact of this facade is so strong, it practically demands that an urban space be created between Burlington House and the Dion building [Malan, 1986: 7].

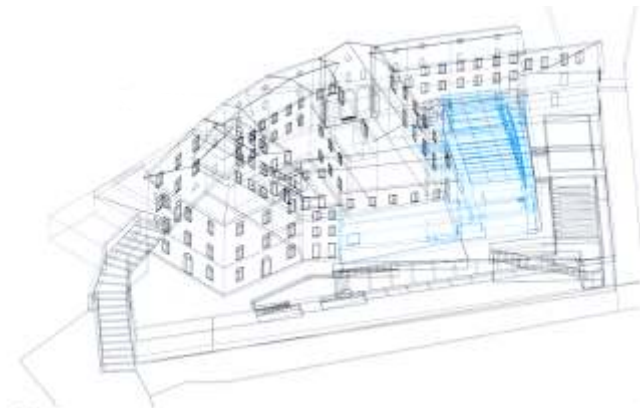


12_ Plan of study area situated to the south of Church Street. Ground floor plan of proposed design, forming two plazas.

In the final design, smaller commercial buildings were altered to expose the facade of Burlington House and to create a large open space which connects to the arcade. A new building was designed on the site of Hamilton House, forming a plaza with arcades connecting to Church Street and the public space to the west. A hierarchical network of public spaces exists in the CBD between Church Square and Sammy Marks Square, and between Church Street and the arcade networks. The thesis is successful in realising the need for public space, however, the size of the public space required lies somewhere between the size of Church Street and an arcade.

The extension of a Graduate School of the University of Sienna (2002) by Andrea Millani is an example where an existing pocket was enclosed. The Graduate School was inserted within the monastery of Santa Chiara and grafted onto the remains of the Palazzo Contucci and its related 20th-century extensions. The graduate school is enveloped in enclosing walls which have stood since the middle ages.

The volume of this extension goes right up to its surrounding envelope, but does however also provide intimate public spaces. There is a strong relationship between interior and exterior; circulation routes throughout the school extend outdoors in a pedestrian circuit. This is taken further where an entrance was widened by removing an original stair block, creating an atrium that provides simple, unified access. Milani's design avoids tipping solid into void, mistaking presence for absence or vice versa [Savi, 2003; 82].



13_ Axonometric view of intervention. Passageways, winding between old and new, surround the auditorium..

The Queen Street Mosque is a noteworthy pocket that exists in the CBD; not only because of its historical value, but also because of its scale and the open spaces it provides. The juxtaposition of the Mosque onto a Cartesian city grid, creates small intimate spaces on the edges. The wash area is open on ground level, but at the same time also very private. Views from neighbouring offices are controlled through a raised roof and a series of arches.

In the Opera Plaza an outside seating area for a fast food establishment is tucked in between office buildings. This space receives little direct sunlight, but is successful because of a climber growing on the side of an adjacent building. The climber is seen from Pretorius Street, suggesting the possibility of a space behind it. The use of vegetation to enliven small open spaces must be considered.



14_ View of Queen Street Mosque, washing area. Opera Plaza with climber on adjacent building.

Site - Place

The site is seen as a room in the city, carved out of the city fabric and defined by its four sides. It currently functions as a service courtyard to commercial buildings on Church Street. The choice of site was greatly influenced by the idea of accommodating architecture in what might be termed lost space. The site is not recognised as suitable for building purposes and appears totally secluded, situated in the heart of a CBD city block. The secrecy of this site is appealing; steeped in contrasts like noise and silence, a furious pace and the choice of pace.

The Noord Vaal Thoroughfare situated on the western edge of the site is an arcade connecting Vermeulen and Church Streets. The site is physically cut off from the middle section of this arcade by only a boundary wall. Visual and pedestrian access to the site will be established from the arcade, strengthening the notion of seclusion, and acknowledging pedestrians as its primary users. The adjacency of transport nodes ensures that it is easily accessible to users of public transport.

The site is in an area well known for its rich historic fabric, which includes Paul Kruger's statue, the Palace of Justice, the Old Netherlands Bank Building, Capitol Theatre, Old Raadsaal, Tudor Chambers and Church Square. The surrounding area contains the traditional CBD uses of retail, offices and services. It is in a high-density built-up area with strong government and municipal functions.

15_ Off-shutter concrete boundary wall of the Old Mutual Building. Southern Facade of the SA National Library Building. Future connection to the Noord Vaal Thoroughfare.

16_ Vehicular access from Vermeulen Street. View of informal traders down Church Street. Interior view of the Noordvaal Thoroughfare.

17_ Entrance to the Noord vaal Thoroughfare on Church Street. View of Church Street from Burlington Arcade. Interior view of Burlington Arcade.



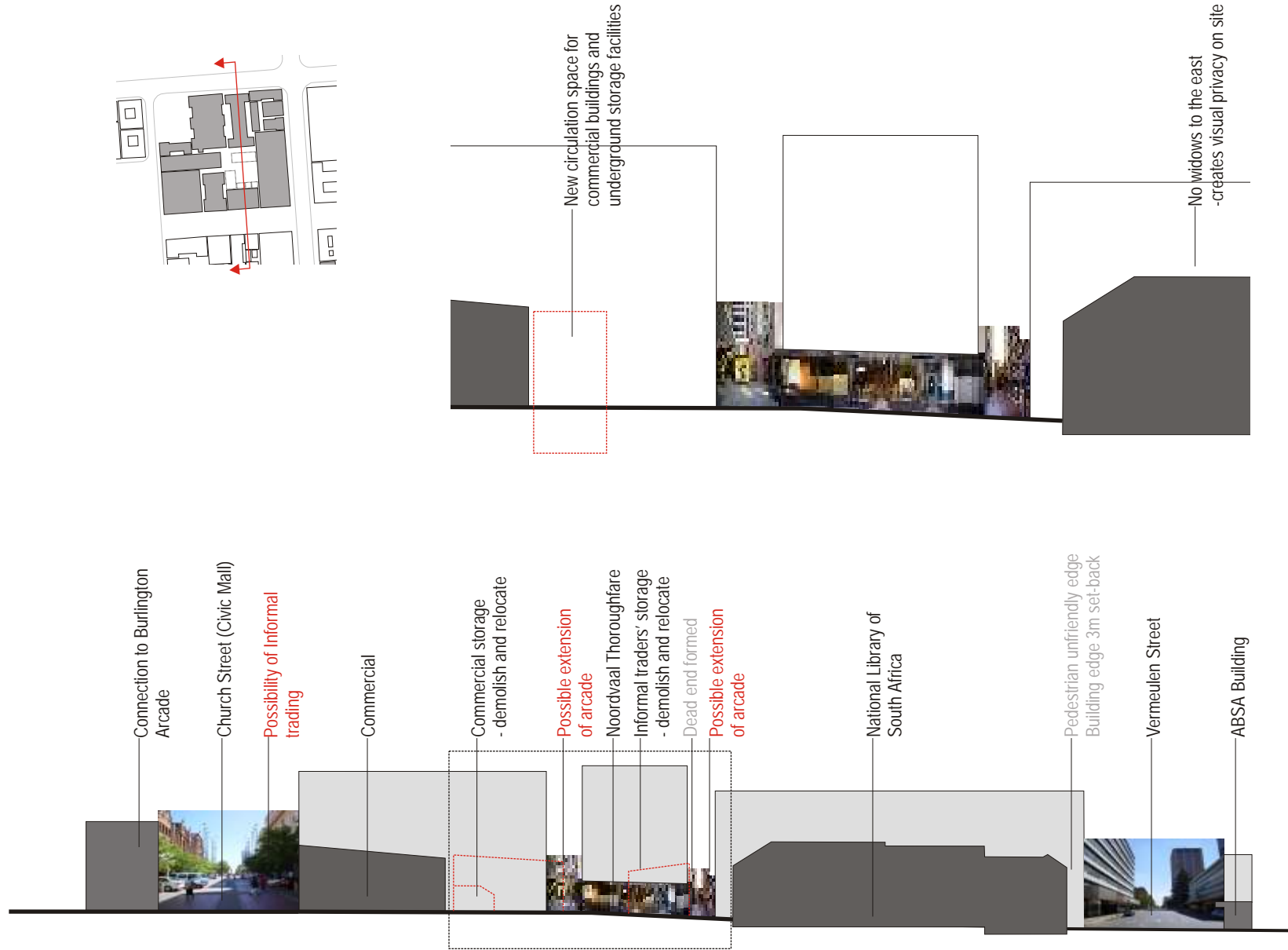


18_ Aerial photograph of site, from Vermeulen Street to Church Street

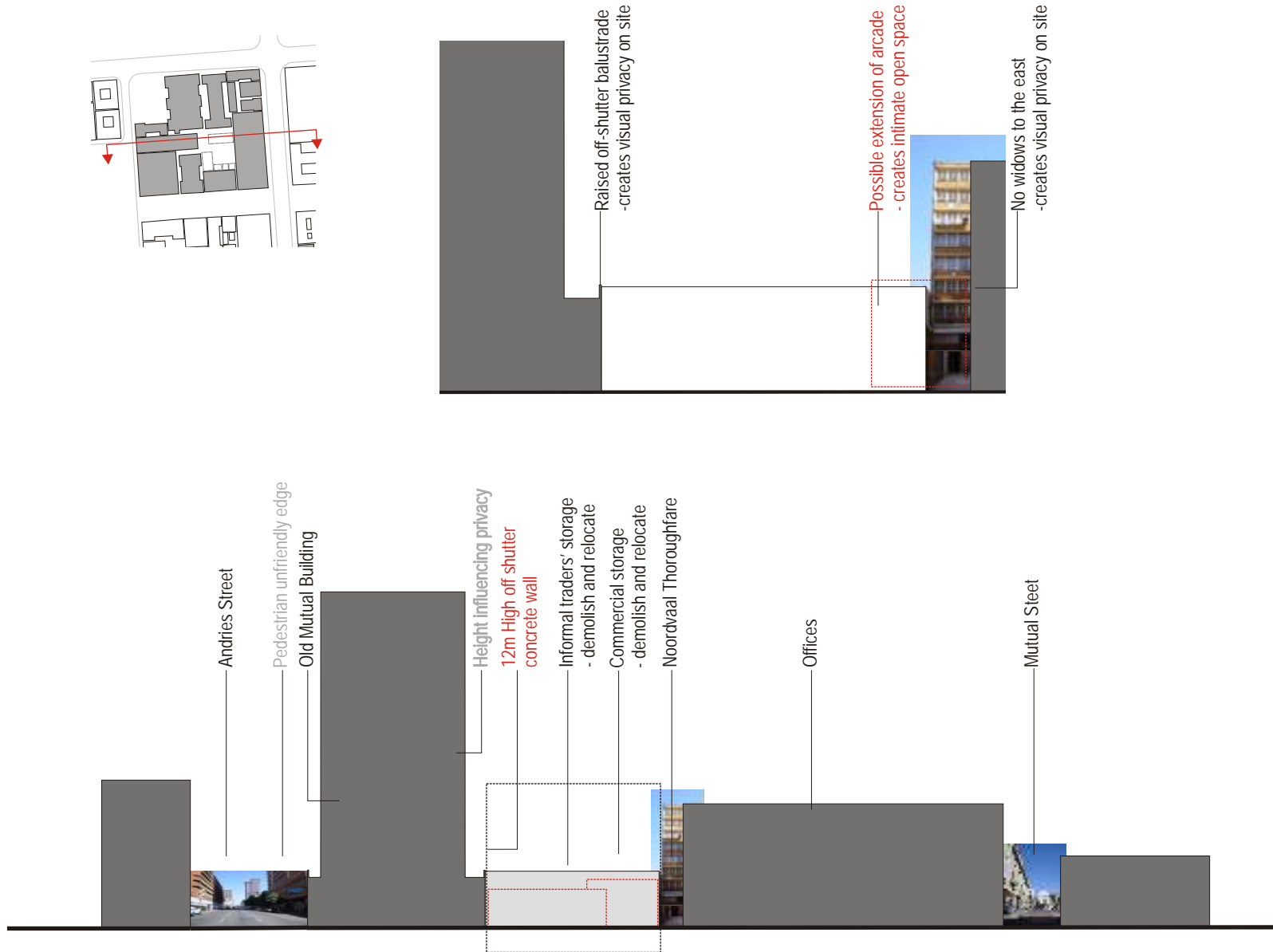
19_ Position of site in the city-block.

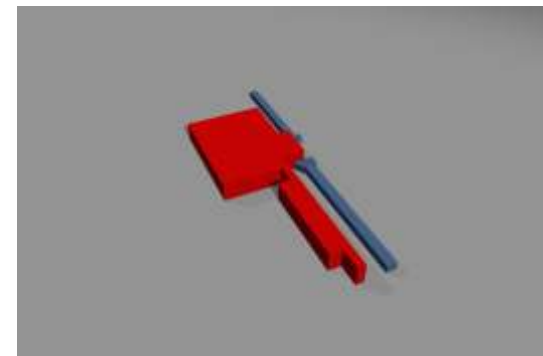
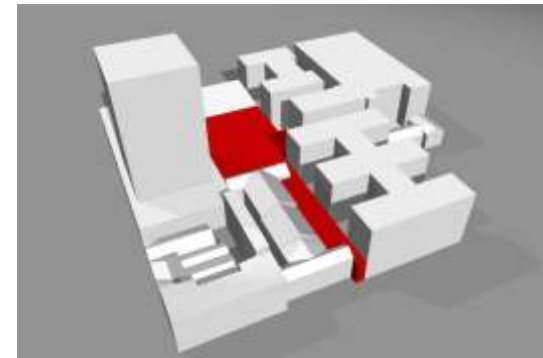


20_ Site-related opportunities and problems - section AA



21_ Site related opportunities and problems - section BB





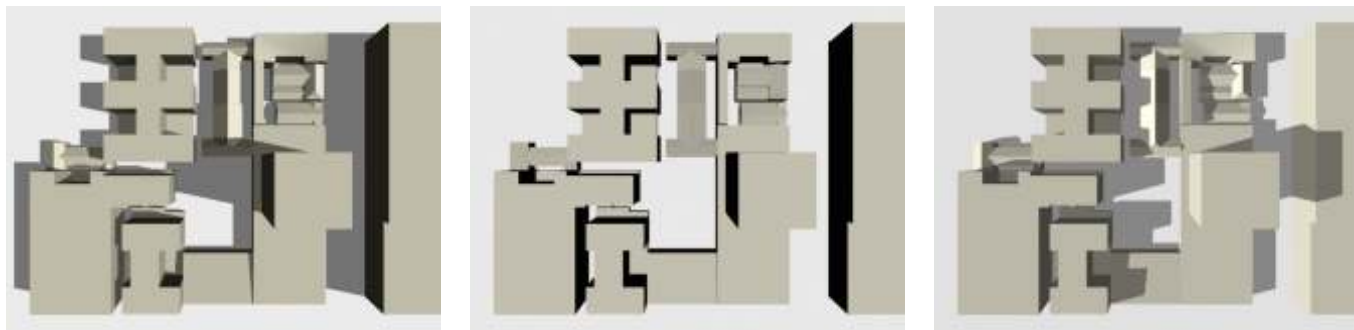
22_ Structures on site to be demolished. Position of site in the city-block. Relationship of site to the Noord Vaal Thoroughfare.

Physical Factors

Macro Climate

Pretoria has a temperate climate. Throughout most parts of the year, it is one of the most pleasant climatic areas in the country. However, days are often oppressive in summer, whereas winter nights can be particularly cold. Temperatures during summer months average 29°C, and in winter average 20°C, with minimums of 9°C and less, but seldom fall below 0°C. The proposed design should provide opportunities to make optimal use of outdoor living and should integrate inside and outside. Basic concepts of sun control, such as roof overhangs, should be kept in mind, and used to manipulate sun penetration in order to enhance heat gain in winter, and prevent sun penetration on surfaces in summer.

The average number of rainy days per annum is 50-89 days. Thunderstorms are often accompanied by heavy rainfall. The highveld is prone to times of rain scarcity. This should be taken into consideration for the catchment and re-use of rainwater, even if only for landscaping and not as principal source for a building. Water elements in public areas can contribute to the sensory experience of a space. Physically, it has a climatic impact by enabling evaporative cooling in summer and heat storage during winter.



23_Shadows on summer solstice, at 9:00, 12:00 and 16:00.

Winds are light to moderate and primarily from the northeast, except during thunderstorms, early spring or weather changes, when the wind has a southerly component. Pretoria in general is fairly wind still.

