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006 DESIGN DISCOURSE

6.1 Design Philosophy

The primary concept for the project is based on the notion that creative professions are disregarded by the public in general, especially when they do not realise the full extent of the process required to achieve the end product. The concept therefore endeavours to reveal the processes as well as the products of the creative professions offered by the University of Pretoria.

Process is directly related to time and the project site, placement and shape aim to stimulate visual interaction with passing pedestrians on a daily basis as the creative process progresses.

The site provides a major thoroughfare for pedestrians using the Gautrain or metro-rail systems, as well as a major gateway to campus. The users will therefore be university students as well as general public. The re-opening of Roper Street and the affiliation of the project with the Gautrain and surrounding projects in the urban framework will also provide a safe pedestrian route for children attending any of the many secondary and primary schools in the immediate surroundings. Allowing school children access to campus will also expose them to tertiary education and the project becomes a permanent exposition, showcasing the creative professions and what it entails.

fig 6.1 DEPARTEMENT ARGITEKTUUR • DEPARTMENT OF ARCHITECTURE
ARGITEKTUUR • BINNE-ARGITEKTUUR • LANDSKAPARGITEKTUUR
ARCHITECTURE • INTERIOR ARCHITECTURE • LANDSCAPE ARCHITECTURE

The concept of revealing or exposure is realised throughout the design and technical investigation. Functions, structure, materials, services and circulation are hidden and revealed at unexpected moments and places. In the layout of the building, the functions are placed to reveal the processes involved during the creative process. The building is experienced on different levels and at varying scales, depending on one's location in and approach to the building, revealing the architectural articulation.

fig 6.1 promotional material for the Department of Architecture

fig 6.2 diagram illustrating the process of a heterogeneous catalyst

The second objective of the concept is based on the concept of a business incubator, where young professionals starting their careers benefit greatly from associating with more experienced professionals acting as mentors. Interaction between closely related professions, as well as interaction and exposure to people at different levels of accomplishment within a profession, significantly enhances a student or young professional's rate of development.

The project, therefore becomes a catalyst, which is defined as "anything that increases the rate of any reaction or process by providing an alternative reaction pathway, whilst remaining unchanged" (Wikipedia/catalyst). Heterogeneous Catalysts provide a surface for the reaction or process to take place on.

To summarise: the project provides a platform where students are able to interact with experienced as well as newly qualified professionals, who on their part can use the facilities to start their own companies and benefit from the input of mentors.

It further serves to blur the boundaries between varying levels of growth. Mentors will be lecturers or other professionals who can earn CPD points in association with the university.

In addition, the threshold or boundary between student and public life is blurred, not taken away; it merely provides a seamless edge while still acknowledging the differences.

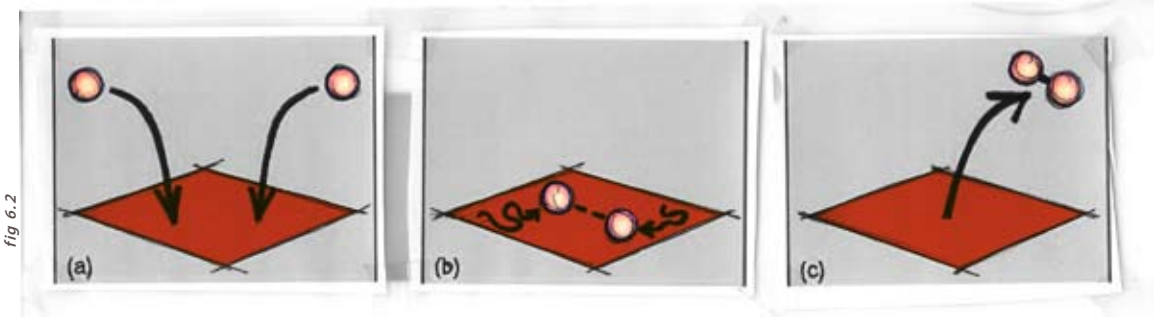


fig 6.2

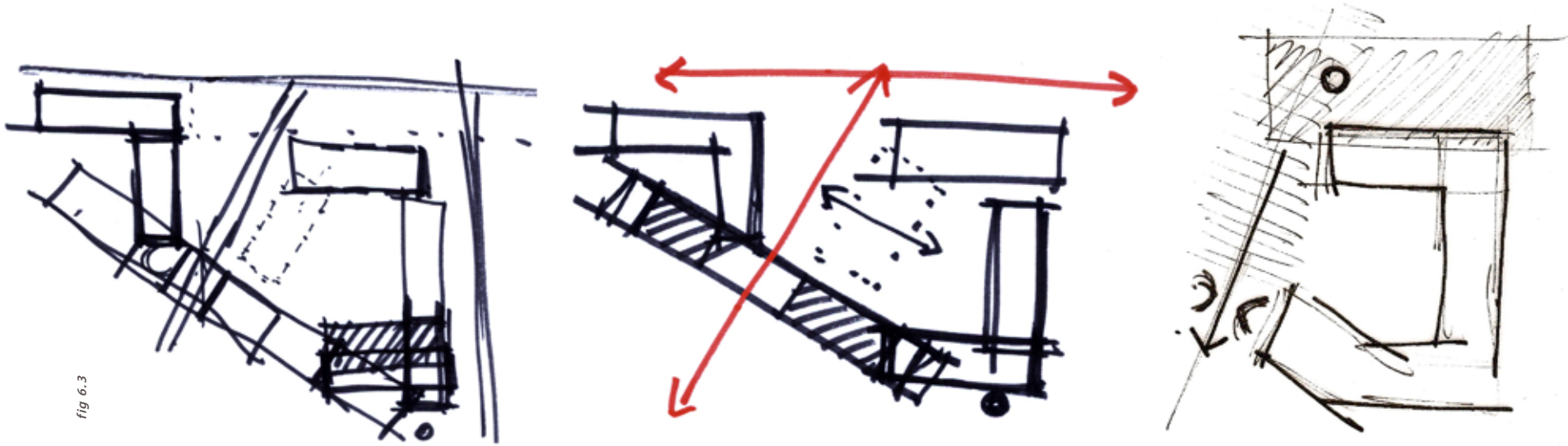


fig 6.3

6.2 Site Implications

From the site analysis, the site was clearly identified as a gateway or entry point onto campus. Access, movement and approach therefore dictate that the building should form a clear threshold, indicating where the public realm ends and the private starts, whilst still allowing public access. The threshold should be clear without the use of barriers, based on the concept of blurring boundaries.

Roper Street was identified as a key intervention opportunity to integrate the city with the university as well as to generate year-round activity, thereby eliminating the dead period to which all activities on campus are subjected. Roper Street will thus be extended and opened onto Burnett Street, as it had been originally, allowing public pedestrian access. From the framework, it has become clear that there are enough activities on both the northern and southern sides of the university to generate sufficient energy to justify commercial activities along this spine. Creating an active street culture, with café's and student orientated shops will enhance the student culture and experience such as one has with city integrated campuses.

fig 6.3 diagrammatic exploration of shape of the building in response to the site

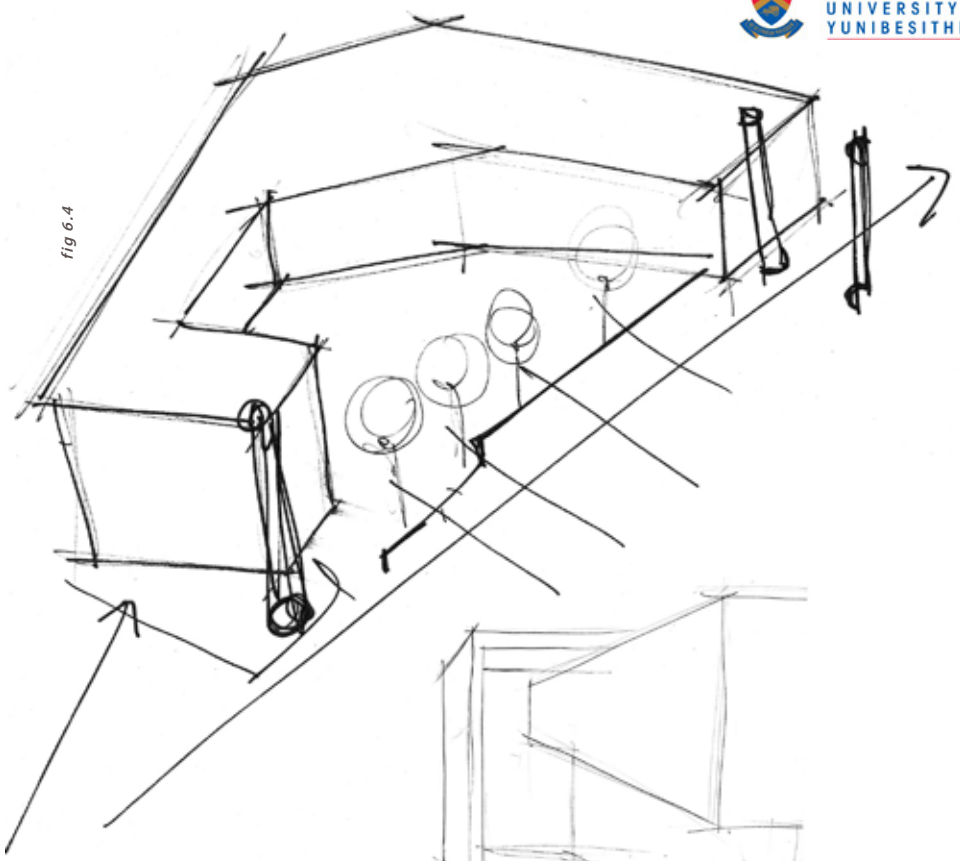
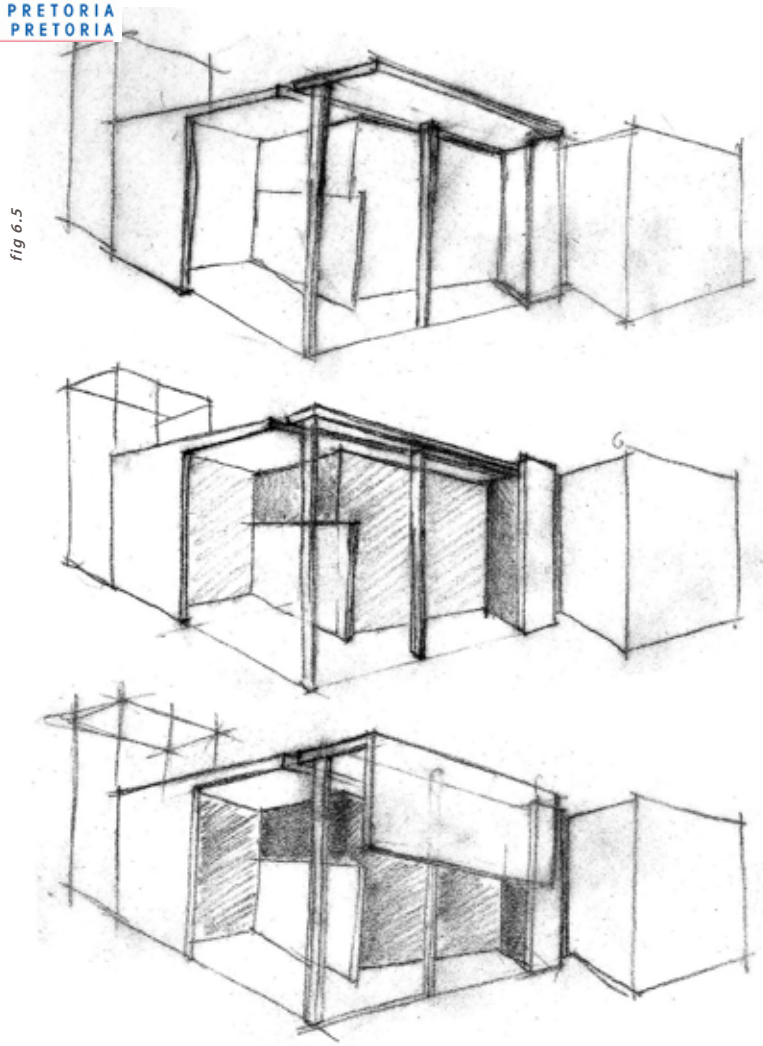


fig 6.4



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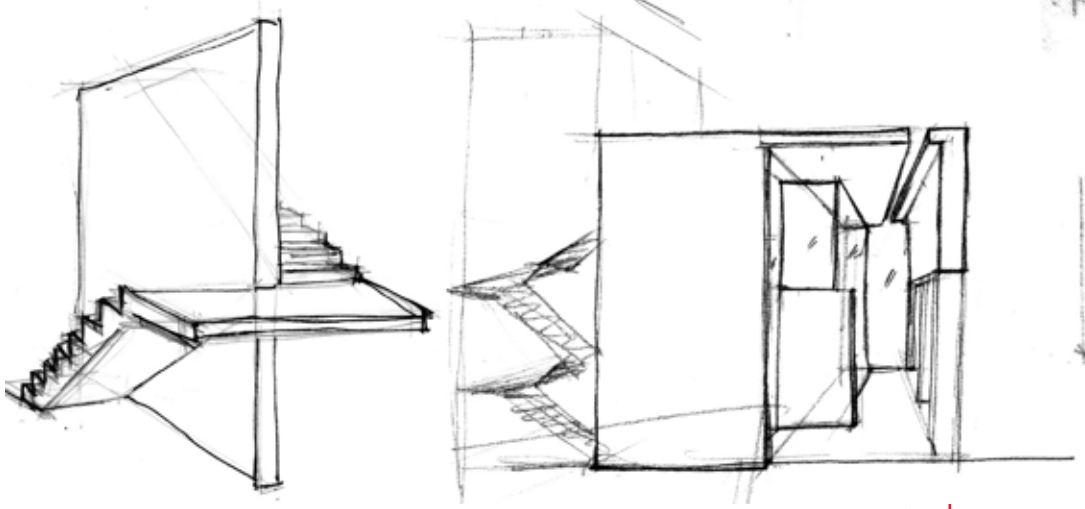


