

# RE[CREATE]tion

Revealing the agency of recreational spaces in the township of Mamelodi East through architecture as a “dispositif” for the everyday

Denambaye Martine Demba

16070713

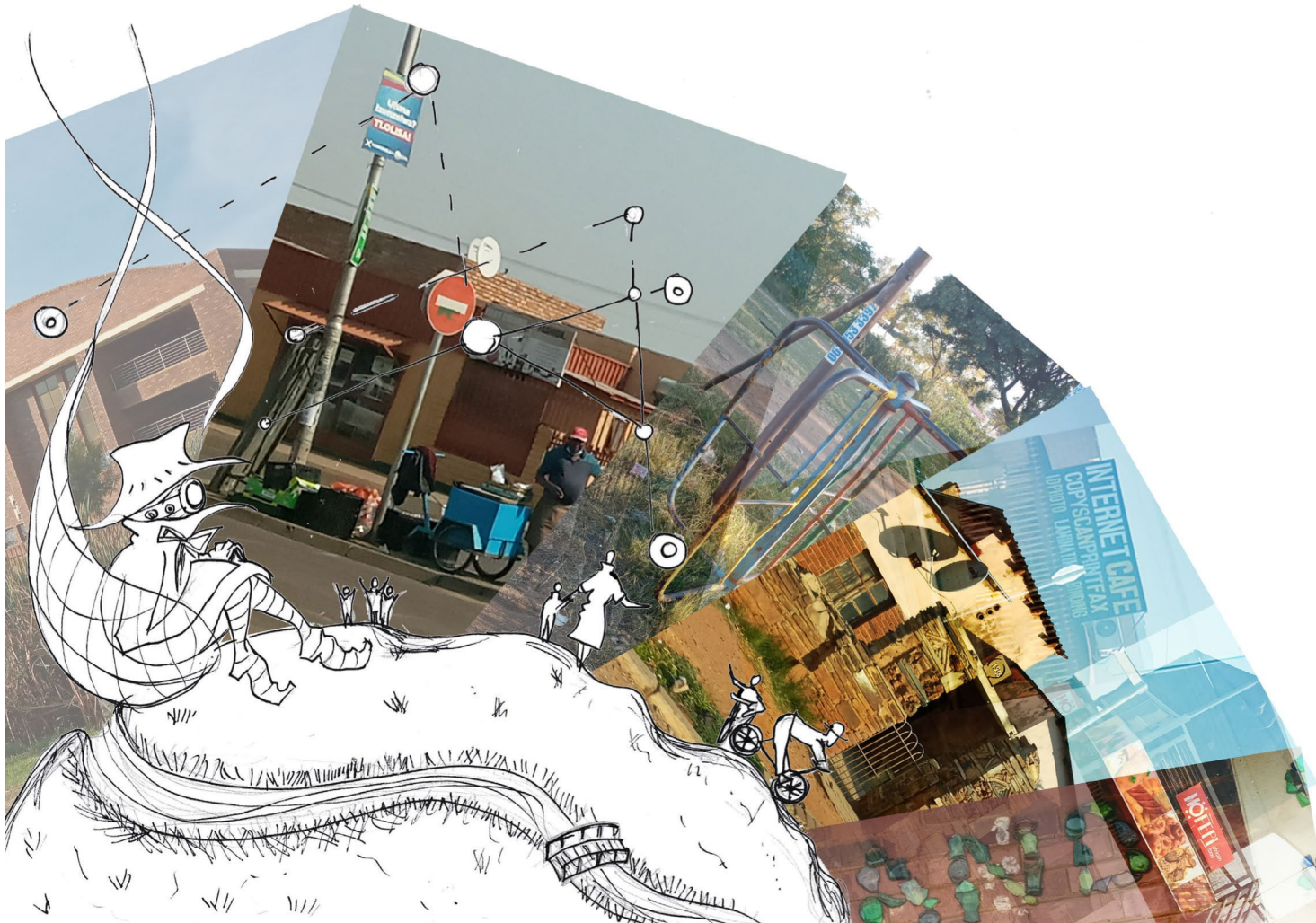




Figure a: Thandanani basketball court (Author 2021)

RE[CREATE]tion: revealing the agency of recreational spaces in the township of Mamelodi  
East through architecture as a “dispositif” for the everyday

by

Denambaye Martine Demba

Submitted in partial fulfilment of the requirements for the degree

Master of Architecture (Professional)

in the

Faculty of Engineering, Built Environment and Information Technology

University of Pretoria

November 2021

Course Coordinator: Prof. Arthur Barker

Study Leader: Paul Devenish

Editor: Debby Dewes

## DECLARATION

---

In accordance with Regulation 4(c) of the General Regulations (G.57) for dissertations and theses, I declare that this dissertation, which I hereby submit for the degree Master of Architecture (Professional) at the University of Pretoria, is my own work and has not previously been submitted by me for a degree at this or any other tertiary institution.

I further state that no part of my dissertation has already been, or is currently being, submitted for any such degree, diploma or other qualification.

I further declare that this dissertation is substantially my own work. Where reference is made to the works of others, the extent to which that work has been used is indicated and fully acknowledged in the text and list of references.



.....  
15/11/2021

## DEDICATION

---

To God, my Lord and Saviour who never fails me and whose joy is my strength.

To my family whom I love dearly, thank you for the never-ending support, love, joyful moments, encouragement and understanding. You all never cease to amaze and inspire me.

## ACKNOWLEDGMENT

---

To my old and the new friends I made along the way, thank you for your overflowing cheerfulness, humour and positive attitudes. To the fellows in studio, these last days in there will really be missed but I wish you all the best for the years to come.

Thank you to my supervisor Paul Devenish for the support and patience, for sharing your knowledge and for challenging me to dig a little deeper.

To all the lecturers and the staff of Boukunde, thank you for all the help and for making this year possible for us.

Finally, thank you to Thandanani Drop Inn Centre and SOS Children's Village for your generous hospitality, time and accommodation. You have truly inspired this dissertation.

## ABSTRACT

---

In South African townships, the realities of the scarcity of public spaces or poorly maintained and derelict recreational sites, are a continuous phenomenon. Additionally, the scars left from the apartheid spatial planning resulted in a perpetuated fragmentation in the urban fabric engendering further issues of public facilities' accessibility. This research-led dissertation, aims to rethink the function of public spaces in townships by acknowledging their multi-layered facets and their transcendence beyond mere services. Through a mixed-method of enquiry and a pragmatic approach, the study takes on a contextual discovery of the narratives and networks emerging from the sites; linking to the importance of socio-cultural sustainability in design. The results are then used to generate a 'dispositif'-architecture as a set of architectural explorations, using the polyvalence of the notions of the in-between and twin-phenomena to articulate recreational spaces at different scales (urban to human) in a holistic manner. The scope of the research is to explore ways to reveal the agency of recreational spaces in townships and their contribution towards urban cohesion. The study turns towards the regeneration of neglected existing cultural and recreational sites to transform them into places with meaning for people rather than afterthoughts of development schemes, so that they not only fit within their context but also showcase the diversity and values of the community using them.

**Key words:** *Mamelodi East, Township, Recreation, Public Space, Urban Cohesion, Socio-cultural Sustainability, "Dispositif", Mixed-method approach, Networks.*

