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Mentor:
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Submitted in partial fulfillment of the requirements for the degree of Magister in Architecture [Professional] in the Faculty of Engineering, Built Environment and Information Technology

University of Pretoria
Department of Architecture

SCHOOL FOR THE BUILT ENVIRONMENT_UP
The building for the school of the Built Environment focuses on the concept of time as form giver in architecture. Time, a governing factor of existence, regulating simultaneously through a linear and cyclical pattern in its operation. The aim of the discourse is to establish a parity between humankind and nature within an urban environment. The goal is to create an environment that acts as time-mediator between the metaphysical and physical city and its myriad users. The emphasis being on the user-interface on the project and its surroundings. Thereby potentially establishing a platform where the city is continually challenged in terms of observing and being observed.

The architecture itself should provide an abridgement of moments in time.

The prominence of the proposed site opens up the possibility of investigating an iconic branding image for the campus. This could be achieved in terms of potential visual resource and movement pattern.
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referred works

addendum
University of Pretoria etd – Boer, G P (2005)

Figures:

0.1. Book cover page: 3-D CAD models of design proposal over time.
0.2. Photomontage of the UP from Lynnwood road.
0.3. Scouring erosion lays bare the sinew and substance of earth. [BELT, A. National Geographic, April 1997 vol. 191 no. 4]

Moment 01:
From left to right:
1.1. Whirlpool Galaxy. 28 million light-years away. In effect looking back in time for 28 m light years (dependant on amount of magnification). [National Geographic. February 2003.]
1.3. Scent in the microgravity of Space. [Madere, J.]
1.7. Corrugated sheet cladding. Refurbishment. Photo: StudioMAS.

From left to right:
1.9. A constant rain of microscopic interplanetary dust particles delivers a variety of compounds, which almost surely contributed to the primordial soup of the substance of Earth. [Heisey, A. [National Geographic, March, 1998 vol. 194 no. 3.]
1.10. VW Pheatons gliding across a beauty queen promenade, a 25m long neon tunnel where the paint job is checked for blemishes. The finished cars are displayed in a glass parking lot. [Champa, P. Surface, issue 43]
1.11. Lalibela, pilgrimage site for Ethiopian Christians for 800 years. 12 Stone churches cut from volcanic tuff. [Steinmetz, G. National Geographic, July 2001.]
1.12. Stark circle of rock measuring about 30 m in the Tenere desert below the masif Adrar Madet in Niger. Roughly 2 km away in each of the four cardinal directions arrows point away from the circle, whose origin, purpose, and age remain a mystery. [Steinmetz, G. National Geographic, March, 1999 vol. 195 no. 3.]
1.14. Brisingid sea stars through a ‘deep-sea-hubble’, ecosystems such as these may hold a clue to early life on earth. [Kostof, E. National Geographic, February 2003]
1.17. Traffic jam. [UN Studio: Move.]
1.18. Advertisement logo for the University of Pretoria

Background image:
1.21. Abell 1689, light being bent due to gravitational pull from 1amassed galaxies. [Cowen, R. National Geographic. February 2003.]
From top to bottom:
1.22. Soft X-ray image of the sun [Universal Records 2002, 3 doors down Away from the sun.]
1.23. Burrowing through block modules. [UN Studio: Move.]
1.24. Part of a fly’s eye. Transparency, semi-, or closed. [UN Studio: Move.]
1.25. Abell 1689, light being bent due to gravitational pull from amassed galaxies. [Cowen, R. National Geographic. February 2003.]
1.26. The farther out we look into space, the father back in time we see. Veil of fossil radiation dating 300 000 years after the big-bang that permeates space. This is the limit of our view when the universe emerged from a state of hot plasma and became transparent. [National Geographic, October 1999, Vol. 196, no. 4]

