STDC_ State Theatre Dance Centre

Anton Wessels

"To engage less than all the senses is to limit understanding and experience. The movement of our bodies through space and time, and the complementary kinesthetic and tactile senses, are central to the active inhabiting of places." (Yudell, B & Ruble, J: 2004)

The STDC
by:
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University of Pretoria,
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Study supervisor: Mr. G. White

Abstract

The State Theatre Dance Centre forms part of the regeneration and upliftment of the Pretoria CDB. The STDC (State Theatre Dance Centre) is proposed to be sited directly opposite the South African State Theatre, in the CBD of Pretoria. The proposed site for the STDC, urban-infill project is an underutilized and undeveloped portion of land along Pretorius Street.

Throughout the project the context was sensitively investigated and considered. The proposed building does not attempt to aesthetically 'blend' with the surrounding buildings but is rather the product of considering the opportunities and constraints that have been highlighted throughout the thesis whilst attempting to breathe new life and innovation into the environment.

The thesis highlights the importance of the spaces found in-between elements within the built environment, as it are the se spaces that express and infuse individual elements with life and energy. Dance comes to life as a series of frames of movement. The choreographer positions dancers' bodies within space to create a continuous flow of 'frames' where the relationships between dancers are expressed by the spaces in-between them. This idea is expressed throughout the thesis as the project develops through the different stages.

With thanks:

Gary White _ Study supervisor.

Mooky Mabala _ Monnyth Dance House @ the State Theatre.

Toon Herman _ HVAC Engineer.

Stefan Nortjè _ Structural Engineer.

Linda Steyn _ Editor.

This thesis is dedicated to my parents and sister, family and friends for all the love and support throughout my years of study.

- Soli Deo Gloria -

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100_ PROJECT INFO

- The brief
- The methodology
- Performance criteria
- The programme

A_The Brief

1_Point of Departure:

To design a building that would be a container for a centre for dance in the Pretoria CBD. The thesis also attemps to explore ways to regenerate the chosen site and study area in order for the area to become a destination.

The primary goal is to design a centre for the study of the art of dance. The centre will be situated in the Pretoria CBD, opposite the State Theatre, to the south of Pretorius Street.

2_Approach:

The thesis explores the theories of legible, cohesive environments were functions found in an environment can complement and feed off one another. It will inquire into the methods used to visually communicate ideas and notions so that the particular environment chosen as site and study area can be read and understood by its users. The thesis will therefore aim at generating an understanding of the study area so as to identify the issues that place constraints on the proposed State Theatre Centre for Dance, and in turn recognize the opportunities that the area holds.

3_Project aims and objectives:

To link with the South African State Theatre complex and by doing so, to strengthen the presence of the institution within the city of Pretoria. The centre will form an annex to the South African State Theatre.

To visually communicate itself as a centre for dance and, by doing so, to create a focal point / landmark of regenerated city space.

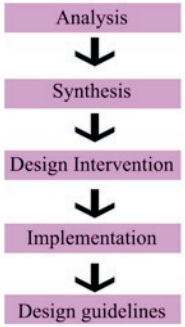
To strengthen the presence and awareness of the art of movement within the city in order to become a platform for social upliftment.

To promote a relationship between the pedestrian and the centre for dance by creating a “destination” building that is accessible to all city users.

The proposal is aimed at communicating a strong message of regeneration and social potency by avoiding ingratiating gestures to ‘blend’ with surrounding buildings.

B_The Methodology

The thesis is to pursues the systems approach to problem solving:



The analysis segment will focus on understanding the context and study area for the State Theatre Dance Centre. Following the analysis, the synthesis stage will be the conclusion to the analysis so as to determine what would need to be implemented, on a larger scale, within the study area and context for the proposed project to have maximum positive effect on its surrounding environment.

The design intervention will follow as a response to the information obtained in the study of the context. In response to this study, the proposed intervention is anticipated to be an appropriate one. The design intervention will be followed by the implementation stage where the responsibilities for the project to be realized successfully, will be investigated.

The design guidelines will then aim to identify all the necessary elements for the design intervention to work.

C_Perfromance Criteria

The needs of the city and its users:

The city of Pretoria once housed the most prestigious theatre in the country, the South African State Theatre. The Theatre established Pretoria as the cultural capital of South Africa. After the rise and fall of the State Theatre, the companies within the institution that formed the lifeblood of the Theatre slowly departed, some even leaving the city. Johannesburg, particularly Newtown, has in recent years been established as a cultural precinct and is today regarded as the home of arts and culture.

The State Theatre is still strugling to return to its former glory and can only do this by being recharged with its lifeblood: the companies that produce the arts.

There is no reason why any one city should be the cultural capital of the country. It is in every city's interest to express its richness through the means that the arts offer.

The needs of the city and its users identified by this thesis for exploration are:
- Ways of assiting the regeneration of the South African State Theatre within the city of Pretoria.
- Communicating the arts within the city of Pretoria so that the city will be perceived as culturally rich.

For the proposal that this thesis will produce, the current environment surrounding the Theatre will be carefully investigated. This investigation aims to identify how the Theatre ties into the larger city context, as well as how the environment needs to be adjusted in order for the proposed project to have maximum effect.

D_The Programme

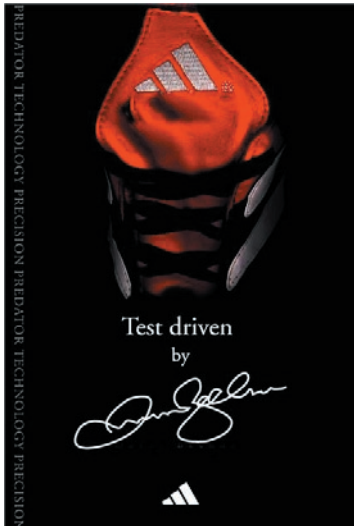
1_The purpose of the programme:

The vehicle for the thesis has been identified as the State Theatre Centre of Dance. The programme for any project identifies the needs of the users, that are to be satisfied. The programme is therefore the context- and site specific needs of the environment.

2_The elements of the programme:

- 4 medium multi-use dance studios (private)
- change rooms (male and female, incl. lockers and showers) (private)
- therapy rooms x 2 (private)
- conference / classrooms x 2 (private)
- library and student / staff lounge (private)
- canteen / cafeteria (private)
- entrance foyer / lobby (semi-public)
- reception and waiting room (semi-public)
- toilets (semi-public)
- ground-floor gallery (semi-public)
- landscaped public / pedestrian walk-through (public)
- retail strip against adjacent building to feed onto walk-through (public)

The thesis aims to identify the needs of the context and, through the context analysis, recognize areas within the study area in need of remedy. Within the study area, Strijdom Square has been identified as having a major impact on the chosen site as it is one of the largest and most important squares in the CBD. Therefore the Square as well as its surrounding buildings will be analyzed in terms of their impact and how poor areas and aspects can be remedied. The analysis also aims to recognize those areas that are currently functioning well and how these areas could be conserved.



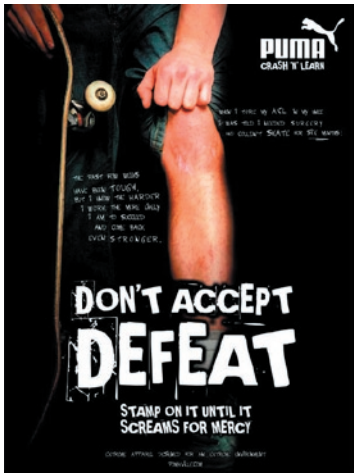


Fig 2.1 and 2.2: Image and text combined to form a powerfull tool for communication.

Introduction:

'Visual messages are a powerful form of communication because they stimulate both intellectual and emotional responses-they make us think as well as feel. Consequently, images can be used to persuade and to perpetuate ideas that words alone cannot' (Lester: 57).

In modern society, communicating through the medium of image has become the most powerful method of conveying ideas or emotions. Since the 'image' (still or moving) has become the prevalent method of communication in modern times, it can be said that it has become the medium best understood by 21st century society. It allows us to convey ideas to society and fellow citizens in a way commonly understood. Visual communication uses methods of description through concepts of topics and themes which people can relate to or identify with.

In architecture, and in South Africa particularly, the debate on cultural identity is one, amongst many, that is enjoying much attention. It is concerned with the development of identity in the landscape and urban environments of South Africa. It searches for methods by which our environment is visually communicated relative to the social, economic and political status of the country, as well as defining our identity in a global society. Thus, it is concerned with the way in which our environments are visually comprehended.

Within both architecture and visual communication, theorists are sharing their frustration on the issue that produced works are becoming too concerned with instant manipulation which feeds off of the desires of a consumer-driven society.

Architecture and Visual Communication:

Architecture, in the traditional sense, is a tool used to accommodate all the activities of a specific society. Thus, architecture is a projection of the distinctive characteristics of a specific place, space or institution, and as such has already achieved a state where it has become a very powerful tool in communication. Both architecture and visual communication utilize a process of design in developing and bringing into play the desired ideas and notions that are to be projected. Many theorists in the architectural field have expressed their concern regarding the role of the visual in architecture of buildings becoming a mere vehicle for visual sensations.

This concern has also been raised in the field of visual communication. Visual communication is a design discourse where images and text are carefully composed to form messages. Advertising is directed to specific target markets, and thus makes use of images and texts that are familiar to the targeted viewer. It is therefore a re-showing/ representation of the viewers' past experiences, desires and needs. In the field of advertising, symbols are used as bait for the desires of individuals. In *south african visual culture* (2005: 14), Michael Herbst explains that often, only representation allows us to convey and articulate our greatest aspirations and ideals, and that in many cases it is the only way for these ideals and aspirations to be translated into visual form. A strong and compelling concept is all that is necessary for anything imaginable to be translated into visual form through media technology.

We find that in advertising, represented worlds are formed through combining imagery and texts that represent the actual, concrete things found in the 'real'. However, the advertisement does not always represent a world that one can fully recognize. This world is usually a theatrical staging of an idyllic and enhanced world. The dilemma here is that, through constantly representing what has previously been represented, all connections to the 'real' are eventually lost. The representation is therefore no longer an accurate depiction of the real.

This brings me back to architecture. The notion of 'staging ideal worlds', is one that creates major tension within the architectural profession. Architecture has in many cases, become, concerned with shaping 'perfect' environments regardless and ignorant of the context. In *Supermodernism: Architecture in the Age of Globalization* (1995: 18), H. Ibelings describes this '…Buildings started to act as vehicles for ideas that had nothing to do with architecture'. It is through the mere re-representation of 'ideal' architectural works, regardless of context, that meaning in architecture is lost: ' a "non-place urban realm" where the packaging of cities as commodities produces a city as a set of scenographic representations' (Low and Lawrence-Zúñiga: 33). In *Polemics: the Eyes of the Skin, Architecture and the Senses*: J Palasmaa (1996: 19) expresses his concern on the role of the visual in architecture by stating: 'Architecture has adopted the psychological strategy of advertising, of instant persuasion,

and buildings have turned into image products detached from existential sincerity'.

In pursuit of meaningful architecture:

In light of the above discussion, I argue that architecture should be driven by the needs of the users rather than their desires. It is only through providing places where people can interact and have their requirements fulfilled, that meaningful places are created: 'Because social practice activates spatial meanings, they are not fixed in space, but are evoked by actors, men and women, who bring their own discursive knowledge and strategic intentions to the interpretation of spatial meanings.' (Low and Lawrence-Zúñiga: 10). Interaction is the life force of meaningful places: 'Space can have no meaning apart from practice; the system of generative and structuring dispositions, or habitus, is constituted by actors' movement through space.' (Low and Lawrence-Zúñiga: 10).

It is therefore safe to say that the programme should be the force behind any architectural project. Only through satisfying the needs of people, can they - the people - bring life to an environment. After all, architecture is an art form that incorporates the theories of spatial experience with a functional and tangible, three-dimensional object. The programme can be defined as the context- or site-specific needs of an environment. The programme is specific to the needs and abilities of the community or users of a place and aims at solving the problems encountered in a context.

However, even if a building, or any environment for that matter, provides all the spaces necessary in fulfilling the needs and requirements of its users, these spaces are condemned if the environment is illegible. What then, if there is such a thing, is the rightful position of the visual within architecture? Since visual media permeate all facets of modern society, how can visual media be incorporated into architecture in a positive way? These questions are what this thesis aims to answer. It is through the exploration of the theories discussed above that I was able to identify an area where the fields of architecture and visual communication overlap.

The role of the visual in architecture – Way-finding:

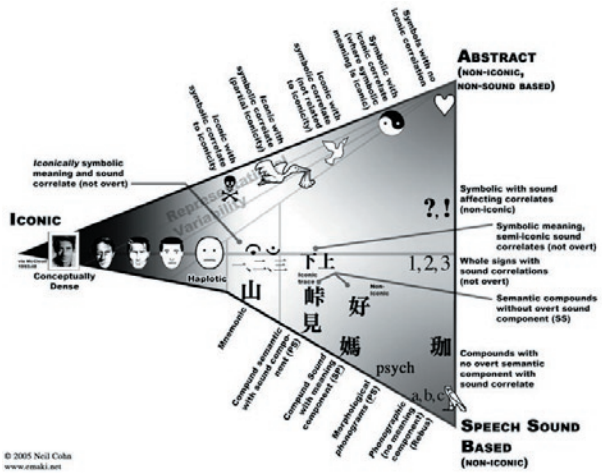
It was Kevin Lynch who first introduced the idea of 'Way-finding' in his 1960's book '*The Image of the City*'. His work was based on the idea of being able to orientate oneself in a space by means of generating a cognitive map through the understanding of an environment. In visual communication, strong concepts are translated into memorable images that convey messages. If the concept is strong, but the execution into visual media is weak, the work fails by not making a lasting impression on the viewers' memory. This can be said of architecture too. The needs within a specific place give rise to a programme. This programme gives rise to the concept. Even if the physical requirements of the concept and programme are fulfilled, but the execution is weak, the environment will not leave a memorable impression on the user. When this happens, the user is unable to form a cognitive map of the environment, and is therefore unable to orientate him- or herself spatially, within it.

The concept of spatial orientation needs to be applied at all scales of the environment, and there are many factors to consider in creating understandable environments. Some of these, as set out by Lynch (1960), are: paths, edges, landmarks, nodes and districts. In *Responsive Environments* (1985) the authors approach the built environment as one that needs to respond to human needs instead of humans having to respond to the needs of the building. A place needs to offer its users a democratic environment which maximizes choice and opportunity. If an environment is able to do this, it is called 'responsive'. There are seven principles that cover the key issues which need consideration in the design process, in order to create a responsive environment. These are:

1. Permeability: this influences where people are able to go.
2. Variety: the range of uses available.
3. Legibility: understanding the opportunities offered by the environment.
4. Robustness: the range of functions that one particular place can be used for.
5. Visual appropriateness: how the appearance of a place creates awareness of what the place offers.
6. Richness: choice of sensory experiences.
7. Personalization: the degree to which people are

Fig 2.3: Wayfingding signage on steroids.

Fig 2.4: New York Times Square - an information overload.



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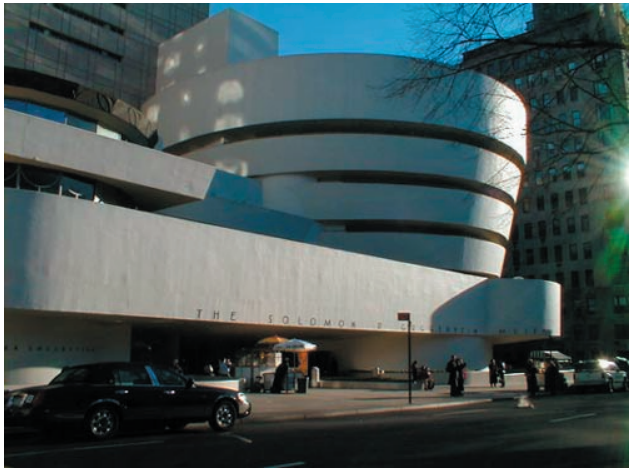


Fig 2.6: The Guggenheim Museum - New York City - the 'spiraling' layout sends the user on a defined journey through the building.

allowed the freedom of putting their own stamp on the environment.

These elements could add to the design of environments that people are able to read and understand more effectively. Only when people can truly understand an environment and then use it efficiently, can the environment be adapted to their ever-expanding or changing requirements.

Paul Arthur and Romedi Passini, authors of *WAYFINDING: People, Signs and Architecture* (1992) express their concern that architecture and visual media need to fuse in the process of design in order to create more legible environments:

> '*Cognitive map*: an overall mental image or representation of the spaces and the layouts of a setting'

> '*Spatial orientation*: the process of devising an adequate cognitive map of a setting along with the ability to situate oneself within that representation'

Paths, edges, landmarks, nodes and districts are the essential elements, according to Kevin Lynch, necessary for highly legible and 'imageable' (cognitive mapping) environments.

Way-finding is primarily concerned with the legibility of environments. It must be understood that it is not simply the design of signage, by graphic designers, which is added to a building or urban environment after completion, but the design of a total environment, by the architect or urban designer, in order for the built form to be readable. Way-finding requirements are therefore integral to all scales of the environment, whether regional, metropolitan or local. Moreover, when designing way-finding-friendly environments it is of extreme importance to consider that these environments also need to be legible and usable for the disabled.

The main principles of way-finding design used to enhance the legibility of an environment (*WAYFINDING: People, Signs and Architecture*: 1992) are:

- **Spatial planning** – Logically organized spaces where different functions feed off, or complement, one another, aid in the understanding of an environment.
- **Architectural communication** – The physical, built form needs to communicate function, movement and circulation, access and entrances, destinations, hierarchy of space, etc.
- **Graphic information** – Visual media form an integral part of the understanding of an environment allowing one to make decisions on destinations. Visual media can also communicate and thus create awareness of the function of an environment.

Conclusion:

It can be argued that the architect has always been concerned with spatial planning as an essential, if not the most essential, part of the design process, so as to create spaces that offer maximum choice. It is no doubt the intention of the architect to design environments that are able to stand the test of time. However, the built environment is cluttered with underutilized space and this is a serious issue when considering land value and resources. The environments or buildings that architects and other designers produce cannot be used as a testing ground for the uncertain. It is the aim of this thesis to highlight the importance of design processes that concern themselves with generating environments that clearly communicate structure, materials, function and - most importantly - how an environment or building should best be put to use.

300 _ CONTEXT ANALYSIS

The project area

- Site identification
- The Sammy Marks precinct
- Background of the South African State Theatre
- Movement patterns & network of green spaces
- Photographic/visual analysis

The study area

- Links to site analysis _pedestrian
- Links to site analysis _local and regional street network
- Preliminary street/block structure
- Land-use compatibility study
- Magnet intervention
- Legibility analysis
- The summary and precinct design concept
- The Strijdom Square intervention in relation to the chosen site

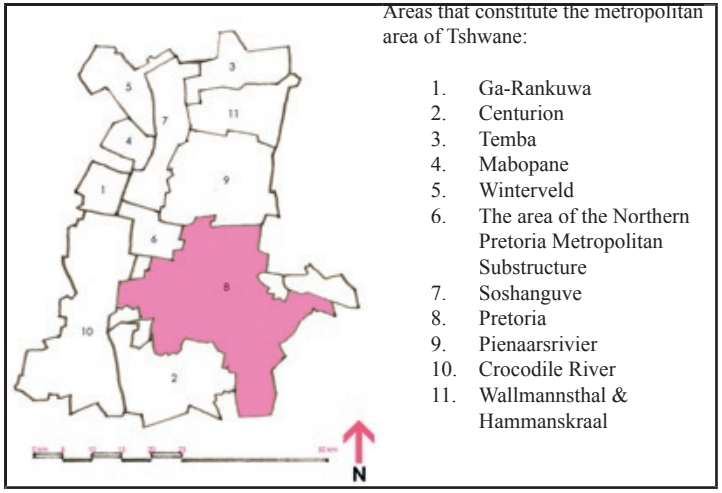


Fig 3.1: Tshwane Metropolitan Region

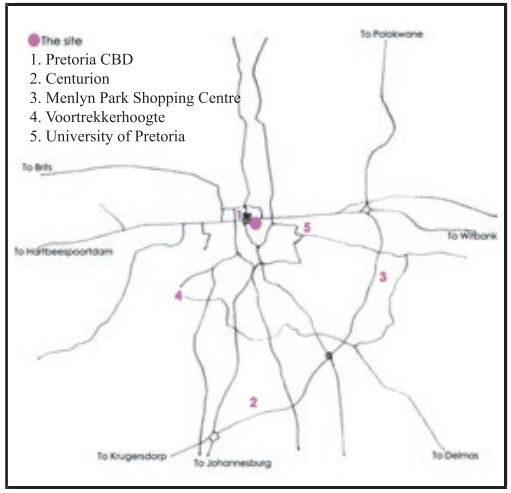


Fig 3.2: Map of the Pretoria area

Fig 3.3: The study area within the Pretoria CBD

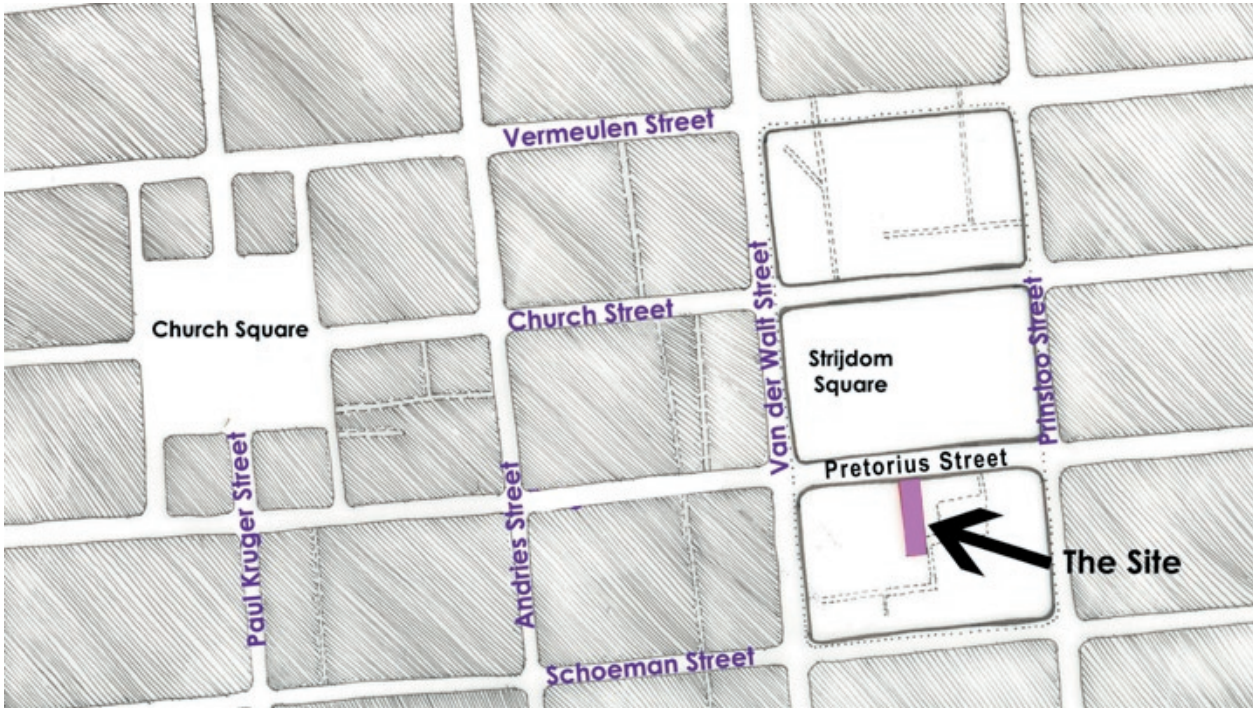


Fig 3.4: The location of the site

Choosing the site

The chosen site is opposite the South African State Theatre, south of Pretorius Street. The site is 21m in width (east - west), and 69,27m in length (north – south) and is an undeveloped portion of ERF 3451. The site has been chosen for:

- its physical proximity and relation to the State Theatre
- its being an under-utilized portion of land which breaks the continuity of the built fabric along Pretorius Street.

The site is currently used as a parking lot.

The proposed project and vehicle for this thesis is the State Theatre Dance Centre which is anticipated to link into the South African State Theatre in various ways. The reasons for this is to strengthen the presence of both institutions within the city of Pretoria, to establish a relationship between them as well as creating awareness of how valuable artistic expression is within society. As seen in figure 3.8, the site is directly opposite the State Theatre.

Fig 3.5: Panoramic view from Pretorius Street

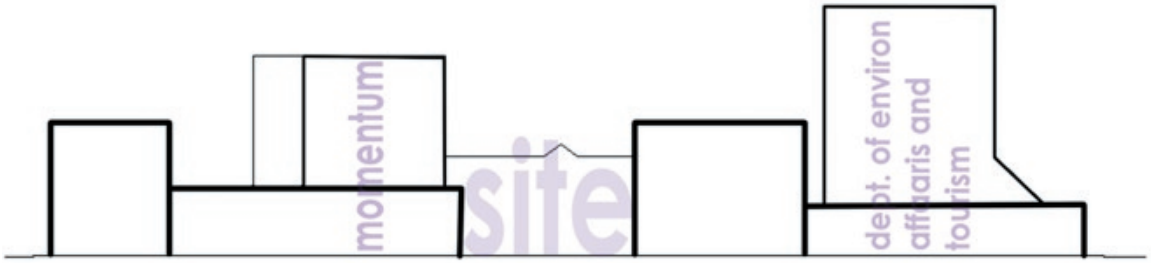


Fig 3.6: Street elevation of Pretorius Street
(From Prinsloo Street to Van der Walt Street)

Two large buildings border the site on either side. The site to the east is occupied by the Momentum building, and the one to the west by the Pretmed building (on ERF 3451) and the Department of Environmental Affairs and Tourism. Figure 3.6, the street elevation, shows the heights along Pretorius Street.

Zoned as: General Business

- Max height: 28m
- Max coverage: 80%
- FAR: 5,5 m
- ERF no: 3451
- Width: 21 m
- Depth: 69,27 m

Being vacant and unused, the site has no significant historical background. It is proposed as the location for the State Theatre Dance Centre, because of the possibility to link it with the South African State Theatre. The historical background of the State Theatre and the background of and future plans for the Sammy Marks precinct are considered for the purpose of understanding the context.

Fig 3.7: Looking into the site

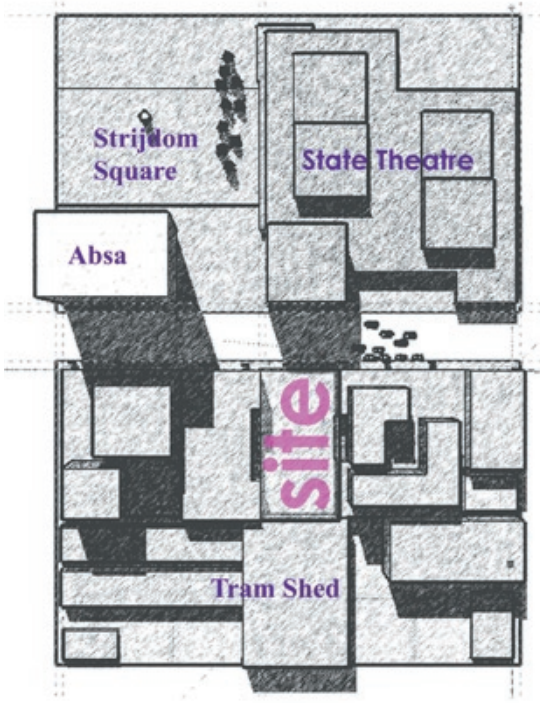


Fig 3.8: The chosen site

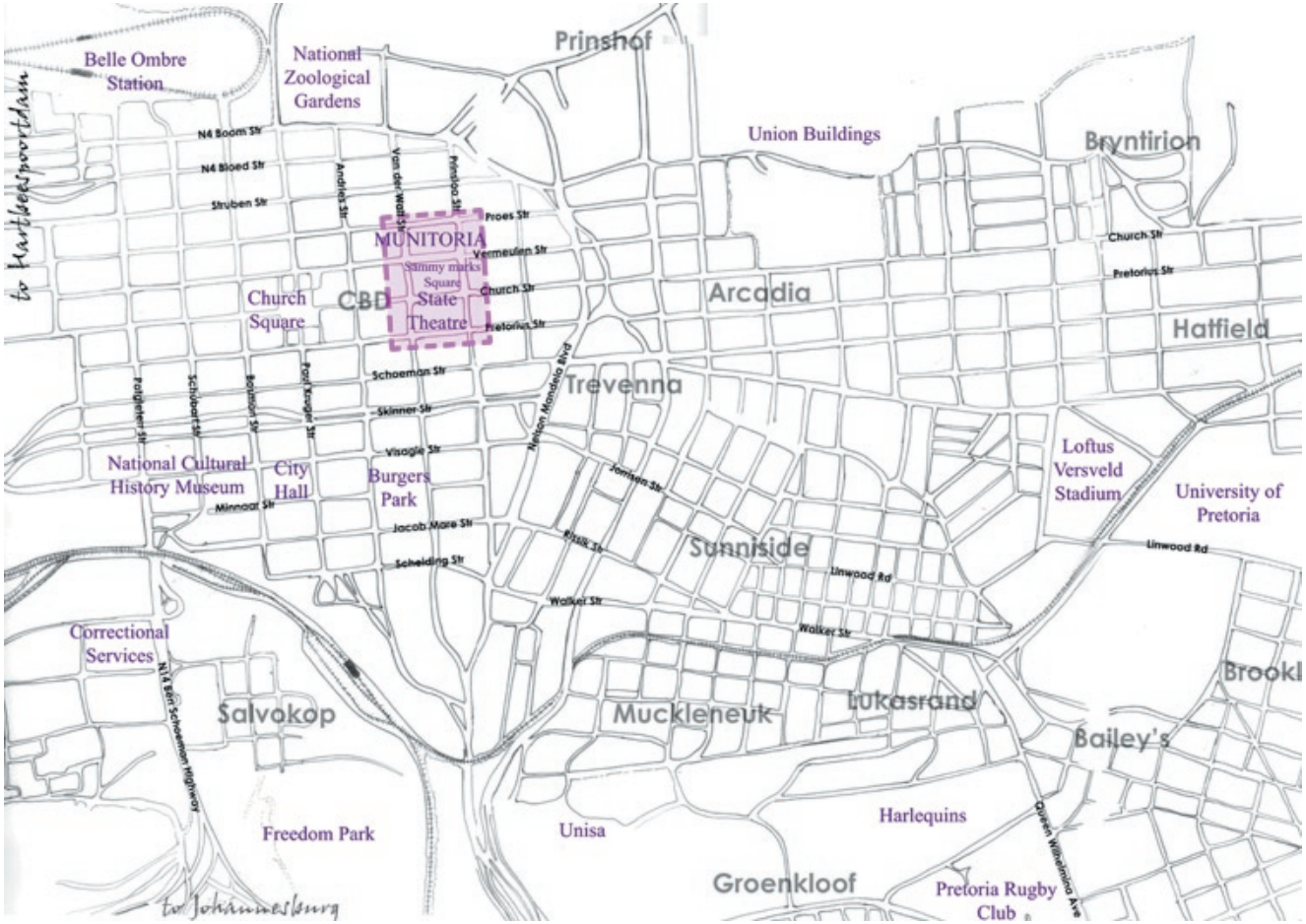


Fig 3.9: The study area indicated on the map of the city

Background and Future Plans: Sammy Marks / Motlotlo Precinct

The precinct is defined by:

- Church Square precinct in the west
- Mandela Corridor precinct in the east
- The precinct extends to
  - Struben Street in the north
  - Du Toit Street in the east
  - Schoeman Street in the south
  - Andries Street in the west

The Sammy Marks precinct, according to the GAP analysis, marks the most densely developed area and current commercial core of the city.

Landmark buildings in the precinct include the MUNITORIA, the Reserve Bank, the Absa Building, and the State Theatre. The precinct is also host to there of the cities' open public. These are Sammy Marks Square, Strijdom Square as well as the State Theatre public space. It also boasts an active, established informal trade market along Church Street.

According to the GAP analysis, although the precinct is well used and developed, there is underutilized space and the precinct can benefit from densification.

Concept for the Sammy Marks Precinct:

It is anticipated that the precinct will become the core of the city for business and second economy.

"the consolidation of governance training and development, i.e. the management and training of government at all levels in an active environment close to what a city centre has to offer, an energetic meeting place and building on the current success of the precinct in terms of public space and controlled informal market activities." (TICP SDF-phase 2: 169 & 170)

Main structuring elements within the precinct:

- Church Street corridor – dedicated to public transport
- Pedestrian and informal trading improvement of Van der Walt Street
- Tshwane Square – introduced at the MUNITORIA
- Upgrade of public space of the Reserve Bank – as an extension of Strijdom Square public space and informal market.

