

Boundaries in the Urban Context– Phenomenal vs. Literal Transparency:

Inter institutional & Disciplinary Research Facility at the University Square, Hatfield

Design project discourse



I am truly blessed. Thank you to the almighty creator;
For my wonderful family, friends, mentors and strangers that have
come into my life to support me. These people have kept me going,
you have kept me going.

The creator would never allow you into a situation that you can't handle



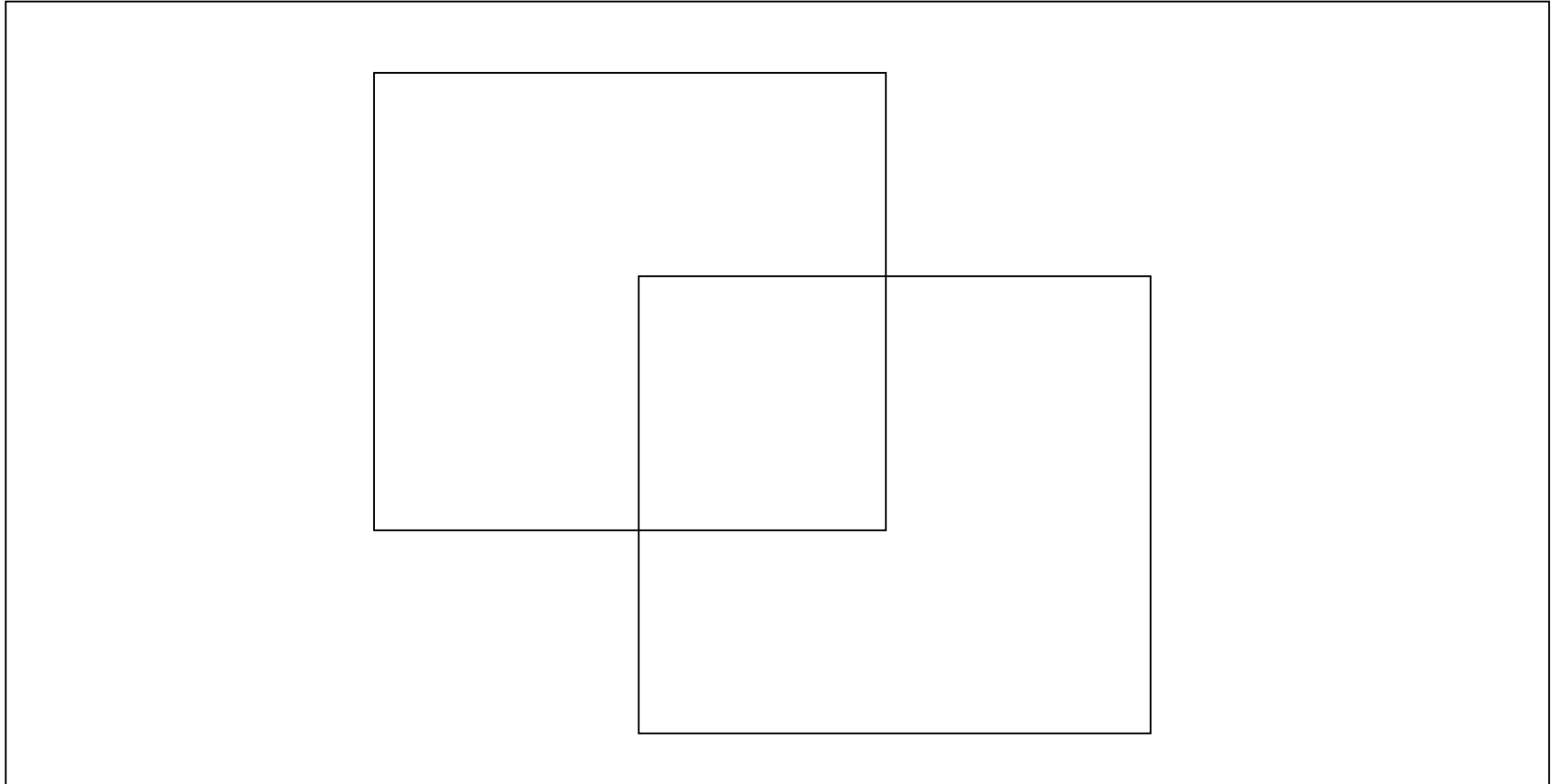


TABLE OF CONTENTS:

- i. List of figures

CHAPTER ONE – CONTEXT ANALYSIS

1. Introduction and background
2. Context study
 - a) macro study
 - b) micro context study
1. Precedent study
 - a) Altering perceptions
 - b) Accessibility and orientation
 - c) Passive environment control systems
 - d) Programme
 - e) Spatial interpretation and application

