

# Conclusion

A wave of vandalism is sweeping Pretoria in the form of Building Mining. This form of urban decay has placed many iconic buildings in jeopardy, including the Extramural Building.

The dissertation aimed to find out if theories of adaptation and heritage practice can help the Extramural Building reclaim its role in the city by regenerating it. A comprehensive theoretical framework was produced and applied to the building. This framework navigated the complexities between heritage practice and remodelling.

The uncomfortable condition that arises from having to navigate the city alongside vehicular traffic was addressed by a Social Space Framework. The framework builds on the existing development plan that the City of Tshwane outlines in its Inner City Regeneration Framework by further developing the Civic Precinct. The strategy mitigates the issues that arise from the immense size of the city's blocks by adding a new pedestrian route that continue the tradition of Arcade's in our city.

Architecture was explored as an extension of the public realm throughout the design and technical development of a Resource Centre for the Justice College. This development addressed issues of heritage practice, theories of adaptation, historical and contextual problems through the design of the centre that mitigates the harsh boundaries that often arise from the collision of public and private realms.

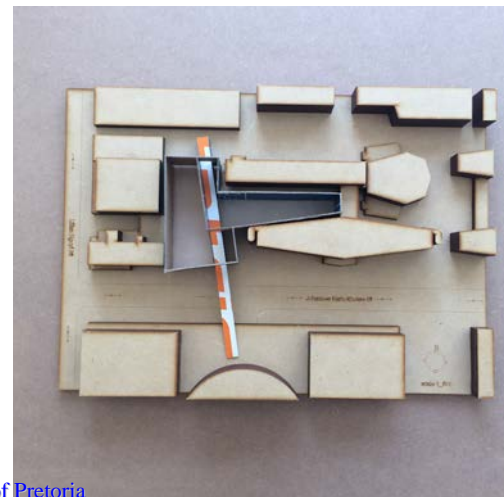
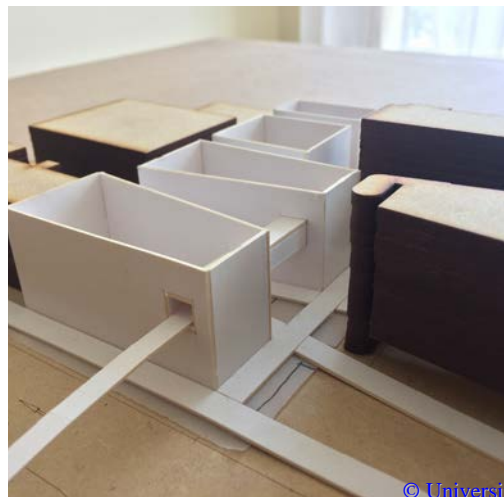
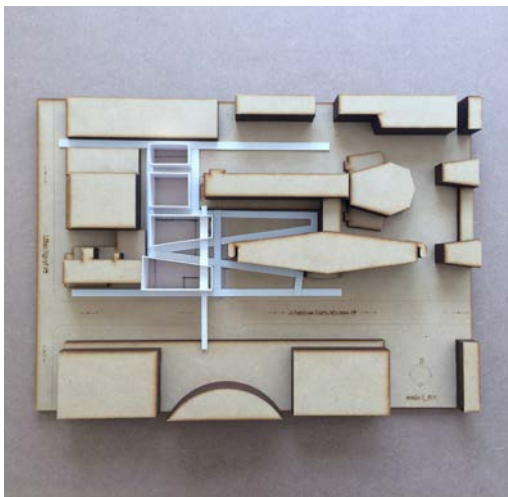
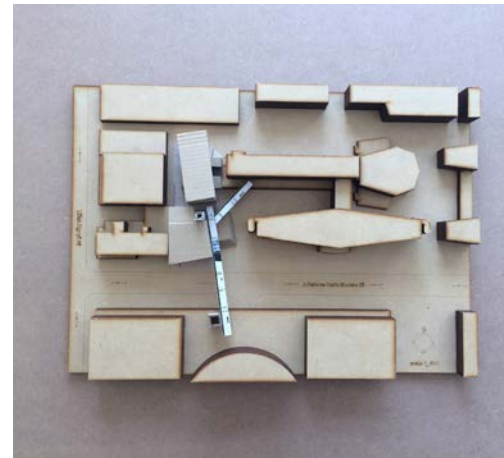
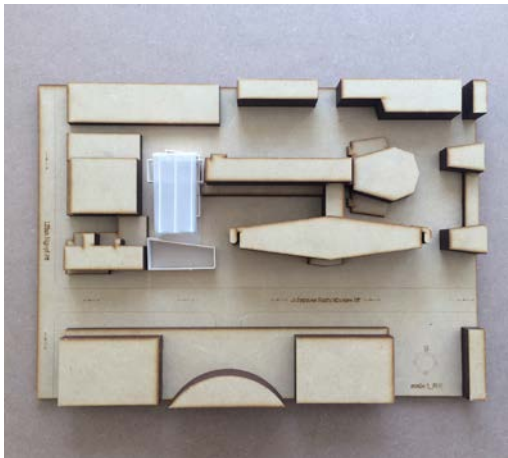
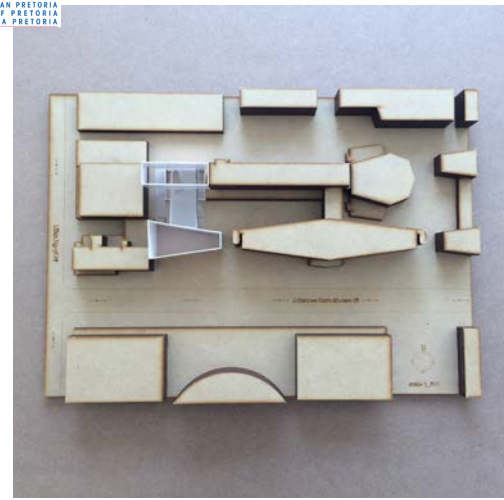
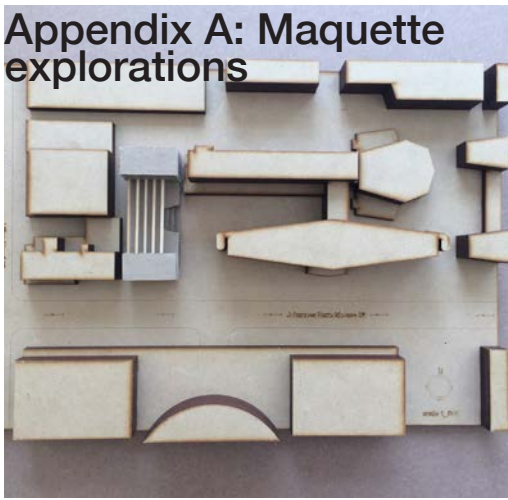
Through the application of appropriate remodelling practices, the Extramural Building can undoubtedly reclaim its role in the city and add a great deal of social and cultural value to the city of Pretoria. A rich global history is embodied by buildings that our generation inherited. The dissertation serves as an example to our nation that it is important to save our old buildings to ensure that we protect our global legacy.