(taken from: TICP SDF-phase 2: 169)

It is described as the precinct where: "the people have taken ownership of the public space and have established it as a truly public space." (TICP SDF-phase 2: 170)

Key concepts summarized:

- Capitalize on opportunities for managed second economy (informal trade).
- Improve pedestrian links to public transport arrival and departure points.
- Extend and integrate core public spaces.
- Tshwane Square.
- Create a forecourt justice college.
- Pedestrian enhancement of Church Street corridor.

"This is a densely developed area in the inner city and in general it is anticipated that the existing services will be capable of accommodating the impact of the proposed development." (TICP SDF-phase 2: 178)

Modal transfer points are anticipated to be where Church Street intersects with Van der Walt Street, Prinsloo Street as well as Nelson Mandela Boulevard. Thus pedestrian accommodation needs to be highly considered in the re-shaping of the streetscapes and intersections.

The South African State Theatre

Construction of the State Theatre commenced in 1965. Only ten years later did the directorate of the Performing Arts Council of the Transvaal (PACT) move into the first completed part of the centre. The State Theatre was finally inaugurated on 23 May, 1981. The Theatre united the activities of the performing arts under one roof. These included administration, workshops, storage, stock, staff, refreshment facilities, rehearsal spaces and the performance facilities. It was a unique centre in the world of theatre and an unequalled and unforgettable experience in the short history of PACT.

The State Theatre lived up to its expectations, providing entertainment across the spectrum of the performing arts. Productions of drama, music, ballet and opera were immaculately organized and the artists and production teams could develop their skills by working under the guidance of only the best.

Interesting statistics of the Theatre's first financial year:

- Total expenditure in 1981 amounted to R11, 492 million. Projected to 2003 (at inflation rate of 11.20%) this amounts to R118, 768 million.
- Over 200 events took place in the Theatre. These included theatre productions.
- 428 performances were staged.
- 275 guided tours through the buildings took place.
- 322,260 people attended these events.
- 804 of the permanent employees were in the service of PACT.
- 690 freelance artists and stage technicians accepted part-time contracts.

(THE SOUTH AFRICAN STATE THEATRE. Annual Report 2003. pg: 4)

More recent happenings:

The nineties came and brought with them allegations that the Theatre was being mismanaged. A bad investment made by the executive management in 2000 confirmed this. June 2000 then saw the retrenchment of the entire staff and the State Theatre was officially declared dormant. The general services of the Theatre were left in the care of a small number of employees.

In 2001 the re-opening of the Theatre as Playhouse was announced. The Theatre would no longer put together productions of its own, but would provide the facilities for private arts groups to host productions.

With the dark cloud of corruption still hovering over it, rebuilding of the Theatre to its former glory has been difficult. Nonetheless, this is carefully and patiently being achieved. One of the greatest obstacles was to invite patrons back to the Theatre since the misconception of the Theatre being closed prevailed.

The dormancy of the State Theatre also saw the degradation of the facilities and equipment into a state of disrepair. Funds have since been invested into upgrades, but this process is far from having the Theatre fully restored to its former state.

State Theatre Vision Statement 2003/04:

"To create a sustainable theatre complex which profiles the diversity of South African arts through quality programming, accessibility and accountability and encourages the development of artists, producers, technicians and audiences in South Africa and in Gauteng and Tshwane in particular."

(THE SOUTH AFRICAN STATE THEATRE – A CULTURAL INSTITUTION. Annual Report 2003/04. pg: 4)

"It is important to realize that the State Theatre can be the shop window of our cultural life, of the artistic and theatre achievements of this country and the creative spirit of our various cultures."
(THE SOUTH AFRICAN STATE THEATRE. Annual Report 2003. pg: 4)

The State Theatre – Infrastructure

Today, the theatre operates as a receiving house with six available venues, including the newest, the Intimate, equipped with a remarkable sound and lighting rig. The Theatre also houses function rooms, administrative offices and all the required facilities for staging opera, drama, ballet and music.

The venues of the South African State Theatre are:
- The Opera
- The Drama
- The Arena
- The Rendezvous
- The Momentum
- The Studio / Intimate

Functions rooms:

- The Arabesque	60 guests
- The Ensemble	80 guests
- Goldfields	12 seated guests
- The Garden Room	32 guests
- The Transvalia	100 guests

The State Theatre also houses three basement levels of parking. This facility can accommodate 1000 vehicles, and is also used by people other than theatre goers. The parking facility forms a vital part of the Theatre's monthly income. The facility is directly underneath the centre, thus offering safe access into foyers.

Other amenities:
- Satchmo's, the art lovers' clubhouse
- Legends, the staff canteen
- The internet café
- Sashebo Restaurant
- The Art Gallery
- Resident Works of Art
- The Art Lovers' Club

The South African State Theatre owned a number of other buildings in the city, but these had to be sold after the mothballing of the Theatre in 2000.

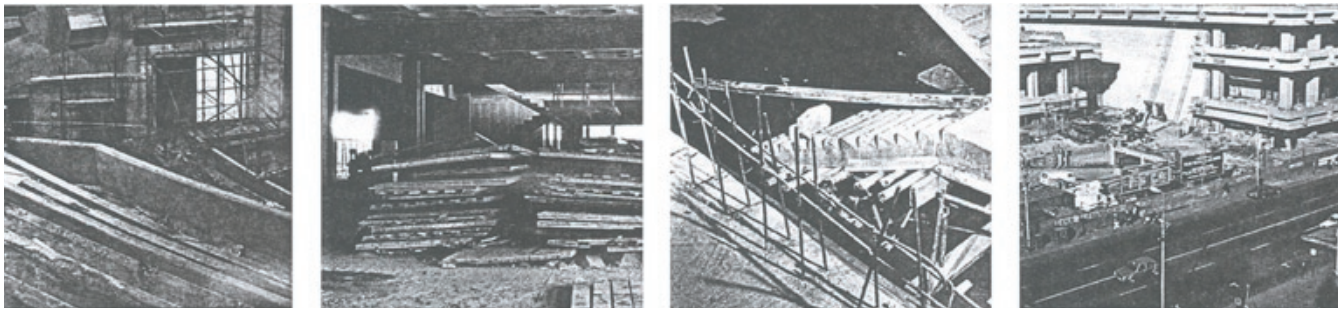


Fig 3.10: The construction of the South African State Theatre

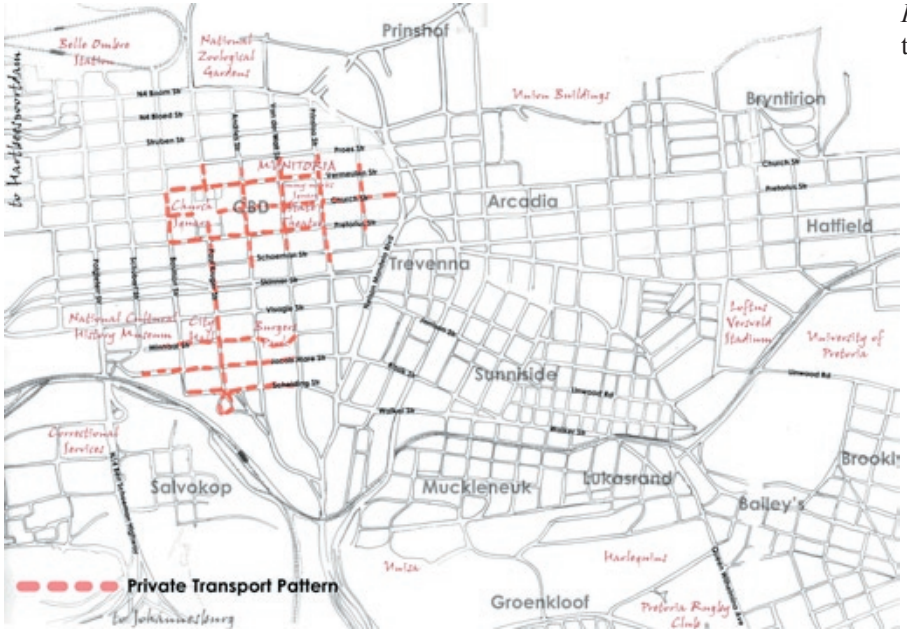


Fig 3.11: Pedestrian movement within the city scale

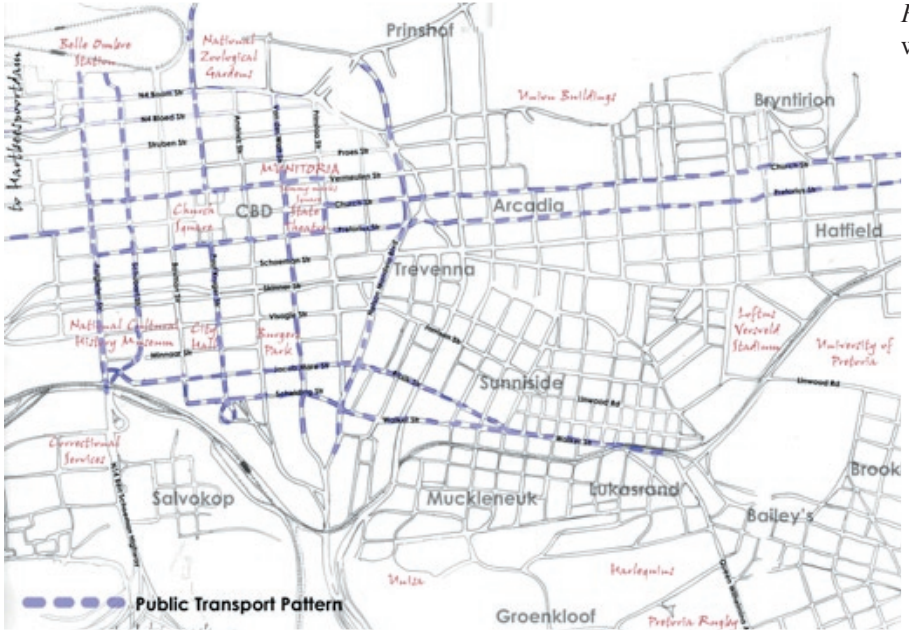


Fig 3.12: Public transport movement within the city scale

Identified Pedestrian Movement

Figure 3.11 indicates the strongest pedestrian energies within the study area. Movement through the area is supported by the commercial activities (formal and informal) along the indicated routes. The highest concentration of pedestrian activity is along Church and Pretorius Streets, followed by activity along Van der Walt and Paul Kruger Streets. Commercial activity feeds off these routes, into side streets running perpendicular, but slowly minimizes as one moves further from the above-mentioned routes. (This information is based on the authors own observation of activities in the area.)

Identified Public Transport Movement

The primary movement of public transport happens along Paul Kruger Street, Van der Walt Street, Pretorius Street, Vermeulen Street and Visagie Street. This is based on observing the pattern of the taxis as well as the bus-stop locations in times of peak traffic. It is Paul Kruger Street that connects the Pretoria Railway Station directly to Church Square which sits at the heart of the CBD. Visagie Street forms a direct link from the southern zone of the CDB into the eastern zone of the city – Sunnisyde and Hatfield. Vermeulen Street as well as Church Street act as primary carriers of traffic out of and into the northern zone of Pretoria CBD. Via secondary roads it also connects to the Belle Ombre Railway Station north west of the city. Visagie Street, Pretorius Street, Church Street as well as Vermeulen Street are all directly connected to Pretorius and Schubart Streets that serve as two of the primary feeders of traffic to and from the N14 highway, which leads to the city of Johannesburg.

Identified Private Transport Movement

Roads used for primary movement of private vehicles throughout the CBD link with the public transport routes. Amongst these are:

- Skinner Street (east-west), with a high load of private vehicular traffic at peak times
- Struben Street & Proes Street, (east-west), taking the N4 highway through the CBD
- Vermeulen, Church, and Pretorius Streets, (east-west), with Church extending to Pretoria West, as well as the eastern suburbs of the city
- Walker / Scheiding Street (east-west), connecting Sunnyside to the southern zone of the CBD at Pretoria Railway Station
- Jacob Mare / Rissik Street (east-west), connecting the south of the CBD to Sunnyside
- Visagie Street, (east-west), linking traffic from the south of the CBD, passing the City Hall towards Potgieter and Schubart Streets in the west
- Potgieter Street (north-south), feeder to from the direction of Johannesburg/Centurion,
- Schubart Street, feeder out of the CBD towards Johannesburg/Centurion,
- Nelson Mandela Blvd (north-south), to and from Johannesburg/Centurion,
- Paul Kruger, (north-south), connecting Pretoria Railway Station to Church Square, The Pretoria Zoo, as well as the northern suburbs of Pretoria

These roads, as well as those mentioned under public transport routes, all offer opportunities for commercial activities, institutions, governmental bodies or public amenities that require a high level of exposure to the public. They have, however, become very busy and in some cases, do not respond sufficiently to pedestrian movement. The roads where high levels of pedestrian activities have been recorded have in some cases become places of informal trade. These offer opportunities for formalizing the markets that constitute the secondary economy of the CBD. They are a great example of how city-spaces evolve and adapt due to the community taking ownership of the streetscape. Informal trade does, however, impose a much greater compression of human traffic onto the sidewalks. This has a negative effect on street-level as space has not been provided for such activity. It does however, offer opportunities to creatively solve and relieve this tension.

Fig 3.13: Private-transport movement

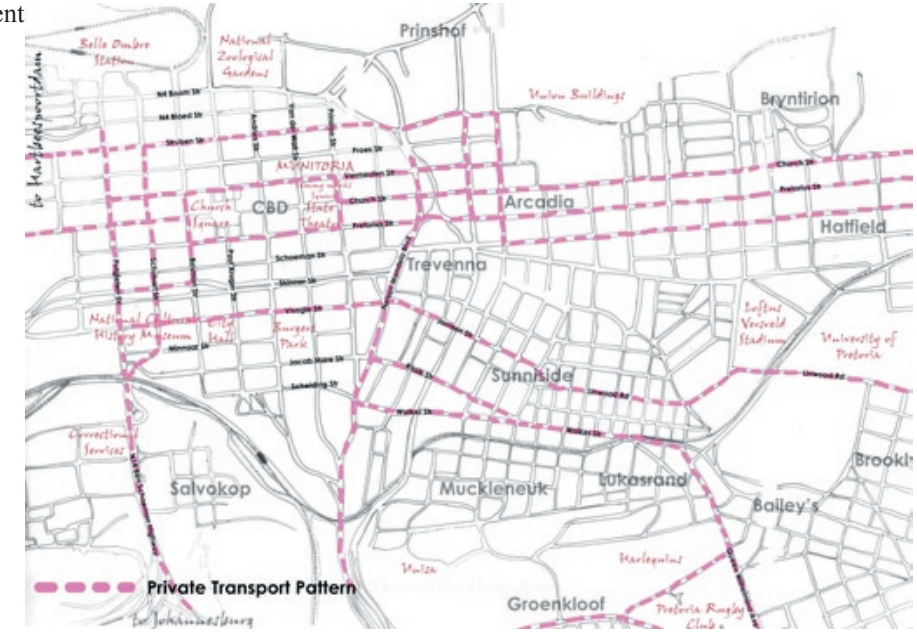


Fig 3.14: Identification of Green Network within the city

1: Strijdom Square - Taken from roof of State Theatre

5: The State Theatre

2: State Theatre offices. 3: Palm Trees along Pretorius

6: Cnr. Pretorius Str & Van der Walt Str. 7: Pretorius str.

4: Facing south from cnr of Pretorius & Van der Walt

Key map:

Fig 3.15: Photographs taken around the site

Photographic Analysis

The area around the State Theatre is maintained fairly well and offers many green and open spaces including:

- Strijdom Square
- The State Theatre Public Square
- Sammy Marks Square
- The Reserve Bank Garden and Public Space

Within some of the above-mentioned space there are fair amounts of soft landscaping. Along Pretorius Street, between Van der Walt and Schoeman Streets, palm trees have been planted on the sidewalk.

The buildings that surround the site are rather plain and repetitive offering little opportunity for personalization by their occupants.

The study area

Following on from the regional and metropolitan analysis, the focus for the analysis was turned to the study area.

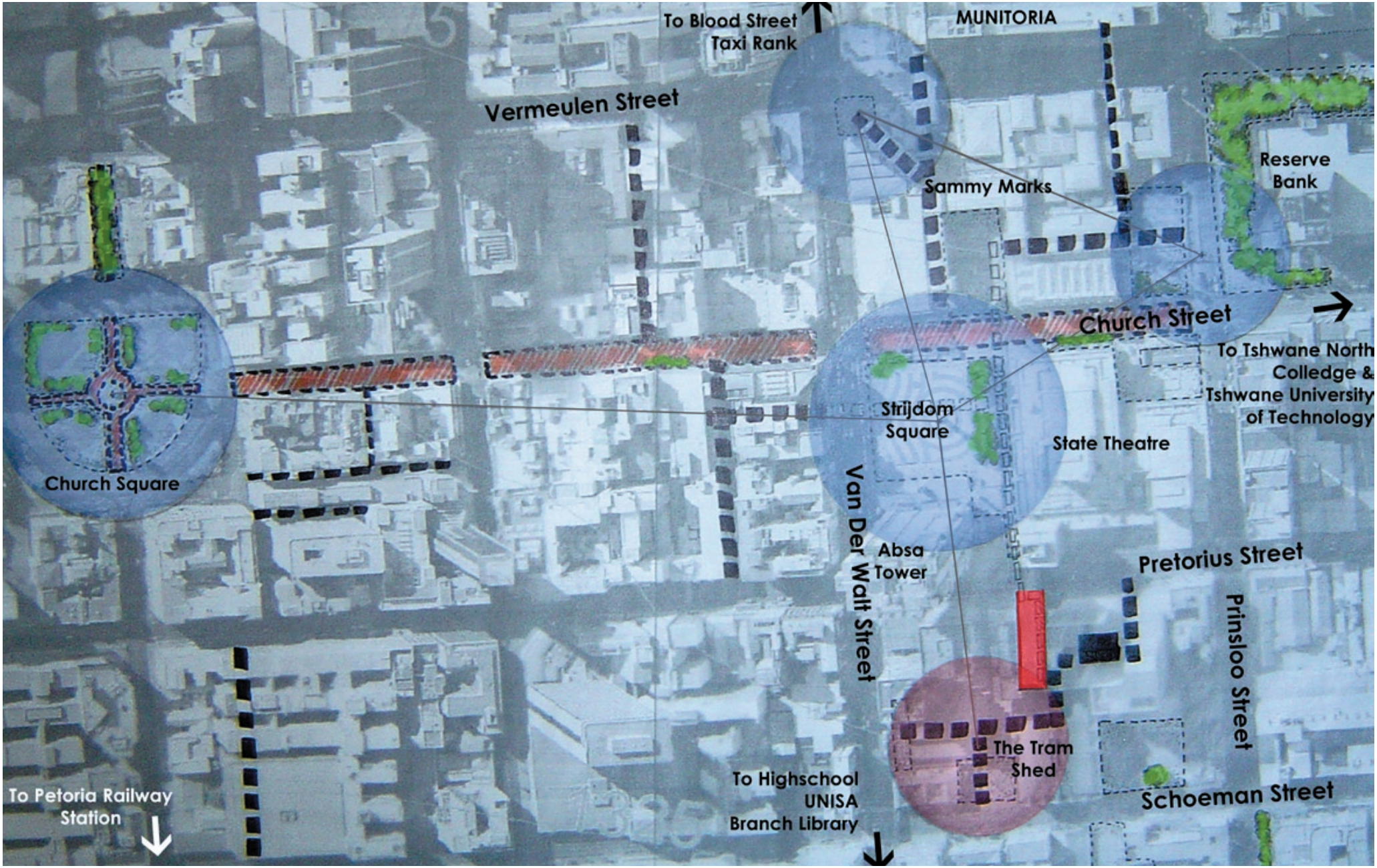


Fig 3.16: ***Links to the site analysis***_ local pedestrian connections

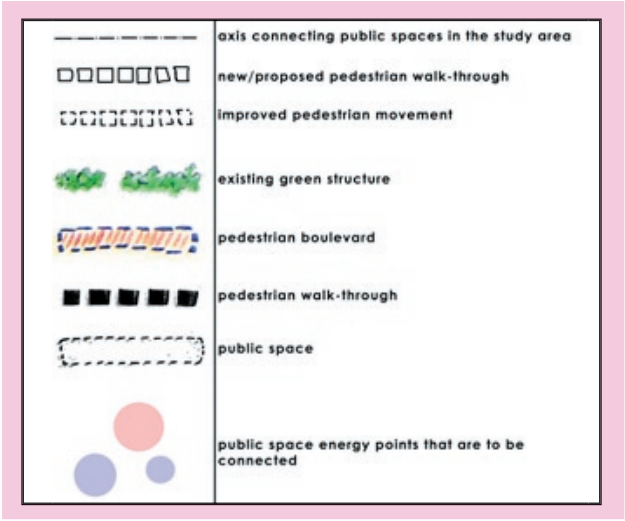


Fig 3.17: Legend for Fig 3.16

Existing Permeability Analysis _ pedestrian links to site

Figure 3.16 on the previous page indicates the pedestrian linkages to the site and study area. Within the study area there are four prominent open public spaces. This analysis also indicates how the walk-through lanes in the city centre act as feeders of pedestrians to these spaces. It can therefore be said that these walk-through lanes connect the network of public open space in the inner city. The connection to/from Strijdom Square to the Tram Shed public space (indicated in red) could be strengthened with the addition of another pedestrian walk-through, permeating the chosen site. It is anticipated that this movement of pedestrians through the site will promote interaction between the dance centre and the public.

Figure 3.18 indicates the position of the study area and site in relation to the rest of the city of Pretoria, as well as how the site is connected and linked to the city. From this analysis it becomes clear that the site is well connected on a city scale, as well as on a regional scale. The figure also shows that with the addition of an access ramp to the State Theatre basement parking along Van der Walt Street, Van der Walt Street (route G) as well as Schoeman Street (route H) could be classified as 1 and 2, respectively, on the rating system used in the analysis.

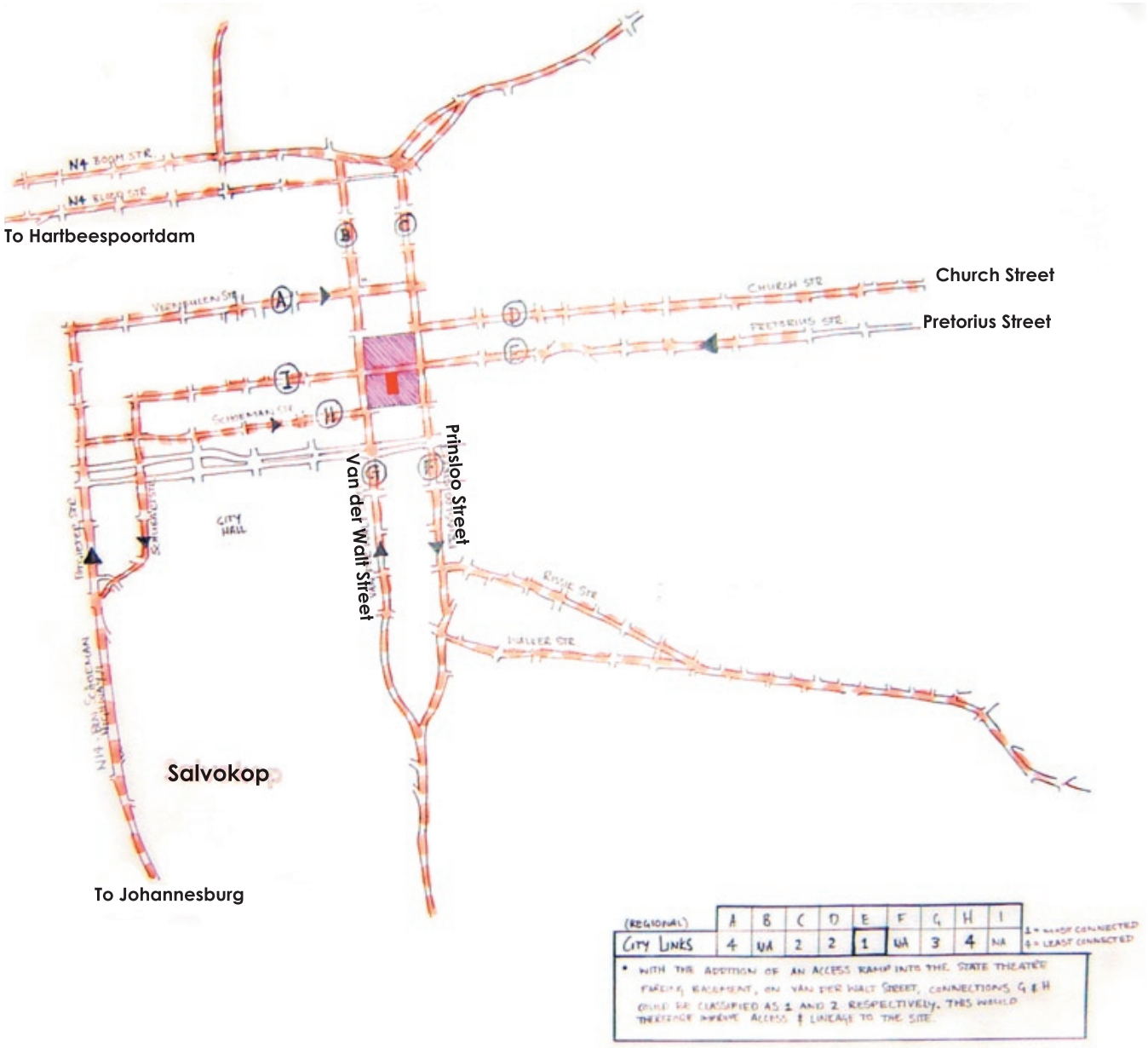
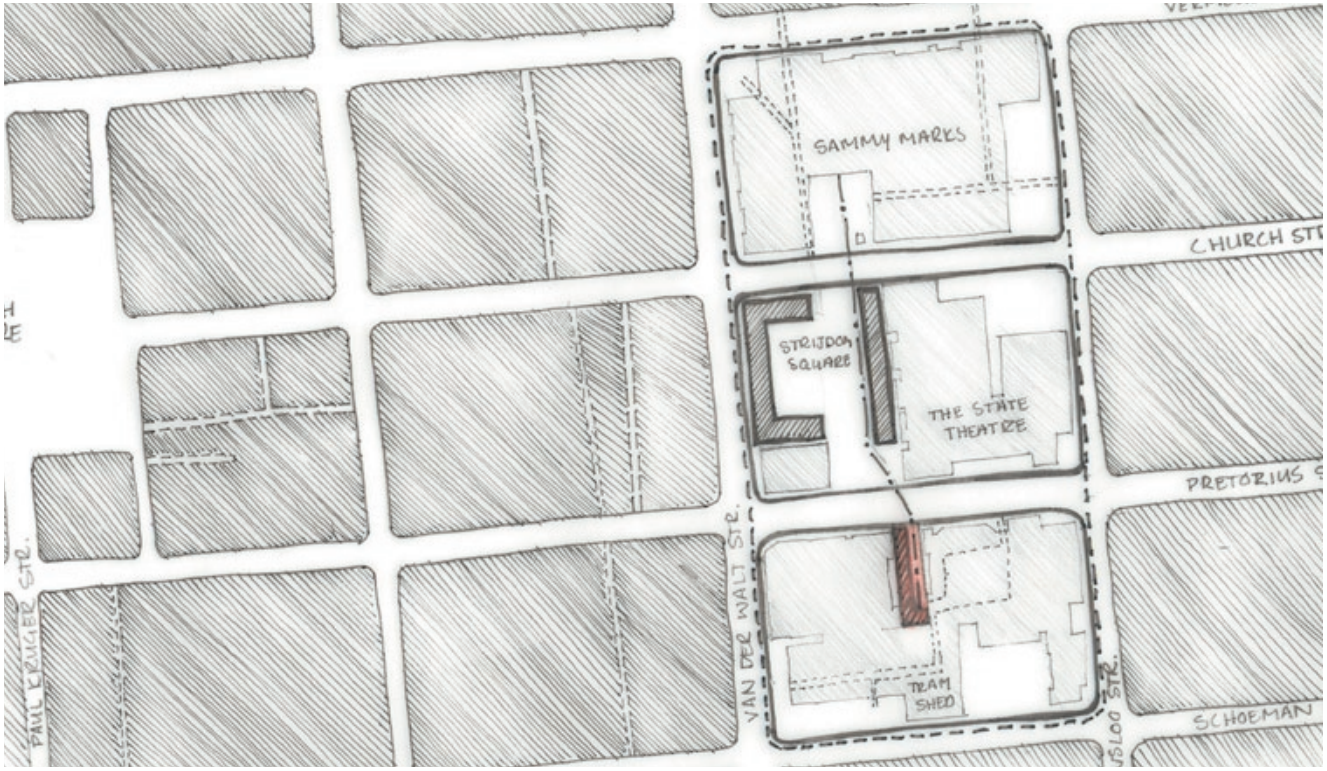


Fig 3.18: ***Links to the site analysis***_Regional connections



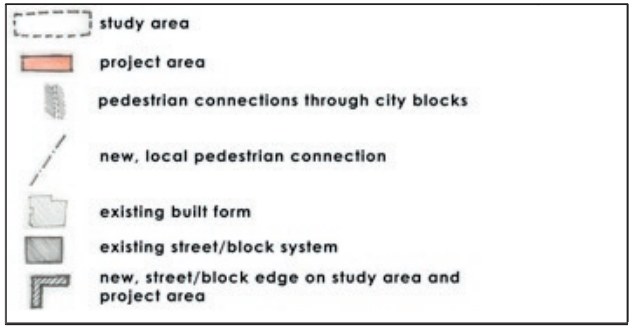


Fig 3.19: The Street / Block system applied to the study area (*after Bently, Alcock, Murrain, McGlynn, Smith: 1985*)

The Street/Block System

From the analysis done on the links to and throughout the site, a preliminary structure has been set up in the study area. Figure 3.19 shows how this structure of built form focuses on Strijdom Square and the chosen site south of Pretorius Street. Built forms have been grouped on the four sides of the Square as all these edges need softening and defining. The current situation on the Square is that the southern and eastern edges are bordered by the Absa tower and the State Theatre. Both the above-mentioned edges are hard and do not communicate at a level relating to the human body. The north-western corner as well as the western edge of the Square are currently lacking in definition.

Land use compatibility analysis

A range of uses have been identified that were deemed appropriate and necessary for the scheme. These were checked for compatibility and then arranged amongst the new street/block structure. As discussed before, a need for a dance centre to link into and act as an annex to the State Theatre has been identified. There is also a need for an additional theatre as well as non-permanent accommodation of a higher standard than presently offered in the area, possibly a boutique hotel for theatre goers and guests of the State Theatre.