## PROJECT DESCRIPTION

**PROGRAMME:** Outreach Precinct (hybrid recreational precinct)

**SITE:** Tsomo street, Mamelodi-YMCA and Rethabile Sports Grounds, Mamelodi East, Region 6, Pretoria, South Africa

**LATITUDE:** : 25,7095 S

**LONGITUDE:** 28,3716 E

**RESEARCH FIELDS:** Smart Cities and Neighbourhoods; Inhabitation of Place; Regenerative and Resilient cities

**CLIENT:** City of Tshwane (Department of Sports and Recreation)

**THEORETICAL PREMISE:** Networks, the “dispositif” and the twin-phenomena

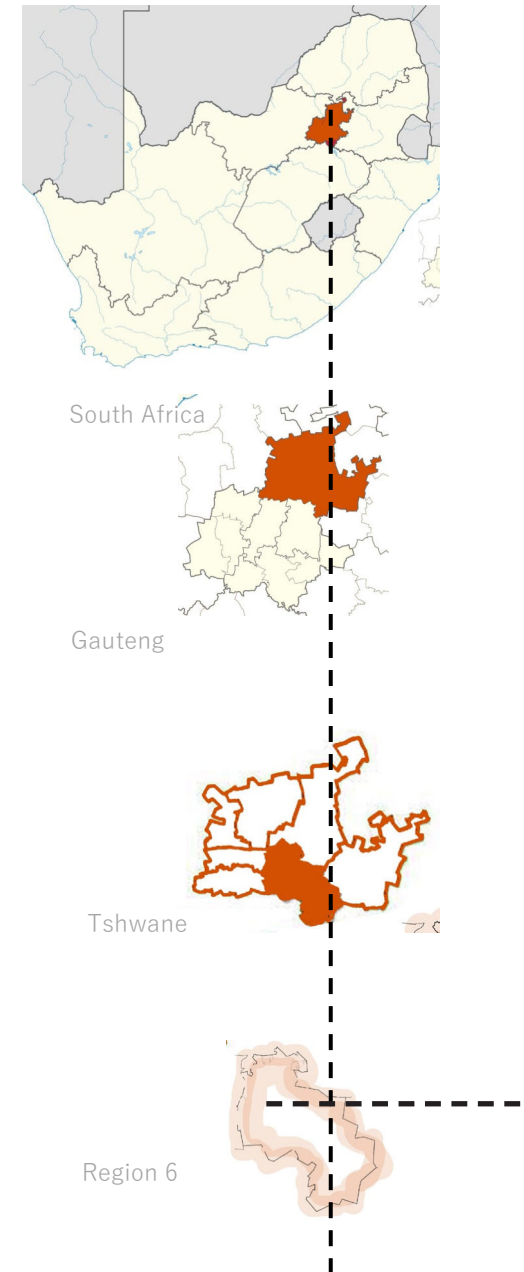
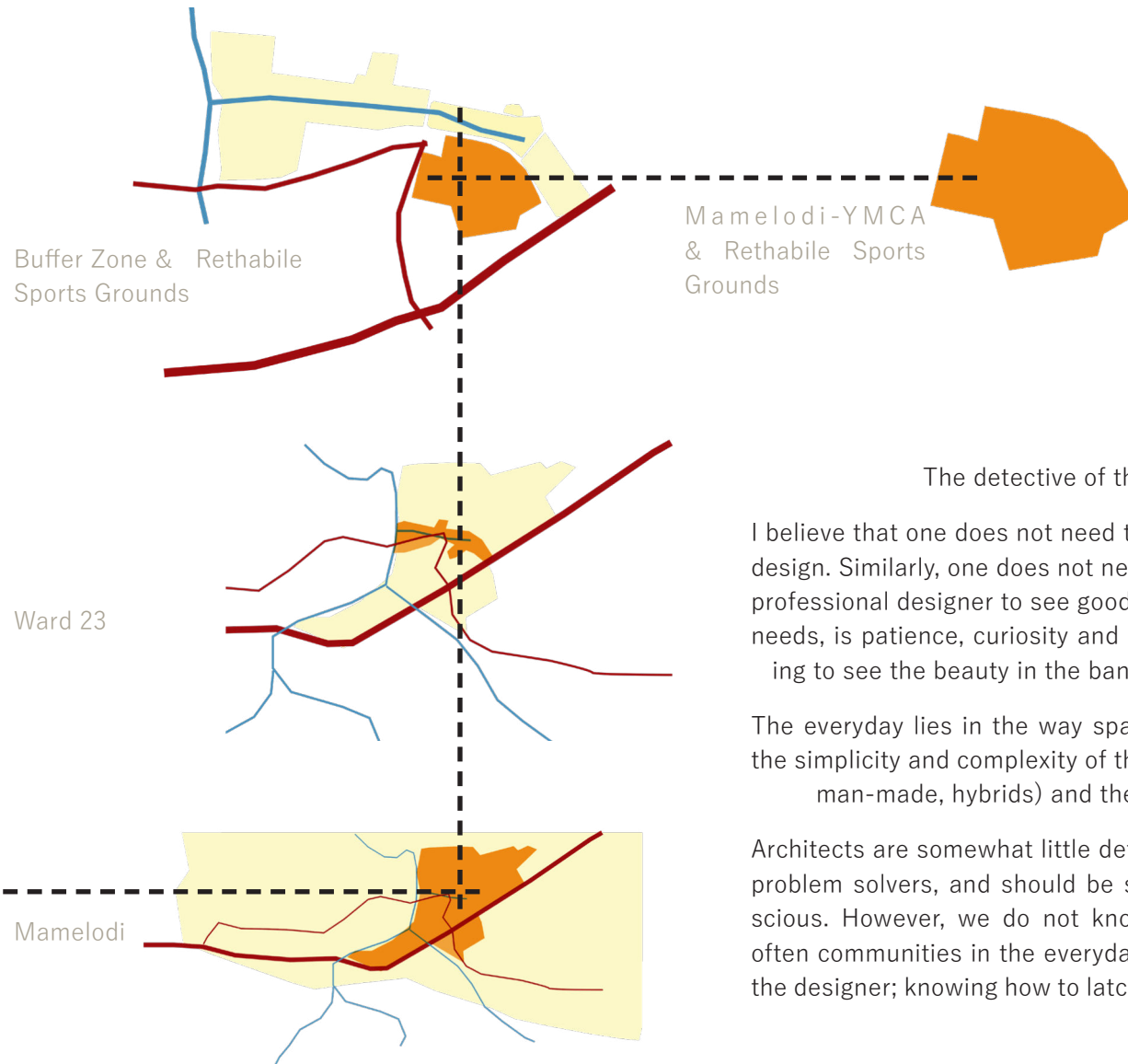


Figure b: Site location (Author 2021)





### The detective of the 'everydayscape'

I believe that one does not need to travel far to find design. Similarly, one does not necessarily require a professional designer to see good design. What one needs, is patience, curiosity and eyes that are willing to see the beauty in the banal of the everyday.

The everyday lies in the way spaces are occupied, the simplicity and complexity of thresholds (natural, man-made, hybrids) and the course of nature.

Architects are somewhat little detectives as well as problem solvers, and should be sustainability conscious. However, we do not know everything and often communities in the everyday provide cues for the designer; knowing how to latch onto these is the key.

# TABLE OF CONTENT

---

|   |           |  |           |
|---|-----------|--|-----------|
| DEDICATION  | iii       | 2.5 DELIMITATION AND LIMITATIONS   | 16        |
| ACKNOWLEDGMENT  | iv        | <b>3- FOUND RECREATION. . . . .</b>  | <b>19</b> |
| ABSTRACT  | v         | 3.1 INITIAL INSIGHT INTO FINDINGS: the value of recreation                 | 19        |
| PROJECT DESCRIPTION   | vi        | 3.2 DISCUSSION   | 22        |
| TABLE OF CONTENT  | viii      | <b>FROM NETWORKS TO BRIEF</b>  | <b>25</b> |
| DEFINITION OF TERMS   | x         | <b>4- PUBLIC SPACE PLURALITY OF MAMELODI . . . . .</b>                     | <b>26</b> |
| LIST OF FIGURES   | xii       | 4.1 SITE ANALYSIS AND INFORMANTS   | 26        |
|   |           | 4.2 NETWORK ANALYSIS AND DESIGN IMPLICATIONS                               | 33        |
| <b>INTRODUCTION: POSITION AND SITUATION</b>                                     | <b>2</b>  | <b>5- FACES OF RECREATION: A TYPOLOGY STUDY . . . . .</b>                  | <b>35</b> |
| <b>1- THE CASE FOR RECREATION . . . . .</b>                                     | <b>3</b>  | 5.1 ACCESSIBILITY, SAFETY & SECURITY                                       | 36        |
| 1.1 DEMOCRATIC RECREATION: A CASE OF SUSTAINABLE BALANCE                        | 3         | 5.2 MULTIFUNCTIONALITY, DIVERSITY & ACTIVITY                               | 38        |
| 1.2 RECREATION AND THE CITY: A CASE OF VALUES, PRIORITIES AND SERVICE PROVISION | 5         | 5.3 ANCHORAGE, SOCIAL DYNAMICS & IDENTITY                                  | 41        |
| 1.3 RECREATION TO THE PEOPLE: A CASE OF AGENCY, PERCEPTION AND TYPOLOGY         | 6         | 5.4 FINDINGS   | 43        |
| 1.4 THEORETICAL FRAMEWORK: towards an architecture that facilitates recreation  | 9         | <b>6- CONCEPTUAL INVESTIGATION . . . . .</b>                               | <b>45</b> |
| <b>2- THE SEARCH FOR RECREATION . . . . .</b>                                   | <b>11</b> | 6.1 PLACE WHERE THE NETWORKS CONVERGE: THE MEETING POINT OF CITY AND HOUSE | 45        |
| 2.1 THE "MAMELODI-SCAPE"  | 11        | 6.2 URBAN FRAMEWORK & BLOCK VISION: VISIONS FOR MAMELODI AND WARD 23       | 47        |
| 2.2 PROBLEM STATEMENT AND RESEARCH QUESTION                                     | 14        | 6.3 PROGRAMMES AND CLIENTS: implications of a public space project         | 54        |
| 2.3 AIM AND OBJECTIVES OF THE STUDY   | 14        | 6.4 CONCEPTUAL EXPLORATION: ITERATION 1                                    | 59        |
| 2.4 METHODOLOGY   | 16        |  |           |

|   |            |
|---|------------|
| <b>SHAPING THE “DISPOSITIF(S)”</b>  | <b>65</b>  |
| <b>7- FROM THE PARTS . . . . .</b>  | <b>66</b>  |
| 7.1 STREET AS A LANGUAGE AND WAYFINDING: ADDRESSING ACCESSIBILITY, SAFETY AND SECURITY  | 66         |
| 7.2 MICROSITES: ADDRESSING DIVERSITY, MULTIFUNCTIONALITY, LAND-USE AND ACTIVITIES       | 69         |
| 7.3 ‘COLLECTIVE ACTION’ AND CULTURE: ADDRESSING SOCIAL DYNAMICS, ANCHORAGE AND IDENTITY | 72         |
| <b>8- TO THE WHOLE: SYNTHESIS . . . . .</b>   | <b>77</b>  |
| 8.1 STRUCTURAL INTEGRITY  | 77         |
| 8.2 FULL ENVIRONMENTAL STRATEGY   | 84         |
| 8.3 SERVICES (THIRD ENVIRONMENTAL STRATEGY)   | 85         |
| <b>9- DESIGN RESOLVE . . . . .</b>  | <b>90</b>  |
| <b>CONCLUDING THE JOURNEY</b>   | <b>108</b> |
| <b>10- RECREATION AND THE ARCHITECTURAL DISCOURSE . . . . .</b>                         | <b>109</b> |
| <b>11- REFERENCES . . . . .</b>   | <b>112</b> |
| <b>APPENDICES . . . . .</b>   | <b>118</b> |

## DEFINITION OF TERMS

---

**Activity and land use:** the way activities are laid out and exercised through space. This may include the aspect of appropriation and the modification of land use.