The duration of bright sunshine exceeds 80% of the possible in winter and 60% of the possible in summer. This has a major influence on how buildings perform regarding the comfort of its users.

Geography

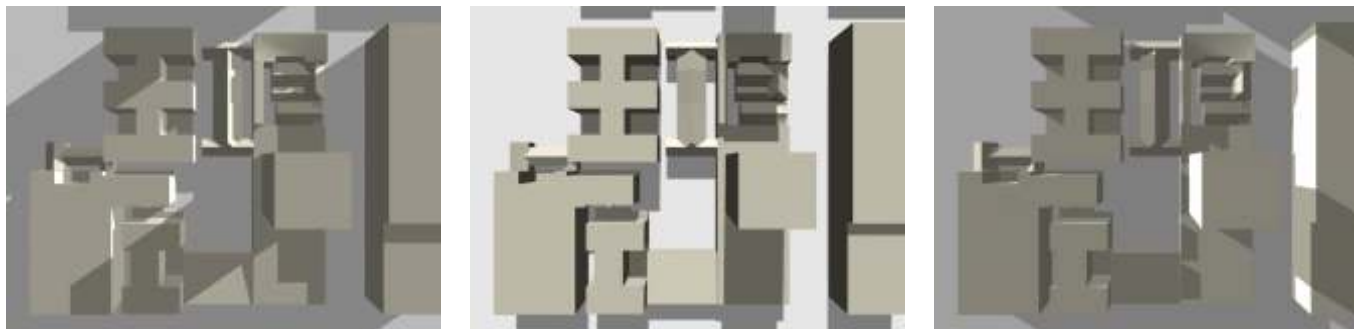
Groundwater: the general movement of groundwater is from southwest to northeast.

Water-table: depths are generally shallow in the low-lying valleys (in which the study area falls), between quartzite ridges, and range in the order of 3-18m. Basements need to be drained mechanically.

Geology: rapidly changing conditions in the Pretoria area resulted in alternating bands of shale and quartzite, because of a high rate of sedimentation and deposition of quartzite upon shale.

Micro Climate

The average temperature on site is a few degrees lower than the average for Pretoria. This might cause uncomfortable conditions during the winter months. The design should respond to this with basic concepts like heat storage and trombe walls.



24_ Shadows on winter solstice, at 9:00, 12:00 and 16:00.

Neighbouring buildings on the perimeter of the site form a solid edge, protecting it from winds. This is unfavourable where natural ventilation is concerned, and climatic design responses based on ventilation must take this fact into consideration.

The total cloud cover is at a minimum during winter. The maximum is reached during summer, peaking in January. Solar radiation along with solar intensity will influence design decisions. Heat radiation from neighbouring buildings must be taken into consideration.

The site receives limited direct sunlight. The position of shadows created by neighbouring buildings on the site should be looked at in order to establish the positions of open spaces, and to determine the mass of the building (SEE FIG. 23 AND 24). Limited direct sunlight received must be used optimally, either as natural light or to heat the structure.

Clients - Users

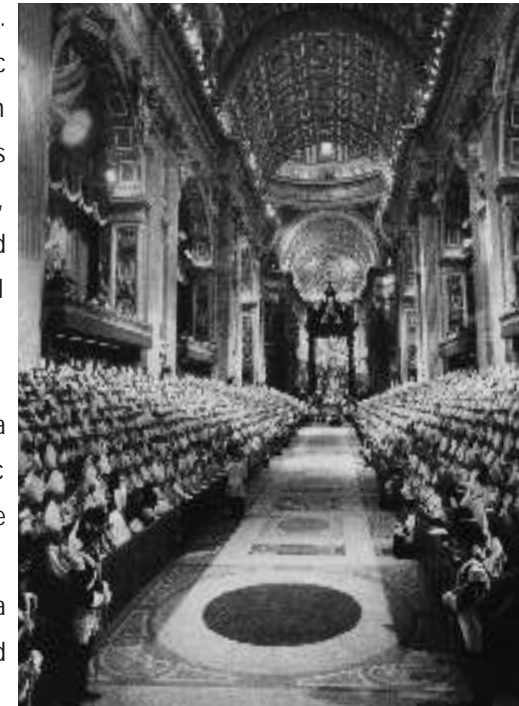
The Roman Catholic Church has successfully come to terms with the rise of the modern state and has carved out a new role for itself as a global defender of human rights, in what Pope John Paul calls a culture of life [Wood Head, 2002; 164]. The new mission for the Church is to play a more critical and social role, which forms part of the new approach of a holistic ministry.

There are several Retreat Houses and Conference Centres in the Pretoria area. These are run by either the Catholic Church or by laymen with a strong Catholic input. The St Vincent de Paul Sizanani Village near Bronkhorstspruit is an example where the original facility was started in 1989 by a Catholic Priest, but is now under layman management. The facility plays an essential social role, providing an aids care centre and orphanage, housing for disabled children, and a craft centre. Running cost for these projects is partly made up of rent raised from conference facilities that are available for public functions.

The proposed retreat will be funded by the Roman Catholic Church, to provide a basis in the inner city from which social work can be done. Different Catholic institutions in the Archdiocese of Pretoria will alternatively and for variable time periods occupy the building as permanent members.

The retreat will also function as a base for other organisations playing a social role, for example Love Life, from where they can work in the CBD and surrounding areas. These members are referred to as working visitors.

The Retreat will further provide a service where members of the public can stay in the retreat for a limited period, opting either to follow the sacred rituals of the priests and nuns, or to allow their own personal rituals to occur. These members are referred to as retreat visitors (SEE FIGURE 26).

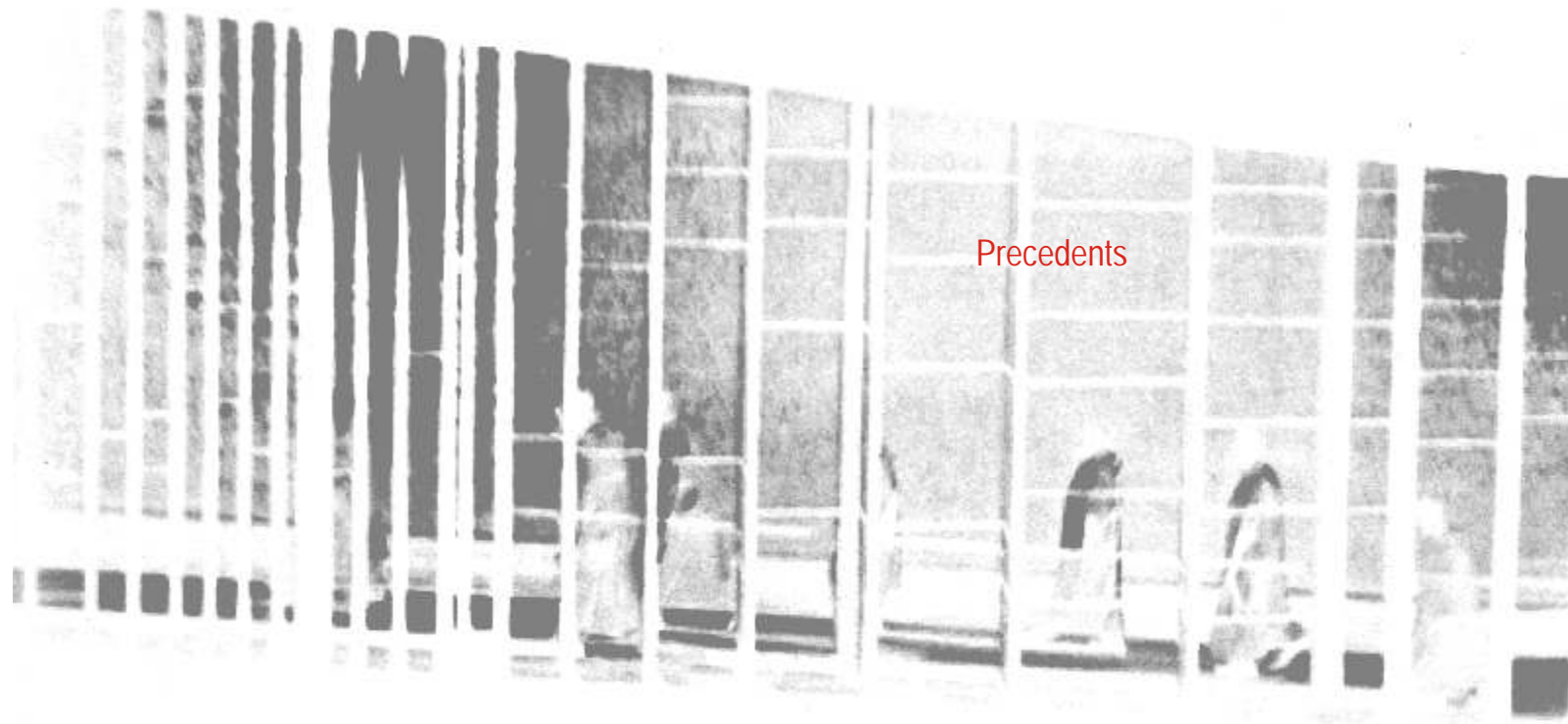


The Retreat building provides a religious environment from which to organise community work. It is further seen as the first part of a bigger Retreat House (Community Centre), that will eventually include some of the buildings currently used by the SA National Library. The Retreat House will include facilities such as a clinic, craft centres, a shelter, and other related functions.

The entrance to the Retreat will be situated adjacent to the Noordvaal Thoroughfare, and will in future also function as the main entrance to the Retreat House. In order to establish the Retreat as future community centre, related functions such as an information area or conference facilities and consulting rooms will form part of the current programme.

	Cells	Chapel
Permanent Members	10	10
Visitors: Working	12	12
Retreat: Overnight	8	8
Retreat: Day		10
	30	40

26_ Table with breakdown of maximum number of users of the retreat.



Cathedral Church of the Holy Nativity, Pietermaritzburg (1983)

Architects - H Kammeyer, N Rozendal, G Carter-Brown

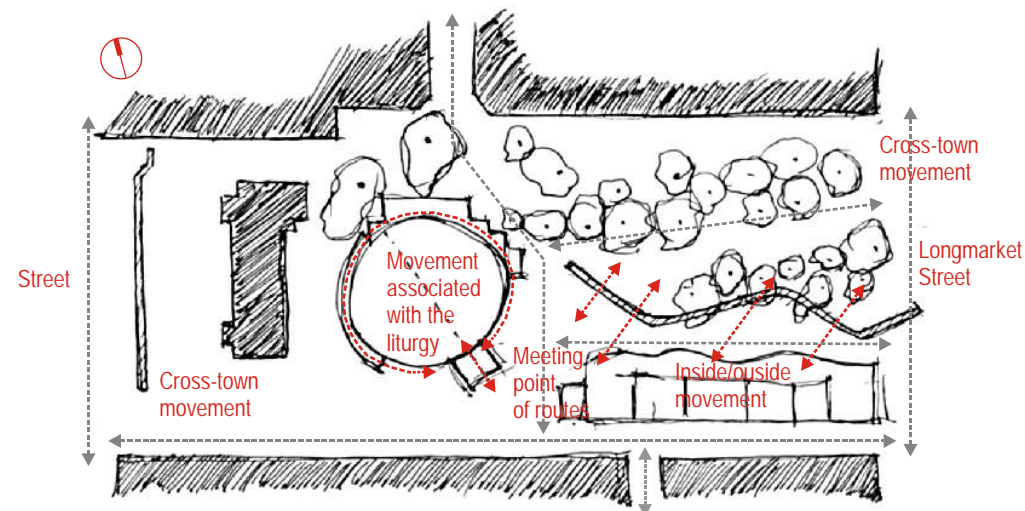
Quantity surveyors - W Slingsby, Campbell and Partners

Electrical mechanical and structural engineers - O Arup and Partners

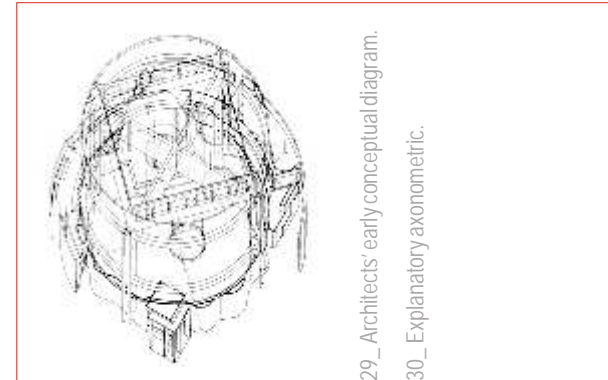
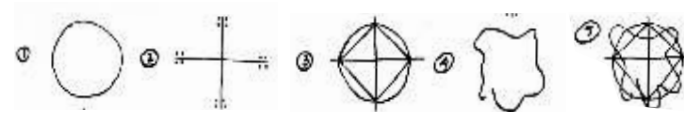
Acoustical consultant - A Jongens

Main contractor - G Black and Son

The site is on the fringe of the CBD of Pietermaritzburg and contains the 120 year old St. Peter's Church. Behind the church is a grove of yellow-wood trees planted by the bishops of Natal. At the time when the design competition was organised for the project, a pedestrianization scheme for the adjacent sites had just been approved and competitors were asked to co-ordinate this into their proposals for the site. This meant that a pattern of movement already existed on the site and together with the shaded shelter, already established the site as a place [Wale, 1983; 5]. The location of the site within the CBD was seen as an opportunity for the Church to integrate with and to open up its functions to the public life of the city. Free movement is allowed in all directions across the site, corresponding to different degrees of involvement and definition (SEE FIG. 28).



28_ Diagram indicating patterns of movement.



29_ Architects' early conceptual diagram.

30_ Explanatory axonometric.

The sanctuary itself is a primary form, wrapped within an outer wall and forming residual urban spaces around it. The architects describe the cathedral as a building built up of layers of ideas, superimposed and interacting. (1) The first conceptual diagram shows a simple, enclosing circular space, unifying a previously divided Anglican community. (2) A cross placed over this space becomes the main support for the roof, in turn supported on four clusters of four columns. (3) The two geometries are reconciled by a complementing square within the circle, which becomes the means of allowing light to penetrate into the upper reaches of the space (SEE FIG. 34). (4) The drum is lifted up from ground level and below its perfect geometry, the geometry of the building becomes free in form and organic in its implications. This is done to accommodate use and to relate its scale to its surroundings. The shape of this shell is furthermore tailored to provide the best possible acoustics for the human voice from the sanctuary area. (5) The layers superimposed on one another form the end result (SEE FIG. 29) [Wale, 1983; 8].

The liturgy associated with the Anglican Church demands free movement between the interior and exterior of the cathedral. At events like Palm Sunday, the whole congregation would exit the church at a side entrance, following a procession that leads them around the Church and eventually back to the main entrance. On rainy days the same procession can be followed by entering and exiting the circulation space at the back of the church (SEE FIG. 28) [Kammeyer, 2003].

The Fellowship Building houses mainly administrative, recreational and educational functions. The edges on the ground floor have been designed to make small spaces along the external public route. The building opens itself out, inviting involvement and participation (SEE FIG. 28) [Wale, 1983; 9]. The seminar rooms, library and lecture theatre have been structured around a circulation route on the first floor, relating to the trees and the outside terrace. A strong inside/outside connection is established.