Other uses that were deemed appropriate are:
- Retail
- Evening Entertainment : Restaurants, Pubs, Lounges, etc.
- Market
- Quality Green Space

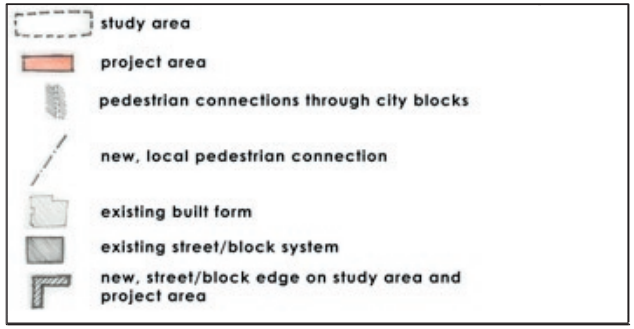


Fig 3.20: Land-use compatibility study

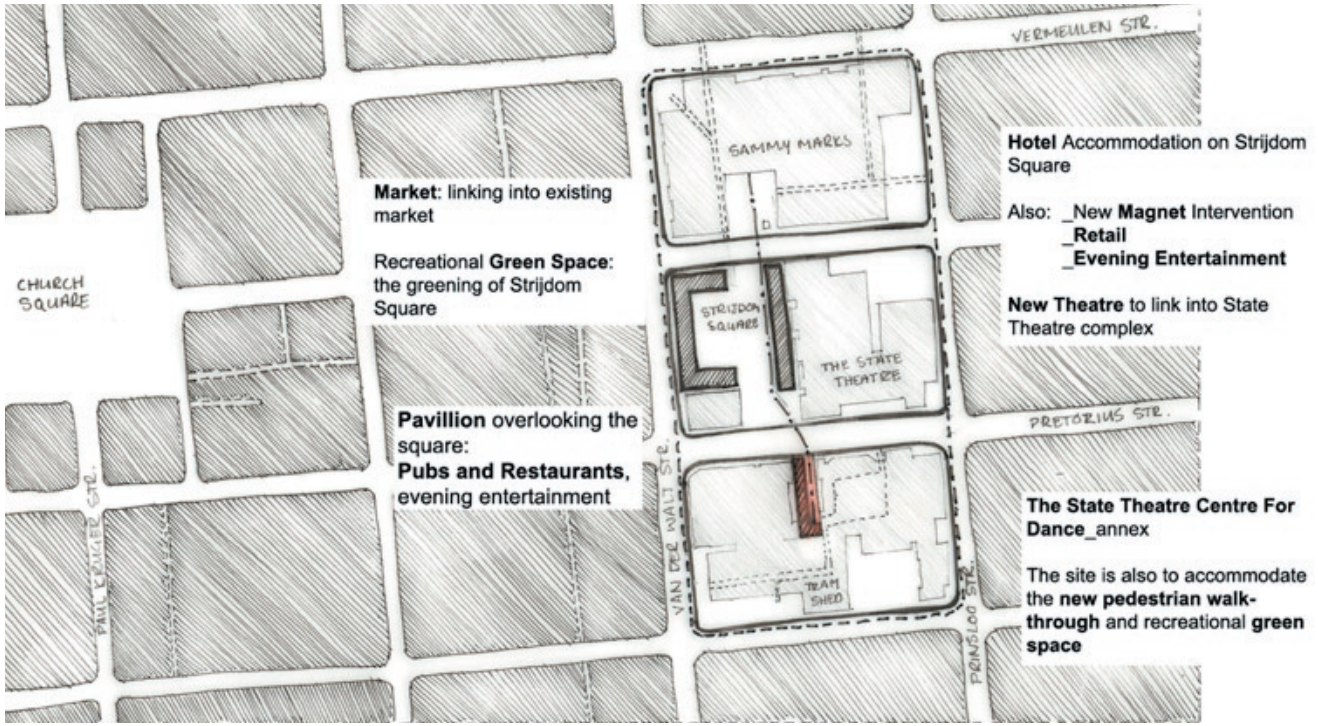


Fig 3.21: Strategic allocation of uses within street / block structure (*after Bently, Alcock, Murrain, McGlynn, Smith: 1985*)

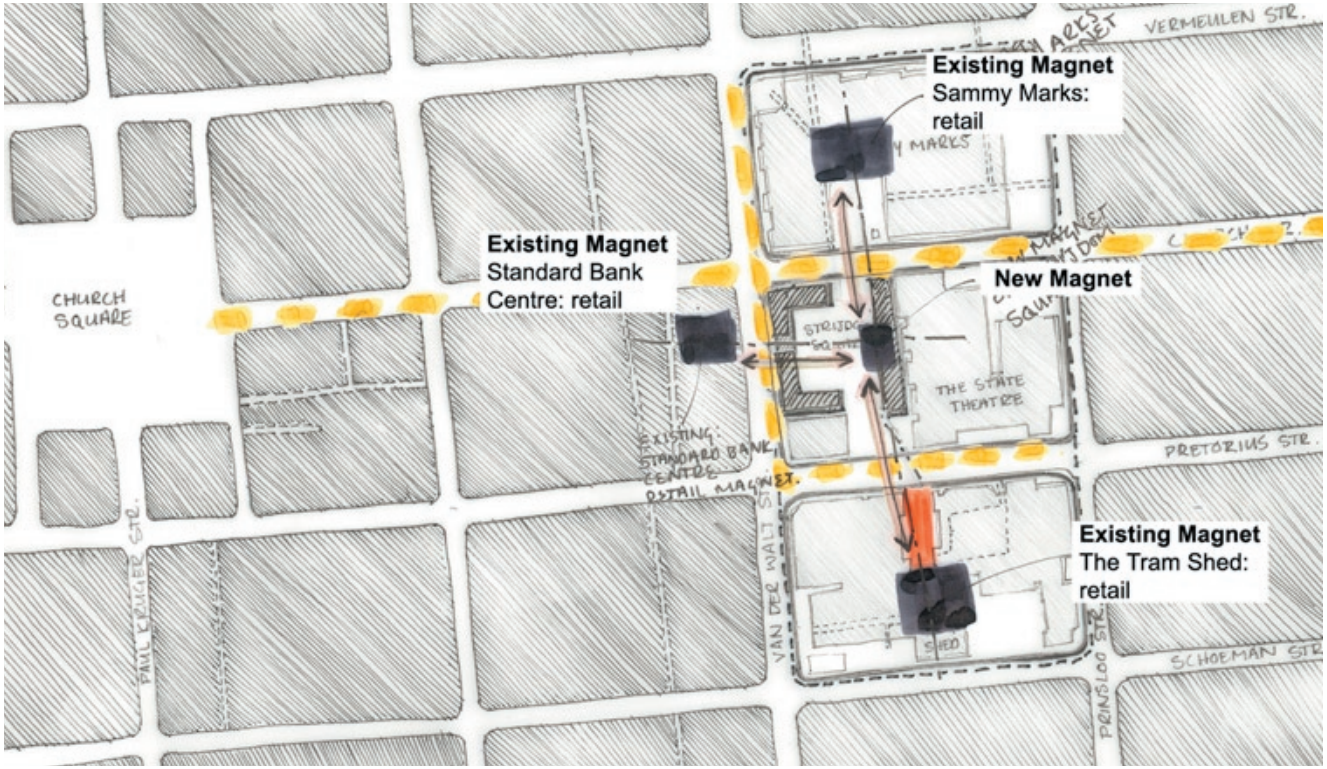
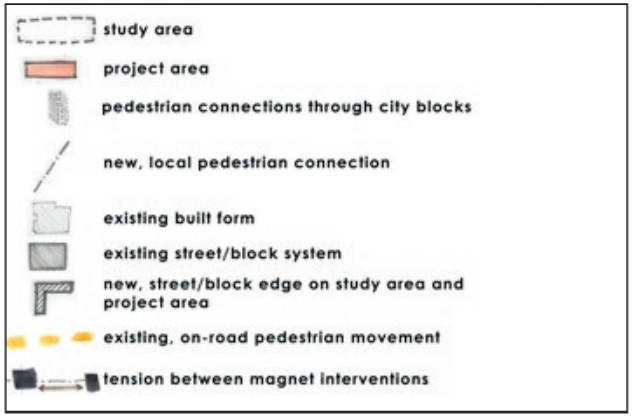
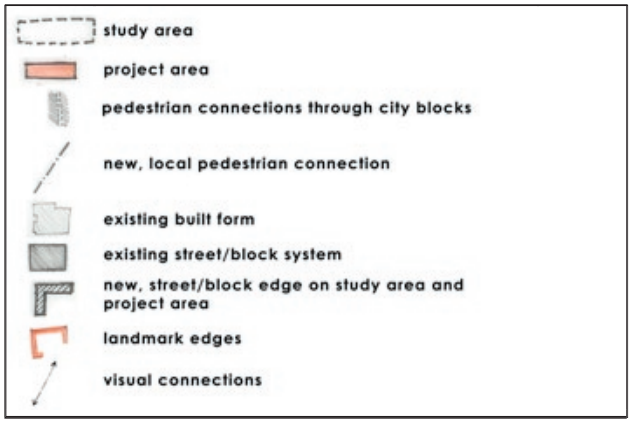


Fig 3.22: The magnet intervention in the study area
(*after Bently, Alcock, Murrain, McGlynn, Smith: 1985)*



The Magnet Intervention

This part of the analysis established the strategic location of a high-demand land use or 'magnet intervention' within the scheme. This intervention is necessary to support pedestrian movement in all directions through the site. The proposal for the positioning of this magnet has been identified in Fig 3.22. It is anticipated that the magnet will move traffic onto as well as through the site.



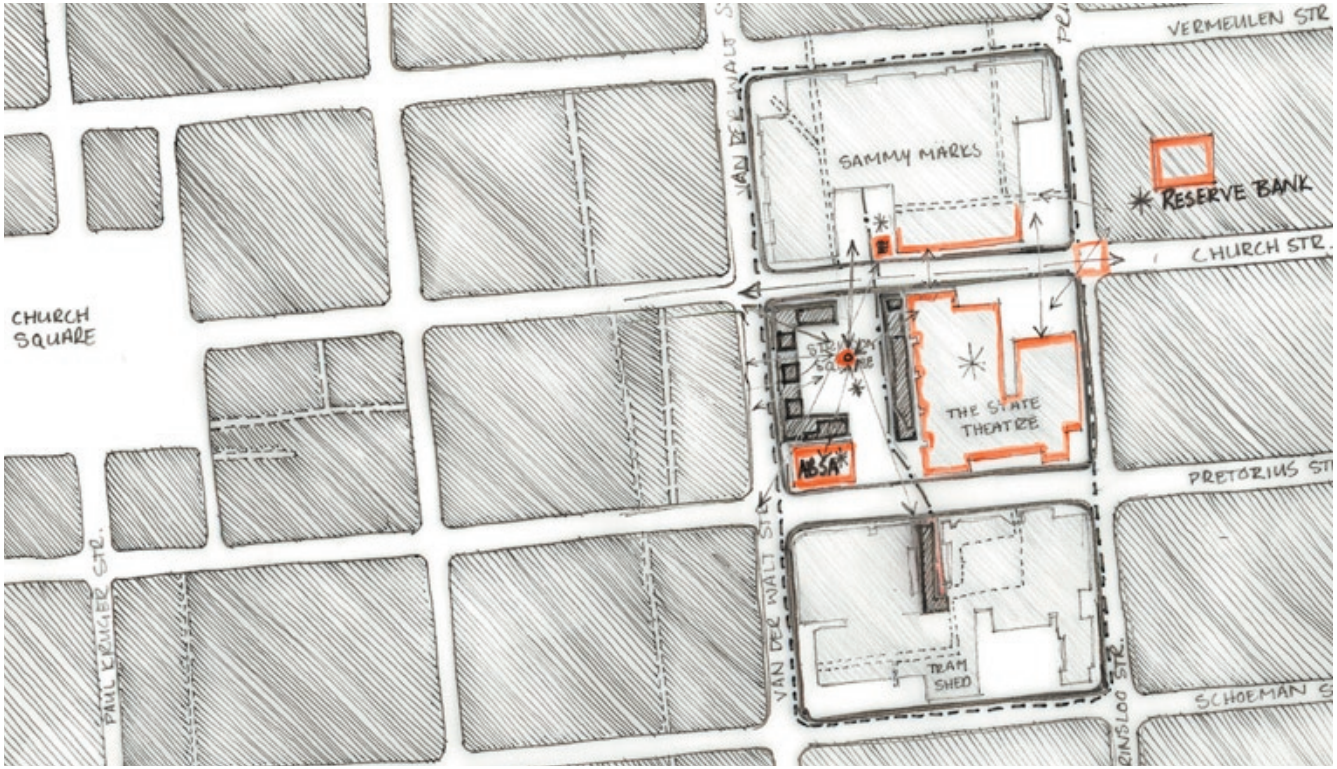


Fig 3.23: Legibility analysis of the study area (*after Bently, Alcock, Murrain, McGlynn, Smith: 1985*)

Fig 3.24: Legibility analysis of city landmarks

Legibility Analysis

The current legibility of the study area and its direct surroundings was analyzed. The Street/Block structure was adjusted to achieve legibility since the addition of the land uses.

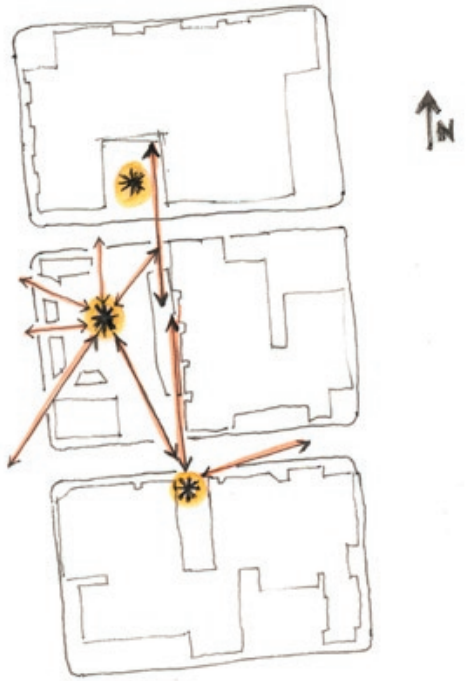


Fig 3.25: Axis and visual linkage (*after Trancik: 1986)*

Fig 3.26: Sequence of movement (*after Trancik: 1986)*

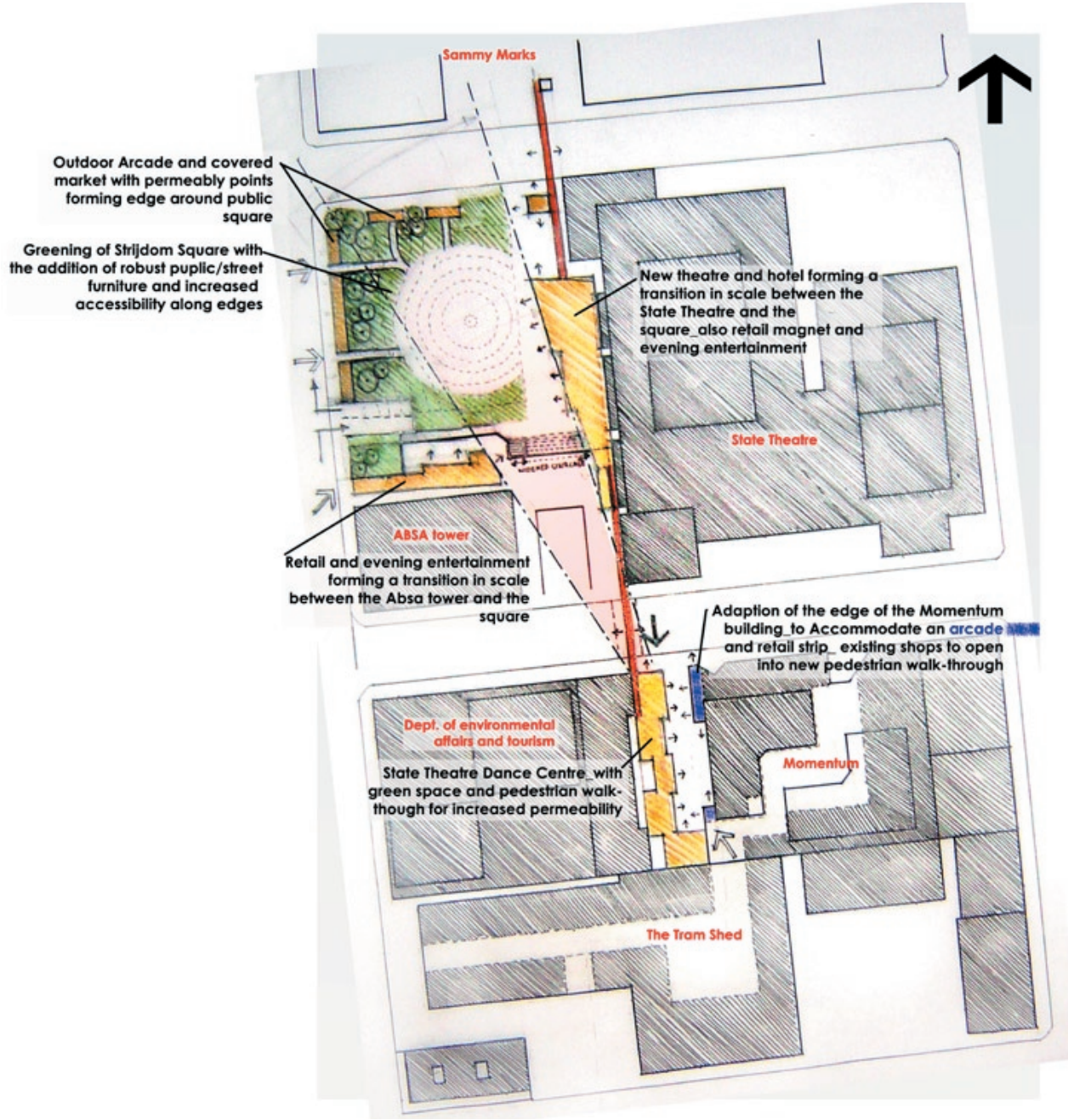
Summary and Solution for the Precinct Development

Following on from the analysis, it has been established where the connections to the site are currently found, and how these can extend into the scheme to achieve permeability. The analysis also highlighted a set of uses that could be accommodated in the scheme. These land uses were then carefully sited, bearing in mind where these uses could best be accommodated within the preliminary structure that has been set up.

The design saw the growth of a north-south pedestrian spine that would connect Sammy Marks Square to the Tram Shed, through Strijdom Square. Although Strijdom Square is currently a permeable site, the analysis aims to point out that movement is not fully accommodated through the Square. For instance;

- Wheelchairs are not accommodated at the level changes
- Moving toward the south-eastern corner, the staircase servicing the level change is badly defined.
- Access along the western edge is minimal and this impairs the permeability of the Square.
- Strijdom Square is very large, and does not contain defined boundaries.
- Greening is minimal. This creates a problem in summer when the city's' temperature rises.
- Bordering buildings (The State Theatre and the Absa tower) are of a very large scale and do not relate to the human body. There are no elements that minimize the scale of these buildings.
- The Square has been identified as a walk-through since there are no fixed activities, except for the market which sits on the northern border along Church Street.
- The Square lacks public furniture, so people are not accommodated and persuaded to spend time in the space.

Fig 3.27:
The final layout after being adjusted to achieve legibility, permeability and variety



In the light of the above, it is safe to say that the Square has simply become a pass-through. It is the intention of this framework to initiate an upgrading of Strijdom Square so that it could become a destination within the city centre.

Principles concerning psychological and physical orientation deemed appropriate for the scheme are: paths, nodes, districts, edges and landmarks. These elements, as set out in The Image of the City (Lynch: 1960), aided the decisions that were made in creating a permeable, legible environment that offers variety.

In Finding Lost Space (1986), Trancik identifies six principles that aid in the design of physically integrated urban space:

1. Spatial order
2. Linking sequential movement
3. Lateral enclosure and edge continuity
4. Integrated bridging
5. Axis and perspective
6. Indoor/outdoor fusion.

Through analysis, the final precinct concept is anticipated to have addressed each of these principles to some degree. They could be further investigated in the design of the State Theatre Dance Centre.

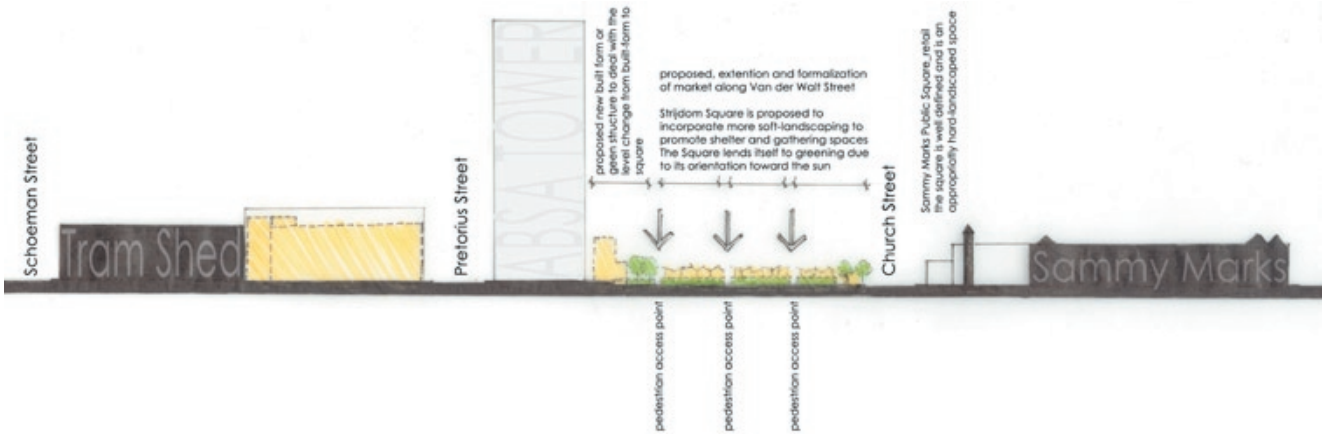


Fig 3.28: Section AA: Through Strijdom Square and chosen site_ showing the relationship between the square and the chosen site.

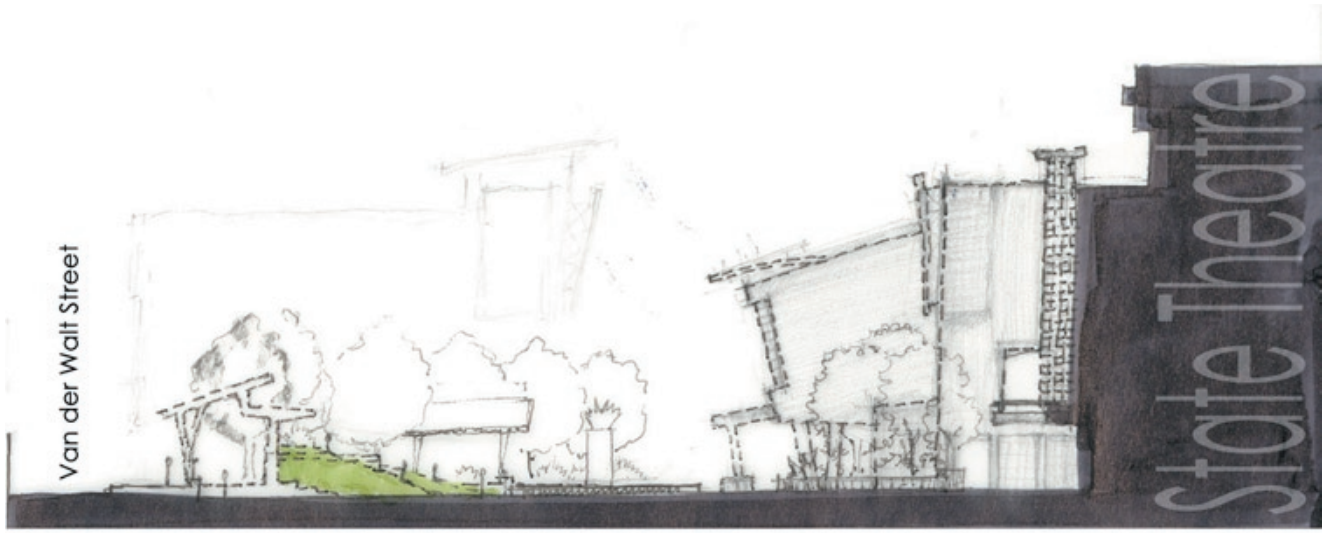


Fig 3.29: Section BB: Through Strijdom Square and State Theatre.

Strijdom Square Intervention

Issues identified on the Square:

1. The Square, although large, is dominated by the sheer size of the surrounding buildings, in particular the State Theatre and the Absa tower. This is due to the fact that there are currently no elements on the square that deal with the transition from building to Square. As a result, a very harsh and negative edge dominates the space.
2. There is a lack in soft landscaping as well as public/ street furniture on the Square leading to the assumption that the Square does not accommodate pedestrians and human activity.
3. Movement across the Square from the north (Sammy Marks) to the south (between the State Theatre and the Absa tower) is badly defined with a very small staircase (in relation to the Square) servicing the level change. No wheelchair access is accommodated at this point.
4. The level change from Van der Walt Street onto the Square is also badly defined and not efficient.
5. The edge of the Square is defined but very hard.

All the above-mentioned issues have resulted in an underused space within an otherwise vibrant part of the city centre. Figs 3.28 and 3.29 show the proposal for the Square in section. With the elements discussed on the previous page in place, the Square could certainly be a more habitable space offering variety, legibility, permeability, richness, as well as offer the users a degree of personalization for users.

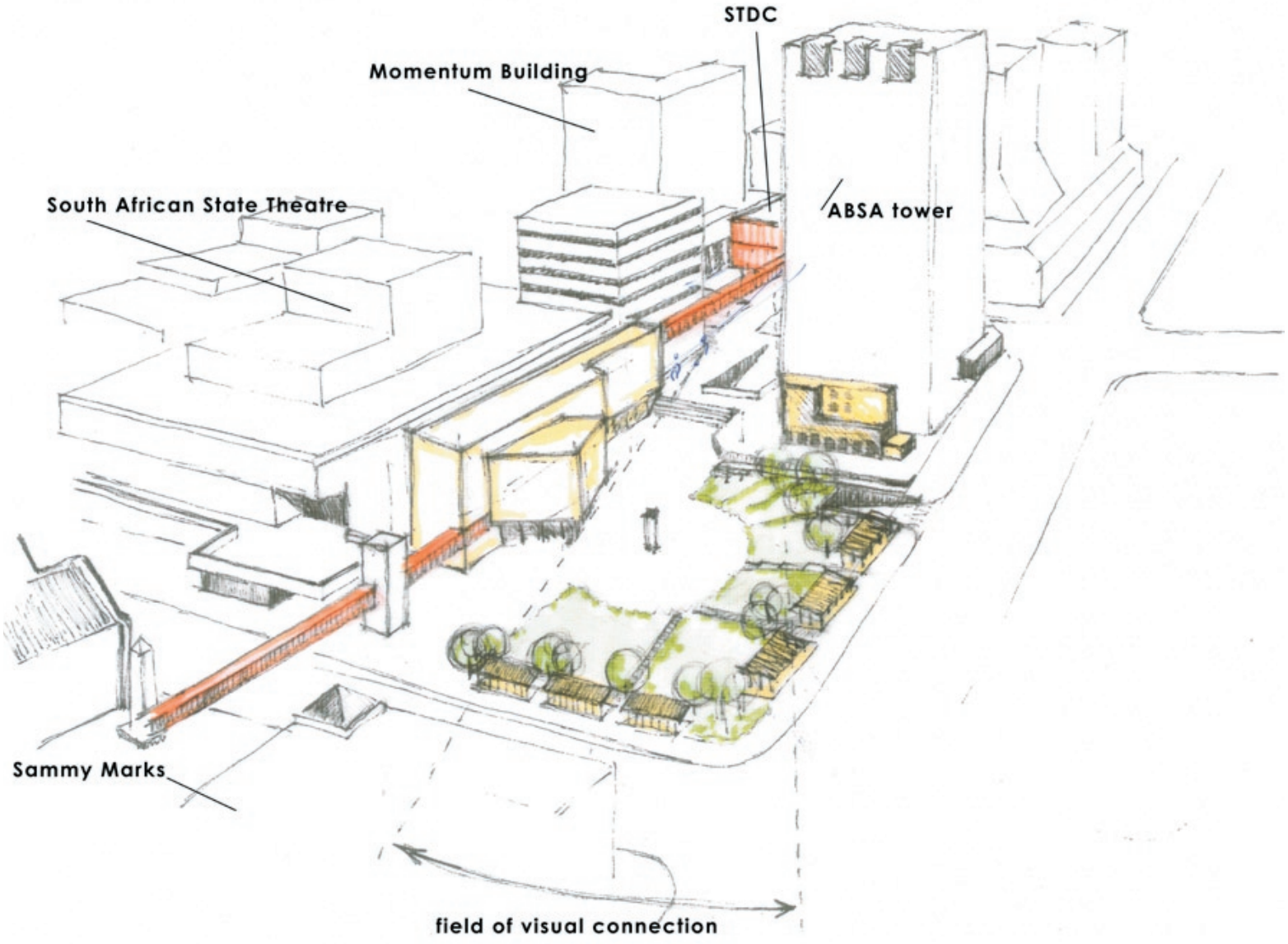


Fig 3.30: Strijdom Square with the precinct concept super-imposed.

400_ BUILDINGS FOR DANCE

Systems for performance buildings

- Systems of performing arts buildings
- The Laban Centre for Movement and Dance_London
- The South African Ballet Centre_Johannesburg
- Systems of relationships

Requirements for rehearsal/studio spaces

- Flooring
- Mirrors
- Barres
- Lighting
- Temperature and ventilation
- Sound insulation

Associated areas

- Change rooms
- Physical therapy room
- Lounge and canteen

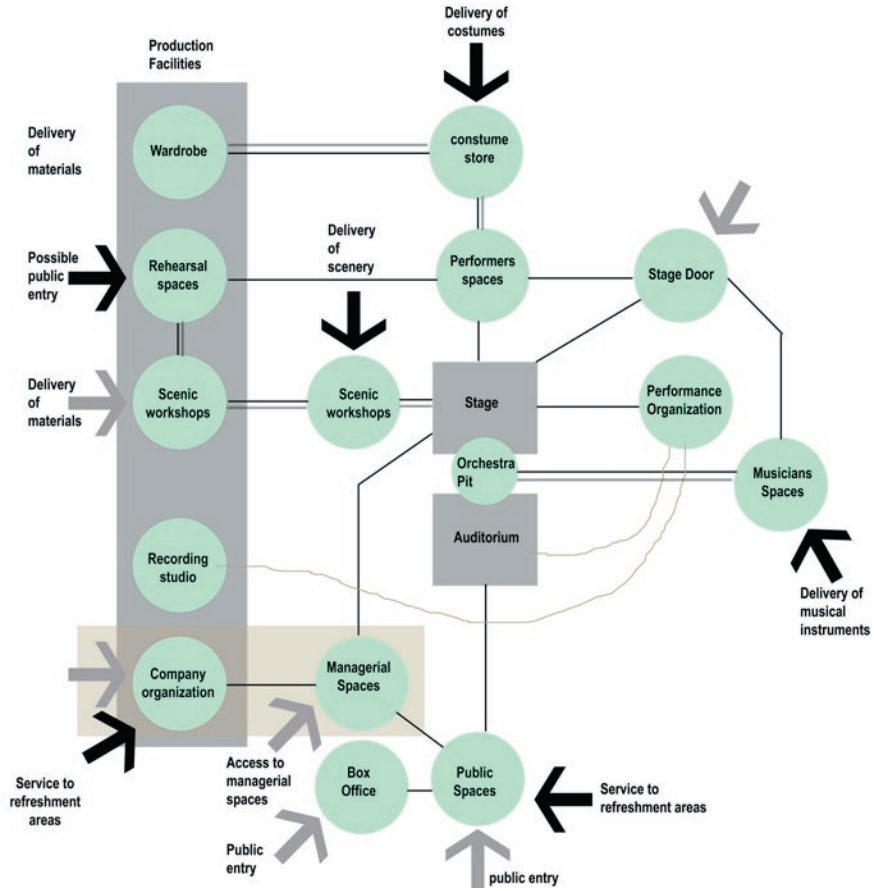


Fig 4.1: The relationship between functions within a building that houses its own production facilities. This system accommodates opera, musicals, dance and drama.
(*after* Appleton: 1996)

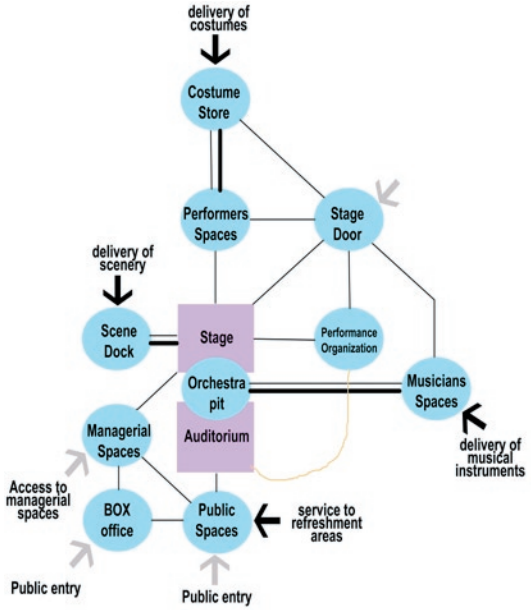


Fig 4.2: The system for a building that receives touring companies only, or with a resident company with production facilities elsewhere. (*after* Appleton: 1996)

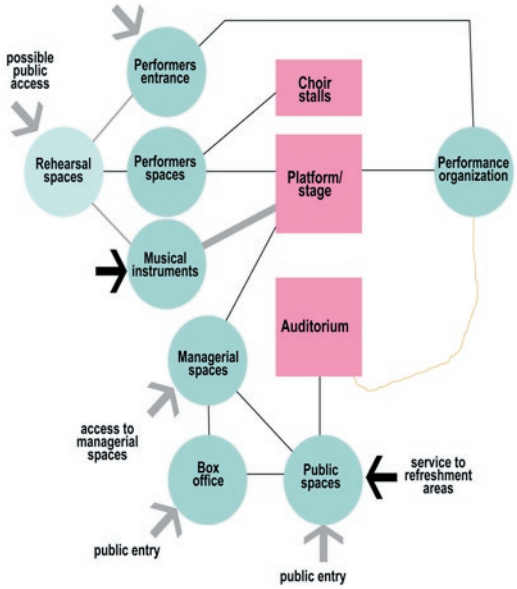


Fig 4.3: The system of relationships for buildings that host live musical performances.
(*after* Appleton: 1996)

Systems for performance buildings

This section of the thesis looks at the systems that need to be in place in buildings that accommodate dance and performance activities.