**Agency:** actions, behaviours or interventions by people or things producing particular effects.

**Affordance:** capacity or characteristics of an object or element that indicate its use to a user.

**Anchorage:** spaces “enhanced through their location and the connection they establish”. This is an important notion for the dissertation’s investigation as it also presents the idea of networks in a tangible manner; the relationships with contexts and other interventions and how to “anchor” networks in space to create places.

**Continuity, mobility, accessibility and connectivity:** set of principals addressing the ease of access to an intervention, accessibility to resources or services, the links the intervention establishes with the greater landscape and circulation (meandering, exploration).

**Comfort, safety and security:** distinct terms but also closely knit; they mainly involve the feeling of reassurance and protection within spaces.

**Dispositif:** a device capable of facilitating an action or a process and connecting elements.

**Diversity:** coexistence at different levels. A variety of elements coexisting in a space: from demographics to

processes (ecological processes such as flora, fauna or water), human interactions, biophilia or the articulation of space to “afford” people to interpret their environment and get a sense of belonging.

**Epistemic diversity:** the notion of acknowledging the value of various sources of knowledge beyond “traditional academic” knowledge.

**Flâneur:** a city dweller who experiences and interprets the everyday while walking, lingering and appropriating the urban environment.

**Floodplain:** mostly flat terrain in close proximity of a water course.

**Identity:** “Representation of space linked to the relation between users or users and the space”.

**In-between:** notion encompassing thresholds and the language emerging at the meeting point of two spaces

**Informal settlements:** sporadic and unplanned settlements often created on the peripheries or in-between spaces of the city, usually unauthorized housing.

**Infrastructure:** the basic physical and systemic services and structures important for a living environment (roads, waste or water management etc).

**Leisure:** using free time for one’s enjoyment.

**Multifunctionality:** multiplicity of functions within a

space; one can think of it as mixed use.

**NPO:** Non-Profit Organisation

**Park:** open public space, often a green landscape intended for social and recreational purposes.

**Place-making/placemaking:** the multi-layered process of creating a good environment for people to enjoy in their daily lives.

**Play:** activity engaged in for enjoyment and recreation, can also be relevant to work

**Public spaces:** areas accessible to the public including streets, recreational facilities and open spaces (in this dissertation the term may be used interchangeably with recreational spaces).

**Open public spaces:** spaces with ecological and socio-economic functions, predominantly free of built forms and encompassing parks, streets, plazas and squares.

**Recreation:** a voluntary act, encompassing but not limited to leisure and play, usually executed during one’s free time. Its Latin roots: “to refresh” or to “restore” (McLean & Hurd 2015: 40).

**RDP Housing:** Reconstruction and Development Programme (RDP) housing scheme.

**Social dynamics:** the way interventions foster networking through providing platforms or occasions for people to gather or collaborate.

**Spatial Agency:** a design position challenging space production, knowledge and skill hierarchy by advocating bottom-up approaches and the collaboration between “experts” and other people.

**Sustainability:** the systemic and equitable management of resources (ecological, economic and socio-cultural) to avoid their complete depletion in the future.

**Townships:** Segregated suburbs created during apartheid, formerly for black occupation.

**Twin-Phenomena:** concept delving into the idea that opposite elements can mutually exist in the same space or form part of the same structure while forming a symbiotic relationship. Often linked to the notion of relativity.

**Urban cohesion:** urban identity and the physical form of the city along its planning processes, socio-economic and socio-cultural factors as it aims to challenge existing inequalities (Pinto & Remesar 2012)

**Urban sprawl:** the rapid, uncontrolled growth and spread of built elements (often housing) over large areas with no urban planning strategy.

# LIST OF FIGURES

---

|  |    |  |    |
|--|----|--|----|
| Figure a: Thandanani basketball court (Author 2021). . . . .   | ii | Figure 1.15: Pinto & Remesar (2012) urban cohesion best practice (Author 2021) . . . . .   | 10 |
| Figure b: Site location (Author 2021) . . . . .  | vi | Figure 2.1-2.2: People agencies in the Public realm (Author 2021). Tent used for events between houses and small garden along Tsako Thabo School' fence. . . . .   | 11 |
| Figure 1.1: Quote on recreation broken down into concepts showing recreation's agency (Author 2021) . . . . .  | 1  | Figure 2.3: Poster of cultural and community events in Mamelodi (Author 2021). Mamelodi is well known for its recreational endeavours such as its annual jazz festival, dances and its famous soccer team Mamelodi Sundown's (Breed 2012: 28). It is also home to heritage sites such as Solomon Mahlangu Square and the rondavels and hosted several important freedom struggle role-players. . . . . | 11 |
| Figure 1.2: Infographics of goal 11, the environment and public spaces (United Nations c2021) . . . . .  | 3  | Figure 2.4: Housing , decorated fences and streetscape (Author 2021) . . . . .   | 11 |
| Figure 1.3: White Paper 'on Sport and Recreation defining each recreation types. Above, the priorities of the "active nation" objective focusing on sports and its monofunctional approach (Author 2021). . . . .  | 4  | Figure 2.5: Timeline of Mamelodi with a focus on recreation throughout the years. Adapted from the van der Waal collection 2000 (Author 2021). . . . .   | 12 |
| Figure 1.4: (Above) Example of Tshawne's region 6 segregating organisation pattern (Author 2021) . . . . .   | 5  | Figure 2.6: Map of Mamelodi with Ward 23 and its portions (Author 2021) . . . . .  | 13 |
| Figure 1.5: (Bottom) Example of Nellmapius and Mamelodi housing zoning adapted from Tshwane RSDF 2018 (Author 2021). . . . .   | 5  | Figure 2.8: Map showing the NPOs' locations in Ward 23 a (Author 2021) . . . . .   | 13 |
| Figure 1.6 : Unspecified, public open space zoning in Mamelodi adapted from Tshwane RSDF 2018 (Author 2021). . . . .   | 6  | Figure 2.7 Map of Ward 23 and the Khalambazo Buffer Zone with Rethabile Sports Grounds . . . . .   | 13 |
| Figure 1.7: Dumping and glass recycling pile at Khalambazo, Mamelodi (Author 2021) . . . . .   | 6  | Figure 2.9: Buffer Zone portions (Author 2021). The totality of the above will be referred to as the Buffer Zone. . . . .  | 13 |
| Figure 1.8: Dumping in the Pienaars River, Mamelodi (Author 2021) . . . . .  | 6  | Figure 2.10: Design by research methodology employed (Author 2021) . . . . .   | 15 |
| Figure 1.9: Collage sequence of Home-based activities observed in Mamelodi Ward 23. Extension of services through wall breach, generational lending of spots near houses, paving appropriation, moving and stationary activities (Author 2021) . . . . . | 7  | Figure 2.11: Reseach timeline (Author 2021). . . . .   | 16 |
| Figure 1.10: Mamelodi and Nellmapius amenities and typologies at distances of 500m radius (Author 2021) . . . . .  | 8  | Figure 2.13: Instruments and data analysis (Author 2021) . . . . .   | 17 |
| Figure 1.11: The function of the "Dispositif" in relation to networks (Author 2021). . . . .   | 9  | Figure 2.12: Interview process (Author 2021) . . . . .   | 17 |
| Figure 1.12: The affordance of Aldo van eyck's playgrounds (Withagen & Calijouw 2017). The number of ways to interpret structures . . . . .  | 9  | Figure 3.1: NPO comparisons (Author 2021) . . . . .  | 19 |
| Figure 1.13: (Collage) Affordance of everyday elements in Mamelodi (Author 2021) . . . . .   | 9  | Figure 3.2:Thandanani Drop Inn Centre , matrix collage of activities and site and assets . . . . .   | 20 |
| Figure 1.14: Spatial Agency, beyond the site, collaborations, epistemic diversity (Author 2021). . . . .   | 10 | Figure 2.3:Thandanani Drop Inn Centre , matrix collage of activities and site and assets . . . . .   | 21 |
|  |    | Figure 3.4: Zoning map around the site, information from Tshwane GIS (Author 2021) . . . . .   | 22 |
|  |    | Figure 3.5: Voices from the volunteers (Thandanani focus group 1,2 2021) . . . . .   | 23 |