CHAPTER TWO – THEORETICAL DISCOURSE

1. Urban design development
 - Connecting nodes of human activity
 - Stability against the loss of connections
 - A success of retail areas and plazas
 - A path as the edge of a region
 - Priority for creating pedestrian paths
 - The pattern of roads as an organizing principle
 - Necessary discontinuities and separation
2. The building within the urban context
 - The city: fragmentation versus unity
3. The building
 - Invisible barriers through design
 - Phenomenal transparency
 - Liminality in architecture
 - Multi-layered meaning

CHAPTER THREE – DESIGN REPORT

1. Initial design approach
 - a) Urban relationships- redefining barriers
 - b) Principle urban issues in the planning process
 - c) Concept 1
 - d) Concept 2
 - e) Concept 3
2. Design development
 - a) Spatial Organization
 - b) Manipulating perceptions
 - c) Addressing entry
 - d) Defining the square as a liminal space
 - e) Development facilities
 - f) Structural concept 1
 - g) Structural concept 2
3. Conclusion

CHAPTER FOUR –TECHNICAL REPORT

1. Introduction
2. Precedent study
3. Site and demolition
4. Material selection
5. Structure
6. Vertical circulation
7. Façade treatment
8. Services
9. Thermal comfort
10. Storm water
11. Fire safety
12. Pavers
13. Solar panels

APPENDIX 1

Technical drawings

TABLE OF FIGURES:

| | | | |
|--|----|---|----|
| Figure 1.01: Proposed site at UP, Hatfield campu (Author) | 2 | Figure 2.02: Gauteng Tourism building – Altering perceptions (Photo images by Author) | 15 |
| Figure 1.02: Proposed site Street edge (Author), | 2 | Figure 2.03: Johannesburg women’s prison (Google image) | 15 |
| Figure 1.03: Typical view down festival Street (4 th year Hatfield campus analysis- Group 4) | 2 | Figure 2.04: National Assembly for Wales – Accessibility & orientation (Richard Rogers webpage) | 16 |
| Figure 1.04: Locality plan (Gautrain Rapid Rail Link, September 2002:0-1) | 6 | Figure 2.05: Hatfield Square locality layout plan (Author) | 17 |
| Figure 1.05: Macro locality plan (City of Tshwane Spatial Development Strategy 2010 & beyond, 2007) | 6 | Figure 3.01: Connecting nodes of huiman activity (Salingaros, 1998:55) | 20 |
| Figure 1.06: District analysis (City of Tshwane Spatial Development Strategy 2010 & beyond, 2007) | 7 | Figure 3.02: Stability against the loss of connections (Author) | 21 |
| Figure 1.07: Current land patterns (City of Tshwane Spatial Development Strategy ,2010 & beyond, 2007) | 8 | Figure 3.03: Success of retail areas and plaza’s (Salingaros, 1998:55) | 22 |
| Figure 1.08: Development Proposal (City of Tshwane Spatial Development Strategy, 2010 & beyond, 2007) | 9 | Figure 3.04: Existing urban relationships along Burnett Street (Author) | 22 |
| Figure 1.09: Key driving forces to the Hatfield District (City of Tshwane Spatial Development Strategy, 2010 & beyond, 2007) | 10 | Figure 3.05: A path as the edge of a region (Salingaros, 1998:55) | 23 |
| Figure 1.10: Developmental restriction to the Hatfield District (Author) | 12 | Figure 3.06: Priority for creating pedestrian paths (Salingaros, 1998:55) | 24 |
| Figure 1.11: Public and private transport, and pedestrian routes around the study area (Author) | 13 | Figure 3.07: Existing nodal connectivity footpaths. (Author) | 24 |
| Figure 1.12: The Gap- missing links along the activity spine (Author) | 14 | Figure 3.08: The pattern of roads as an organizing principle (Salingaros, 1998:55) | 25 |
| Figure 1.13: Proposed continuity along Burnett street edge – heights and massing (Author) | 14 | Figure 3.09: Proposed dedicated network paths (4 th year Hatfield district analysis- group 4) | 25 |
| Figure 2.01: Gauteng Tourism building – Aerial photo (Digitalglobe; edited by Author) | 15 | Figure 3.10: Necessary discontinuities and separation (Salingaros, 1998:55) | 26 |
| | | Figure 3.11: Nodal connectivity (Salingaros, 1998:55) | 28 |