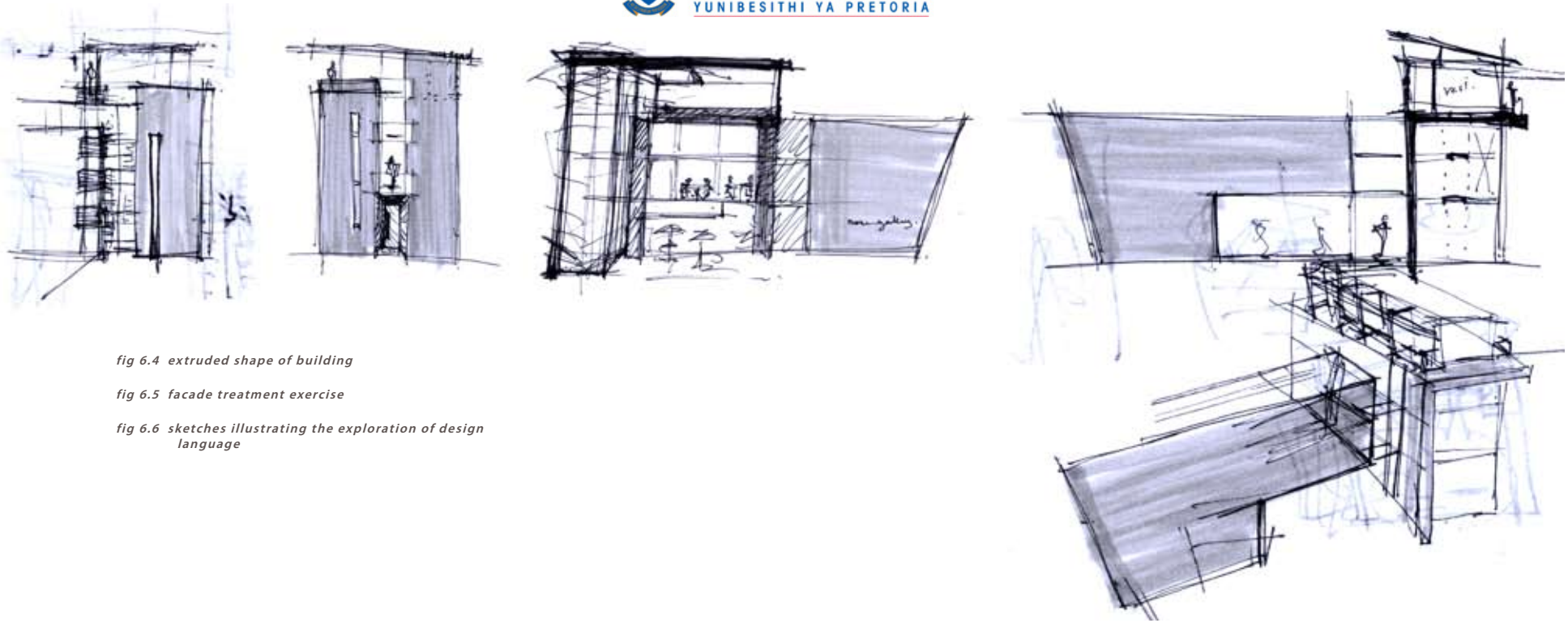


fig 6.6

fig 6.4 extruded shape of building

fig 6.5 facade treatment exercise

fig 6.6 sketches illustrating the exploration of design language

The site therefore requires an iconic building placed on a direct axis running from the Human Sciences building, which indicates the main entry point on Lynnwood Road. This will create the tension necessary to generate movement as well as provide clear legibility and orientation points.

From the surrounding land-uses and proposed activity in Roper Street, it has been concluded that a multi-use building is required, including office, commercial and residential components. This will link with the activities on campus, in Hatfield, and the surrounding residential facilities.

The site also forms an urban gateway to the Hatfield precinct which is indicated by a public square, which forms a resting place for commuters using the metro rail station. The site has numerous indigenous trees which form a natural barrier to indicate the edge of this square. The building will be located behind this line of trees, forming a soft buffer between public and semi-public. The Burnett Street façade aims to excite and invite the passing traffic and has a hard street edge defining the public interface. In contrast, the facades facing the Roper Street pathway is interactive and on a much more intimate scale to entice the passer-by to enter the courtyard and linger.

On the southern side of the site a few buildings have been identified with heritage value which will need to be respected. Clear movement paths will need to be established to control movement.

fig 6.7

fig 6.8

fig 6.9

The uninspired building context present adjacent to the site, which contrasts manifestly with the rich, vibrant architectural culture established on campus to date represents a huge challenge in the search for a suitable architectural vocabulary for the proposed project. A language is required which will be in harmony with the existing buildings on campus yet completely fresh and new to add to the genre already established. The Baragwanath Taxi rank in Soweto, the High Performance Centre (HPC) at LC DeVilliers Sports grounds and the Canadian Clay and Glass Gallery were used as precedents for the language of the building.

Another challenge was that even though the building needed to be iconic, because of its function, it also needed to form a neutral backdrop for the creative products and processes that will form a permanent display. The quest for a language is rooted in the primary experience of space, experience of the art and architecture on display, and the experience of interaction.

The language therefore opts for brutalism with large imposing surfaces, which are left blank, forming a blank canvas for the displays. The entire shape and layout of the building is focussed on the display of end products as well as process.

fig 6.7 the U.P High Performance Centre at L.C De Villiers Sports Grounds in Pretoria, May 2002

fig 6.8 Canadian Clay and Glass Factory by PATKAU Architects, 1986

fig 6.9 Baragwanath Taxi Rank in Soweto, by APC (African Professional Consortium), 2005

fig 6.10 design exploration

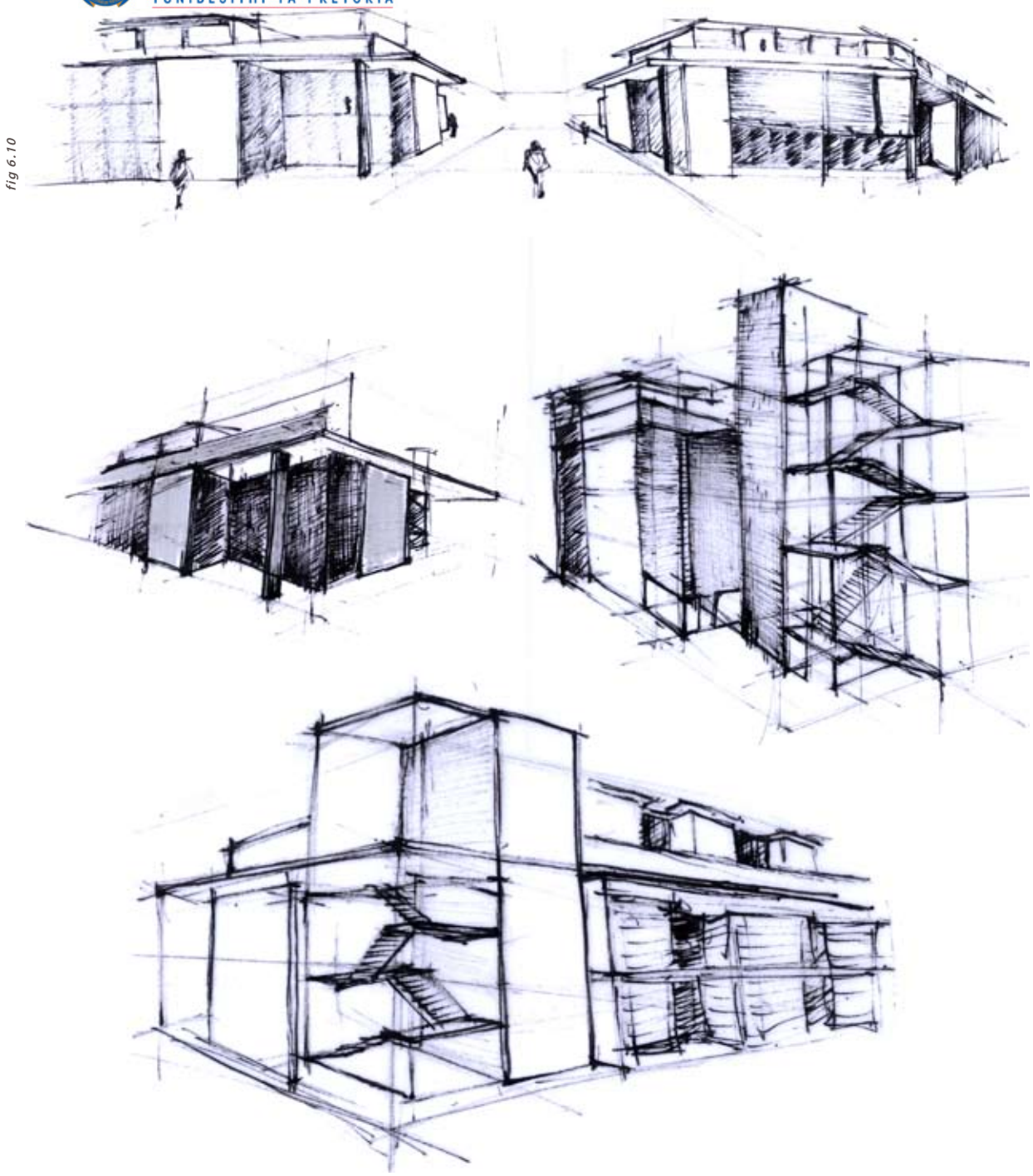


fig 6.10

The main pathway on Roper Street is lined with trees, separating slow and fast moving pedestrians. Two courtyards with different levels of intimacy balance each other on either side of the path. The broader walkway on the side of the sculpture yard promotes faster movement, providing the user with a different experience to that on the other side. The objects of interest are larger and needs to be experienced at a fast pace, joining the experience over time as the sculpture progresses. Seating separates the pathway from the sculpture yard to filter and slow down traffic as it enters the smaller and more private sculpture yard and also provide a resting place where one can view the art in progress.

The building aims to stimulate the experience of architecture and art in the building and unravel a different perspective to the user - a perspective of process, revealing how it came to be.

fig 6.11 diagrammatic plan layout

fig 6.12 building height investigation

fig 6.13 courtyard concept

fig 6.14 development of spatial organisation

6.3 General Strategy

6.3.1 Spatial Organisation

The building complex is organised as a cluster of forms and spaces. This was due to three main considerations:

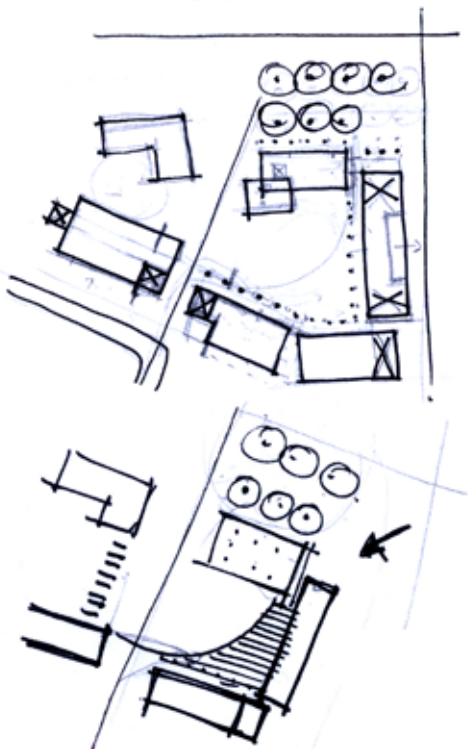


fig 6.11

• To allow for movement through the complex and maximum access to the courtyard

The traditional institutional building is one that is enclosed and inaccessible. This causes great speculation as to what happens inside the building. Through the design of permeable structures arranged in an accessible configuration, a transparent process is communicated.

• To allow maximum exposure to public

With studios, offices and other formal spaces spilling out into the informal passages, and large glass walling systems; visual access is maximised into all areas of the building.

• To create different types of spaces with various levels of public access.

The site is so vast that it became necessary to define smaller spaces in order to create more intimate and human scaled spaces.

A clear separation of functions, with a focus on the links or connections between the different professions and users rather than the components themselves is brought about.

All the functions have been placed to maximise exposure of the creative processes as well as the end products accommodated in the building. Architecture, being the amalgamation of art and science, forms the primary function. The architectural studios have therefore been placed in the front, indicating its prominence as the central function in the building. The exhibition spaces line the gateway indicating it as the second most prominent function.

fig 6.12

public square

broad street

narrow street

fig 6.13

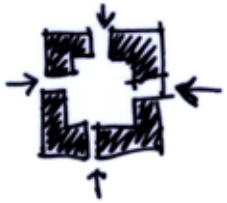
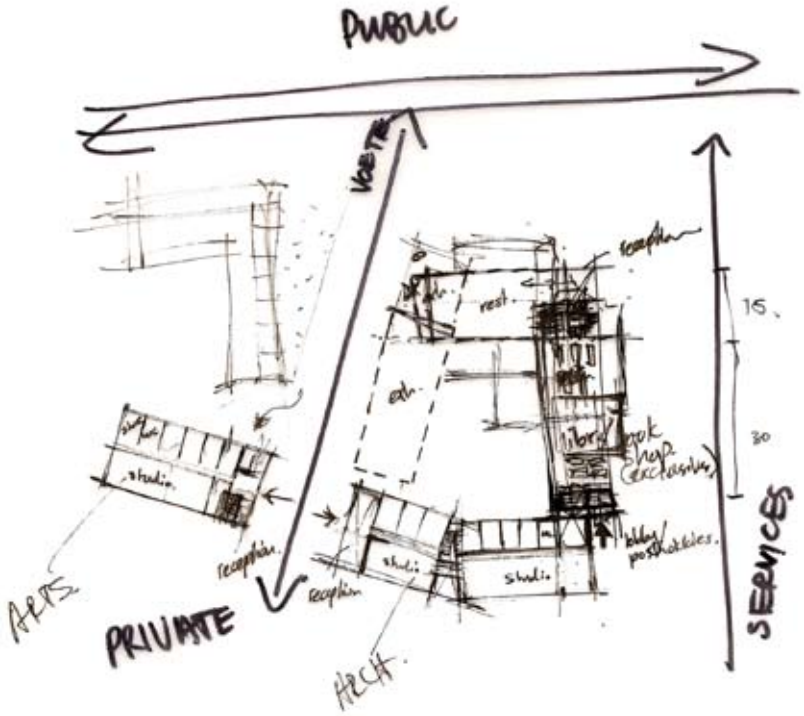


fig 6.14



The different approaches to the building have also dictated the exterior spatial layout of the site as well as the interior spatial layout. The primary approach firstly reveals the architectural process, then the sculpting process and finally the exhibition of the products, the building itself being the product of architecture.

The secondary approach first reveals a different aspect of process with a view of the art studios and then juxtaposed to that the exhibition space, forming a clear link between process and product. Then, as one passes the gateway, the intricate “inner world” of creating the product is revealed in the courtyard.

Other functions, such as the restaurant, book and coffee shop have been placed to invite entry into the courtyard, forming attractions at the back clearly visible to the passing public on the Roper Street pathway. Once inside the courtyard, a further aspect of the process is revealed by the architectural studio and workshop.

6.3.2 Circulation

Because of the nature of the site as an entryway, movement and circulation is of great importance.

"One does not physically experience space simply by gazing at buildings or looking at them from above. Space is experienced only through sequential movement. Space, like music, can be a source of elemental joy, something to which one can give up oneself entirely" - Fumihiko Maki (GEEL, 2005:98).

With the added experience of repetition as one uses the same paths over and over again, the displays will change as the processes evolve. Visual connectivity allows a transparent process to be maintained. This facilitates awareness, stimulation and way finding within the complex.

The circulation spaces are areas where events overlap, increasing the possibility of the unexpected event, interaction and networking. The balconies have the effect of an endless horizon with clear glass balustrades.