|  |    |  |    |
|--|----|--|----|
| Figure 3.6: Finding the dispositif (Author 2021) . . . . .   | 24 | Figure 5.7: FRIENDS CENTRE AT ANGKOR HOSPITAL FOR CHILDREN, Cambodia, Cook + Fox Architects, 2008 (Cookfox 2008)) . . . . .                                    | 38 |
| Figure 4.1: Roadmap to the brief (Author 2021) . . . . .   | 25 | Figure 5.8: SESC POMPEIA, São Paulo, Lina Bo Bardi, 1986 (Finotti & Kon S.a.). . . . .   | 38 |
| Figure 4.3: Map adapted from the Tshwane Open Space Framework 2005 (Author 2021) . . . . .   | 26 | Figure 5.9: WRITERS THEATRE, United States, Studio Gang, 2016 (Studio Gang 2016) . . . . .   | 39 |
| Figure 4.2: Map adapted from Tshwane RSDF 2018 (Author 2021) . . . . .   | 26 | Figure 5.10: RDP HOUSING, Mamelodi, South African Government, c. 1994 (Author 2021) . . . . .  | 39 |
| Figure 4.4: Cultural mapping generated from interviews and photographs of sites (Author 2021).. . . .  | 27 | Figure 5.11:MAGGIE'S CENTRES, Multiple architects, Europe and China, c1996 (Maggies S.a.) . . . . .  | 39 |
| Figure 4.5: Site hydrology, information from SANBI c2021 and Open street maps c2021 (Author 2021) . . . . .  | 27 | Figure 5.12: VPUU ACTIVE BOXES , Western Cape, VPUU, 2006-14 (VPUU 2017) . . . . .   | 40 |
| Figure 4.6: Map of movement and transport around the site (Author 2021) . . . . .  | 28 | Figure 5.13: SOS CHILDREN'S VILLAGES LAVEZZARIO COMMUNITY CENTRE, Illinois, Studio Gang Architects, 2008 (Studio Gang 2008) . . . . .                          | 40 |
| Figure 4.7: Map of activities, unsafe zones and boundaries around the site (Author 2021) . . . . .   | 28 | Figure 5.14: CONNECT COMMUNITY , Houston, Gulfton, Sharptown, Purpose Built Communities (Connect community S.a.) . . . . .                                     | 40 |
| Figure 4.8: Zoomed-in site analysis and opportunities (Author 2021) . . . . .  | 29 | Figure 5.15: NIKE FOOTBALL TRAINING CENTRE SOWETO, Johannesburg, RUFProject &Luyanda Mpahlwa DesignSpaceAfrica , 2010 (Living Space 2013) . . . . .            | 41 |
| Figure 4.9: Tabulated interview (information according to emergent themes and urban cohesion principles (Author 2021) . . . . .                              | 30 | Figure 5.16: THANDANANI DROP INN CENTRE, Mamelodi, 1970 (buildings)/ 2011 (current function) (Author 2021). . . . .  | 41 |
| Figure 4.10: Activity mapping of the Buffer Zone (Author 2021) . . . . .   | 32 | Figure 5.17: GIMNASIO VERTICAL (Vertical gyms), Venezuela, Urban-Think Tank c2001. . . . .   | 41 |
| Figure 4.11: Social network analysis of gathered data (Author 2021) . . . . .  | 33 | Figure 5.18: ALEXANDRA INTERPRETIVE CENTRE, Johannesburg, Peter Rich Architects, 2010 (Peter Rich Architects 2010) . . . . .                                   | 42 |
| Figure 4.12: Extracting data from diagram (Author 2021) . . . . .  | 34 | Figure 5.19: SOS CHILDREN'S VILLAGE, Mamelodi, 1985 (Author 2021) . . . . .  | 42 |
| Figure 5.1: Typology card game explanation (Author 2021) . . . . .   | 35 | Figure 5.20: LEA MOBILE LIBRARY, Foro Lindbergh (Parque México), Project for Public Spaces + Lugares Públicos, 2015 (Project for Public Space c2020) . . . . . | 42 |
| Figure 5.2: Urban cohesion characteristics diagrams (Author 2021) . . . . .  | 36 | Figure 6.2: Corner shoe tailor {Author 2021} . . . . .   | 46 |
| Figure 5.3: SUPERKILEN, Copenhagen, Topotek 1 + BIG Architects + Superflex, 2012 ( Baan 2012) 37   | 37 | Figure 6.3: Ecomuseum explanation and characteristic diagrams (Chang c2015) . . . . .  | 48 |
| Figure 5.4: HIGH LINE, New York, Diller Scofidio + Renfro, JamesCorner Field Operations ,1999-2011 (Baan 2009) . . . . .                                     | 37 | Figure 6.4: Mamelodi Vision Combining "Small City and "Urban interior (Elke[Bitso]) (Author 2021; Niebuhr 2021) . . . . .                                      | 49 |
| Figure 5.5: UVA EL PARAISO, Colombia, EDU - Empresa de Desarrollo Urbano de Medellín, 2015 (Arango et al. 2015)) . . . . .                                   | 37 |  |    |
| Figure 5.6: EDUCATIONAL CENTER 'MONTECARLO GUILLERMO GAVARIA CORREA', Colombia, EDU - Empresa de Desarrollo Urbano de Medellín ,2012 (Arango 2012) . . . . . | 38 |  |    |

|  |    |   |    |
|--|----|---|----|
| Figure 6.5: Urban vision objectives, strategy and informants {Author 2021} . . . . .                           | 50 | Figure 6.26: Massing model (Author 2021) . . . . .  | 63 |
| Figure 6.6: Evolution of the urban framework {Author 2021} . . . . .   | 51 | Figure 6.28: Model 1:200 (Author July 2021) . . . . .   | 63 |
| Figure 6.7: Development of urban vision (Author 2021) . . . . .  | 52 | Figure 6.27: Massing model programme combinations (Author 2021) . . . . .   | 63 |
| Figure 6.8: Development of urban vision (Author 2021) . . . . .  | 53 | Figure 6.29: Site view model 1:200 (Author July 2021) . . . . .   | 64 |
| Figure 6.9: Development of urban vision (Author 2021) . . . . .  | 53 | Figure 6.30: Water mitigation exploration and vegetation regeneration(Author 2021) . . . . .  | 64 |
| Figure 6.10: Unfolding the interconnected programmes in relation to 'actors' and needs (Author 2021) . . . . . | 54 | Figure 6.31: Scenarios(Author 2021) . . . . .   | 64 |
| Figure 6.11: Development of programmes in relation to vision and site opportunities (Author 2021) . . . . .    | 55 | Figure 7.1: The dimensions of the in-between (including the Twin phenomena) as observed on the works of Aldo van Eyck and Kisho Kurokawa (Author 2021) . . . . .  | 65 |
| Figure 12: Early speculative accomodation schedule(Author 2021) . . . . .                                      | 57 | Figure 7.2: Condensing the whole (Author 2021) . . . . .  | 67 |
| Figure 6.13: Stakeholders and client timeline (Author 2021) . . . . .  | 58 | Figure 7.3: Paying attention to the natural landscape and its regeneration (Author 2021) . . . . .  | 67 |
| Figure 6.14: Linking places and creating platforms of spaces (Author 2021) . . . . .                           | 59 | Figure 7.4: Landscape and architectural elements for wayfinding - gabion towers 'arrows' (Author 2021) . . . . .  | 67 |
| Figure 6.15: Platform 1 . . . . .  | 59 | Figure 7.5: Condensing the whole (Author 2021) . . . . .  | 67 |
| Figure 6.16: Platform 2, 3 and 4 combined . . . . .  | 59 | Figure 7.6: Paying attention to the natural landscape and its regeneration (Author 2021) . . . . .  | 67 |
| Figure 6.17: Placing all anchors and satellites (Author 2021) . . . . .  | 60 | Figure 7.7: Testing the amphitheatre as part of the street corner (Author 2021). (Top) closed for private performances and (bottom) open for public performances and (right) sound experience . . . . .   | 68 |
| Figure 6.18: Adding the Trails and ways and desire lines . . . . .   | 60 | Figure 7.9: Reformed plans with building facing north (Author 2021) . . . . .   | 68 |
| Figure 6.21: Replacing spots with platforms, combining all (Author 2021) . . . . .                             | 61 | Figure 7.8: Gabions as directional device and space creation (Author 2021). . . . .   | 68 |
| Figure 6.19: Linking all places (Author 2021) . . . . .  | 61 | Figure 7.10: Pavilion maquettes depicting occupation of 'microsites' thresholds - movement, niches and sustainable services incorporated into the design (i.e., rainwater harvesting, planters etc). Design devices include: stairs, corridors, stoeps, roofs, change of levels . . . . . | 69 |
| Figure 6.20: Extracting the axes (Author 2021) . . . . .   | 61 | Figure 7.11: Shop-front threshold, local stones and storage as display (Author 2021) . . . . .  | 71 |
| Figure 6.23: Sights lines exploration platform 5 (Author 2021) . . . . .                                       | 62 | Figure 7.12: The threshold that "breaths" . . . . .   | 71 |
| Figure 6.22: Sights lines exploration platform 4 (Author 2021) . . . . .                                       | 62 | Figure 7.13: Material experimental cube, testing transparency, colour and shading as devices (Author 2021) . . . . .  | 72 |
| Figure 6.24: Sights lines exploration workshop (Author 2021) . . . . .   | 62 |   |    |
| Figure 6.24: Sights lines exploration workshop (Author 2021) . . . . .   | 62 |   |    |
| Figure 6.25: Sights lines exploration workshop above(Author 2021) . . . . .                                    | 62 |   |    |