Moment 02:
Baseline study cover page. From left to right:
2.2. Wind turbines in Iowa, USA, tapping the resources of renewable energy. [Time. April-May 2000. Vol. 155 No.16A. p.60]
2.5. Concept model 01, addition & subtraction / solid & void on >200m structure.
2.6. The worlds’ tallest tree_126,5m Coastal Redwood. [NG, January 1997, Vol 191, no.2]
2.7. Barragan’s Towers of Satelite City_50.5m. Mexico City, 1957. [Ambasz 1976:52]
2.8. Concept model 01. Integrating the structure with the site to increase energy flow to and from the building.
2.9. Concept sketch of section through the structure.
2.10. Concept model 01, entrance / exit / accent.
2.11. Occupancy time-graph

Moment 03:
3.1. Context study cover page. Background image of scaffolding and crane, figure-ground / ground-figure stury of the UP campus
3.2. World map of location of Pretoria, South Africa. [Author]
3.3. Land use map of the Univeristy of Pretoria. [Author]
3.4. Development strategies of the UP as well as external influences and proposals. [Aerial photograph: UP Department of Geology and Municipality
of Tshwane]

3.5. Proposed Lynnwood and Roper street edge-development. [Aerial photograph: UP Department of Geology and Municipality of Tshwane]

3.6. Congregating bus-stops in Lynnwood street. [Aerial photograph: UP Geology department and Municipality of Tshwane]

3.7. View axis / movement corridors on and surrounding the UP campus. [Author]

3.8. Figure-ground / Ground-figure image of UP and surrounding areas. [Author]

3.9. Aerial photograph: UP Department of Geology and Municipality of Tshwane]

3.10. ‘iron curtain’ of pallisade security fence on the periphery of the main campus of UP [Author]

3.11. Concept sketch of the status quo of Lynnwood street pavement. [Author]


3.13. Photograph of Academic Information Centre on the left and the Humanities building on the right hand side. [Author]

3.14. Vertical sun angles at 12:00 for Pretoria region.

3.15. Aerial photograph of the main campus of UP. [Geology department and Municipality of Tshwane]

3.16. The farther out we look into space, the farther back in time we see. Veil of fossil radiation dating 300 000 years after the Big Bang that permeates space. This is the limit of our view when the universe emerged from a state of hot plasma and became transparent. [National Geographic, October 1999, Vol. 196, No. 4]

3.17. Photosynthetic oxygen producing bacteria that is seen as an oxygen pioneer plant for primordial earth. [Ewert, K. National Geographic, March, 1998, Vol. 193, No. 3]


3.21. Tree-rings as time capturing mechanism giving a history of the growth cycles of a particular tree. [VISI, 2004, p. 171]

3.22. Early years of the University of Pretoria. [UP archive]

3.23. University of Pretoria historical development plan. [Author]

3.24. Aerial photograph of UP in 1943. [UP Archive]

3.25. Aerial photograph of UP October 1945. [UP Archive]


3.27. Artist impression of ‘Transvaal University College’ TUC 1911. [Photo: UP Archive]

3.28. Photo of the UP showing the Old Arts building. 1911. [Photo: UP Archive]

3.29. Eland sculpture on pillar at western vehicular entrance of UP, accessed from University street, aptly named Elandsport to retain some of the site’s heritage.

3.30-33. Series of aerial photographs of UP over time. [Photo: UP Archive]

Clockwise from top left:

3.34. Old Arts building. 1911).

3.35. Agriculture building. (1920).

3.36. Glass greenhouse designed by Strauss Brink, added to Botany complex in 1956.


3.38. Old Chemistry building (1911).

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3.39. Detail of Merensky Library (1938)


Clockwise from top left:

3.41. Amphitheatre, Musaion. (1960)

3.42. Administration building (1970)

3.43. Engineering building (1956-60)

3.44. Detail of façade, Aula and Student Centre. (1958)

3.45. Aula and Student Centre (1958)

3.46. Detail of external lighting, Botany building designed by Moerdyk. & Watson. (1940-59)

3.47. Background image: Engineering building (1956-60)

From top to bottom:

3.48. Aerial photograph of Administration building. 1970. [UP Archive]

3.49-51. Series of photographs on the main campus of the UP.