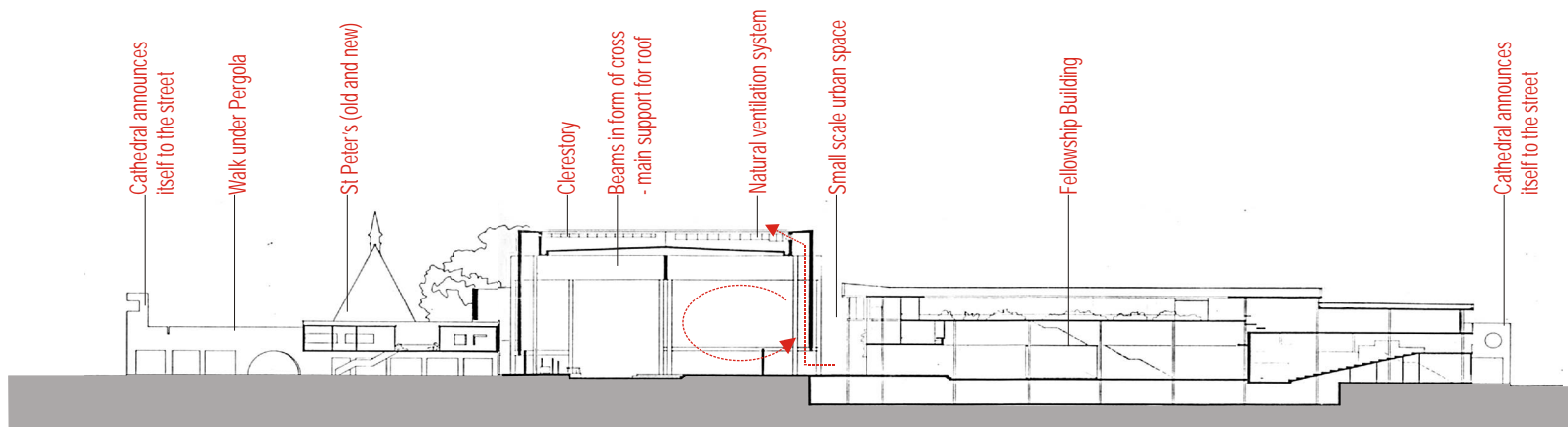
The complex is environmentally responsive. The Sanctuary is naturally ventilated on the convection principle; air entering at the base of the drum between the two skins and escaping out of mechanically operated clerestories at roof level produce the required air change rate (SEE FIG. 34) [Wale, 1983; 8]. The Fellowship Building consists of a number of verandahs, which are environmentally and regionally appropriate. The interior of the Fellowship Building opens up to allow natural ventilation. Most walkways are shaded by transitional elements.

31_ The Cathedral seen from Longmarket Street. 32_ The main entrance and external gathering space. 33_ The spire of St Peter's showing above the rampart.



The cathedral is essentially a “people’s church”. The building becomes a thick wall wrapped around the functions of worship, fellowship and administration, unifying these in a single urban statement. It was the architects’ conviction that the Church is part of the world, that the Church should be able to reach out, to be involved in, and participate in, the business of daily life [Kammeyer, 1995; 20].

34_ Longitudinal section trough site indicating building positions.



Dominican Monastery of La Tourette, Eveux-sur-l'Arbresle (1957)

Architect - Le Corbusier

With the construction of La Tourette, the Constitution of the Dominicans did not evolve a new type of monastery; they rather simplified the types of buildings common in the 13th century and cut them down to essentials. Keeping within this rule the monks expounded the spatial programme of the order. They asked for a church and oratory, a chapter-room and refectory, a cloister, a library, lecture-rooms and cells [Henze, 1966; 8]. There is a sense of intellectual energy informing a plan that determines everything by reference to the Rule [Braunfels, 1972; 230].

Le Corbusier employed vestiges of the traditional monastery in his plan. The use of bare concrete and stark forms was intended as an equivalent to the stonework of old buildings [Curtis, 1996; 423]. Le Corbusier further selected the ancient ground-plan of the rectangle surrounding an inner courtyard, and in the refectory he retained the traditional 3-aisled hall [Henze, 1966; 12]. However, a strong sense of creative harmony, of tradition and new ideas, led to a new physical type of Christian monastery. The monastery gate is in the traditional position next to the church, but the gateway now consists only of a free-standing frame in space; it acts as a sign to remind strangers of the dignity of the place toward which their steps are bending [Henze, 1966; 10].

What gives the variously articulated functions the power of architecture was the way they were linked by platforms and corridors, and orchestrated within a clear overall form [Curtis, 1996; 424]. Le Corbusier abandoned the traditional type and model of the cloister, but enhanced the functional quality of the communicating way; the cloister takes on the shape of a cross linking all four sides of the courtyard. By placing the scholastic floor between the ground-floor containing the church and cloister, and the cells above, an overall vertical unity is achieved.

The visitor entering the monastery is guided by carefully controlled visual clues and led into the more private areas in a downward-spiralling movement, through spaces of varying light and intensity. It is a route of initiation, from the secular world outside to the daily ritual of the community within [Curtis, 1996; 424]. The visitor moves through a series of transitions; from the public realm of the outside to the semi public space of the church, from the private space of the lower church to the personal space of the individual cells.



35_ Ground floor plan of church and refectory.

36_ The cloister takes on the shape of a cross in the square of the courtyard.

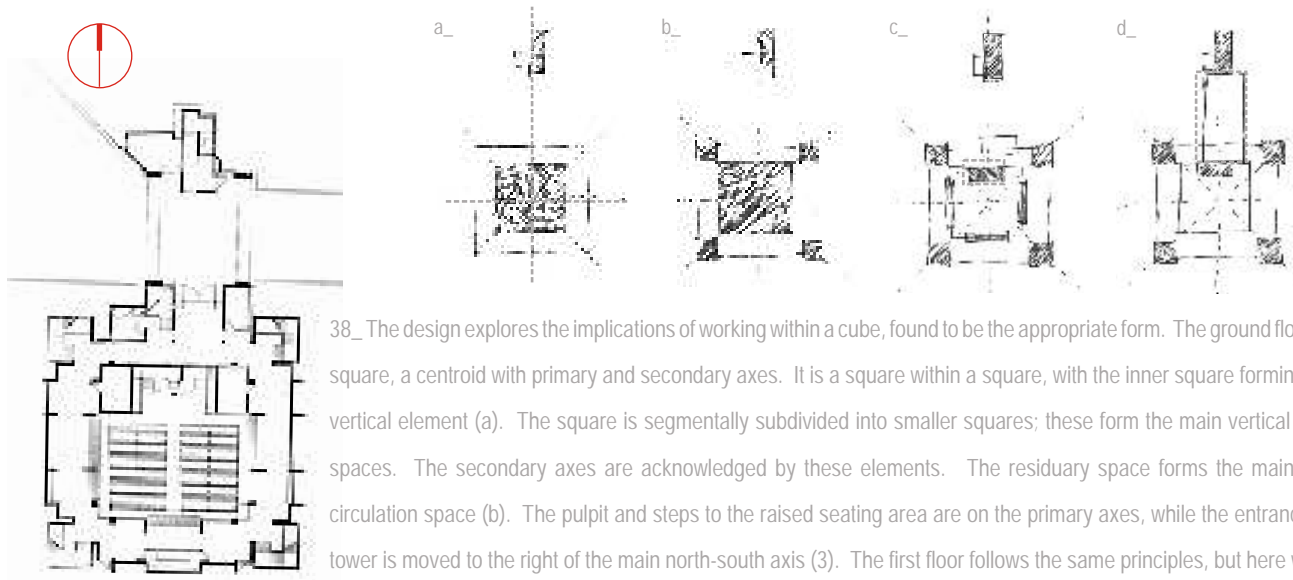
37_ The lower church with individual altars.

Dutch Reformed Church, Welkom (1964)

Architect - RS Uytenbogaardt

In 1964 this bold Church was imposed on a featureless landscape of rough veld of windswept grass, designed by the Dominee's brother-in-law, R.S. Uytenbogaardt (SEE FIG. 41). Since then not much has changed; the rough veld is still there, but church members have come to accept this fortress-like structure.

Although the building sits in a veld, like a pavilion-type structure, it was designed around its interior, with hidden light sources allowing visitors no outside views. The building could just as easily have been constructed in an inner city block. The Church has a powerful simplicity; the square plan of the main space extends to a functional and impressive spatial organisation. Strong scaling elements exist without being overpowering - the low circulation space, the height of the main space and the space created by the vestry (SEE FIG. 42).



38_ The design explores the implications of working within a cube, found to be the appropriate form. The ground floor plan is a square, a centroid with primary and secondary axes. It is a square within a square, with the inner square forming the main vertical element (a). The square is segmentally subdivided into smaller squares; these form the main vertical circulation spaces. The secondary axes are acknowledged by these elements. The residuary space forms the main horizontal circulation space (b). The pulpit and steps to the raised seating area are on the primary axes, while the entrance and bell tower is moved to the right of the main north-south axis (3). The first floor follows the same principles, but here we find the interlocking forms of the vestry, and part of the horizontal circulation space (d).



39_ Interior view of pulpit and main seating area.



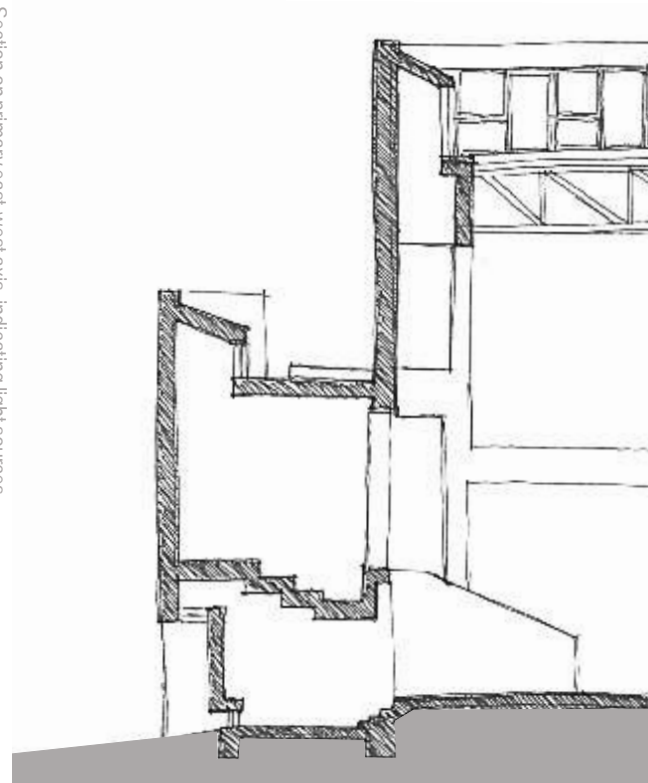
40_ Light filtering in through two levels of clerestory.

When moving from the harsh light of the Free State into the Church, one is met by an almost complete darkness (SEE FIG. 44). Only glimpses of an interior light source draws one nearer. A calculated use of natural light, horizontally controlled, mellows an interior composed of natural materials, purged of superfluous detail, to produce a genuinely religious atmosphere [Graig, 1973; 226]. The main seating area is a few steps higher than the darker circulation route. With this change of levels and light intensity, there is both physical movement and an inner journey or passage that moves or removes the subject metaphysically.



The church was designed as an expression of brutalism, to exploit the use of structural and untreated materials such as timber, brick and concrete, and for the undisguised expression of a building's functions [Graig, 1973; 224]. Different aspects of the same material become the decoration and expression of the building; it accepts the elevational consequences of its internal space making [Nuttall, 1993; 14]. The potential of ordinary building elements are exploited in order to express design quality; clay bricks and concrete blocks are used on all their sides, while concrete elements become sculptural. Attention is given to the connection between materials.

Here is an architecture of discovery - one that comes from the struggle with the art of architecture, with materials, structure, space and light, and not from a pre-existing style [Nuttall, 1993; 14].



42_ Section on primary east-west axis, indicating light sources.

43_ Detailing of connections between materials used.

44_ Main horizontal circulation space.

Hector Pieterse Museum, Soweto (2002)

Architects and exhibit design - MRA Architects

Landscape design - P Watson

Quantity surveyors - F Williams and J Kgole

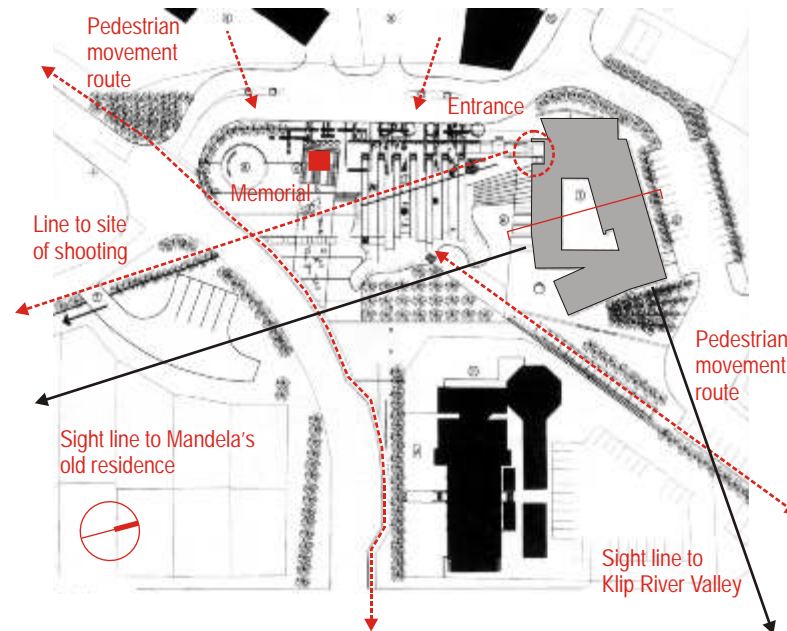
Electrical engineers - Gama Gamedze Associates

Mechanical engineers - Ubunye Engineering Services

Civil engineers - Civil Projects Engineers

Structural engineers - HBS Makheta CC

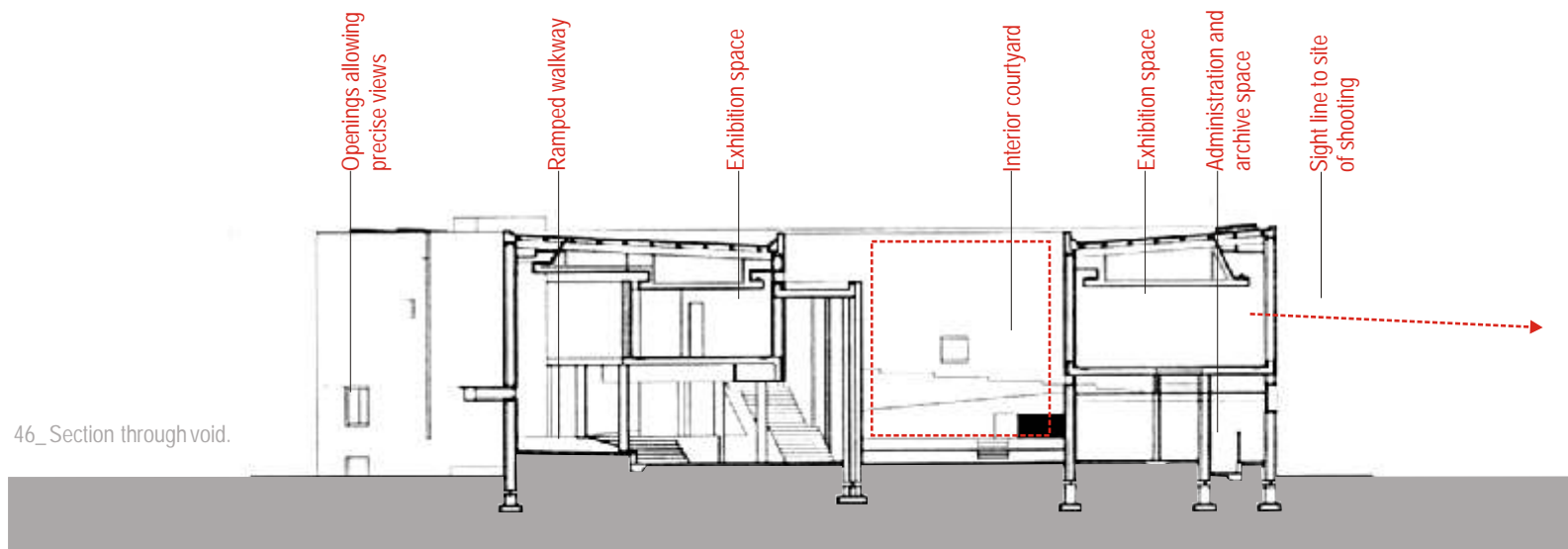
On June 16, 1976, Soweto students organised a peaceful march against 'Bantu Education' and the use of Afrikaans as a medium of instruction. During the marchers' clash with police, a 13-year-old schoolboy, Hector Pieterse, was gunned down. Chaos broke out and the area became a war zone for several days. The museum commemorates this part of South African history.



45_ Site plan indicating sight lines and main pedestrian movement routes.

It is impossible not to draw comparisons between this museum and the Apartheid Museum. The Apartheid Museum struggles to have any contextual meaning. The neighbouring theme park trivialises the initial response to the site, and the experience of the museum. The Hector Pieterse Museum was erected on the site of the uprising and 600m from the site where Hector was shot. Two roads and a traffic circle were closed and several sites consolidated to form a public gathering space and site for the museum [MRA Architects; 2003, 32]. The museum responds to the community that surrounds it. An Anglican Church, a community centre, and a primary school form the edges of this gathering space.