|   |    |   |    |
|---|----|---|----|
| Figure 7.14: Socio-economic material palette . . . . .  | 73 | Figure 8.10: Collage exploring the parts of the model: detached façade, outdoor rooms, shelf-windows, light-wells, bottle in walls, hammocks, boardwalks as architecture(Author 2021) . . . . . | 82 |
| Figure 7.15: Comparing bottles' colour and heights (Author 2021) . . . . .  | 74 | Figure 8.11: 1:100 Sketch section through admin block, garden and seed bank (Author 2021) . . . . .   | 83 |
| Figure 7.16: Bottle modules in relation to other traditional construction materials (Author 2021). . . . .  | 74 | Figure 8.12: 1:50 sketch section through Maker's space and afterschool centre (Author 2021) . . . . .   | 83 |
| Figure 7.17: Testing bottle combinations in relation to cuts, colour and sizes (Author 2021) . . . . .  | 75 | Figure 8.13 : Sefaira daylight speculations (Author 2021) . . . . .   | 84 |
| Figure 7.18: Building experiment, miniature bottle walls , mortar, brick and DIY glass bricks (Author 2021) . . . . .   | 75 | Figure 8.14: Water strategy diagram (Author 2021) . . . . .   | 85 |
| Figure 7.19: Sketches exploring glass in construction: 1) glass brick, 2) light device, 3) glass aggregate (Author 2021). Research found that the use of green glass in concrete can and reduce the amount of in concrete (Afshinni 2019). Green glass decreases the risk of silica . . . . . | 76 | Figure 8.15: Water strategy explanatory map(Author 2021) . . . . .  | 86 |
| Figure 7.20: Sketches of collective action scenarios (plastic bags and clay) (Author 2021) . . . . .  | 76 | Figure Calculations and sketch details . . . . .  | 86 |
| Figure 7.21: Recycled plastic hammock . . . . .   | 76 | Figure 8.16: Water strategy wetland and suspended wetland flow diagram (Author 2021). . . . .   | 88 |
| Figure 7.22: Glass louvres example (Boukunde) for recycled glass montage (Author 2021) . . . . .  | 76 | Figure 8.17: Green Star summary report (Author 2021) . . . . .  | 89 |
| Figure 7.23: Recycled clay tiles (). Example of shading device . . . . .  | 76 | Figure 9.2: Programme layout 3D (Author 2021). . . . .  | 90 |
| Figure 8.1: First plane (Author 2021) . . . . .   | 77 | Figure 9.1: Site plan at 1:500 . . . . .  | 90 |
| Figure 8.2: Second plane (Author 2021) . . . . .  | 78 | Figure 9.3: Greenscaping (Author 2021). . . . .   | 91 |
| Figure 8.3: Third plane (Author 2021). . . . .  | 78 | Figure 9.4 : Wayfinding and greenscape. How landscape, shops, outdoor rooms and receptions orientate users (Author 2021) . . . . .  | 91 |
| Figure 8.4: Forth plane (Author 2021). . . . .  | 78 | Figure 9.5: Parts of the precinct (Author 2021) . . . . .   | 92 |
| Figure 8.6: Sketch plan First Floor at 1:200 (Author 2021) . . . . .  | 79 | Figure 9.6: Ground Floor Plan at 1:200 . . . . .  | 93 |
| Figure 8.5: Sketch plan Ground Floor at 1:200 (Author 2021) . . . . .   | 79 | Figure 9.7: First Floor plan at 1:200 . . . . .   | 94 |
| Figure 8.7: Sketch plan Roof level at 1:200 (Author 2021). . . . .  | 79 | Figure 9.8: Section AA at 1:50. . . . .   | 95 |
| Figure 8.8: 1:50 section model through afterschool centre (Author 2021). Brick columns, timber, glass bricks . . . . .  | 80 | Figure 9.9: Section BB at 1:50. . . . .   | 97 |
| Figure 8.9: Technology concept, the meeting of every planes, ventilation and daylighting - see p. 77-78 for colour-coding (Author 2021) . . . . .   | 81 | Figure 9.10: Section 1: 20 of afterschool centre. . . . .   | 98 |
|   |    | Figure 9.11: Detail library seat at 1: 10 . . . . .   | 98 |
|   |    | Figure 9.13: Detail eave and planter seat at 1:5. . . . .   | 99 |

|   |     |
|---|-----|
| Figure 9.14: 3D details of afterschool walkway elements . . . . .   | 100 |
| Figure 9.15: Section model 1:20, the urban room . . . . .   | 101 |
| Figure 9.16: Section model 1:20, the outdoor library. . . . .   | 102 |
| Figure 9.17: Section model 1:20, the raingarden/ braai . . . . .  | 103 |
| Figure 9.19: Diaporama concept, technology planes, ventilation and daylighting . . . . .  | 104 |
| Figure 9.18: Section model 1:20, Maker's space stoep. . . . .   | 104 |
| Figure 9.21: Afterschool centre outdoor room (Author 2021) . . . . .  | 105 |
| Figure 9.20: Inside the Afterschool centre (Author 2021) . . . . .  | 105 |
| Figure 9.22: Maker's space's east façade - ramp and sandpit playground with view into storage (Author 2021) . . . . .   | 106 |
| Figure 9.23: Afterschool centre first floor passage . . . . .   | 106 |
| Figure 10.1: A conclusion - architecture , public spaces and 'dispositifs'; a pluridisciplinary and poly-directional approach. How 'dispositifs' blur the lines of what is produced and what produces- a shift in power-scaling (Author 2021) . . . . . | 108 |
| Figure 10.2: Building sharing its façade with the public and the city (Author 2021). . . . .  | 109 |
| Figure 10.2: (suite)Building sharing its façade with the public and the city (Author 2021) . . . . .  | 110 |
| Figure 10.3: From simple to over-designed threshold (Author 2021) . . . . .   | 111 |
| Figure 10.4 : Diagram summary, the spectrum while designing for recreational spaces (Author 2021) . . . . .   | 111 |



“Recreation is not a secondary **CONCERN FOR A DEMOCRACY**. It is a primary concern, for the **KIND OF RECREATION A PEOPLE MAKE FOR THEMSELVES** determines the **KIND OF PEOPLE THEY BECOME** and the **KIND OF SOCIETY THEY BUILD**.”

Harry Allen Overstreet

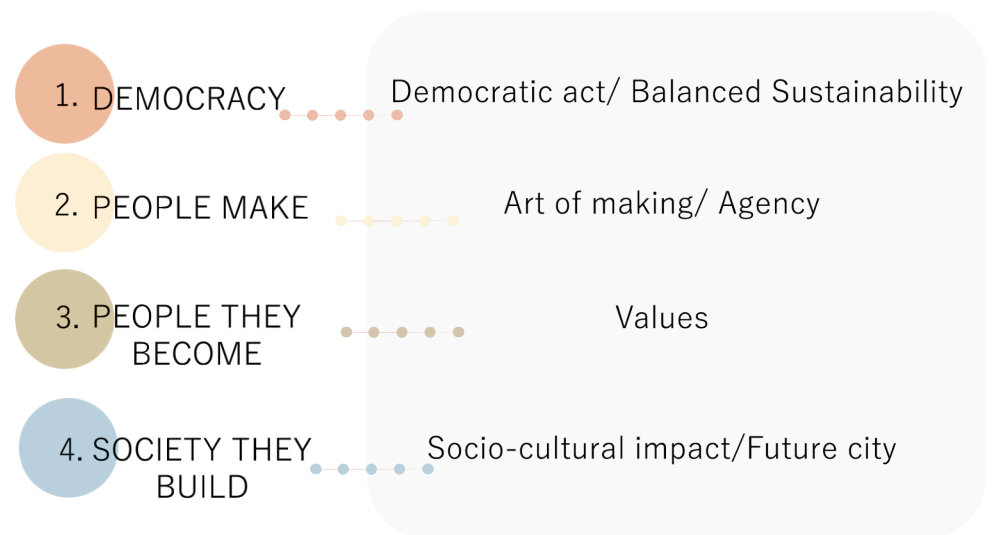


Figure 1.1: Quote on recreation broken down into concepts showing recreation's agency (Author 2021)

# INTRODUCTION: POSITION AND SITUATION

## //Nuanced Recreation

The term ‘recreation’ is a vast and complex notion that varies dependent upon individuals and cultures (Cordes 2013: 7; Metin *et al.* 2017: 556). While ‘play’ and ‘leisure’ are rather conceptual in nature, ‘recreation’ seems to be more tangible as it is attached to activities that people can easily picture (McLean & Hurd 2015: 46). As such, recreation transcends the idea of leisure and steps into the realm of self-improvement by using the concept of ‘free-time’ going beyond relaxation and even moving towards goals achievements (McLean & Hurd 2015:40; Metin *et al.* 2017: 549). Recreation can, thus, be considered “socially institutional” (McLean & Hurd 2015: 44) when it is provided by entities with less conspicuous ties to recreation, such as: hospitals, correctional facilities or even markets (Cordes 2013: 8; Watson 2009: 1589).

## //Background and Significance

The researchers noted in the preceding section all previously aimed to define and emphasise the idiosyncrasies of recreation. However, several other studies have also delved into the spatiality of recreational spaces by relating to their benefits and the characteristics that lead to their success or their demise (Pinto & Remesar 2015, Project for Public Space c2020). Although, both realms of enquiry investigate the same topic, less emphasis has been and areas wherein which placed on the ways these two portions meet. In addition, the complex plethora of identified recreation has been met with a lower focus on possible

approaches available to contextually achieve these polyvalent spaces. Addressing these current research gaps is of relevance to the South African urban fabric, and particularly for townships, where public spaces are not regarded as main priorities (). Although some researchers have already proposed ways to approach the design of such spaces by tapping into spatial agency and/or social network analysis to name a few (Casakin & Valera 2020; Dascalu 2013; Schneider & Till 2012). These perspectives deserve further exploration as a contribution to the creation of contextual public spaces that are representative both of Overstreet’s quote that introduced this chapter (Figure 1.1) and the extracted interpretations thereof, as presented in this current work.