# Appendices



# Appendix A: Maquette explorations

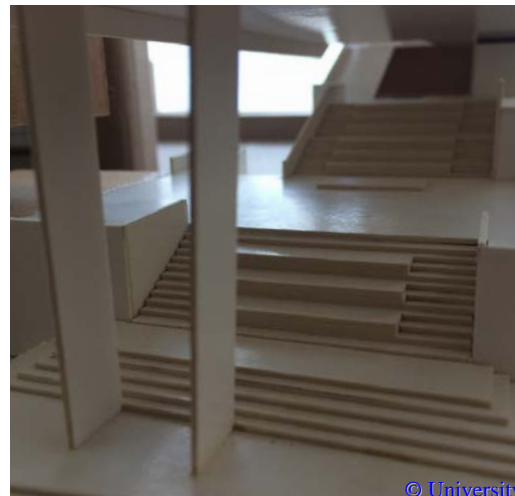












# Appendix B: Final iteration of Resource Centre



Centre for Constitutional Rights

Workmen Compensation Fund

SAPS Criminal Record Centre

Justice College

Resource Centre

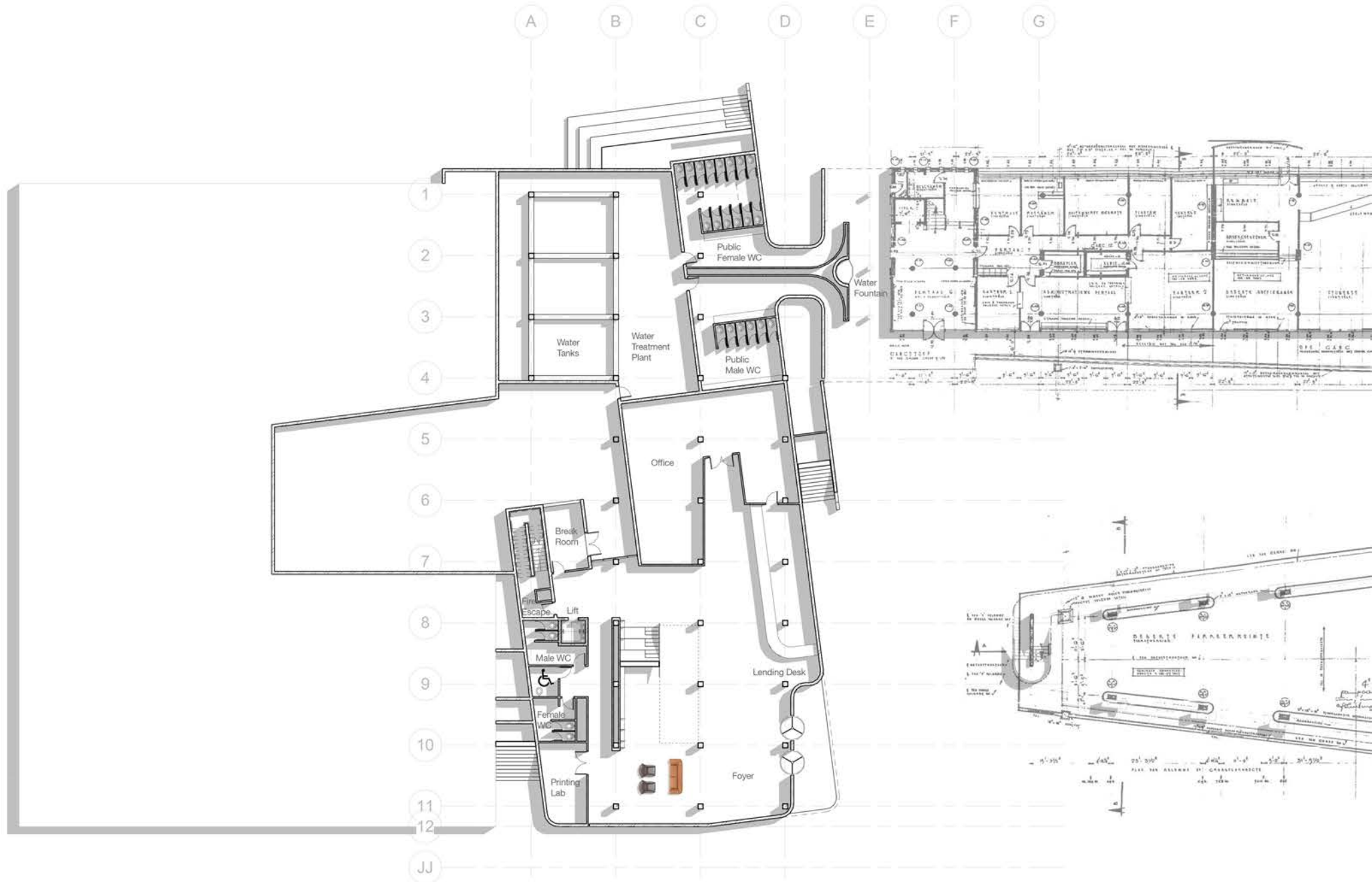
Road Accident Fund Centre

Johannesburg

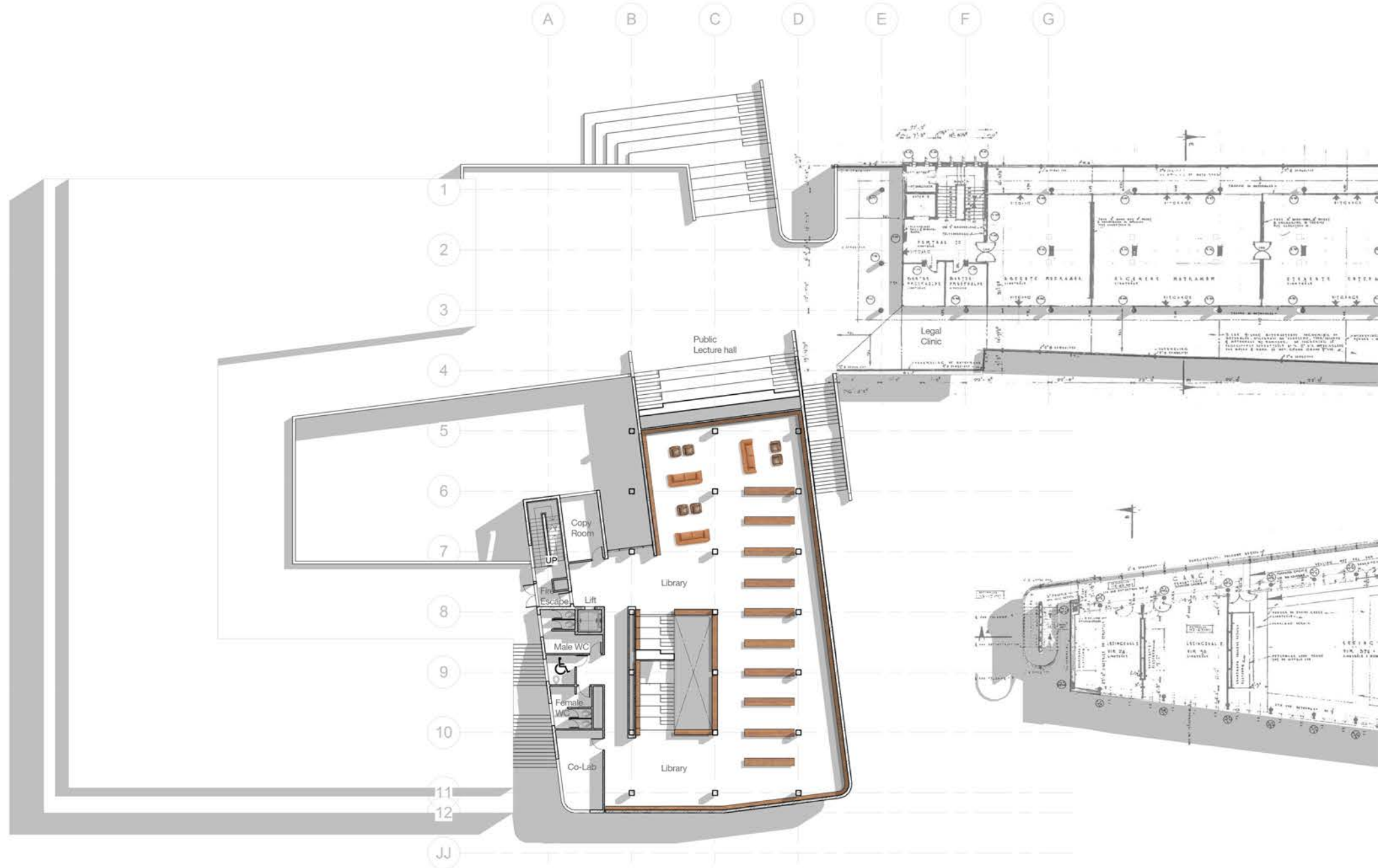