The flush-jointed red-brick museum echoes the distinctive 1940's red-brick houses around the museum, establishing a contextual continuity [MRA Architects; 2003, 32]. Although this is a pavilion type building that has an inward focus, openings have been strategically placed to visually and historically connect to the surrounding areas. It is stark and oppressive, informed by the architects' respect for the suffering of the people [Du Preez; 2002, 28].





The museum is designed as a ramped and flat sequence of spaces that gently rise up around a central void over three floors. The ritual movement up the ramp gives visitors a sense of procession, linking historically to the march on 16 June. Movement up the ramp takes place through different layers of meaning. The complexity of the uprising is further strengthened through layers of spaces; a courtyard within a white box, within a red-brick box. There is the occurrence of incidences; for instance when one reaches the top of a ramp, an unexpected window looks out over the Klip River valley. Through the framing of critical views, historic moments are explicitly brought back into existence and internalised through the museum. Space is collapsed and the temporal separation of events that occurred over a protracted time and geographic area has been brought into a single condensed experience [Low, 2003; 32].

The museum exists outside the boundaries created by the structure. The physical landscape outside becomes an integrated part of the experience. An 800 m long line of 'rooigras' between two steel plates is drawn from the entrance of the museum towards the actual site where Hector was shot. In the gathering space in front of the Museum, a memorial, surrounded by several dry-stack black-slate walls and grass-block paving, conveys the real message of the museum. The inscription reads 'To honour the students who gave their lives in the struggle for freedom and democracy'.

The integration of the narrative museum space and the physical landscape outside is the most potent and memorable aspect of the museum [MRA Architects; 2003, 33].

47_ Exterior view of entrance and main exhibition space.

Sculptures by Richard Serra (1939 -)

All Serra's sculptures are concerned with experience and observation. Some reveal the process of their making, some clarify aspects of their physical properties, and others redefine the nature of the space they occupy [Krauss, 1986; 11].

Serra's works involve the viewer in this creative, exploratory process. They alter and reshape the viewer's perception of space and virtually force interaction [Krauss, 1986; 11]. Only parts of a work can be seen from any one vantage point; it requires that time be spent in walking, looking, anticipating, and remembering. The physical properties of Serra's sculpture is presented in a non-illusionistic manner so that the principles of the work's construction can be grasped. The viewer must "work" to understand the piece.

Both his indoor and outdoor sculptures occupy greater space than the works themselves; they define a greater spatiality. Even the urban and architectural works define certain boundaries where apparently no such boundaries exist (SEE FIG. 49). Pieces change configuration with the viewer's every step, making him aware of the relationship of the works to himself and the space they occupy [Krauss, 1986; 12].

In most of the sculptures a sense of movement exists. This is realised through form (curved plains or straight lines), the ever present possibility of collapse and metaphysical movement as experienced in *Delineator* (SEE FIG. 49). The urban and architectural works that involve more than one element and have an active dialogue with their own parts, seem to propel the viewer around them, exerting a sense of speed [Krauss, 1986; 13]. This is particularly true of *Clara-Clara* (SEE FIG. 48).

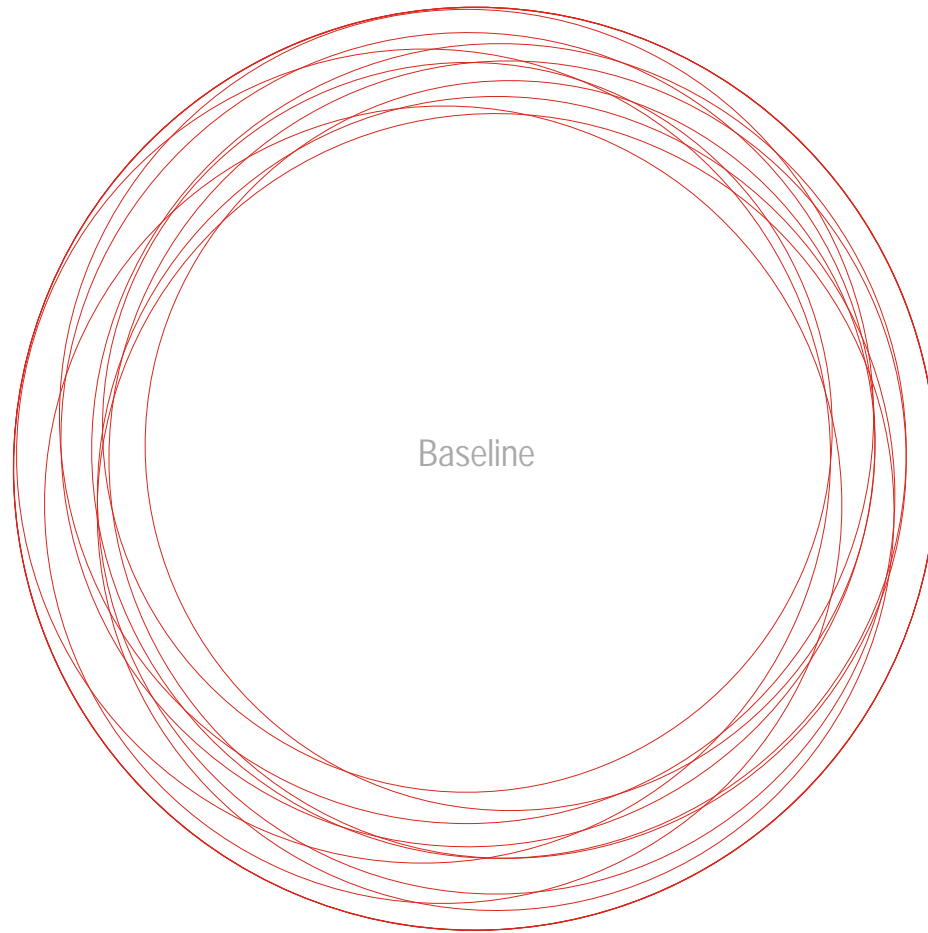
Serra creates works that are site specific; he structures his works as an integrated part of the sites on which they are to be placed. His works are designed in relation to the site, which they then redefine. They are built within the context of the architecture or urban space, and their scale and placement are determined by the size and shape of their spaces and by the limitations of access space and weight load.



48_ Clara-Clara (1974), consists of two identical sections of a cone, a shape that has different radiuses at top and bottom, placed side by side with one inverted, so that the two parts incline in the same direction, enhancing and distorting the viewer's sensations of speed and mobility as he/she passes between them [Krauss, 1986; 13].



49_ Delineator (1974-75), consists of two rectangular plates, one flat on the floor, the other attached to the ceiling, but positioned crosswise to the lower plate. The juxtaposition of the steel plates forming this open cross generates a volume of space which has an inside and outside, openings and directions, above, belows, rights, and lefts. These coordinate with the body, so that the observer understands the work when walking through it, and senses a volume of verticality that he/she becomes part of [Krauss, 1986; 12].

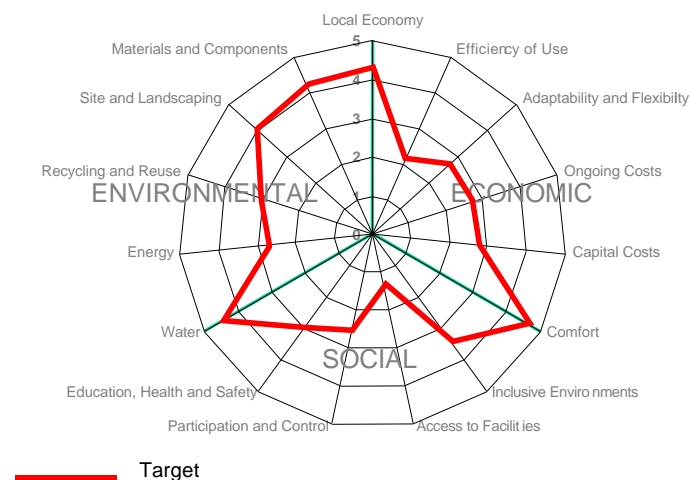


Introduction

The baseline document provides a multi-faceted approach to the construction of the proposed buildings, highlighting certain points to create an overall understanding of what should be achieved in the design.

Non-renewable resources are being depleted and increasing environmental damage is done as a result of human activities. It is therefore increasingly important that this is addressed, so that sustainability becomes a key issue in the way we live and work. Buildings can play an important role in supporting sustainability. This is done through careful planning in which design decisions, material specifications and so on are carefully evaluated in terms of their long term impact on the economic, social and environmental sustainability of a society and the natural environment [Gibberd, 2002; 1].

The Sustainable Building Assessment Tool (SBAT) has been designed to assess the sustainability of buildings. It measures the performance of a building in relation to a number of economic, social and environmental criteria. The tool also enables a building to be rated in terms of its sustainability, and for buildings to be compared to each other and to existing benchmarks. Target setting was done using the SBAT-tool to establish the most critical aspects regarding the sustainability of the building.



An austere luxury

Buildings that continue to captivate us are free of "isms", free of superficial "good taste" and superfluous additives [Blaser, 2001; 15]. The view of empty space reflects the architectural expression of restraint and the ingenuity of unsurpassable clarity in spatial treatment, achieving tranquillity in monastic solitude [Blaser, 2001; 13].

The architecture should be rigorously reduced and refined in order to allow nature to penetrate into the interior [Blaser, 2001; 25]. Architecture of simplicity is introspective, creating a mood that exudes an atmosphere of harmony and an appeal for silence. Architecture of silence facilitates the process of ritual and allows it to come to the foreground. The building is to act as backdrop for events and activities to play out.

Simplicity means loyalty to oneself, the ultimate goal being clarity [Blaser, 2001; 17]. Religion is expressed as a public ritual but depends on the introspective journey of individuals. Utilising emptiness releases the intensity of the introspective experience [Blaser, 2001; 87]. The architecture allows for internal reflection to occur. Internal purity is restrained to the point of monastic silence, although it never neglects cheerfulness. The subtle modulations of sharp edges, clean lines and smooth surfaces are what stimulates us. These are loci of spiritual exchange. Moments of silence are gifts. In silence we feel at home [Blaser, 2001; 15].

The proposed design should be based on a ritual movement from public to private; subjects follow a procession through spaces that become more simplistic and silent towards the chapel, and experience psychological changes which will draw them towards their own inner thoughts.

Building is nature is building

Inside - outside

The relentless complexities of contemporary life have made the distinction between inside and outside a dilemma. Avoiding the distinction and creating an almost invisible interrelation between them, must be an important factor in the design development. The climatic condition of Pretoria furthermore suggests such an interaction. For Tadao Ando [1991; 110], the nature that a sacred place must relate to is a man-made nature, or rather an architecturalised nature. He believes that when greenery, water, light, or wind is abstracted from nature-as-is according to man's will, it approaches the sacred.

The emphatic unity of buildings and nature maintains the vitality of a unified spatial arrangement. Such a design captures the harmony between "interior space" and "exterior space". As a result a "pure space" generates a sense of well-being [Blaser, 2001; 17].

At the Naoshima Contemporary Art Museum, the rectangular shapes connect to the surrounding sea and mountains, while the cylindrical structures tie the sky to the land (SEE FIG. 60) [Blaser, 2001; 9]. Similar ideas of connection are seen in the Cathedral Church of the Holy Nativity and the Fellowship Building in Pietermaritzburg (SEE P. 42-45). Here, simple shapes provide a two-way route by which nature can flow back and forth.

The building is designed as an open structure; where intimate interior spaces relate to the existing exterior. The structure does not create space but rather exists within the spaces already present on the site.



The courtyard typology

The structure of the Islamic Medina forms a tightly knit urban fabric that is based on interdependence. Structures are designed in accordance with strict traditional rules; the owner is not allowed to build his house, or add to it in any way, without taking into account the morphology of the city [Metals, 1999; 44]. The proposed design is seen as having a similar structure, prototype, density and interdependence.

Open courtyards in Islam have developed because of various religious, social and physical conditions, in particular, the tendency of families to become extended and for women to rarely go out in public [Kazimee, 2002; 24]. Courtyards form a fundamental space in both private and public Islamic architecture. The number of courtyards and their complexity vary from a single courtyard in most domestic spaces to a system of courtyards found in palaces. The size of the courtyard tends to determine its importance, from the small residential courtyard up to the huge courtyards of mosques and other public spaces.

The residential open courtyard is the place where all cooking in a traditional household takes place and it serves as the workshop of the house. Within the traditional Afghan courtyard a solid platform half a metre high allows people to sit above the level of circulation. In most instances courtyards are adorned by a well, tree, fountain or ornamental pool. In working-class houses a single courtyard connects all the rooms of the house. Rooms surrounding the courtyard are closed on three sides with one side opening directly onto the courtyard. In this manner a strong inside-outside connection is established.



In the sacrosanct family environment of the Moroccan House, the courtyards are often masterpieces of architecture and ornamentation; finely carved wood, sculpted plaster, stylish faience tiling and skilfully arranged wall fountains are found in the courtyard [Metals, 1999; 44]. The transition zone between inside and outside, the in-between, recalls ancient truths, reminding us of the relationship between man, nature and architecture [Blaser, 2001; 85]. In the design of the retreat, the indoor-outdoor transitions or thresholds are of great importance in the ritual process.

The principle of diurnal rotation is key to the layout of domestic courtyards in Afghanistan. According to this principle, activities naturally rotate around courtyard areas according to daily and seasonal cycles in response to climatic factors [Kazimee, 2002; 23].

During the summer months the eastern part of the open space is the starting point for a gradual rotation, or "migration", of the inhabitants around the edge of the enclosure, following the available shade provided by the huts and other screening features. In winter, the pattern described is altered; outdoor tasks follow a similar pattern, only now they take advantage of the warmth of the sun during the day [Kazimee, 2002; 23]. Through diurnal rotation a strong daily secular ritual occurs. The retreat should incorporate ideas on diurnal rotation in the courtyards and sections of the cloister.

There should not be a single central courtyard in the proposed design that forms the heart of the structure, but rather a number of smaller courtyards where the centre of activity moves according to the position of the residents. It is a system consisting of more, or less, secret places.



52_ Courtyard in the Mausoleum of Moulay Ismail in Meknes, Morocco

53_ Two courtyards allow daylight into the back part of a deep property

54_ Sunken courtyard and roof garden as extension to a villa

Site

The position of the site demands a high degree of interaction with the surrounding urban fabric. The design should not be detrimental to the site, but should rather use its qualities and attractiveness to add to the quality of the surrounding area, and to contribute to the local community.

Brownfield Site

The aim is to create a high quality, high density urban infrastructure that successfully integrates the new building into the existing street pattern. The development must be seen as part of a larger systemic regeneration of the inner city that is choreographed over a stretch of time.