Of note is that there tends to be a certain polysemy, unpredictability and even playfulness that emerges from the idea of ‘making’ recreational spaces, This is particularly evident when considering all the possibilities of activities and city dwellers’ individual endeavours that take place within South African townships. The current project, therefore, acknowledges these realities throughout the structure of this document as well as its relevance to the methodology depicted later in Figure 2.10. Indeed, this project takes on a narrative and empirical approach to its research as opposed to adopting a stricter methodology. As a result, this paper begins by building a case for recreation in relation to the South African context. This presentation is then followed by the theoretical implications that internalise the four extracted principles

from Figure 1.1 . The project then culminates into a research-led design methodology, with findings forming the basis for the proposed design development.

# 1- THE CASE FOR RECREATION

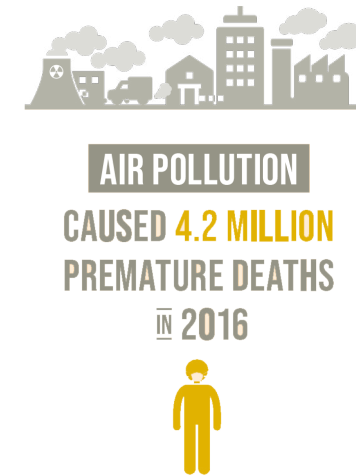
## 1.1 DEMOCRATIC RECREATION: A CASE OF SUSTAINABLE BALANCE

As a democratic act, recreation suggests choice and the rights to something or to do something, which are all fundamental to urban dwellers.

Recreational spaces belong to the overarching category of public space and according to Human Habitat (2015: 4, 127), these encompass the following: streets, open public spaces and public facilities. Studies show that these spaces bring several benefits to people's well-being, and create areas to pause, socialise and linger (UN-Habitat 2015: 62, United Nations c2021). They are also the sites for the daily "flâneurs" (Leff 2019: 1).

The United Nations Sustainable Development Goals-2030 Agenda include "Goal 11" (c.2021) (Figure 1.2); promoting the good planning of public spaces around the world to allow people to access their right to healthy, safe, resilient and sustainable environments.

According to Sang-Chuel Choe (2007: 135), as cities thrive for sustainability, a balance between economic, environmental and socio-cultural principles should be achieved. However, often when aiming for the attainment of sustainability, the heavier focus on environmental and economic factors leaves the socio-cultural sphere -involving people and their networks- lagging



### SHARE OF URBAN POPULATION

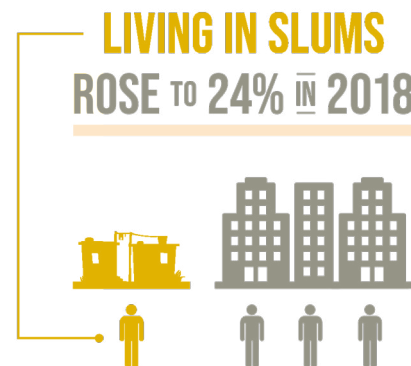


Figure 1.2: Infographics of goal 11, the environment and public spaces (United Nations c2021)

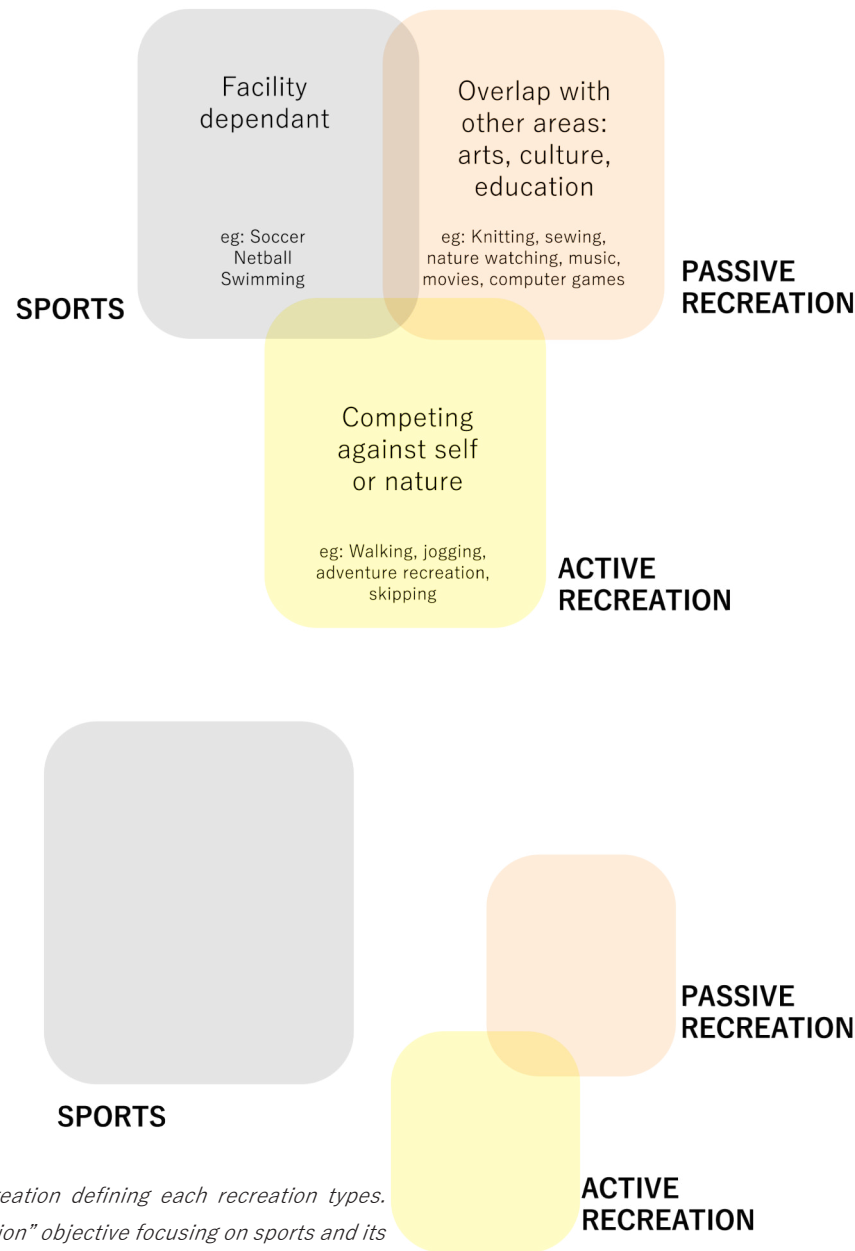


Figure 1.3: White Paper 'on Sport and Recreation defining each recreation types. Above, the priorities of the "active nation" objective focusing on sports and its monofunctional approach (Author 2021).

behind (Choe 2007: 135; Memmott & Keys 2015: 276).

This situation is also present in the built environment where the tendency to produce highly effective 'green infrastructures' sometime results in well-functioning ecological singular 'objects' with little connections to their surroundings; the architecture in isolation is sustainable, but as part of a bigger whole is less effective (Mostafavi 2010: 1,7). Similarly, Serge Salat *et al.* (2011: 18) and David Leatherbarrow (2002: 14) argue that the whole and the parts should have a level of synergy; emphasizing the inadequacy of highly monofunctional and disconnected parts in relation to the greater city.

In South Africa, the government recognises recreation as a benefit to the nation, however, while the White Papers on Sports and Recreation (2012: 15-16) follows suit (Figure 1.3), its heavy focus on sports as recreation also undermines the potential of active, passive and even hybrid recreation; risking monofunctional space perpetuation.

## 1.2 RECREATION AND THE CITY: A CASE OF VALUES, PRIORITIES AND SERVICE PROVISION

In the city of Tshwane, in South Africa, public space planning remains an issue yet to be solved.

Due to apartheid's legacy, the current urban condition of Tshwane remains fragmented with a disparity between the wealthy suburbs and the townships (City of Tshwane 2005a: 18, 26). The scars of the regime's spatial planning are still present as seen by the segregating grain and lack of cohesion between spaces in the townships (Figure 1.4).

As a post-apartheid remedial phase, rapid RDP housing was provided with priorities for service provision focused on housing (Figure 1.5), which left public spaces to be neglected in the planning and maintenance process (McConnachie & Shackleton 2010: 244). Research has shown that the percentage of public open space in RDP schemes were even significantly lower than the ones in older townships (Denoon-Stevens & Ramaila 2018: 434; McConnachie & Shackleton 2010: 247). Hence, while the RDP scheme helped people in need of permanent homes, this monofunctional development fails to reach a good balance of spatiality for urban living.