Tshwane House

NHRC

Municipal Services



Ground Floor Plan \_ scale 1:200



First Floor Plan \_ scale 1:200

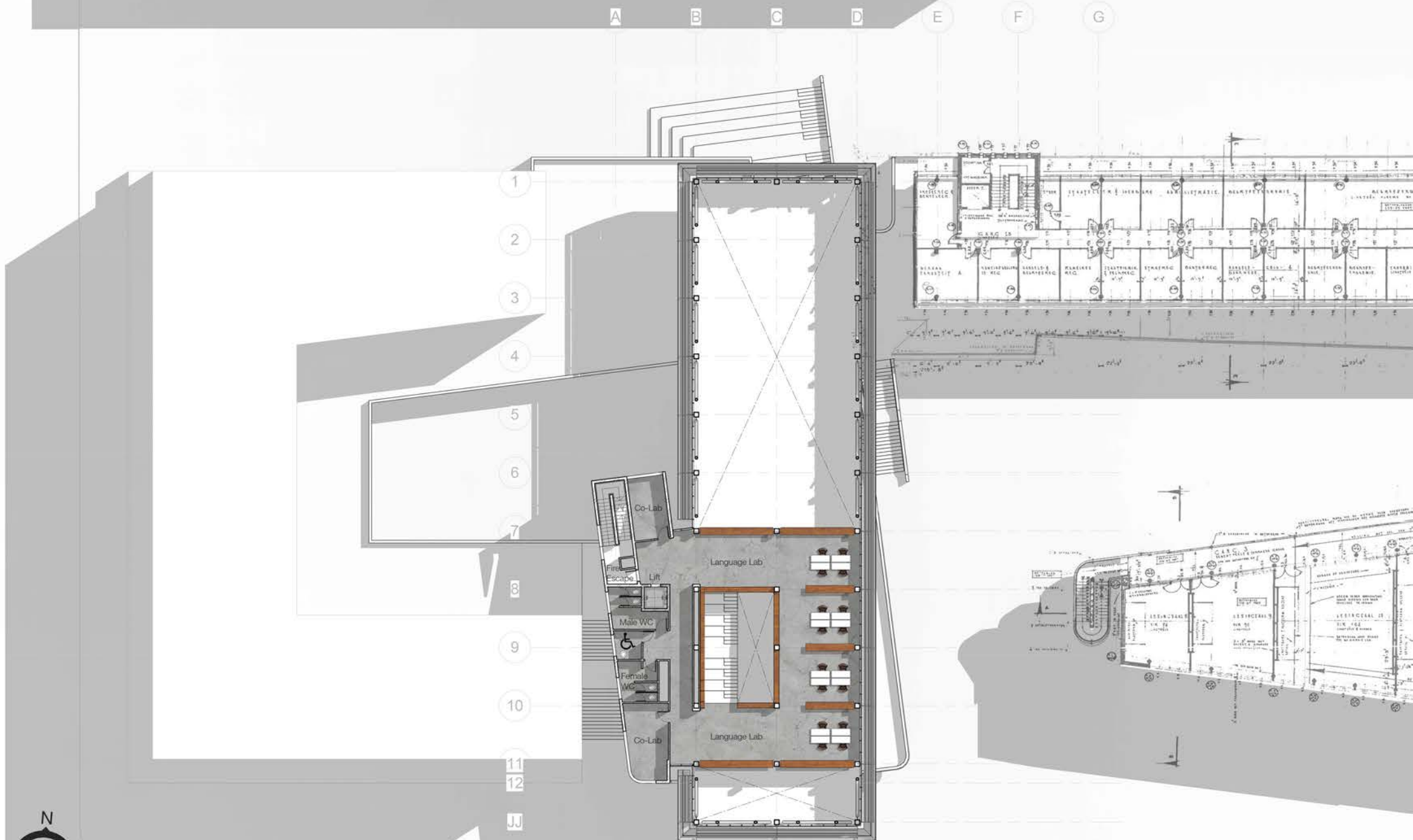


Second Floor Plan \_scale 1:100



Third Floor Plan \_ scale 1:200

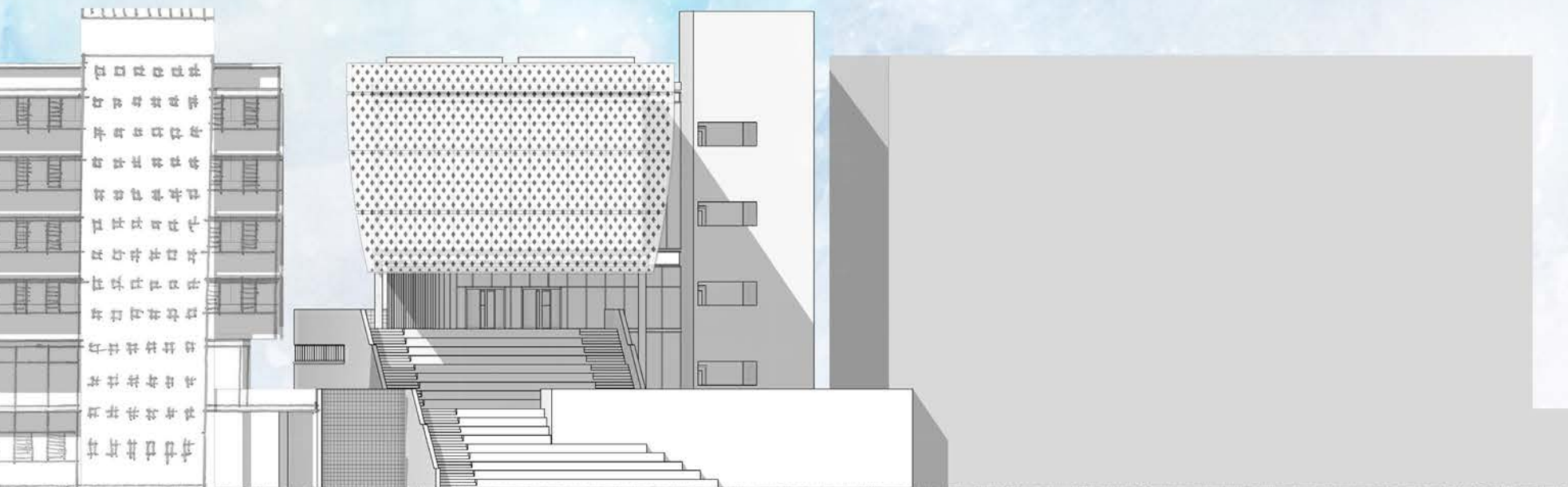


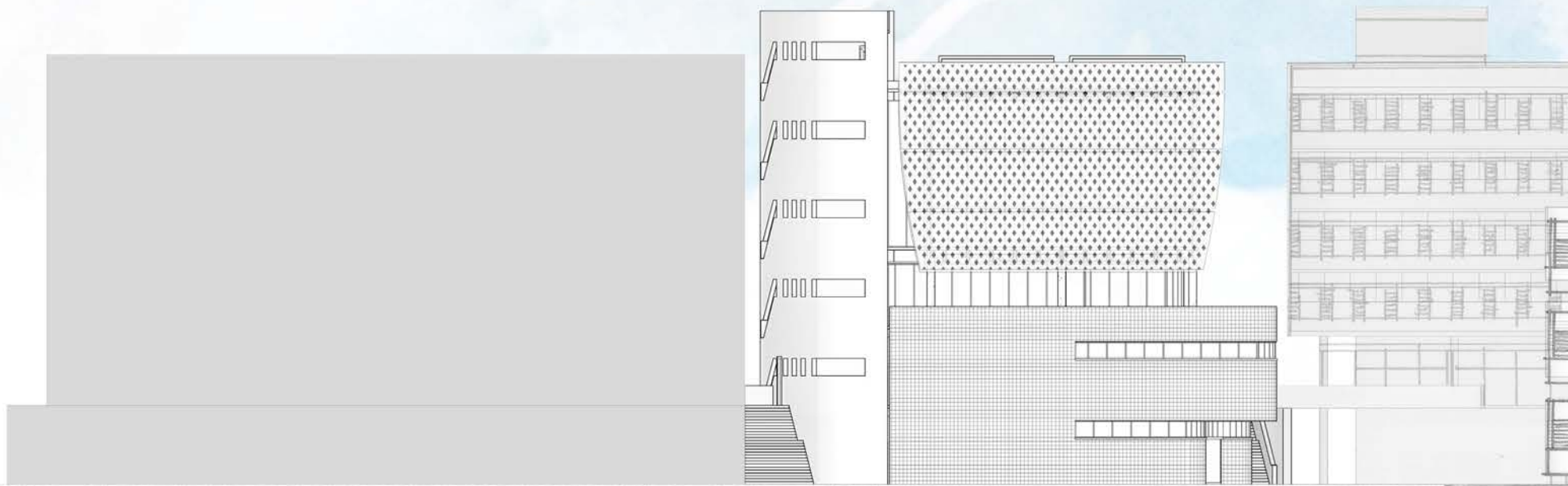


Fourth Floor Plan \_ scale 1:200

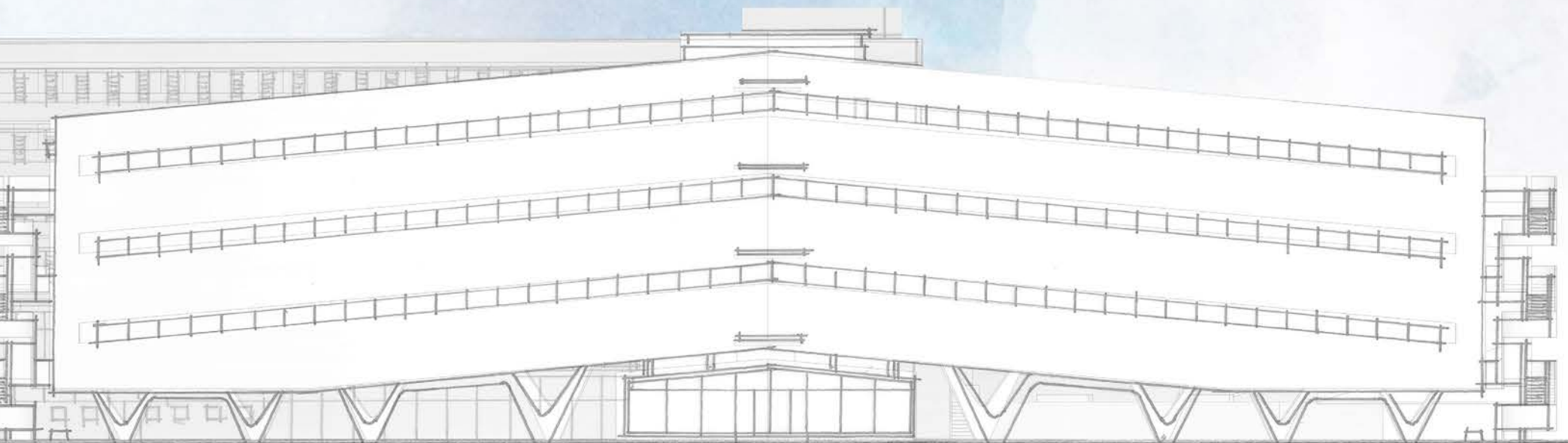


