06 | TECHNICAL INVESTIGATION AND DESIGN RESOLUTION

Technical Concept

Precedents

Materials

Structure

Ventilation Strategy

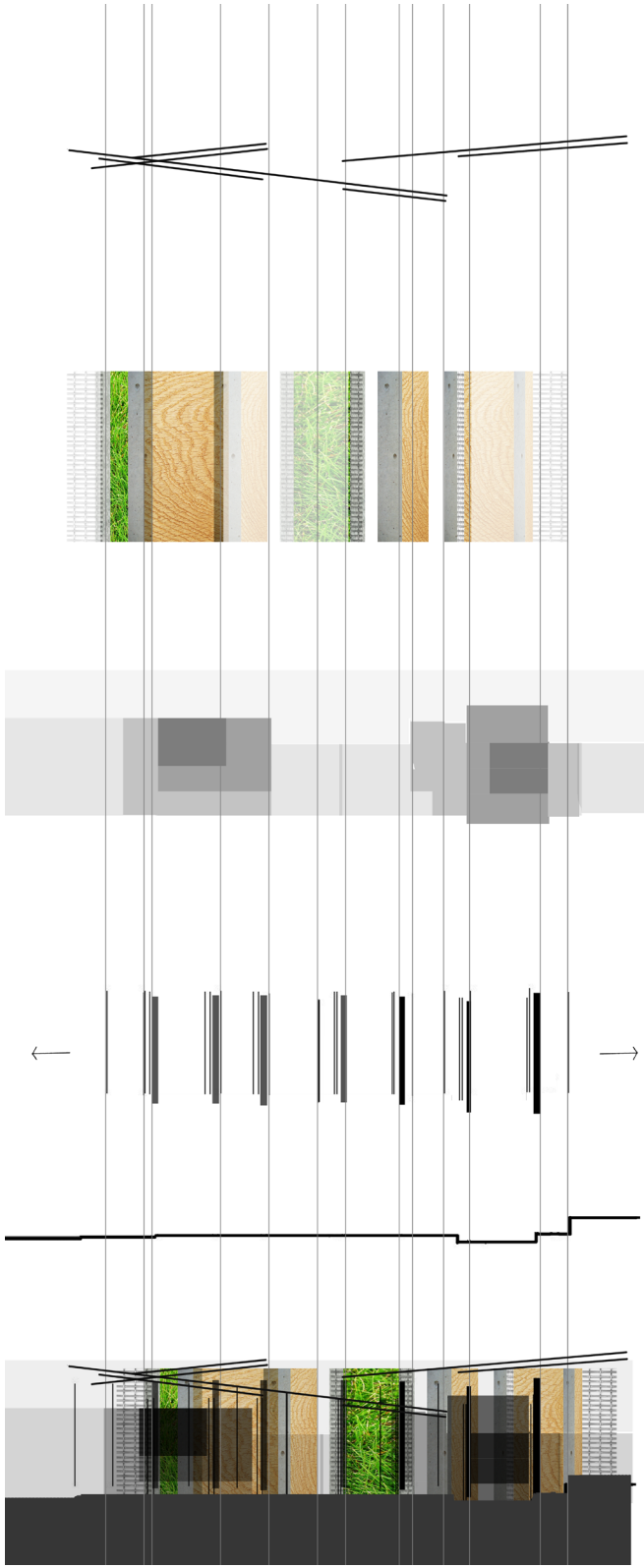
Water Harvesting

Design Resolution

Model Photos

Figure 6.1. Conceptual sketches of technical approach

© University of Pretoria



The canopy unifies and connects old to new, inside to outside

AUGUST 2013

A layering of materiality aids in the legibility and articulation of space

Spaces are intended to flow into one another without any stark transitions

Space is articulated through a layering of vertical elements

An extended surface connects space on an urban scale

A layering of materials and elements construct a physically and visually connected environment

© University of Pretoria

6.1. TECHNICAL CONCEPT

The concept for the technification of the scheme is derived from design intentions, thus emphasising the layered and connected sense of space. A palette of elements including **surface, vertical articulation and canopy**, is formulated in order to ensure the concept is taken through to the resolution of the scheme, manifesting in different ways according to a hierarchy of transitional spaces. These elements are used within each space to articulate the specific spatial requirements.

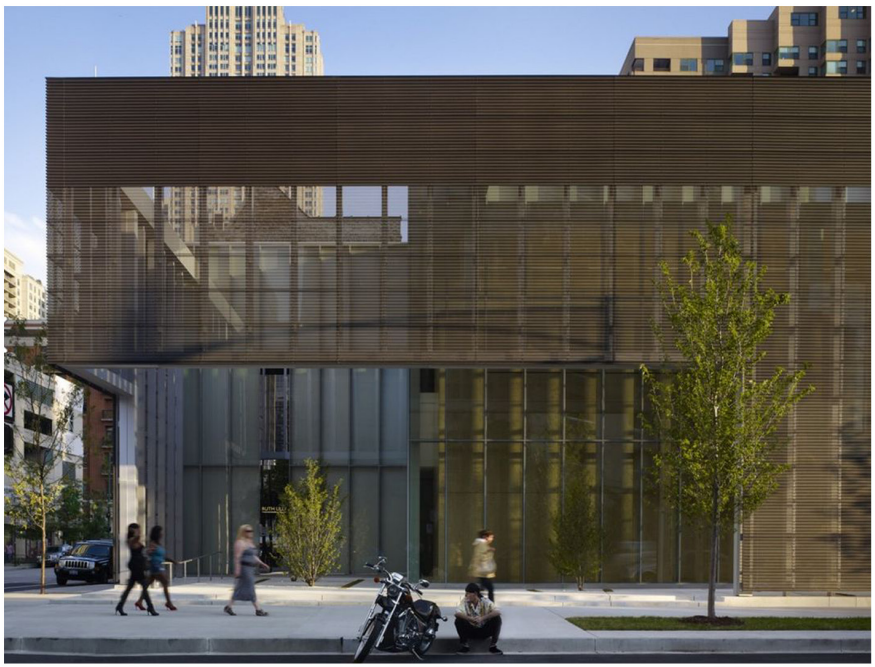
The first element is the **urban surface**, which holds the most significant potential to connect the place to the larger urban area. The intervention thus extends beyond the site, acting both centrifugally and centripetally.

Vertical separations of space are considered as aids in connecting spaces to each other while at the same time providing the separations needed for security and privacy. While the building is not completely open to physical movement, visual connection between spaces are intended to extend much further in order to make users aware of each other's movement and activities, allowing for observation and interaction.

The canopy serves in connecting the place of education as a whole. Due to the very different nature of the existing buildings which form part of the design, and the addition of a new intervention, this element unites the objects to ensure the parts and their connections are legible to the user. The canopy also includes exterior spaces into the arrangement, providing the necessary smooth transition from exterior to interior.

Figure 6.2. Technical concept

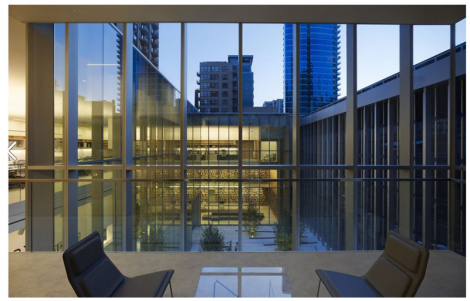
© University of Pretoria



Garden

Transparent edges

Presentation space



Flexible reading spaces

© University of Pretoria

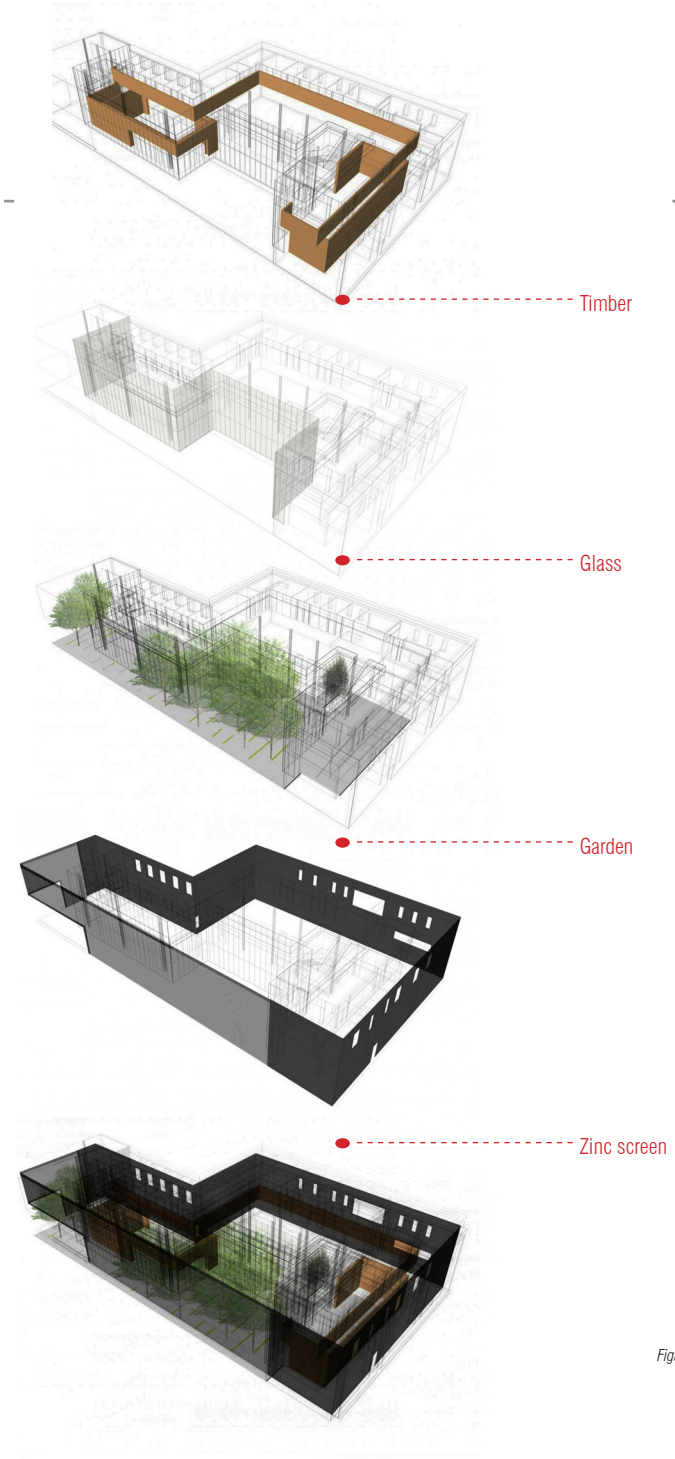


Figure 6.3. John Ronan: Chicago Poetry Foundation

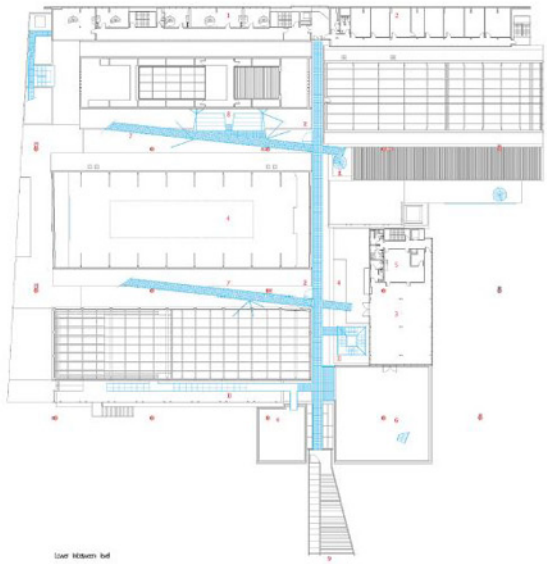
6.2. CHICAGO POETRY FOUNDATION, CHICAGO, USA, 2011. ARCHITECT: JOHN RONAN ARCHITECTS

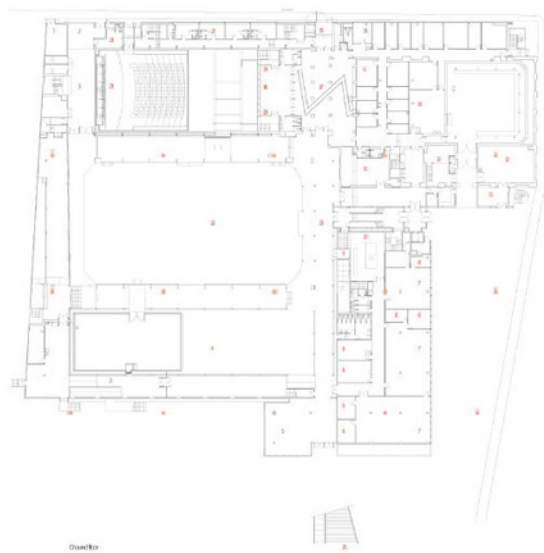
The poetry foundation is designed as a building in constant dialogue with its exterior spaces, considering these spaces as ancillary rooms. It follows that the building slowly unfolds in spatial sequence. The approach through the exterior blurs the hard distinctions between public and private realms. (Broome 2011:63)

The sequence is supported by a variety of materials, varying in acoustic qualities and conceptually articulating the series of layers thorough which a visitor would move. Zinc, Glass and timber peel apart to define the various programmes.

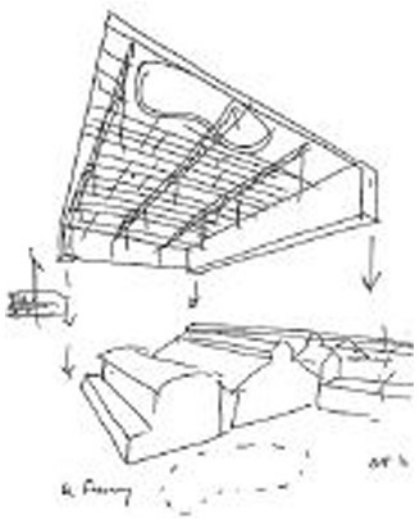
The outer layer of corrugated anodised zinc lends the building a monolithic appearance from the outside. This layer however becomes perforated and takes on a veil like diaphanous quality. While allowing visual access to the street it also acts as a sun shade, while the meandering glass façade with anodised aluminium framing behind it delineates the garden (Detail 2012:466).

© University of Pretoria





© University of Pretoria



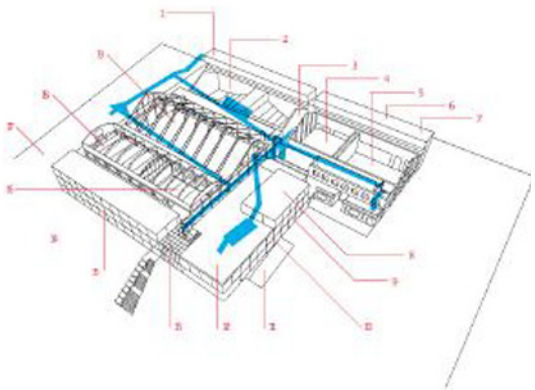


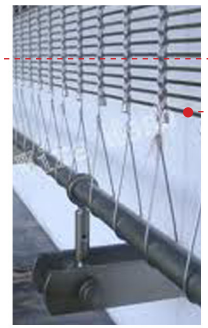
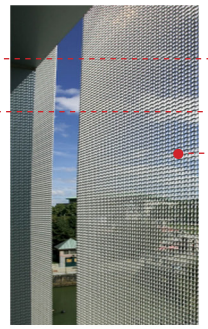
Figure 6.4. Bernard Tschumi: Le Fresnoy centre for Contemporary Arts

6.3. LE FRESNOY NATIONAL STUDIO OF CONTEMPORARY ARTS, TOURCOING, FRANCE, 1992, ARCHITECT: BERNARD TSCHUMI ARCHITECTS

The Le Fresnoy National Studio of Contemporary Arts incorporates a multiplicity of artistic activities under one roof which includes performance art, cinema, video and film production, sound studios, a postgraduate school, a restaurant, several exhibition areas as well as student and artist residences. The existing buildings could have been demolished, but the character and magic of place would be lost, thus the complex of buildings were kept and protected by a large roof stretching across the whole complex which protects the existing structures and provides for all the necessary ducting and services needed.