To gain an understanding of the relationships between functions within buildings for dance, systems of such buildings were studied. Figures 4.1, 4.2 and 4.3 show these systems. However, these buildings, unlike the proposed State Theatre Dance Centre, include production facilities and their relationships to backstage and public areas. The State Theatre Dance Centre does not house an auditorium and theatre, nor does it link directly into the South African State Theatre. These relationships therefore, only act as a guide to the system that would be designed for the State Theatre Dance Centre.

The Laban Centre for Movement and Dance – Deptford, London - Herzog & de Meuron.

"The building's interior is a network of 'streets', or corridors and chambers on two full stories with an interstitial mezzanine" (Ryan, 2003: 132). The building gives the impression of a town, the circulation spaces being the streets that wind and carve their way through the rooms which form the solid mass of the building.

As seen in Fig 4.6, the circulation of the building is fairly simple yet charged with moments of intensity. Through contrasting surface treatments, elements are expressed and highlighted.

The principal elements within the building are the two large, black spiral staircases that celebrate the act of movement between the levels of the building.

The polycarbonate sheeting used to clad the building hides the structural logic of the building. The structure only reveals itself in the library. The façades of the building, clad in polycarbonate sheeting, are in some places inlaid with mullionless glass that reveals lit interiors by night and reflections of the surroundings by day.

The inner courtyards of the building, clad in glass with pools of water at the bottom, become a play of reflections and transparency, providing an abstract tool for the formation of fresh spatial qualities. This mix of transparency and reflection creates a dreamlike space of psychedelic images. Within these spaces the different colours that describe each level of the building merge, giving the building an incredible sense of energy and vigour.

Another element that adds to the dynamism of the building is the shadow projections of dancers on the matt façade. "To passersby in the evening, the dancers' bodies appear as participants in a contemporary shadow play. The building seems to invite motion with its ramping floors, spiraling stairs, and dynamic curves" (Ryan, 2003:136).

Studio spaces have at least one clear glass panel/window for dancers to orient themselves to weather patterns and other exterior realities.

The Laban can be described as a feminine building, not one of 'flat' beauty, but rather one of mystifying, obscure and seductive spaces that keep the user in a constant exploration to uncover its 'secrets'.

Fig 4.4: Courtyard Reflection and transparency.

Fig 4.5: The Laban Centre for Movement and Dance at night

Fig 4.6: Ground floor and mezzanine plan

Fig 4.7: Southern façade of the South African Ballet Theatre

Fig 4.8: The pedestrian boulevard with the Johannesburg Civic Theatre to the right and the South African Ballet Theatre forming the focal point at the northern tip of the boulevard.

Fig 4.9: The eastern façade of the building also showing the link passage.

Fig 4.10: The pedestrian boulevard: facing south with the South African Ballet Theatre to the left of the image.

The South African Ballet Theatre – Johannesburg

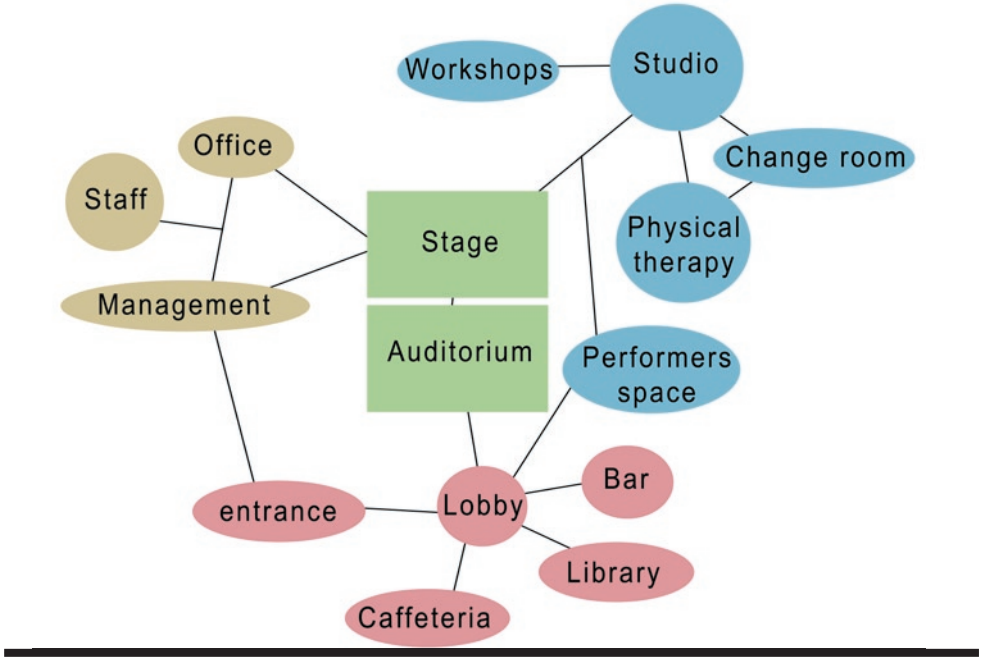
The South African Ballet Theatre forms part of the regeneration of the Braamfontein area. The building is an annex to the Johannesburg Civic Theatre and is situated west of the Civic Theatre. The new South African Ballet Theatre forms a integral part of the surrounding context and it is clear that the context was considered in the development and execution of the concept and project.

The building links directly into the main building of the Civic Theatre via a passageway. The southern façade orientates toward a regenerated, landscaped pedestrian boulevard which connects the park (south of the Civic Theatre) to the Johannesburg School of Arts (north of the Civic Theatre) as well as other commercial buildings to the west of the new building. Movement through the pedestrian boulevard occurs against a slope where wheelchair access is not accommodated in all areas. The translucent southern façade of the building forms a grand focal point to the northern tip of the pedestrian boulevard, making it a landmark in the Braamfontein area.

On closer inspection, the following was noted:

- The public entrance is badly defined (entrance through the Civic Theatre is exclusive to students and staff)
- Upon entry one has a choice to move either up or down a flight of stairs. Wheelchairs are not accommodated in the building at all, yet the ground floor houses a toilet for the disabled.
- On ground floor, a seating platform overlooks the ballet studio. This was intended for use by public members to view dancers, yet this space is not being used since the building is virtually impenetrable by the public. The area around the building where the entrance is situated is fenced and secure.
- The building lacks office space so users in need of office space had to occupy the area underneath the viewing amphitheatre on the ground floor.
- The studio spaces are generous and have a floor to ceiling height of approximately 6 metres.

Fig 4.11: The Laban Centre for Movement and Dance.



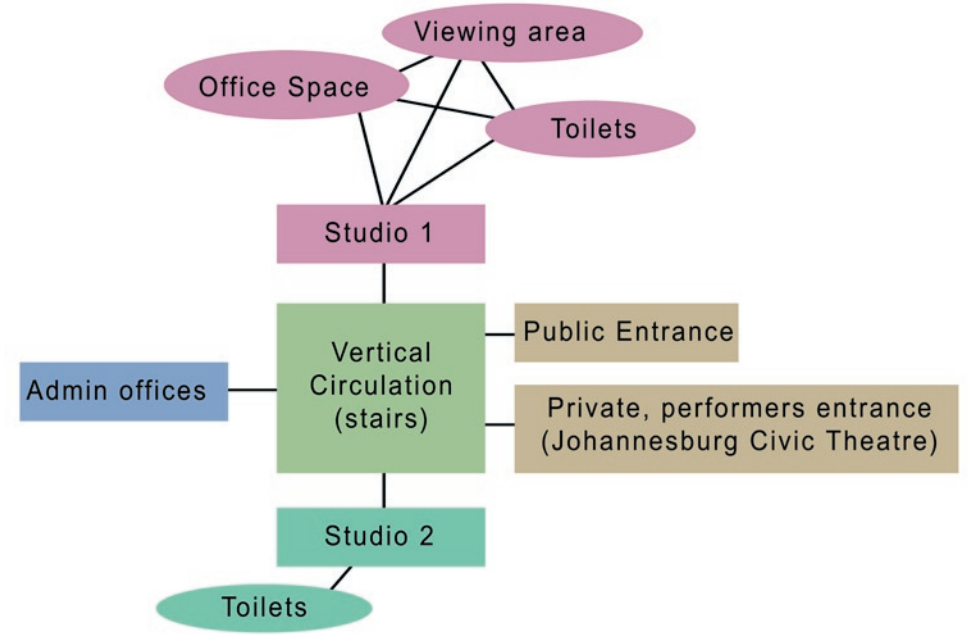


Fig 4.12: The South African Ballet Theatre.

Systems analysis

Figures 4.11 and 4.12 show the relationship of functions within the Laban Centre for Movement and Dance and the South African Ballet Theatre, respectively.

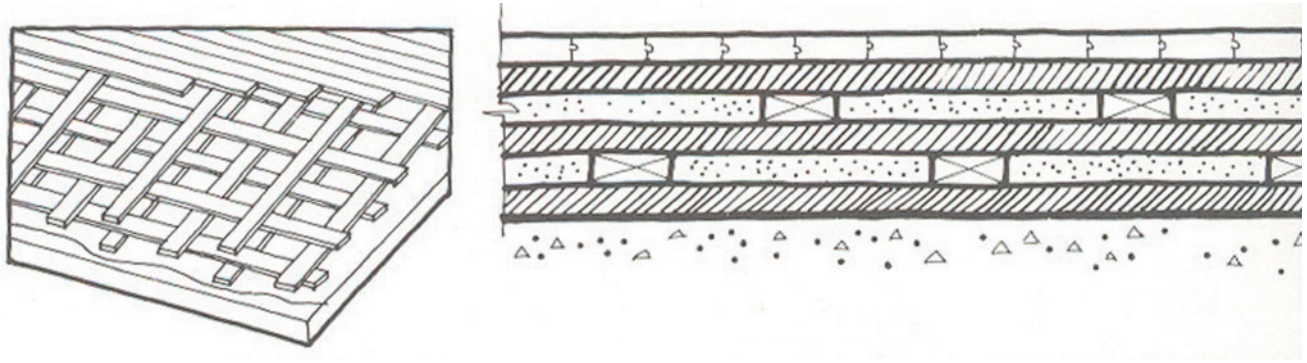


Fig 4.13: Five layer basket-weave timber floor.

Studio/Rehearsal space requirements

In order for a space to be used as a rehearsal space or dance studio, it needs to adhere to a number of very specific requirements in terms of systems that need to be in place for the space to be 'dance friendly'. The next part of this section will look at these requirements.

Flooring:
For multi-purpose dance flooring a timber, finished with linoleum or vinyl sheets will be installed.
The floor will be stained in a dark rather than light colour so that reflection will be minimized.
A couple of flooring systems for dance studios are available, including a five-layer, basket-weave installed directly on top of the structural concrete slab. These layered floors are resilient and are used as a shock absorber for dancers' feet. Figure 4.13 shows this basket-layering of the timber sections for a 5-layer basket-weave floor.

Floors in studio spaces need to be washable, especially if the studio is used for different types of dance (ballet and modern dance). According to Armstrong and Morgan in *Space for Dance* (1984:69), rosin from ballet slippers is hard on bare feet and difficult to remove form wood. Battleship linoleum, or vinyl sheeting, should therefore be used for the top layer of the flooring system.

Mirrors:
Studio spaces require a continuous strip of mirrors along at least one full length of the studio. Mirrors need to be perfectly aligned to prevent any distortion in reflections. These mirrors need to be at least 2m high and a curtain that can be pulled across the mirror needs to be installed. "Dancers rely on mirrors during rehearsals, but need to be weaned of that dependency as the first performance date draws near" (Armstrong and Morgan: 70).

Barres:
Dance companies of most choreographic styles use barres for warm-up sessions and in classes. In order to accommodate full companies, studios need barres along at least three walls. Permanent barres occupy less floor space and are more rigid, therefore fixed barres are preferred. Where barres run along mirrored walls the barres will be floor mounted and allowance will need to be made for the curtain to hang in-between the barres and the mirrors. See Figures 4.14 and 4.15 for heights of barres, curtains and mirrors.

Lighting:
"Rehearsal-room lighting should be incandescent, or at least a combination of incandescent and fluorescent" (Armstrong and Morgan: 70). Wherever possible, allowance should be made for daylight to penetrate the space. Dancers spend most of their time in studios, and windows allow them to orientate themselves to the changing exterior weather and time patterns.

Positioning and shading of glazing needs to be considered to avoid glare, unwanted solar gain and heat loss. A minimal electrical pipe grid for theatrical lighting can be considered for in-studio, live presentation. This could add to the usefulness of the space.

Heating and Ventilation:
Studio spaces do not need to be chilled by an air-conditioning system, but in hot climates like South Africa, the humidity and temperature will need to be controlled. This requires an HVAC system. Temperatures need to be kept steady at 21° - 24° Celsius, and the air supply will have to run slowly through oversized ducts to avoid drafts.

Fig 4.14: Barres indicating heights

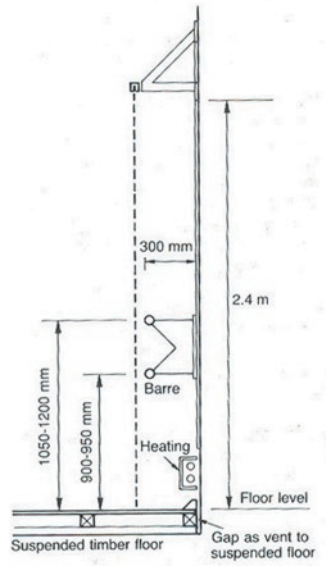
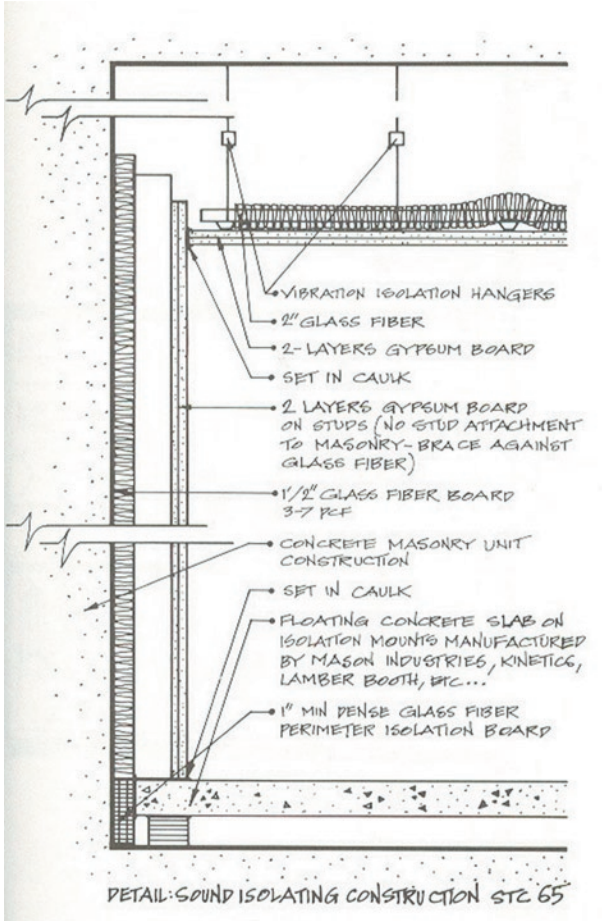


Fig 4.15: Barres, curtains, and mirror heights



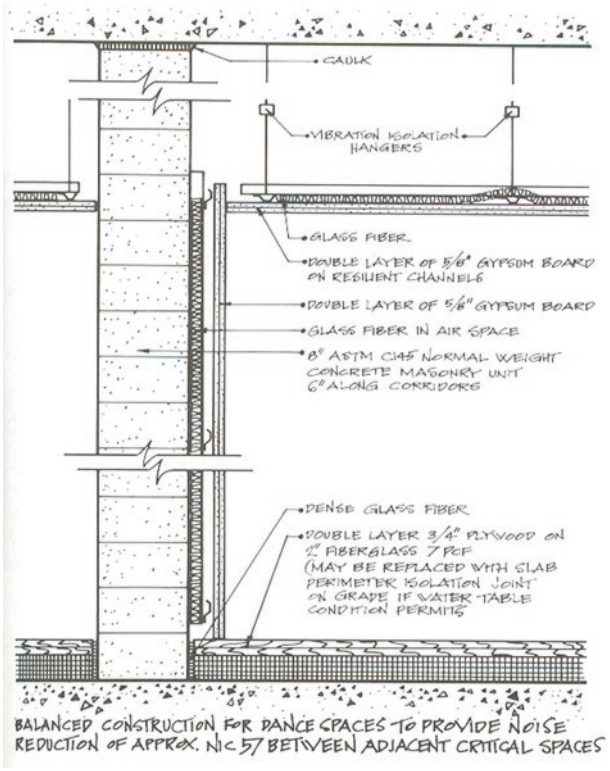


Fig 4.16 & 4.17: Insulation through layering

Sound insulation:
Increasing wall, floor and ceiling mass is the simplest way to contain sound. This is, however, not always possible. Another way to achieve sound insulation would be to construct walls, floors and ceilings of multiple layers that are separated by air, insulation, resilient pads and anti-shock hangers. The air spaces between the layers would slow the travel and ultimately render them too weak to travel from room to room. Figures 4.16 and 4.17, taken from Armstrong and Morgan (1984: 63), indicate the layering of surfaces so as to decrease and ultimately stop sound penetration.

Doors that lead into rehearsal spaces need to be approved for sound insulation. Sound must also be stopped from running through the HVAC system into other rooms.

Associated spaces

Although the energy within centres for the performing arts concentrates around the stage and rehearsal spaces, there are far more left to consider in the design of a centre for dance. It is the spaces surrounding the above-mentioned 'energy centres' that service and feed them. These associated spaces are just as critical and important to consider, since they become the spaces of retreat and rest.

Associated areas in a centre for the performing arts are:

- **Changerooms:** Changing rooms with toilets, showers and lockers are essential for servicing rehearsal studios.
- **Physical therapy room**: Large dance companies and centres usually employ a full-time therapist. Therapy rooms may include massage table, floor mat, full-length mirror, lockable cabinet for first-aid equipment and medicine, small refrigerator and a desk and chair for the therapist.
- **Lounge and canteen:** Throughout the day, dancers travel in groups from rehearsals to stage etc. The lounge therefore becomes the place for non-physical therapy and solitude where dancers can regain a sense of individuality.

Other amenities:

- Conference/class-rooms
- Administration office spaces
- Library
- Auditions room
- Model-making facilities
- General storage
- Music room with recording facilities

500 _ DESIGN DEVELOPMENT

The design development

- the constraints and opportunities of the site
- the idea
- the design concept and development

The final design intervention

- exterior views
- interior views

Fig 5.1: Street elevation of Pretorius Street
(From Prinsloo Street to Van der Walt Street: see *Fig5.2*)

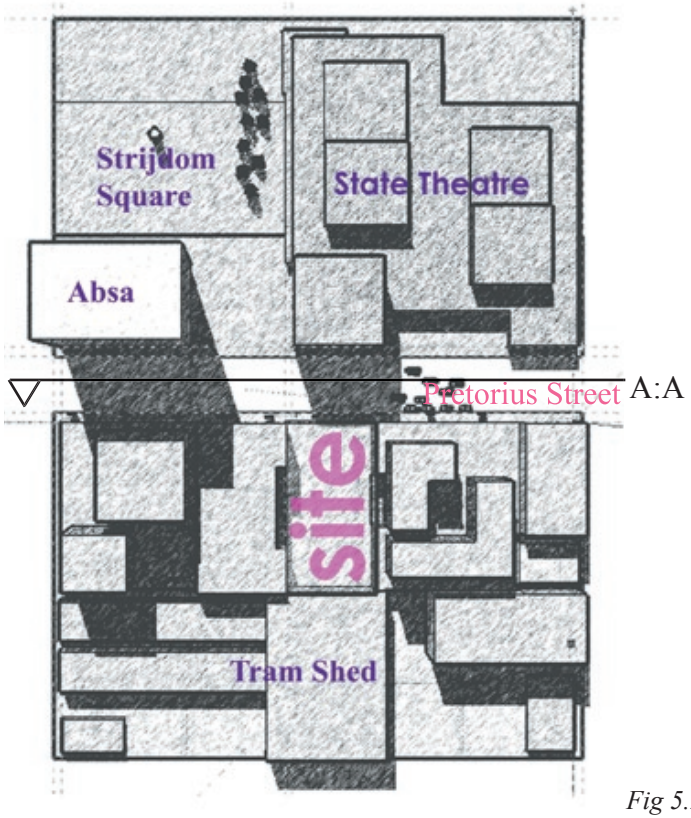


Fig 5.2: The chosen site

Constraints and opportunities of the site

The following issues were highlighted as constraints placed on the design for the chosen site:

1) Light penetration: the site is 69.27m in length (north-south) and 21m in width (east-west). The site's length runs perpendicular to Pretorius Street. The site is also surrounded by tall buildings on all sides (see Figs 5.1 and 5.2). In summer, the site receives sunlight from 9am until 4pm and in winter from 11am until 2pm. Due to the fact that the site receives so little sunlight, heating and ventilation pose a challenge.

2) Height: the proposed building will need to generate enough height so that it will not become 'lost' amongst the surrounding buildings. By generating height, the building could possibly capture more sunlight.

3) The footprint**:** The building will need to be carefully planned for the site so that the pedestrian walk-through can be accommodated through the site. Neither the building, nor the pedestrian walk-through should dominate the space. Both elements should be read in harmony with one another.

4) The site, as set out in the context analysis on the study area, is located in an important position within the proposed pedestrian spine. The building therefore becomes a focal point from Strijdom Square. The issue with this is that the site has a very narrow street elevation width (21m), and the building would need to be a bold statement so that it could be read as a focal point.

The idea for the site:

- Accommodate public/pedestrian movement through the site.
- Create a landmark/focal building for the area.
- Generate a relationship between the State Theatre Centre for Dance and the public pedestrian walk-through.
- Communicate and advertise the building as an institution of dance and performance through an appropriate design language.
- Expose the art of dance to the public domain.
- Form a well-defined and valuable open city space for public and private users.
- Re-establish the performing arts in the area.
- Produce quality spaces for use by dancers and staff of the State Theatre Dance Centre.

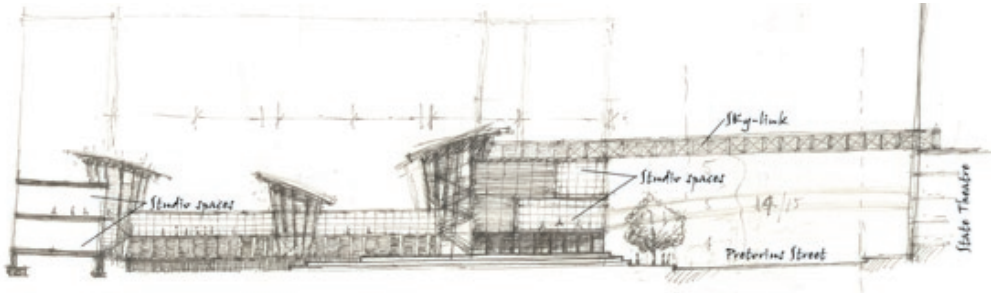


Fig 5.3: Conceptual exploration- section/elevation through site

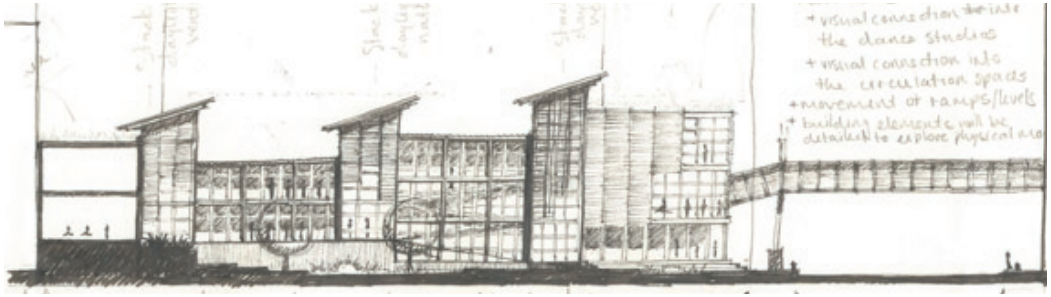


Fig 5.2: Conceptual exploration- section/elevation through site

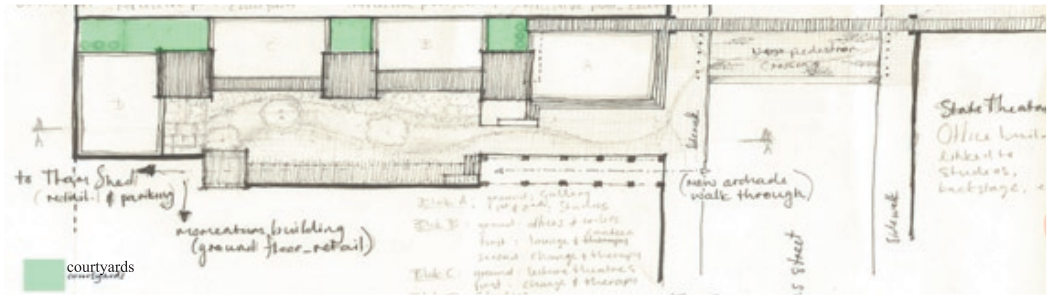


Fig 5.3: Initial footprint of dance centre with courtyard spaces indicated

The design concept and development

With the highlighted constraints, the design idea and objective in mind, the design started to grow. The following pages present the design development sketches for the State Theatre Centre for Dance.

The initial design concept sketches indicate the inclusion of a pedestrian sky-bridge that would link the State Theatre Centre for dance directly into the State Theatre. The sky-link would accommodate the movement of the users from the dance centre to the State Theatre and also into the proposed retail development along the western façade of the State Theatre (on Strijdom Square), thereby strengthening the spinal development through Strijdom Square. The sky-link was later eliminated as it would have a negative effect on street level by removing people from the street which is the truly public domain. The sky-link was initially also considered for its ability to connect the users of the dance centre to the State Theatre basement parking. With the site forming a crucial link in the pedestrian movement patterns of the area, it was decided that there would be no parking included on the site as it is very narrow, and the addition of a ramp for vehicles would impair the pedestrian movement onto the site. The site links directly into the Tram Shed which is a retail development adjacent to and south of the dance centre. The Tram Shed also contains a large multi-storey parking facility and it is therefore proposed that the users of the dance centre would make use of the available parking. State Theatre basement parking is another option.

The concept sketches also indicate the inclusion of a service/ delivery passage on the north-western side of the site. However, the proposal for the site requires that only the canteen/cafeteria will need to receive deliveries. For that reason, the delivery entrance and passage were removed as space on the site is limited. The canteen/cafeteria will have minimal deliveries and the main entrance of the building can service these needs.

The footprint of the building wraps around the western and southern edge of the site, leaving the eastern edge open for the pedestrian walk-through and open space. This open space also allows light to penetrate into the depth of the site. The first sketches for the proposal show three courtyard spaces within the building. These courtyards were also removed as the design developed. With three courtyards, the area that is taken up by

each becomes too small to allow adequate light penetration into the lower floors of the building. It was therefore decided that the entrance foyer/lobby would become a multi-volume space with a glass roof so that light and heat can enter through a larger area. It should be borne in mind that the site receives minimal sunlight, therefore the maximum amount of light needs to be harnessed. For the same reason, the services of the building, i.e. toilets, changerooms, kitchens etc. were concentrated in the south-western corner of the site (receives the least amount of light).

The initial sketches/diagrams (Figures 5.3 – 5.5) of the design show a very rigid arrangement of spaces. The thought was too free the space by celebrating the individual elements of the design. The solid mass of the building then offered an exercise which entailed the carving and sculpting of solids and voids within the structure.

As the building's primary function is to accommodate a centre for dance, the design required freedom for generous spaces. For this reason a height of approximately 6m floor-to-floor was afforded to the dance studios, while the rest of the building worked on a 4.5m floor-to-floor height. This allowed the studio spaces to be positioned either in line with the first floor, or on a split level with the second and third floors (see Figure 5.9 for diagrammatic representation).

Figure 5.10 shows how the design then developed further with the introduction of a reflective pool along the edge of the building forming a transition from the public space into the dance centre. The building, previously wrapping around the back of the site with an L-shaped footprint was at this stage broken into two separate and celebrated parts. Here, the definition of spaces is enhanced and spaces can truly start feeding off one another.

As the general form of the building is built up of squares and boxes, a continuous gentle curve was introduced in the interior of the building. This highlighted the idea of movement within the building and became a symbol of the freedom that can be found within the box. In some areas the curve became problematic and the idea needed further exploration. By exploring the ground floor as a generic model for the rest of the floors, the sketches (Figure 5.10 – 5.14) reveal the development of the curve, how in different areas it was removed, introduced or simply adjusted.

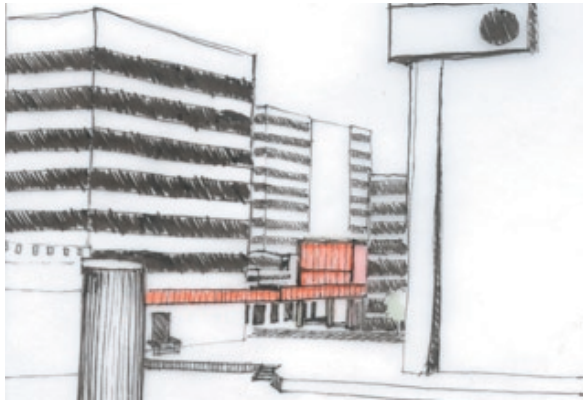


Fig 5.6: The Building as a landmark - view from Strijdom Square

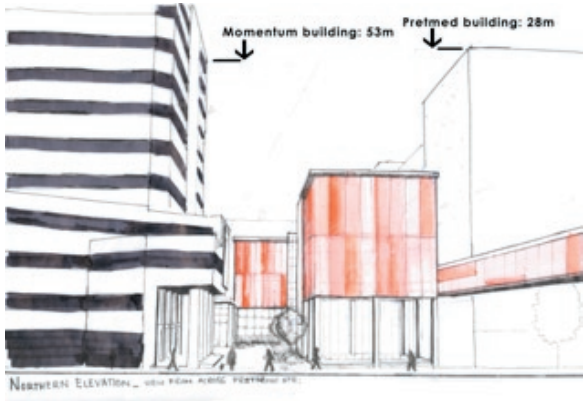


Fig 5.7: Pretorius Street elevation (northern facade)

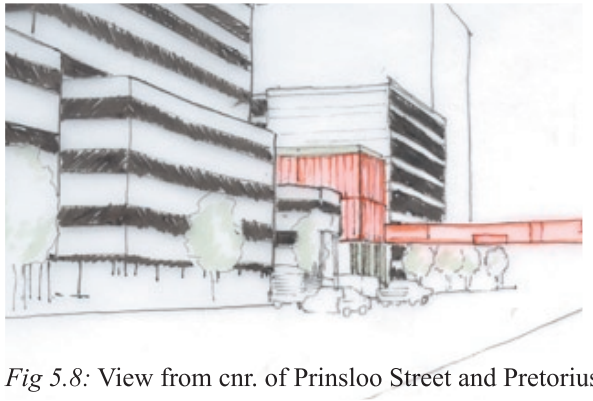


Fig 5.8: View from cnr. of Prinsloo Street and Pretorius Street

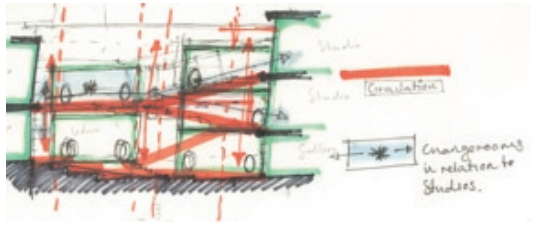


Fig 5.9: Circulation diagram

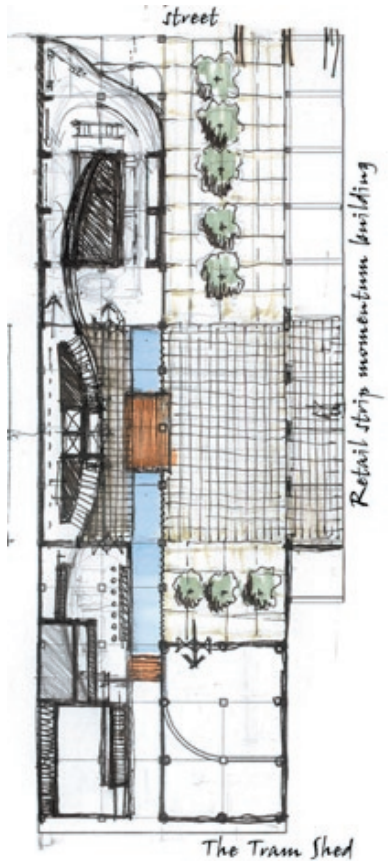


Fig 5.10: Introducing the curve

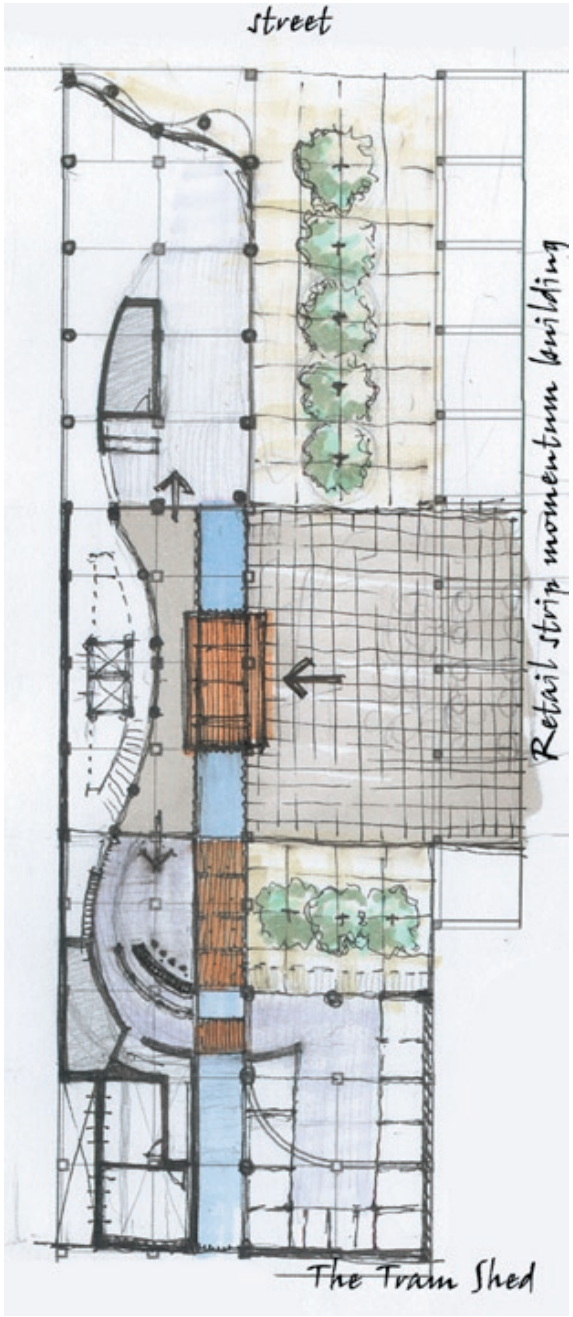


Fig 5.11: Developing the curve: the diagram shows how the introduction of the curve alows for circulation in the building to become about journeys toward destinations.