3.52. Photograph of Academic Information Centre on the left and the Humanities building on the right hand side. [Author]

3.53. Background image: Driving ambition, architect Gunter Henn designed the Volkswagen manufacturing facility on Strassburger Platz, Dresden. Production site of the new VW Phaeton. [Champa, P. Surface, issue 43]

3.54. The sacred city of the Inca, Machu Picchu, altering the landscape for centuries without destroying the balance of nature. [Lanting, F. National Geographic, August 1999, Vol. 199, No. 2]


**MOMENT 04**

Assimilate cover page. From top to bottom:


4.2. Geographical barriers such as Robben Island’s prison. ‘The Island’ as seen by the confluence of time and democracy into its current state as a World Heritage Site. Artist: P. Matloua. [Warren Siebrits Modern and Contemporary Art, Johannesburg, South Africa-Another Country: X27ap]


4.4. Tulane University Centre, Louisiana. [Vincent James Associates in All


4.11. Aerial photograph of the great pyramids at Giza, Egypt. [http://www.amtsgygm.sdbg.dk/s/pyramid.htm]


4.15. Photo of School of Architecture model. Project based on two axes. A horizontal east-west orientation, and a vertical programme differentiation. , Deux Lions District, Tours, France. [Migayrou 2001]

4.16. Model of School of Architecture eastern elevation. [Migayrou 2001]

4.17. Model of School of Architecture southern elevation. [Migayrou 2001]

4.18. Model of School of Architecture. Different levels each embrace different programme themes. [Migayrou 2001]

4.19. Courtyard view of School of Architecture, Deux Lions District, Tours, France. [Migayrou 2001]


4.22. Level 3 presentation plan, Carpenter Centre. Le Corbusier. [Curtis 1986:218]


4.25. Model of West Coast Gateway, Los Angeles, depicting past and present layers inherent in any location. [Migayrou 2001]


4.49-50. CAD model of southern façade growth screen.

4.51-52. Rhythmic seasonal changes of the appearance of the southern façade.

4.53. Diagram illustrating the various permanent and adaptable areas of the building.

From top to bottom:
4.49-50. CAD model of southern façade growth screen.

4.51-52. Rhythmic seasonal changes of the appearance of the southern façade.

4.53. Diagram illustrating the various permanent and adaptable areas of the building.

From top to bottom:
4.54. Background image: 3-D CAD detail of western façade wall.

4.55. Time as the silent agent of effect on timber.

4.56. The confluence of time and erosion on a concrete retaining wall.
5.57. Photograph of gabion basket wall 'cladding'. Photograph: studioMAS.
5.58. Photograph illustrating the visual texture of galvanised mild steel.
5.59. Atmospheric oxidation of exposed mild steel. Photograph: studioMAS.

Moment 06:
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6.16. Photomontage of CAD model plan perspective and the plan drawing.

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6.17. Northern façade of CAD model.
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6.20. Perspective of south-western façade.
6.21. Southern façade of CAD model.

6.22. Portal image of CAD model.
6.23. Perspective view of square.
6.24. Detail of southern façade.
6.25. Perspective view of a secondary entrance and media centre.

6.26. Bird's eye view of CAD model from the south-west of the building.
6.27. Human interface design / skin architecture.

6.28. Bird's eye view of CAD model from the north-west of the building.
6.29. Internal / external. View of CAD model showing the main entrance and portal.

From top to bottom:
6.30. Southern façade growth screen
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6.32. Reinforce concrete staircase walls.
6.33. Northern view of staircase walls.

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6.34. Front perspective image of northern façade sunscreen skin module.
6.35. Connection detail between steel sunscreen rib and reinforced concrete column.
6.36. Side perspective of sunscreen CAD model.

Moment 07:
Technical investigation cover page:
7.1. Electricity hub of Building management system. [http://www.online.kek.jp/belle.evbld/pictures.htm]

7.2. Detail drawing of northern façade sunscreen skin connection detail.
7.3-8. Series of CAD model structure.
7.9-15. Skin architecture.

From top to bottom:

7.20. Drawing of fire exits and effective areas.
Clockwise from top:
7.22. Perspective view of portal with lift shaft on the left hand side. The lift shaft acts as a light well during night time, emitting filtered red light on the main access ramp. The daily usage of the elevator functions as a time modulator of its users' movement.
7.23. Western façade perspective view of CAD model with the lift shaft depicted in red.