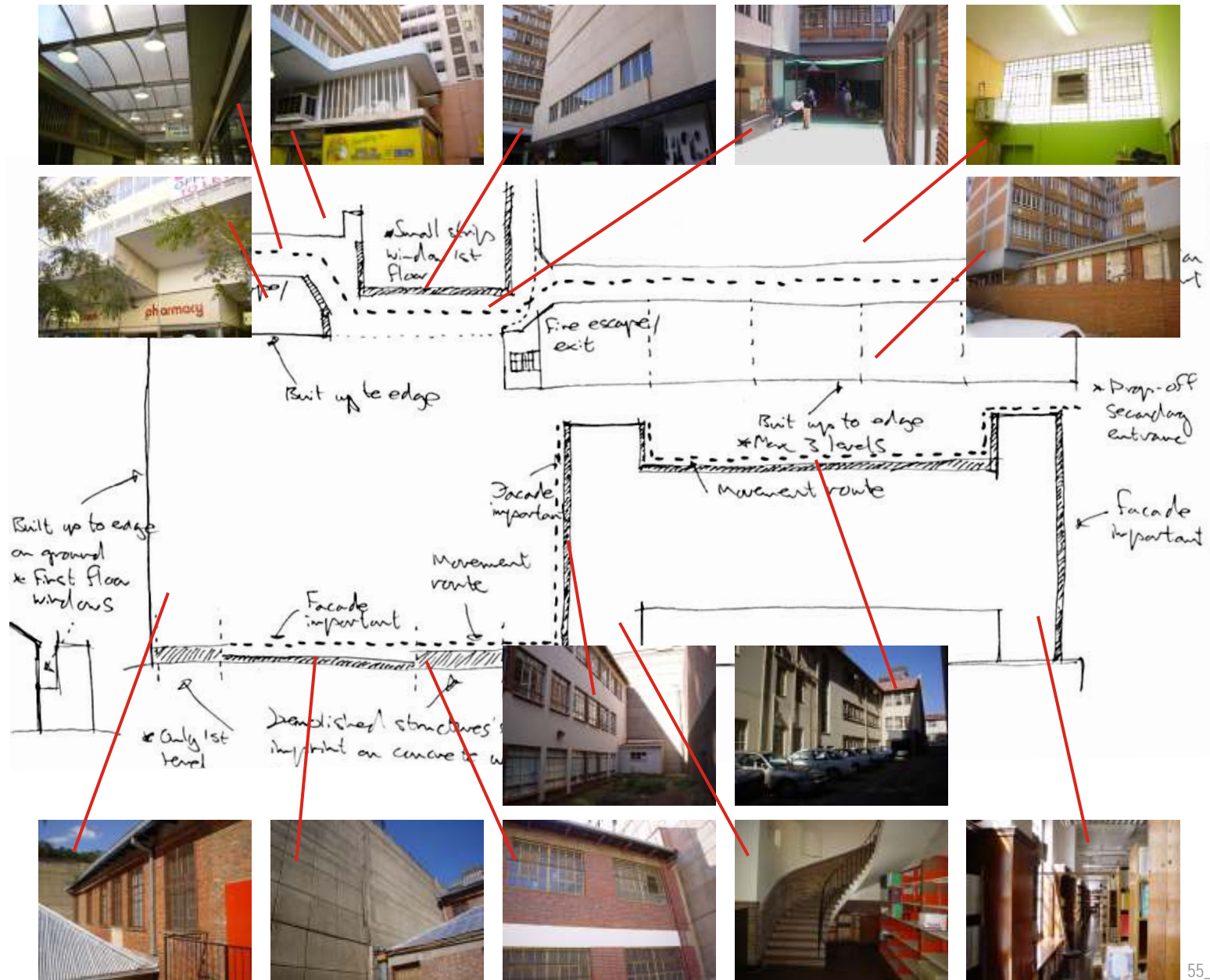
Surrounding fabric

The design must create awareness of the existence of the site and its surrounding fabric. It must reveal previously unseen elements. Historical layering, traces of demolished structures and their existence must be incorporated into the design (SEE FIG. 55). New buildings should not have a harmful effect on neighbouring buildings, for instance by casting shadows over them where access to sunlight is important.

Landscaping

The variety of colours and foliage of different plants enhances and modifies the spaces and forms of buildings; they become "mood generators". In this way boundaries are blurred by bringing nature back into the city.

The landscape should portray stylised or abstracted ideas of veld (planes of vegetation) and sky. Planting should be simple and monochromatic. Only hardy plant materials that require the minimum amount of attention are to be utilized. Indigenous plants must be used as far as possible. Plant species should further be chosen based on texture (grasses) and their inherent sculptural qualities (trees). Roof gardens should mainly be planted with grasses and low shrubs for screening; i.e. lovegrass (*Eragrostis curvula*), thatchgrass (*Hyparrhenia hirta*) and kweek (*Cynodon dactylon*) are possible grass options. White stinkwood (*Celtis africana*) and wild olive (*Olea europaea subs africana*) are possible tree options.



Scale

In cities like Florence and Marrakesh, where a dense urban fabric has been woven, ideas on community is strengthened. The site must be knitted into the urban fabric and flow patterns of the CBD. This requires careful consideration and integration of adjacent built masses to form a continuous and homogeneous urban fabric.

The design should be low scale, with buildings spread out over the whole site, right up to and even touching neighbouring buildings. The buildings surrounding the site are influential in generating the form of the building. The building should not shout but rather exists silently in amongst the surrounding fabric. This concept connects to the idea of intimacy.

Single elements in the design should have a larger scale. A bell tower will announce the building to pedestrians in the square or arcade, and to users of the surrounding office buildings. The chapel should also be designed as a vertical element due to its ritual importance and the symbolism of verticality that exists in the Christian religion. These vertical elements should only be visible from the square and the surrounding office buildings.

From the micro-climatic conditions it can be established that the amount of sunlight reaching the site during the winter months should be maximised. A low structure around different sized courtyards will permit sunlight to reach most parts of the building. The low vertical scale of the structure also ensures that the same amount of sunlight reaches the open section of the arcade.



56_ Marrakesh's Medina - the aerial view gives a good idea of the tightly-knit structure of Muslim towns, the interlocking buildings all but obscuring the network of narrow streets and alleys.

Structural System

Due to the nature of the programme a dualistic structure is required. The public spaces and storage areas should be temporary spaces in terms of changing needs and should be flexible. The Retreat on the other hand, requires a more permanent structure that provides silence and seclusion.

Flexibility and adaptability

The design should be able to accommodate possible future changes. Design parameters that should be adhered to include minimum structural dimensions of 3 m in the vertical direction and the use of non-loadbearing elements. Spaces and finishes further need to be robust to cope with future requirements or changes in use. The design should be based on a modular system. The use of a service wall in the building should provide easy access and modification to services.

The use of open building systems reduces the need for wet construction and subsequent damage that the extraction and manufacture of lime and cement has on the environment. These systems demand structures that can be erected or dismantled with the minimum use of energy and waste of materials. A dry-walling system should be used in the public and storage components of the project to internally divide spaces.

Ritual space

The structure should be able to accommodate privacy and discovery. There should be a strong indoor - outdoor connection that offer spaces where planned or spontaneous events can unfold. Users should be offered multiple choices. Both indoor and outdoor spaces should consist of various sizes and scales to accommodate different activities. The structure should consist of solid interiors connected to outdoor spaces, tied together by various circulation routes.

57_ Typical plan of the Ghoza house and contemporary structures in Guinea, communicating ideas of space accommodating gathering and indoor - outdoor connections .



Social issues

Comfort of Occupants

Personal comfort is the most important user need to be satisfied. Standards of comfort grow out of a range of conditions with determining factors categorised as follows:

- every space should have an opening of at least 10% of the floor area of that space
- minimum lighting requirements are as follows - offices and kitchen (working areas) 400 lux; multi-use rooms 100-400 lux; libraries 300 lux; bedrooms, entrance and circulation 150 lux; bathrooms and storage space 100 lux [Tutt, 1998; 413]
- artificial lighting should be energy efficient and comfortable
- no occupant should be further than 6m from an outside view
- access to green outside space should be provided
- air should be provided at a minimum of 7,5 l/s per person
- noise levels in the chapel, office and library should be <40-50dBA. Quiet areas on site should be identified and activities with the same noise requirements should be grouped together

An Inclusive environment

Ensuring that buildings are inclusive supports sustainability, as replication is avoided and change of use supported. The design should be able to accommodate various types of users. The following should be considered:

- access to information and public spaces should be easy but controlled
- public areas should be accessible and inviting
- access to private areas should be controlled, with facade treatments that are sensitive to the public
- all levels of the public spaces should be accessible either through ramps or lifts. All areas on the ground floor of the retreat should be accessible to disabled persons

Facades

Its is important to consider thresholds between interior and exterior spaces by either defining or blurring them. The facades should be flexible in terms of transparency and penetrability (transparent, semi-transparent or closed). Views should be carefully controlled by the size and placement of openings, directing views towards specific elements

Health and safety

The following design aspects should be employed to provide a safe and secure environment:

- fire regulations should comply with SABS 0400
- visual links and linkages across open spaces should be a prime concern if informal surveillance is to be promoted
- a spatially accessible layout should be provided with no hidden and unsafe places
- adequate lighting should be provided to ensure that there are no dark areas adjacent to the building or in the square. Building elements that will assist surveillance of open spaces, like bay windows or balconies, should be used
- in terms of security, consideration must be given to the different times that different parts of the building would be used

Public open space

Public open spaces in cities give form to the ebb and flow of human exchange. Such spaces provide channels for movement, communication and common spaces for recreation and contemplation. A public energy must be created through the design of this open space, creating a vibrant 24-hour activity node. A public open space should be formed on the western edge of the site by widening the middle section of the Noordvaal Thoroughfare. The space created will form part of the hierarchical public open space system of the CBD; Church Square, Church street (Civic Mall) and the arcade system.

The following should be considered:

- open spaces should be people-centred and designed to accommodate comfortable social interaction
- spaces should be scaled to form an intimate square with tranquil spaces adjacent to the pedestrian movement route
- the Noord Vaal Thoroughfare should be resurfaced. The new surface material will visually connect and unify the arcade and the new intervention
- waiting and pause areas in the public open space must be designed to accommodate shelter, shading and street furniture

Environmental issues

Energy

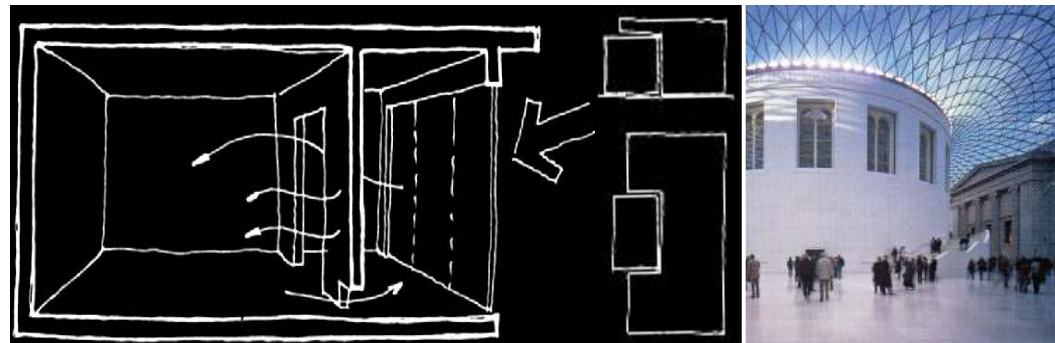
- use energy efficient lighting and task lighting
- provide the minimum possible lighting for the specific building function
- make use of daylighting
- make use of solar power, direct heat gain and sun porches
- reduce the use of mechanical ventilation through the introduction of passive climate systems
- design facilities with high occupation rate in best positions for passive climatic systems

Passive environmental control

The design should respond to the micro-climate of the site through basic passive control systems. Appropriate orientation, shading devices and ventilation will suffice as passive cooling during summer months. The winter conditions, however, requires a more dynamic approach.

A series of sun porches will be used as a passive heating system in the building. Sun porches are intermediate, usable spaces between the exterior and interior of the building (SEE FIG. 58). They increase the heat collection potential of a given facade, by allowing a larger glazing area than is practicable or desirable with direct gain.

With appropriate provision of shading and ventilation in summer, the porch spaces may be pleasant environments year-round in most climates. A sufficient portion of the glazing (>20%) must be openable, in order for the sun porches to become, in summer, the equivalent of shaded outdoor porches, providing shade for the building wall behind the sun space [Givoni, 1998; 171, 175].



58_ Diagram of a typical sun porch, embedded into the main structure

59_ The Great Court at the British museum forms a contemporary sun space

Sun admission into the building is desirable during winter months. This has a specific psychological value which is appreciated beyond its energy contribution [Givoni, 1998; 421]. The building must furthermore accommodate ample outside sun spaces which form part of the diurnal movement of the design.

Ventilation

The issue surrounding ventilation is addressed mainly from the perspective of occupant comfort; replenishing oxygen for respiration and increasing thermal comfort.

Natural ventilation alone will not be sufficient in providing the required air change of 7,5 l/s per person, because of the wind protection provided by the solid building edge surrounding the site. Sections of the new building would be placed right up against the surrounding fabric, in effect creating dead facades, that would further inhibit natural ventilation. Mechanical ventilation will be needed to ventilate spaces with a high occupancy density (Capel, multi-use hall), and deep spaces (bathrooms), while smaller areas (cells, meditative spaces) will depend on the natural forces of wind and buoyancy to deliver fresh air.

The Old Mutual Building will create strong air currents in the area. A high pressure pocket is formed against the facades of a high-rise building which faces the wind. This causes a strong downward current, and in this way mixes up the air layers near the ground between the lower buildings. During the summer months, in warm humid regions which often experience light winds, the stronger currents may be welcomed for increasing the comfort levels of the local residents [Givoni, 1998; 295].

Waste recycling

- Inorganic waste should be sorted and stored on site. Provision for this should be made in the storage space
- Large quantities of organic waste will be produced by the Refectory. An agreement should be made to have this waste collected daily and used elsewhere (e.g. in a piggery)

Water consumption

- reduce water usage
- use efficient devices, i.e. dual flush water closets and aerated shower heads
- promote water saving awareness in the building
- select planting with low water requirements (indigenous species)
- reduce run-off by using pervious or adsorbent surfaces and minimising hard landscaping. Retain run-off on site before releasing into stormwater channels

Harvest rainwater and store. Use for hand washbasins, flushing water closets and maintenance of landscaped areas. Where possible, collected water should be stored as water features on the surface. This would contribute to the climate of the building by making use of evaporative cooling in summer and heat storage in winter.

The amount of collectable rainwater from the existing buildings is 749 kl/year. Residents will require approximately 894 kl/year for use at hand washbasins and water closets [Tutt, 1998; 409]. Landscaping will require approximately 523 kl/year for irrigation purposes [Tutt, 1998; 409]. A collection area of a further 950m² is required for the balance needed. Taking the site coverage and size of storage tank into consideration, the design target is set to meet 75% of the water required annually, for above-mentioned services, from harvested rainwater.

-recycle grey water to supplement water demand not met through harvested rainwater

Materials

We are not usually aware that an unconscious element of touch is unavoidably concealed in vision; as we look, the eye touches, and before we even see an object we have already touched it. Touch is the unconsciousness of vision, and this hidden tactile experience determines the sensuous quality of the perceived object, and mediates messages of invitation or rejection, courtesy or hostility.

Tadao Ando [1991; 126] uses natural materials on those parts of a building that come into contact with the human hand or foot, because he is convinced that substances such as wood and concrete are invaluable materials for architecture, and that one becomes aware of the true quality of architecture through the body.

Conventional building methods have been relied on without questioning whether they optimise the potential of the materials used. The potential of ordinary building elements should be exploited in order to express design quality.

Environmental impact of materials

The ecological impact of materials must be assessed to inform the choice of materials. The following should be considered;

- use natural materials in their raw form
- use materials and components with low embodied energy (e.g. concrete and timber)
- choose materials with long term benefits (e.g. corten steel). Where finishes require higher maintenance (e.g. timber), it is not perceived as a negative but rather as a long term social project, benefitting local workers
- choose comfortable materials in terms of their thermal and acoustic abilities and durability
- the use of materials with inherent decorative qualities is encouraged (e.g. concrete and timber)
- local building materials must be used. This will reduce the amount of fuel used for transport and reinvest money in the local community. It also enhances awareness of materials and climate specific construction features unique to each region. The main construction materials (concrete, steel, brick and glass), will be sourced within a 100km radius (PPC plant and ISCOR foundries). Timber is sourced outside this area, but its renewability makes it a sound material choice
- save on construction costs by selling the materials of the demolished structures on the proposed site; corrugated iron sheets, red face bricks, steel window frames, and glass. Use building rubble as fill material

Contextual influence

The design is to form a continuous and homogeneous urban fabric with the adjacent built masses. Establishing a contextual link to material use in the surrounding buildings is necessary.

A brick aesthetic has been established in Pretoria, as can be seen in the existing buildings on the site and in the surrounding areas. The presence of the solid off-shutter concrete wall on the eastern side of the site, as well as the column and beam office buildings on the western side, establish the use of concrete as an obvious choice. On ground floor level in the inner-city, especially in the arcade system and Church Street, glass is probably the material pedestrians most often come into contact with; vast shopfronts dominate this area.

In the surrounding buildings wood is used mainly as interior finish (cladding material, handrails) and mostly in limited amounts. A noteworthy exception to this is the Saambou Arcade where a massive atrium is clad exclusively in wood. In the proposed design the use of wood will primarily be inside, exploring the lavish quality of wood to create warm interiors.

The visual presence of metal in the area is limited mainly to columns, staircases and shopfronts. Cast iron columns are found along Civic Mall (Church Street), while staircases are made either of steel profiles or wrought iron elements. In the building steel will be used structurally as well as decoratively (e.g. cladding material). Shopfronts in Burlington Arcade and sections of the Noordvaal Thoroughfare are finished in copper. A possible roof option would be a craft-lock type copper roof sheet, which will establish a contextual link with the surroundings.