New facilities were located within the existing volumes, while a fluidity of space was maintained by the development of the in-between spaces. Large horizontal windows covered with transparent glazing ensure an interior flooded with natural light. Hanging walkways and platforms activate the in between space to allow for a variety of appropriations by the users of the centre. The large roof thus acts as the project's common denominator, unifying and connecting the range of spaces which sit underneath it. The intention of the roof is to create and give attention to spaces of leftovers, residue, gaps and margins between the existing and the new. Therein lies the unexpected where unprogrammed events might occur. (Tschumi 2006:38-47)

© University of Pretoria

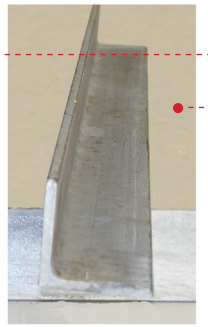
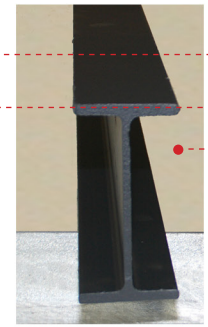
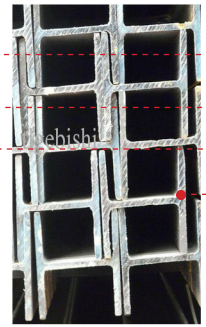



Metal fabric at various densities depending on shading required

Typical connections

Exterior application

Interior application

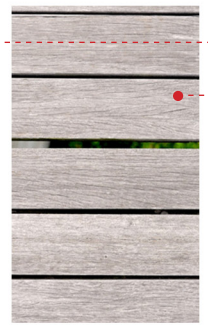




Galvanised steel

Supports

Beams and columns

Trusses

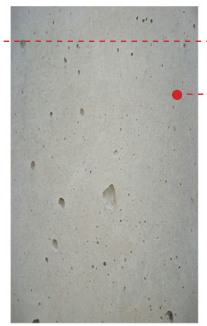
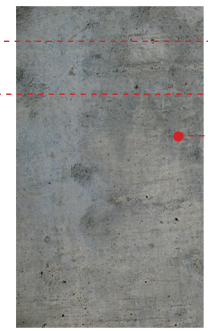


Plywood (Interior)

Balau (Exterior)

Timber floor application

Timber ceiling application

Existing off shutter concrete

New off shutter concrete

Concrete screen floors

Concrete structure with brick infill

© University of Pretoria

6.4. MATERIALS

The materiality of the scheme is configured in a way which enforces the idea of spatial layering and palimpsest, ensuring that spaces flow easily into one another. The layering of materials also relate to the environmental conditions they are found in.

Steel and concrete are used on the exterior while **timber** becomes identifiable within more intimate interior spaces.

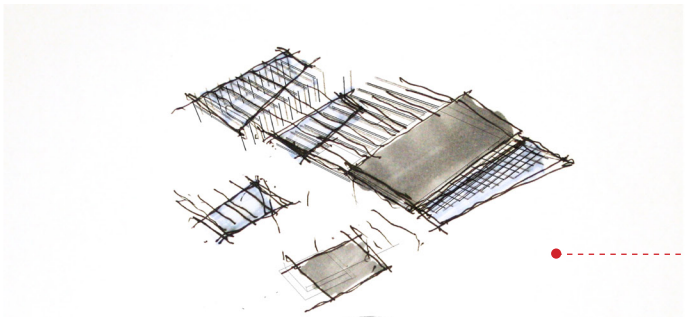
Large openings constructed of **glass** pivot windows in aluminium frames, open up the building for visual connectivity, these are placed within **timber sub frames** so as to extend the material associated with the interior of the building to the vertical interfaces of the building.

Metal fabric is used as a screening device as well as to claim and articulate exterior spaces of the building, the transparency of the fabrics are varied in order to create differentiation and to serve environmental and lighting requirements.

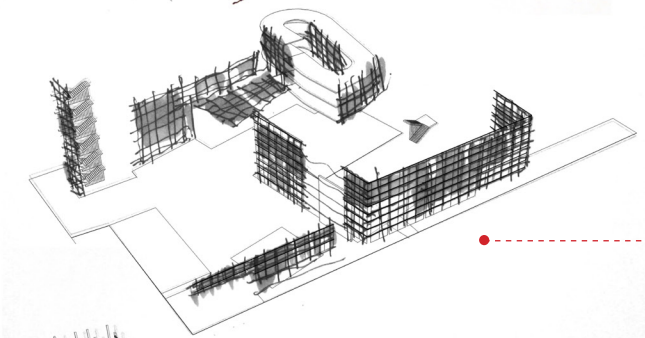
The materiality of space pushes and pulls into one another, ensuring once again the connection and merging of space.

Figure 6.5. Materials

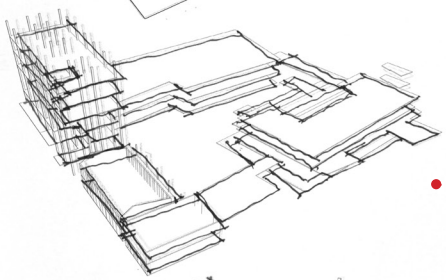
© University of Pretoria



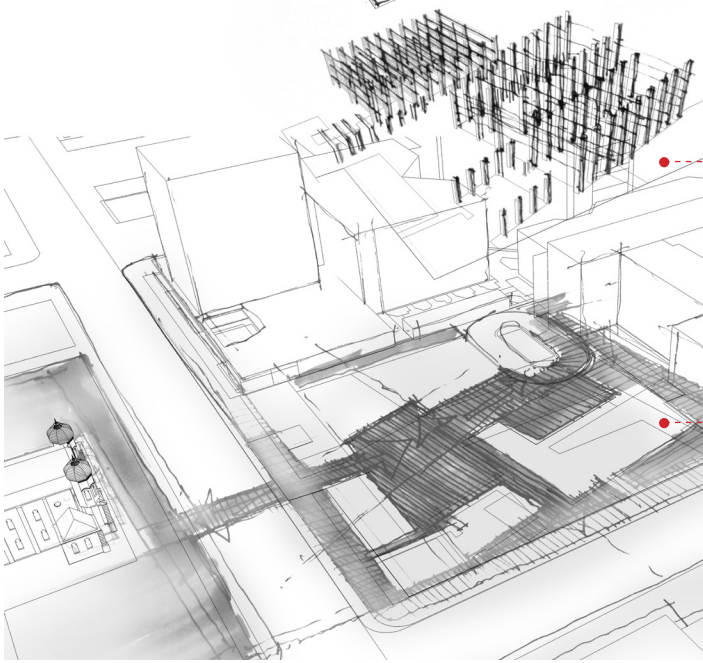
Unifying Canopy



Protective metal fabric screens



Floors considered as secondary urban surfaces



Supporting Columns

Extended Surface

© University of Pretoria

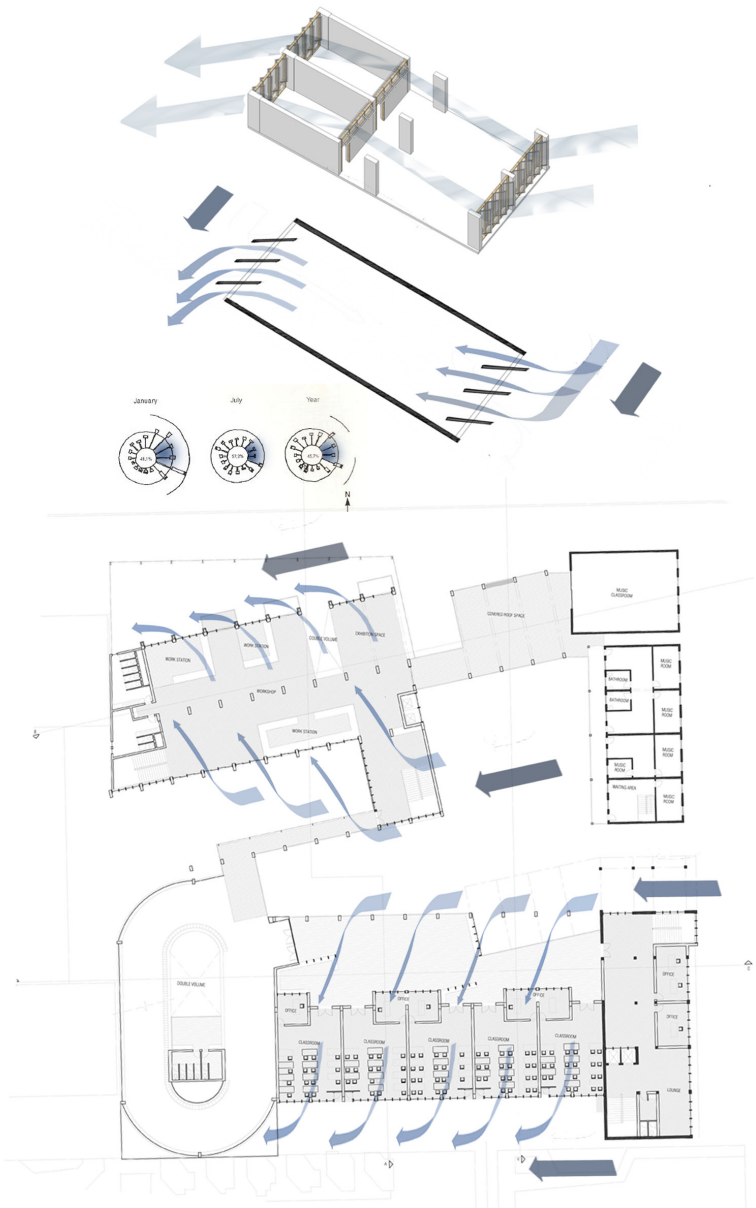


Figure 6.6. Deconstruction of technical palette
Figure 6.7. Diagram of cross ventilation principle
Figure 6.8. Wind rose of Pretoria showing dominant quadrant (reference)
Figure 6.9. Ventilation concept

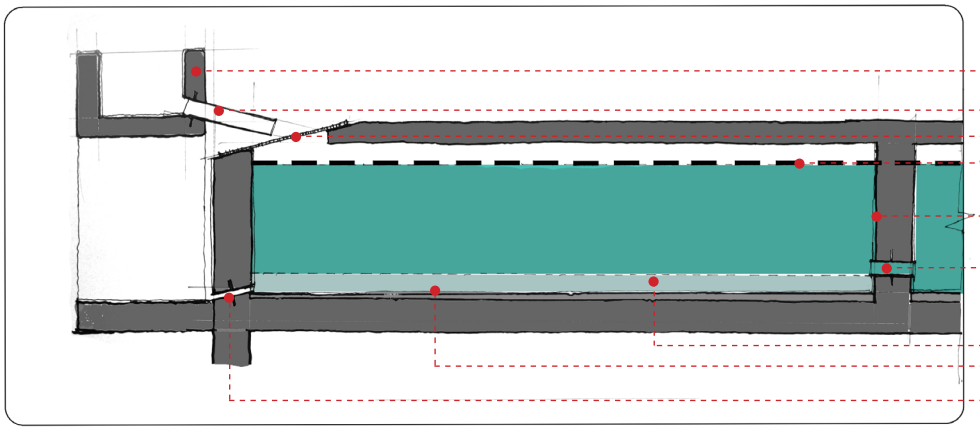
6.5. STRUCTURE

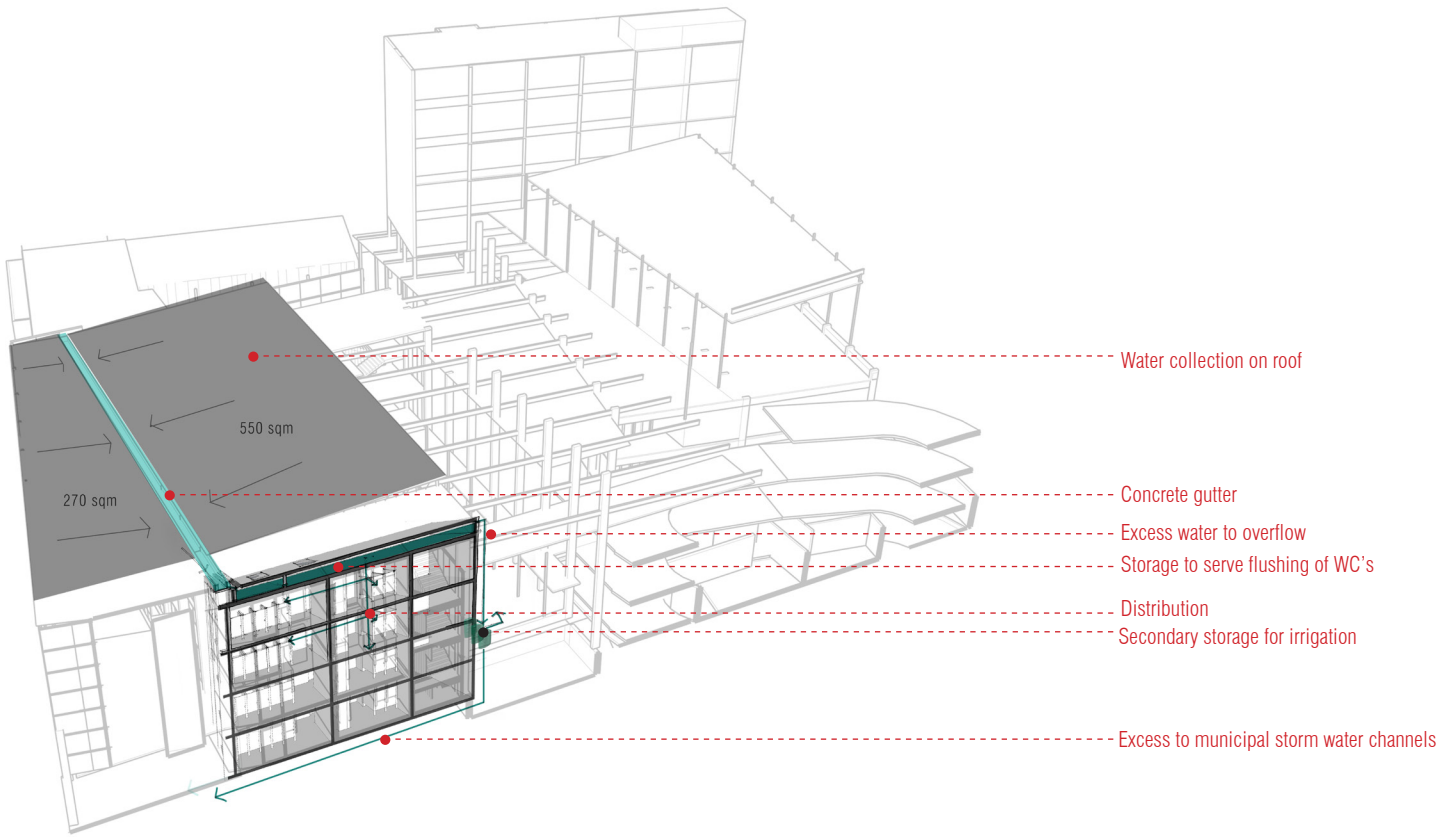
The load bearing structure of the building comprises of heavy concrete columns and floors following on the robust nature of the existing Peugoet Building. These elements are however not used to define space but to create secondary horizontal planes to the extended urban surface upon which space is articulated by **vertical separations and canopies** . Space is defined first and foremost by the lightweight assemblies of steel, timber and metal fabrics. the old and new therefore begin to speak a similar tectonic language, creating a whole comprised of similar parts.

The intervention pushes into existing structures with exposed connections in order for them to be understood as previously autonomous buildings which have extended and become incorporated into a new range of activities and spaces.

New and existing structures push into and pull away from each other creating the most architecturally important space between them - the **in-between**. The merging is not concealed but exposed and reinforced with the rotated grid.