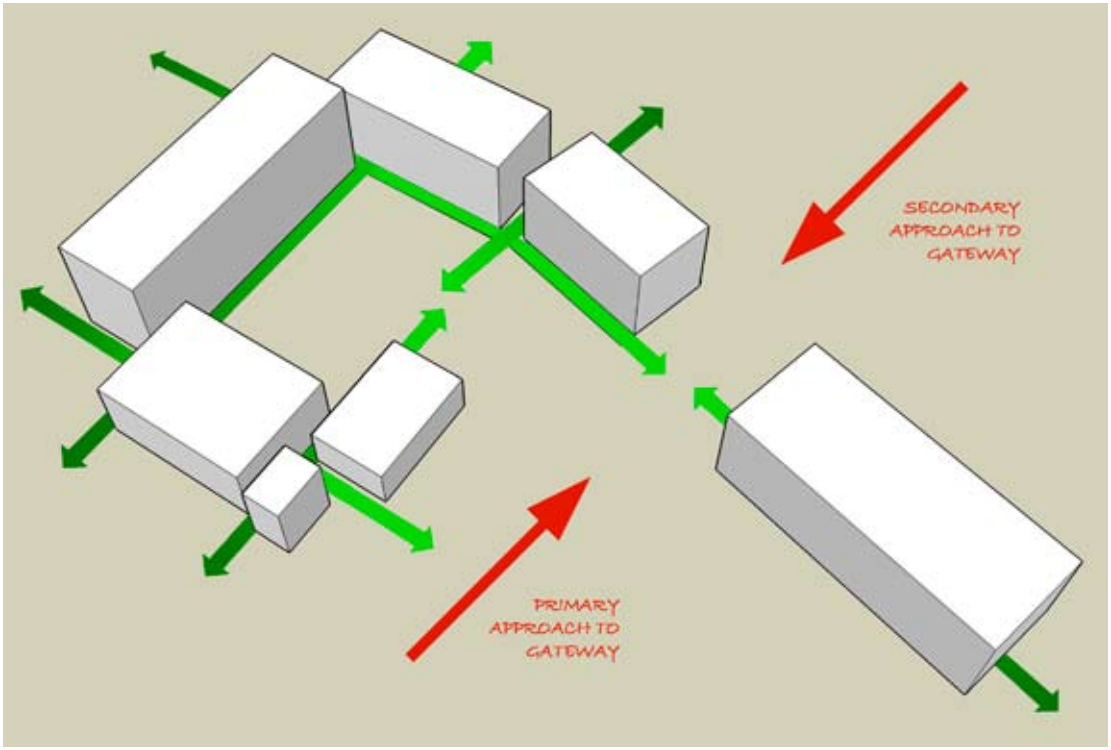


fig 6.15

The building layout has been fractured into smaller building components linked together by the primary circulation passages. On ground floor it allows the building to be accessible from all directions, drawing the public into the semi-public courtyard while still maintaining a clear indication of when one is moving over the thresholds between public, semi-public and private. This also allows maximum entry to the courtyard yet remains secure, in keeping with the theoretical investigation on safety.

Because of the fractured nature of the building, emphasis is placed on the links between components rather than the components themselves. The passages are wide and encourage interaction on every level and junctions are accentuated by social interactive spaces, promoting the idea of cross pollination. The visual links from the various roads towards the site are acknowledged by means of the passageways located between the building fragments. Through these passageways, the pedestrians will gain access to the courtyard.

The passageways are open to the outside for three reasons:

• Firstly to emphasise the separation of the building components leaving the ends open to the outside.

• Secondly to provide a 'weather buffer' by creating large overhangs and deep recesses to protect against the harsh western and northern sun.

• Thirdly to promote interaction between users on every scale, with wide passages which provide easily accessible space for lingering and networking. It also creates a visual connection with users in the courtyard, enhancing the intimacy of the courtyard. All the social interaction spaces 'spill out' into the passages, reinforcing the link between inside and outside, obscuring the boundary between public and private.

The external circulation is made possible by the mild climate in Pretoria.

fig 6.15 external circulation and movement

fig 6.16

6.3.2.1 Approach to Gateway

The building will have two main approaches for pedestrians utilising Roper Street from the north and south. The primary approach is from the clear public realm of Burnett Street, with the building changing from large scale to small. As one approaches, the building steps back and both courtyards are revealed. The bulk of the building is hidden and becomes revealed as one passes the workshop, revealing the courtyard and all the functions in it. The 'gateway' is lined with two exhibition spaces, exhibiting the products.

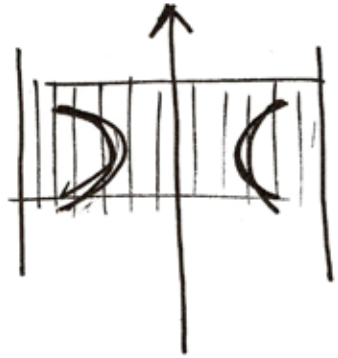


fig 6.17

fig 6.18

The secondary approach is from the southern side, from the vibrant, dynamic street with activities lining the street up to the curb. The building steps in, forming a bottleneck and stands out; forming vast glass surfaces on either side. One's attention is drawn to the exhibition. The two buildings forming the 'gateway' has been placed in a juxtaposed position to promote a natural flowing movement into the courtyard under the double volume colonnade, which steps down to a single volume space once the user enters the more intimate space of the courtyard and building.

Both these approaches strengthen the awareness of the courtyard and the threshold objective.

fig 6.16 primary approach to gateway from north

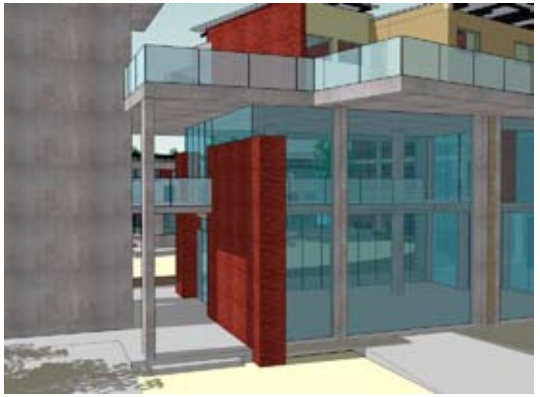
fig 6.17 gateway concept

fig 6.18 secondary approach to gateway from south

fig 6.19

01

03



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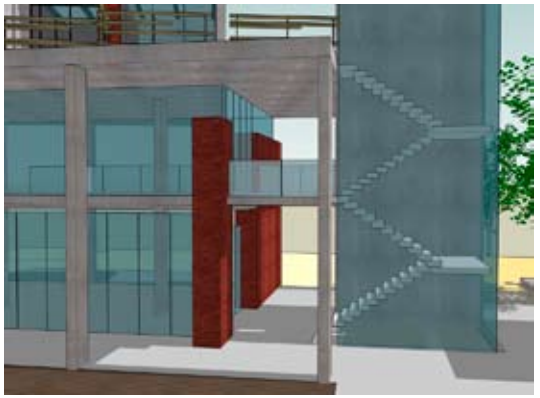


06

fig 6.19 views of building entrances

fig 6.20 building entrances

6.3.2.2 Entrance

The building and site have many entry points, allowing maximum access to the courtyard, while still providing an intimate sheltered environment. Each building and is differentiated in scale and size to indicate importance. E accommodate a specific user who will mainly be using that spec

The buildings form a gateway and clear entry point onto campus

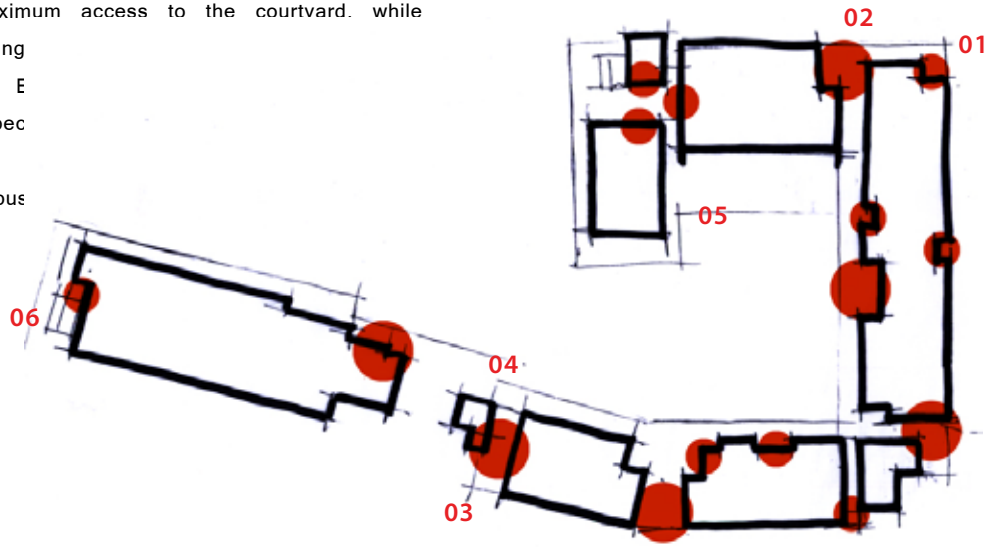


fig 6.20

6.3.2.3 Internal Circulation

While primary circulation is exposed, the secondary circulation within each building component has been enclosed, in keeping with the concept of 'hiding and revealing'. The movement systems become part of the buildings and are defined by spatial elements and columns.

These elements are dynamic and enhance the notion of movement through their rhythmic configuration. Where there is no movement, the building becomes enclosed, indicating a grounded, static form.

All staircases are celebrated and exposed to the outside, indicating the vertical connection and revealing the life blood of the building. They form a focal point of each component connection and are visible from all major approaches.

According to Christopher Alexander:

"A staircase is not just a way of getting from one floor to another. The stair is itself a space, a volume, a part of the building; and unless this space is made to live, it will be a dead spot, and work to disconnect the building and to tear its processes apart.

Therefore, place the main stair in a key position, central and visible"

(ALEXANDER, 1977: Pattern 133).

6.3.3 Courtyard

The main function of the courtyard is to create an intimate environment within the public realm. The intimacy of the courtyard is contrasted with the public nature of the square on Burnett Street. In creating this space, it provides the public with a quiet place to linger as well as give the users of the building a space where they can relax without being cut-off from the public. It has a distinct and definite shape, creating a positive outdoor space described by Alexander (1977: Pattern 106). The Convent of Latourette by Le Corbusier and he Electric Ladyland Offices by OMM Design Workshop were used as precedents for a courtyard building.

fig 6.21

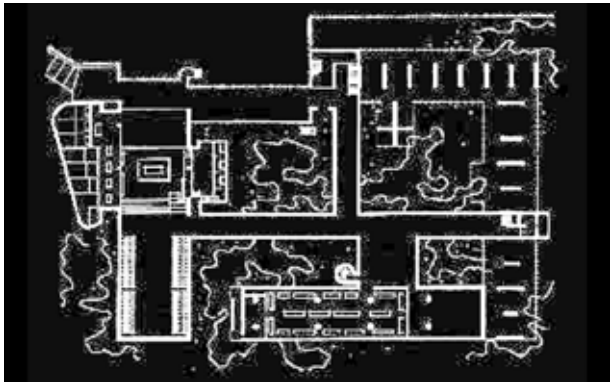


fig 6.22

fig 6.21 view of courtyard

fig 6.22 Monastry of Sainte Marie de la Tourette, Eveux France, Le Corbusier, 1953

fig 6.23 Electric Ladyland Offices, Kloof Durban, OMM Design Workshop, 2003

fig 6.24 section through courtyard

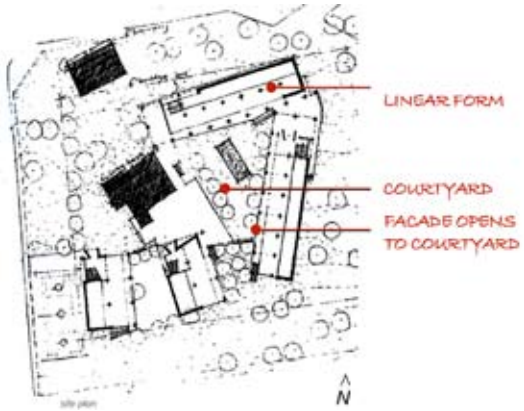


fig 6.24

fig 6.23

Each floor faces onto the courtyard, strengthening the intimacy and interactive qualities of the building. The "spill out" spaces from the auditorium, and the balconies of the apartments are examples of this.

The courtyard has been refined and its character completed by making certain that the space always has a view out into the larger public area of the path or into the buildings and its processes. The building has been designed to offer passers-by a view of the product of creative processes while the courtyard provides the opportunity to view the processes themselves as these take time to become apparent. The architectural studio and workshop therefore face the courtyard while the exhibition spaces line the pathways. For this reason also, all exhibition spaces have been placed in foyers and next to major movement paths.

According to Pattern 114 (Alexander, 1977):

"Outdoors, people always try to find a spot where they can have their backs protected, looking out toward some larger opening, beyond the space immediately in front of them."

6.3.4 Transition Space

In order to firmly establish the threshold between the campus and the public realm, the entire site acts as a transition space, leading the user from public to private realm, physically as well as psychologically. The transition exists, as an actual physical place, between the outside and the inside, and the view, and sounds, and light, and surface which you walk on, change as you pass through it.

"It is the physical changes - and above all the change of view - which creates the psychological transition in your mind"

(Alexander, 1977: Pattern 112).

fig 6.25

6.3.5 Gateway

As it has been argued in the theoretical investigation, in order for safety to be maintained passively, without barricading the campus, a clear threshold needs to be established where the user is physically and psychologically aware that they have passed into a private and therefore surveyed space, deterring them from vandalism or crime.

Alexander (1977: Pattern 112) states that:

"While people are on the street, they adopt a style of "street behavior." When they come into a house they naturally want to get rid of this street behavior and settle down completely into the more intimate spirit appropriate to a house. But it seems likely that they cannot do this unless there is a transition from one to the other which helps them to lose the street behavior. The transition must, in effect, destroy the momentum of the closedness, tension and "distance" which are appropriate to street behavior, before people can relax completely."

For this purpose, a gateway has been established creating a transition between the "outside" public world and the less public inner world.

"If the point where the path crosses the boundary is invisible, then to all intents and purposes the boundary is not there. It will be felt, only if the crossing is marked. And essentially, the crossing of a boundary by a path can only be marked by a gateway"

(Alexander, 1977: Pattern 53).

The feeling of transition on passing through the gateway has been emphasised by a change in level and surface, as well as a change in light from the stairwells at night. The gateway forms the starting point of the pedestrian circulation inside the campus.

fig 6.25 view of gateway

6.3.6 Hierarchy

A clear hierarchy of public to private space has been included on various scales in the design, from the site to the building and even in the detailing.

According to Alexander (1977: Pattern 127): *"Homogeneity of space, where every room has a similar degree of intimacy, rubs out all possible subtlety of social interaction in the building."*

The spaces have been arranged to create a sequence which corresponds to their degree of "privateness", beginning with the entrance and most public parts of the building and site, then leading into the slightly more private areas and finally into the most private domains. Each threshold is clearly identifiable, whilst flowing from one space to the next over a seamless floor.