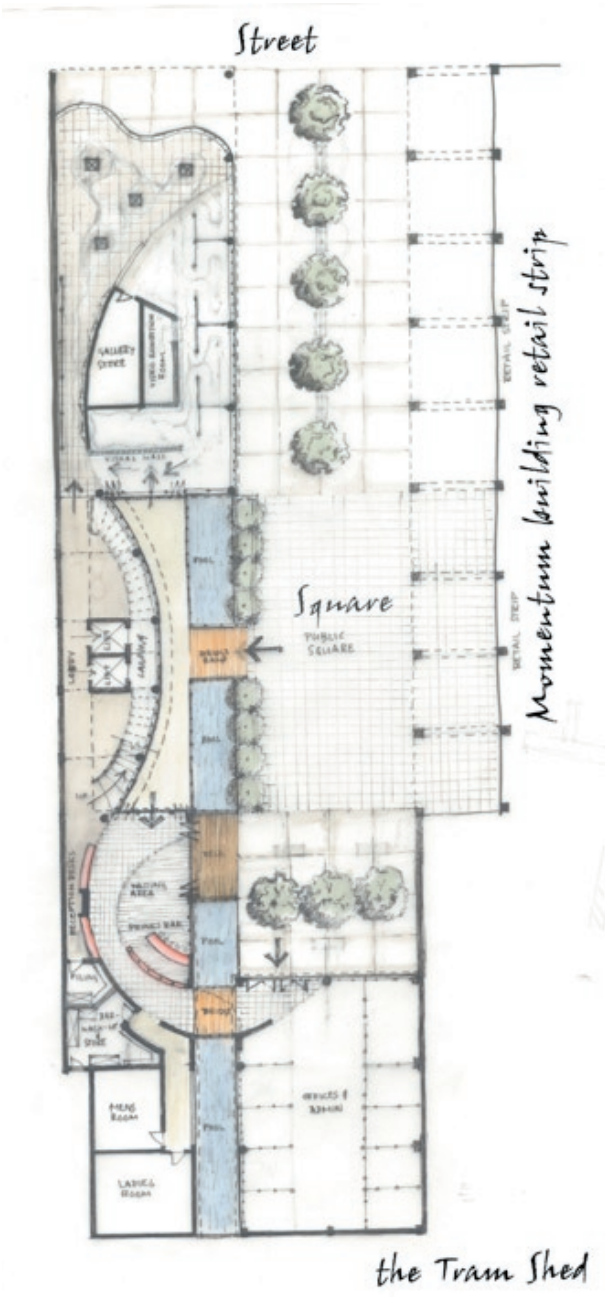


Fig 5.12: Here, the curve generates an elegant flow through the building although there are other areas within this layout that prove to be problematic, for instance, the negative space that the stairway lobby forms on the entry platform as one would cross the reflective pool from the public square.

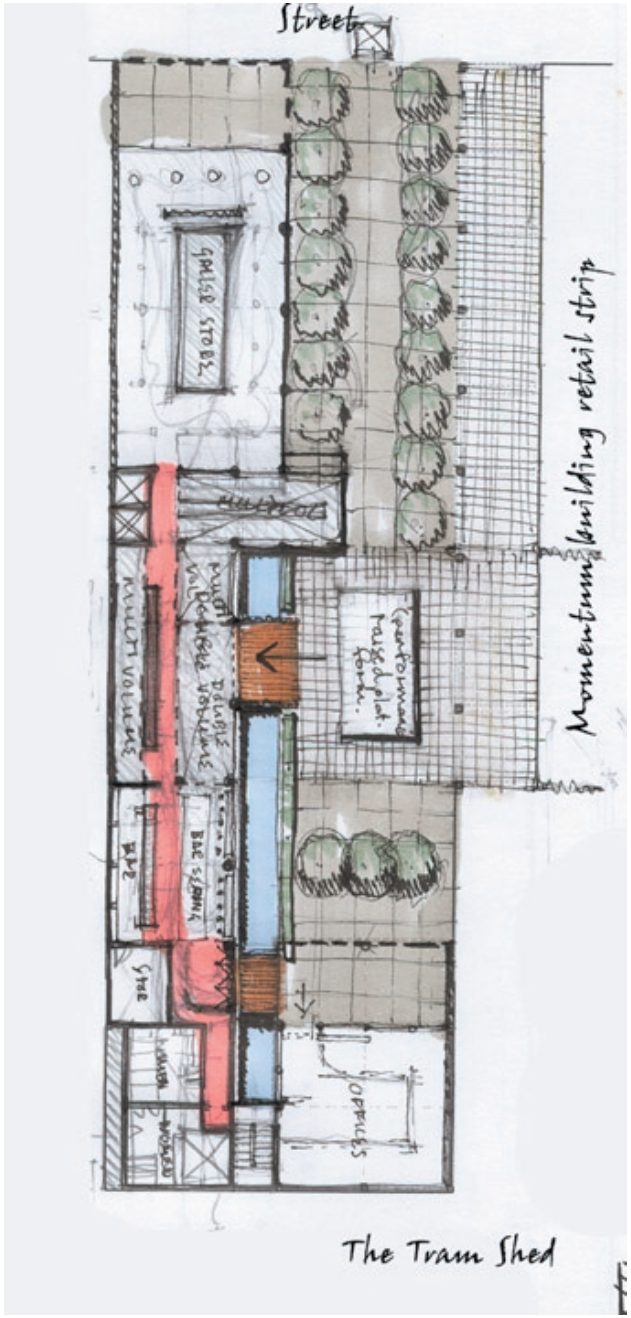


Fig 5.13: Re-thinking the use of the curve:
The development of the curve highlighted the possibility of generating journeys of movement toward destinations within the building. With the issues of the negative spaces that have been created through the use of the curve in mind, the layout was reconsidered. By softening and, in some places, removing the curve and incorporating straight, geometric lines in the design, the aim was to maintain the notion of the journey, but eliminate the negative spaces created by the curve.

Fig 5.14: The figure shows the adjusted curve. Here, spaces follow in a logical order spreading out from the directly accessed reception area. The reception area becomes the point of orientation within the layout. The journey generated in the building is still present, but the negative spaces have not all been eliminated.

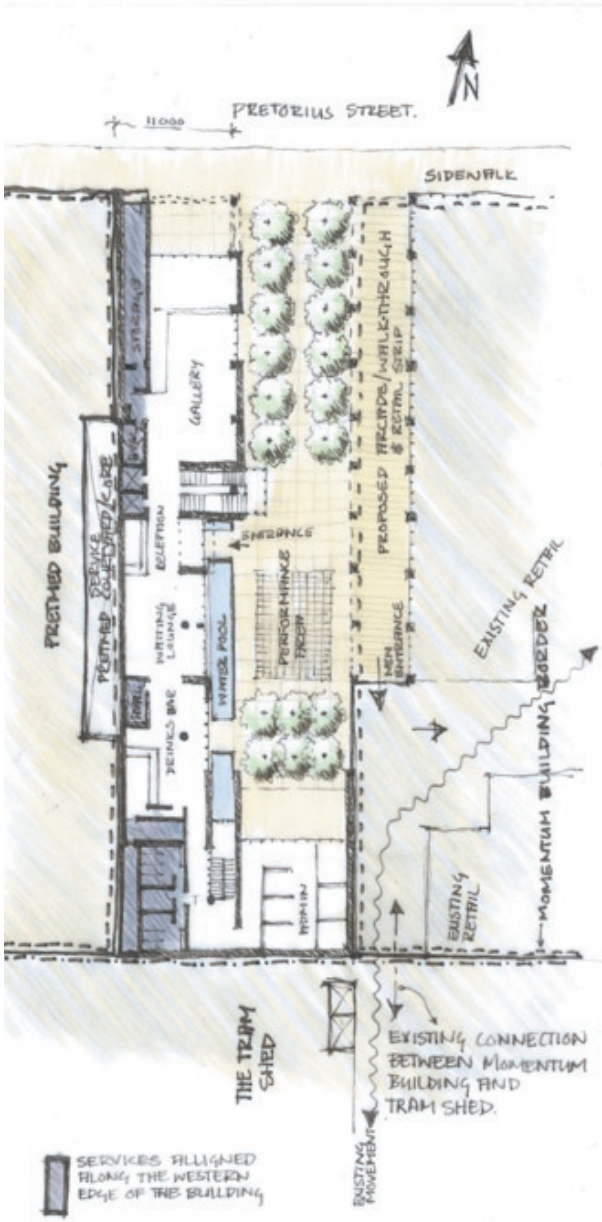


Fig 5.15: The ground-floor plan shown here indicates the positioning of services along the western edge of the site with the pupblic/pedestrian space on the eastern edge, bordering the proposed Momentum building retail-strip.

Ground floor layout

The ground-floor layout served as a generic model for the rest of the floors of the building. Whilst designing the ground floor of the building, the upper floors were considered in terms of the positioning of services like changerooms, toilets and kitchens. These services were concentrated in the south-western corner of the site, with this being the 'deepest' area of the site, with additional services like the HVAC and electrical ducts and storage being located along the western edge of the building. The western edge of the site thus became the hard edge of the building, bordering the Pretmed building. The eastern elevation of the Pretmed building forms a hard edge to the chosen site. This edge contains a service core/courtyard but no windows bordering the site for the proposed State Theatre Dance Centre.

When considering the investigation and analysis of the study area (chapter 300), it was concluded that the western edge of the chosen site would be the most appropriate for the development of the State Theatre Dance Centre. By positioning the building along the western edge of the site, allowance has been made for the proposed retail strip along the western edge of the Momentum building as well as access into the Tram Shed retail and parking arcade.

The layout shown in Figure 5.15 indicates how these ideas were applied. This layout became the point of departure for the application of the structural and material exploration of the design.

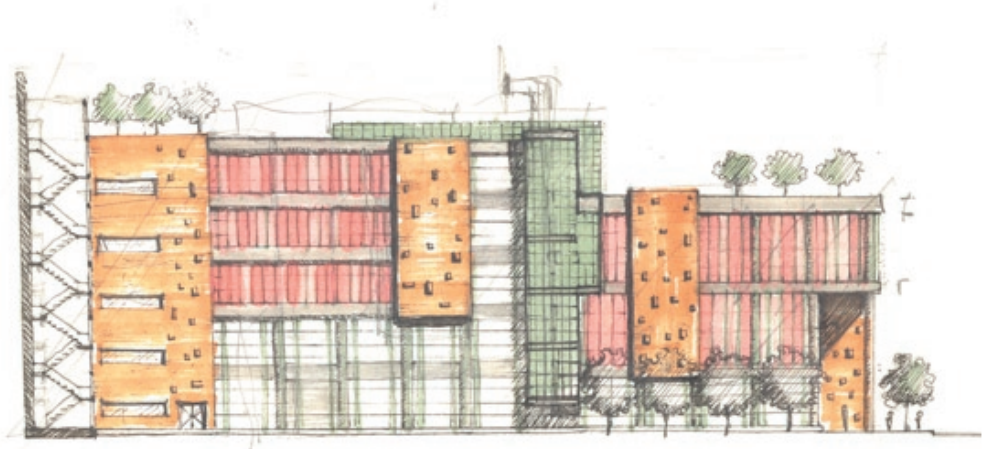
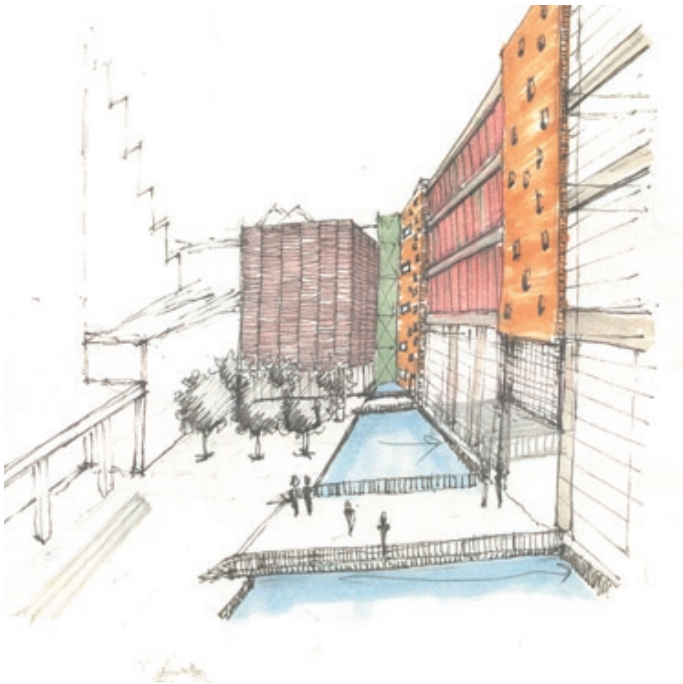


Fig 5.16: First exploration and composition of materials on the eastern elevation

Fig 5.17: The most southern portion of the building - the 'box'- contrasting with the rest of the buiilding through choice of material.



Exploration of materials

Figures 5.16 and 5.17 shown on the right are the initial sketches used to explore possibilities for the choice of materials to be used for the building. Figure 5.17 shows the view of the 'box', the most southern portion of the building which is to contrast with the rest of the building in colour and materials. By doing this, the separated nature of this area of the building is expressed and explored for design possibilities.

Fig 5.18: Perspective view of the building with initial choice of materials.

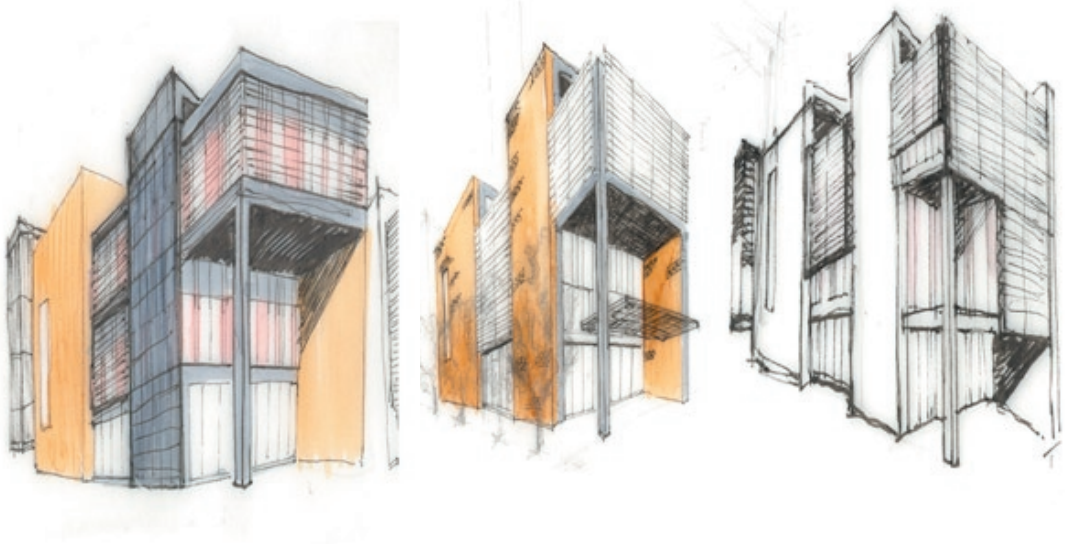


Fig 5.19: Exploring the choice of materials for the north-eastern corner of the building.

Material exploration

Figure 5.18 shows a perspective of the State Theatre Dance Centre. At this stage of the design process the materials considered were exposed brick walls and randomly placed iodized glass (pink), amongst others. The design for the 'box' included the same materials, however, it was to be clad with a copper louvre system. The copper would weather in time and turn to a shade of green.

A shadow study of the building was subsequently done. This indicated that parts of the eastern façade, which consists of large expanses of glass, would need to be shaded in some way. Figure 5.19 depicts the exploration of the north-eastern corner of the building which is most affected by sun penetration.

Figures 5.20 to 5.24 on the next page show the shadow study done on the building.

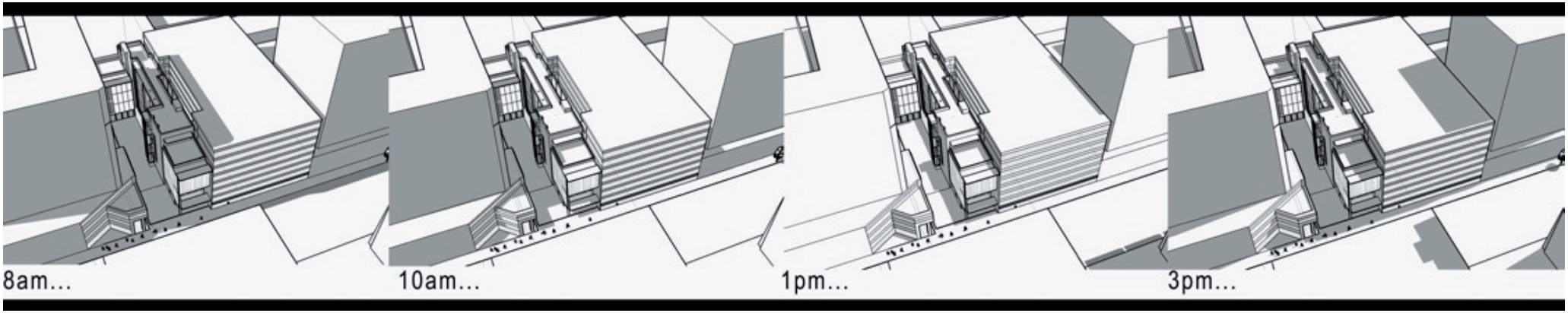


Fig 5.20: The shadow study for 31 December.

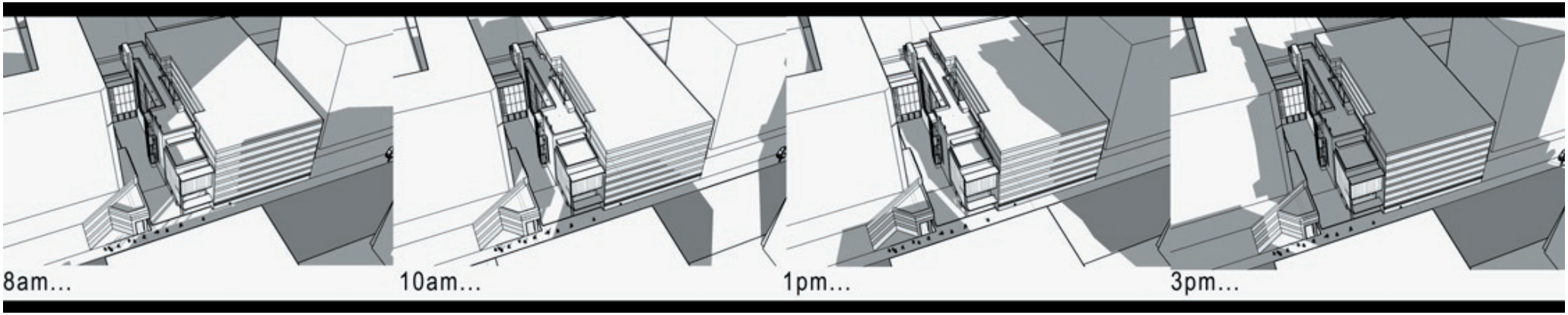


Fig 5.21: The shadow study for 30 June.

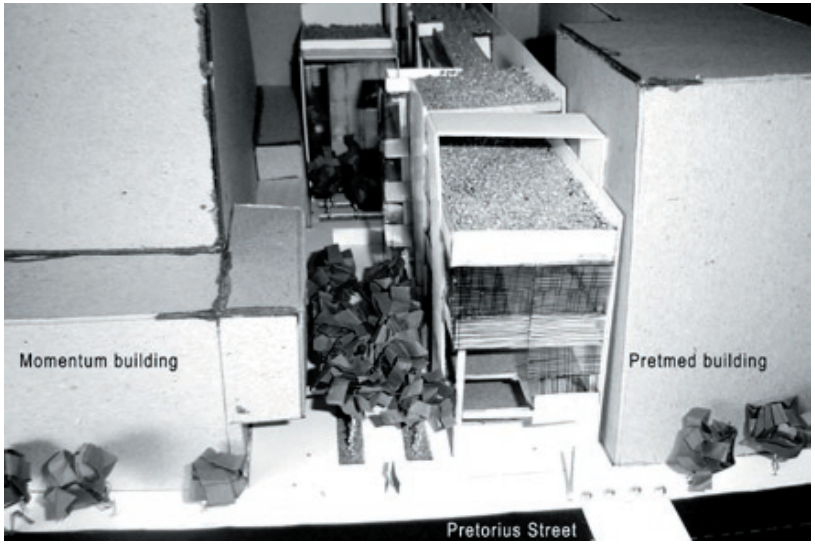


Fig 5.22(top) and 5.23(left): The sketch model of the State Theatre Dance Centre showing the height in relation to the Pretmed building.

Fig 5.24: The response to the issues highlighted by the sketch model.

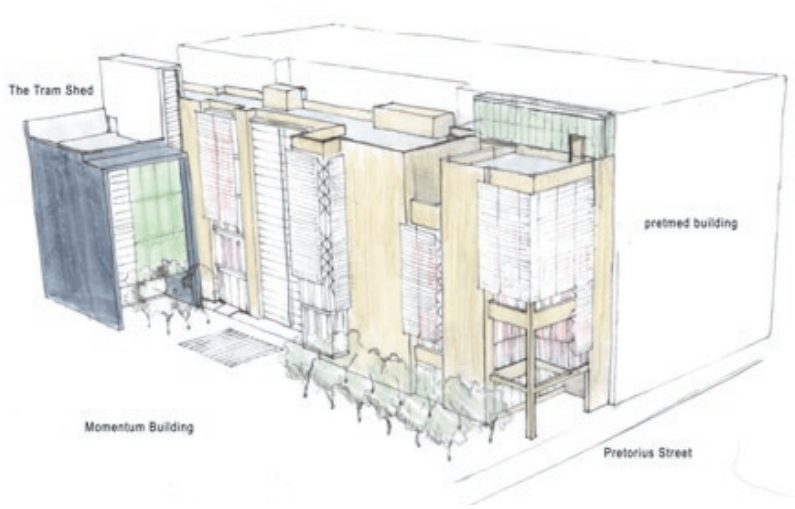


Fig 5.25: The covered roof terrace and layering of the facade.

Developing the response

Figures 5.22 and 5.23 are images of a sketch-model of the site and building. Here, the spaces created within the site can be read. The model also revealed a couple of problem aspects of the design.

1. Heights of the buildings: The northern façade of the proposed State Theatre Dance Centre does not match the height of the neighbouring Pretmed building. Here more height needed to be generated for continuity of the street edge.
2. The treatment of the northern façade of the building, along Pretorius Street, did not respond to the neighbouring Pretmed building's fenestration.

Figure 5.24 shows the design developing in response to these issues. The height of the buildings was then matched by adding another usable space to the northern tip of the building as well as a staircase along the western edgethat would allow access to a roof terrace above this new space. This terrace was later also covered which is shown in Figure 5.25.

The transition between the two fenestration typologies was dealt with by creating a neutral area on the western-most edge of the northern façade. This neutral area simply consists of a blank wall containing no fenestration.

The sketch shown in Figure 5.25 became what the author aimed to achieve in the design. Here the proportions are complementary and the façade has a sense of depth and layering.

The final design intervention : exterior views

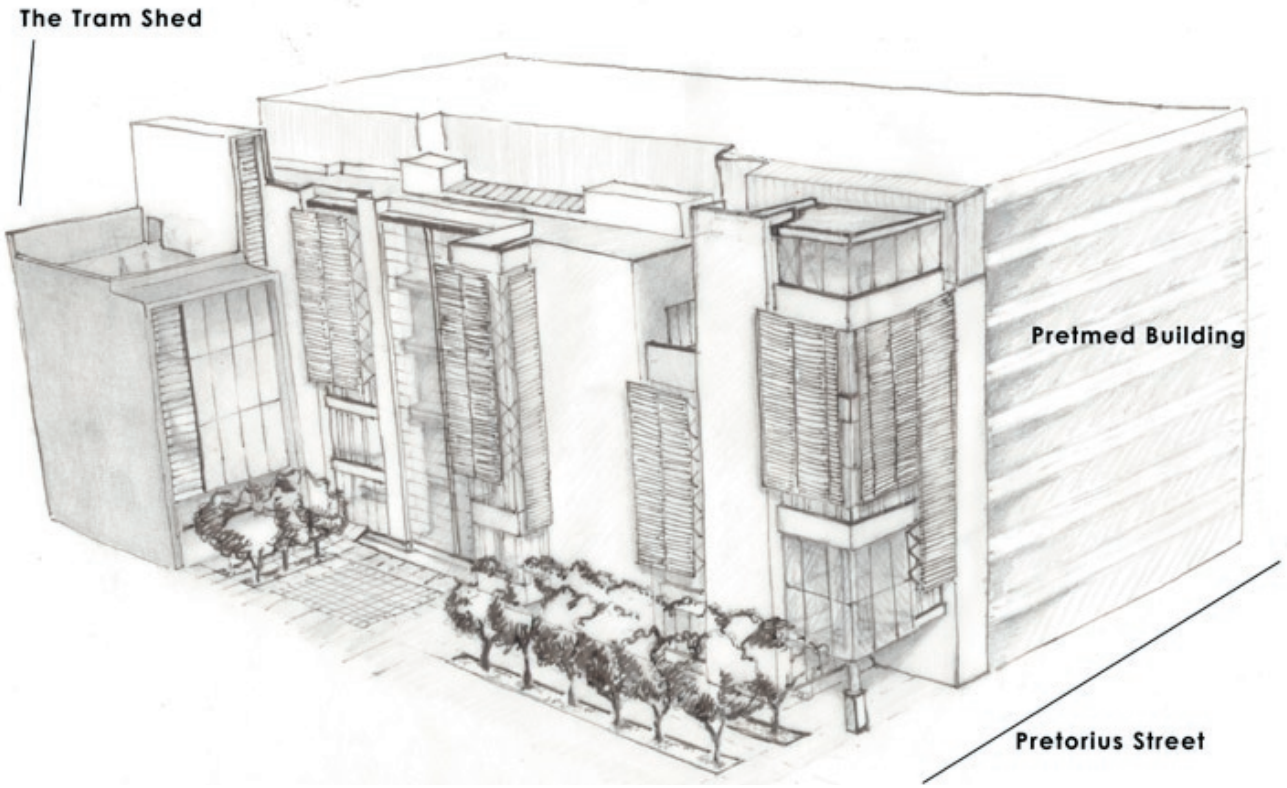


Fig 5.26: Birds-eye-view, north east _ the final design of the STDC in perspective.

The final design intervention _ STDC exterior views

Decisions regarding the final design intervention were reached through the exploration and development of design possibilities. The constraints and opportunities of the site set strict boundaries for the development of the STDC and these were explored and tested through a reiterative process of design and analysis. Figures 5.26 to 5.29 show the finalized product, proposed for the State Theatre Dance Centre. The building developed into an elegant, sophisticated and modern structure, and it is anticipated that the STDC can communicate and express itself as a symbol of 21st century South African architecture.

Fig 5.27: Section through the STDC depicting levels and activities.

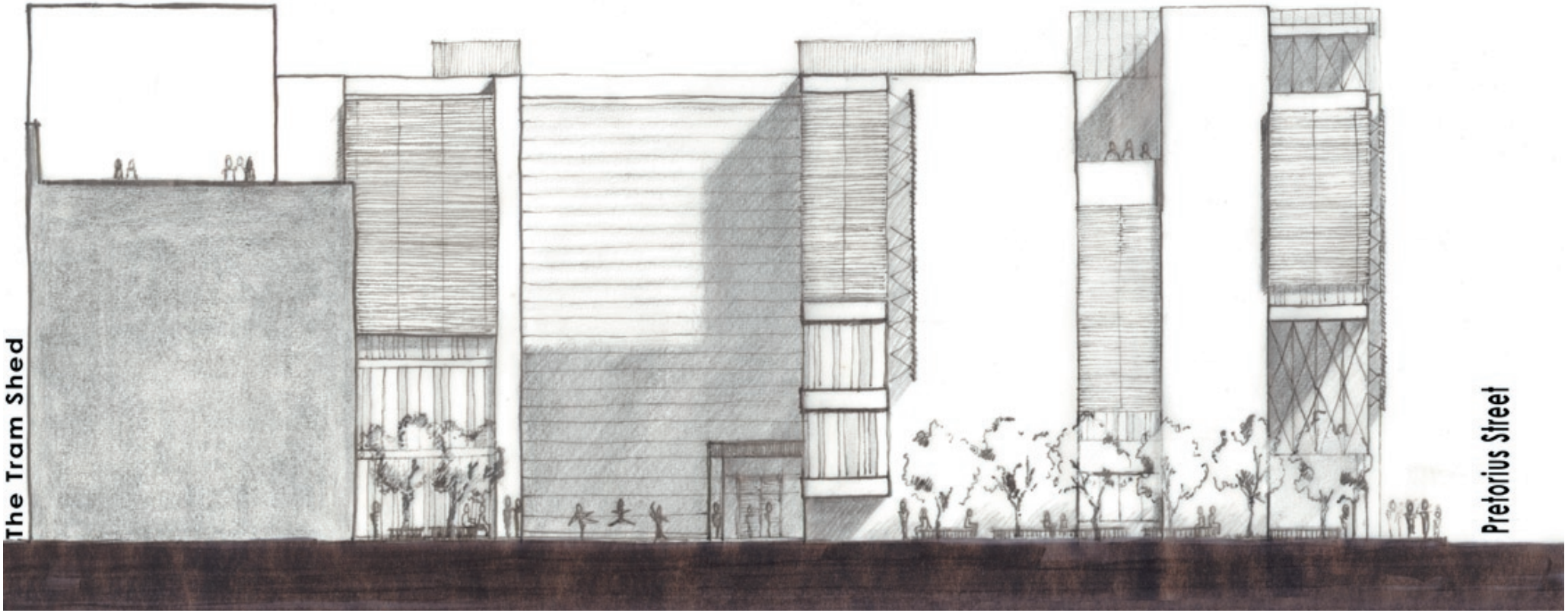


Fig 5.28: Eastern elevation of the STDC.