© University of Pretoria





© University of Pretoria

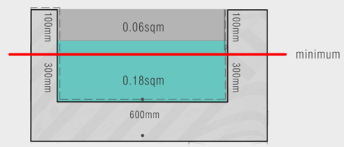
COLLECTION

month	average monthly precipitation	yield (p x a x 0.8)
january	0.136m	89 cubic meters
february	0.075m	49 cubic meters
march	0.082m	53 cubic meters
april	0.051m	33 cubic meters
may	0.013	8 cubic meters
june	0.007	4 cubic meters
july	0.003	2 cubic meters
august	0.006	4 cubic meters
september	0.022	14 cubic meters
october	0.071	46 cubi meters
november	0.098	64 cubic meters
december	0.110	72 cubic meters

GUTTER CALCULAIONS

minimum cross section of gutter required if 7cm squared is sufficient for 5sqm of roof area = 0.12sqm

x 1.5 for waterproofing and overflow safety = 0.18sqm



STORAGE AND REQUIRED VOLUME

floor	occupancy	population (area x occupation)	water required per day (p x 1.5 per day x 4 litres)
gound floor	A1retail - 10 p/sqm	45	270 litres
first floor	A3 instruction - 5p/sqm	90	540 litres
second floor	G1 offices - 1p/15sqm A3 place of instruction 5p/sqm	65	390 litres
third floor	A3 place of instruction - 5p/sqm	90	540 litres

TOTAL OCCUPATION 435 people
TOTAL WATER REQUIRED PER DAY 1740 litres
TOTAL WATER REQUIRED PER MONTH: 52200 litres
MINIMUM STORAGE REQUIRED 53 m3
AVAILABLE WATER STORAGE: 58m3

Figure 6.10. Water storage diagrams
Figure 6.11. Water storage calculations

6.6. VENTILATION STRATEGY

Horizontal pivot windows which rotate both ways make it possible to promote the ingress or deflection of prevailing winds. This process is enhanced by the orientation of the buildings and open spaces between them. While the programme does not require incoming air to be cooled, the thermal mass provided by the heavy concrete floors maintains a regular temperature within the building. Well insulated roof structures and double glazing support the thermal insulation of the building.

6.7. WATER HARVESTING

The large area of the new roof makes it possible to harvest large amounts of water. The sizing of the gutter was determined by this, but was made larger in order to handle excessive amounts of water during intense high veld thunderstorms.

Due to the amount of harvested water exceeding the available space for storage the storage space was determined by the amount needed to flush all of the waste closets in the new building. Other fixtures such as hand basins and drinking water is municipally supplied.

The rooftop tank has an overflow which transports excess water into secondary tanks for irrigation, and the remaining waste is transported to the municipal storm water system.