Light

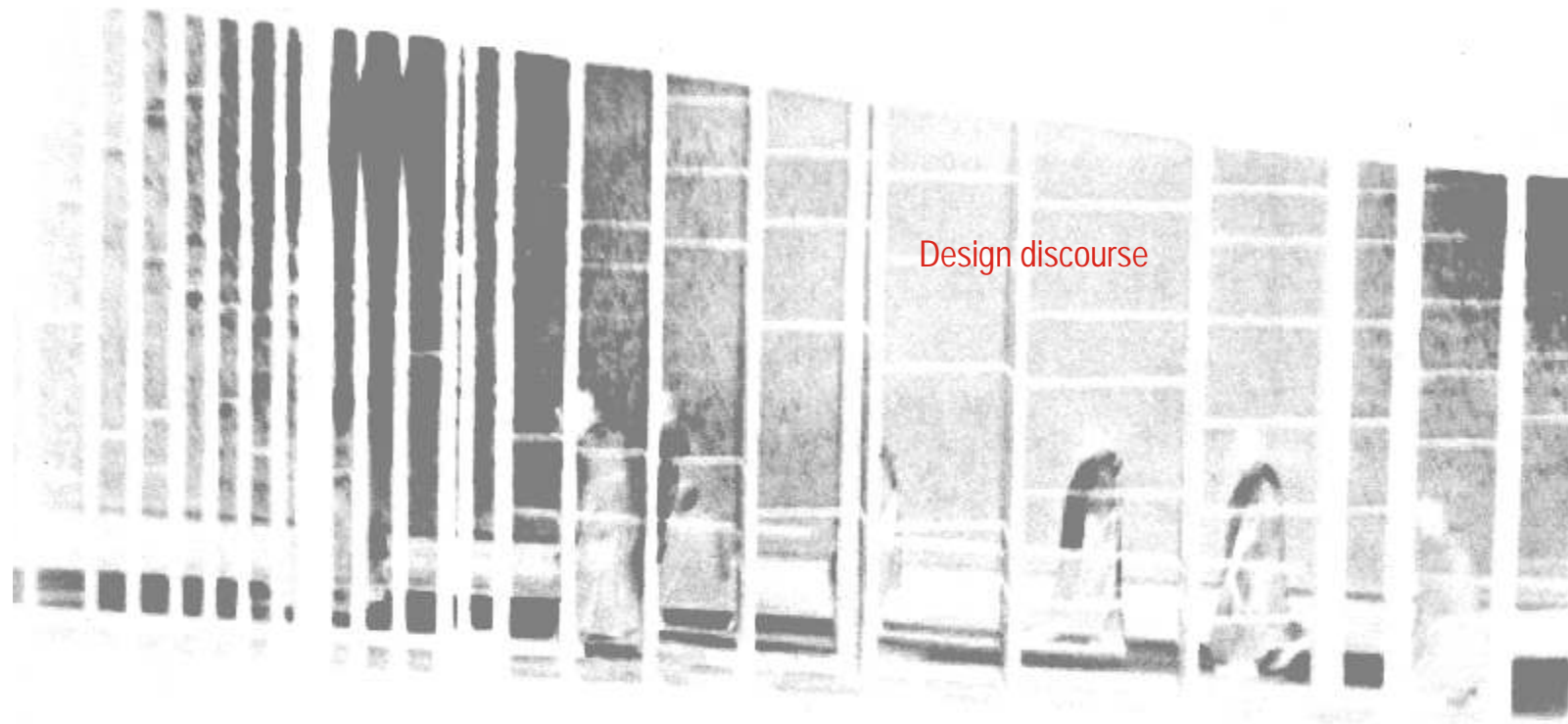
Thought immaterial, light can take on a surprising physical presence. It is sometimes the most tangible of building materials. Light can alter our perceptions of space. It can enhance our comprehension of the elements of a building, by making the perception of texture possible. In the Church of the Light, Tadao Ando [1991; 126] made as few openings as possible in the building, because light becomes brilliant only against a dark background (SEE FIG. 64).

With limited direct sunlight reaching the site, attention should be given to the movement of the sun. Light penetrating the same space from different openings at different times of the day creates interior layers, resulting in a weaving and flowing of air and light. The constantly changing quality of light and movement caused by natural light adds a dynamic quality to a space. This idea connects to the principle of "diurnal rotation", as seen in traditional courtyard structures.



61_ Interior view of the Ibarak Church of the Light in Osaka

62_ Interior view of the 'hot' room in the hamman el Kachacine.



Introduction

The purpose of this study is to investigate ritual in order to establish an intimacy between architecture and its users. The liturgy of the Roman Catholic Church is used as a point of departure, but the study is especially concerned with personal secular ritual.

The project directly addresses urban issues as well as spatial and emotional ones. The intervention is seen as part of a process of architectural proliferation. It takes the existing fabric and current conditions and rather than replacing them, creates a synthesis of elements so as to evolve a new urban condition; i.e. how to grow a piece of city rather than how you build it. The dominant trends of town planning have been based on strong strategies and strong urban form. The medieval townscape as well as the urban settings of traditional communities grew on the basis of weak principles. Strong strategies are reinforced by the eye, the sense of distant control, whereas weak principles give rise to the haptic townscapes of intimacy and participation (Pallasmaa, 2000; 82).

Design decisions were influenced by Pallasmaa's ideas on fragile architecture: it is concerned with real sensory interaction instead of conceptual manifestations. Problems and opportunities are identified on a small scale and the response is focussed on these: it is an architecture that grows and opens up.

The retreat provides a sense of calm in the middle of the bustling city. Our culture aspires to power and domination and this quest characterizes Western architecture as well; architecture speaks a powerful image and impact (Pallasmaa, 2000; 81). The design is seen as a piece of fragile architecture in the sense that it exists quietly within a city block. The design is knitted into the urban fabric and flow patterns of the CBD, especially the pedestrian networks. The architecture of weak structure and image is contextual and responsive. It is concerned with real sensory interaction (Pallasmaa, 2000, 81).

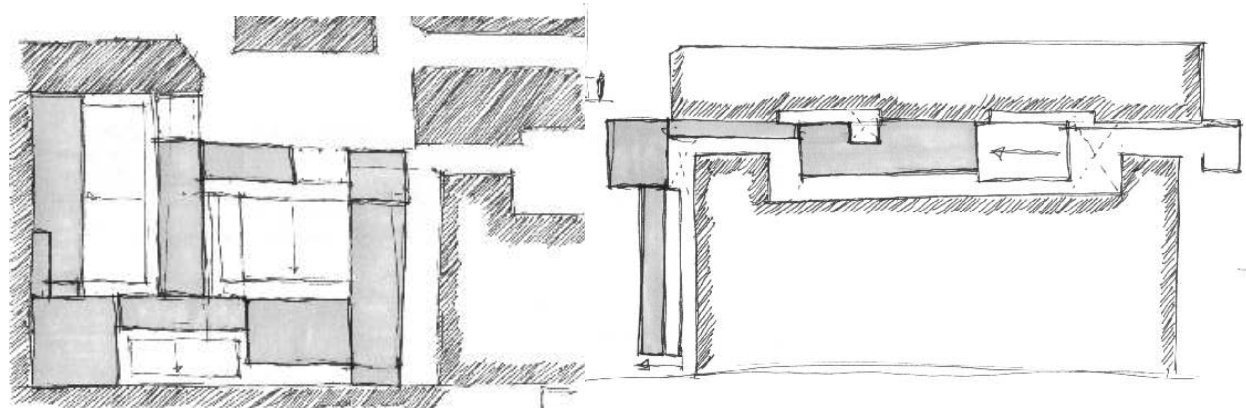
Ritual

Certain activities have an intrinsically ritualistic quality, such as the rites of religious practice. For others, the qualities associated with rituals are imbued by external factors. These activities are the rituals that give shape to our lives (Pawson, 2002; 21). Users make up their own rituals, suggested by existing religious rituals or by intimate experiences suggested by the architecture. Even ordinary daily rituals are carried out with a sacramental attitude.

Rituals gain their power from the act of performance. Unlike the currency of ideas, they do not grow in value or importance by being taught or read about, or discussed. It is the act of doing that we invest with significance (Pawson, 2002; 21). The design forms a stage architecture where an element of tension is introduced by users, or more subtly, by their absence. The relationship between individual and place acquires ritualistic characteristics.

Architectural meaning resides in human experience. It is evoked in the acts of occupying and inhabiting space, in experiences of space, matter, gravity, and light (Pallasmaa, 2001, 51). The role of architecture is not to entertain or thrill but to structure our understanding of the world and of our very existence; to articulate how the world touches us (Pallasmaa, 2001, 51).

63_ Concept sketches of masses and voids, and intervention in pan-handle.

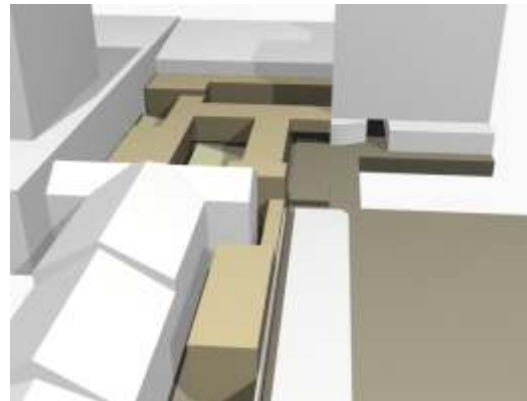


Design

The architecture of the eye detaches and controls, whereas haptic architecture engages and unites. Tactile sensibility replaces distancing visual imagery by enhanced materiality, nearness and intimacy (Pallasmaa, 2000; 79).

The design has a purposeful modesty of scale in relation to the neighbouring building, placing greater importance on the activities within. An architecture of courtesy and attention, it invites us to be humble, receptive and patient observers (Pallasmaa, 2000; 82). The design consists of layers of secrecy, the first being the position of the site, that slowly reveals itself as routes are followed and rituals performed. The idea of secrecy links to the traditional monastery where the architectural work and the life of the monks are essentially hidden from the world. The insertion of the chapel into an existing structure (NLSA), with only the tower suggesting a religious function, places it in the most sacred position on the site.

The design was conceived of ideas based on simplicity. Especially in the meditative spaces (e.g. Chapel and chapter room) a process of reduction was followed to create simplistic and silent spaces that draw visitors towards their own inner thoughts. The retreat is made up of simplistic spaces which are layered to create a multi-sensory experience. Contrast exists between the textures created by a timber and steel screen and the smooth off-shutter concrete walls.



64_ Concept image of the Retreat within the cityblock. 65_ Concept model indicating main public open space.

The design was conceived as a single articulated entity of coherent spaces. The whole is held together by the constancy of an emotional atmosphere. Routes throughout the design are constructed of brushed concrete, with illuminated balustrades where needed. The exterior route that cuts through the common room and chapter room directly links the most sacred space (chapel) and the most private spaces (cells).

In the design there is an interplay of positive and negative volumes, of masses and voids. The void is a vessel for light and shadow, and it also serves as a compositional nexus binding the different masses (Ambasz, 1986; 106). Containment and openness reinforce each other.

Layout and function

Any work of architecture which does not express serenity is a mistake. That is why it is an error to replace the protection of walls with today's intemperate use of enormous glass windows (Ambasz, 1986; 8). The proposed site is surrounded by walls, most notably the 12 m high boundary wall of the Old Mutual Building. The design is respectful of the existing urban fabric by positioning the courtyards adjacent to the boundary walls. In this manner the design becomes interwoven with the city block, forming a continuous and homogeneous urban fabric.

The design acknowledges the typologies of the monastery, specifically the historic ground plan of the quadrangle surrounding an inner courtyard. The design was further influenced by the courtyard typology of the Islamic Medina, specifically how a tightly knit urban fabric that is based on interdependence is formed.

Entrance to the retreat is from the middle section of the Noordvaal Thoroughfare (Level 0). This section of the Thoroughfare is open and is enlarged to form an area for informal trading. This level is a storey higher than the northern edge of the site. All the public functions of the retreat (i.e. multi-use hall, seminar room and offices) are located on the lower level, while the retreat occupies the levels from the mid level and up. On entering the building, visitors may choose between the public and retreat sections.

The ground floor of the currently disused NLSA building is dedicated to public functions, with a multi-use hall and ablution facilities inserted into the southern section. The first and second floors will be used by a School for the deaf. Further public facilities are located in the pan-handle to extend the available space.

The retreat exists around a public open space. This open space has a more intimate scale than Church or Strijdom Squares. Access is controlled through a series of pivot screen doors that may be kept open during the day, giving full public access to the open space. When these doors are closed they form the western edge of the retreat and the open space becomes an exclusive part of the retreat. This space now becomes accessible through various openings in the retreat, most notably the refectory that opens up completely to the open space.

The meditative spaces are grouped together in the middle section of the retreat, with the living areas (refectory, cells, and ablution) on the southern edge of the public open space. In this manner there is a gradual movement from the most sacrosanct space to the meditative spaces and on to the living spaces. At the same time there is a transition from religious ritual to ordinary daily rituals. The repetition of the cells stands in direct contrast to the uniqueness of the meditative spaces. Without similarity we cannot know difference, and repetition is simply comforting (Pawson, 2002: 41).



66_ Concept model indicating the positioning of the courtyards adjacent to the existing boundary walls. 67_ View of the Retreat as seen from the Noordvaal Thoroughfare.

Contextuality

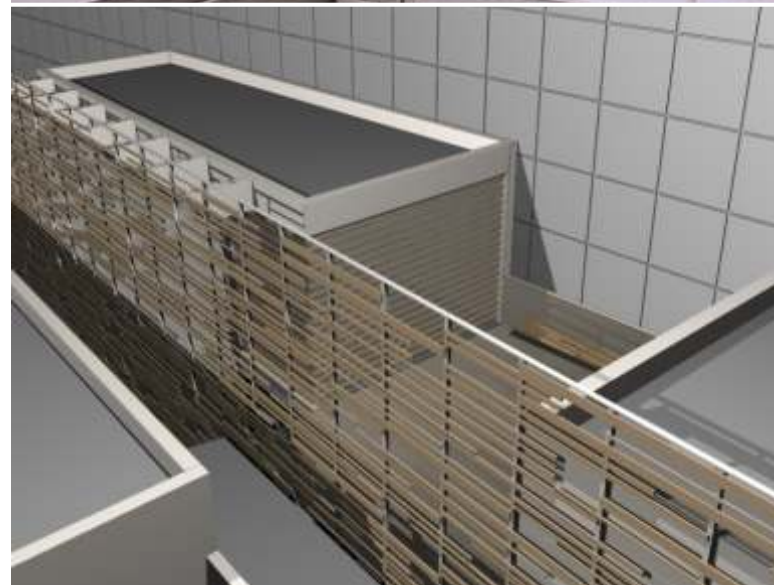
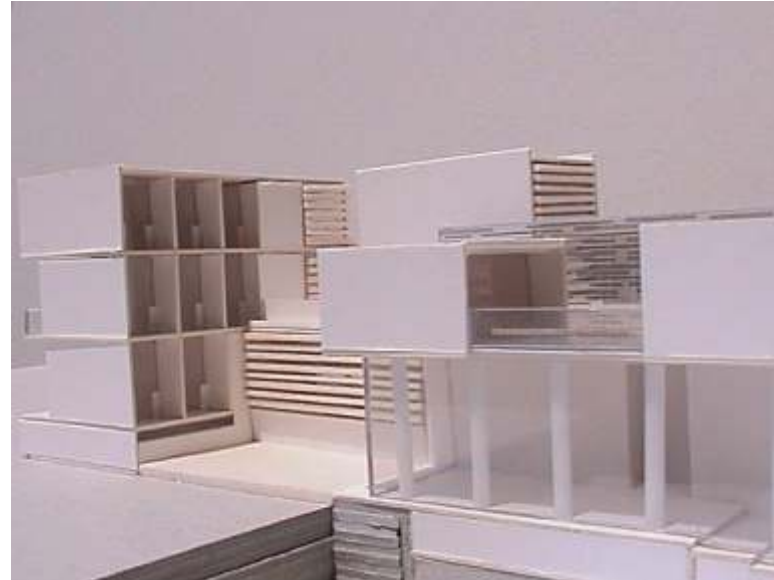
The idea of fragility suggests listening and dialogue (Pallasmaa, 2002: 82).

The design creates awareness of the existence of the site and its surrounding fabric. Historical layering is applied; traces of demolished structures are incorporated into the design. A historic layer of the demolished buildings exists in the traces it leaves on the boundary walls of the neighbouring buildings. In this manner there is a connection to deep time in the design. The design further reveals previously unseen elements. The southern facade of the NLSA building is exposed and becomes the main facade to be seen from the open space. This facade gains added importance as it forms the external skin of the chapel.