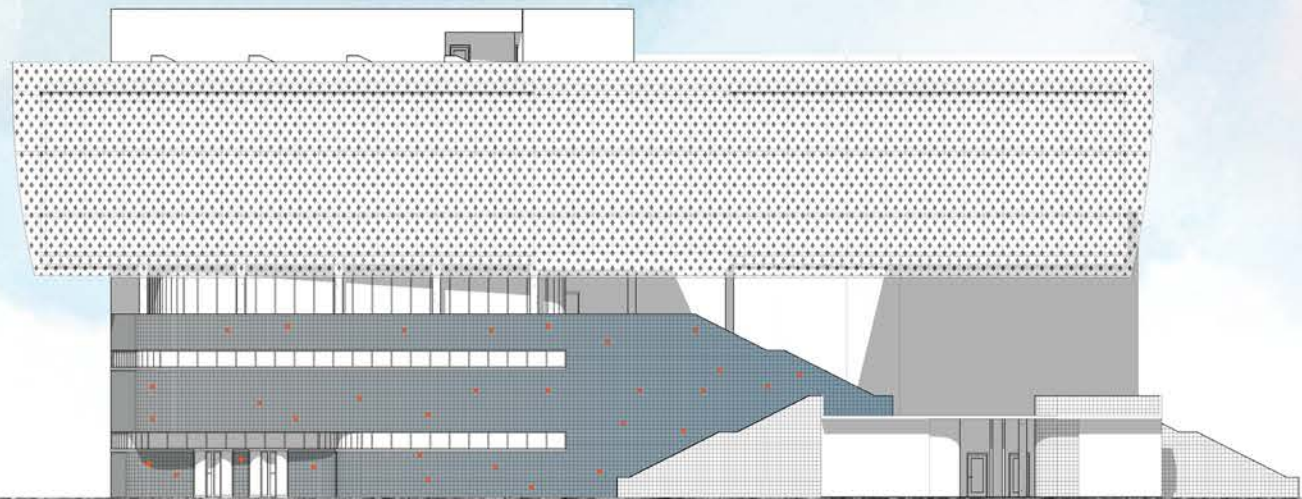
East Elevation \_ scale 1:200



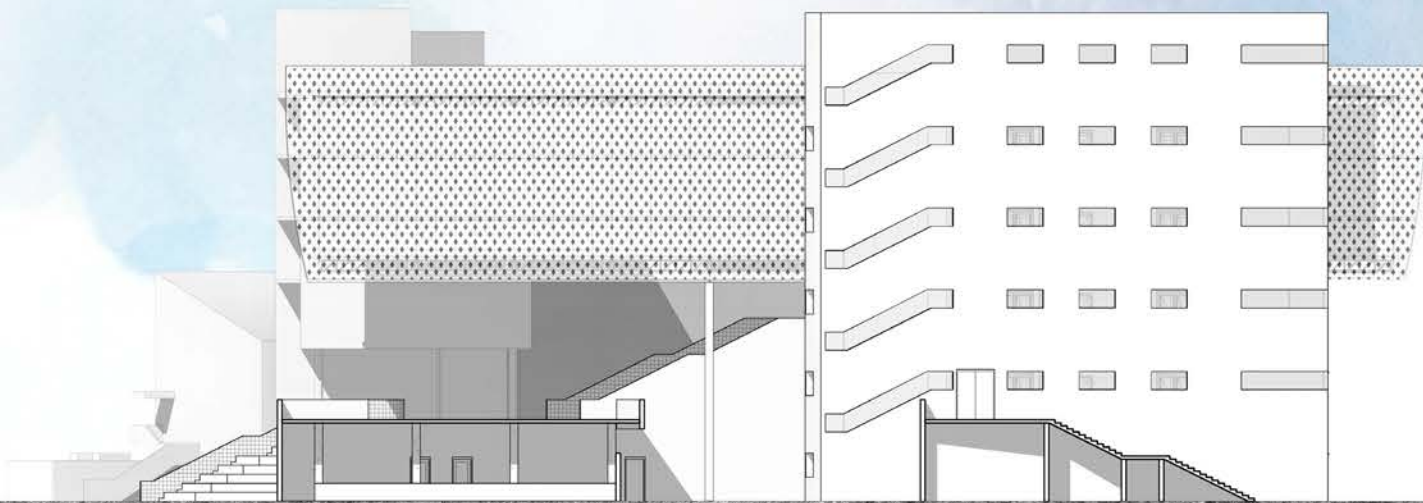


East Elevation \_ scale 1:200



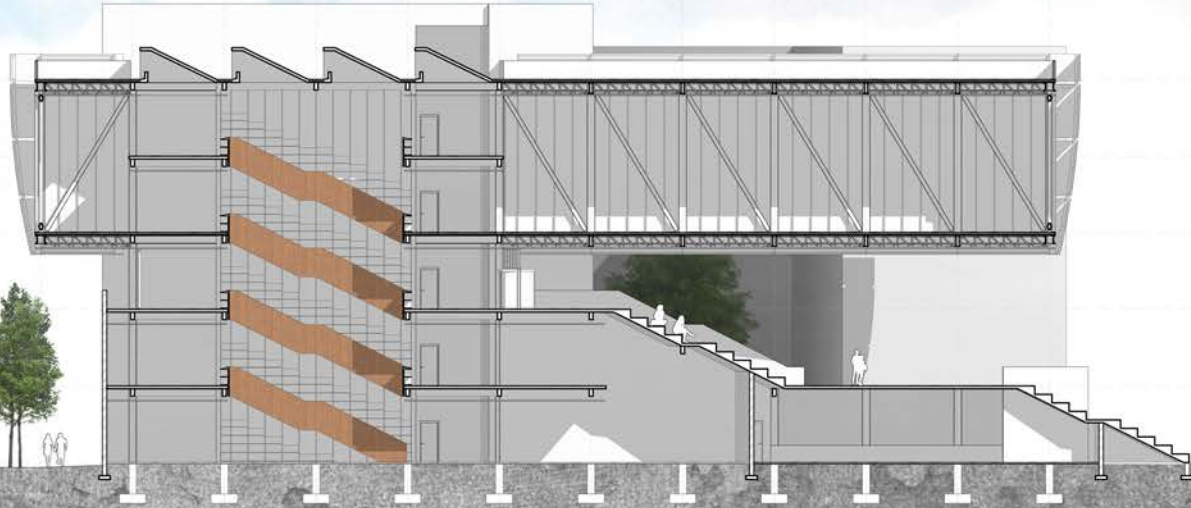


East Elevation \_ scale 1:200



West Elevation \_ scale 1:200

12 11 10 9 8 7 6 5 4 3 2 1

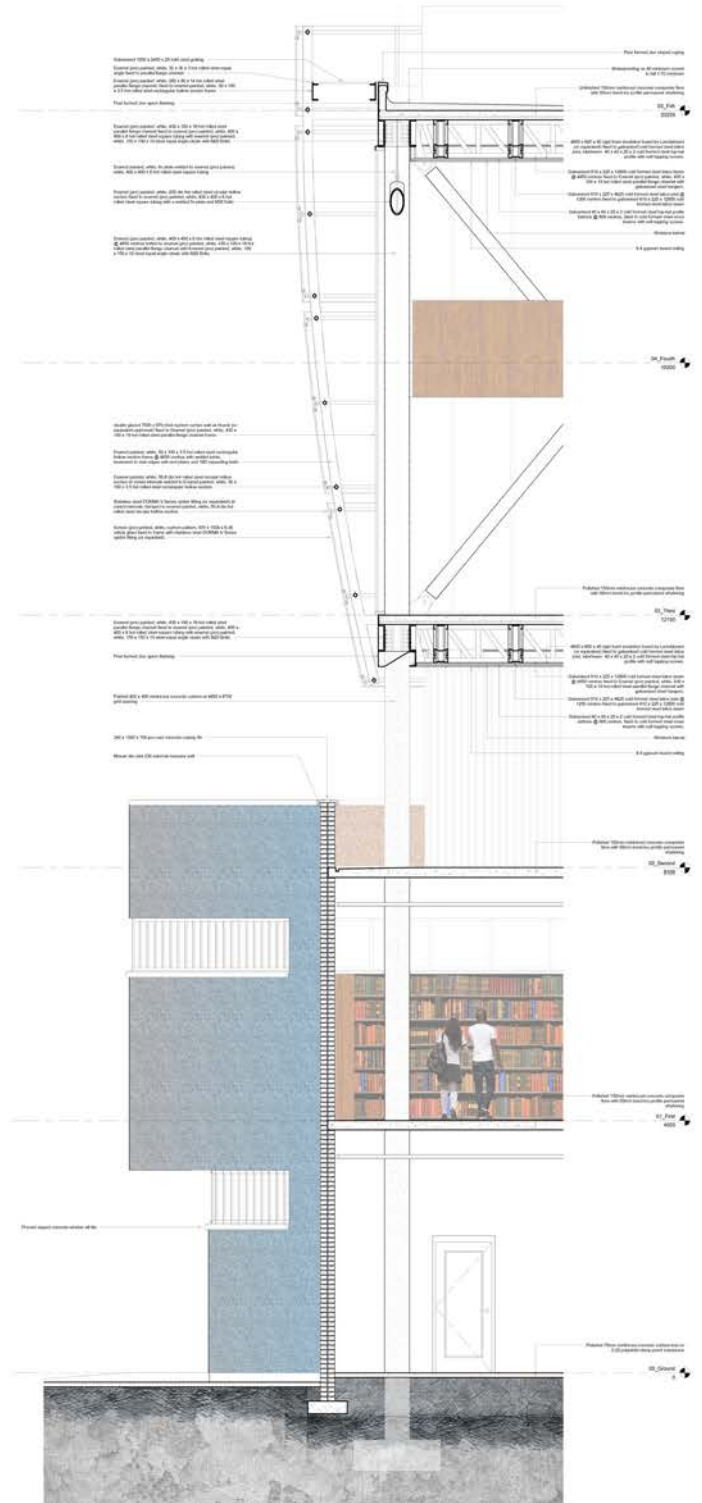
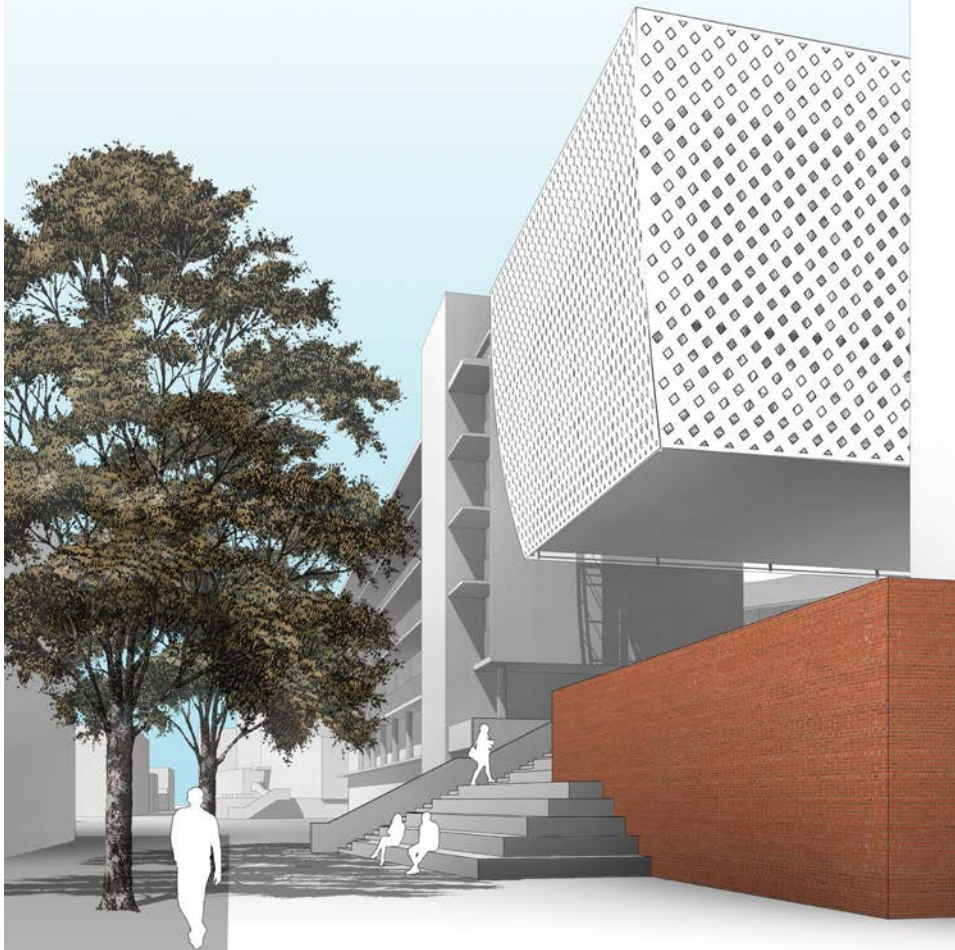