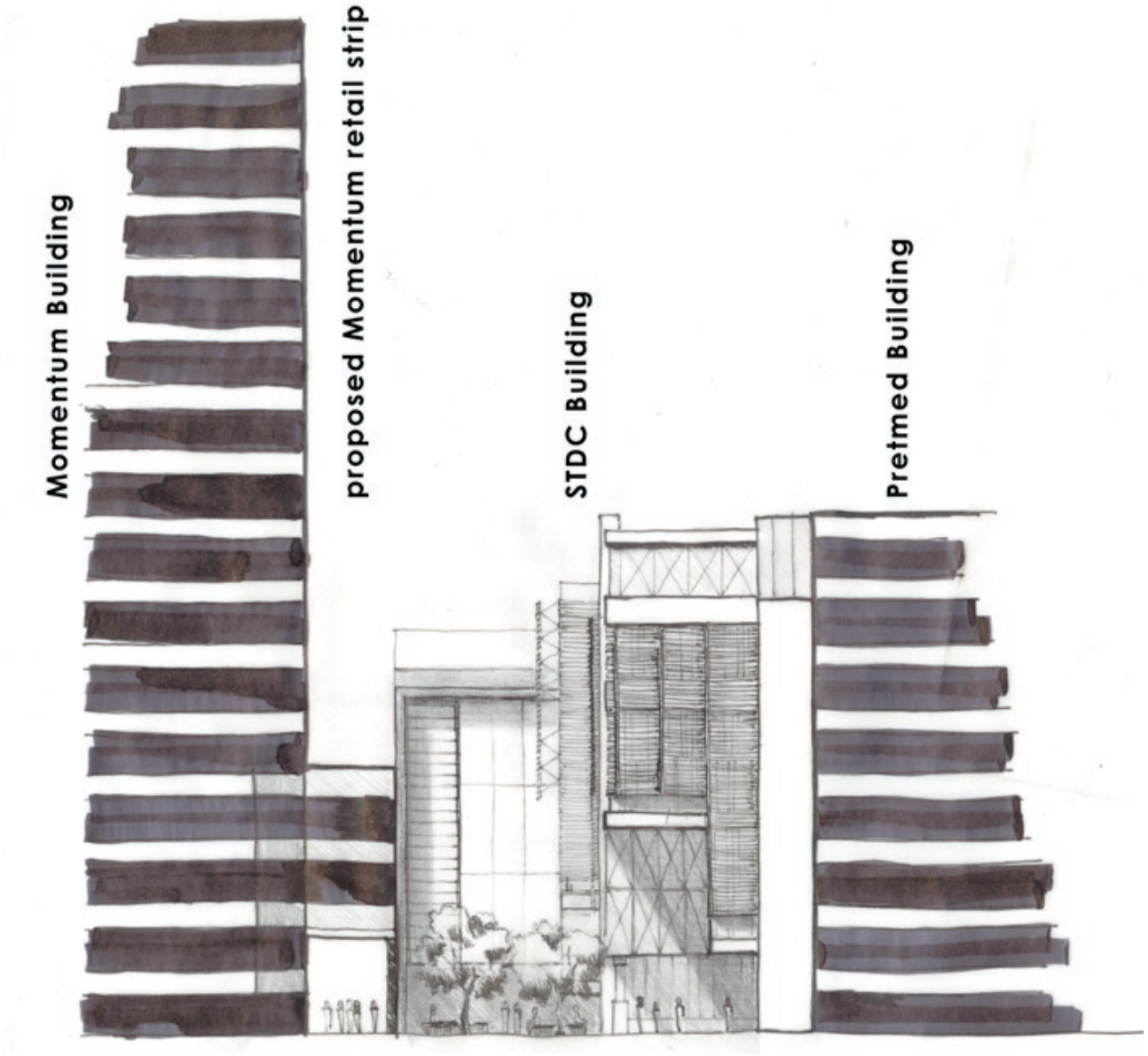


Fig 5.29: The STDC northern elevation.

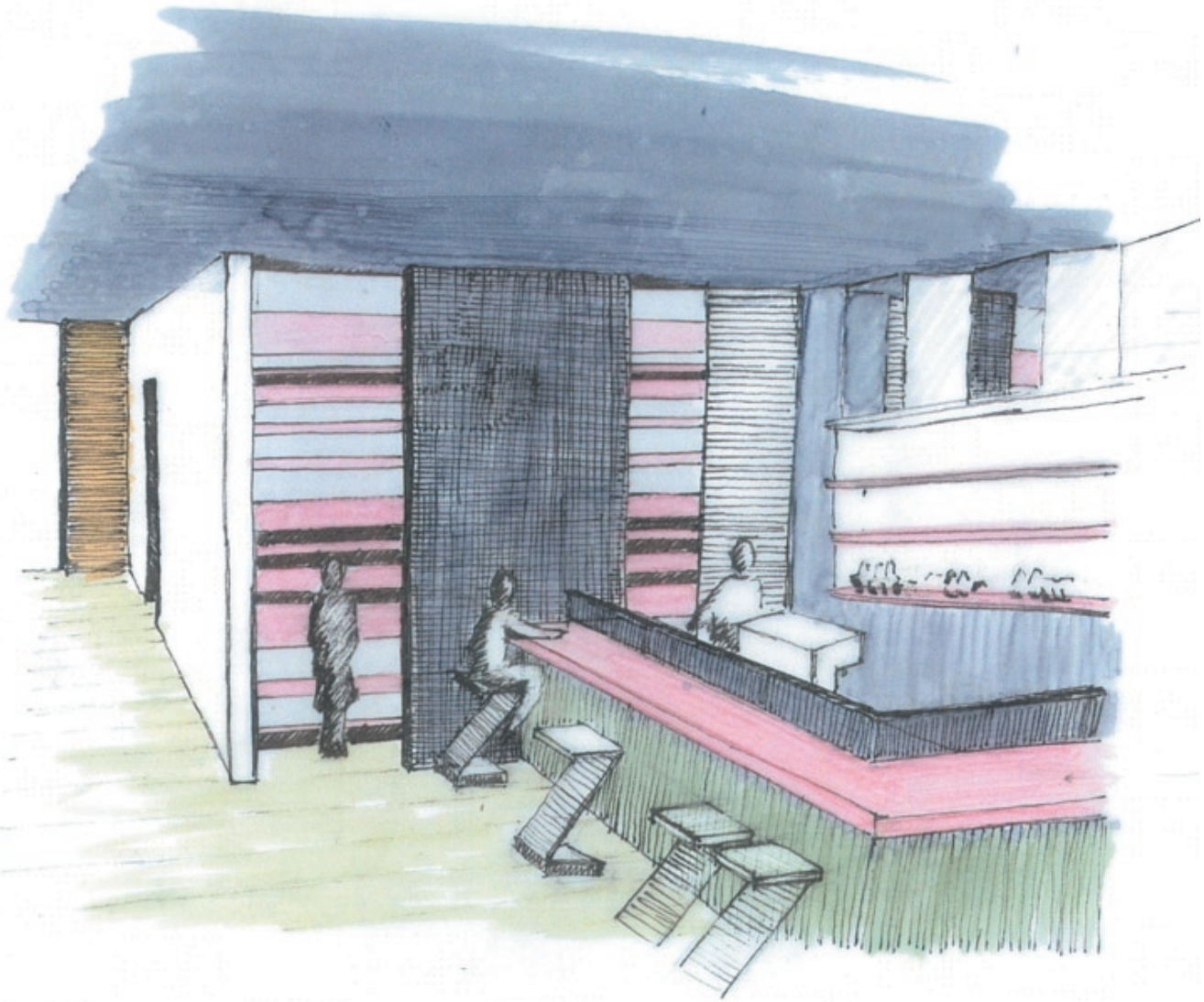


Fig 5.30: The drinks bar on ground floor - accessible to the public.

The final design intervention _ STDC interior views

For continuity in the design, the interior of the building was also explored. The interior of the STDC will house the life of the project which is in essence dance. The spaces feeding the dance studios are considered to be just as vital and therefore different areas within the building were conceptualized. The interior images shown in Figures 5.30 to 5.39 depict the colourful and vivacious interior spaces. The spaces were designed to express freedom and an element of fun, which is so central to dance as an art form. After all, dance is commonly an expression of one's joy rather than melancholy.

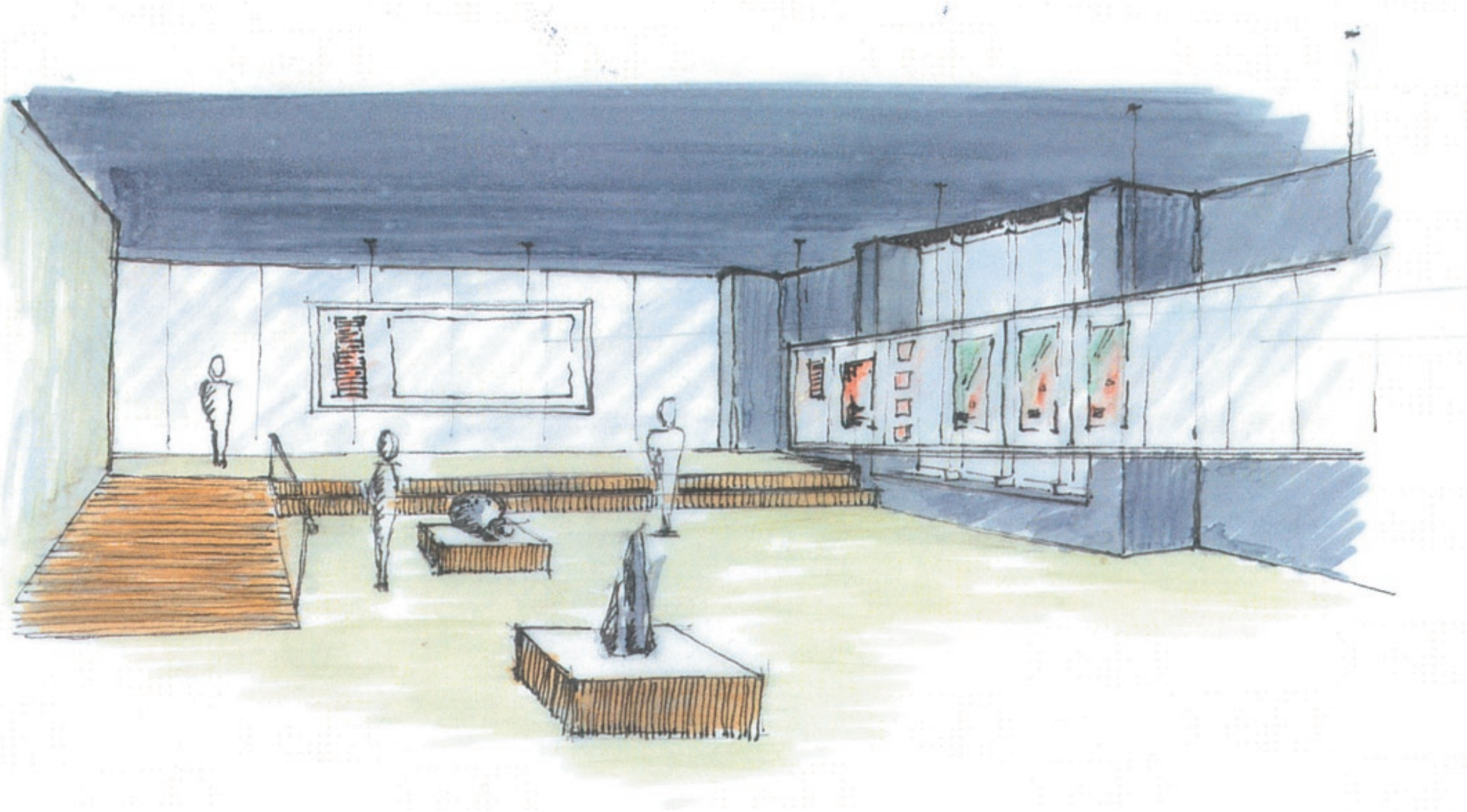


Fig 5.31: The ground floor gallery forming part of the public interface.

Fig 5.32: The reception and waiting area consisting of varying spatial volumes.

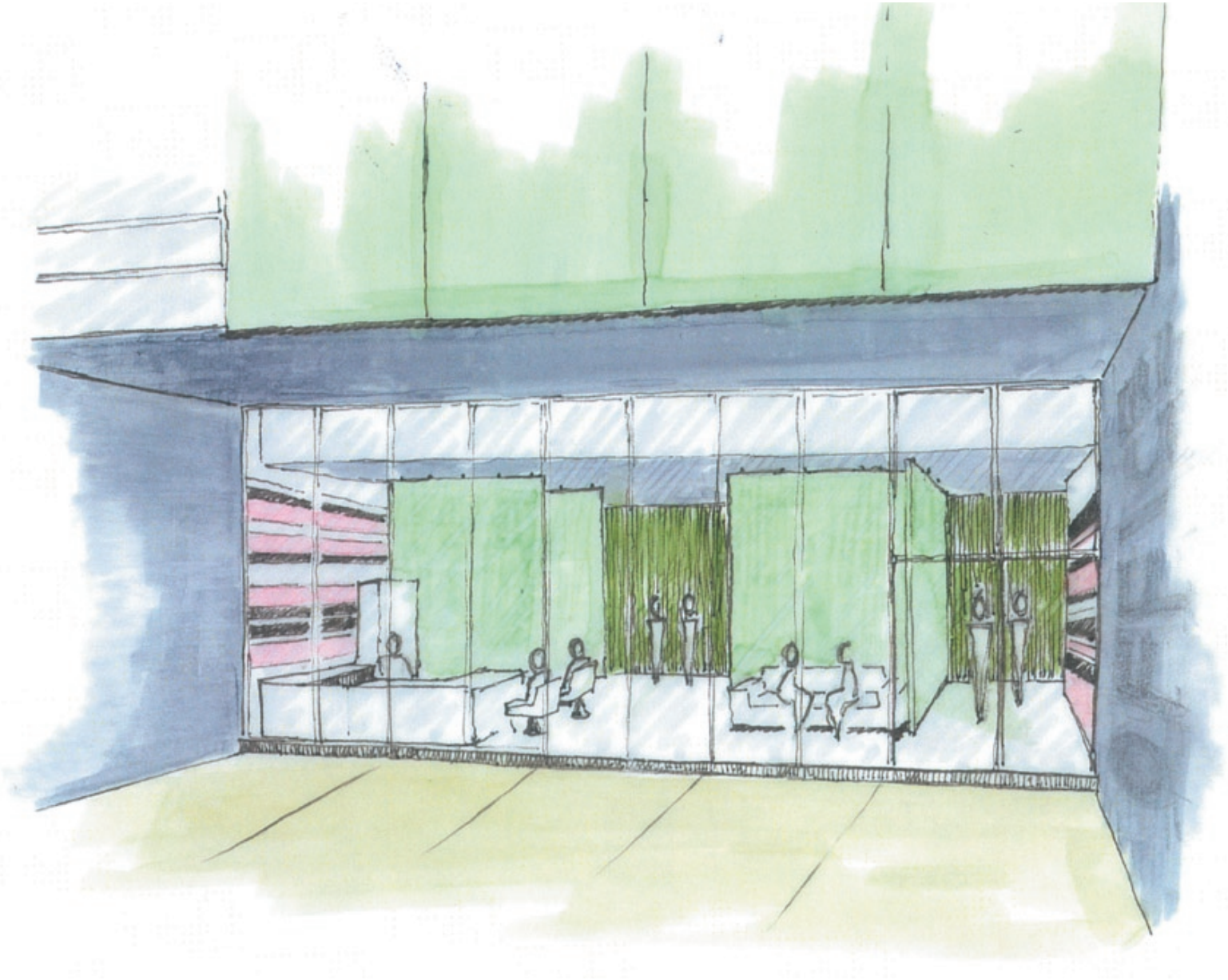


Fig 5.33: The administration and consultation office with seperate entrance.

Fig 5.34: The bridge on the first floor connecting the southern and northern part of the STDC.

Fig 5.35: Looking toward the classroom on the third floor - curved walls express movement around corners.

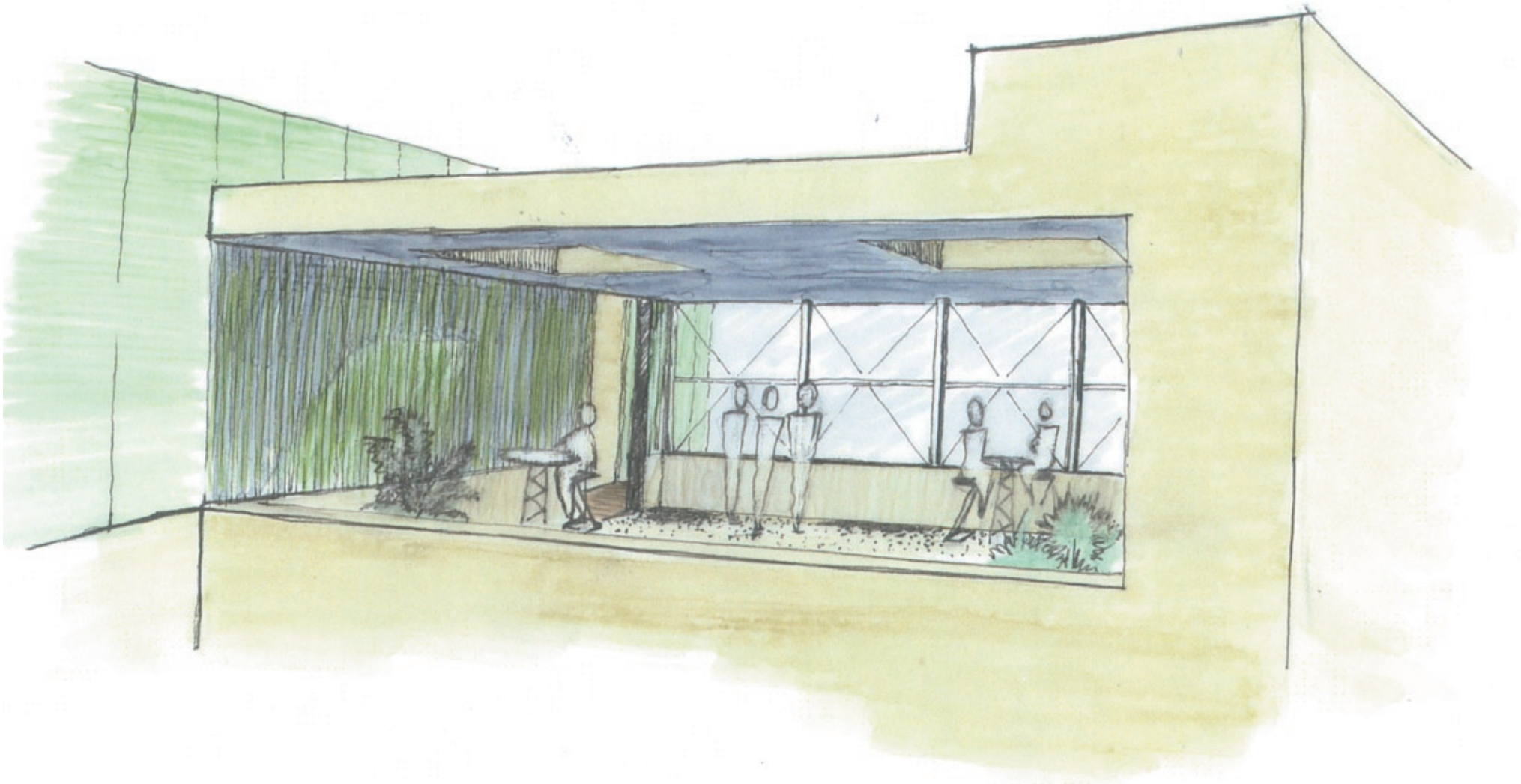


Fig 5.36: The roof terrace at the northern most point of the building.

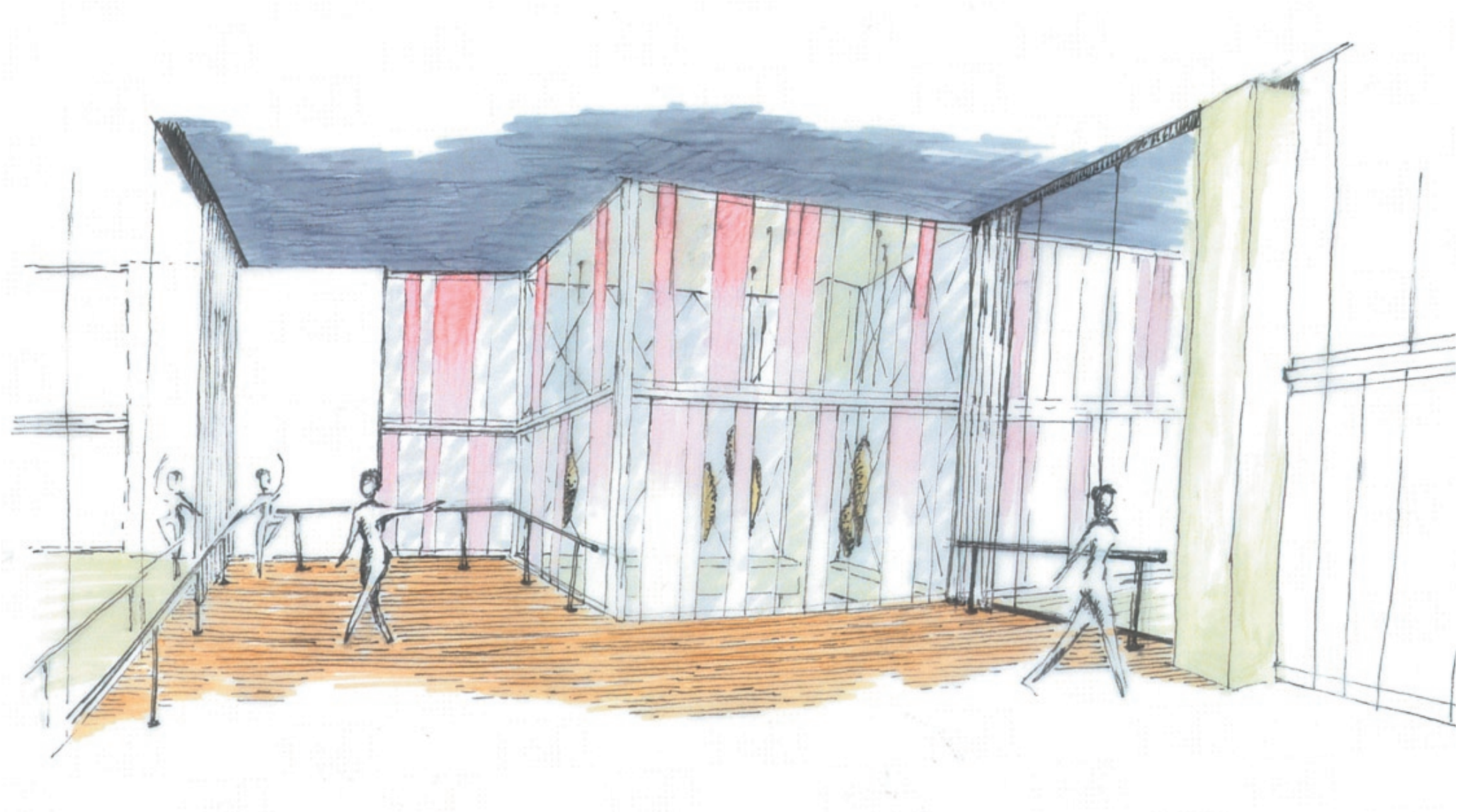


Fig 5.37: Studio 1 - the heart and lifeblood of the STDC.

Fig 5.38: Large mural of dancing figures against multi-storey wall _ view from public space

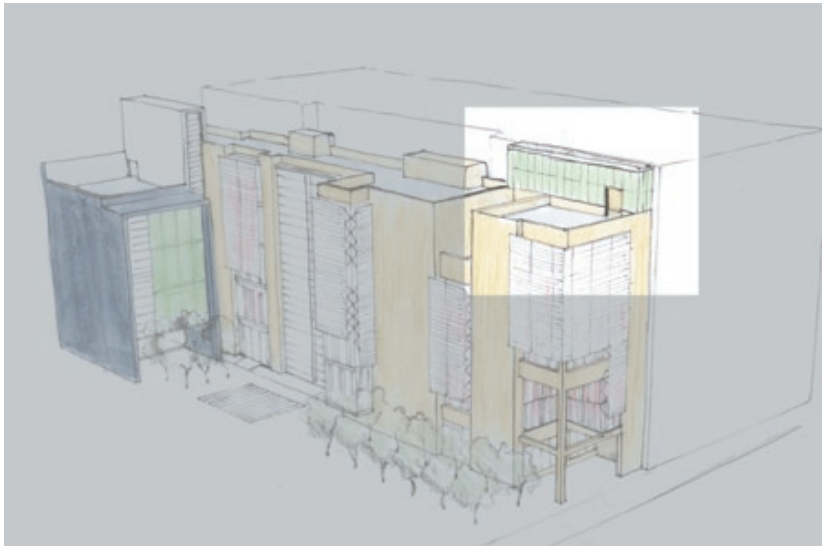


Fig 6.1: Author's sketch indicating the 'box' tower

Fig 6.2: Constitutional Court and Constitution Hill _ Johannesburg. OMM Design Workshop & Urban Solutions Architects and Urban Designers.

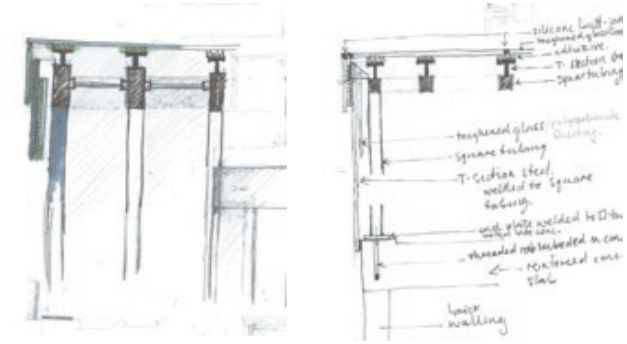


Fig 6.3: Falls Leisure Centre _ Belfast. Kennedy Fitzgerald & Associates.

Fig 6.4: Fitzwilliam College Gatehouse and Auditorium _ Cambridge. Allies and Morrison.

Polycarbonate/Perspex Tower

Section A_A, Detail 1 and Detail 4, of the design drawings show the polycarbonate/perspex box which has been placed on top of the proposed STDC building. This 'box' houses a staircase that takes the users to a landscaped roof space. The light structure also generates height on the western edge of the building to match the height of the neighbouring building.

This structure needed to be as light as possible, so that the transferring loads would be minimal. The reason for this is that the loads on its eastern edge have to be transferred vertically down the steel columns onto the coffered slab, then horizontally trough the beams into the concrete columns on the western edge. Its vertical loads on the eastern edge are not directly transferable through the structure into the ground.

Fig 6.5: The hydraulic arm that rotates the louvers: Authors sketch

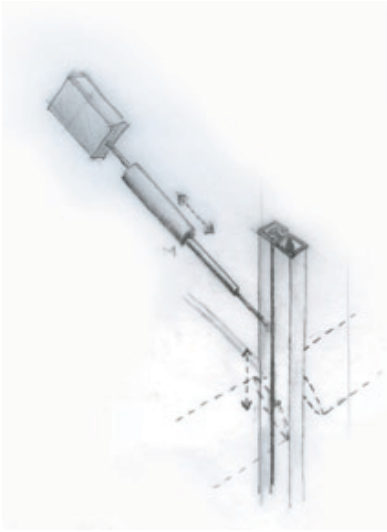


Fig 6.6: Discovery Health Head Office Extension _ Johannesburg. Paragon Architects. (images by author)

Shading System

The proposed STDC building makes use of different glazing systems. Although the site is deep and narrow (70m north-south, and 21m east-west) and neighbours tall buildings, a computer-generated 3D model showed that some of the glass façades received direct sunlight. At the discretion of the designer, it was decided to make use of a louvre system to shade these façades. Some areas on the façades were left uncovered, but these areas only receive minimal amounts of sunlight (less than one hour per day) at large angles.

Sections A:A, C:C and Detail 2 of the design drawings shows the system that is proposed for the building. This is the same system used on the Discovery Health building in Sandton,






Fig 6.7 - 6.12: Clearwater Shopping Centre _ Johannesburg. (imges by author)

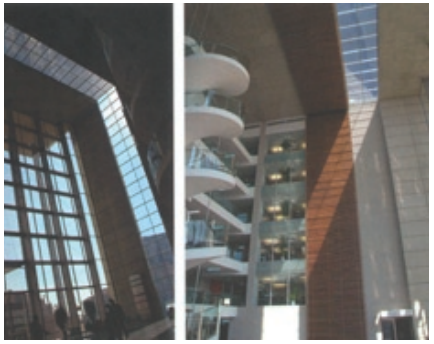


Fig 6.13: Discovery Health Head Office Extension _ Johannesburg. Paragon Architects

Fig 6.14: Courtyard Building, Fitzgerald Museum _ Cambridge. John Miller + Partners.

Fig 6.15: The Performance Academy _ Newcastle Upon Tyne. RMJM LTD.

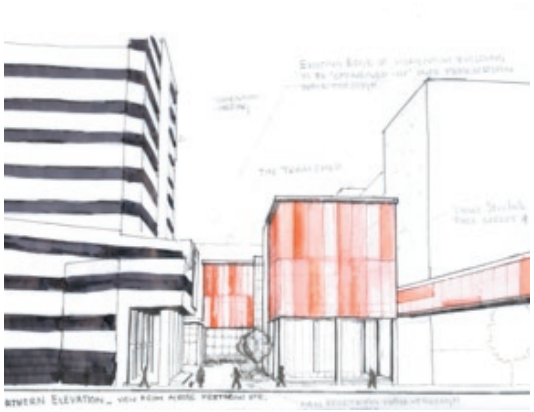
Glazing System

The proposal for the project called for a readable building that would interact with the pedestrian, bringing the art of dance down to public level. This was the main determining factor in creating a public space in front of the building, and making use of large glazed façades. The entrance to the building sits in the centre of the site, within the proposed public space. This central portion of the site becomes the area of orientation within the building. From here circulation spreads into a linear route along the length of the building as well as vertically.

This portion of the eastern façade (see Section E:E & Detail 7) receives ample shading from the neighbouring building as well as the main staircase which projects into the public space. It receives minimal sunlight and was therefore left open, uncovered by louvres.

For this system the author looked at the glazing system used at Clearwater Shopping Centre in Johannesburg. The system makes use of horizontal, rectangular steel sections welded onto a T-section brace-member which is in turn connected to concrete columns. Aluminium frames are connected to the steel sections with bolts. These aluminium frames relate to the horizontal steel section only. The glass panels are then butt-jointed vertically.

This part of the building shown in Section E:E indicates the use of multi-volume spaces. The western edge of the roof slab indicates the inclusion of a glass roof (Detail 5). Various examples of the treatment of such roofs were looked at.



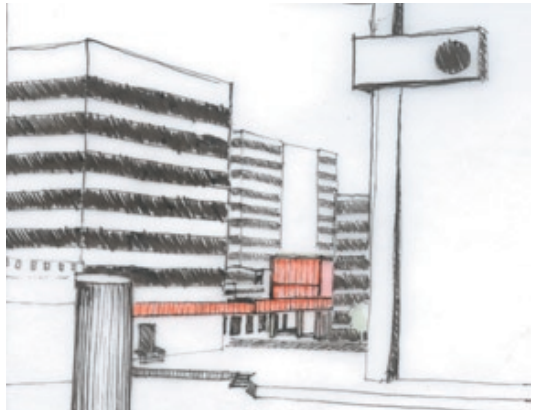


Fig 6.16 & 6.17: Concept sketches of the building as a 'beacon': by author.

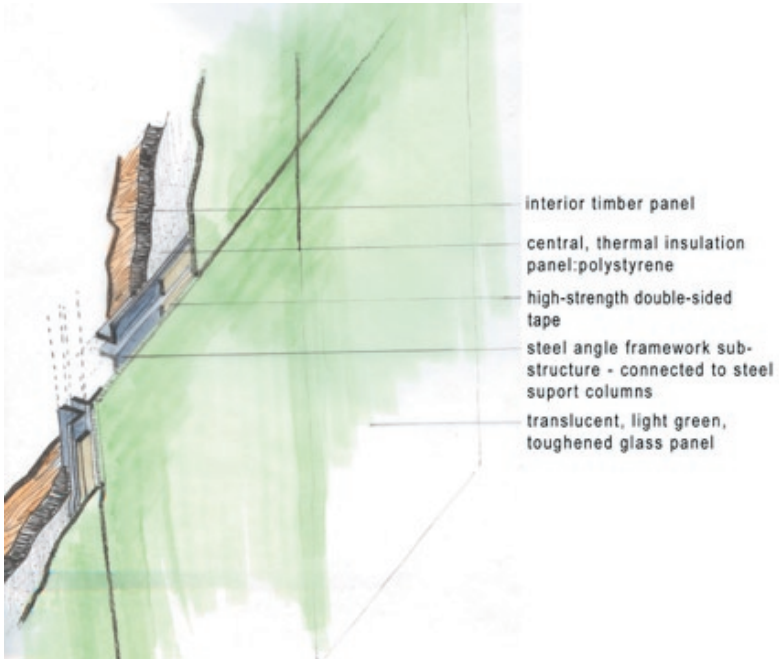
LED and Glazing System

The proposal for the study area of the thesis which was derived form the context analysis indicates that the site on which the STDC building sits is a 'landmark' or focal point within the area as it is located at the southern tip of a pedestrian spine running through Strijdom Square. With this in mind, the decision was made to treat the building as a beacon of attraction. The project called for a building that would have a strong presence both during day and at night. This inspiredthe idea to make use of bold colours and lighting.