Throughout the design, distinction is made between new and existing, but with no unnecessary drama at the junctions. Simple shadow lines distinguish floor slabs from existing facades. However, an interdependence exists between the design and the existing urban fabric. Existing boundary walls are drawn into the site; at some places they become internal walls and new facades are only completed by these existing walls.

The scale of the existing off-shutter concrete wall is not agreeable in proportion to human scale. To make the wall a readable surface, building masses are situated right against it, breaking it down into smaller pieces that are seen from the courtyards and library. Furthermore, in the library a glass facade, that runs parallel to the concrete wall, begins to define the wall as a piece of abstracted nature (SEE FIG. 68).

From the Noordvaal Thoroughfare the full scope of the off-shutter concrete wall is still visible. The western facades of the retreat form continuous, abstracted planes that begin to compete with the scale of the off-shutter concrete wall. A timber and steel screen runs the length of the chapter room and audience room, and extends above the roof, while the facade of the common room and library is treated as a single plane by means of a Corten screen that covers the whole facade.



68_ Image of the library situated against the Old Mutual boundary wall. 69_ Image of the courtyard situated between the Audience and Chapter Rooms.

Courtyards

The courtyards are enclosed on all four sides with high walls, forming deep spaces which force a connection to the vertical. They form open enclosures or secluded gardens, which relates to the Islamic notion of compartmentalized and successive garden spaces (Ambasz, 1986; 105). The resulting outdoor spaces each have their own character and varying degrees of privacy. The largest courtyard is an open public space.

The second largest courtyard is surrounded by cells on three sides, with the red face-brick wall of an existing building forming the fourth. The entire courtyard is covered in timber decking, with a curved off-shutter concrete bench situated near its centre. This curve establishes a link with the semi-circular wall in the chapel, visually linking the most sacred and private areas in the retreat.

The more private courtyards are situated adjacent to the off-shutter concrete wall. This is visually the most secluded area on site, providing privacy from even the adjacent office buildings. The courtyard which is formed between the chapter room and audience room is further screened from movement in the retreat by a timber and steel screen to become the most private courtyard. In this courtyard the floor surface and balustrade is treated as a single element as the Cor-ten strips on the floor continue in the vertical direction. The Cor-ten strips further conceal a skylight that brings light into the Library

70_ Concept image of a courtyard indicating the response to the existing fabric. 71_ Image of model indicating a courtyard space surrounded by the accommodation area.



The building was designed as an open structure where intimate interior spaces relate to the existing exterior. Indoor spaces flow out into the decked courtyards without level changes, creating a strong indoor - outdoor connections. The same materials are used inside and outside where possible. To do so prevents the junction between one material and another from stopping the eye. In this way, a further connection between the interior and exterior is created. Concrete is used as a seamless surface; floor slabs rise up and become balustrades.

Courtyards are specifically not shaded to address winter conditions and to force visitors to move between courtyards. Through the process of diurnal rotation, a strong secular ritual occurs with opposite patterns followed during winter and summer months. The curved bench in the courtyard further acts as a large sun-dial, as a shadow progresses from its one end to the other.

Transition

The tower, together with the steps leading to the lower level, has the added function of providing a moment of transition away from the transience of the outside into the stillness of the retreat. The tower is situated in the traditional position, but is visually separated from the chapel to serve as an announcement of the intervention to persons using the arcade. At the top it houses a bell that signals the opening and closing of the retreat, and announces religious services. This creates a sense of structure or order for both the inhabitants of the retreat and people in the surrounding areas.

A continuous concrete floor surface, leads visitors from the tower, down a flight of stairs into the entrance area, then gradually up the cloister ramps and finally into the chapel. The seamlessness of the floor surface functions as a city carpet that draws visitors from the outside into the most sacred space. Illuminated balustrades that wrap around the multi-use hall and chapel further encourage visitors to explore the secrecy of the place.

Movement

The different route possibilities in the design add another layer of secrecy to the building. Visitors discover options as they move through the retreat. Different movement tempo's exist, with some routes linking directly to the chapel and others offering the possibility of wandering through the building with places to sit and rest or contemplate.

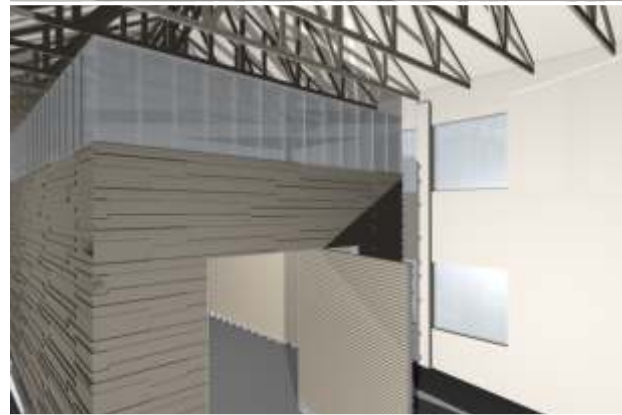
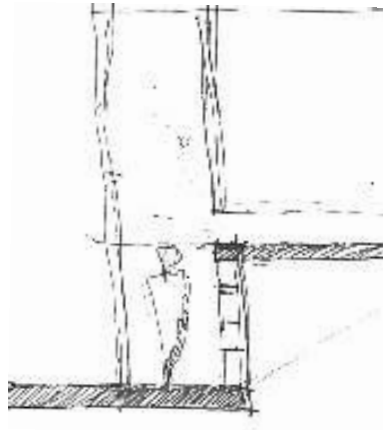
Routes throughout the design directly address the human skeletal and muscular system. Movement along stairs or ramps focuses the vision of the user on that which is in front of him. Moving down the stairs in the narrow slit between the chapter room and common room, the user's vision is led directly towards the chapel and, more specifically, to the tabernacle.

Chapel

The garden is the myth of the Beginning and the Chapel that of the end (Ambasz, 1986; 108).

The insertion of new functional and symbolic structures short-circuits the initial architectural logic and opens up the emotional and expressive range (Pallasmaa, 2000; 82). The chapel is conceived as a box inserted into the NSLA building. The western facade wraps around the sacristy in a semi-circle of translucent glass. This curve is a deviation from the linear lines of the chapel and the rest of the retreat. In this manner the focus is placed on the altar and tabernacle, while in the cloister the curve draws visitors around to the next ramp, which leads to the entrance of the chapel.

The interior of the chapel is simplified as far as possible, reducing the elements within the space. Paradoxically, this process of simplification increases visual impact. The rituals performed in this space are allowed to come to the foreground and to become exceptionally meaningful and valued. Users are further drawn towards their own inner thoughts and introspective experiences.



72_ Interior view of the Cloister. 73_ Entrance to the Chapel. 74_ Interior view of the Chapel.

The walls of the chapel consist of three planes of timber cladding that seem to float above the concrete floor. This is achieved by placing a band of strip windows around the base of the chapel. The glass sections are divided by structural stainless steel fins which disappear on elevation. Concealed down-lighters further throw a soft light around the base of the chapel. Another band of strip windows is situated at the top of the chapel space. The idea of verticality is further strengthened by the walls ending just beneath the exposed roof trusses of the NLSA building. Where the chapel is concealed in mystery from outside the retreat, the opposite is true from the cloister, where the strip windows allow views into the retreat and the translucent facade of the sacristy begins to reveal activities within.

The apse wall of the chapel consists of two free-standing white planes forming a semi-circle that projects out around the altar. These two elements reflect the morning light that enters through the translucent wall of the Sacristy, light is then diffused around the tabernacle and altar. The planes are separated by a tall slot, and unified by the tabernacle that is inserted into this slot. The altar is made of roughly hewn stone slabs and the tabernacle of stainless steel sheets. The chapel is devoid of imagery, to make allowances for visitors from various religious backgrounds, but abstraction is used to communicate with Roman Catholic visitors. The stations of the cross are formed by white pre-cast squares that project out of the timber clad walls.

The exterior walls of the chapel are textured through the use of timber sections of various lengths and depths, creating a tactile experience. The interior walls consist of timber sections, which through their precise spacing become smooth and readable as single planes.

Conclusion

Buildings attempt to conquer the foreground instead of creating a supportive background for human activities and perceptions. Architectural projects of our day are often impudent and arrogant, and seems to have lost the virtue of architectural neutrality, restraint, and modesty (Pallasmaa, 2000; 84).



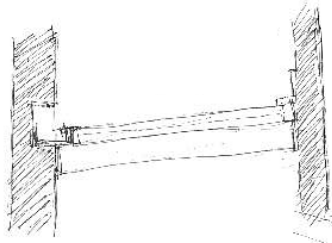
Introduction

The following text is supplement to a set of drawings, to enrich and motivate decisions made on a technical level. The aim is not to repeat any information, but only to display how an idea should extend to the finest level of detail when making architecture. The technical report further does not address all issues raised but only a selection of the most important elements. The ideas expressed here can however be extended throughout the entire project.

Response to the surrounding fabric

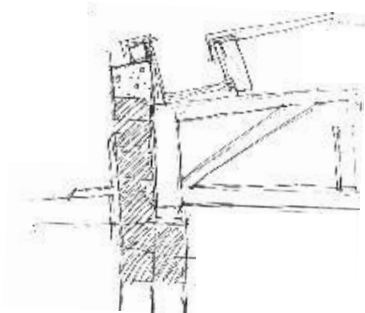
Interior passages

The connection between the red face-brick wall and the intervention (the southern edge of the site) makes a clear distinction between new and old. In the courtyard the face-brick wall remains an exterior wall, but in the passages it becomes an interior wall. The interior passages leading to the cells on the first floor are set back 1200 mm from the existing boundary walls. On the first floor a glass balustrade with timber handrail runs the length of the passage. The roof connection is made with a skylight, bringing light into the back part of the structure. The face-brick wall is topped with a new concrete cornice that conceals a box gutter (SEE FIG. 68).

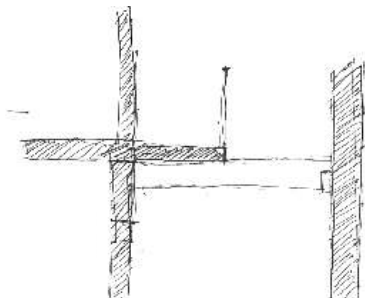


Courtyards

All the courtyards are situated directly adjacent to the existing urban fabric. In each courtyard the fourth edge is defined by an existing boundary wall.



In the design the building's volume is fragmented by a series of courtyards. This layout allows for natural ventilation and daylighting, with ample outside views. The courtyards form part of the passive climate control in the design. Courtyards are specifically not shaded to address winter conditions and force visitors to move between courtyards; a ritual of diurnal rotation is followed from one courtyard to the next as the day progresses.



The courtyards on level 0 are finished in open timber decking, creating an abstracted or architecturalised nature. On level 1 the courtyard is finished in Cor-ten steel strips welded to a Cor-ten steel frame. This allows light to filter through a skylight which illuminates the reading section of the library. The change in material further indicates a difference to the lower courtyards, this one is dedicated for the use of permanent or religious members. The use of these two finishes allows for an edgeless transition between interior and exterior spaces as floors are finished on exactly the same height.

Screens

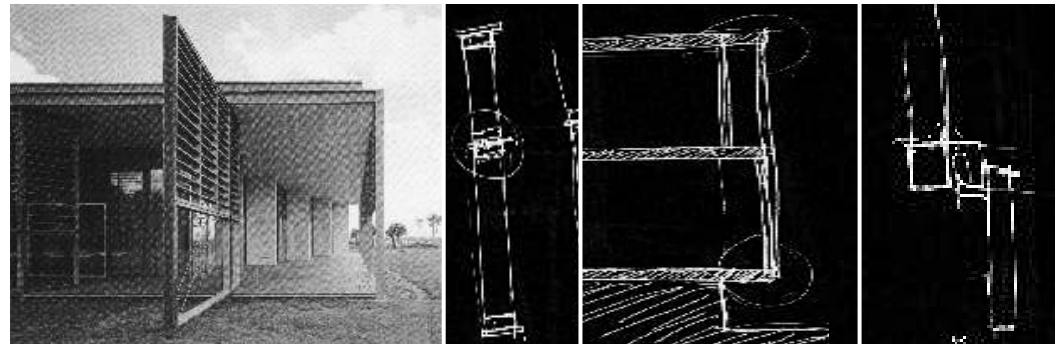
Screen devices will be used for both visual and sunlight screening. The screens read as solid surfaces when viewed from a distance, and disintegrate on visual approach, to where they only filter light to the inside. Two different screen designs are used throughout building.

A timber and steel screen covers the whole length of the western walls of the audience room and the chapter room. This screen acts as an abstract element that relates to the elevation of the massive off-shutter concrete wall of the Old Mutual Building. It starts to visually disintegrate the concrete wall down to a more human scale. Both this screen and the one on the western edge of the site consist of the same configuration of timber slats as the chapel. Only here the slats are spaced further away from each other and instead of a cladding material become a screen.

The built-up edge around the site makes larger openings on the eastern and western sides of the building possible. In the common room the western facade is pushed back to form small balconies, which consist of floor-to-ceiling stacking doors in wooden frames. The entire western facade is screened with a perforated Cor-ten steel element. Individual screens on sliding tracks allow the facade to open up even more, depending on the time of day.

Intervention in the pan-handle

The 2,8 m slope of the site from south to north was maximised to create changes in levels throughout the design. The slope furthermore made it possible to insert a structure into the pan-handle. The close proximity of buildings force a dialogue between the existing buildings (NLSA and Noordvaal offices) and the new structure. A ramp leads visitors from the lower level of Vermeulen Street to the entrance on the mid-section of the Noordvaal Thoroughfare. A 500 mm slit between the new structure and the NLSA allows for ventilation and daylight to reach the lounge area of the intervention (SEE FIG. 51).



76_ Pivoting door forming a shading device. 77_ Concept sketch of detail of pivoting door. 78_ Concept sketches of the western facade of the Common Room and sliding shading devices.

Chapel and multi-use hall

Intervention and structure

The chapel and multi-use hall will be inserted into the existing National Library of South Africa (NLSA). The existing concrete column and beam structure, roof structure and exterior skin will be retained. The existing floor slabs will be removed and the ground floor excavated to provide the height needed in the multi-use hall. The existing ceiling will be removed, revealing the roof trusses and existing skylights.

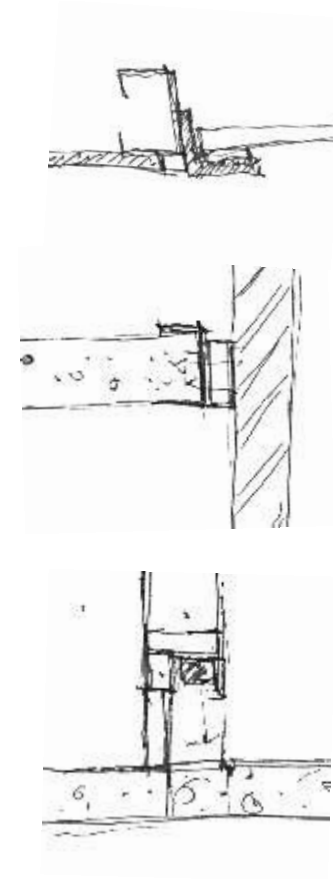
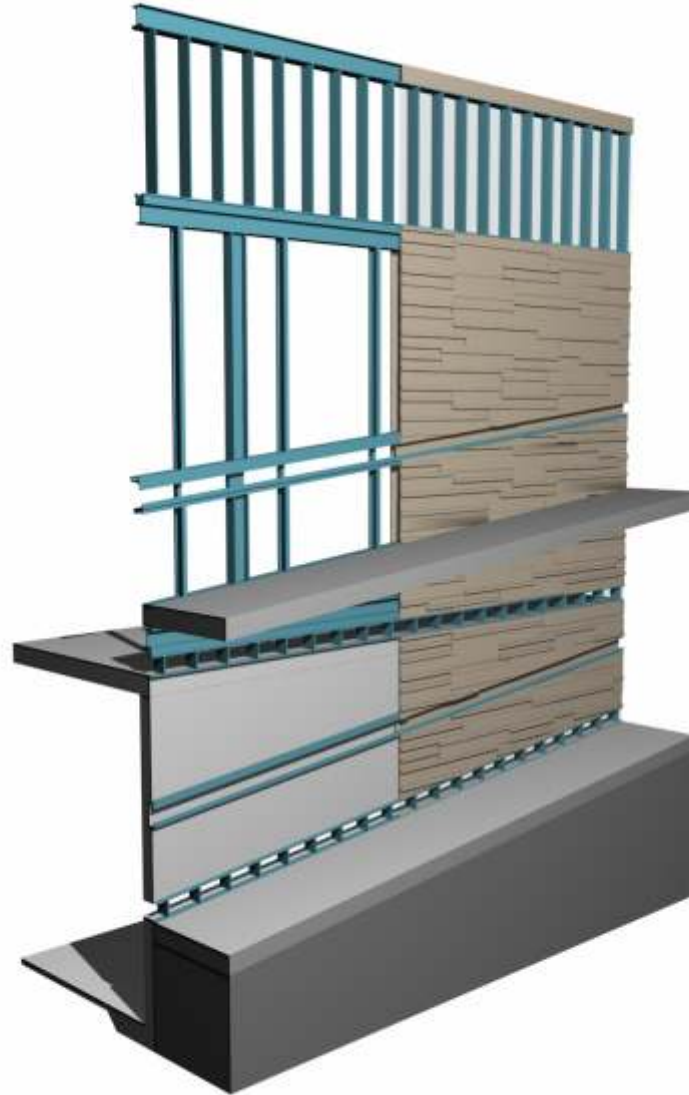
The chapel and multi-use hall will be inserted as a box with various ramps spiralling around it, which form the cloister. The multi-use hall is constructed of 200 mm off-shutter reinforced concrete. The chapel is constructed of a stiff light-weight steel structure and connected with steel braces to the concrete structure of the exterior skin. This, together with the ramps and retained roof structure, provides lateral stability to the exterior skin.