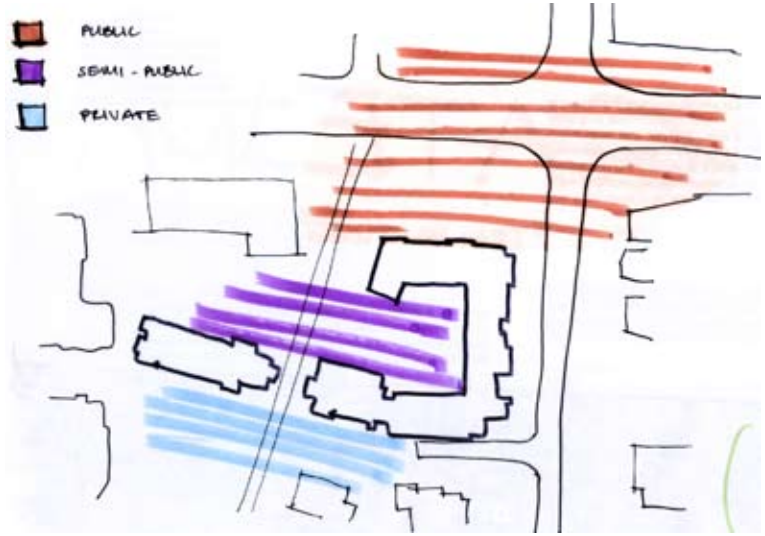


fig 6.26

6.3.7 Scale

Scale is an important factor in the perception of a space. The impression of space often dictates or accommodates the type of contact we make. Different scales have been used for different types of spaces. Where the nature of the spaces change form public to private, the scale has been adapted to imply the use of the space.

While the walls of a space provide enclosure, the height of the ceiling plane overhead determines its qualities of shelter and intimacy. Accordingly, ceiling height varies in accordance with function, indicating that the lower levels are mainly for public use and as one ascends the levels become more intimate and private, ending with the residential. On the ground floor, certain areas and passages have been designed with double volume spaces where hierarchy dictates this.

fig 6.26 site hierarchy of space from public to private

6.3.8 Attention to Detail

The attention to detail lends a quality of complexity and refinement to the building. Each connection and joint has been celebrated with the separation of elements, highlighting the coming together of the different materials. The links are emphasized and become more important than the whole, conveying the honest integrity of the materials.

6.3.9 Revealing Light

Throughout the building, light plays a prominent role in the design, illustrating the concept of revealing or 'bringing to light'. Al the major passages are in some way illuminated with natural light, either with skylights or slots cut into the slabs. Light becomes a guiding element, directing the flow of movement as the building is revealed to the user. People are by nature phototropic, meaning they move toward light, and, when stationary, they orient themselves toward the light. As a result, people will automatically orientate themselves to the courtyard.

All entrances and key points in the circulation system have been designed to be systematically lighter than its surroundings, with light (daylight and artificial light) flooded there by means of double-volume glass walls, so that its intensity becomes a natural target in accordance with Alexander (1977: Pattern 135).

All internal stairwells have floating reinforced concrete stairs fitted to a reinforced concrete wall in the middle and lit from beneath to convey an impression of lightness. The stairwells are all encased in glass and become major visual focal points throughout the building. Alternating areas of light and dark are also created between the central walls and lift shafts, promoting flow of movement up the stairs.

All external stairs will be artificially lit at night to draw attention to the paths. Beneath the external benches around the planters spaces have been left open to allow for natural lighting and ventilation in the basement which is also artificially lit at night.

fig 6.27

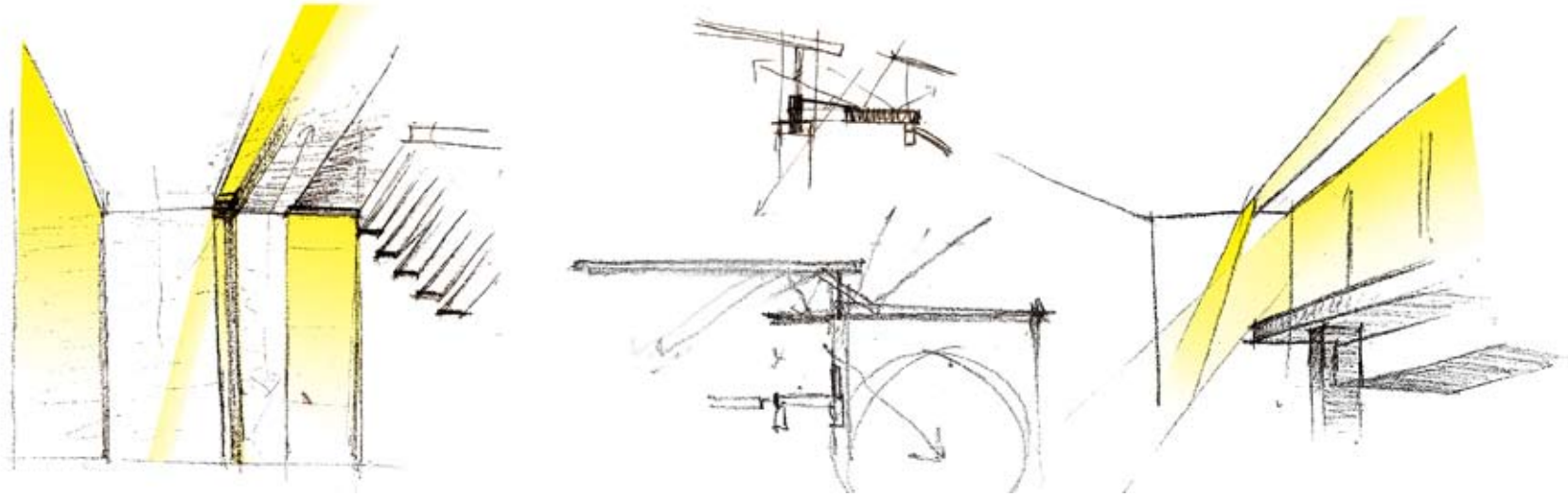


fig 6.27 sketches illustrating use of light

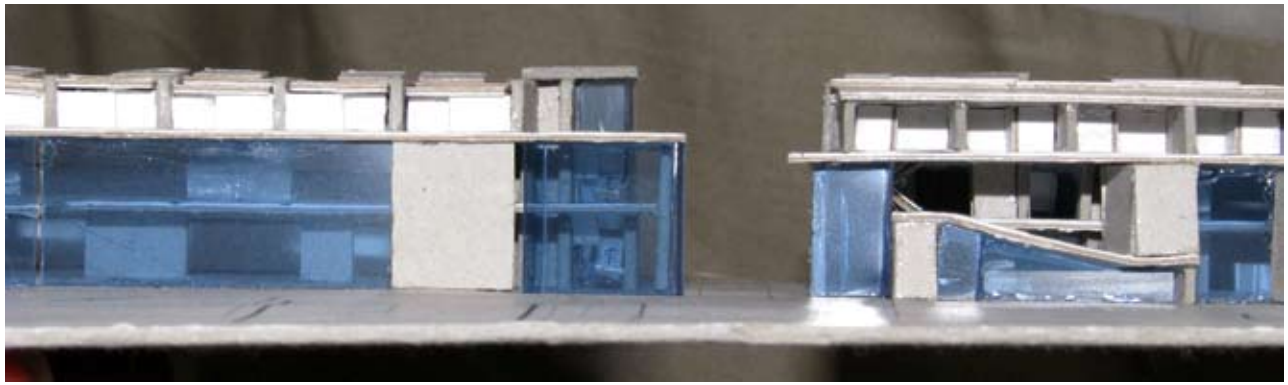


fig 6.28

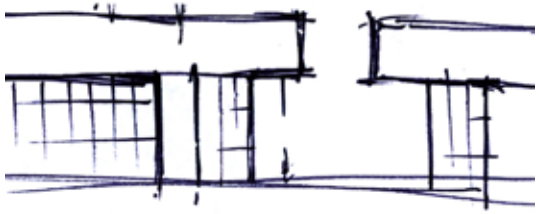


fig 6.29

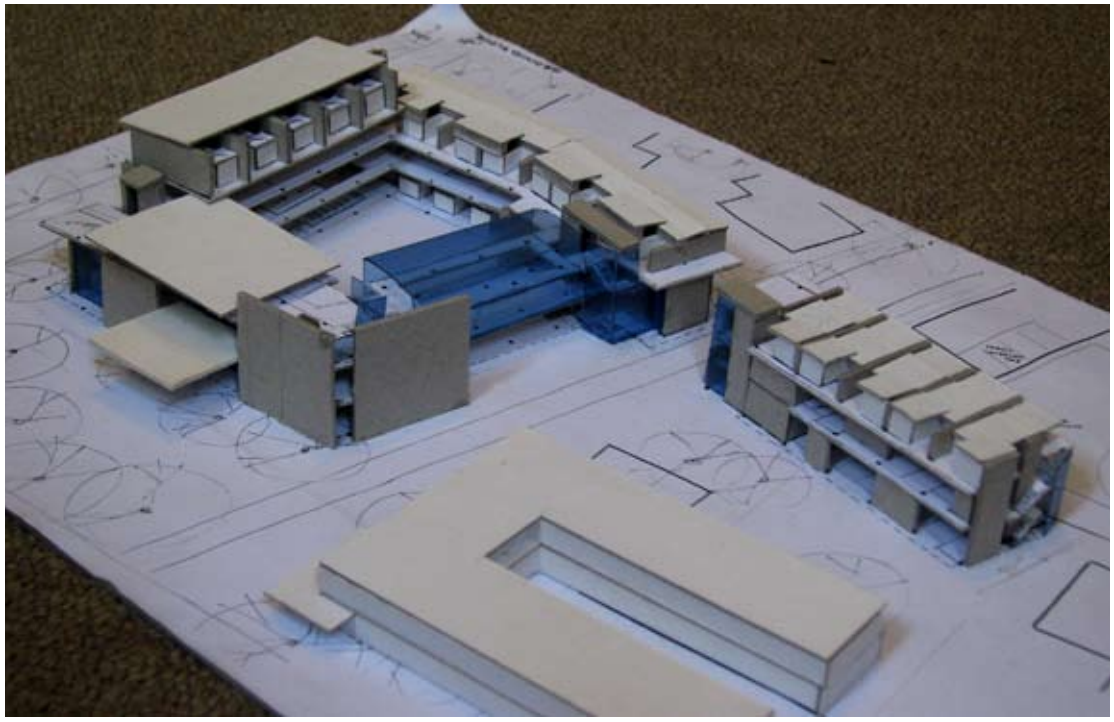


fig 6.30

fig 6.28 concept model showing gateway

fig 6.29 diagram of gateway concept

fig 6.30 process model

fig 6.31 primary approach - view from Burnett Street

fig 6.32 initial design layout - ground floor plan

fig 6.33 revised design layout - ground floor plan

fig 6.34 initial design layout - first floor plan

fig 6.35 revised design layout - first floor plan

6.4 Conceptual Design

The postulated context, the precedent studies along with a study of structures and buildings, informed the conceptual design of the building. The conceptual design is the result of intuition, desire and the constraints of the particular building and site.

The concept design took form from the opportunities and constraints of the site. The initial idea was a single structure to host the various aspects of the programme as well as to act as a gateway. After the initial design, the concept of 'gateway' was revisited and it was decided that a gateway not necessarily encompassed but could be two separate iconic features, speaking the same language across the gap.

According to Alexander (1977: Pattern 53):

"A gateway can have many forms: a literal gate, a bridge, a passage between narrowly separated buildings, an avenue of trees, and a gateway through a building. All of these have the same function: they mark the point where a path crosses a boundary and help maintain the boundary. All of them are "things" - not merely holes or gaps, but solid entities"

(Alexander, 1977: Pattern (53).

The programme was then divided into separate components linked by circulation elements. The components were divided according to programme, loosely translated as architecture, art, exhibition, office, and commercial.

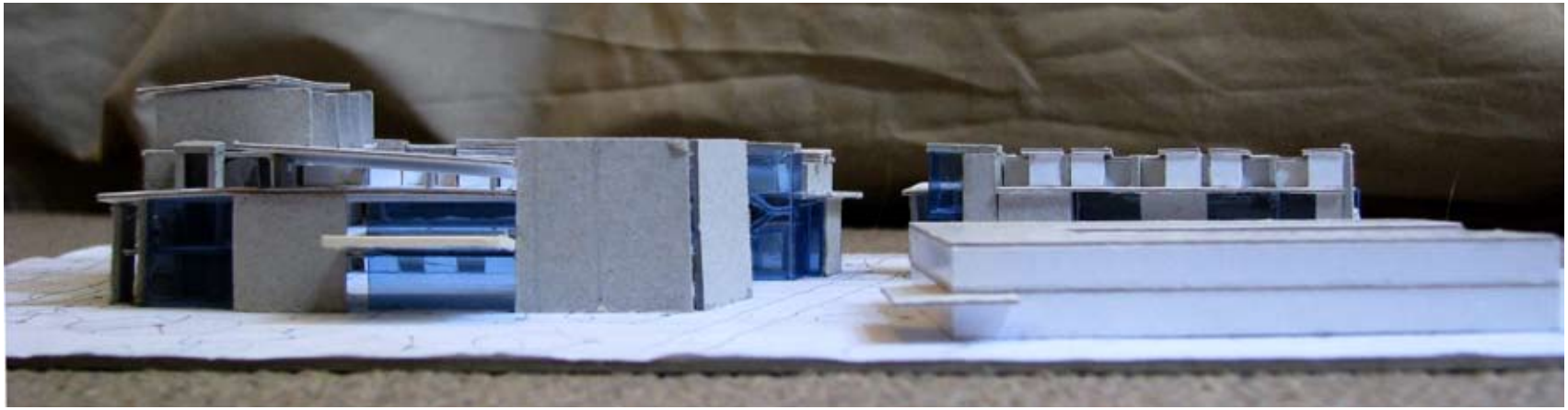


fig 6.31

fig 6.32

After the initial design layout was generated, the concept was revisited and the design analysed accordingly. The layout of functions was found to be flawed, new priorities were established and a new layout was designed. The following changes were made:

The position of the architectural studio allowed no view from the outside of the process, thereby defeating one of the fundamental objects of the concept. The ramp to the basement denied people close access to view the studio and the private cubicles placed behind the passage obstructed viewing from the courtyard. Its position caused

it to be hidden from public view and lose prominence as the primary function. The studio was therefore moved to the front where the work could be viewed by the public, as well as from the courtyard. The circulation was moved to the centre to cause minimal obstruction.