At first the design included the use of iodized glass in shades of pink and red. Since the glass needed to be protected from sunlight, especially on the northern façade (which is visible from Strijdom Square), it would have been a shame to hide the glass away. Therefore, the design now incorporates an LED lighting system. The glazing system is built up of horizontally orientated glass panels at random widths. These panels are a combination of randomly placed translucent and clear glass. The LED lights are then positioned behind a bulkhead ceiling in relation to the translucent panels. These panels then light up at night and the building becomes a true beacon.

Fig 6.18 & 6.19: Sentinel Office Development _ Glasgow. Gordon Murray and Alan Dunlop Architects.

Fig 6.20 & 6.21: The layered facade: by author.



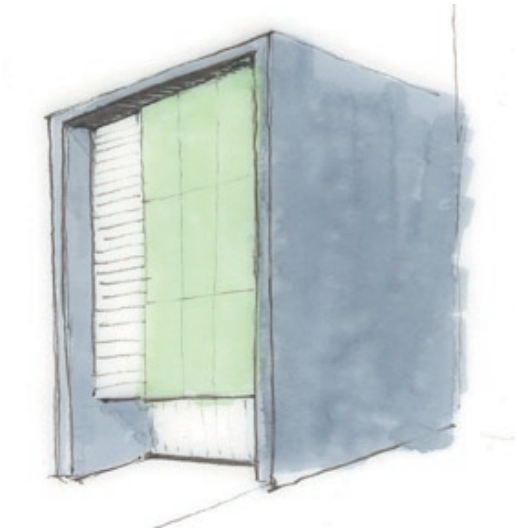


Fig 6.22: Timber venner - glass panels at Seewurfel _ Zurich. Camenzind Evolution.

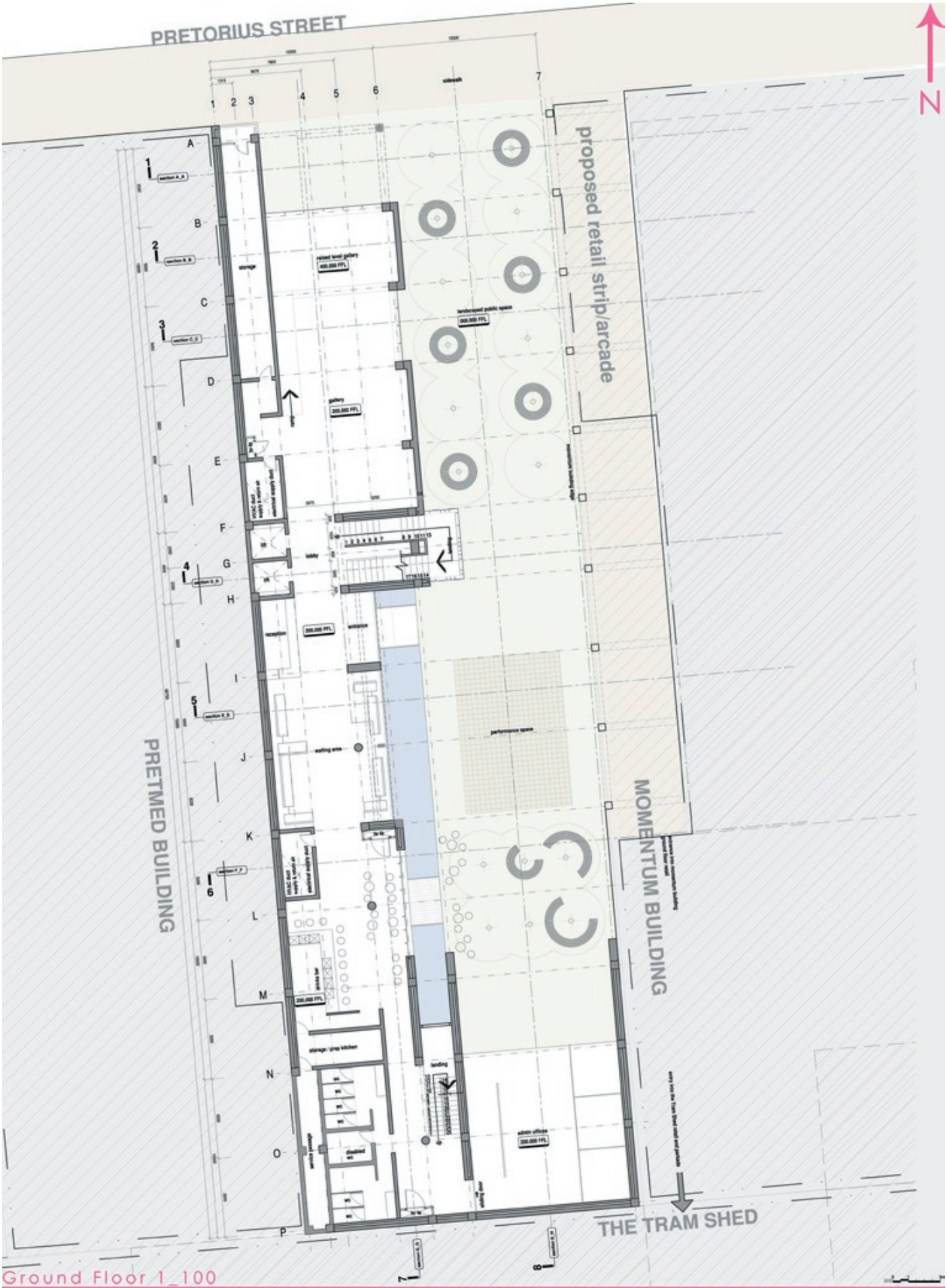
Cladding Panels

The southern block of the proposed building is physically 'separated' from the main portion of the building by a staircase shaft. It was decided to treat this block differently than the rest of the building and thereby highlight the separation. The block houses an admin office on ground floor and two dance studios on first and second floor.

The design for this portion of the building called for a 'sleek' cladding system, one that would provide the building with clean and defined lines (see Section H:H and Detail 9 of design drawings). The system uses light-green, frosted glass panels that are connected to a steel framework with high-strength, double-sided tape. The steel framework is then connected to steel fins which in turn connect to steel support columns inside the building. The cladding system is made up of layers that include a central polystyrene insulation layer and an interior-finish layer of timber-veneered MDF building boards.

601_PLANS

presentation panels



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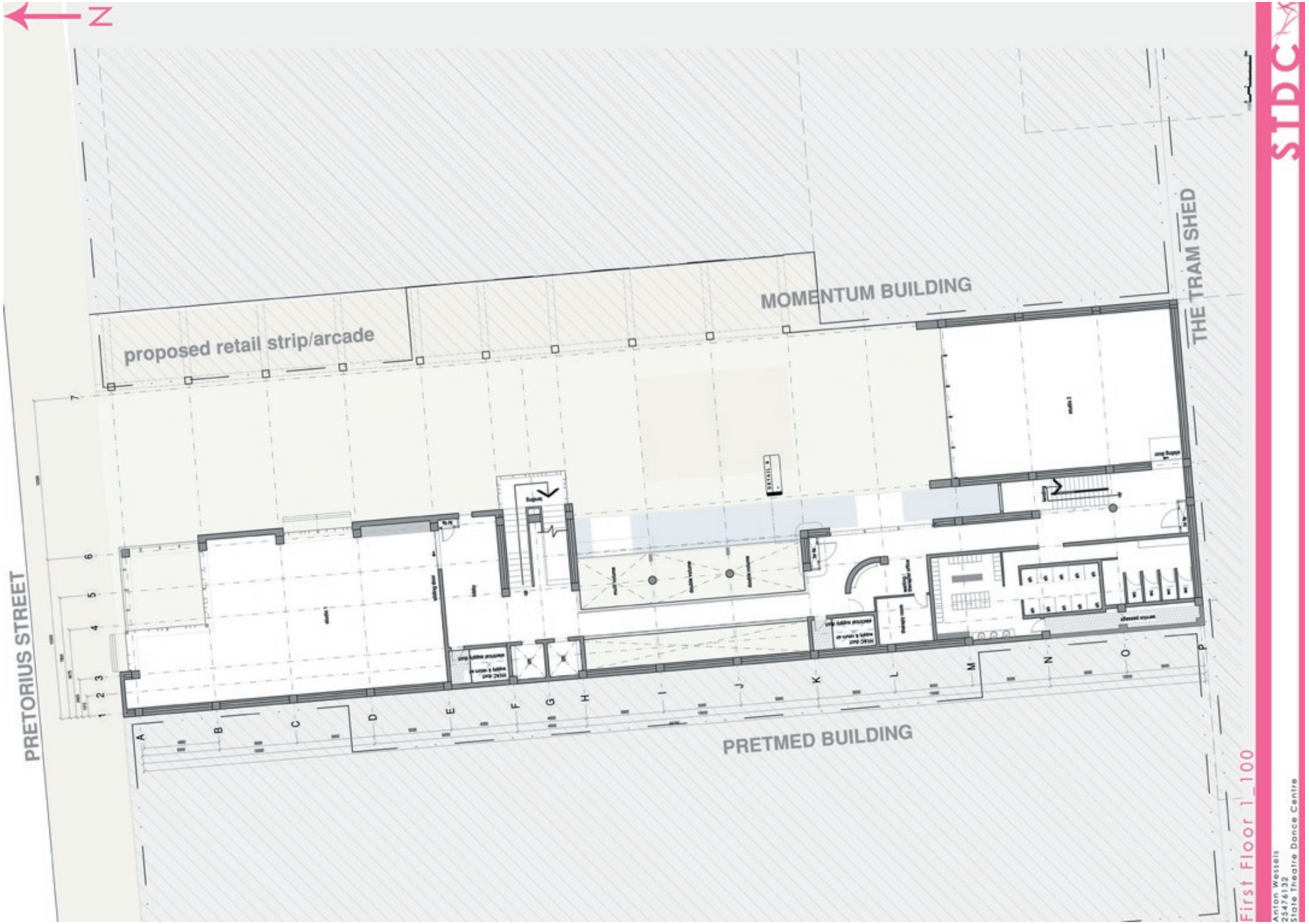
STDC


N
proposed retail strip/arcade
MOMENTUM BUILDING
THE TRAM SHED
PRETORIUS STREET
PRETMED BUILDING
RETAIL
STDC
First Floor 1_100
Anton Wessels
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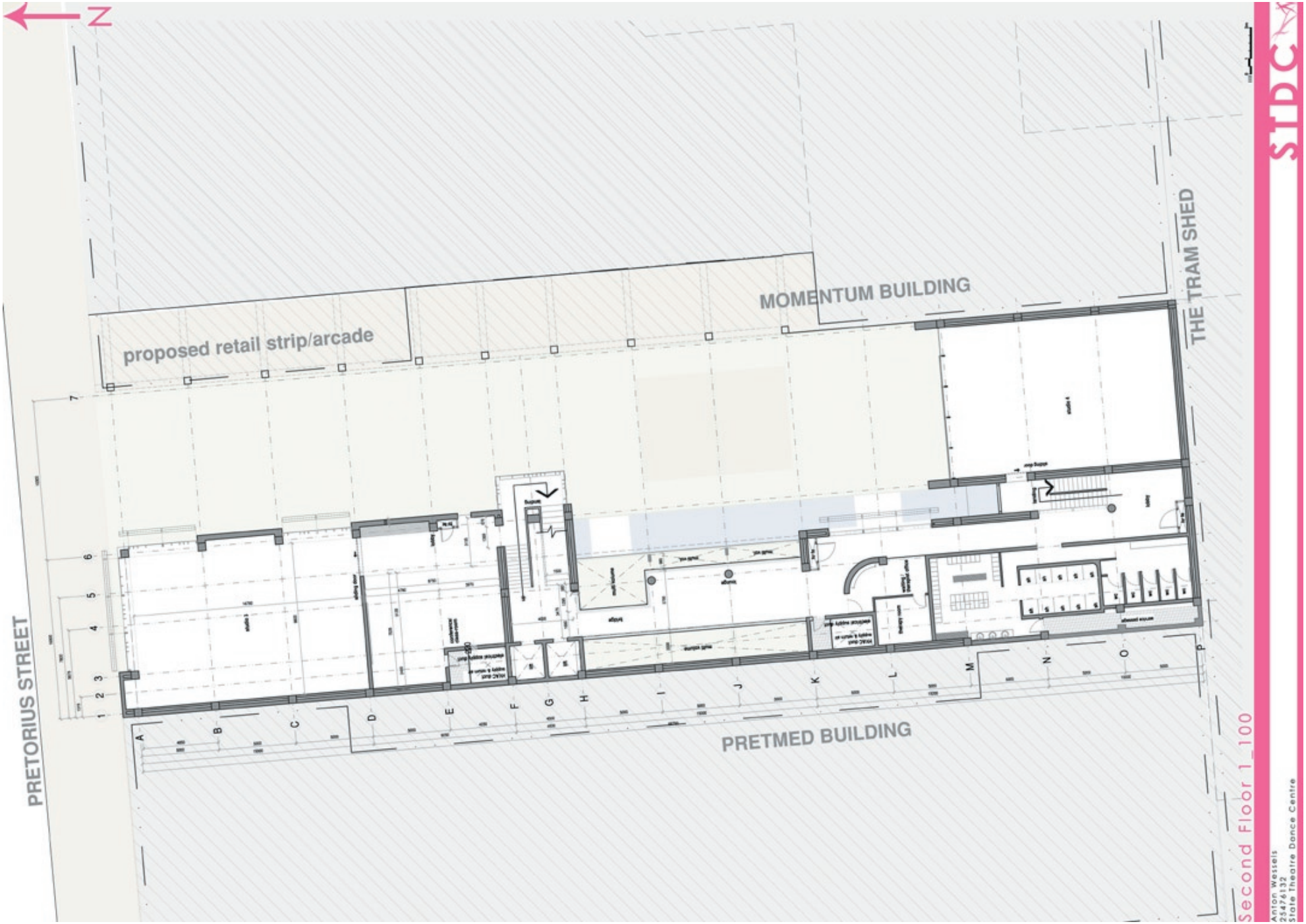
N
proposed retail strip/arcade
MOMENTUM BUILDING
THE TRAM SHED
PRETORIUS STREET
PRETMED BUILDING
STDC
Second Floor 1_100
Anton Wessels
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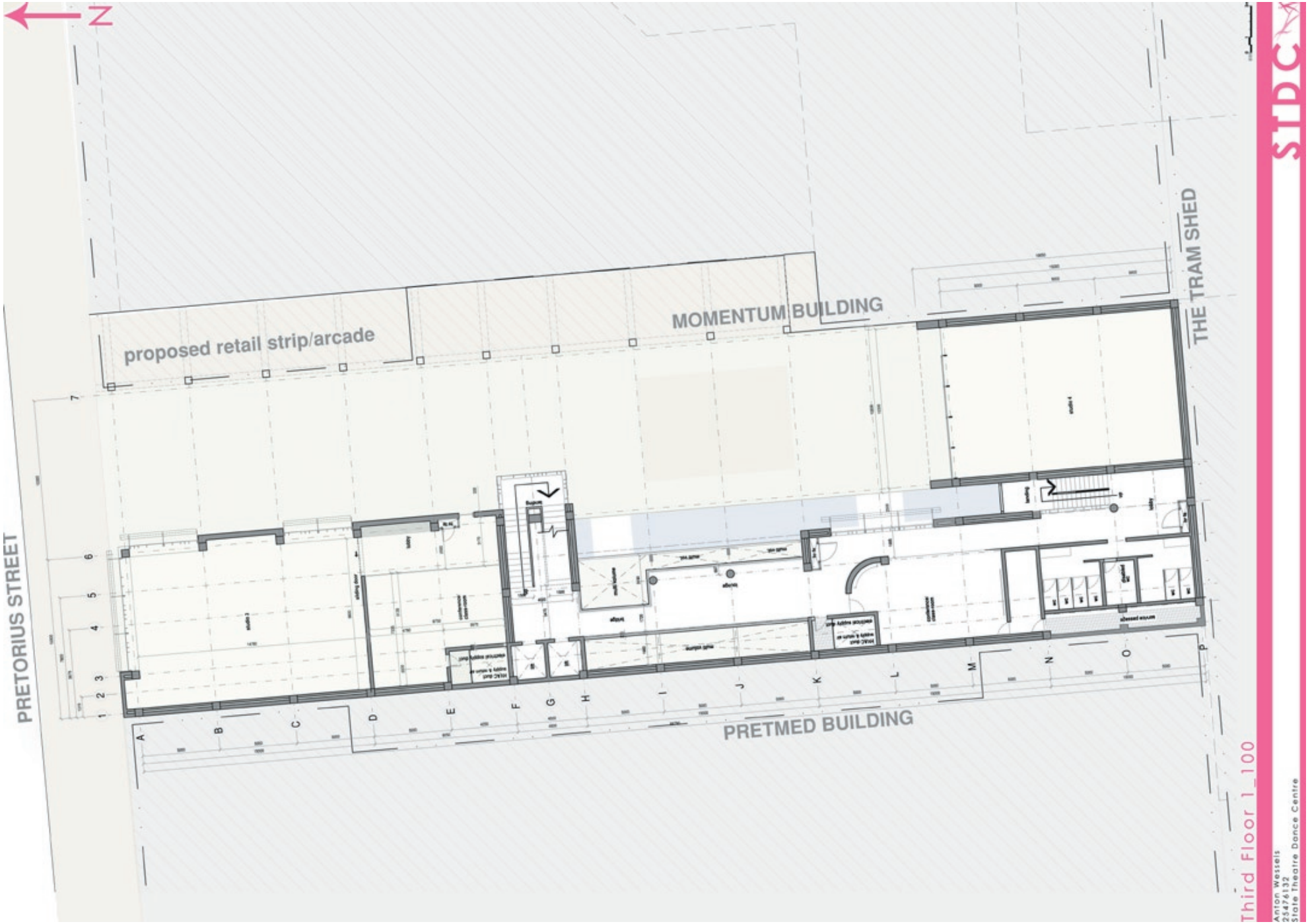

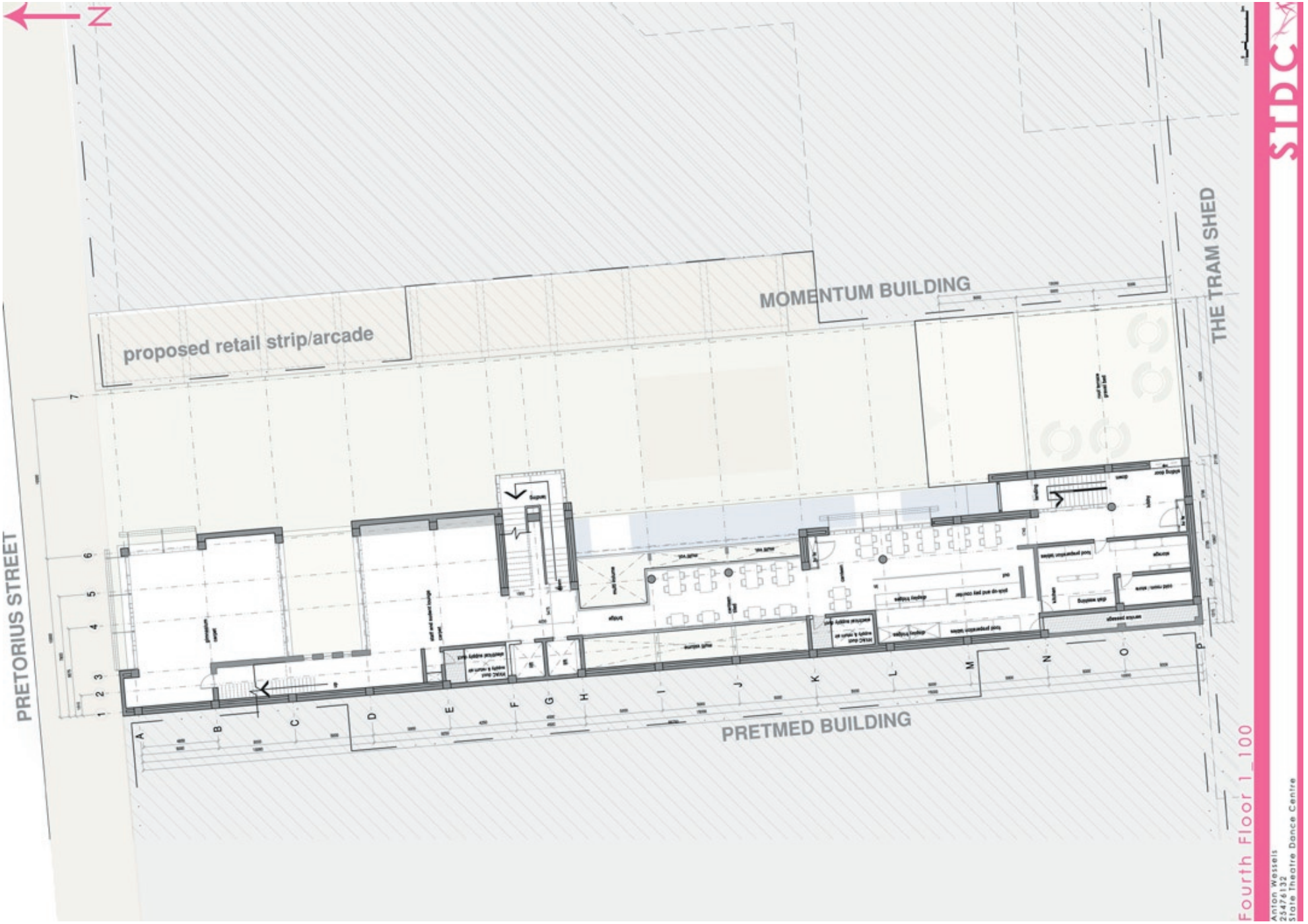
N
proposed retail strip/arcade
MOMENTUM BUILDING
THE TRAM SHED
PRETORIUS STREET
PRETMED BUILDING
STDC
Fourth Floor 1_100
Anton Wessels
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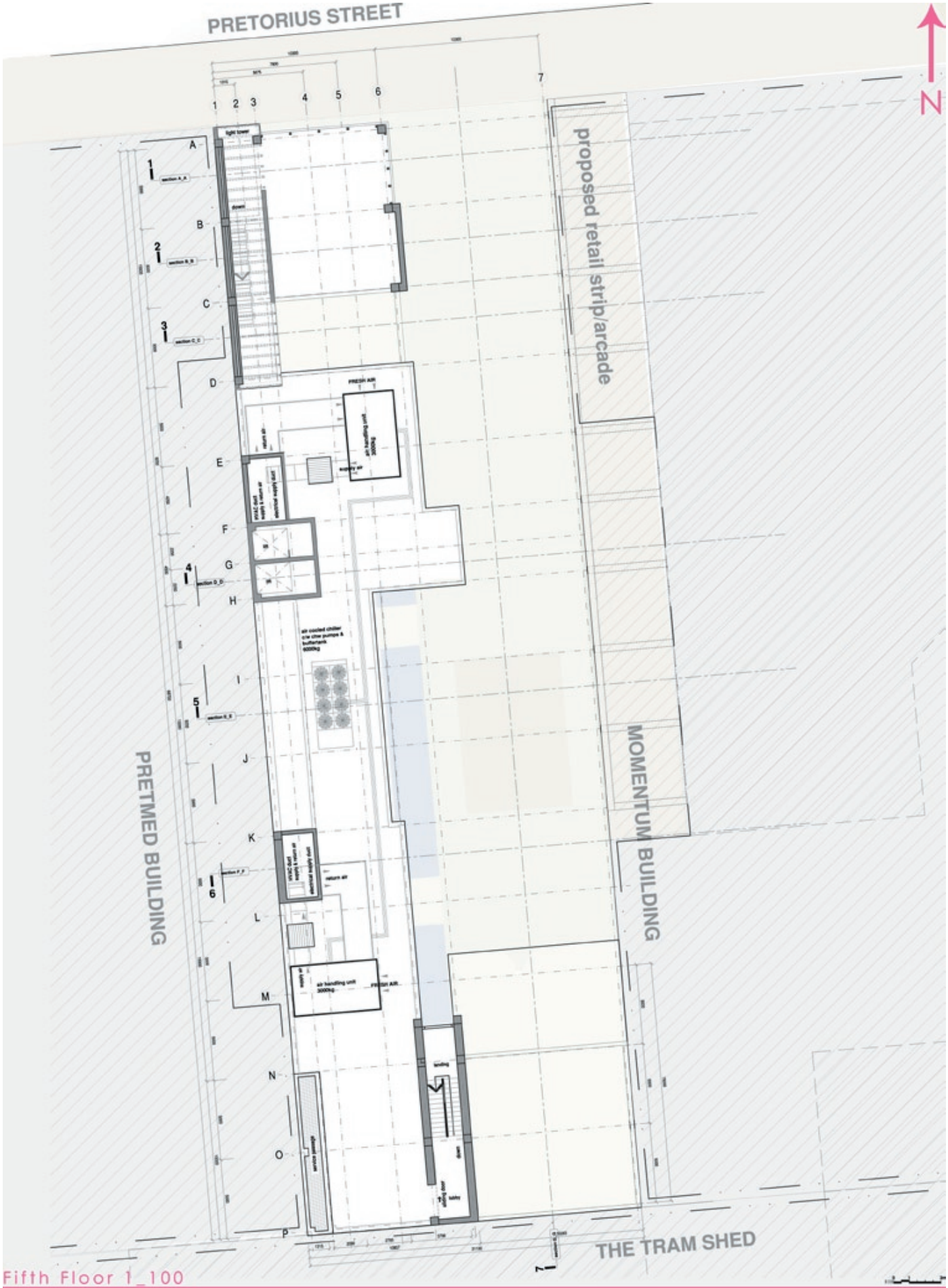
State Theatre Dance Centre



Fifth Floor 1_100

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STDC

602_ SECTIONS, ELEVATIONS AND DETAILS

presentation panels

detail1: the glass box / tower - beacon of light

North eastern corner of the STDC

Section A:A 1_50

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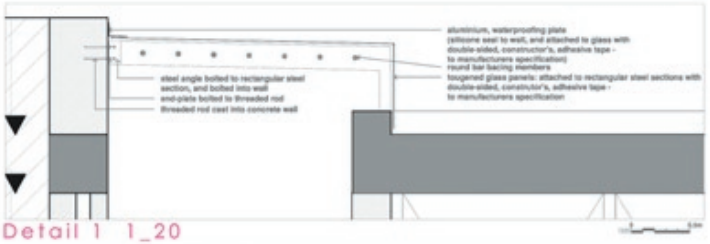
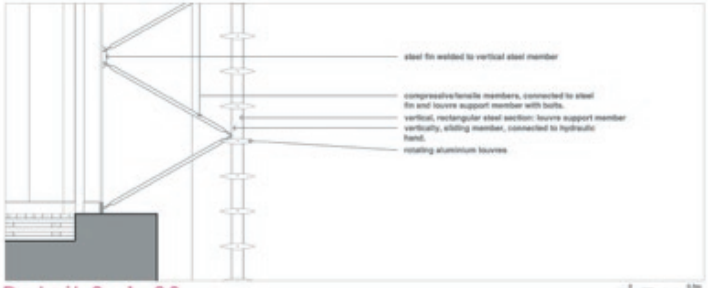
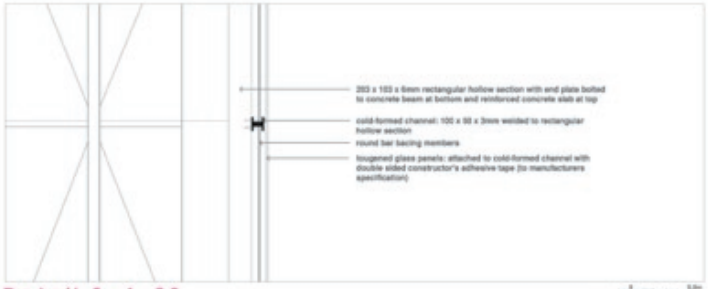
STDC