| | | | |
|---|----|--|----|
| Figure 3.12: The concept of Phenomenal Transparency illustrated (Fernand Leger, Three Faces, 1926.) | 30 | Figure 4.14: Concept 3 layout (Author) | 45 |
| Figure 3.13: The concept translated - Spatial Transference (Author) | 31 | Figure 4.15: penetrative layout- encouraging connectivity (Author) | 45 |
| Figure 3.14: Experiment with Phenomenal Transparency in 2D (Author) | 31 | Figure 4.16: Street edge relation (Author) | 45 |
| Figure 3.15: Villa Stein, Garches. Le Corbusier, 1927. Garden Façade. (Aaron Crawford, 2001) | 32 | Figure 4.17: Integrated concepts 2 & 3 | 46 |
| Figure 3.16: Villa Stein plan (Aaron Crawford, 2001) | 32 | Figure 4.18: Activity spine, street edge relationships (Author) | 47 |
| Figure 3.17: Experimenting with Phenomenal Transparency in 3D | 33 | Figure 4.19: Relationships translated to site (Author) | 47 |
| Figure 3.18: Touchstone –Abstract translation of concept (Author) | 34 | Figure 4.20: 3D locality model- Proposed continuity of streetscape along spine (Author) | 47 |
| Figure 4.01: Identified Urban issues; possible solutions proposed (Author) | 37 | Figure 4.21: Spatial organization- private versus public realm (Author) | 48 |
| Figure 4.02: Existing primary connections- site analysis (Author) | 38 | Figure 4.22: Initial sketches- spatial division and unification (Author) | 48 |
| Figure 4.03: Linear interpretation of hierarchical nodes (Author) | 39 | Figure 4.23: Initial sketches- orientation (Author) | 48 |
| Figure 4.04: Principle Urban issues to be addressed (Author) | 40 | Figure 4.24: Phenomenal Transparency- applied to layout of dedicated spaces (Author) | 48 |
| Figure 4.05: existing site conditions (Author) | 41 | Figure 4.25: Pragmatic application within context- Phenomenal Transparency, creating liminal spaces for unification. (Author) | 49 |
| Figure 4.06: Site barriers (Author) | 41 | Figure 4.26: Vertical and horizontal relationships on site- between the parts of the building and also their surrounding environment. (Author) | 50 |
| Figure 4.07: Integration of historical buildings –Option 1(Author) | 41 | Figure 4.27: Burnett Street edge- relationships between the building occupant and public. (Author) | 50 |
| Figure 4.08: Integration of historical buildings –Option 2(Author) | 41 | Figure 4.28: Investigation of required heights, ensuring continued relation between building occupants and the general public (Gehl, 1987:12). | 51 |
| Figure 4.09: Concept 1 layout (Author) | 42 | Figure 4.29: Transparency- Activity spine street edge perspective (Author) | 52 |
| Figure 4.10: Conceptual view from the development, down Burnett Street. (4th year Hatfield District analysis, group 4) | 43 | | |
| Figure 4.11: Conceptual view of the development (Author) | 43 | | |
| Figure 4.12: Current university interface with Burnett Street, and public transport stop- the lack there of. (Author) | 44 | | |
| Figure 4.13: Proposed interface of new development, with Burnett and Festival Street. (Author) | 44 | | |

| | |
|--|----|
| Figure 5.15: west wall typical detail (Google image- edited by author) | 74 |
| Figure 5.16: Articulating the barrier- west elevation (Author) | 74 |
| Figure 5.17: Articulating the barrier- east elevation (Author) | 74 |
| Figure 5.18: South façade- relating to its context (Author) | 75 |
| Figure 5.19: Perspective view- site first encounter (Author) | 75 |
| Figure 5.20: Identifying the primary service areas (Author) | 76 |
| Figure 5.21: Typical ventilation stack utilized in building (Author) | 77 |
| Figure 5.22: Pneumatic waste OHsystem illustrated (Google images) | 77 |
| Figure 5.23: Isometric section illustrating service duct layout (IM. Sutherland 2002) | 78 |
| Figure 5.24: Typical storage plant layout utilized | 79 |
| Figure 5.25: Cross ventilation of Threshold 2 (Author) | 80 |
| Figure 5.26: Cross ventilation of Threshold 1 (Author) | 80 |
| Figure 5.27: Shading devices (Author) | 81 |
| Figure 5.28: Drainage detail (82) | |
| Figure 5.29: Roof plan –Water store & drainage (Author) | 82 |
| Figure 5.30: Fire escape exits (Author) | 83 |
| Figure 5.31: Fire escapes and exit routes (Author) | 83 |
| Figure 5.32: Paver selection (Colonial style webpage) | 84 |
| Figure 5.33: Paver layout (Author) | 84 |
| Figure 5.34: Photovoltaic fixing detail (Author) | 85 |
| Figure 5.35: Photovoltaic film technology (Google images) | 85 |