Furthermore, public space is also lost as the city experiences population growth- the provision of housing cannot keep up with the demand for urban dwellings, culminating in urban sprawl and the proliferation of informal settlements on the peripheries and in-between spaces of the city (City of Tshwane 2005a: 7;

Moreleta Park Integration Project 2020)

Existing public facilities in townships also run the risk of becoming 'lost space'. Karina Landman (2016, 2018: 41) and Lebogang Lancelot Nawa (2018) emphasize the issue of neglect and maintenance. A high focus on specific monofunctional spaces is problematic, but spaces lacking any definition or connection to communities (Figure 1.6- "undetermined" zones) are equally inadequate (Barac 2013: 50). When these are not used to their full potential or left vacant, the likelihood of crime and other dangerous activities to take place arises (Landman 2018: 43). Moreover, some areas become subject to dumping and pollution (Figures 1.7 and 1.8) (City of Tshwane 2005a: 56; Landman 2018: 120).

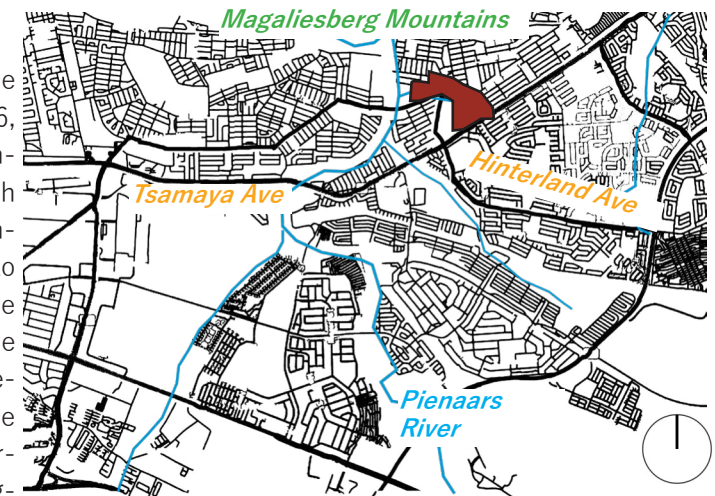
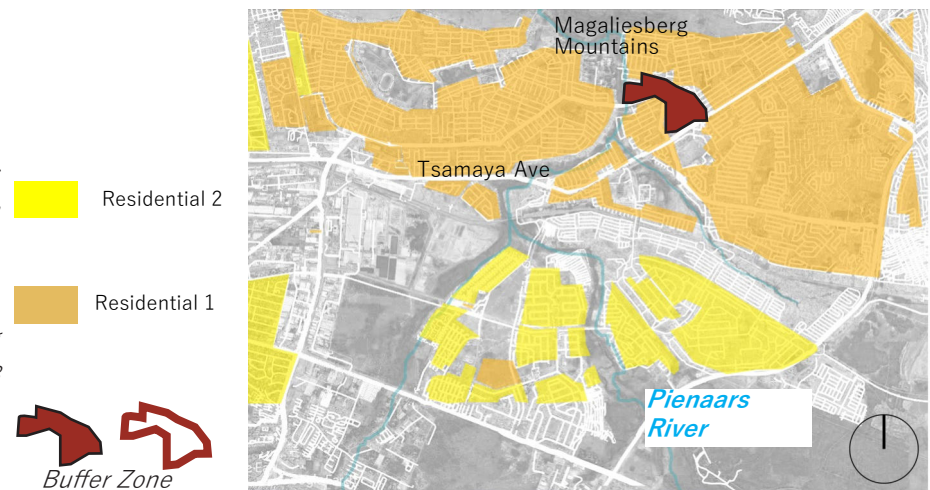


Figure 1.4: (Above) Example of Tshwane's region 6 segregating organisation pattern (Author 2021)

Figure 1.5: (Bottom) Example of Nellmapius and Mamelodi housing zoning adapted from Tshwane RSDF 2018 (Author 2021).





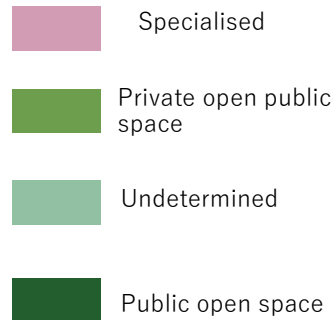


Figure 1.6: Unspecified, public open space zoning in Mamelodi adapted from Tshwane RSDF 2018 (Author 2021)

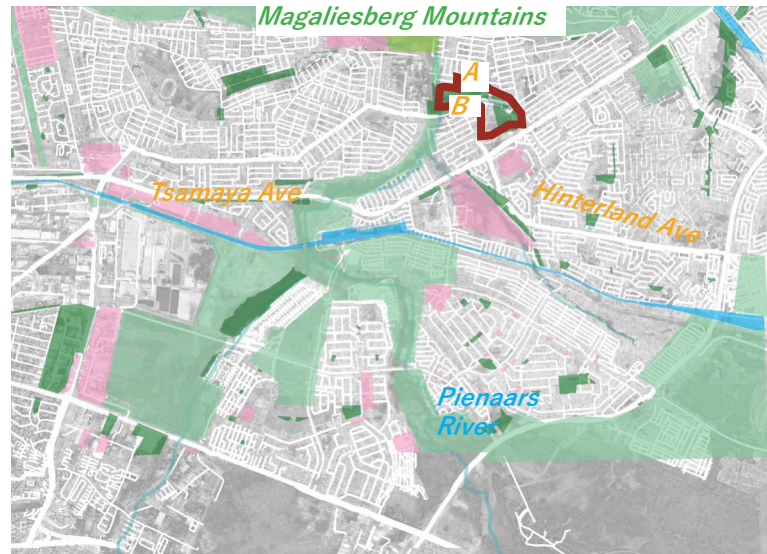


Figure 1.7: Dumping and glass recycling pile at Khalambazo, Mamelodi (Author 2021)

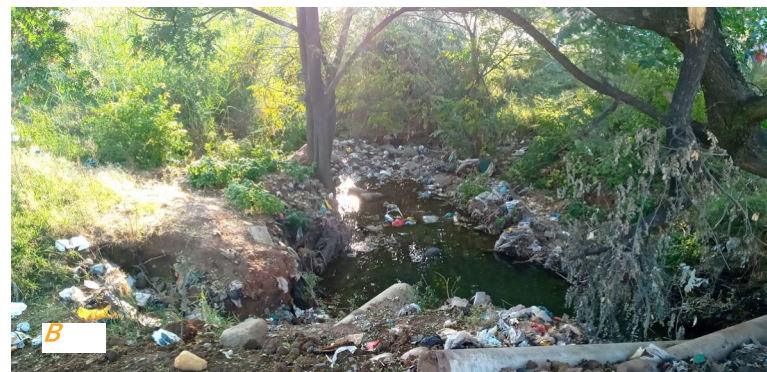


Figure 1.8: Dumping in the Pienaars River, Mamelodi (Author 2021)

### 1.3 RECREATION TO THE PEOPLE: A CASE OF AGENCY, PERCEPTION AND TYPOLOGY

In this section, the plurality of the physical embodiment of recreation in relation to people will be discussed. Jan Gehl (2010: 134) proposes that there are two types of activities in public spaces: moving and stationary. These are closely linked to context, cultural values and economic levels. In developed countries, stationary activities are an indicator of good quality spaces searching to invite people to linger (Gehl 2010: 135). Meanwhile, in developing countries, many activities are deemed a necessity -for income generation or survival- therefore, stationary activities such as street trade occur regardless of the quality of the city space (Gehl 2010: 134). This “negotiation between place and practice” (Barac 2013: 48), transcends into African cities dwellers’ recreation choices.

Through different research studies on South African townships, it was found that home-based activities, attending stoke fares, church, shebeen or washing cars were considered recreational (Figure 1.9) (Magi 1999: 298; Wilson & Hattingh 1992: 478-482). These examples highlight the grey area between work, leisure, play and even spirituality. Furthermore, the type of recreation preferred were often influenced by distance, availability, cost of recreation or the lack of awareness of other activities (Figure 10) (Magi 1999: 298-299).

The popularity of home-based activities, proves that despite the lack of service provisions in townships and

informal settlements, people become resourceful by providing and maintaining services themselves from their own homes (Figure 1. 9) (Charman *et al.* 2020: 105-107, Urban Citizen Studio 2019). These are basic instances of “people as infrastructures” (AbdouMalik Simone 2004 in Exploratory Notes on African Urbanism 2009: 8) and an exploration of social economies which African Urbanist deem an important contextual phenomenon for urban design (Pieterse 2009: 8).

The house is also synonymous with refuge, comfort and safety (Hertzberger 1991: 48-49; Landman 2016: 82). Studies in South Africa have shown that people’s perceptions of public spaces are conflicted. Many voiced that they did not feel safe especially in public parks (Denoon-Stevens & Ramaila 2018: 433; Landman 2018: 5). Similarly, the fear of ‘undesirables’ occupying public space has long been debated, and areas are avoided due to them being drug hubs or homeless people having appropriated them (Tosi 2007: 226; Touludi 2016).

While drug usage is considered a morally wrong recreational practice in many cultures, the presence of the homeless is a different social matter (McLean and Hurd 2015: 43; Tosi 2007: 229). The latter do not turn to public spaces out of free time but rather out of necessity; raising the debate around people’s rights to public space and how these should be designed for different space usage through amenities provision in the space created. (Groff & McCord 2011: 3; Tosi 2007: 228; Touludi 2016). Hence placemaking has to take into consideration ingrained social disparities, including gender, ages, cultural and ethnic backgrounds which influence the overall typology, functionality and accessibility of public recreational spaces (Breed 2012: 23; Nawa 2018: 260; Kowaleski 2014: 173, 178).