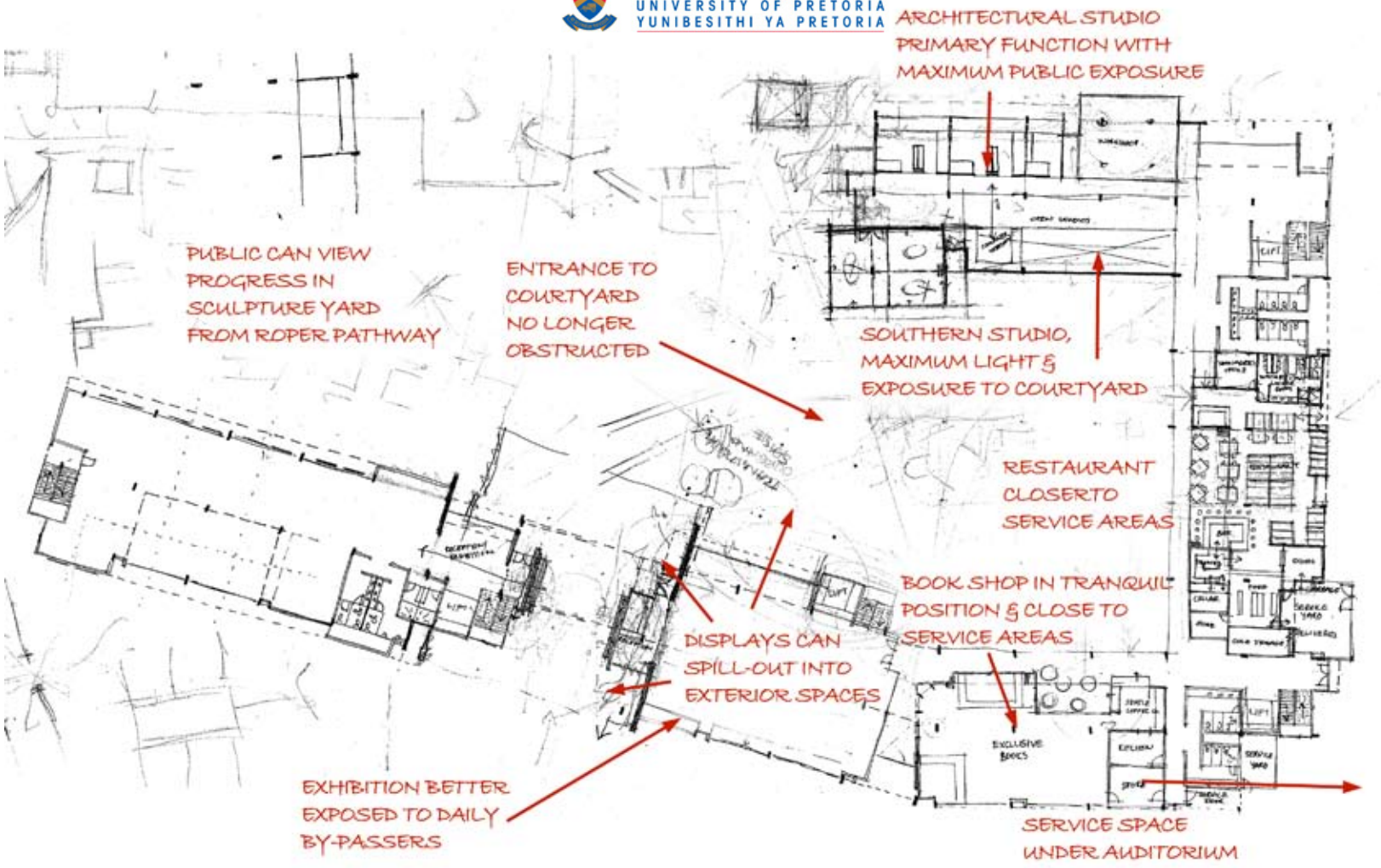


fig 6.33

The exhibition bridge was found to obstruct and enclose the courtyard instead of inviting people in. Because it was raised above the ground, it was found that passers-by would not be able to see and fully experience the art on display. The exhibition space was then given a prominent position next to the gateway to indicate its importance in terms of the concept. The pieces on exhibition could now not only be seen prominently from both approaches, but could also spill out into the courtyard and pathway, further engaging the passer-by.

The sculpture yard was too hidden where it was on the southern side and was moved to the front to enhance its visibility and engage the viewer

Initially the auditorium was placed next to the gateway in order to articulate the gate with its sloped floor. After consideration, it was decided that its function was not prominent enough for this and that it would need a quieter position. The walls would also need to be obscure in order to prevent distraction when it was in use. The views possible from this elevated position would not be used to best advantage.

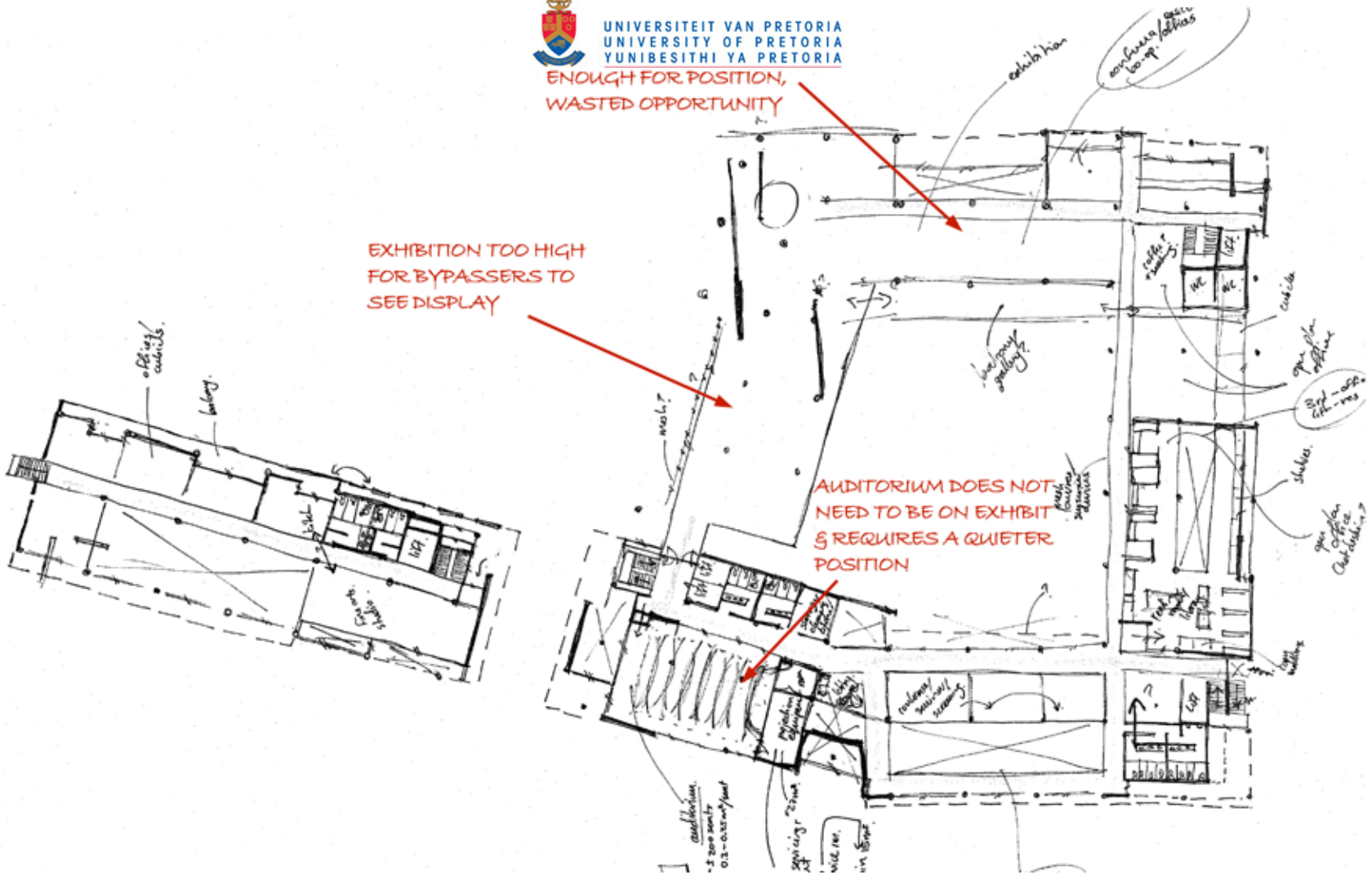


fig 6.34

The auditorium was therefore moved to where the architectural studio had been on the first floor.

Because the floor of the auditorium steps down from the entrance, the floor to ceiling space reduced to form a more intimate space beneath and it was decided that this would offer an ideal position for the coffee shop and service spaces associated with the bookshop. The bookshop would also mainly be used by the users of the building and needed a tranquil setting, away from the Festival Street front where it was planned initially.

The restaurant was initially placed in the front of the building because it was seen as a public function and major attraction point, opening onto the public square as well as the courtyard. Even though this was a sound principle, there were however a few problems. Firstly, the restaurant was not a primary function of the building and therefore locating it in such a prominent position could not be justified. It would also cause many

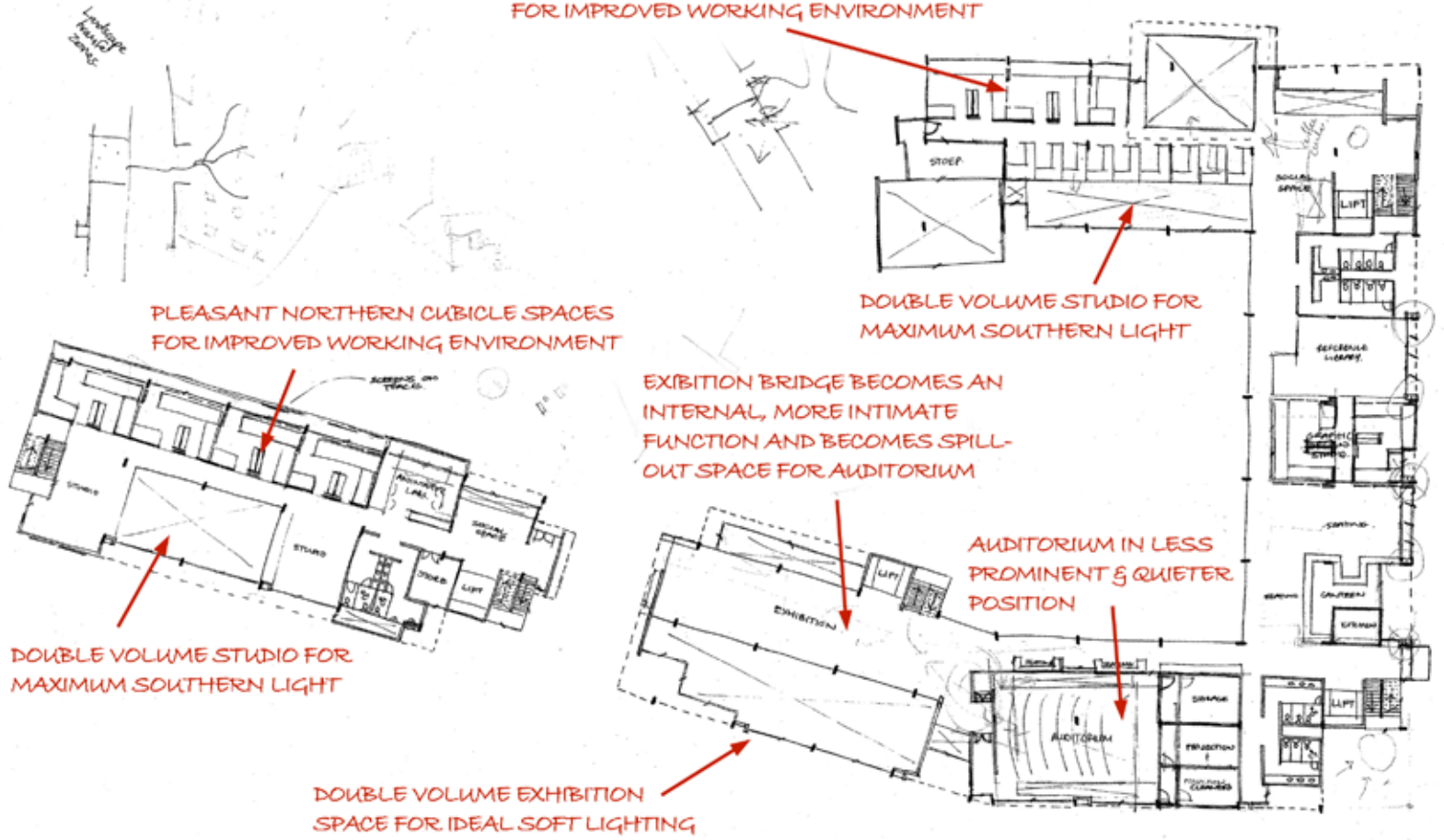


fig 6.35

users to only use the restaurant and ignore the rest of the functions, entirely missing the point of exposing the public to the process as much as possible.

Secondly, the kitchen and service areas needed to be close to the service street for deliveries and waste disposal. This caused the restaurant seating area to be extremely large and the preparation areas very far from the serving areas. It also had to cross the main circulation of the building, obstructing the natural flow and activities of the office and other areas. It was therefore decided to move the restaurant to the component on Festival Street.

Service areas were improved, and it still had a street front for signage and attraction which was not placed so far back that it would not be seen from Burnett Street. The main advantage was that the character of the restaurant could be changed to match that of the quieter courtyard atmosphere. It would now also draw people from the Roper Street pathway as well as customers who could use it as a meeting place for business purposes.

6.4.2 Design Principles

6.4.2.1 Design Exploration

• Limited fenestration to be provided on east and west facades with proper sun screening.

• The legibility of the building should extend into the surrounding areas, including appropriate street furniture and landscaping.

• The structure and facades should provide a high degree of visual stimulation due to the prominence of the site in terms of passers-by.

• The specific micro-climate of the site and surroundings should be investigated and responded to.

6.4.2.2 Efficiency of Use

The structure will be occupied almost daily throughout the year. The nature of the professions located within the building is such that studio spaces would be used extensively and with no specific time limits during the day.

6.4.2.3 Construction & Viability

The permanent concrete frame structure will be built on a grid to promote modular dimensions of elements, limit wastage, as well as allow for a relatively simple basement and parking layout. The grid ties the plan together and forms the basis of mass, coherence, rhythm and expression.

6.4.2.4 Running Costs

The concrete frame structure and face brick requires minimal maintenance. The timber louvers will have to be treated continually to prevent buckling. The courtyards and surrounding landscape requires maintenance that could be delegated to groups of landscape architecture students.

6.4.2.5 Parking

Parking for staff and students remains a major cause of concern for the University of Pretoria. The ever increasing student numbers exacerbates the problem. Provision of vehicular parking over and above the requirements will be made for the proposed building.

6.4.2.7 Landscaping

Existing trees on site should be kept as far as possible. Endemic plants that are drought resistant must be specified to minimise the amount of water required for irrigation, such as Acacia Xanthophlea (Fever Tree). Trees that can take battering and require minimum area for root systems must be specified for the courtyard planters.

6.4.2.8 Datum

Datum refers to an element to which other elements in a composition can relate. The main circulation path (Roper Street extension) acts as a datum element on plan, forming a common edge within the organisation.

6.4.2.9 Rhythm

Rhythm organises lines, shapes, forms or colours harmoniously. The space-defining columns form repetitive structural bays and modules of space within the composition.