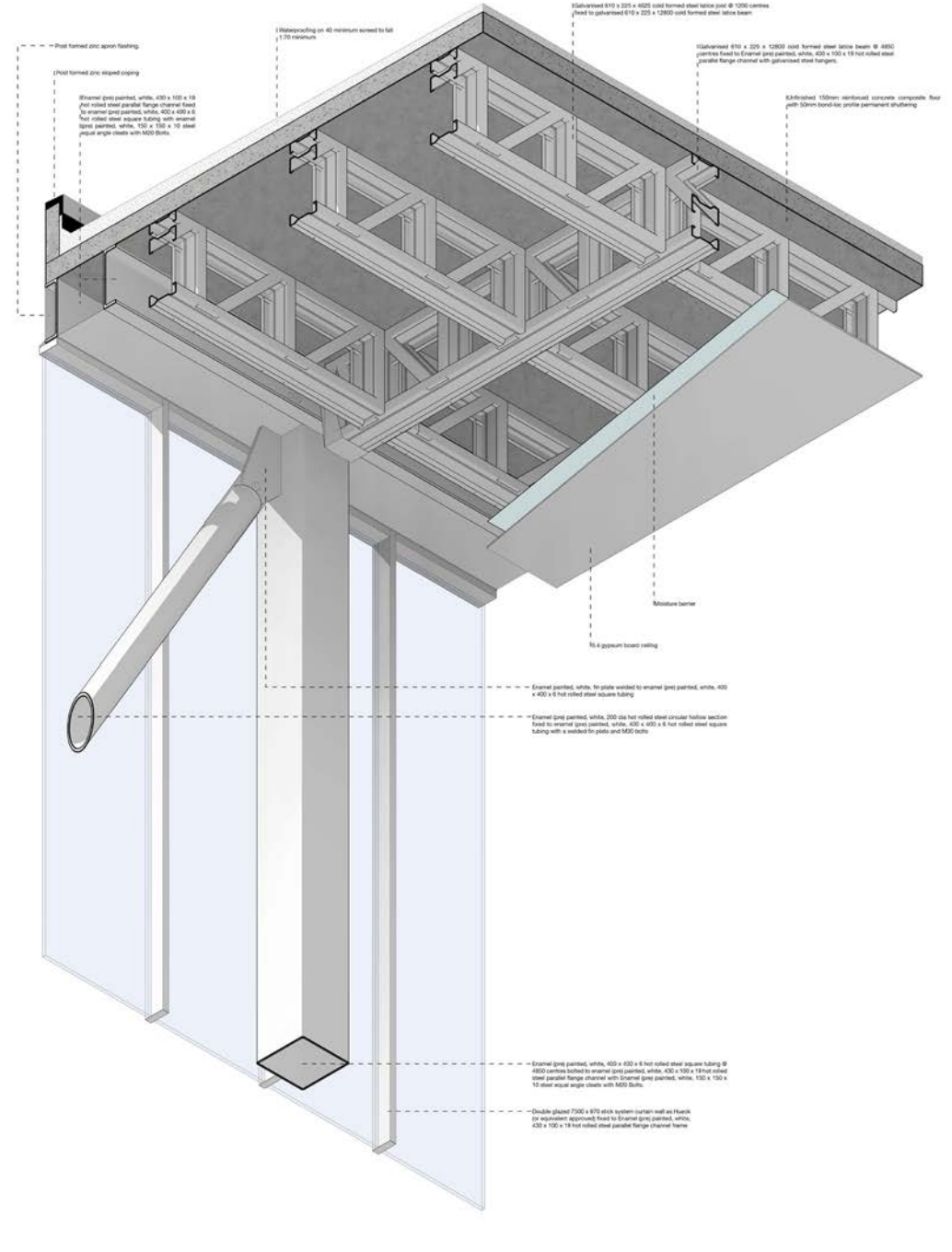
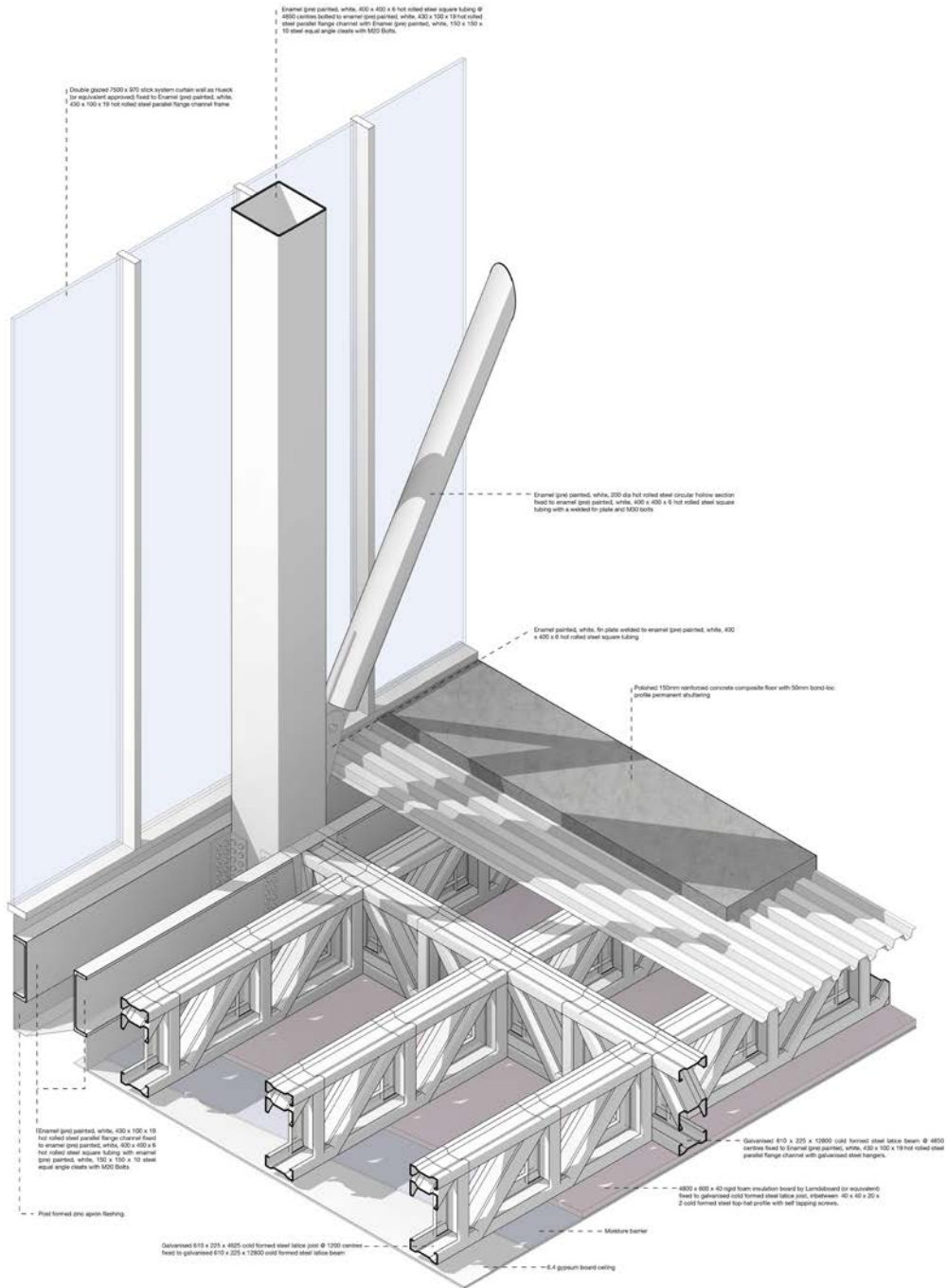
Section A-A scale 1:100





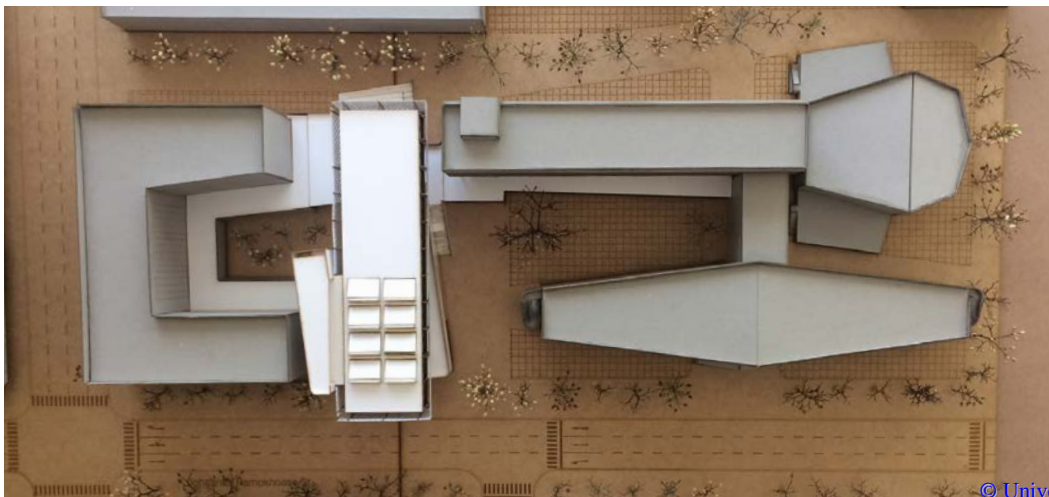
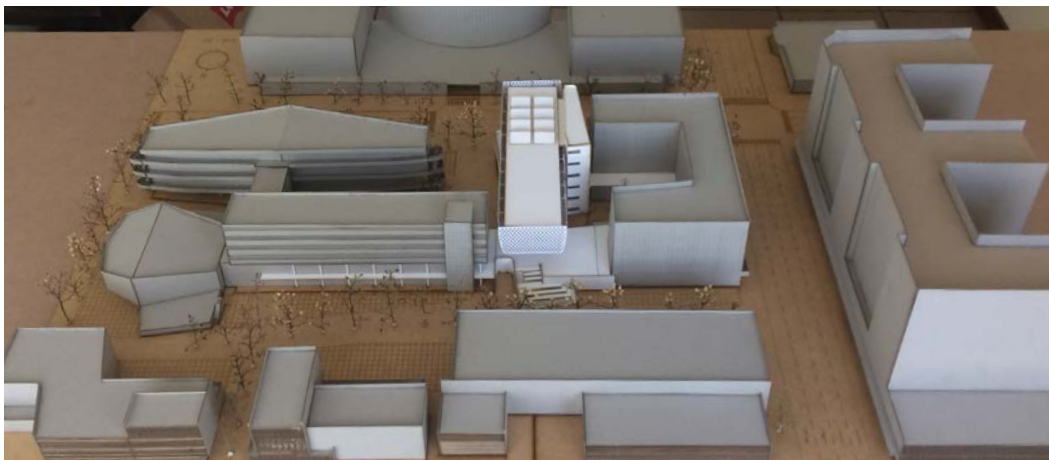
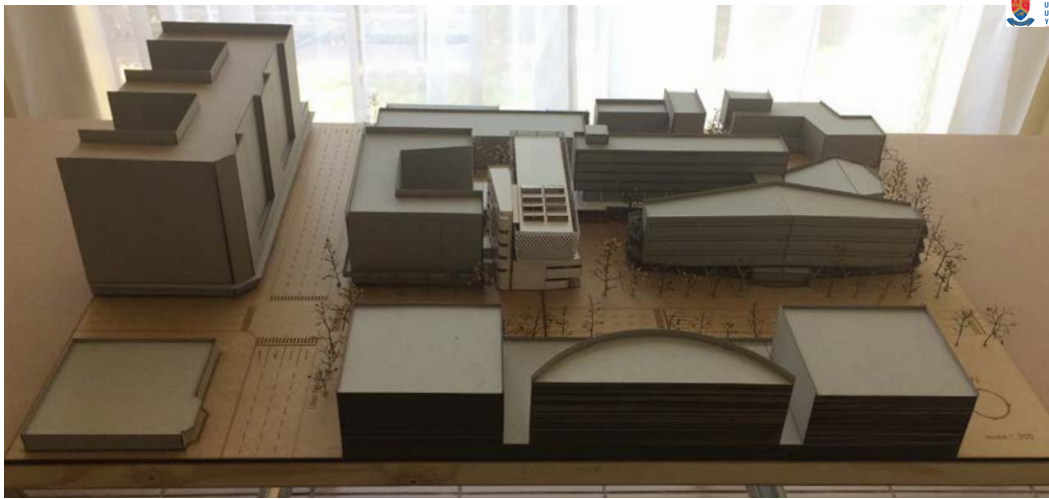
Section A A \_ scale 1:100