A continuous movement route is formed by a single floor finish which leads from the reception area, up the ramps, and into the chapel. In this manner an urban carpet extends from the exterior into the most sacred space. Floor slabs and ramps are constructed from fine- aggregate reinforced concrete which is brushed to allow for a better mechanical grip.

The intervention will be distinguished from the existing structure through a shadow line running at the edge of the connection between new concrete work and the existing skin. For this, a steel channel is welded to a 50 mm steel plate which is then bolted to the existing structure, and the concrete slab cast into this channel (SEE FIG. 64). This type of connection is easily reversible.

The sacristy and eastern wall of the chapel is formed by a translucent glass and steel wall. This wall is constructed from double-glazed panels with their frames concealed in hollow stainless steel sections. These sections are fixed to vertical 20 mm stainless steel fins.

The exterior of the NLSA will stay unchanged except for the refitting of windows with safety glass and two elements which announce the intervention. The first is new windows and timber shading devices on the western side, and the second is a Cor-ten steel-clad protruding box that acts as a threshold before entering the "retreat space".



79_ Isometric view of the chapel and multi-use hall seen from the cloister. 80_ Concept sketches of connection details

Acoustic and thermal treatment

In the chapel, members of the congregation will be no further than 10 m from the altar, so there is no need for extra sound reflection. The walls are acoustically treated for sound absorption in the chapel and sound insulation from the cloister. From the interior to the exterior a typical wall will consist of 50 mm mineral wool fibre board under open spaced timber battens (20% openings), a 75 mm cavity and a layer of timber strips glued to a particle board base. Ramps in the cloister are furthermore specifically solid (reinforced concrete slabs) to deliver acoustic protection from the entrance area and multi-use hall.

All windows in the chapel are double-glazed for acoustic protection from activity in the cloister. Windows inserted into the existing skin on the western side will also be double-glazed to address disturbances and activities from the route in the pan-handle. This is further done for thermal protection from heat radiated from the blank eastern wall of the Noordvaal Office Building.

Both the chapel roof and existing roof of the NLSA are insulated with a 40 mm mineral wool fibre board.

Ventilation

Both the chapel and multi-use hall require mechanical ventilation to obtain the required air change rate of 7,5 l/s per person. Fresh air is drawn from the base of the building on the southern side and carried through shafts concealed in the suspended roof of the multi-use hall. From there fresh air is distributed through two separate cycles. The cloister, lounge and foyer areas will be naturally ventilated.

Lighting

Natural lighting will not be sufficient in this part of the NLSA; the chapel and multi-use hall have specific lighting requirements, while the cloister area north of the chapel has limited exposure to natural light.

This is addressed by removing the existing ceiling to reveal existing skylights. New skylights will be inserted higher up on the southern side.

The new ceiling constructed between the existing roof trusses will be painted white, light is reflected off the ceiling by concealed tubular fluorescent lamps.

Concealed tubular fluorescent lamps are further used to light recessed handrails. These lamps follow the incline of the ramps to wrap around the chapel and multi-use hall. They furthermore function as route indicators. Concealed tubular fluorescent lamps are also used in the chapel to fulfil the minimum daylight requirements.



81_ Images of a concept model indicating the insertion of the chapel and multi-use hall into the National Library of South Africa Building.

Cells

Structure and shell

The cells are grouped together on the southern side of the site and have north facing facades. The cells and ablution facilities consist of modular units of 2,4 x 5,6 m that are divided by 200 mm off-shutter reinforced concrete fins. The fins, together with a 200 mm off-shutter reinforced concrete slab (260 mm in the cantilevered walkways), form the structural system, which carries all loads and frees up facades.

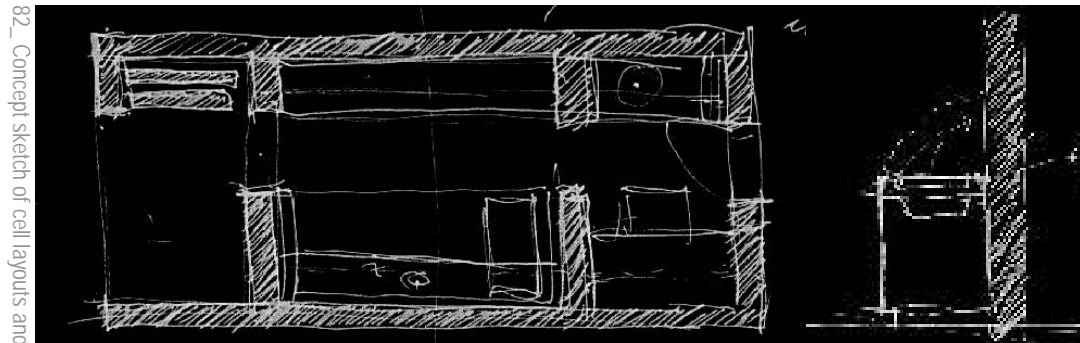
The northern edge of the cells is formed by a sun space. The outer facade consists of full room-height glass stacking doors in a timber frame. The inner layer is formed by a glass door in a timber frame, and a window with a concealed frame in a stainless steel section above a 110 mm painted brick wall. The southern edge is also formed by a 110 mm brick wall that is painted on the cell side and tiled (with white mosaic) on the walkway side. A stainless steel lintel runs above the door and conceals the frame of the glazing unit.

A timber shaft conceals and gives access to a 150 mm oPVC rainwater down pipe and a 40 mm oPVC water pipe for the handwash basin.

Finishes

The floor of the cells will be finished in 22 mm timber tongue and groove floor planks, and in the sun porch the concrete slab is given a direct-finish. The ceiling consists of plywood boards fixed to steel z-sections and finished with a stainless steel cornice to create a shadow line around the edge of the space. The ceiling continues out into the sun space and into the walkway, interrupted only by small slits that conceal window frames. This creates a indoor-outdoor connection.

82_ Concept sketch of cell layouts and fold-open handwash basin.



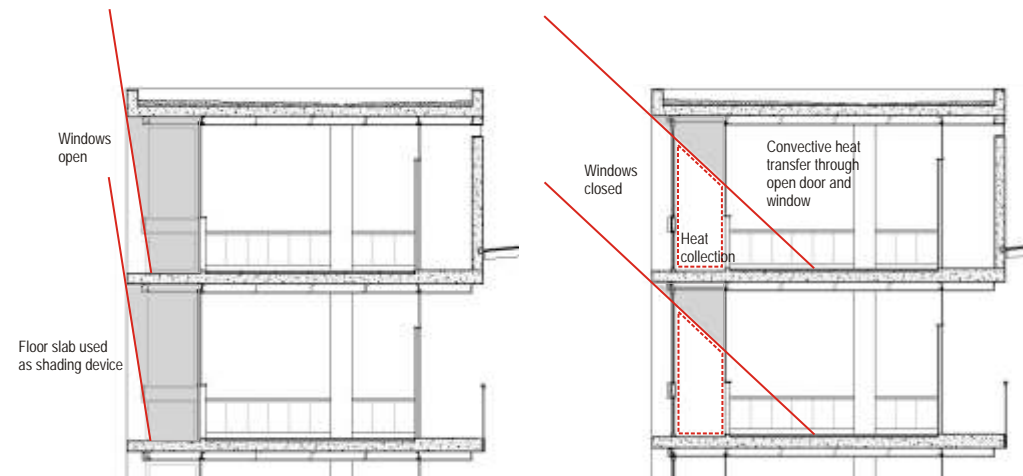
The base for the bed consists of a cantilevered off-shutter reinforced concrete slab. The remainder of the cell is fitted with timber cupboards and furniture. In one of the cupboards a handwash basin is concealed by a timber covering that opens up to reveal the basin (SEE FIG. 66).

Sun spaces

The sun porch will be indented into the building between the concrete fins. Heat loss through the end walls is minimised without reducing solar exposure, thereby increasing the thermal efficiency of the sun space. The connecting wall is a thermally conductive, massive wall with large openings, leading to the inner room where heat is needed. The convective heat transfer is higher than the conductive flow across the wall.

To be effective in winter, the outer facade must be kept closed and the windows and door of the inner facade kept open during the daytime and closed at night (SEE FIG. 67). The thermal mass of the concrete slab moderates the diurnal temperature fluctuations to make the porch habitable. The slab, furthermore, acts as a shading device during summer when the outer facade is completely open (SEE FIG. 67).

The fact that each cell has a separate sun porch means that occupants can easily control their own environments.



83_ Diagram of a section through a cell indicating first the summer and then the winter functioning of the sun porches.

Concrete

Concrete is the material of choice for all the structural and most of the solid envelope construction. Its flexibility in terms of its properties means that most structural, thermal and fire performance requirements may be achieved through variation of the basic elements of the material. Concrete structural frames free the facades from load bearing, and so make floor to ceiling glass walls possible; the result is a dynamic flow of space from inside to outside. Concrete as a mass element creates thermal mass which is beneficial for passive climate control.

Free-standing exposed concrete, linked to nature, is remarkable for its lightness and weightlessness [Blaser, 2001; 33]. The natural quality of the material encourages human interaction. Furthermore, in the proposed design the quality of processional change through continual environmental exposure will reveal an ongoing process that relates to the continuous ritual process.

In-situ concrete will be used as a structural and sculptural element. All concrete will be off-shutter, with finishes varying from smooth, using steel form-work, to rough, using wooden boarding. The use of timber shuttering reveals the truth of the construction process and the influence of other materials. The texture of the surfaces will be used to differentiate the tactility of the surfaces where applicable.

Tadao Ando uses standard size concrete blocks throughout his designs. These blocks measure 900 x 1800 mm, with six tie-rod holes each arranged in a grid of 400 x 600 mm. The tie-rod holes have a diameter of 25 mm. The resulting pattern, which is consistent on both the exterior and interior, is in measured, agreeable proportion to the human scale. The wall becomes a readable surface [Blaser, 2001; 52].

In the design a smaller block of 600 x 1200 mm will be used. This is a readily available standard steel wall panel size, which will lower the cost and environmental impact of manufacturing shuttering [Wegelin, 2002, 15]. The composite board sizes are made up of multiples of 300 mm, implying a compatible building system. Tie-rod holes will be left exposed like the concrete, establishing an interior-exterior connection. The wall formation will awaken curiosity about the activities within [Blaser, 2001; 85].

Concrete walls and columns are made with a white concrete mixture, which lends a sensual quality to the structure. This is done to further create a clear distinction between new and existing concrete structures. Where concrete is used as interior flooring, it is power floated and smoothed with a steel trowel before setting (direct-finished floor). The smooth concrete finish can be polished, giving it an aquatic feeling. Movement routes are constructed from 30 MPa reinforced concrete; interior routes are brushed and exterior routes sand-blasted to reveal the aggregate and allow for a better mechanical grip.



Wood

As a natural material, wood is the perfect expression of our intimate connection with the world in which we live. It was the first, and remains the most important, of the plants used by humans. Grown and harvested in a sustainable manner, timber is a renewable resource, and thus the ultimate environmentally friendly building material. Well built and tested timber structures are energy efficient, flexible to receive later additional structures, and respond organically to external conditions [Fox, 1989; 123, 130]. In terms of indoor comfort and health aspects, timber is one of the most acceptable materials [Stulz, 1993; 101].

Wood will be used extensively throughout the project, as construction material and for both indoor and outdoor elements. All purpose-made (non-modular) shuttering will be constructed of timber. External elements include timber shading devices, while interior elements include composite boards as cladding material, wooden slats as privacy screens, and timber flooring. Furniture throughout the building will consist primarily of locally produced timber units.

Only timber from sustainable managed sources will be specified. The production and processing of timber requires less energy than most other building materials. Demolished timber structures can be recycled as building materials or burned as fuel (and the ash used as fertiliser) [Stulz, 1993; 109]. When disposed of through rotting or burning, it is returned to nature without any further energy input.

Today, environmentalists are concerned about the toxic contents of pesticides in wood preservatives. Using chemically treated wood can be avoided, however, by following basic rules; (i) eaves can protect the facade if extended far enough, (ii) when using vertical battens, water drips on horizontal boards will ensure that water runs off more quickly, and (iii) timber could rest on metal shoes, rather than come in direct contact with the ground. Alternatively, finishing wood with beeswax or repeated layers of approved wood oil, sanded in between applications, will suffice.



Glazing

Glass manufacturing is a high-energy industry, but glass is easily recycled when separated from other materials [Fox, 1989; 51]. The high-energy demand of glass manufacture and its ability to increase the cooling load of the interior by solar heat gain, should be considered.

The specific climatic condition of the site implies that larger fenestration on the east and west facades of the building is possible. It will be possible to control solar heat gain during the summer months through simple shading devices. During the winter months a system based on direct gain and sun porches will create comfortable environments.

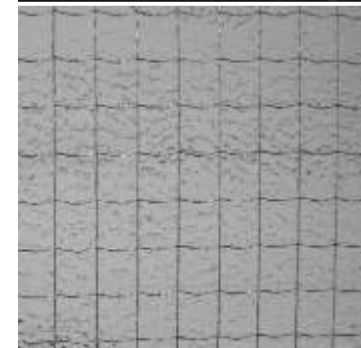
Low emissivity glass will be used where there are large glazed surfaces and where heat gain could be a problem. Laminated glass will improve the thermal and security aspects of glazed areas. Double glazing is needed for satisfactory acoustic protection of the multi-use hall and chapel.

In this design glass acts as a gauze veil, simultaneously concealing and revealing; a metaphor for the segregation or inclusiveness of the ritual act.

Steel

Nearly all metals are derived from non-renewable resources, the extraction of the raw material is destructive, and large amounts of energy is used in the refinement and transport of metals [Fox, 1989; 67]. The environmental impact of metals can be reduced by using larger amounts of recycled metals and designing components to be demountable and re-useable.

Steel has a high strength-to-cost relationship, but has poor fire performance qualities and poor resistance to corrosion. Steel elements should be galvanised after all cutting and forming has been done.



Composite boards

The use of open building systems reduces the need for wet construction and subsequently the damage that the extraction and manufacture of lime and cement has on the environment. These systems demand structures that can be erected or dismantled with the minimum use of energy and waste of materials.

An dry-walling system will be used in the public and storage component of the project to divide spaces internally. This adds to the flexibility of these spaces, taking into consideration possible future changes in use. The system is made up of three layers; the inner and outer layers consist of a 12mm composite flat sheet connected to a timber framework, and the 50mm cavity is filled with glass fibre blankets or mineral wool insulation. The use of materials with inherent decorative qualities (i.e. Chipboard or plywood) is encouraged.

The standard size of these composite boards is 1200mm x 2400mm. They will be used in a horizontal direction creating strong horizontal lines. This connects to the idea of the design quietly existing in amongst the surrounding urban fibre, with only a few vertical elements standing out.

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