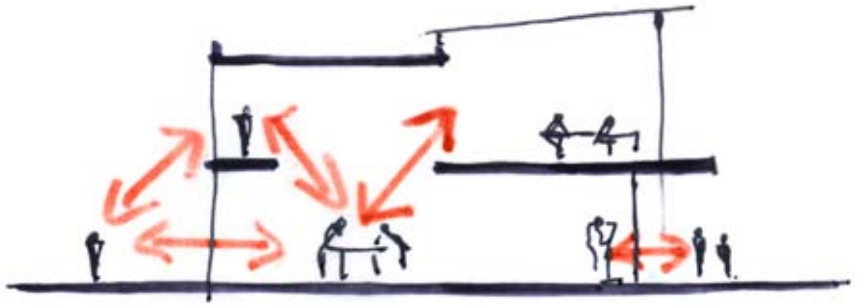
6.5 Building Response

6.5.1 In Plan

The interior of the building comprises a complex programme of events that have been superimposed to allow for unexpected events to occur. The ground floor is host to the public functions of the building, including a restaurant, book shop, exhibition space, and studios, while the first floor allows for semi-public facilities which require a certain degree of privacy, such as the lecture hall and reference library. The spaces permit cross programming between events. The entire building layout has been organised to promote the gradual transition from public to private.

fig 6.36

The entire site is built on a basement and therefore has no site levels to contend with. The building footprint has been elevated to emphasize the threshold between inside and outside but is sloped to allow seamless access to the entire building. Various ramps and stairs allow access onto the platform. The 'bridge' between the two main building components forming the gateway has been elevated to be level with the building floor levels, promoting movement between the buildings as well as clearly identifying the threshold onto campus. The threshold between the pavement and the ground floor is seamless. The exterior floor finish is rough textured epoxy mortar while the floor finish upon entering is a highly polished epoxy mortar finish.



6.5.2 In Section

Within the building the structural system is revealed to the user through honesty of construction. The section of the building was refined to reveal the concrete structure and the columns without cluttering the space with walls. The columns remain freestanding and simply support the concrete slabs of the floors. This allows the floors to become an infill of walls and glass. The columns are placed on the outside of the building to reveal their structural function to the viewer. Various functional spaces are experienced as a person moves through the building.

As previously mentioned, the building layout has been fragmented and is linked by the circulation elements with service cores joining the components where they meet. These service cores form pivot points around the vertical circulation. All the components have differing heights for clearer definition and play with levels of scale.

Portions of the circulation on the ground floor become double volume voids, allowing for visual connectivity of most functions of the building.

The visual connectivity is achieved through the application of vertical superimposition. Miralles and Pinos's Civic Centre in Barcelona was used as a precedent for interaction between users of a building. Curtis (1999:15) describes the centre as an institutional interpretation which insists upon such values as communal interaction and casual meeting. *"It is a building which seems to imply social emancipation and participation".*

fig 6.38

fig 6.36 site plan

fig 6.37 Civic Centre, Barcelona Spain, by Miralles and Pinos

fig 6.38

fig 6.39

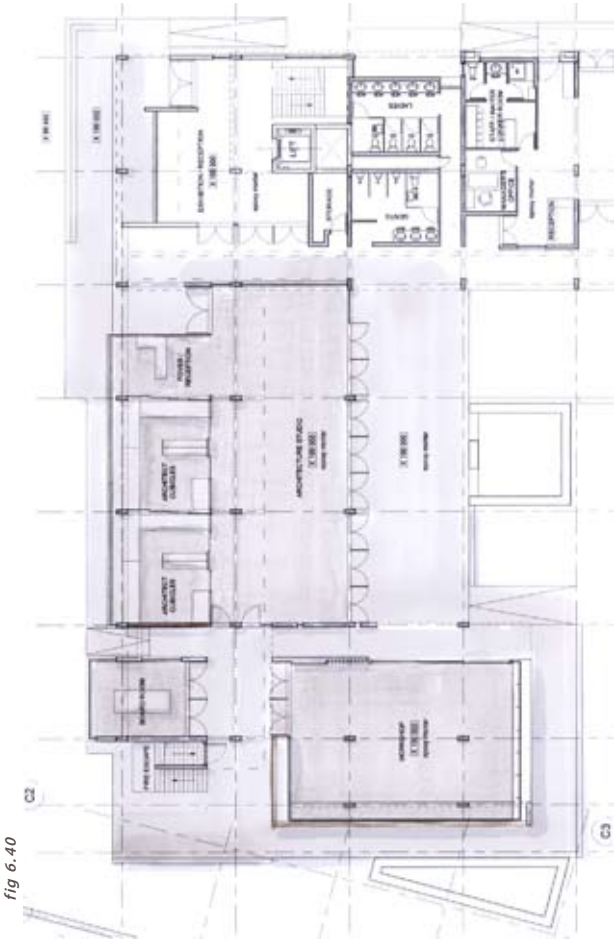
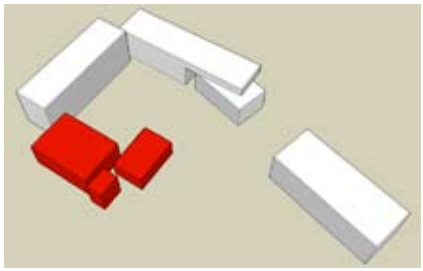


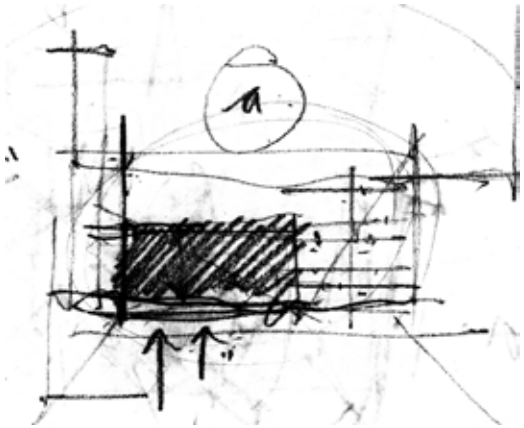
fig 6.40



6.5.3 Architectural Studio & Workshop

The studio layout was inspired by the Electric Ladyland Offices, in Kloof, Durban by OMM Design Workshop. This building was divided into two parts with a programme-specific half which includes services and circulation, whilst the un-programmed half allows for transformable office space that can adapt to the user's requirements. A suspended mezzanine floor can be retracted or removed to create a double volume space, allowing the building to be completely transformable to the needs of the inhabitants.

This idea of separating the building into two halves allowed for the layout to be designed to be as flexible as possible whilst allowing for lockable cubicles which can be rented out to start-up companies. The double volume studio allows for maximum adaptability where workshops and group projects or competitions can be held. The cubicles can be subdivided or joined with neighbouring cubicles transforming to the needs of the inhabitants.



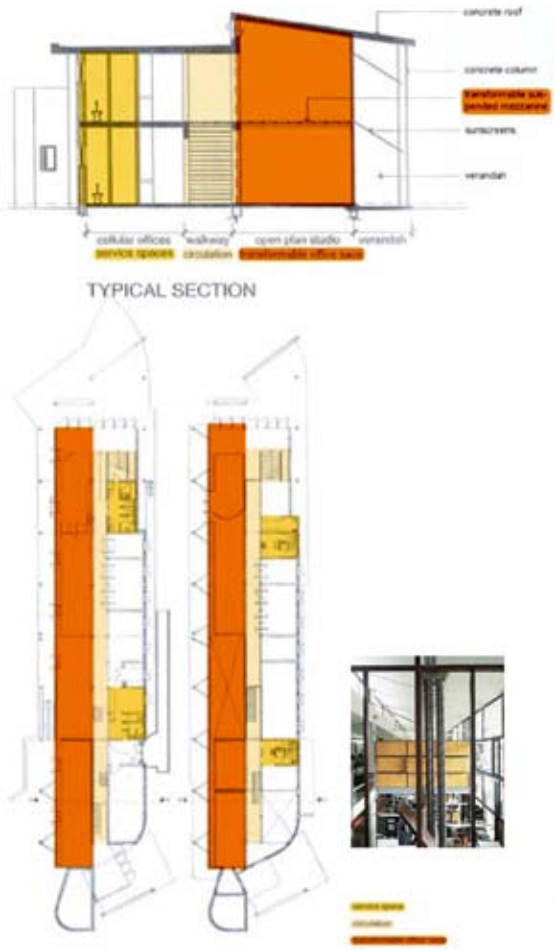


fig 6.38 section through architectural studio

fig 6.39 view of architectural studio from the north

fig 6.41 Electric Ladyland Offices, Kloof Durban, OMM Design Workshop, 2003

fig 6.41

In keeping with the idea of exposing the process to public or students, the studio space can be viewed from all sides as well as from the cantilever walkway above. For this reason this part of the building has been designed as a glass cube, allowing maximum southern light.

The northern façade has been designed with suitable sun shading devices that form part of the internal cubicle structure, as well as functioning as a light shelf, allowing for soft diverted light to enter. The raised platform on which the building is set, steps down into

fig 6.42

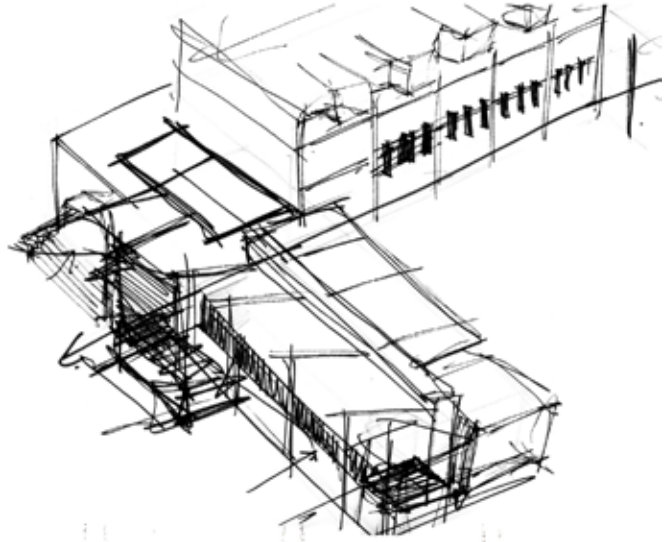
fig 6.43

fig 6.42 view of architectural studio and workshop from north-west

fig 6.43 view of architectural studio and workshop from the south

fig 6.44 design development - architectural studio

fig 6.45 design development - workshop



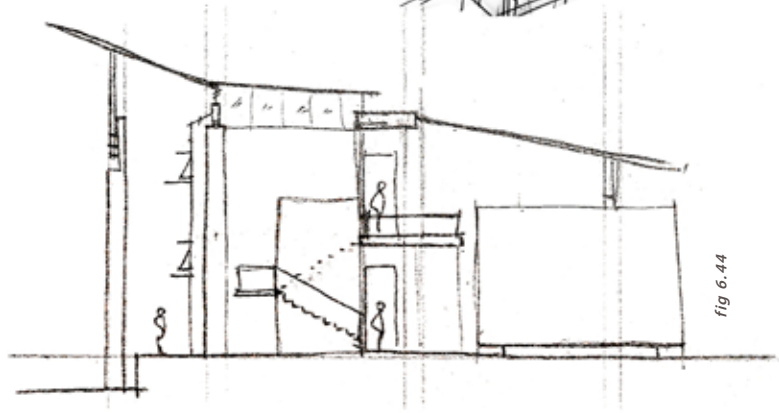


fig 6.44

the public square just behind the natural tree line, providing a shaded seating area. This also acts as a buffer between the public and private activities inside to minimise disturbance, creating a boundary without a barrier.

The main circulation in the studio is illuminated by a south facing skylight, allowing for soft light to wash the concrete beam and guide the user down the passage. The ceiling steps up in line with the walkway, further defining the space and allowing for the rafters to be revealed, in keeping with the concept. The walkway links up with the entry from the main building foyer on the east and the secondary entrance and fire escape to the west. In the west, the walls fall back to create a secondary fragmentation separating the boardroom and workshop from the studio and linking with the courtyard. This secondary walkway allows the user to move directly past the workshop, with the idea of capturing their interest. The boardroom is isolated to minimise disturbance.

The Burnett Street façade has been designed to clearly indicate the changing functions beyond.

The intention behind the shape of the workshop, which will mainly be used for model building purposes, was to form a protective shell around the activities, while opening up and showing its contents to the courtyard from where it can be viewed at leisure. It has also been isolated to minimise disturbance. The western side has been equipped with horizontal hardwood louvers spaced close enough to block the harshest rays. A reinforced concrete beam functions as a structural element, as well as a vertical light shelf allowing soft light to wash the space. Directly beneath it, a concrete bench and secondary light shelf allows for occupants to set down their computers and connect with the network. Large, top-hung sliding doors allow for the entire eastern façade to be opened up to the courtyard and to slide away into a recess in the wall.

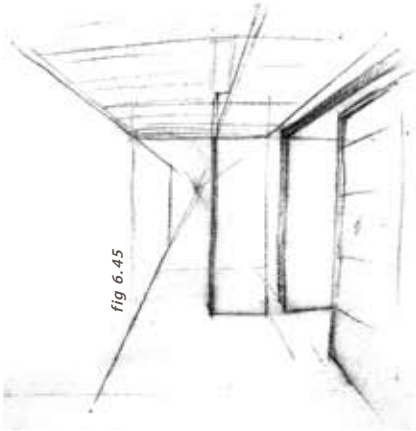
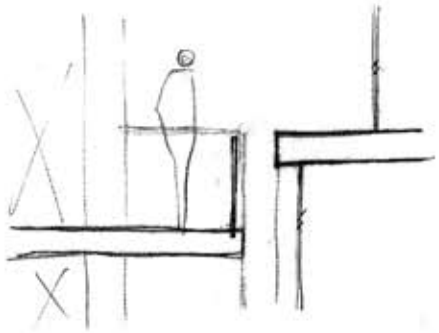
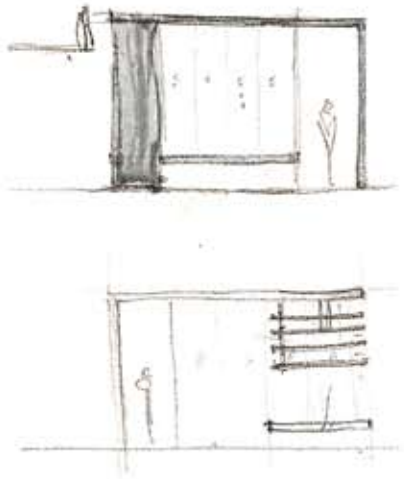
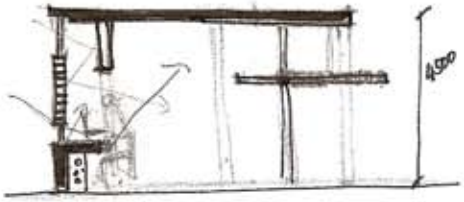
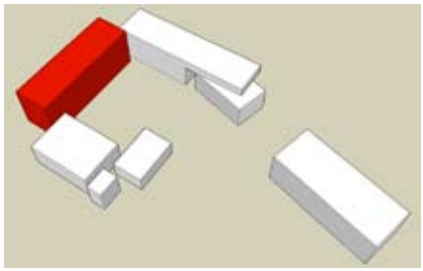


fig 6.45









6.5.4 Restaurant / Offices

This component is the tallest and provides the main barrier between the service road (Festival Street) and the residential facilities beyond it, and the courtyard and building activities. The foyer forms the main attraction point from Hatfield and Burnett Street the metro rail station and pedestrian path from the north. The design gently steps back from the public square, inviting you into the building. Once inside, the building breaks away with frameless glass doors to reveal the courtyard beyond. The Balearic Technological and Business Innovation Centre in Majorca, Spain was used as a precedent for the doors.