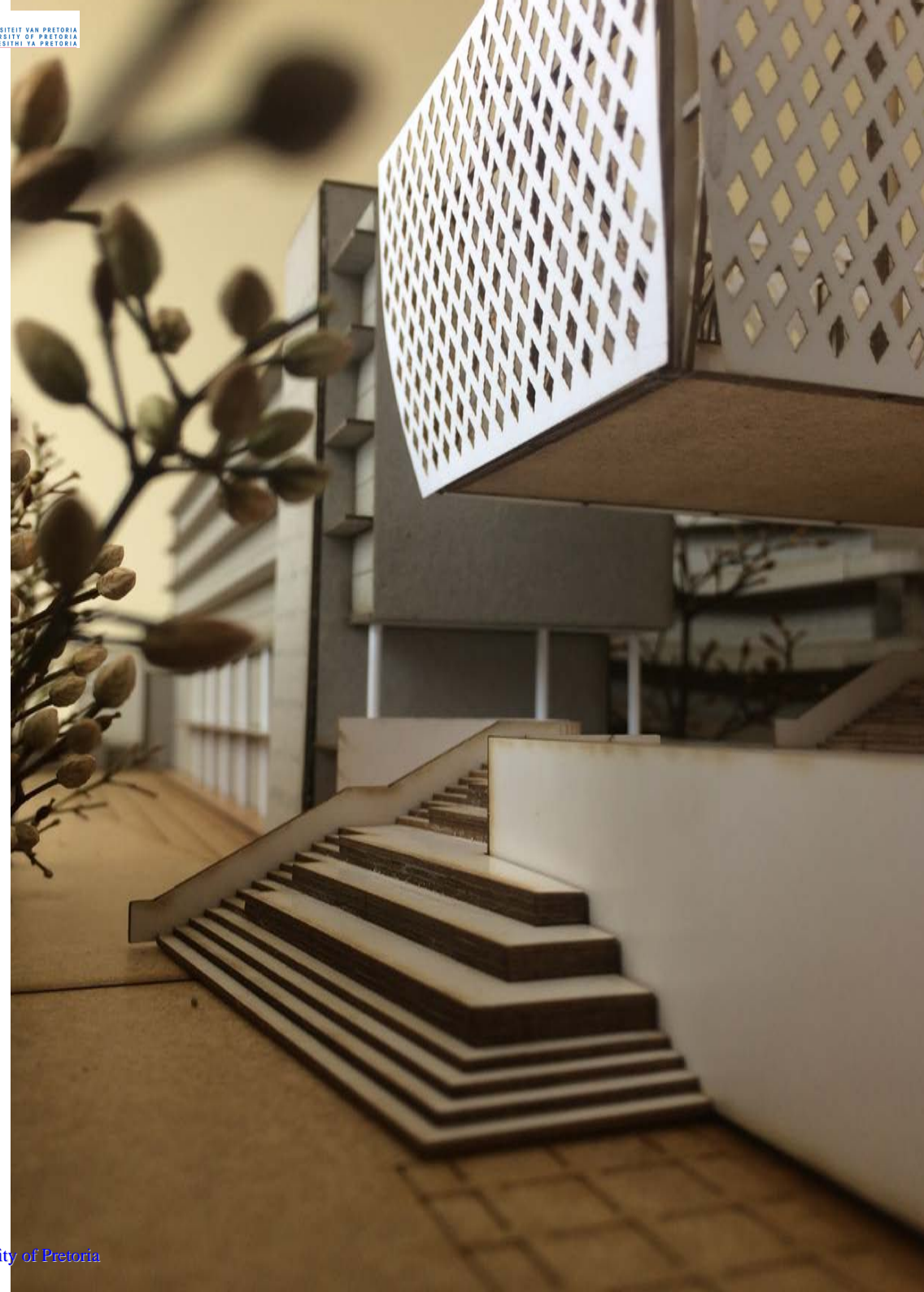














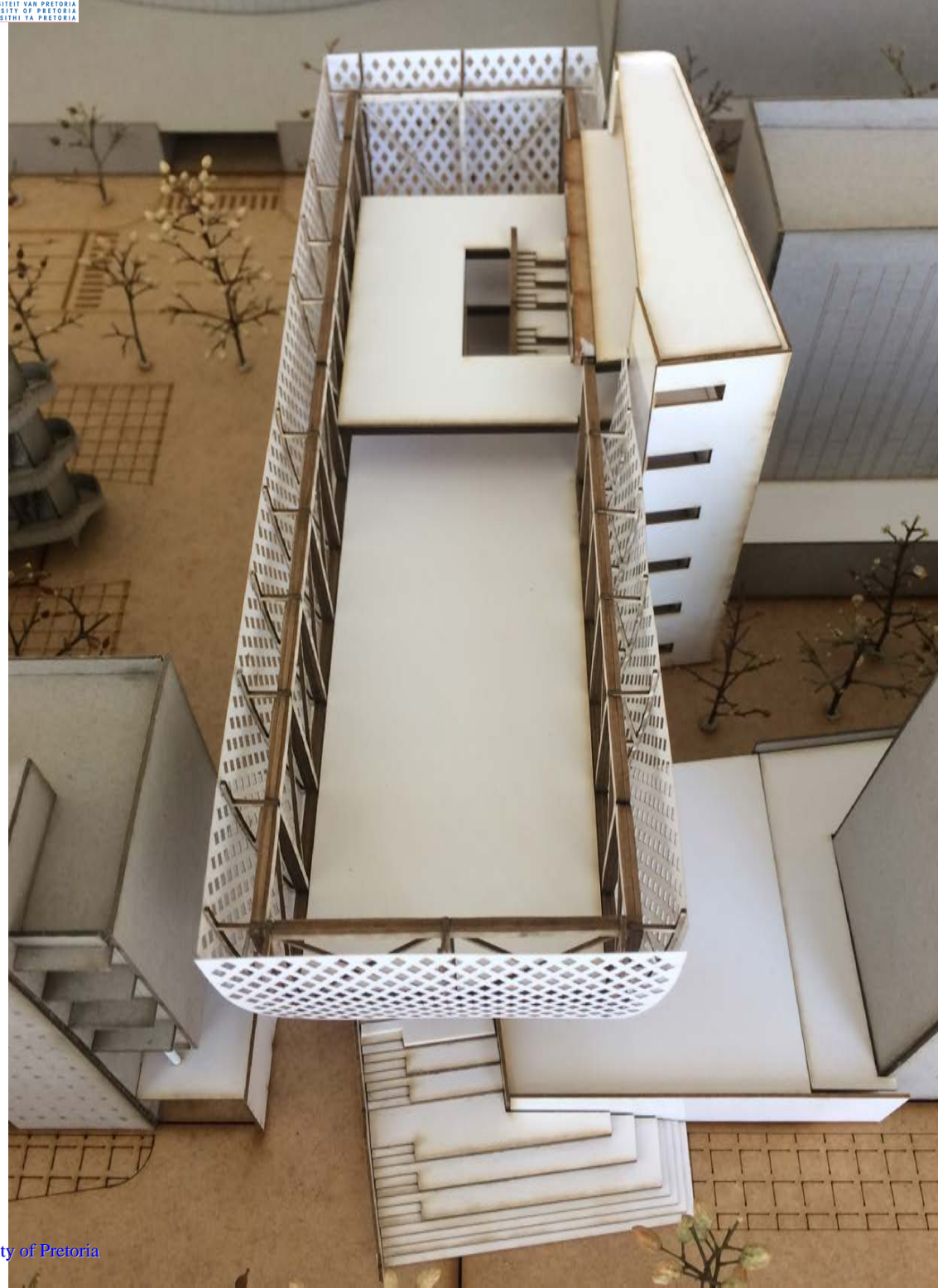
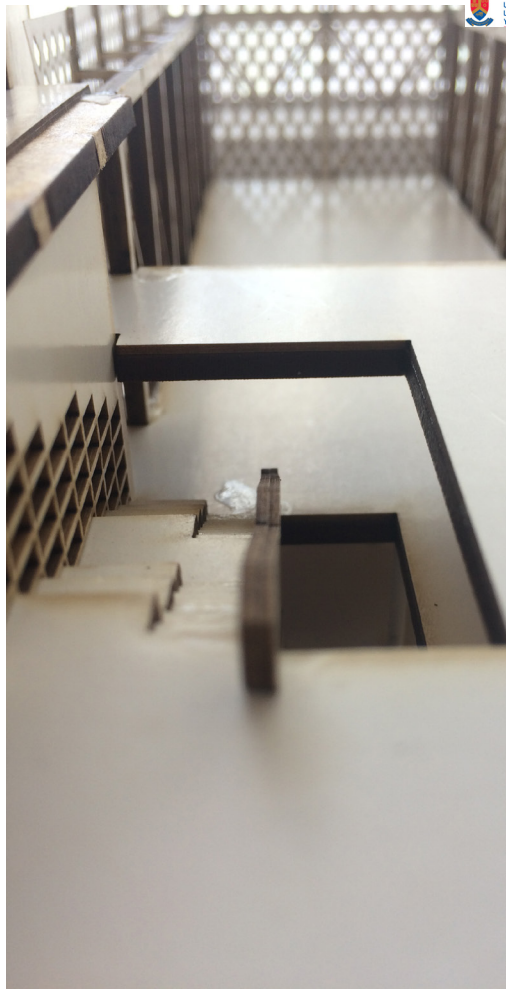