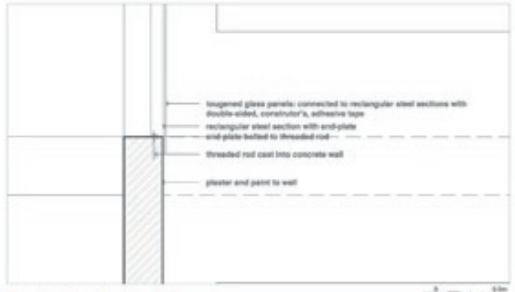
Detail 1 1_20



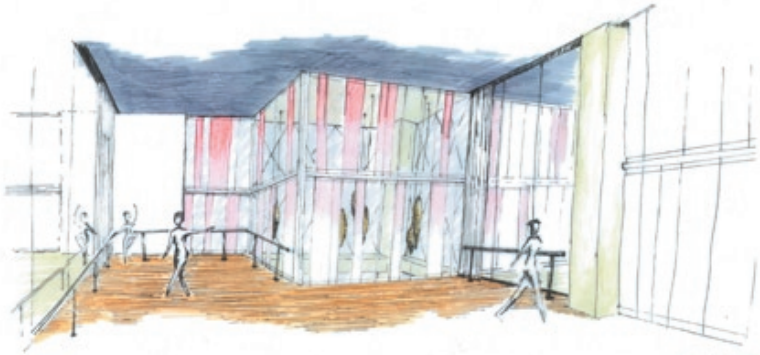
Detail 2 1_20

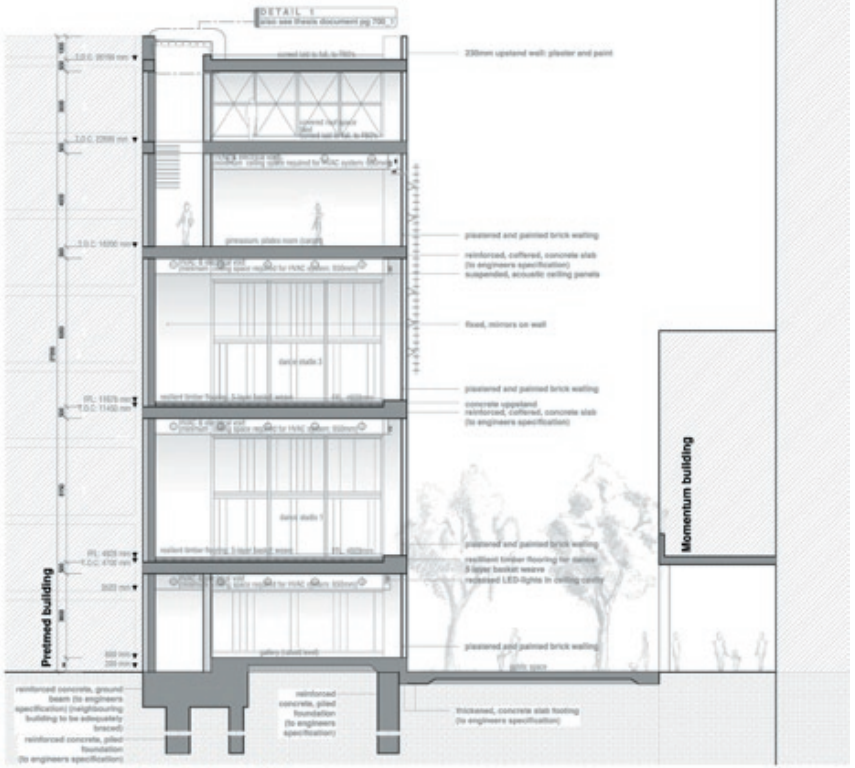


Detail 3 1_20



Detail 4 1_20

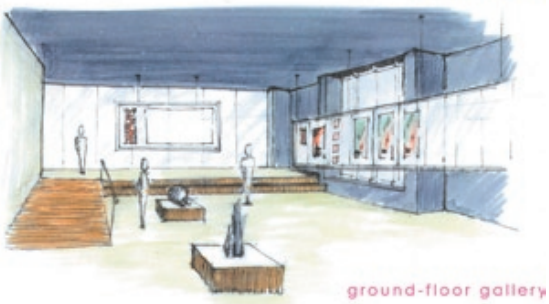

studio 1



Section B:B 1_100

detail 2: the hydraulic arm which rotates the loures

roof terrace



ground-floor gallery

Section C:C 1_50

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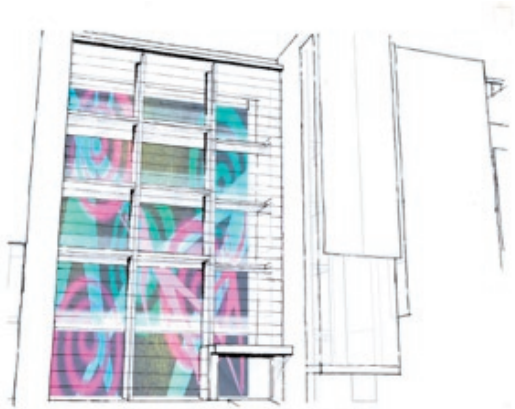
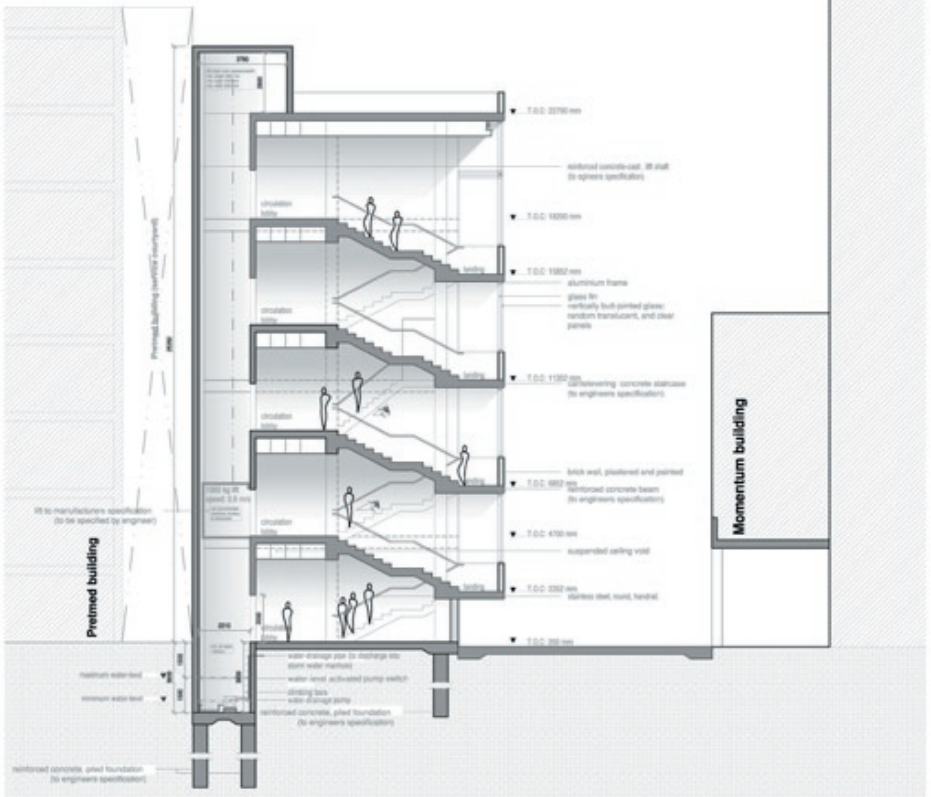


large mural against multi-volumne wall

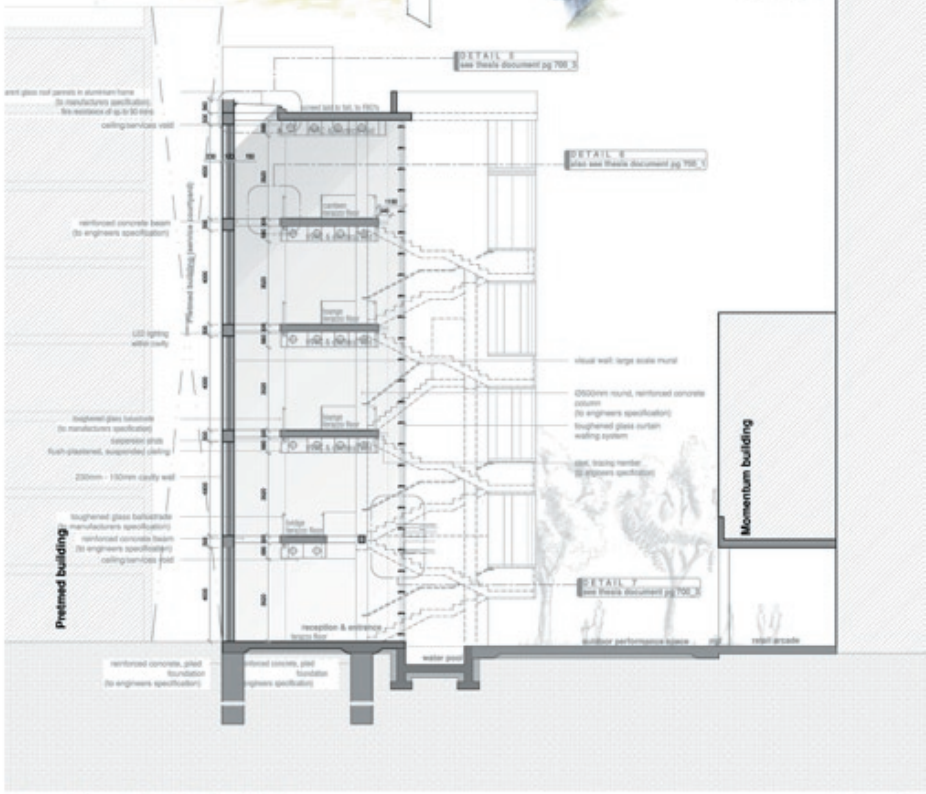
detail 7: steel and aluminium glazing system

reception lounge

first-floor bridge



Section D:D 1_100



Section E:E 1_100

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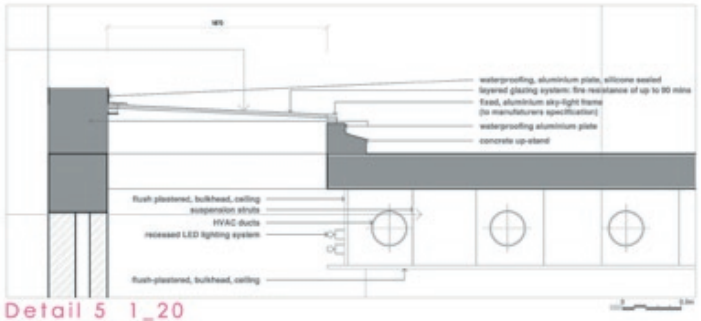
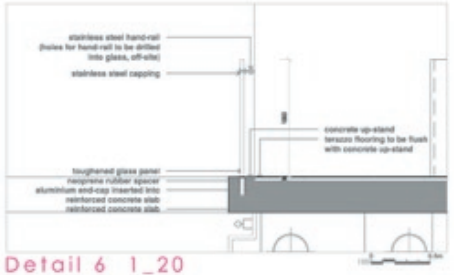
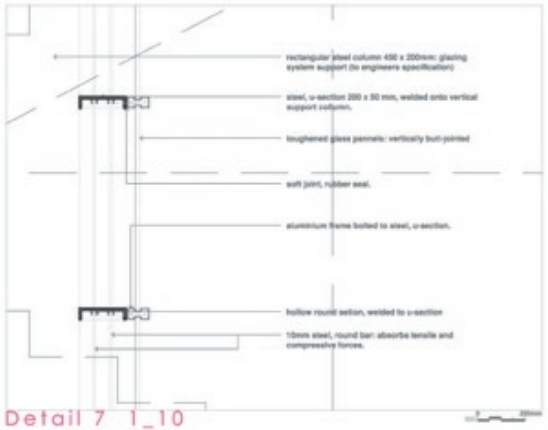
detail 5:
tilted aluminium framed skylight



Detail 5 1_20

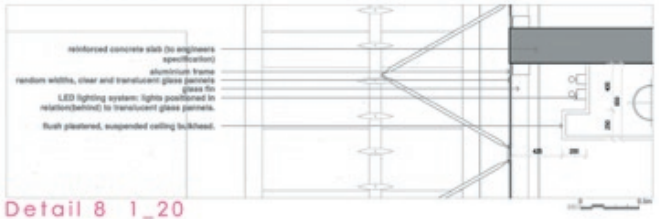


Detail 6 1_20



Detail 7 1_10

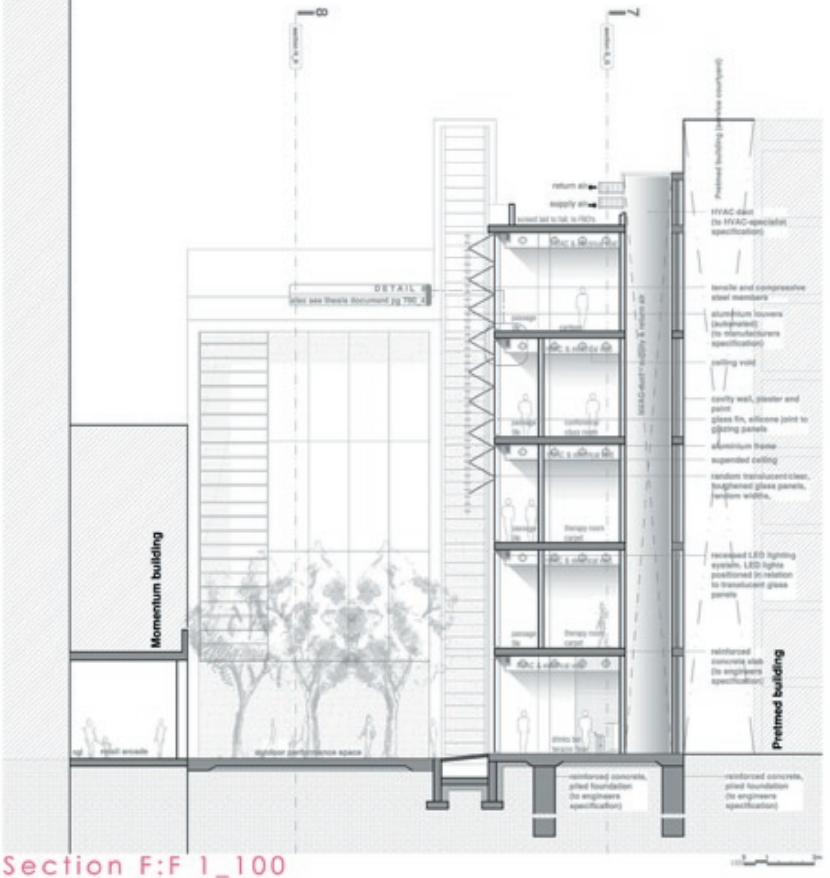
detail 8:
LED lighting system



Detail 8 1_20

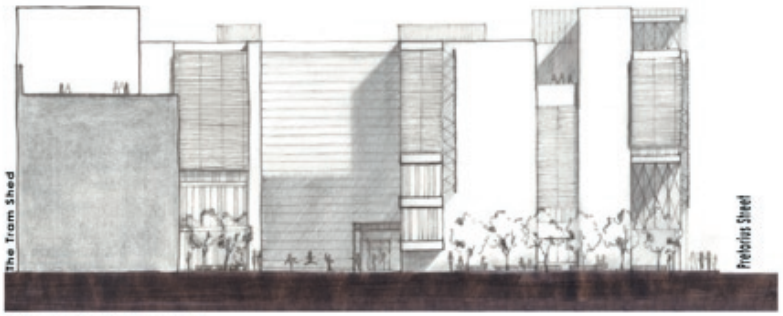
ground-floor drinks bar

looking toward the therapy room on the second floor

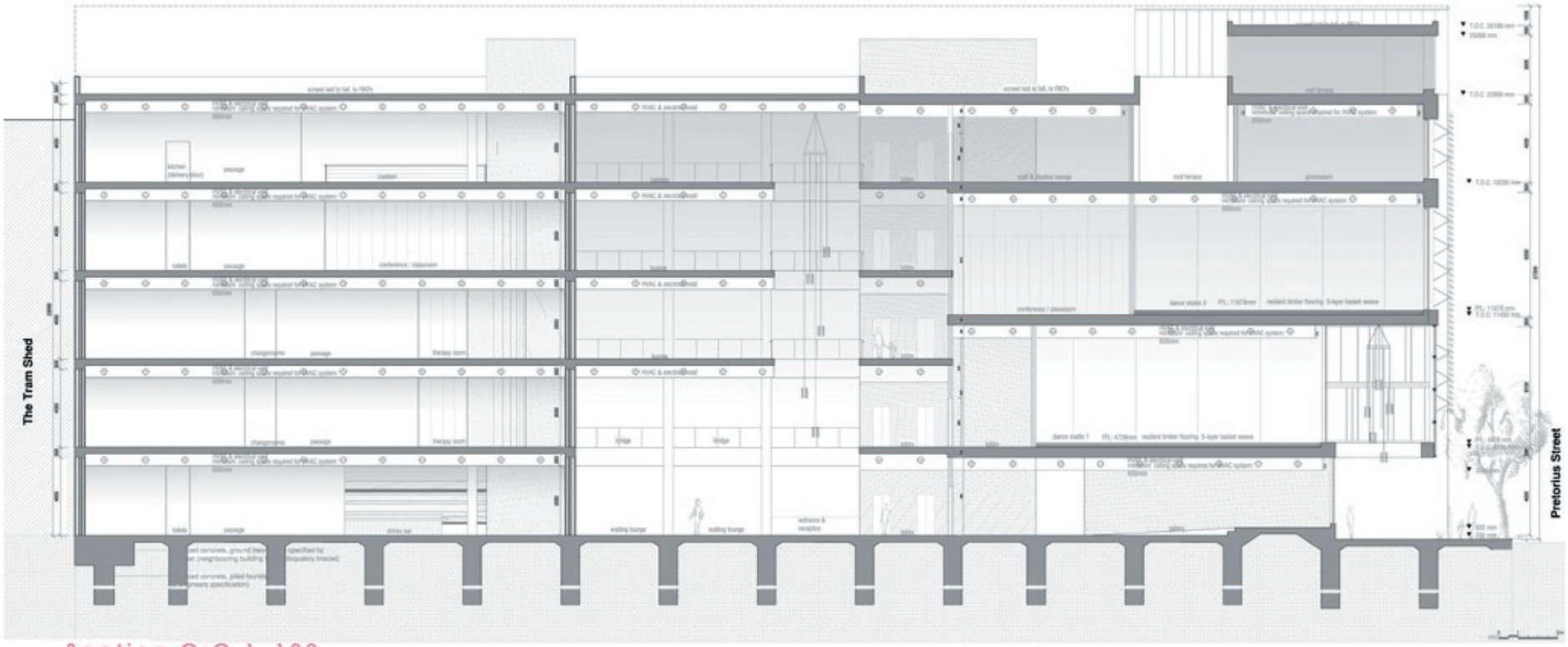


Section F:F 1_100

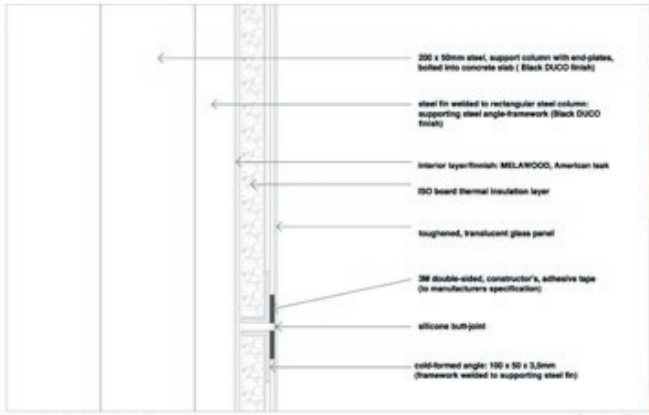
sketched section _ activities within spaces



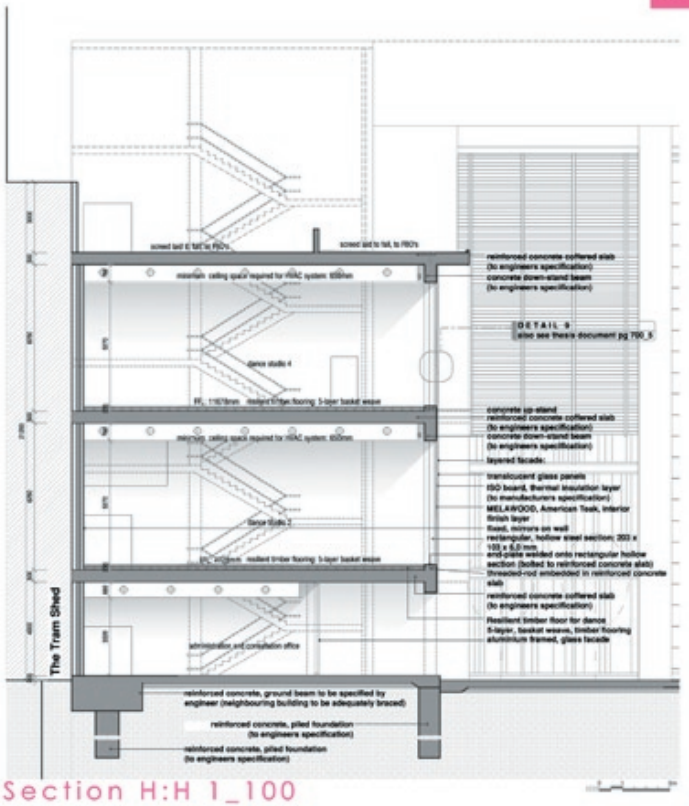
Sketched elevation



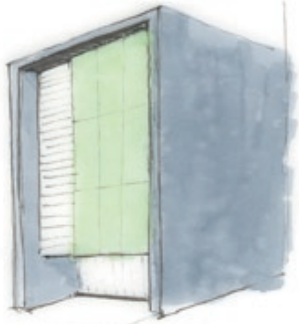
Section G:G 1_100



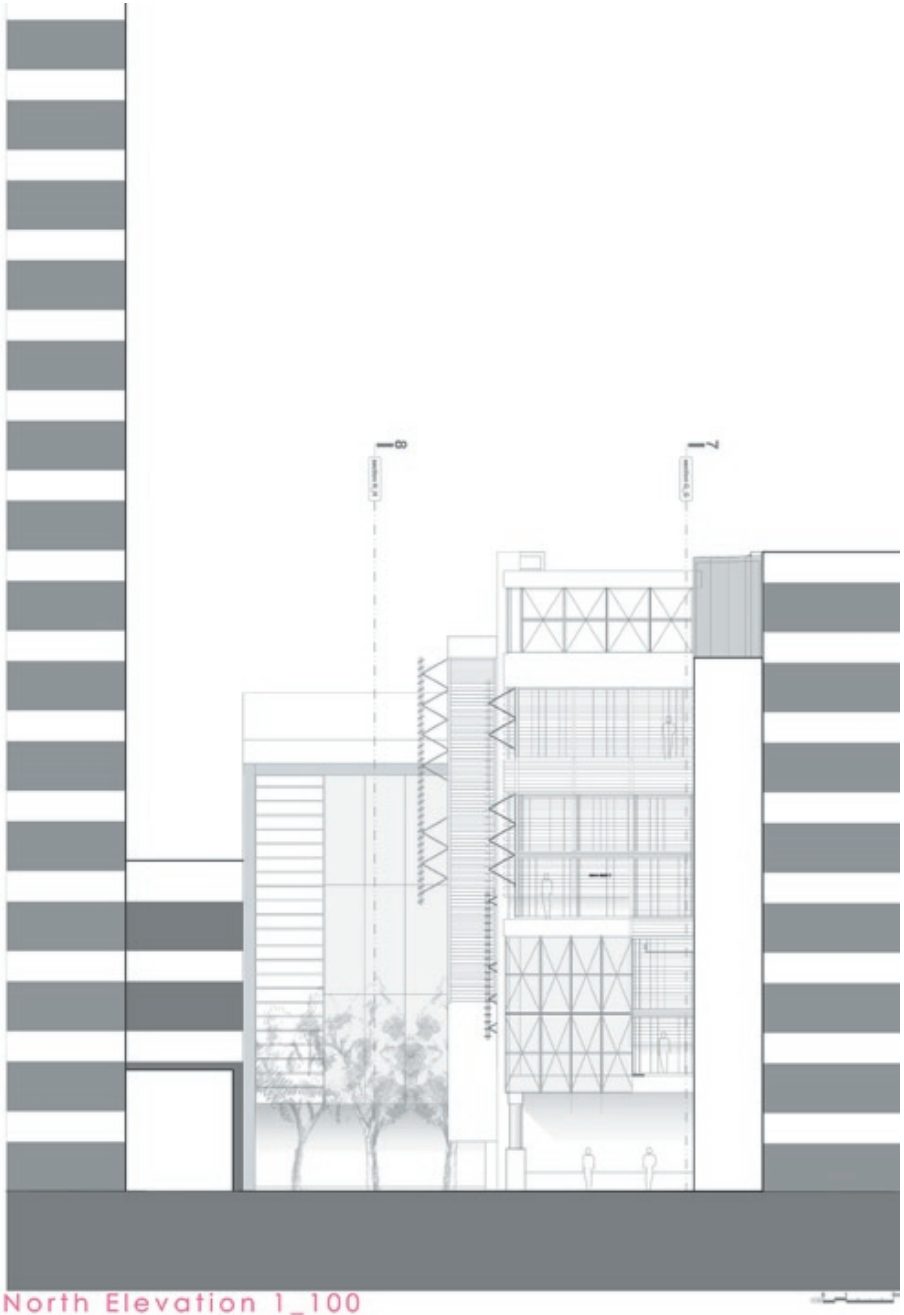
Detail 9 1_5



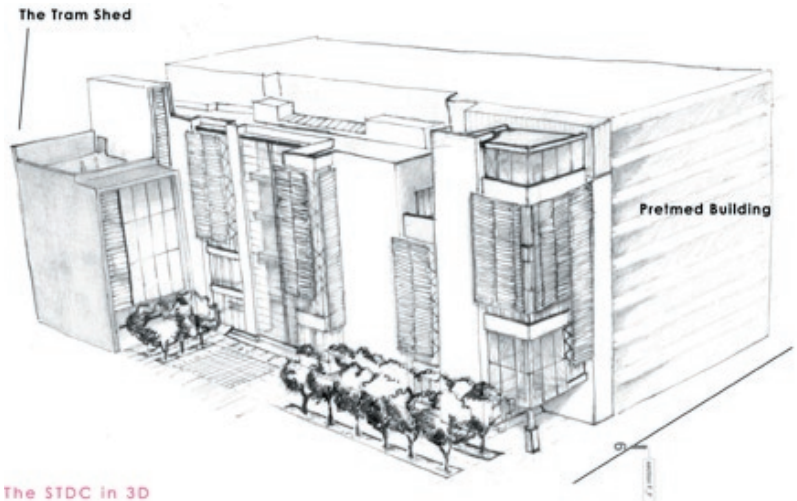
Section H:H 1_100

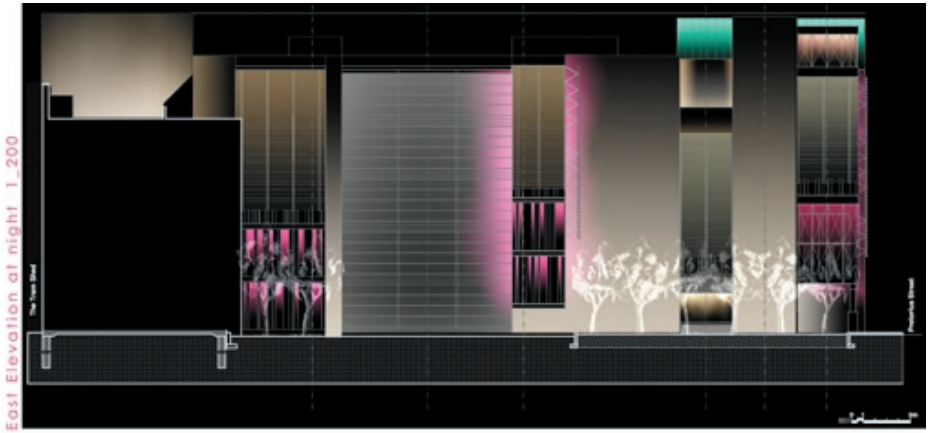


The BOX...detail 9

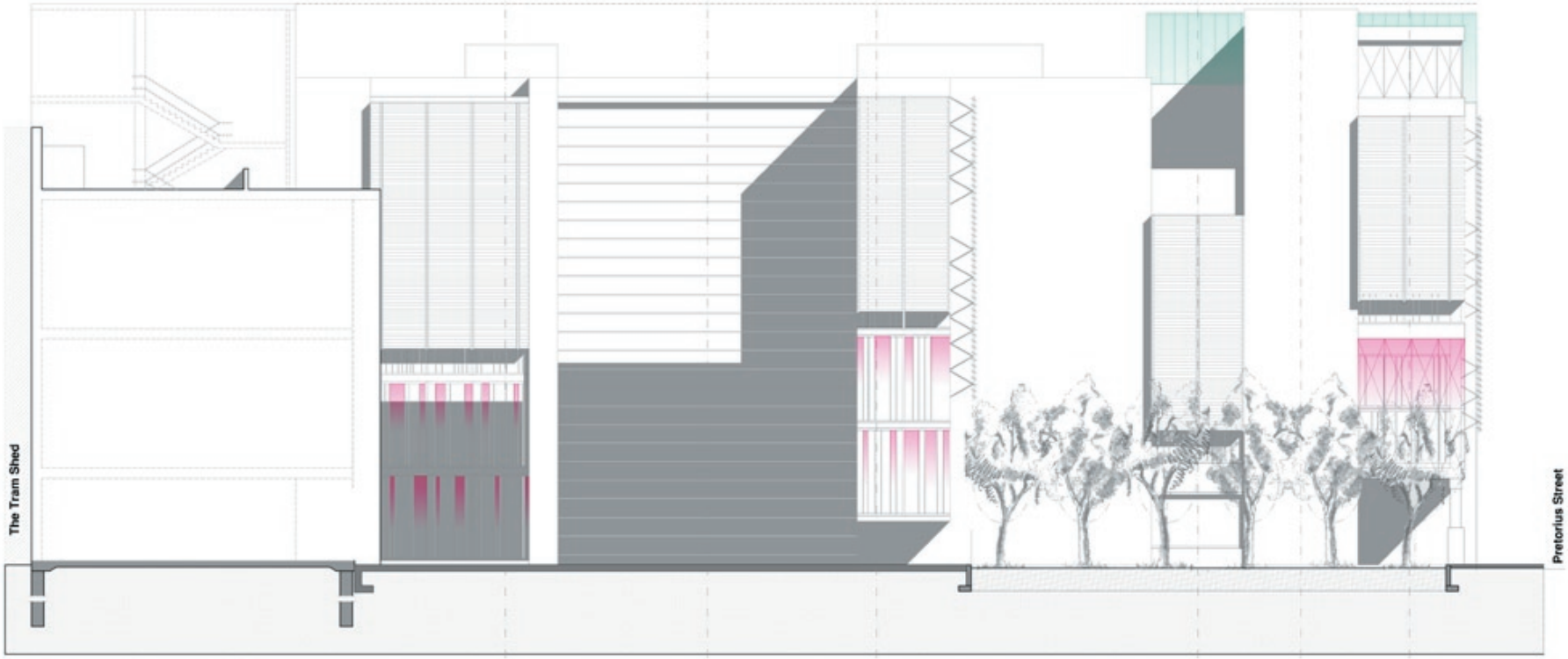


North Elevation 1_100





The STDC in 3D



East Elevation 1_100

Anton Wessels
25476132
State Theatre Dance Centre

STDC

700_IMPLEMENTATION AND CONCLUSION

Implementation

- land ownership
- release of the land
- finance for the STDC building

Conclusion

Land ownership

The site is currently (2006) owned by: GOVPRET (PTY) LTD

Postal Address: P.O. Box 15
PRETORIA
0001

The current (2006) tenant on site is listed as: PREMIUM GOVPRET

Postal Address: P.O. Box 15
PRETORIA
0001

Release of the land

ERF 3451 will need to be subdivided as the proposed site is an empty portion of an occupied site. The thesis proposes that the project will be funded through a joint venture with the South African State Theatre and the Department of Arts and Culture. The proposed site for the State Theatre Dance Centre (STDC) will need to be bought by the clients as the site will have to undergo a notary linking to the State Theatre (ERF R/2909). This also means that neither of the sites/buildings (South African State Theatre or the State Theatre Dance Centre) can be sold without the other; the two sites will be bound legally.

The reason for the notarial linking is that the proposed STDC project contains no parking facilities. The users of the STDC building will make use of the parking facilities available at the State Theatre.

Finance for the STDC building

A joint venture between the South African State Theatre and the Department of Arts and Culture is proposed.
The estimated building cost has been calculated as follows:

Project description	The State Theatre Dance Centre
Date	October 25, 2006
Architect	Anton Wessels
Site	ERF 3451
Method of calculation	R/m² of construction area

The assessment was based on the following:

- Current building costs
- Area according to architect's drawings
- Normal soil conditions for foundations

No allowance was made for the following:

- Professional fees
- Site cost
- Escalation in building cost
- Services
- Legal costs
- Cost of subdivision (the site is the undeveloped portion of ERF 3451)
- Cost of notarial binding
- Approval of construction drawings
- Interest on loans
- Taxes
- Municipal fees

Accommodation schedule:

Description	Area (m²)
- Reception, waiting room and circulation on all floors.	925
- Office spaces	113
- Restrooms	90
- Dance studios	600
- Changerooms	182
- Classrooms	112
- Therapy rooms	52
- Cafeteria and kitchen	184
- Lounge	80
- Gymnasium	100
- Gallery	223
Total construction area:	**2746 m²**

Schedule of Accommodation					
Space discription	**Number of spaces**	**Area/Space (m²)**	**Area (total) (m²)**	**Cost/m² (R)**	**Cost (R)**
Reception, lounge and circulation spaces (ground floor)	1	256	256	R 5,000.00	R 1,280,000.00
Circulation and lounge (first floor)	1	195	195	R 5,000.00	R 975,000.00
Circulation and lounge (second floor)	1	(187 + 32)	219	R 5,000.00	R 1,095,000.00
Circulation and lounge (thirdt floor)	1	187	187	R 5,000.00	R 935,000.00
Circulation and lounge (fourth floor)	1	(63 + 60 + 30)	153	R 5,000.00	R 765,000.00
Office spaces	1	113	113	R 5,500.00	R 621,500.00
Restrooms	2	45	90	R 4,500.00	R 405,000.00
Dance studios	4	150	600	R 7,400.00	R 4,440,000.00
Changerooms	2	91	182	R 4,500.00	R 819,000.00
Classrooms / conference facilities	2	56	112	R 7,500.00	R 840,000.00
Therapy rooms	2	26	52	R 5,500.00	R 286,000.00
Cafeteria and kitchen	1	184	184	R 6,500.00	R 1,196,000.00
Lounge	1	80	80	R 4,500.00	R 360,000.00
Gymnasium	1	100	100	R 5,200.00	R 520,000.00
Gallery	1	223	223	R 5,300.00	R 1,181,900.00
Total area:			**2746**		
Estimated sub-total cost:					**R 15,719,400.00**
Prelims (10% of building cost)					**R 1,571,940.00**
Architectural fee					**R 1,115,059.50**
Total estimated building cost					**R 18,406,399.50**
Professional Fee:					
Base fee (R)	R 54,000.00				
Percentage of Project cost	6.75%				
Total fee (R)	**R 1,115,059.50**				

Fig 7.1: Cost estimation spread-sheet

Conclusion

The proposal for the State Theatre Dance Centre (STDC) originated from an analysis of the environment within the CBD of Pretoria. The project looked at a part of the CBD that the author perceived as one of several vital areas within the city of Pretoria that require remedy and improvement. Through analysis the positioning of new elements in relation to existing elements was introduced within the built fabric. It is anticipated that the intervention can improve the existing condition of the area for pedestrians and users. The vehicle for the thesis is the STDC, but in order for the project to achieve its full potential, the concept for the surrounding environment requires serious consideration.

'The human body brings space to life and dance into being. And the choreographic placement of dancers' bodies describes the volume within which dance is performed. Choreography itself consists of a changing series of images built upon combinations of the human body. For that reason the empty space between dancers is as critical as the space each occupies' (Armstrong and Morgan: 9). The spaces between elements within the built environment are therefore just as essential as the space each element inhabits. It is the space in-between that electrifies the individual element with life and expression.

The STDC building is of such a nature that it can be fully functional without the changes made to the surrounding environment, yet these contextual changes will enhance the project considerably. The STDC is anticipated to become a beacon and landmark within the CBD whilst being a symbol of 21st century architecture.

The project responds sensitively to the environment yet does not attempt to aesthetically 'blend' with the surrounding buildings. The STDC is the product of considering the opportunities and constraints that have been highlighted throughout the thesis whilst attempting to breathe new life and innovation into the environment.

It is the author's opinion that the body of work meets the objectives and needs identified at the outset.

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    - 26 May, 2006.
- Toon Herman _ HVAC engineer. 4 August, 2006.
- Stefan Nortjè _ Civil Engineer.
    - Telephonic: 27 August, 2006.
    - 11 October, 2006.