© University of Pretoria

6.8. FINAL DRAWINGS

© University of Pretoria

FIRST FLOOR 1:200

© University of Pretoria

SECOND FLOOR 1:200

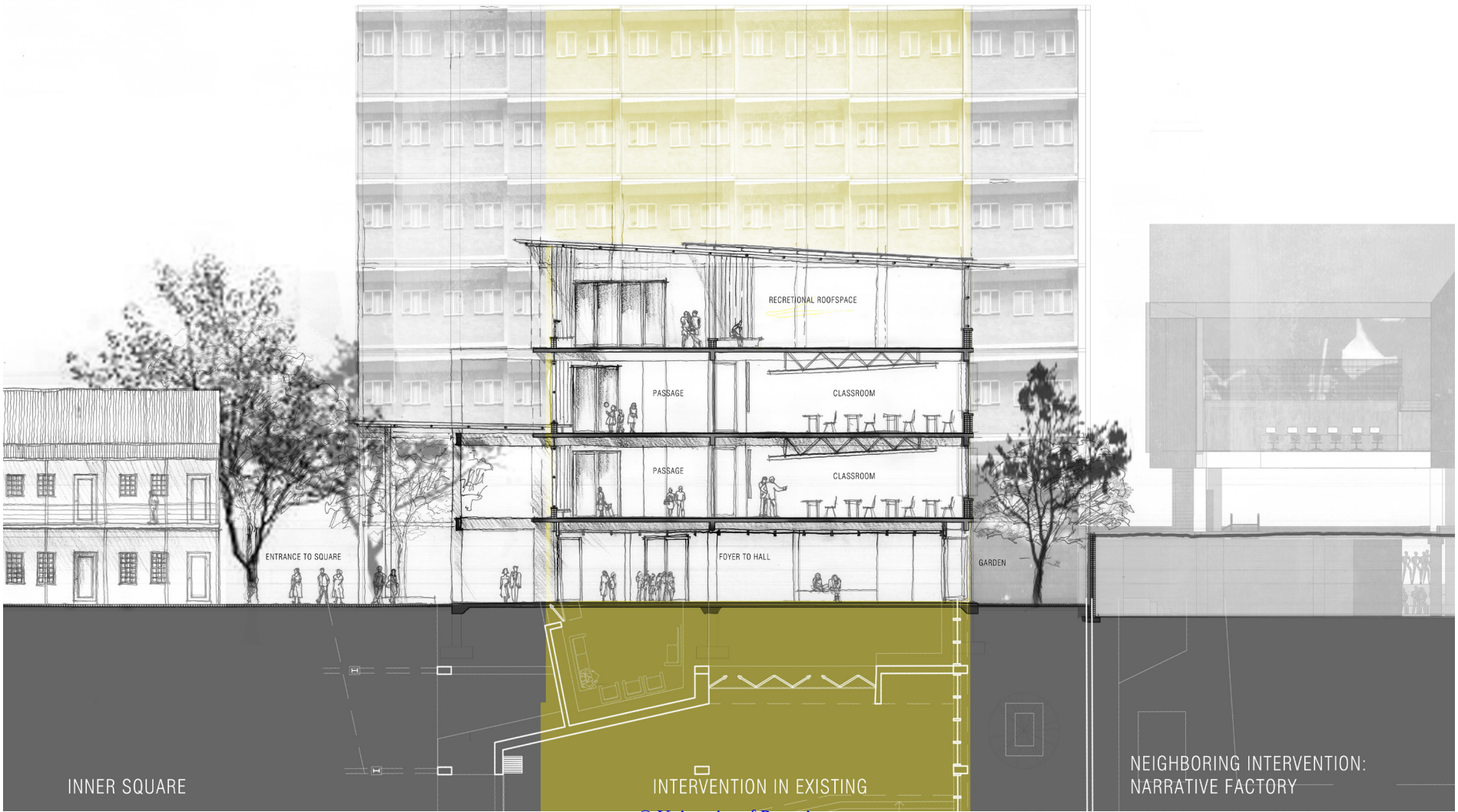
© University of Pretoria

THIRD FLOOR 1:200

© University of Pretoria

CTION CC 1:100

© University of Pretoria



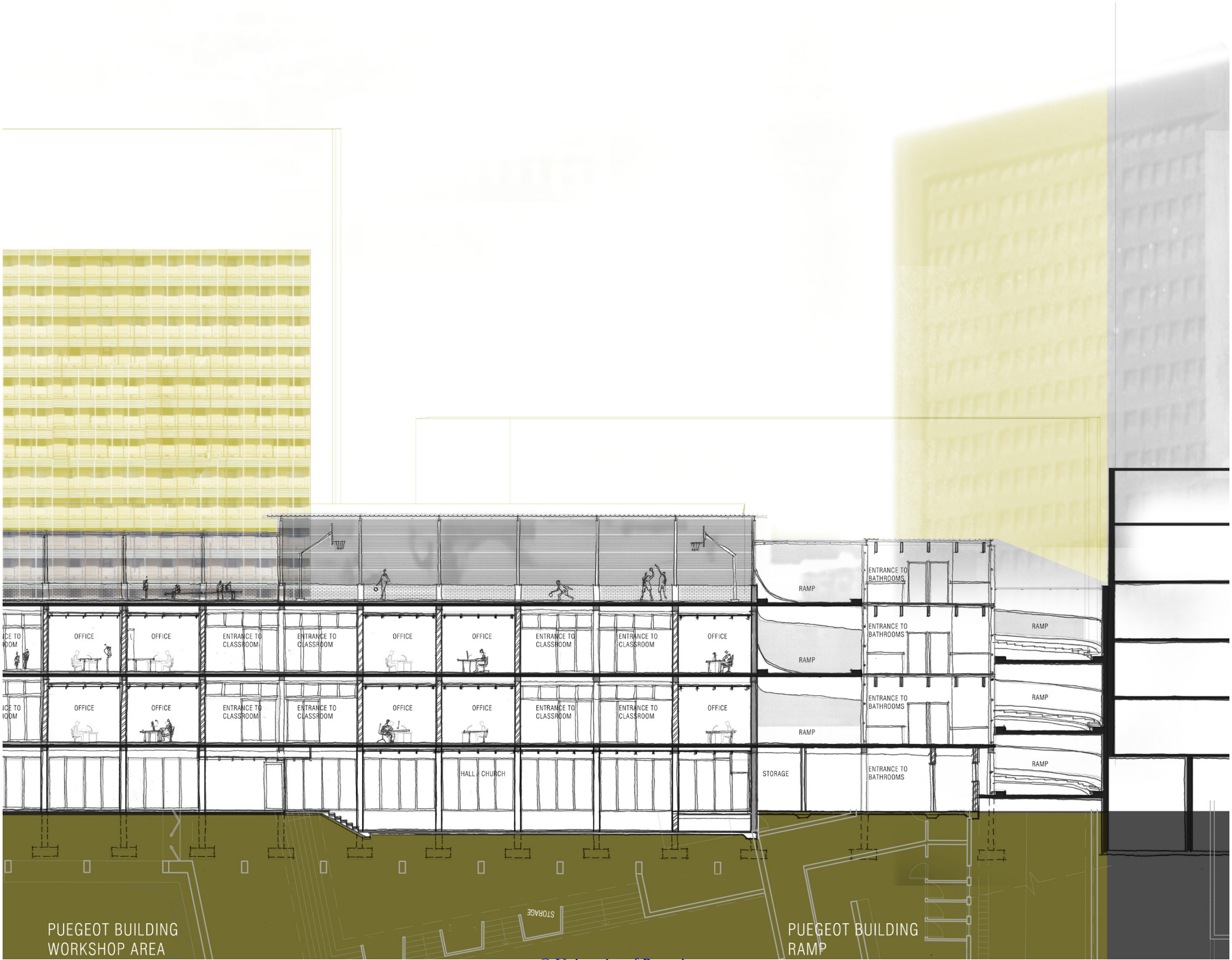
© University of Pretoria

CTION DD 1:100

STRUBEN STREET

PUEGEOT BUILDING
ADMIN BLOCK

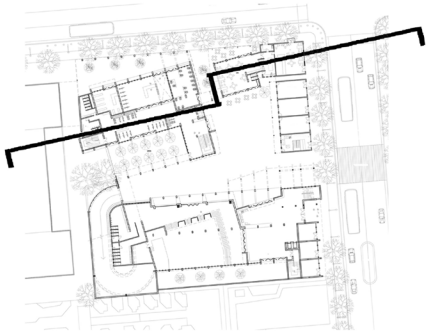
© University of Pretoria



PUEGEOT BUILDING
WORKSHOP AREA

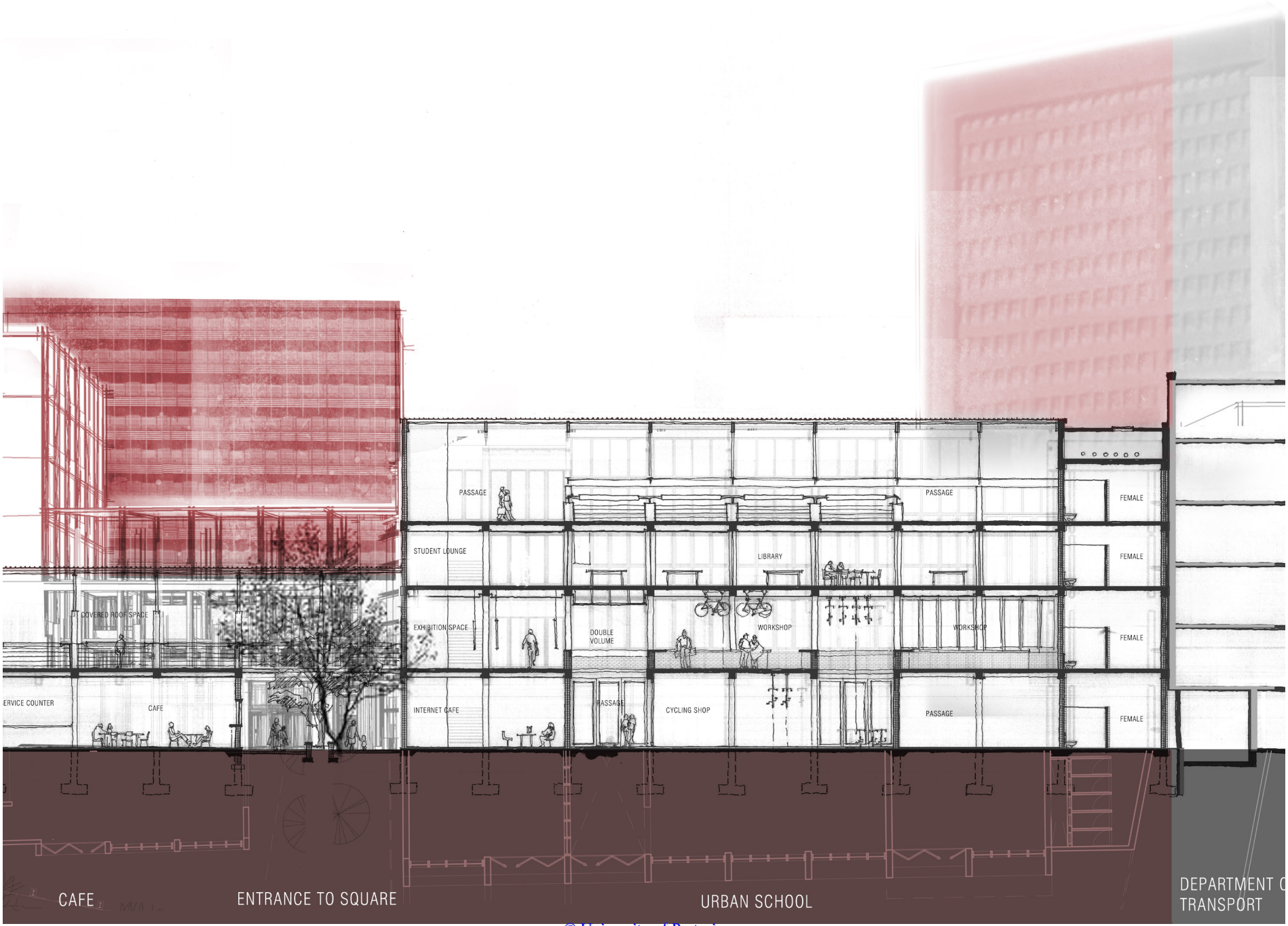
PUEGEOT BUILDING
RAMP

© University of Pretoria



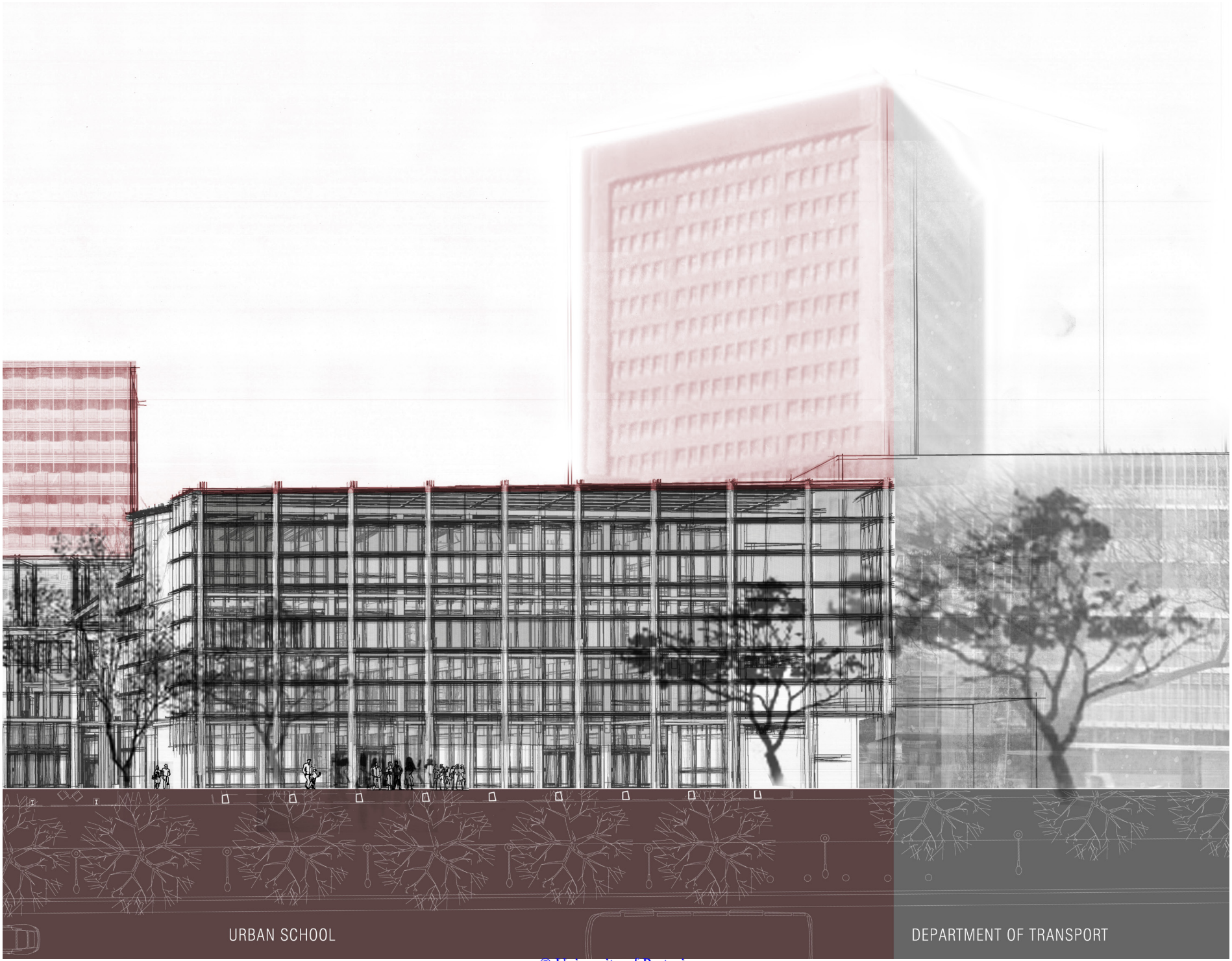
SECTION BB 1:100

© University of Pretoria

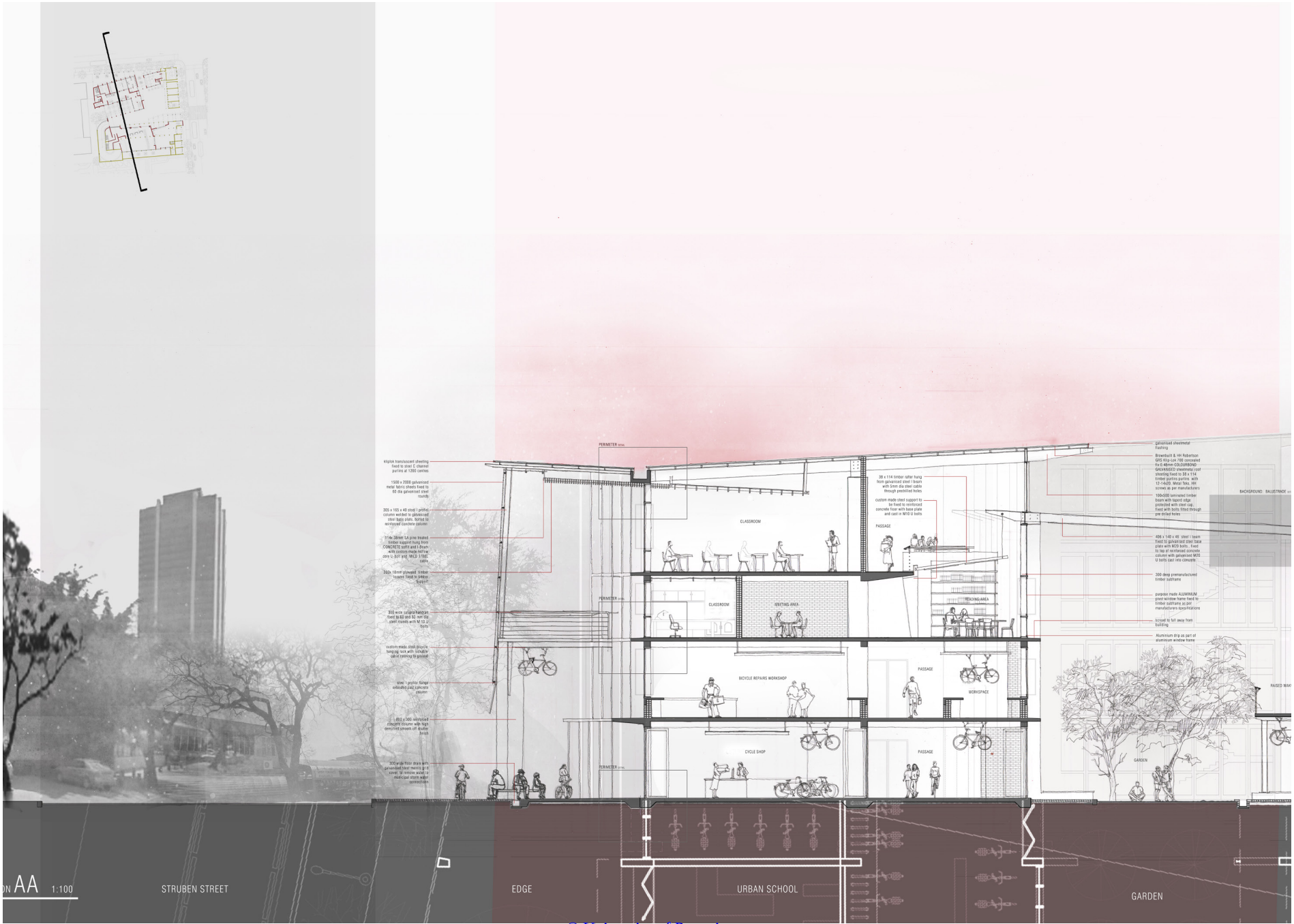


© University of Pretoria