The passages are placed on the outside, providing a weather buffer with deep overhangs to protect against the western sun. The walkways are lined with columns on the outside, revealing the structure and forming a repetitive rhythm and unifying element repeated throughout the building. The walkways are separated by strips cut away

fig 6.46 Balearic Technological and Business Innovation Centre, Majorca Spain

fig 6.47 section through restaurant and offices

fig 6.48 ground floor and second floor plans of restaurant and offices

fig 6.49 view of restaurant and offices from courtyard

fig 6.50 view from Festival Street

fig 6.46

fig 6.47

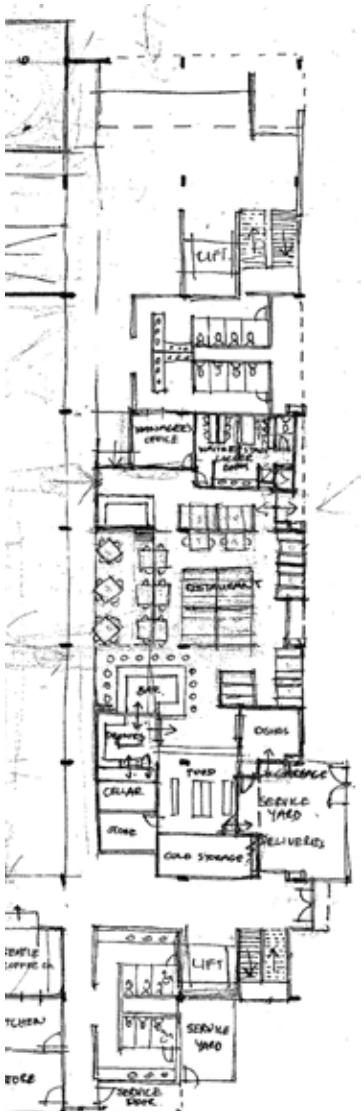


fig 6.48

fig 6.49

fig 6.50

between the passage and walls to allow light to become the guiding element along the passages. Down-stand beams allow for services to run horizontally along the circulation routes.

The restaurant is almost completely transparent and forms a soft barrier between the street and courtyard. The courtyard is an informal extension of the restaurant, which can also be used in connection with the book and coffee shop.

The offices and designer cubicles have glass panel dividers along the sides to allow for visual interaction. Suitable timber louver screens form part of the balustrade and is used to modulate between the solid and glazed areas, as well as to tie the façade together as one unified element. The Dutch Embassy in Maputo by Claus & Kaan Architecten was used as precedent for cubicle spaces within larger spaces and deep passages with repetitive structural elements.

The open plan office area accommodates different levels of flexibility for lecturers and mentors as well as start-up companies of related professions.

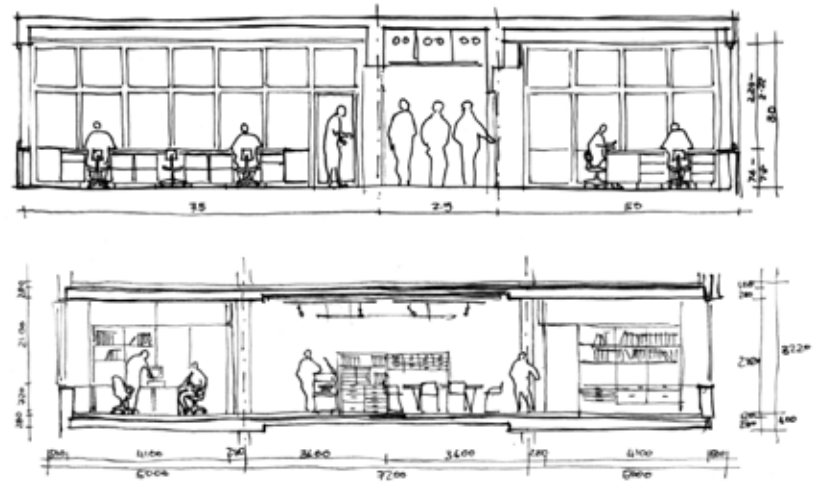


fig 6.51

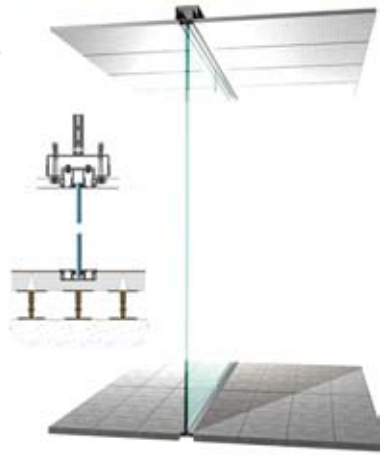


fig 6.52

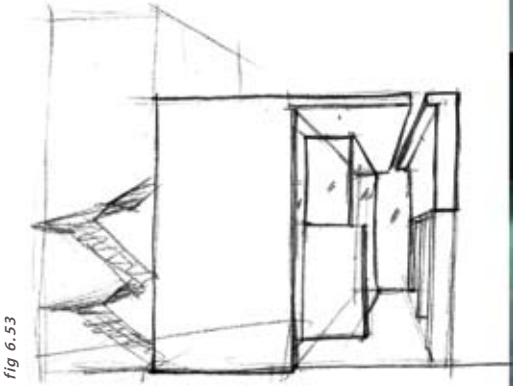


fig 6.53

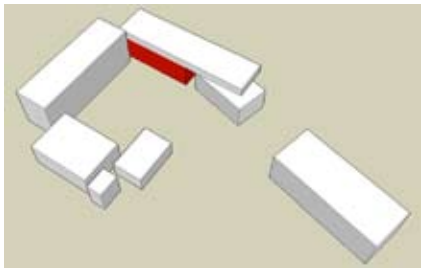
fig 6.54

fig 6.51 design exploration of offices

fig 6.52 glass dividers

fig 6.53 design exploration of facade

fig 6.54 Dutch Embassy, Maputo Mozambique, Claus & Kaan Architecten



6.5.5 Book Shop & Lecture Hall

The function of the book shop is to act as an 'in-house library' for established architectural firms as well as to draw a specific demographic group, which will enhance the character of the building and precinct.

The slab of the auditorium interrupts the continuity of the first floor slab sloping down for a more intimate enclosed space formed in the coffee shop and service areas. This interruption opens the view from the ground floor to the double volume exhibition space.

fig 6.55

fig 6.55 section through lecture hall

fig 6.56 ground & first floor plans of lecture hall and book shop

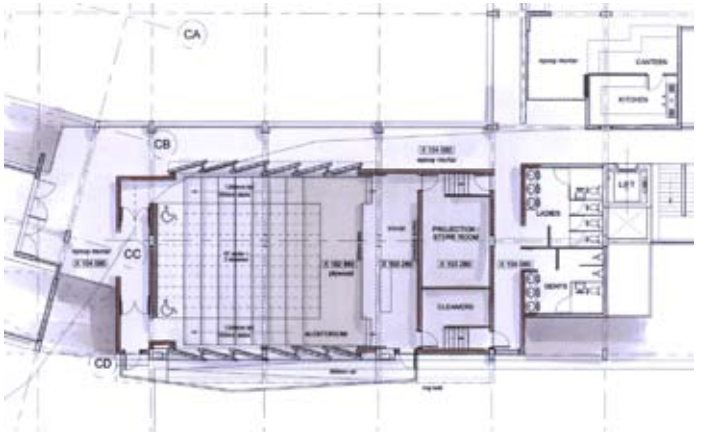


fig 6.56

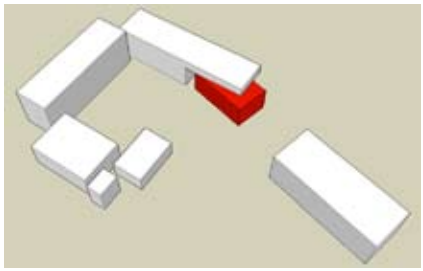
The side walls of the auditorium have been angled for maximum acoustic advantage as well as to allow reflected natural light to enter unobtrusively. A ramp has been provided to allow access for disabled lecturers in wheelchairs, as well as providing an outdoor breathing space.

Two central columns were removed in order to prevent visual obstruction. Transfer beams of approximately 1500mm deep were necessary to carry the slab and apartments above. Because of the great depth of these beams, they were taken up into the dividing walls between the apartments. Because of this and the service ducts running down next to the columns, the walkway had to be cantilevered past the columns. Where the exhibition space grid step back, the duct automatically moved with it and therefore the walkway could be stepped back. The resulting shape echoes that of the ramp wrapped around the building on the first floor level and provides it with overhead cover.

This part of the building and exhibition space is connected by a bridge element formed by the residential apartments. The entrance from the south steps back with a floating walkway leading to the entrance of the lecture hall. The scale of the apartments relates to the neighbouring heritage buildings.

fig 6.57

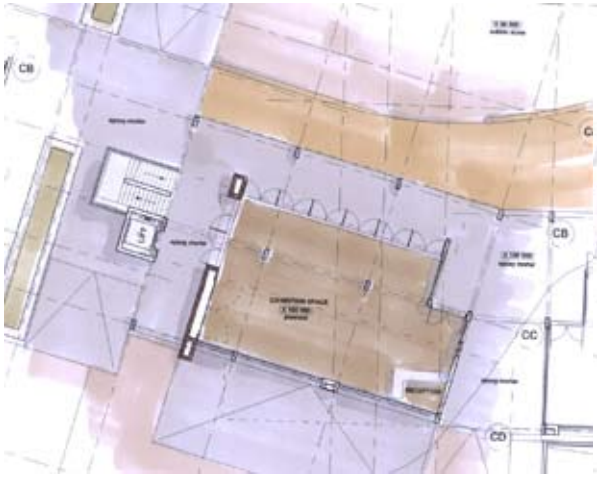
fig 6.58



6.5.6 Exhibition Space

The Beyeler Foundation Museum was used as a precedent of an exhibition space that is naturally lit. It was built to house the private collection of Modern art belonging to Ernst Beyeler. The 127m long building is described as resembling "a ship lying anchored alongside the busy road" (Beyeler Foundation, 2007). Beyeler wanted a naturally lit, calm and restful environment, hence the idea to create a non-monumental space open to direct contact with nature, based on the design of day-lit spaces under a sheltering roof

fig 6.59



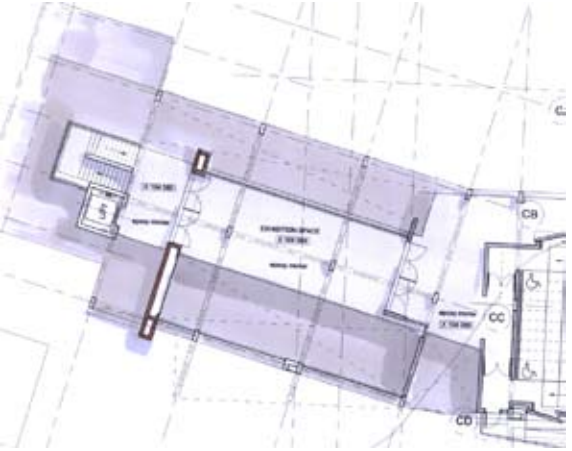


fig 6.60

fig 6.57 view of book shop from courtyard

fig 6.58 view of lecture hall and book shop from the south

fig 6.59 Beyeler Foundation Museum, Riehen Basel, Renzo Piano, 1997

fig 6.60 ground and first floor plan of exhibition space

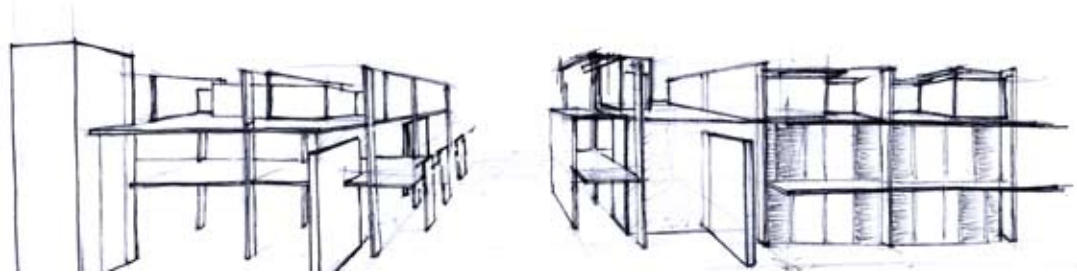


fig 6.60

that filters the sky. The lightweight over-sailing roof contrasts with the seemingly heavy-weight archaic walls. These walls are interrupted and broken in order to provide a range of gallery spaces.

The building's steel roof structure provides support for various glass layers, including a glass ceiling and internal louvers, double glazing, and posts that carry external inclined glass shading. The transparent roof consists of a projecting steel structure suspended horizontally like a flying carpet. It supports the glass of the transparent roof and the brise-soleil that protects the interior against direct overhead sunlight. This roof provides the whole of the interior with the natural light desirable for viewing art. In terms of efficient light usage, the building has climatic buffer zones (e.g. service and ancillary rooms) that help to reduce reliance on mechanical systems.

In the proposed project, the exhibition space has been placed on the grid which aligns with Roper Street, while the apartments on the second floor continue on the original grid. This creates the illusion of the exhibition space popping out from beneath the grid, forming an imposing element which draws attention to it and the art it exhibits. The exhibition space has large glass facades, allowing ample soft southern light to illuminate the space.

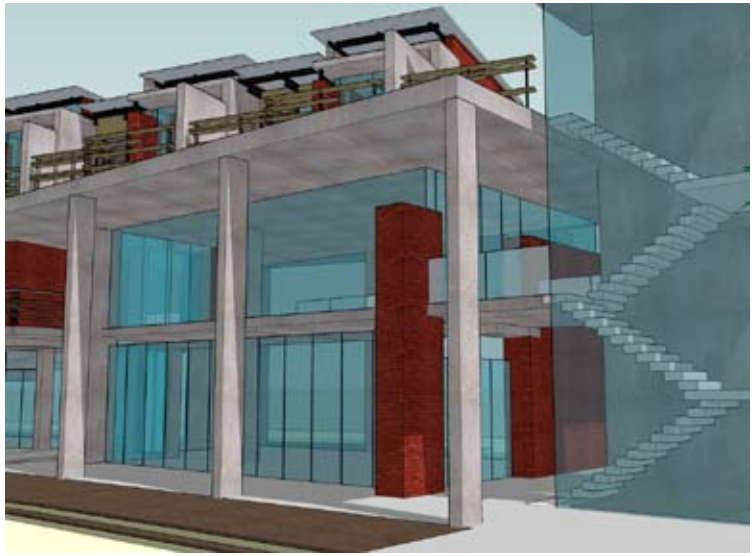


fig 6.61

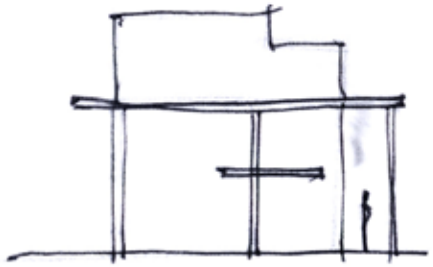


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fig 6.62

The walkway on the second floor links to the spill-out space in front of the lecture hall and continues to form a double cantilever, floating walkway extending into the double volume exhibition space. Both sides take advantage of the endless horizon effect with a glass balustrade facing the interior and a structural glass wall to the north.