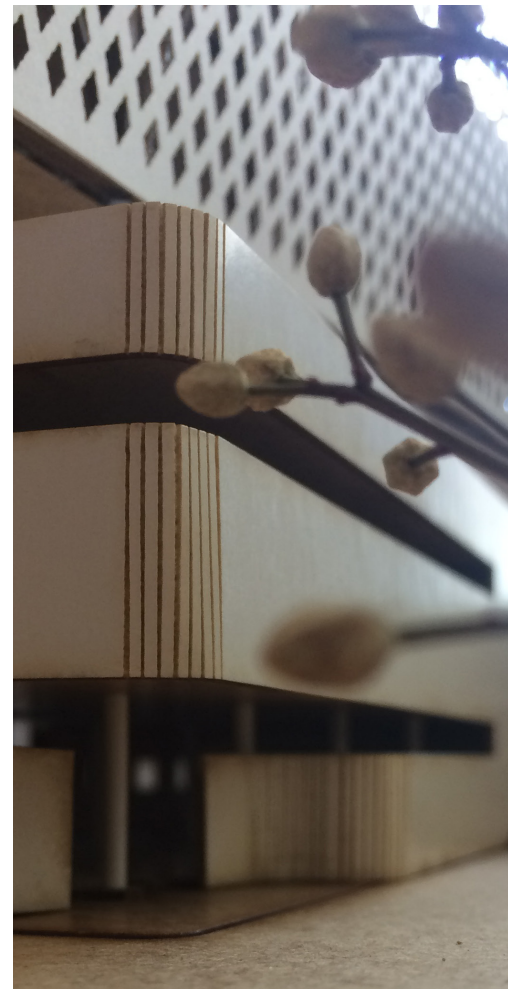
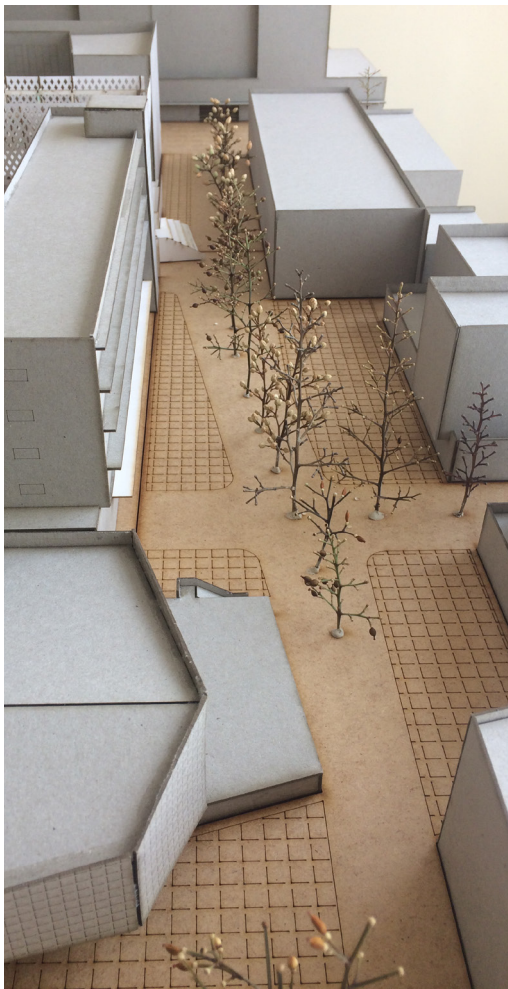


















# List of figures

Figure 1: Shearing layers of change. Brand, S. 1994. How buildings learn: What happens after they're built. New York: Penguin Books: 13.	9
Figure 2: Conservation diagram - Maintenance.	14
Figure 3: Conservation diagram - Preservation.	15
Figure 4: Conservation diagram - Restoration.	16
Figure 5: Conservation diagram - Reconstruction.	17
Figure 6: Remodelling diagram - the building within.	18
Figure 7: Remodelling diagram - the building over.	19
Figure 8: Remodelling diagram - the building around.	20
Figure 9: Remodelling diagram - the building alongside.	21
Figure 10: A comprehensive strategy for the conservation of a place.	22
Figure 11: Shattered, but not broken.	24
Figure 12: South Boiler House interior. GFC Locations Directory. n.d. [Online]. Available:< <a href="http://www.gautengfilm.org.za/locations/all-locations/111-turbine-hall">http://www.gautengfilm.org.za/locations/all-locations/111-turbine-hall</a> > [Accessed 26 August 2017].	25
Figure 13: link to Turbine Hall. GFC Locations Directory. n.d. [Online]. Available:< <a href="http://www.gautengfilm.org.za/locations/all-locations/111-turbine-hall">http://www.gautengfilm.org.za/locations/all-locations/111-turbine-hall</a> > [Accessed 26 August 2017].	25
Figure 14: Befor renovation. The Forum Company. n.d. [Online]. Available:< <a href="http://blog.theforum.co.za/the-story-of-turbine-hall-newtown-johannesburg">http://blog.theforum.co.za/the-story-of-turbine-hall-newtown-johannesburg</a> > [Accessed 26 August 2017].	25
Figure 15: After renovation. GFC Locations Directory. n.d. [Online]. Available:< <a href="http://www.gautengfilm.org.za/locations/all-locations/111-turbine-hall">http://www.gautengfilm.org.za/locations/all-locations/111-turbine-hall</a> > [Accessed 26 August 2017].	25
Figure 16: Tshwane House under construction.	26
Figure 17: History behind bars.	28
Figure 18: Extramural Building, University of Pretoria. Sandrock, B. 1969. Brian Sandrock. Plan, 54(5):28).	32
Figure 19: Combined ground floor plan of Extramural Building. (Sandrock 1957)	32
Figure 20: Extramural Building organisation diagram.	32
Figure 21: A-block southern façade	33
Figure 22: A-block exterior stairs.	33
Figure 23: First floor balcony C-block.	33
Figure 24: March 2017.	36
Figure 25: April 2017.	36
Figure 26: B-block - Damage to briti tiles.	37
Figure 28: C-block - Damage to southern facade.	37
Figure 27: A-block - damage to northern facade.	37
Figure 29: C-block - Damage to northern façade.	38
Figure 30: C-block - Damage to auditorium entrance.	39
Figure 31: C-block - Damage to first floor.	39
Figure 32: C-block - Damage to southern facade.	39

Figure 33: South-west view of Pretoria from the Extramural Building's roof. _____	40
Figure 34: Representation of the Tshwane Inner City Regeneration Framework. _____	45
Figure 35: The need for small blocks. Jacobs, J. 1961. The death and life of great american cities. Harmondsworth: Penguin Books: 179-182. _____	46
Figure 36: Area of investigation. _____	48
Figure 37: Mapping of civic precinct. _____	48
Figure 38: Mapping of civic precinct. _____	49
Figure 39: Psychogeographic mapping and social spines of the Civic Precinct. _____	50
Figure 40: Programming of the Civic Precinct. _____	52
Figure 41: Paley Park in winter. Henderson, J. [Online]. Available:< <a href="https://en.wikipedia.org/wiki/File:Paley_Park_jeh.jpg">https://en.wikipedia.org/wiki/File:Paley_Park_jeh.jpg</a> > [Accessed 27 August 2017]. _____	54
Figure 42: Entrance on 53rd Street. U.S. National Archives and Records Administration. [Online]. Available:< <a href="https://en.wikipedia.org/wiki/file:a_cbs_secretary_uses_her_lunchbreak_to_help_plant_flowers_at_entrance_to_paley_park,_a_gift_to_the_city_from_cbs..._-_nara_-_551705.jpg">https://en.wikipedia.org/wiki/file:a_cbs_secretary_uses_her_lunchbreak_to_help_plant_flowers_at_entrance_to_paley_park,_a_gift_to_the_city_from_cbs..._-_nara_-_551705.jpg</a> > [Accessed 27 August 2017]. _____	54
Figure 43: Tree canopy. Siklo, S. [Online]. Available:< <a href="https://www.pps.org/places/paley-park/">https://www.pps.org/places/paley-park/</a> > [Accessed 27 August 2017]. _____	55
Figure 44: Public art. Boucher, M. [Online]. Available:< <a href="https://www.pps.org/places/paley-park/">https://www.pps.org/places/paley-park/</a> > [Accessed 27 August 2017]. _____	55
Figure 45: Moveable furniture. Boucher, M. [Online]. Available:< <a href="https://www.pps.org/places/paley-park/">https://www.pps.org/places/paley-park/</a> > [Accessed 27 August 2017]. _____	55
Figure 46: The search _____	58
Figure 47: Programme diagram of existing building, on plan. _____	58
Figure 48: Programme diagram of existing building, on elevation. _____	58
Figure 49: Programme diagram of new building, on elevation. _____	58
Figure 50: Supply and demand. _____	59
Figure 51: Proposed programme diagram for the A-block _____	61
Figure 52: Proposed programme diagram of C and D-block _____	61
Figure 53: Final programme diagram of resource centre _____	61
Figure 54: Seattle Central Library exterior view. Ruault, P. [Online]. Available:< <a href="http://oma.eu/projects/seattle-central-library">http://oma.eu/projects/seattle-central-library</a> > [Accessed 28 August 2017]. _____	62
Figure 55: Building meets sidewalk. Ruault, P. [Online]. Available:< <a href="http://oma.eu/projects/seattle-central-library">http://oma.eu/projects/seattle-central-library</a> > [Accessed 28 August 2017]. _____	63
Figure 56: Interior space. Ruault, P. [Online]. Available:< <a href="http://oma.eu/projects/seattle-central-library">http://oma.eu/projects/seattle-central-library</a> > [Accessed 28 August 2017]. _____	63
Figure 57: Reading room. Ruault, P. [Online]. Available:< <a href="http://oma.eu/projects/seattle-central-library">http://oma.eu/projects/seattle-central-library</a> > [Accessed 28 August 2017]. _____	63
Figure 58: Program development. OMA. [Online]. Available:< <a href="http://www.archdaily.com/11651/seattle-central-library-oma-lmn">http://www.archdaily.com/11651/seattle-central-library-oma-lmn</a> > [Accessed 28 August 2017]. _____	63
Figure 59: A device for changing perception _____	70
Figure 60: Conceptual diagram. _____	72
Figure 61: Early conceptual section. _____	72
Figure 62: Early conceptual elevation _____	72