© University of Pretoria



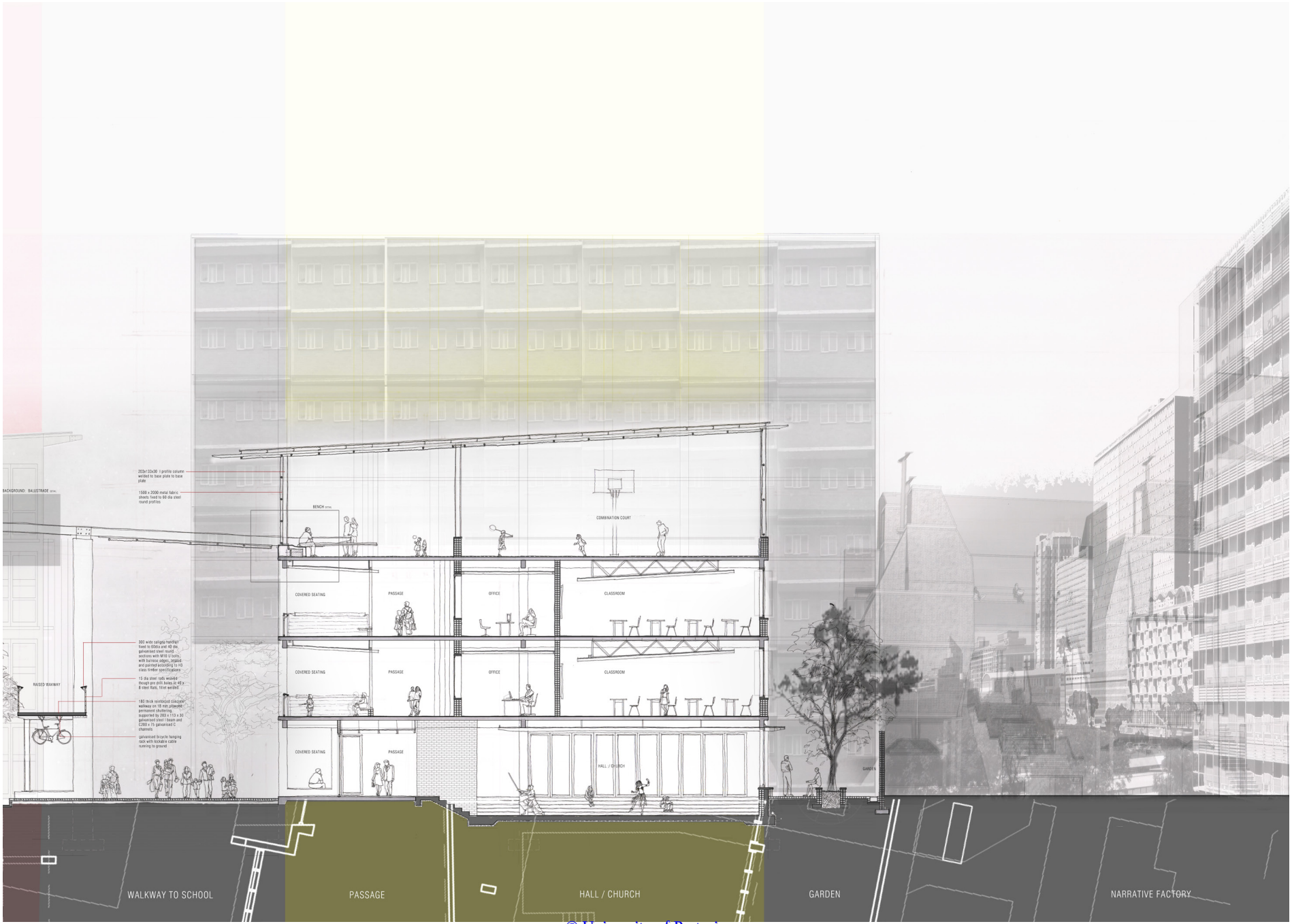
© University of Pretoria



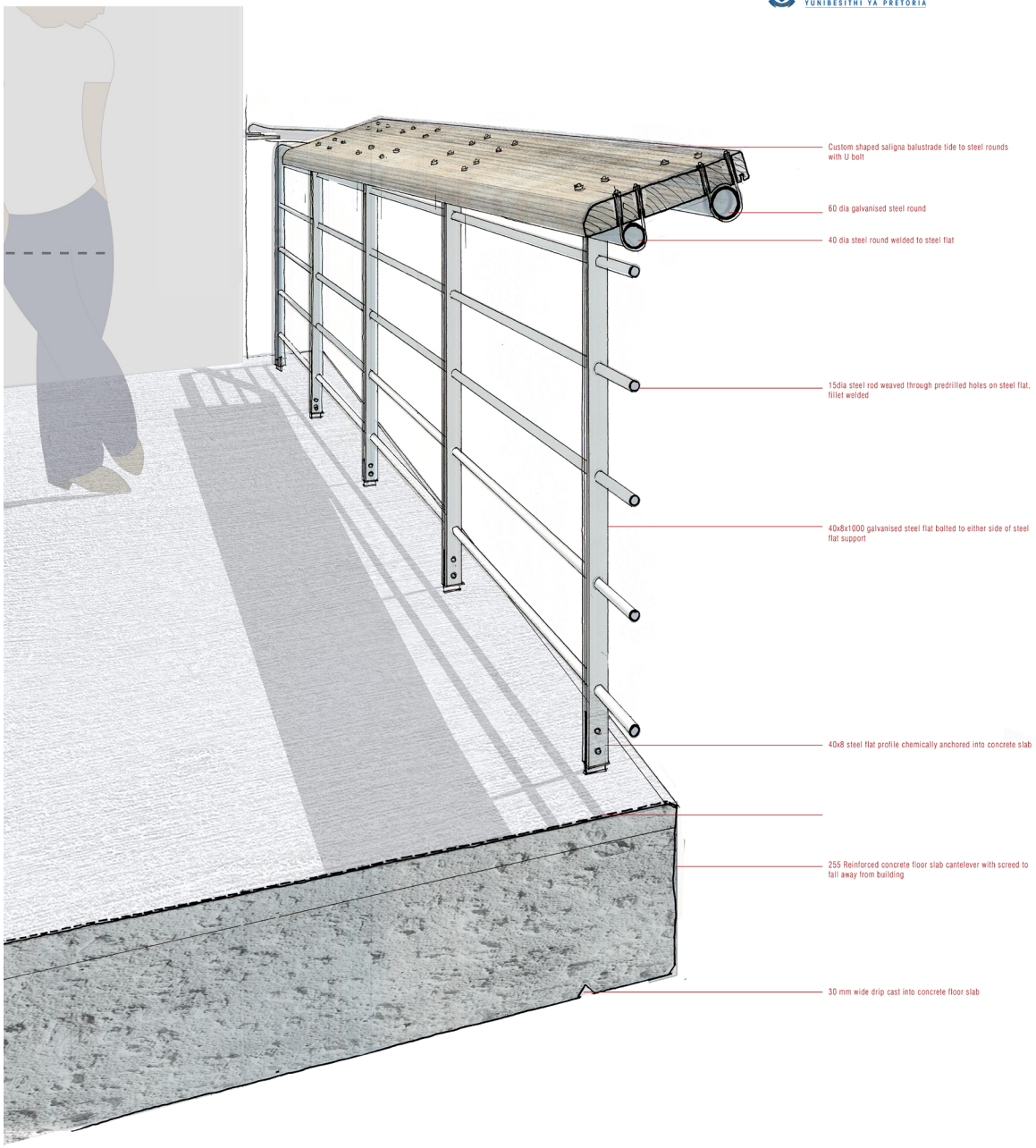
AA 1:100

© University of Pretoria

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA



© University of Pretoria

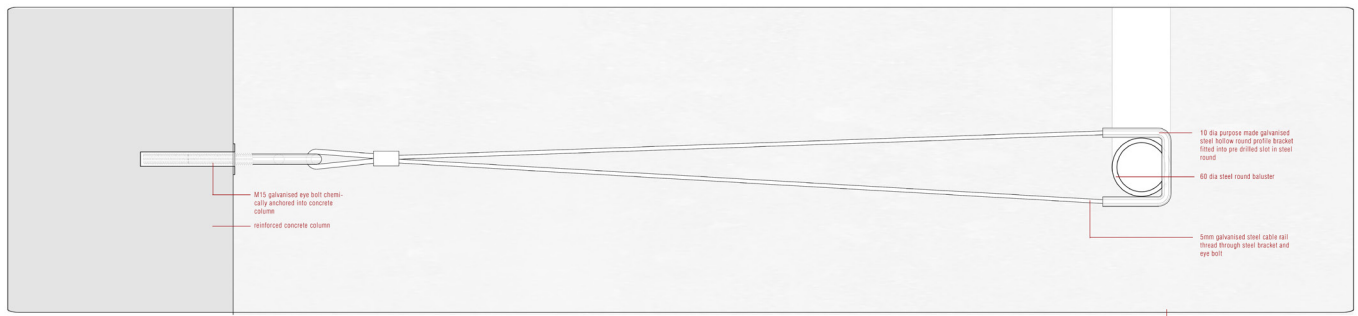


BALUSTRADE DETAIL NOT TO SCALE

© University of Pretoria

6.9. DETAILS

RAILING DETAIL SECTION 1:2



RAILING DETAIL PLAN 1:2

Figure 6.21. Detail 01 Balustrade

© University of Pretoria

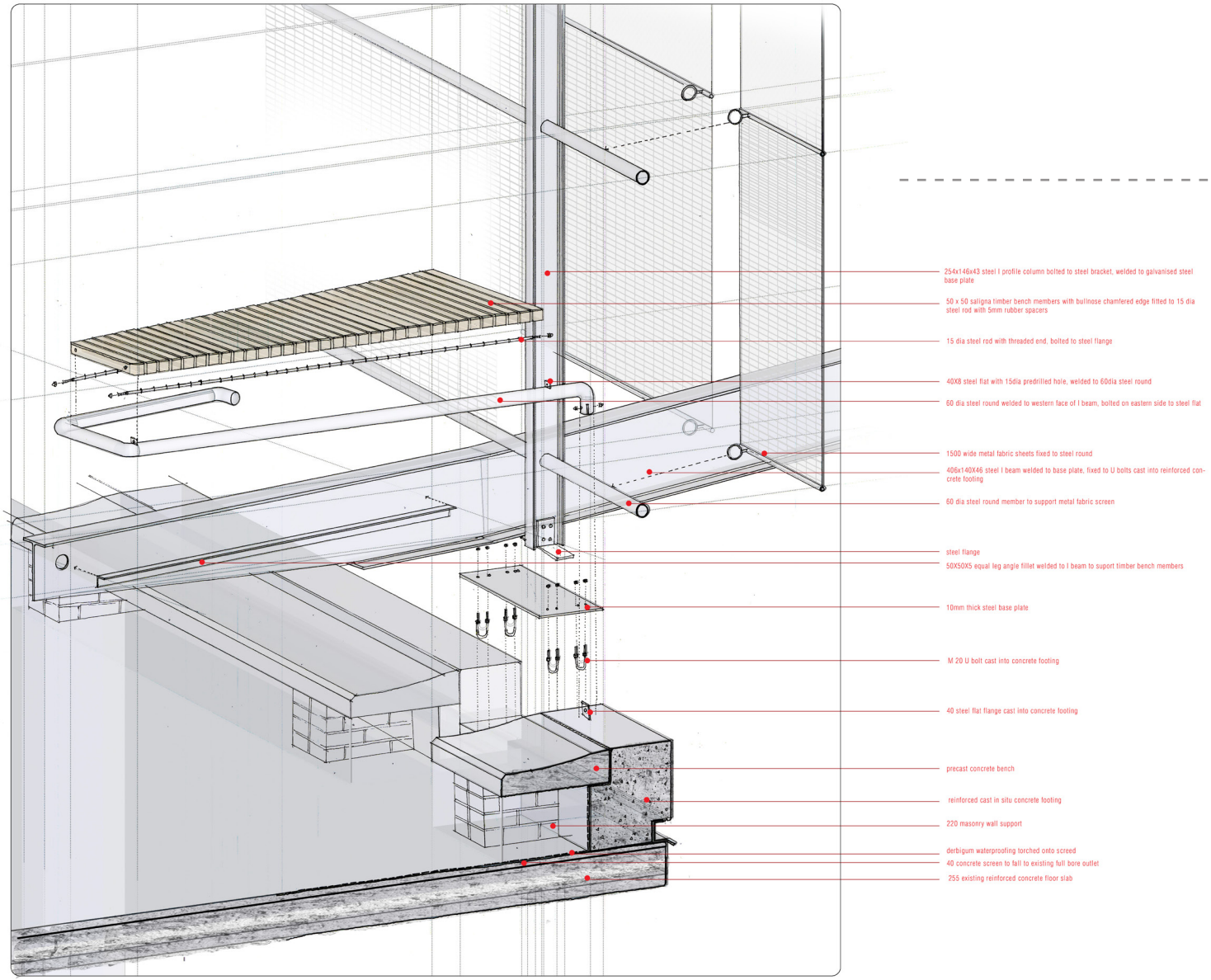
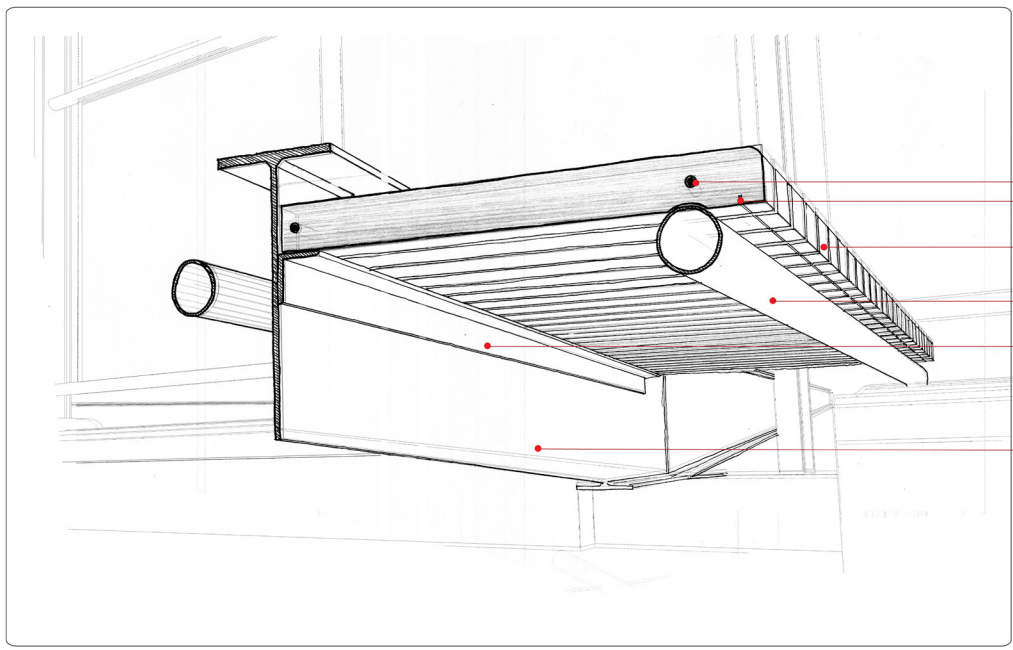


Figure 6.22. Detail 02 Bench

BENCH DETAIL NOT TO SCALE

© University of Pretoria



© University of Pretoria

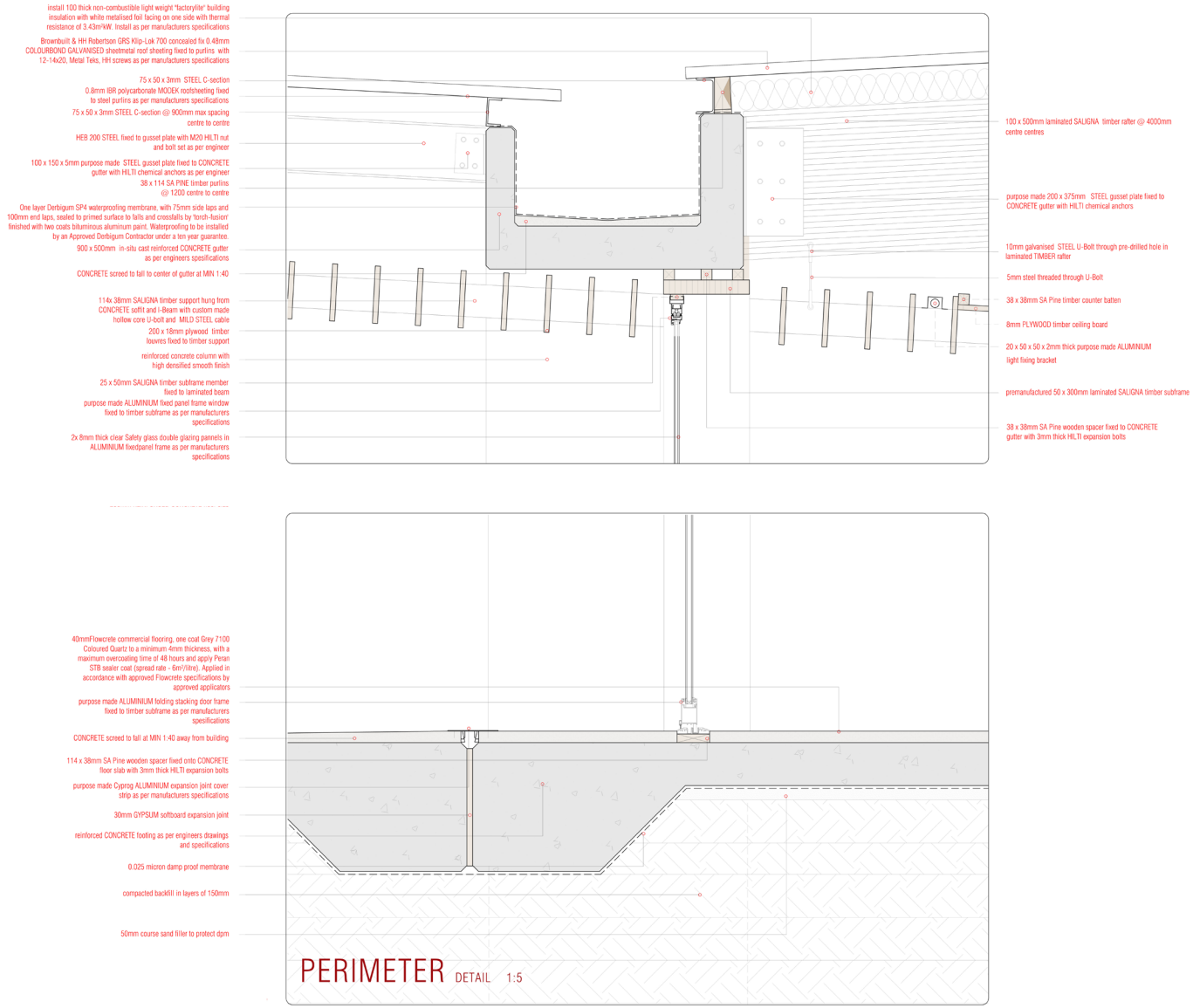
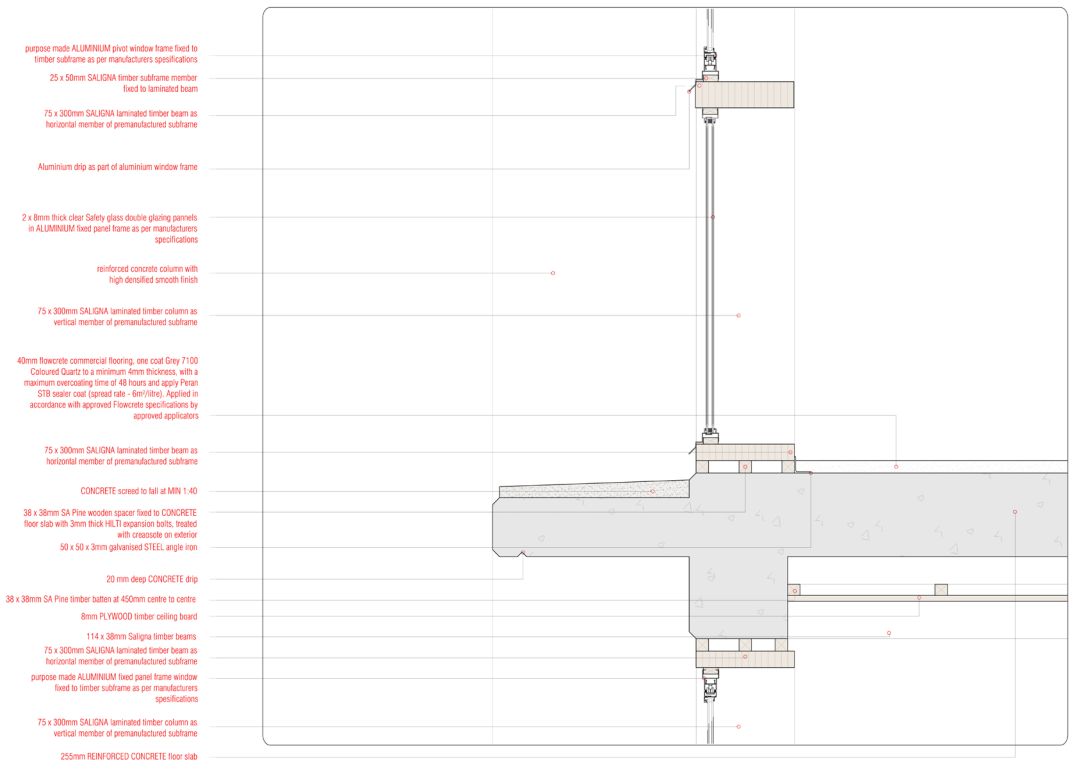