The vertical circulation has been separated from the exhibition space and linked only with the walkway to create a slower channel of movement to pass before the entrance. The walkway also forms an overhead cover leading into the main entrance. A large red facebrick wall indicates the entrance to the exhibition space and provides a surface for advertisements or notices. The wall has been hollowed out to allow for easily accessible storage space. The main storage space has been placed in the basement to be out of the way and is accessed by the lift.

The entrance opens up into a broad double-volume colonnade which has an overwhelming effect on the user as well as forming a large overhang to protect against direct northern sun light. To the side frameless glass doors opens up the exhibition space and allow for displays to spill out into the courtyard.

The southern glass wall has toughened frameless sliding doors to allow large art pieces to be moved into the space from the road.

The vertical circulation on either side of the gateway forms two focal points indicating the threshold between public and private.

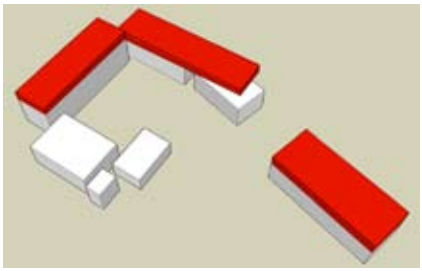


fig 6.63 Residential Building on Oak Lane, Melrose Arch Joburg, Savage & Dodd Architects

fig 6.64 view of apartments from the courtyard

fig 6.65 apartment floor plans

6.5.7 Residential Apartments

The residential levels hover above a two-storey plinth, which houses the commercial components. Rather than creating private gardens that exclude all but the users of those gardens, the building presents an interactive face to the public courtyard and thereby performs a function beyond its private realm.

The residential component consists of 16 apartments ranging in size from 1 bedroom bachelor (+/-40m^2), to 2 bedroom (+/-55m^2) units to accommodate the specific target market of students, young professionals and visiting professors and lecturers.

The Melrose Arch Residential building on Oak Lane in Johannesburg by Savage & Dodd Architects was used as a precedent. The key principles in their design were to 're-conceptualise' an apartment building within the context of an urban street-based model, that also opened up to create meaningful external spaces within the units, whilst respecting and responding to a difficult climatic orientation.

Because of the depth of the building and the grid spacing, the apartments are elongated rectangular shapes which which did not allow sufficient natural light to reach the central areas. The roof over the living areas has therefore been lifted to create a light shelf on the northern side to allow light to be bounced into the darker recesses of the space.

The spaces have also been stepped to allow maximum light to enter and create private outdoor social spaces.

Externally the apartments respond directly and deliberately to their orientation. Crisp, clean and contemporary lines define the edges while shielding the buiding's facades from the extremes of climate through the use of deep vertical and horizontal overhangs. Views are maximised through full-width and height glazing.

In order to minimise the service ducts, the layout of the plan was mirrored in the back whist retaining a regular rhythm in the front.

fig 6.64

fig 6.63

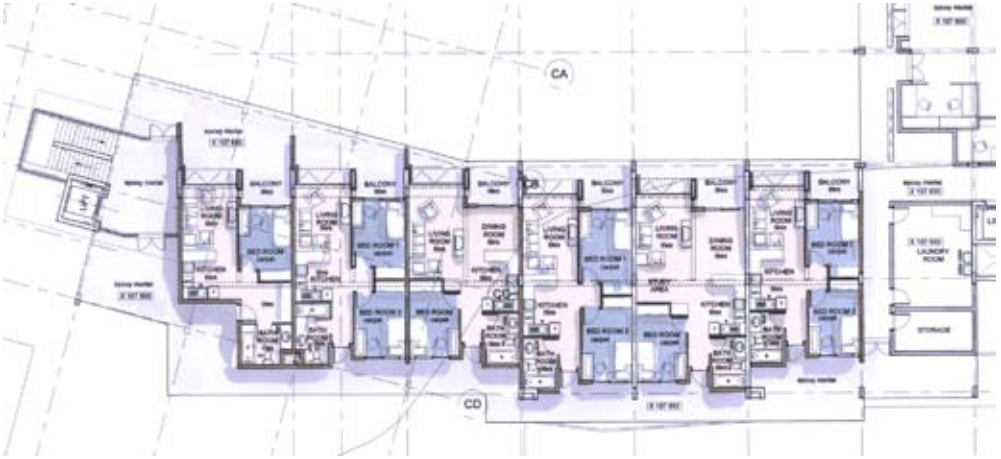


fig 6.65

fig 6.67

fig 6.68

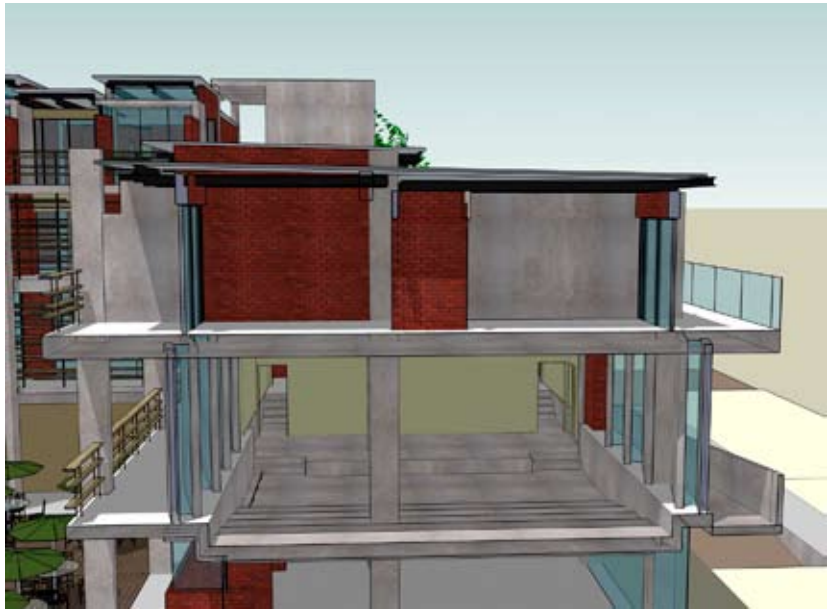


fig 6.67 section through living area

fig 6.68 section through bedroom

fig 6.69 front view from the north

fig 6.70 design development

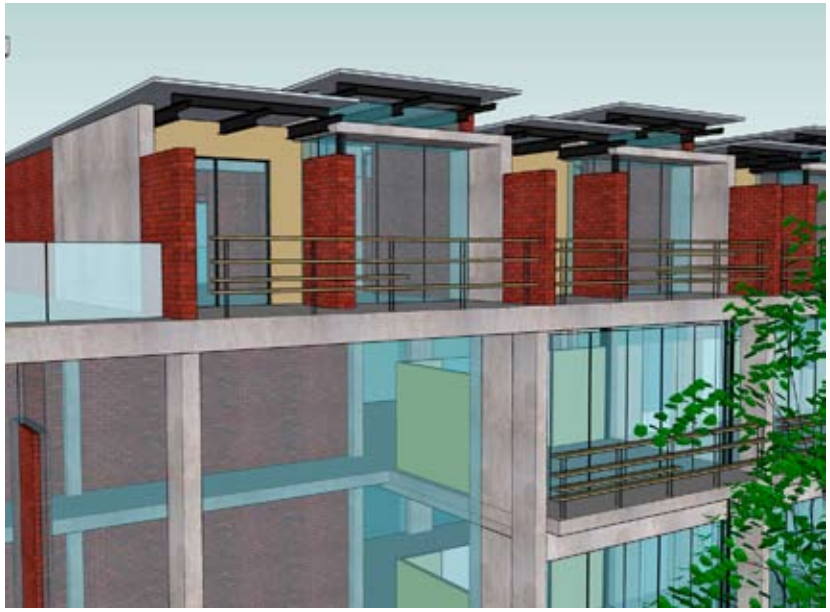
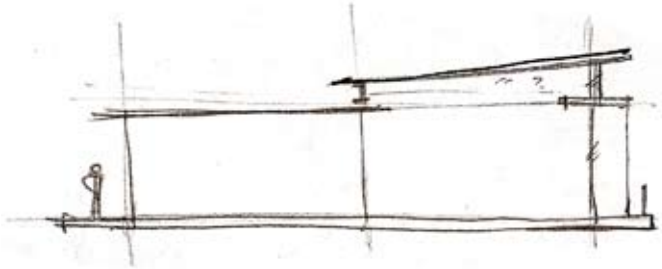


fig 6.69



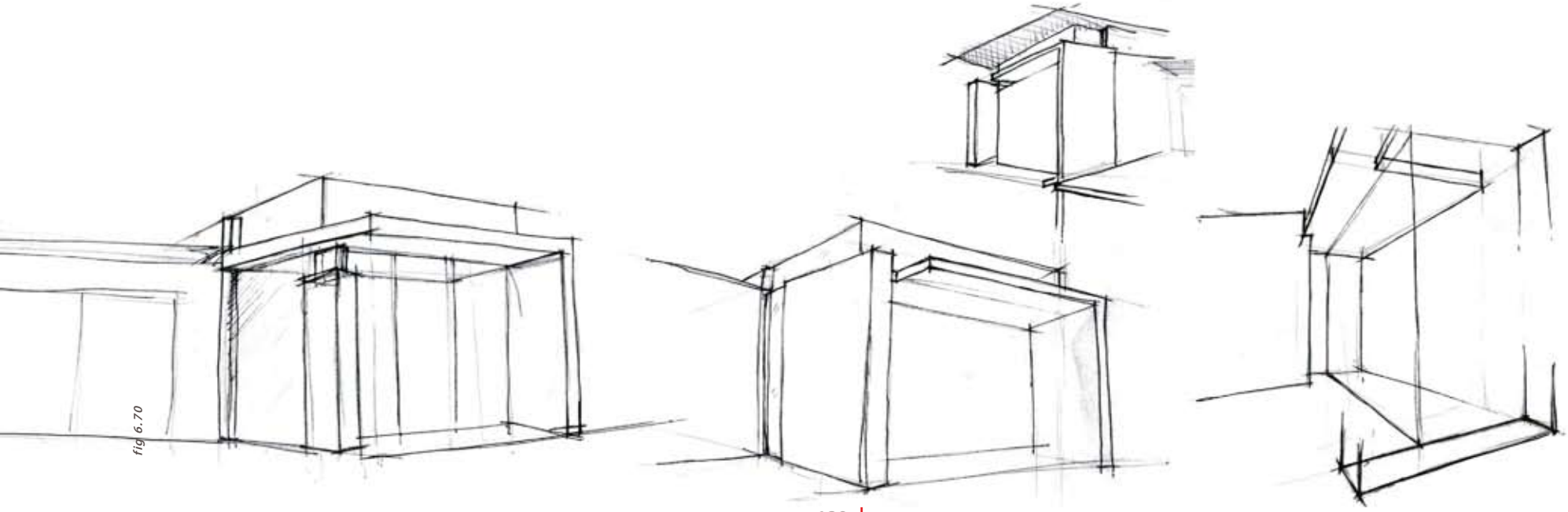


fig 6.70

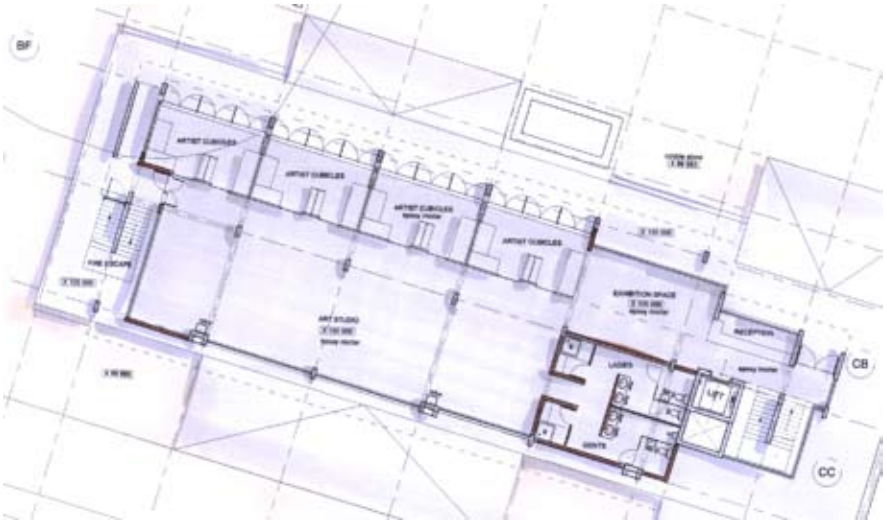
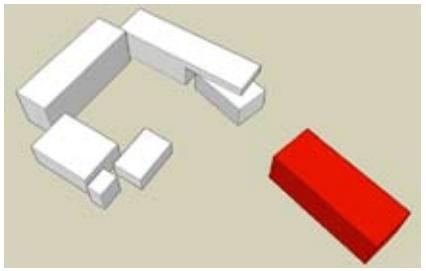


fig 6.71

fig 6.72



6.5.8 Art Studios

The art studios building forms the other side of the gateway, and has been designed in the same language whilst not mirroring the other building exactly. The grid of this building lines up with the colonnade and deck extending in front of it in order to promote the flow of movement entering into the courtyard.

The building has been designed on the same principles as the architectural studio, with lockable cubicles on the one side and double volume studios to the south, with the exception of the cubicles opening into the sculpture yard in front and large sliding doors to the south allowing access for heavy vehicles from the road connecting to the technical building.

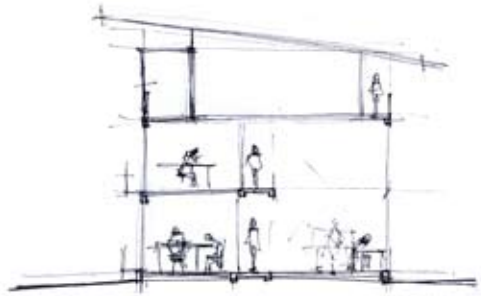
fig 6.71 ground floor plan of art studio

fig 6.72 section through art studio

fig 6.73 design development

fig 6.74 view of art studios from the north

fig 6.75 view of fire escape from the south-west



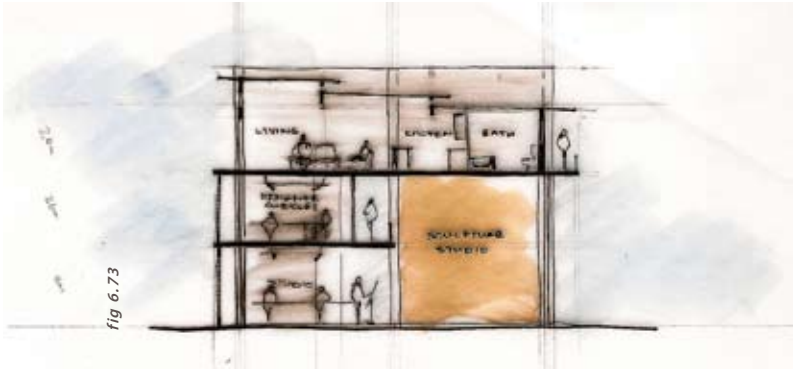


fig 6.73

fig 6.74

fig 6.75