Figure 63: Sketch of floating roof over public space. _____	73
Figure 64: Continuous skin.concept sketc. _____	73
Figure 65: Re-imagined B-block sketch. _____	73
Figure 67: View from air. Snøhetta. [Online]. Available:< <a href="http://snohetta.com/project/42-norwegian-national-opera-and-ballet">http://snohetta.com/project/42-norwegian-national-opera-and-ballet</a> > [Accessed 29 August 2017]._____	74
Figure 66: View from water. Snøhetta. [Online]. Available:< <a href="http://snohetta.com/project/42-norwegian-national-opera-and-ballet">http://snohetta.com/project/42-norwegian-national-opera-and-ballet</a> > [Accessed 29 August 2017]._____	74
Figure 68: Public lobby. Snøhetta. [Online]. Available:< <a href="http://snohetta.com/project/42-norwegian-national-opera-and-ballet">http://snohetta.com/project/42-norwegian-national-opera-and-ballet</a> > [Accessed 29 August 2017]._____	75
Figure 69: View from water. Snøhetta. [Online]. Available:< <a href="http://snohetta.com/project/42-norwegian-national-opera-and-ballet">http://snohetta.com/project/42-norwegian-national-opera-and-ballet</a> > [Accessed 29 August 2017]._____	75
Figure 70: Scale 1-500 context model with concept maquette. _____	78
Figure 71: Scale 1-200 context model. _____	78
Figure 72: Scale 1-100 structural model of C-Block. _____	78
Figure 73: Theoretical framework redevelopment strategy. _____	79
Figure 74: Block Framework indicating route, zoning and programming. _____	80
Figure 75: Programing maquette test placed on a plan. _____	82
Figure 76: Programing maquette test placed in context. _____	82
Figure 77: Alternative arrangements of programing maquette. _____	82
Figure 78: Programing sketch in elevation. _____	82
Figure 79: Movement diagram. _____	83
Figure 80: Diagramatic maquette in context. _____	84
Figure 81: Maquette adressing public space. _____	84
Figure 82: Design development sketch exploring primary and secondary elements. _____	84
Figure 83: Massing maquette. _____	84
Figure 84: Maquette adressing covered public space _____	84
Figure 85: Ground floor sketch plan. _____	85
Figure 86: First floor sketch plan _____	85
Figure 87: Development of first floor sketch plan. _____	85
Figure 88: Diagramatic development of first floor layout. _____	85
Figure 89: Technical development strategy. _____	88
Figure 90: Technical concept. _____	88
Figure 91: Unpacking the structure. _____	89
Figure 92: Structural core and framed structure diagram. _____	89
Figure 93: East elevation expressing an exposed structural frame. _____	90
Figure 94: Long section through public lecture hall and vertical circulation. _____	90
Figure 95: Developed first floor skech plan. _____	91
Figure 96: Developed fourth floor sketch plan. _____	91
Figure 97: Existing building material palette. _____	92
Figure 98: Solar movement. _____	93

Figure 99: Solar angle at solstice and equinox.	93
Figure 100: Cross ventilation.	93
Figure 101: Solar chimney. Bradshaw, V. 2006. The building environment: active and passive control systems: 224.	93
Figure 102: Hybrid ventilation strategy.	94
Figure 103: Rainwater harvesting system diagram for existinf building.	95
Figure 104: Rainwater harvesting system diagram for resource centre and public facilities.	95
Figure 105: Solar panel positioning.	95
Figure 106: SBAT report, first iteration.	96
Figure 107: SBAT report, second iteration.	96
Figure 108: Model in progress showing atrium and vertical circulation.	98
Figure 109: Model in context as viewed from the street.	98
Figure 110: Model from northern walkway.	98
Figure 111: Model showing plinth and public lecture hall.	98
Figure 112: Model showing formal relationship to existing.	98
Figure 113: Medley of concept models.	98
Figure 114: Forces diagram.	99

# References

- Artefacts.co.za. 2017. List of projects for Brian Alan T. Sandrock. [Online]. Available: <[http://www.artefacts.co.za/main/Buildings/arch\\_bldgs.php?archid=1957&name=Brian%20Alan%20T&surname=SANDROCK](http://www.artefacts.co.za/main/Buildings/arch_bldgs.php?archid=1957&name=Brian%20Alan%20T&surname=SANDROCK)> [Accessed 15 March 2017].
- Artefacts.co.za. 2017. Sandrock, Brian Alan T. [Online]. Available: <<http://www.artefacts.co.za/main/Buildings/archframes.php?archid=1957>> [Accessed 15 March 2017].
- Bakker, K.A. & Müller, L. 2010. Intangible Heritage and Community Identity in Post-Apartheid South Africa. *Museum International*, 62(1-2): 48–54.
- Bakker, K.A. 2011. Heritage as transmission: Towards achieving a more dominant narrative of inclusion. Paper delivered at the international conference of the UMass Amherst Centre for Heritage & Society: Why does the past matter? Changing Visions, Media, and Rationales in the 21st Century. May 4-7, 2011, UMass Amherst.
- Bradshaw, V. 2006. *The building environment: active and passive control systems*. Hoboken: John Wiley & Sons.
- Brand, S. 1994. *How buildings learn: What happens after they're built*. New York: Penguin Books.
- Conradie, D. & Van Wyk, L. 2012. *The Green Building Handbook, South Africa – The Essential Guide – Appropriate Passive Design Approaches for the Various Climatic Regions in South Africa*. Volume 5. Johannesburg: alive2green.
- Conradie, D. 2012. Quantified strategies for Köppen climatic classification Cwa. *The Green Building Handbook, South Africa – The Essential Guide – Appropriate Passive Design Approaches for the Various Climatic Regions in South Africa*. Edited by Van Wyk, L. Volume 5. Johannesburg: alive2green: 113
- Cooke, J. 1998. Revisions of the modern: the end of the international style in the Transvaal. In: Fisher, R.C., Le Roux, S.W. & Maré, E. (eds.) *Architecture of the Transvaal*. 1st ed. Pretoria: University of South Africa: 231-251.
- Department of Public Works, 2009. *Vision, Mission and Values*. [Online]. Available: <<http://www.publicworks.gov.za/avisionandmission.html>> [Accessed 02 August 2015].
- DoJ&CD: Justice College. 2016. *Background, ethos & values*. [Online]. Available: <<http://www.justice.gov.za/juscol/values.html>> [Accessed 17 April 2017].
- Fisher, R.C. 1999. The native heart: the architecture of the University of Pretoria campus. In: Judin, H., Vladislavić I., Nederlands Architectuurinstituut (eds.) *Blank architecture, apartheid and after*. Rotterdam: NAI Publishers: 221-235

Fisher, R.C. et al. 2003. The modern movement architecture of four South African cities. *Docomomo*. 28: 68-75.

Gerneke, G. 1998. From Brazil to Pretoria, the second wave of the modernist movement. In: Fisher, R.C. et al. (eds.) *Architecture of the Transvaal*. 1st ed. Pretoria: University of South Africa: 196-229.

Greig, D.E. 1971. *A guide to architecture in South Africa*. Cape Town: H. Timmins.

Groak, S. 2002. *The idea of building – thought and action in the design and production of buildings*. London: E & FN Spon.

Harvey, D. 2012. *Rebel cities: from the right to the city to the urban revolution*. London: Verso.

Holm, D. 1998. Kerkplaats and capitalists: the first architects in context. In: Fisher, R.C., Le Roux, S.W. & Maré, E. (eds.) *Architecture of the Transvaal*. 1st ed. Pretoria: University of South Africa: 55-78.

Hosagrahar, J. 2008. Interrogating difference: postcolonial perspectives in architecture and urbanism. In: Crysler, C. et al. *The sage handbook of architectural theory*. London: SAGE: 70-84.

ICOMOS Australia. nd. The Burra Charter: the Australia ICOMOS charter for the conservation of places of cultural significance. [Online]. Available: <<http://www.icomos.org/australia/burra.html>> [Accessed 22 March 2017].

Jacobs, J. 1961. *The death and life of great American cities*. Harmondsworth: Penguin Books.

Jordaan, G.J. 1989. Pretoria as 'urbs quadrata'. *Architecture S.A.* May/June: 26-29.

Joubert, P. 2010. *When climate inspires change*. Pretoria: Published by Author.

Le Roux, S. & Botes, N. 1991. *Plekke en geboue van Pretoria, 'n oorsig van hulle argitektoniese en stedelike belang, volume twee: die noordoostelike en noordwestelike kwadrante*. Pretoria: Pretoria Argitektuurvereniging.

Le Roux, S. 1990. *Plekke en geboue van Pretoria: 'n oorsig van hulle argitektoniese en stedelike belang. Vol 1*. Pretoria: Pretoria Argitektuurvereniging.

Le Roux, S.W. & Holm, D. 1989. Die onderbroke stad. *Architecture SA*. May/June: 30-34.

Machado, R. 1976. Old Buildings as palimpsest: towards a theory of remodelling. *Progressive Architecture*. 11: 46-49.

Marquis-Kyle, P. & Walker, M. 2004. *The Illustrated Burra Charter: Good Practice for Heritage Places*. Australia: ICOMOS.

Nora, P. 1989. Between memory and history: Les lieux de mémoire. *The regents of the University of California*. 26(Representations): 7-24.



Nuttal, C.J. 2009. Turbine square: urban renewal. *Architecture S.A.* January/February: 40-45

Nuttgens, P. 1983. *The story of architecture*. London: Phaidon.

O'Rourke, K. 2013. *Walking and mapping: artists as cartographers*. Cambridge: MIT Press

Preller, GS. 1938. *Old Pretoria: brief story of the city's Voortrekker-period*. Pretoria: Die Afrikaanse Kultuurraad.

Project for Public Spaces. n.d. Paley Park. [Online]. Available:<<https://www.pps.org/places/paley-park/>> [Accessed 27 August 2017].

Purcell, M. 2002. Excavating Lefebvre: The right to the city and its urban politics of the inhabitant. *GeoJournal*, 58(2/3): 99-108.

Rex, HM. 1974. *Die lewe en werk van Sytze Wopkes Wierda in Nederland met verwysing na sy betekenis vir die Zuid-Afrikaansche Republiek*. PhD Thesis, University of Pretoria, Pretoria.

Robert, P. 1989. *Adaptations, new uses for old buildings*. New York: Princeton Architectural Press.

Ruault, P. n.d. Seattle Central Library. [Online]. Available:<<http://oma.eu/projects/seattle-central-library>> [Accessed 28 August 2017].

Sandrock, B. 1969. Brian Sandrock. *Plan*, 54(5): 20-29.

Snøhetta. n.d. Norwegian National Opera and Ballet. [Online]. Available:<<http://snohetta.com/project/42-norwegian-national-opera-and-ballet>> [Accessed 29 August 2017].

South Africa. Department of Public Works. City of Tshwane. 2015. Tshwane inner city regeneration. [PowerPoint presentation]. Correspondence, 01 April 2016, Pretoria.

Stauch, HWE. 1951. A modern office building. *Public Works of South Africa*. XI(92): 13-18

University of Pretoria. 1960. *Ad destinatum: Gedenkboek van die Universiteit van Pretoria*. Johannesburg: Voortrekkerpers Beperk.

Van Vollenhoven, A.C. 1992. 'n Histories-argeologiese ondersoek na die militêre fortifikasies van Pretoria (1880-1902). MA dissertation, University of Pretoria, Pretoria.

Whyte, W.H. 2001. *The social life of small urban spaces*. New York: Project for Public Spaces.