Figure 6.23. Detail 03 Perimeter details

© University of Pretoria



© University of Pretoria

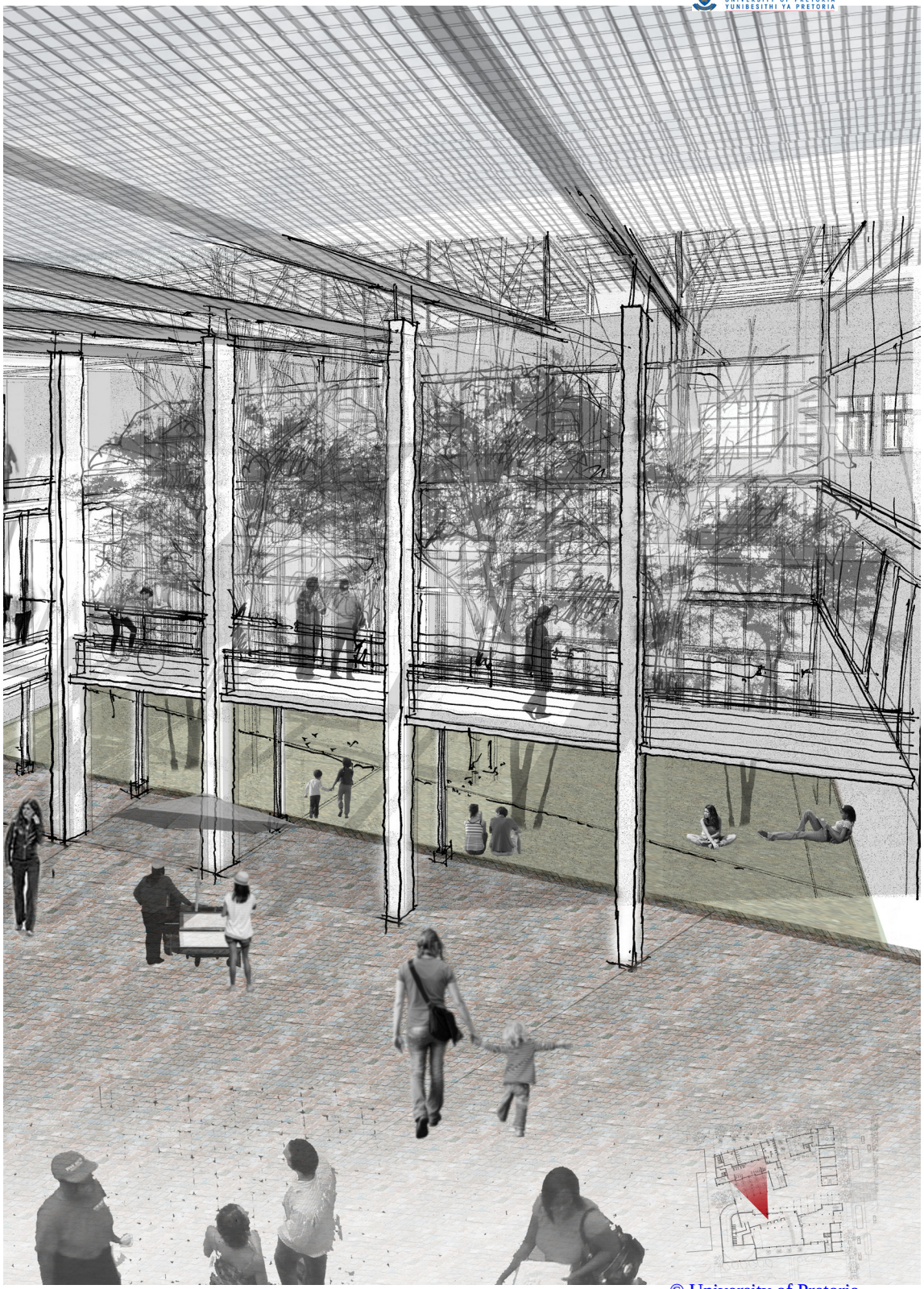


Figure 6.24. 3D View: Garden

© University of Pretoria

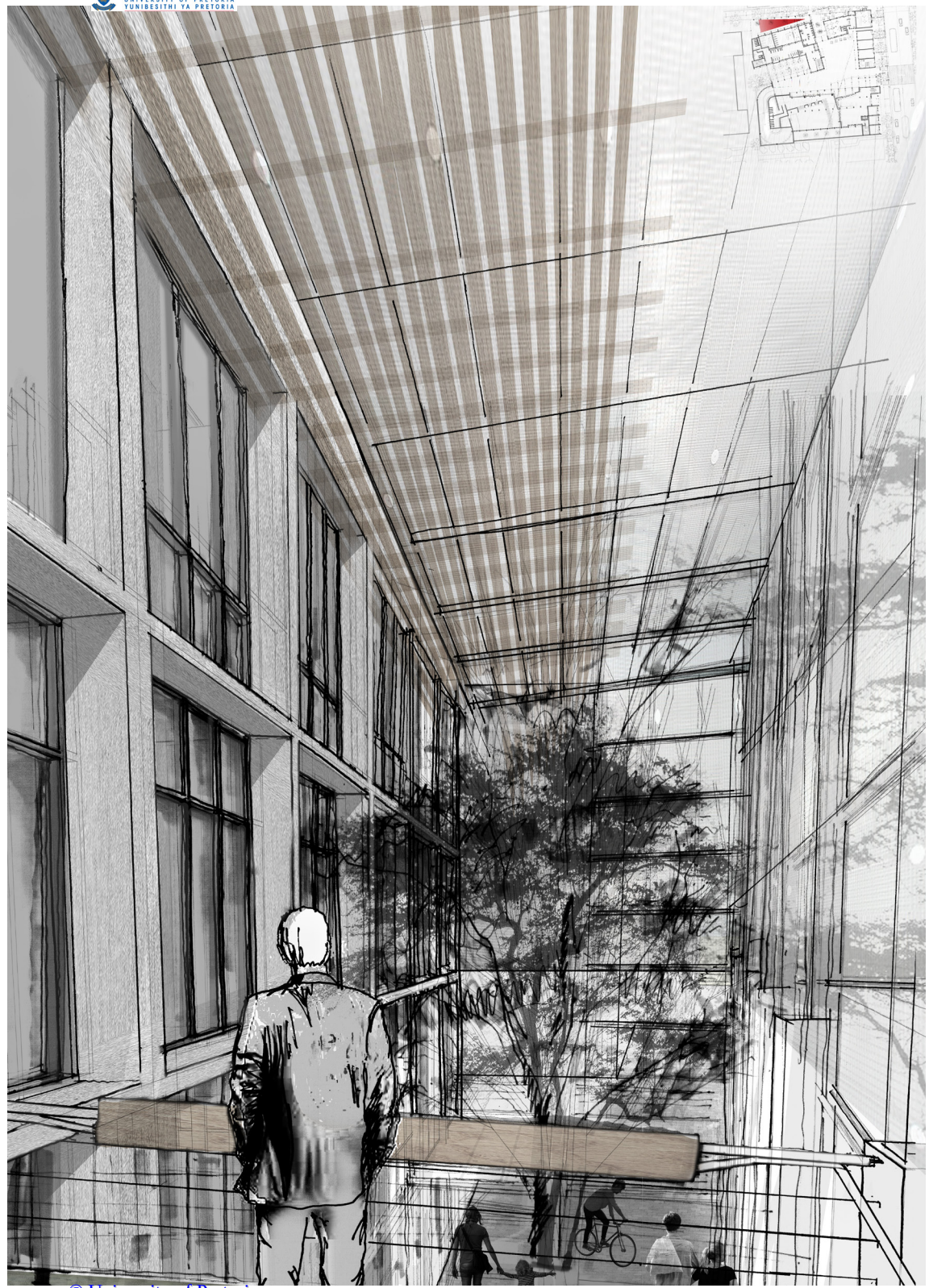


Figure 6.25. 3D View: Northern Edge

© University of Pretoria

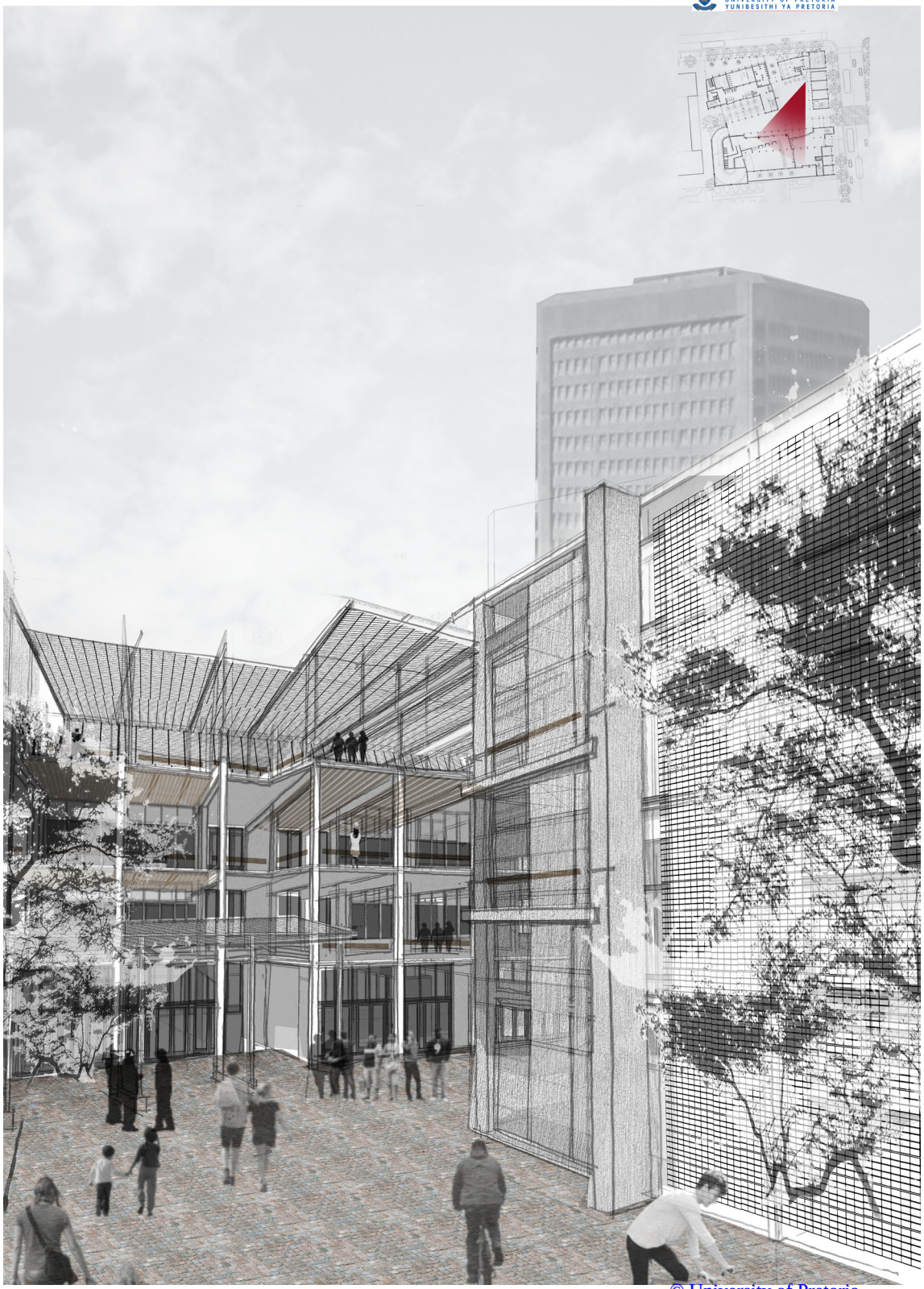


Figure 6.26. 3D View: Public Courtyard looking to existing

© University of Pretoria

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Figure 6.27. 3D View: Public Courtyard looking to cafe

© University of Pretoria

© University of Pretoria

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

INTERVENTION IN EXISTING

NEW

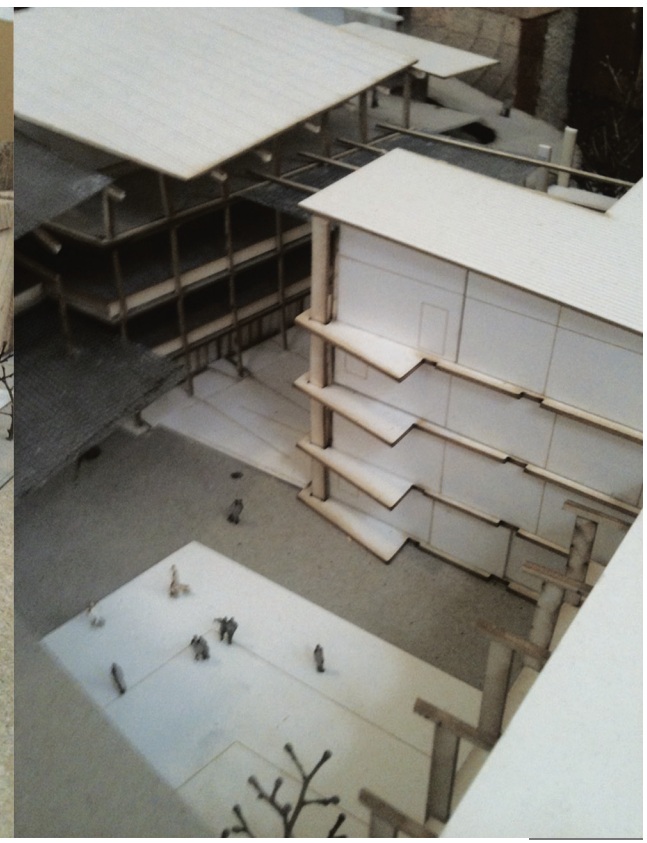
STRUBEN STREET

EASTERN STREET VIEW

© University of Pretoria

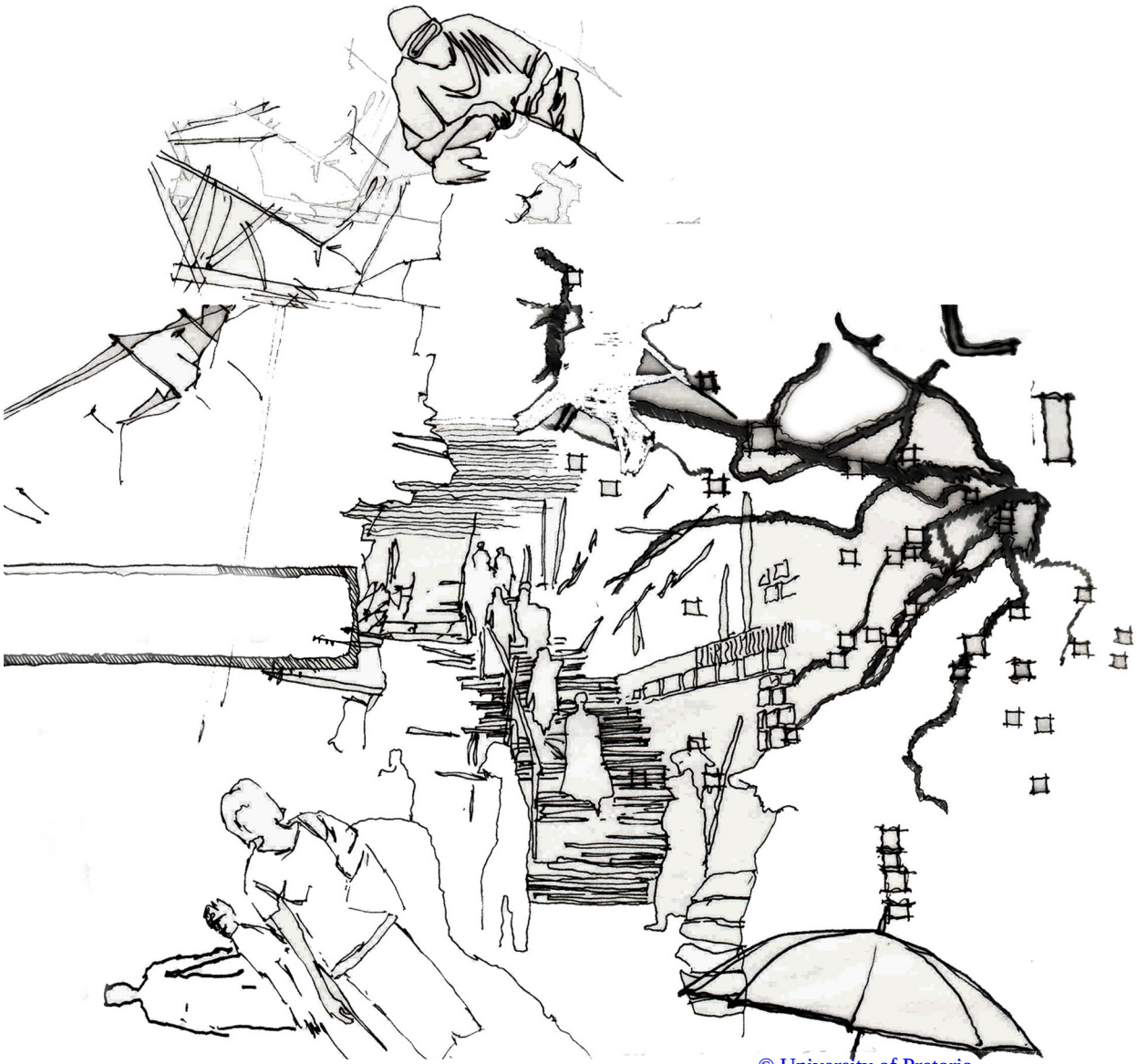
© University of Pretoria

6.10 MODEL PHOTOS



© University of Pretoria

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA



© University of Pretoria

07 | CONCLUSION

While urban planning aims at creating positive urban environments, the good intentions are rarely carried through in specific interventions. This thesis has shown how an intervention in the Pretoria city centre does not exist alone, but is inserted in a manner which respects and enriches the environment around it. It is intended to serve as an example with the hope that continued development will follow suit.

The City already exists - our responsibility as architects is not to add a multiplicity of structures born from ideals which will never be realised, but to use our urban environment to enrich and inform the architecture which we create.

© University of Pretoria

BENTLEY, I. 1985. Responsive Environments: a Manual for Designers, Routledge.

BROOME, B, 2011. Open Verse. Architectural Record. 11 November 2011.p 63-90.

COCHRANE, M. 2010. Transcending Thresholds: Architecture in Transition. Online thesis. Bartlett School of Architecture. http://ephemeralarchitecture.files.wordpress.com/2011/01/m-cochrane-yr-5-thesis-copy2.pdf. Accessed 2013-05-16

CRUZ, M. & COLLETTI, M. 2001. Interfaces/intrafaces. Research output

CRUZ, M & GAGE, S. 2009. Interaction. In Allen, L. Borden, I. O'Haire, N. Spiller, N. Bartlett designs: Speculating on Architecture. John Wiley and Sons. 2009

Dokumentasie: Die Panagos gebou [S.a.] Argief: Department of Argitektuur. Universiteit van Pretoria.

LE ROUX, S. & BOTES, N. 1992. Plekke en Geboue van Pretoria. Volume Twee. Pretoria: Stadsraad van Pretoria

FISHER, K. 2007. Pedagogy and Architecture. Architecture Australia. 96, 55-58.

FRANCK, K. A. & STEVENS, Q. 2007. Tying down loose space. Loose space: Possibility and diversity in urban life. Edited by Karen A. Franck. New York: Routledge. 1-33.

GEHL, J. 2010. Cities for people. Washington: Island Press

GREEN, M. Transitional Space. Available at: www.changets.wordpress.com/212/01/23 accessed 2013 05 23

HERTZBERGER, H. 2005. Lessons for Students in Architecture. Rotterdam: 010 Publishers.

HOLM, D. & VILJOEN, R. 1996. Manual for Energy Conscious Design. Department of Mineral and Energy affairs: Pretoria.

JOUBERT, O. & BAKKER, K. 2009. 10+ Years 100+ Buildings: Architecture in a Democratic South Africa. Cape Town: Bell-Roberts.

© University of Pretoria

08 | REFERENCES

KOOLHAAS, R. 1994. Delirious New York: a Retroactive Manifesto for Manhattan. New York: Monacelli Press.

Levin, A. 2013. Potteries Thinkbelt – Cedric Price. http://mfareview.wordpress.com/2011/06/23/potteries-thinkbelt-education-architecture-and-a-wayfoward/ Accessed 2013 03 10

LYNCH, K. 1960. The Image of the City. Cambridge: MIT press.

MALAN, C. 2013. Approaches to Urban Design: City of Tshwane Urban Renewal Project. Power point presentation. Arup, Pretoria, South Africa .

PORTER, T. 2004. Archispeak: an illustrated guide to architectural terms. New York: Routledge.

TRANCIK, R. 1986. Finding Lost Space: Theories of Urban Design. New York: Van Nostrand Reinhold Company

TSCHUMI, B. 1996. Architecture and Disjunction. Cambridge: MIT press.

TSCHUMI, B. 2006. Le Fresnoy National Studio for Contemporary arts. in UME 7 pg 38-47

TSCHUMI, B. 1996. Six Concepts - Excerpt from Architecture and Disjunction. Available at: http://famusoa.net/achin/courses/tschumi/6concepts.pdf accessed 2013 02 26

NOERO, J. Educational Buildings. Available at: http://www.noeroarchitects.com/architecture-projects-education/ accessed 2013 04 01

Author Unknown. FET Colleges. Internet: www.fetcolleges.co.za. Available at 2013 03 10

Author unknown. 2012. Poetry Foundation in Chicago. Detail: Review of Architecture and Construction Details. Vol 2012-5. p 466-468.

© University of Pretoria

© University of Pretoria

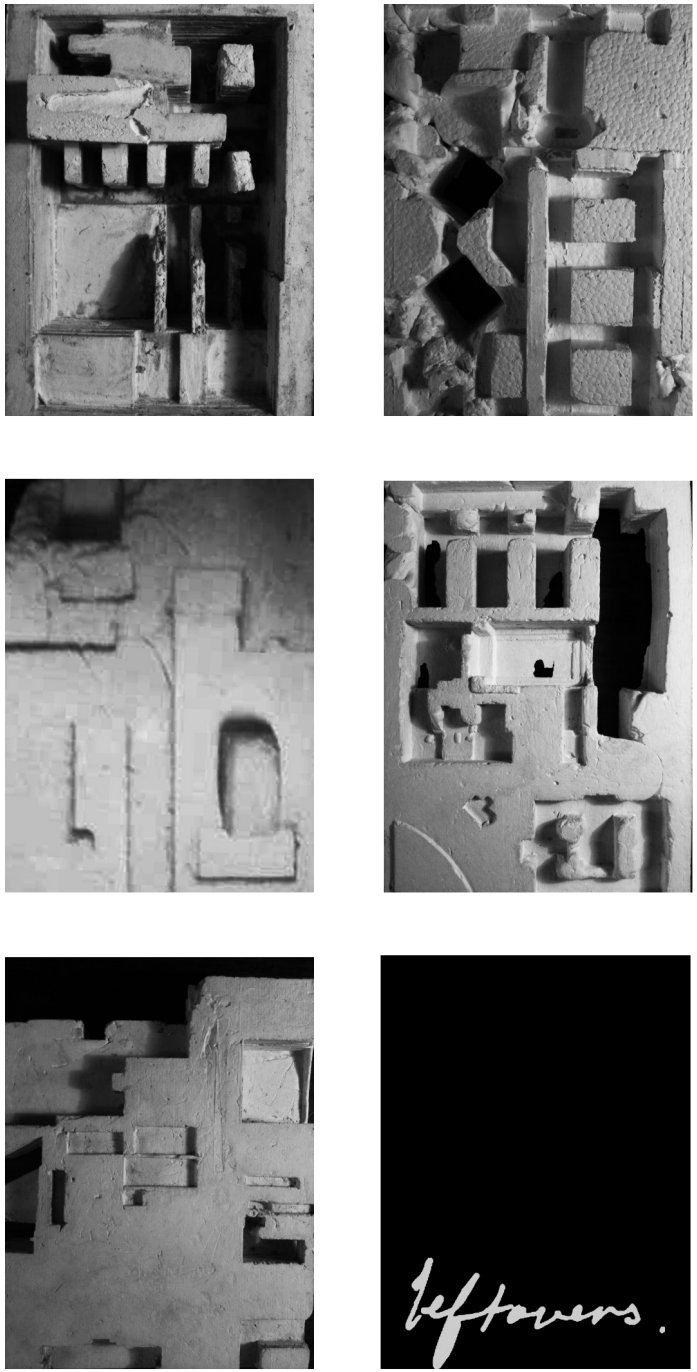


Figure.1.1. Plaster of paris models of negative space for respective sites

01 | APPENDIX

A Group approach in collaboration with Y. Viljoen, O, Horzook, S. Steyn, C. Hughes & R. Smit

© University of Pretoria

CONTENTS

01.1.	Introduction	133
01.2.	Loss is more: Loose Space	134
01.3.	Generators of Loss	134
01.4.	Grand Visions	135
01.5.	The Automobile	136
01.6.	Sub-urbanity	137
01.7.	Fence Fetishism:	138
01.8.	Genealogy of Fences	139
01.9.	The Kraal	139
01.10.	The Laager	139
01.11.	The Landscape - Pretoria	140
01.12.	Land Parcels - Farms	140
01.13.	The City Grid	141
01.14.	Stratified Rainbow	141
01.15.	Various Manifestations of the fence	142
01.16.	Scale as Fence	142
01.17.	Hostility as Fence	142
01.18.	Use as Fence	142
01.19.	Signage as Fence	143
01.20.	Level as Fence	143
01.21.	Fence as Fence	143
01.22.	Approaches	143
01.23.	References	145

LIST OF FIGURES

Figure.1.1.	Plaster of paris models of negative space for respective sites	131
Figure.1.2.	Map of lost space	134
Figure.1.3.	Conceptual image of grand visions	135
Figure.1.4.	The effect of the Automobile	136
Figure.1.5.	The effect of sub-urbanity	137
Figure.1.6.	The effect of fence fetishism	138
Figure.1.7.	The Kraal	139
Figure.1.8.	The laager	139
Figure.1.9.	The landscape	140
Figure.1.10.	Land Parcels	140
Figure.1.11.	The city grid	141
Figure.1.12.	Stratified rainbow	141
Figure.1.13.	Scale as fence	142
Figure.1.14.	Hostility as fence	142
Figure.1.15.	Use as fence	142
Figure.1.16.	Level as fence	142
Figure.1.17.	Laboratories for diachronic analysis and manipulation	143

© University of Pretoria

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

1.1. INTRODUCTION

The reciprocal relationship between human desires and human artefacts is at the core of the development of urban forms. Our programmes create unique spatial arrangements when our cities distribute and manage dynamic flows of material and inhabitants. These spatial arrangements, in turn, produce novel programmes when practices adapt to complex changes in density and distributions. In cities, the human scale is amplified; here the forms we inhabit are shaped not only by the needs and desires of human bodies but are also subject to the forces of mass culture. Individuals, subcultures, media, and government coagulate to form visions and zeitgeists which give additional, often radical, shape to the city. The ebbs and flows of these forces occasionally dislodge spaces from the programmes for which they were designed or necessitate the deliberate design of empty space. This disconnection has left the city punctuated with “Lost Spaces”.

© University of Pretoria

Figure.1.2. Map of lost space

1.2. LOSS IS MORE: LOOSE SPACE

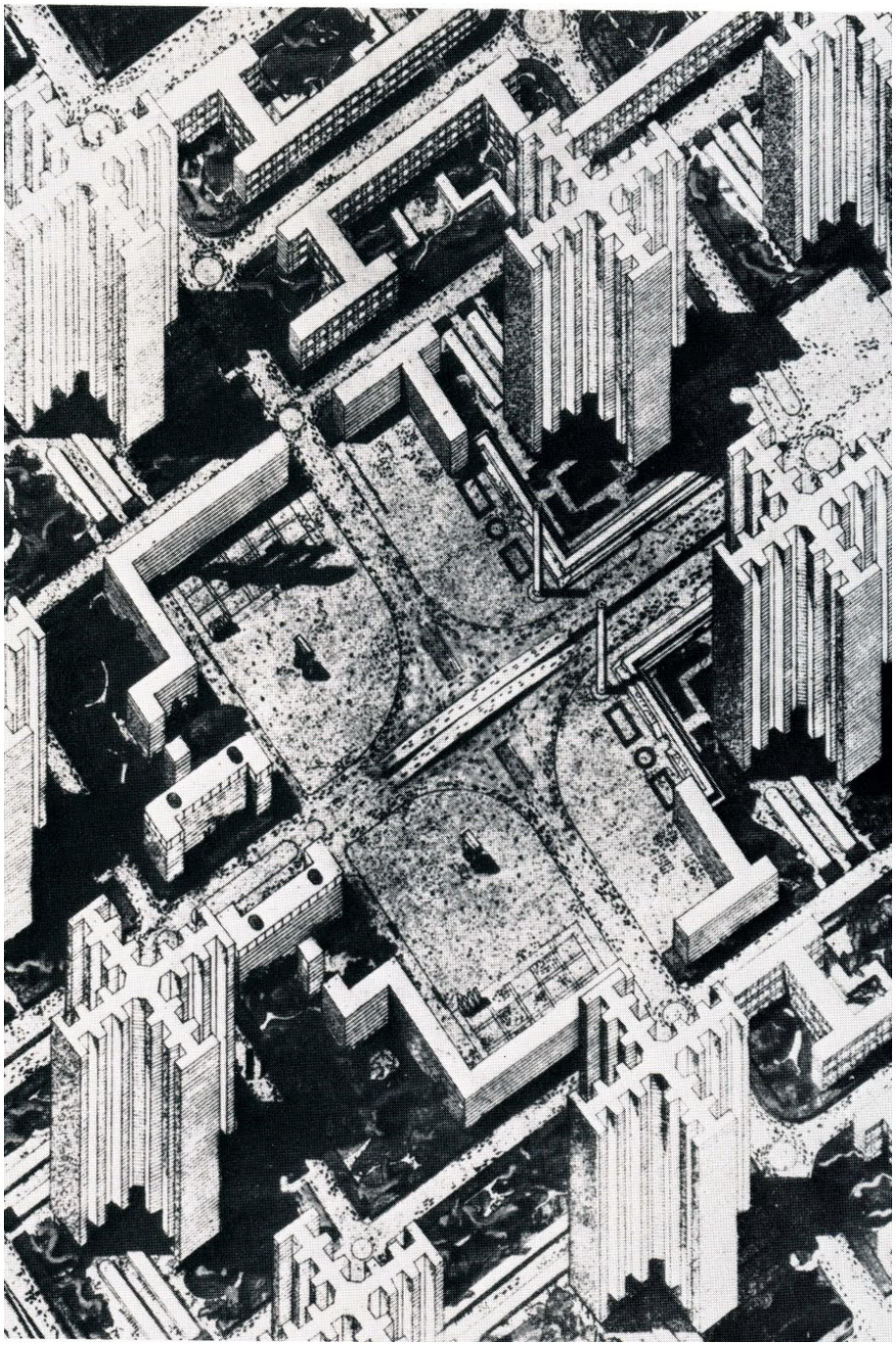
The programmatic vacuum that exists within these lost spaces is precisely where the productive potential for new practices is at its most concentrated. It is, however, necessary to socialise these spaces if they are to become productive (Franck. 2007). Karen Franck and Quentin Stevens calls such productive spaces “loose”. The defining characteristics of loose spaces is that they share programs that do not clearly define the limits of the activities that may be carried out there. They can be squares, wide sidewalks, staircases, building thresholds and abandoned sites. It is in the interest of the profession, and no doubt society in general, for to architects make original programming part of the design process and to take advantage of the productive capacity of ambiguous urban sites. While the history of a lost space and an investigation into its former functions may be useful in directing the generation of new programmes, attempts to refill these spaces with the programs that have abandoned them would be to deny them their creative potential.

1.3. GENERATORS OF LOSS

For the purposes of this investigation, the various causes of lost space are investigated only in order to classify and analyse lost spaces, and not in order to remediate the forces that have created the current urban condition.

These superhuman forces are classified under the general headings of Grand Visions, Automobiles, Suburbanity, and, ultimately,

© University of Pretoria



Fence Fetishism.

1.4. GRAND VISIONS

The use of architecture as flags of brand identity has proliferated the occurrence of object buildings as each brand attempts to stand apart from competitors and detractors. Object buildings often necessitate the design of empty spaces devoid of any purpose other than the provision of adequate viewing distance. Grand schemes of urban planning conspire with object buildings to produce “open space” on an urban scale.

Figure.1.3. Conceptual image of grand visions

© University of Pretoria

1.5. THE AUTOMOBILE

The mechanical model of the city, which rose in popularity dramatically during the first half of the 20th century, (Lynch. 1984. pp360) has placed emphasis on economy and efficiency as the primary principles influencing the management of urban space. The speed at which goods and people could be distributed through the urban fabric became closely associated with progress, while density and congestion were recast as undesirable complications which smother development. The rise of the automobile has meant not only that additional space had to be made for the bulk of metal occupying the urban territory, but also that a perceptual distance between the occupants of vehicles and the spaces outside has been created.

Figure.1.4. The effect of the Automobile

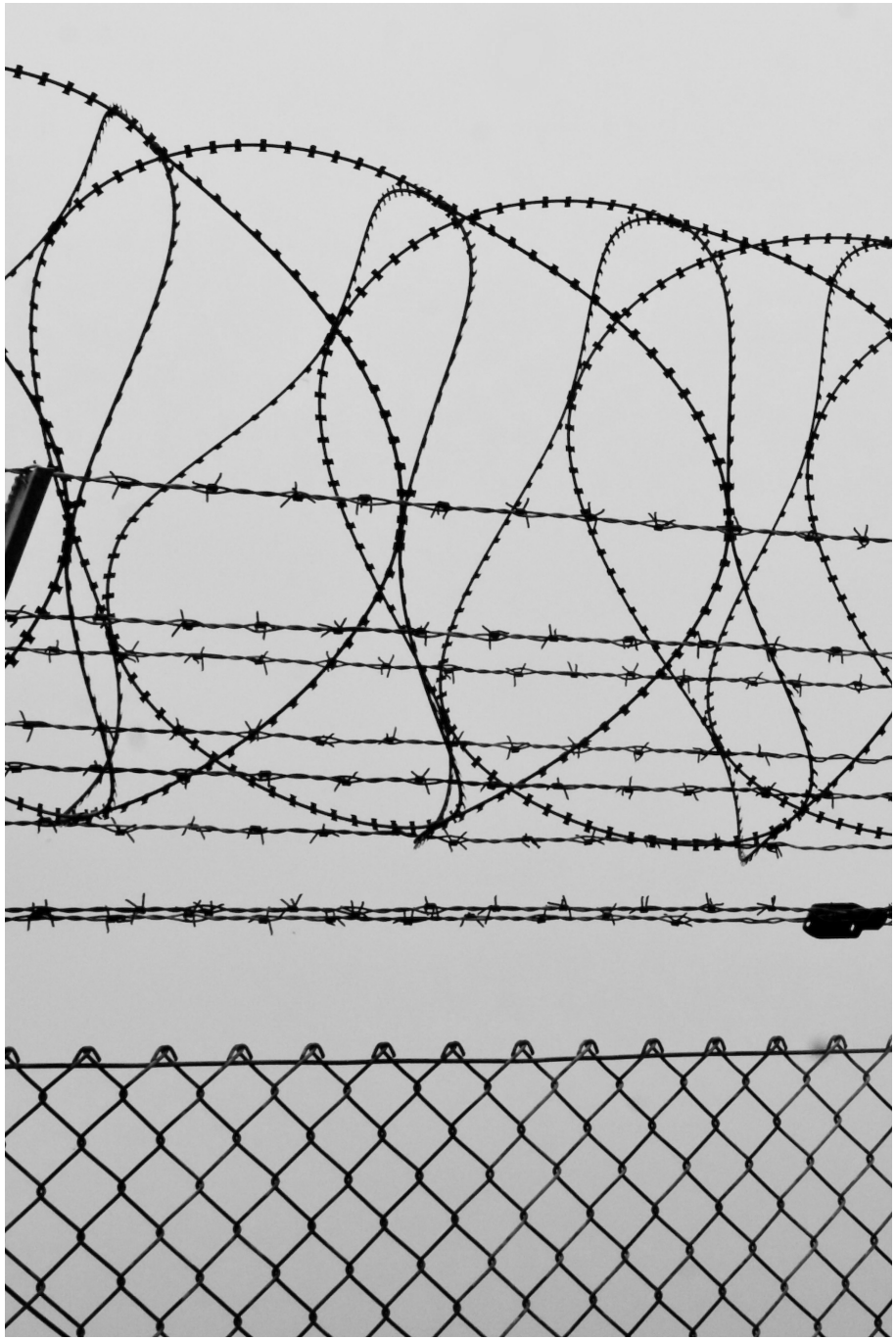
© University of Pretoria

Figure.1.5. The effect of sub-urbanity

1.6. SUB-URBANITY

The rise of the automobile has enabled cities to grow well beyond the scale of animal and human based transport. The tendency of peripheral urban land to be more affordable than central sites has encouraged horizontal growth and a loss of density. This spread has also led to the development of many compact new centres, to which formerly urban programs flow - abandoning traditional city centres in favour of highly adaptable, and often predictable, shopping malls.

© University of Pretoria



1.7. FENCE FETISHISM:

The uncertainty engendered by loose space carries an element of danger. This is confirmed by Karen Franck when she writes that it is "[p]recisely because the activities occurring in loose space are varied and unpredictable, [that] there is always a degree of uncertainty which, in and of itself, may be seen by some as a substantial risk." The aversion to vagarious activities has led to the widespread erection of fences and the closing of auxiliary entrances (and even primary thresholds) to public buildings in the city. The logic seems to be that relatively predictable lost space is more palatable than loose space, and, since "social ills" occur only in inhabited spaces, removing people from spaces will make potential sites of danger benign. This cauterization and segmentation of urban space has become one of the most significant current engines driving the production of lost space.

Figure.1.6. The effect of fence fetishism

© University of Pretoria

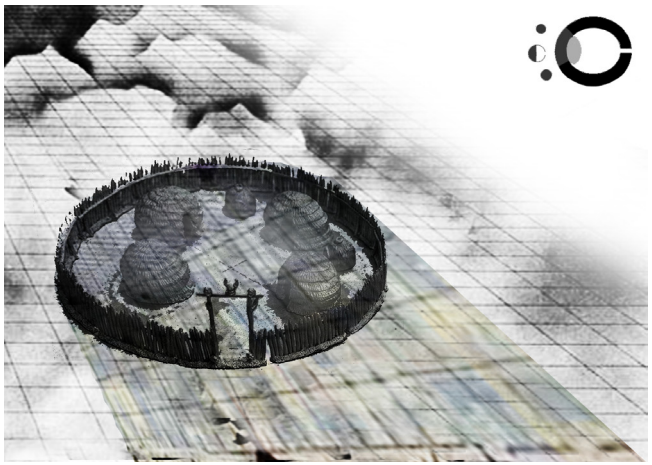


Figure.1.7. The Kraal

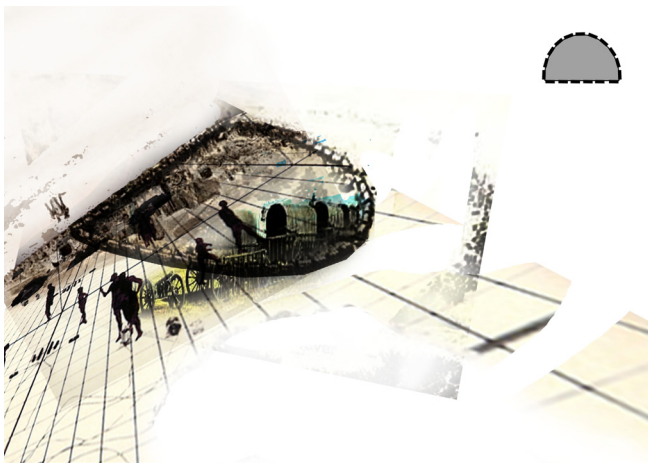


Figure.1.8. The laager

1.8. GENEALOGY OF FENCES

A brief history of the fence in South Africa will be useful in setting the context and establishing the totemic significance that have made them so commonplace. The genealogy will trace the evolution of fences in South Africa from the kraal to the city grid.

1.9. THE KRAAL

In precolonial African settlements, the kraal was an enclosure for livestock which consisted of a circular boundary of mud wall or reed-palisade fence construction. The term originates from Dutch or Afrikaans and since early colonisation it loosely refers to the settlement as a whole, including the traditional huts that circumscribe the animal stockade (McCall: 1984: XX). The kraal offers nocturnal security for the livestock, whilst the settlement as a whole provides the infrastructure for a social unit where the chieftain is located on the end opposite to the singular entrance and is adjacent to a reception hut for visitors and meetings (Kidd; 1984: 41).

1.10. THE LAAGER

In the mid-1800s ‘South Africa’ was mostly a territorial expression, made up of various independent political states devoid of any real unity (New History. 2010). It was within this context that the laager originated - essentially a military camp made up of a ring of 50 or more pioneer wagons (New History. 2010). The wagons were both a means of transport and shelter as well as part of a collective fortress when grouped together in a circular formation and reinforced with additions of thorn bushes and sticks. The

© University of Pretoria

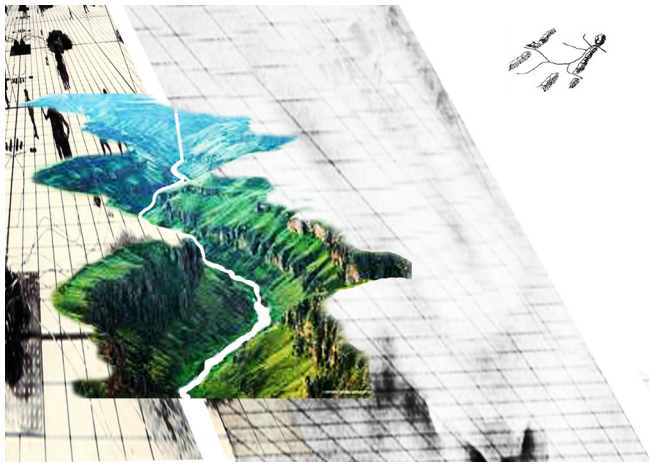


Figure.1.9. The landscape

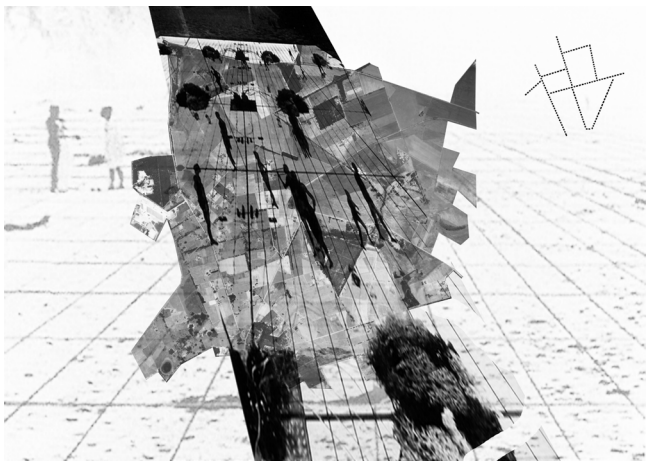


Figure.1.10. Land Parcels

laager was possibly adapted from the African kraal as a circular settlement with the hut and thorn bushes as the defensive barrier (Van Rensburg. 2009). Like mobile huts which formed a communal kraal for the defence of people and animals in the centre.

1.11. THE LANDSCAPE - PRETORIA

The Pretoria city form is a direct result of the landscape in which it is situated (Visit Pretoria. Online). The natural boundaries that defined the original city centre included the Apies river on the Eastern edge, Redoubt and Gezina Hills on the north, Magazine and Timeball Hills south and Steenhoven Spruit west. (Jordaan. 1989: 26).

1.12. LAND PARCELS - FARMS

The landscape over which Pretoria has been constructed, was previously the territory of Ndebele tribes who were forced to flee with the arrival of the Voortrekkers in 1836 (SAHO; online). The first permanent occupation of the area occurred with the setting out of the Elandspoort farm by the Bronkhors brothers in 1842. Over the next decade various other farms were established resulting in a division of the land as individual claims to portions were staked out by the early settlers (Honiball; 67-67). Thus the Pretoria valley was gradually divided along agrarian boundaries (Alkayyali; 16-17).These farm boundaries remain evident in the layout of the city suburbs for example Waterkloof farm and Irene farm.

© University of Pretoria

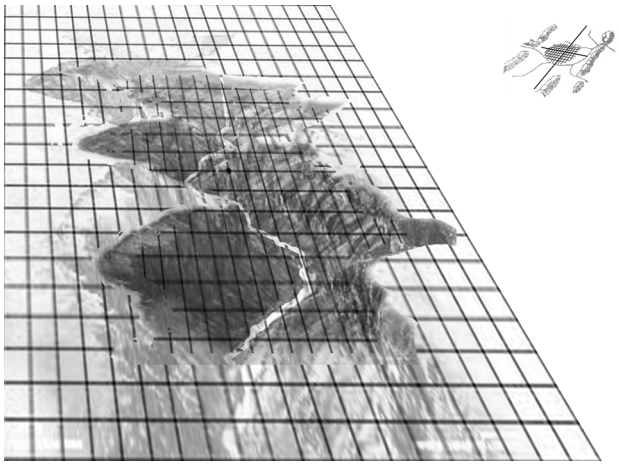


Figure.1.11. The city grid

Figure.1.12. Stratified rainbow

1.13. THE CITY GRID

By 1853 a community had formed around the religious congregational needs of the many farmers in the area, and in November of that year the Elandspoort and Daspoort farms were declared a town. In 1856 the town of Pretoria was pegged out by Andries Du Toit as an imposed grid following the traditional roman Cardo-Decumanus layout (Alkayyali; 16-17). This grid divided the area into ever smaller territories now defined by a grid of roads and property boundaries. Pretoria was granted official city status in 1931. (SAHO; online).

1.14. STRATIFIED RAINBOW

During the 1990s the perception of safety and trust in the government's ability to provide security waned. This perception, combined with the high incidence of crime, conspired to enact the privatization of security services and the formalization of segregation in spatial rather than legislative terms. (Mellin. 2011)

© University of Pretoria

Figure.1.13. Scale as fence

Figure.1.14. Use as fence

Figure.1.15. Hostility as fence

Figure.1.16. Level as fence

1.15. VARIOUS MANIFESTATIONS OF THE FENCE

Etymologically the concept of the fence is related to defence, fencible and fend (as in “to fend for oneself” - to be independent) and essentially represents a manner of separating and claiming space. A fetish is defined as “an inanimate object worshipped for its supposed magical powers or because it is considered to be inhabited by a spirit” (OED. 2010). With fences, these “magical powers” or “spirits” revolve around security, containment, ownership, privacy and control. There are, however, various ways in which buildings, symbols and activities claim space and control access. They vary in subtlety - from degrees of deterring occupation perceptually, to straightforward obstacles.

1.16. SCALE AS FENCE

The difference between the human body and the size of a surface or volume influences the desire for proximity. The larger the deviation from the human scale, the more likely it is to appear repellent to a person on the street.

1.17. HOSTILITY AS FENCE

Spaces that do not conform to conventions of comfort or that do not have attributes that are considered inviting may act as perceptual fences by discouraging occupation and movement.

1.18. USE AS FENCE

When sites are defined by particular uses, the ingress of other uses is, to some

© University of Pretoria

degree, restricted. The memory of former uses and events can also create impressions that continue to define territories. Abandonment and the ensuing lack of use can also discourage occupation.

1.19. SIGNAGE AS FENCE

Language and imagery serve to demarcate the boundaries of a territory. They indicate permitted or forbidden practices with a limited material dimension.

1.20. LEVEL AS FENCE

Raised surfaces act as fences when they make spaces physically inaccessible. Staircases, ramps, elevators or escalators act as “gates” in these “fences”.

1.21. FENCE AS FENCE

Material fences, which have ability to control access without obscuring vision, have become the ubiquitous manifestations of the desire for security and control.

1.22. APPROACHES

Selected sites are treated as laboratories for the diachronic analysis and manipulation of the existing “fence” types. In doing so, a selection of spatial forces can be used as informants for the exploration of various site-specific interventions.

Figure.1.17. Laboratories for diachronic analysis and manipulation

© University of Pretoria

© University of Pretoria

1.23. REFERENCES

ALKAYYALI, A. 2011, *Liminal Public Infrastructure : a Typology of Public Space for Everyday Performances*, MArch(Prof) dissertation, University of Pretoria, Pretoria, [Online]. <http://upetd.up.ac.za/thesis/available/etd-11252011-112216/> accessed 04/04/013 LYNCH, K. 1984. Good City Form. Cambridge MA: MIT.

FRANCK, K.A. and Stevens, Q. 2007. *Tying Down Loose Space in Loose Space: Possibility and Diversity in Urban Life.* Edited by Karen A. Franck. New York: Routledge.

HONIBALL, TW. 2010, *Elandspoort 357-JR*, MArch(Prof) dissertation, University of Pretoria, Pretoria. <http://upetd.up.ac.za/thesis/available/etd-12092010-153001/unrestricted/03chapter3.pdf> accessed 04/04/013

JORDAAN, G. 1989. *Pretoria as 'Urbs Quadrata'*. Architecture SA, Issue May/June, pp.26-28.

KIDD, D. 1910. *South Africa*. London: A. and C. Black.

McCALL, T.G. 1984. *Explanation of terms: South Africa (the Cape Colony, Natal, Orange Free State, South African Republic, and all other territories south of the Zambesi)*. London: Unwin.

MELLIN, J. 2011. *World Policy Blog: Dividing Fences*, [Online] available at <http://www.worldpolicy.org/blog/2011/08/03/dividing-fences> accessed 07/04/2013

NEW HISTORY.2010. *The Roots of Segregation*, [Online] available at <http://newhistory.co.za/part-3-chapter-7-the-roots-of- segregation/> accessed 04/04/2013.

NEW HISTORY. 2010. *The laager*. [Online] viewed at <http://newhistory.co.za/part-1-chapter-2-the-xhosa-and-the-boers-a-new-frontier-district-the-zuurveld-a-contested-zone-the-laager/> accessed 04/04/2013

PETTMAN, C. 1913. *Africanerisms; a glossary of South African colloquial words and phrases and of place and other names*. London, New York: Longmans, Green and co.

SAHO. 2009. *Pretoria Timeline* 1800-2009. [Online] viewed at <http://www.sahistory.org.za/topic/pretoria-timeline-1800-2009> accessed 04/04/013

THE OXFORD ENGLISH DICTIONARY. 2010. 2nd Edition. Oxford: Clarendon Press.

VAN RENSBURG, A.M.2009. [Online] *Laager and Kraal*, viewed at <http://www.oocities.org/athens/atlantis/4364/c2.htm> accessed 04/04/013.

VISIT PRETORIA. *History of Pretoria* [Online] viewed at <http://visitpretoria.co.za/General/history-of-pretoria> accessed 04/04/2013.

© University of Pretoria