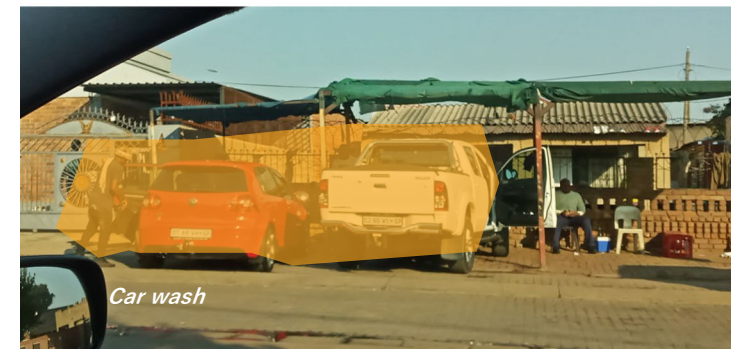


Figure 1.9: Collage sequence of Home-based activities observed in Mamelodi Ward 23. Extension of services through wall breach, generational lending of spots near houses, paving appropriation, moving and stationary activities (Author 2021)

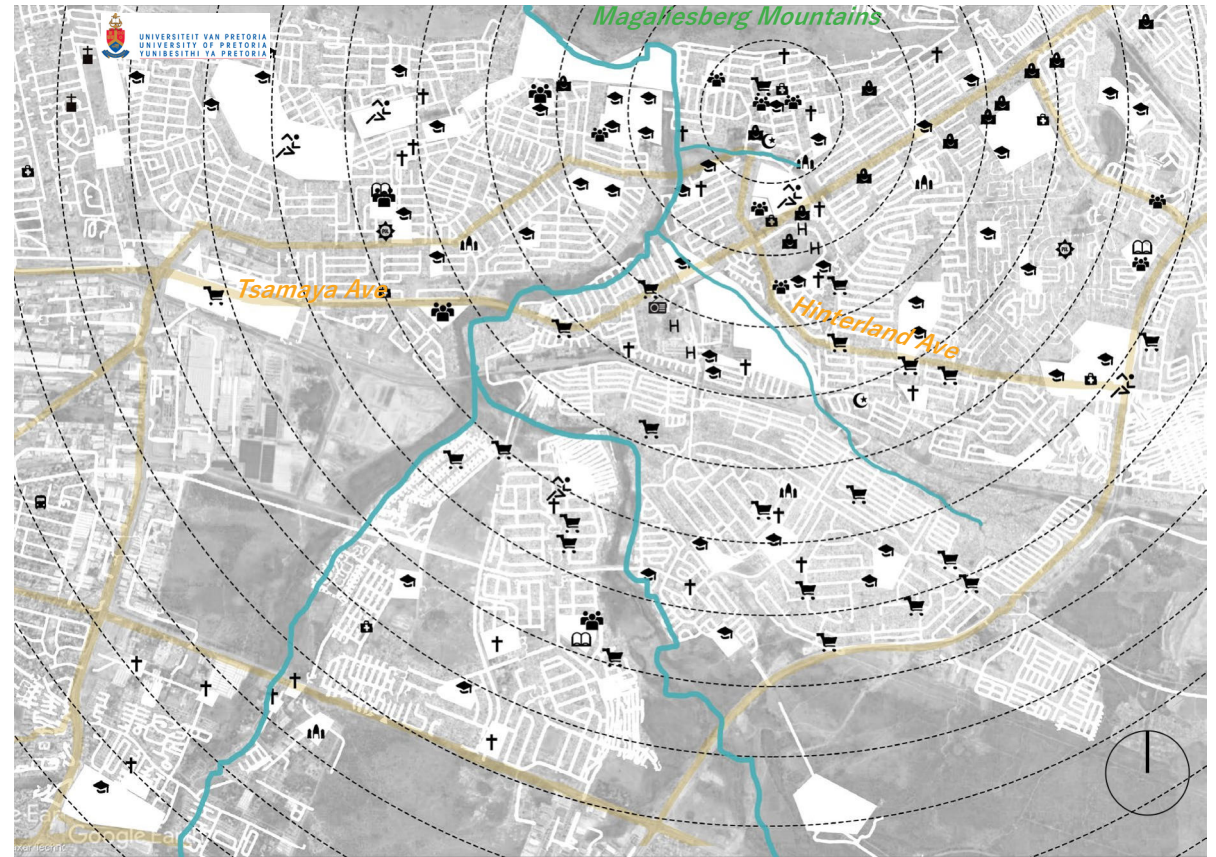


Figure 1.10: Mamelodi and Nellmapius amenities and typologies at distances of 500m radius (Author 2021)

## 1.4 THEORETICAL FRAMEWORK: towards an architecture that facilitates recreation

The parameters that recreation encompasses but are not limited to: cities and population well-being, societal needs, safety and diversity. These are closely knitted with cultural norms and economic activities. Recreational spaces are used by a myriad of different demographics and are the sites for “spontaneous and unexpected social interactions” (Casakin & Valera 2020: 9). Sections 1.1-1.3 presented various literature around the ways recreation is provided in the complex setting of South Africa- by whom, the different foci and consequences. All these interconnected intricacies between procedures, people and sites, point to the notion that public spaces are made out of networks (Pinto & Remesar 2015:7; Casakin & Valera 2020: 11).

### //Architecture as ‘Dispositif’:

When networks are involved in space making, the notion of the “dispositif” comes into play (figure 1.11).

Adapted from Michel Foucault’s writings, the concept of the “dispositif” or apparatus/device is used in space production to shift power-scaling (Daly & Smith 2011: 23). It blurs the lines between what produces and what is being produced. The aim is not to create a utopia through architecture but rather to augment or supplement existing situations or actions; it becomes an enabler, a system of relation, not simply an object (Dascalu 2013: 207; Daly & Smith 2011: 27). Similarly, the concept of “dispositif”-architecture is closely related to the affordance theory which discusses design

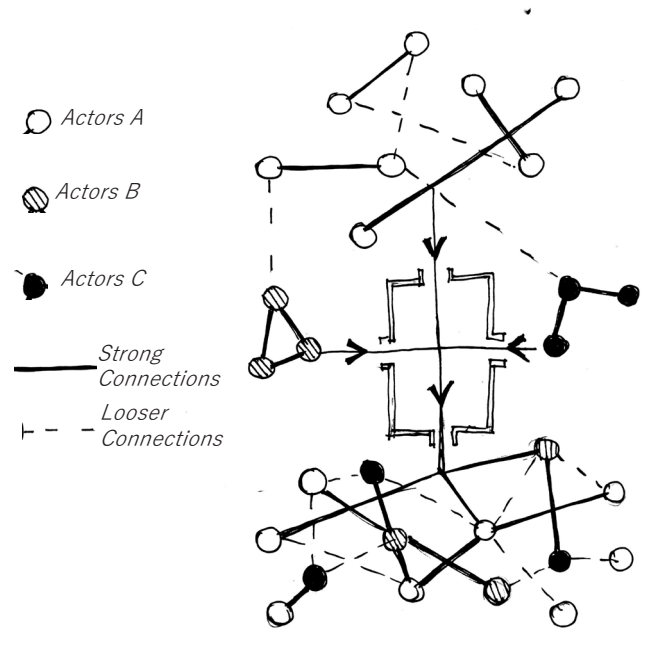


Figure 1.11: The function of the “Dispositif” in relation to networks (Author 2021)

interventions’ “affordance” where design either allows or denies freedom of use and interpretation of objects or spaces (figure 1.12-1.13)(Withagen & Calijouw 2017: 5-6). Therefore, a good level of understanding of physical sites, associated networks and “flow” avoids for subsequent designs to restrain the positive flux of people’s activities or values (Barac 2013: 47; Swilling 2013: 66).

With these statements, it is possible to visualise the following networks of relations: people to people (social interaction), place to place (physical relations) and people to place (activities or events). The designer then has to build a strategy to manoeuvre these networks of informants resulting in interventions (Dascalu 2013: 209-216).

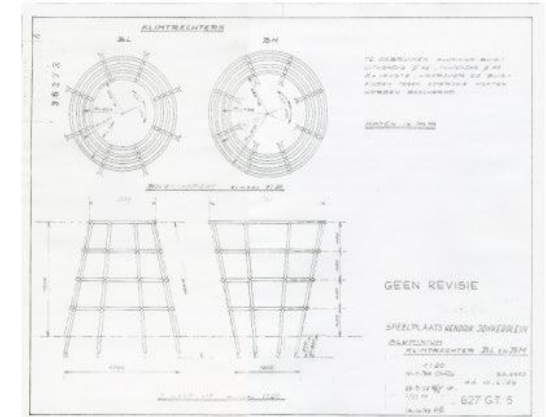
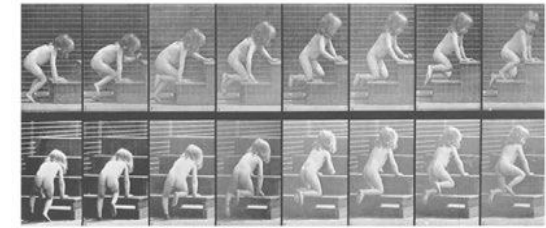


Figure 1.12: The affordance of Aldo van eyck’s playgrounds (Withagen & Calijouw 2017). The number of ways to interpret structures



Figure 1.13: (Collage) Affordance of everyday elements in Mamelodi (Author 2021)

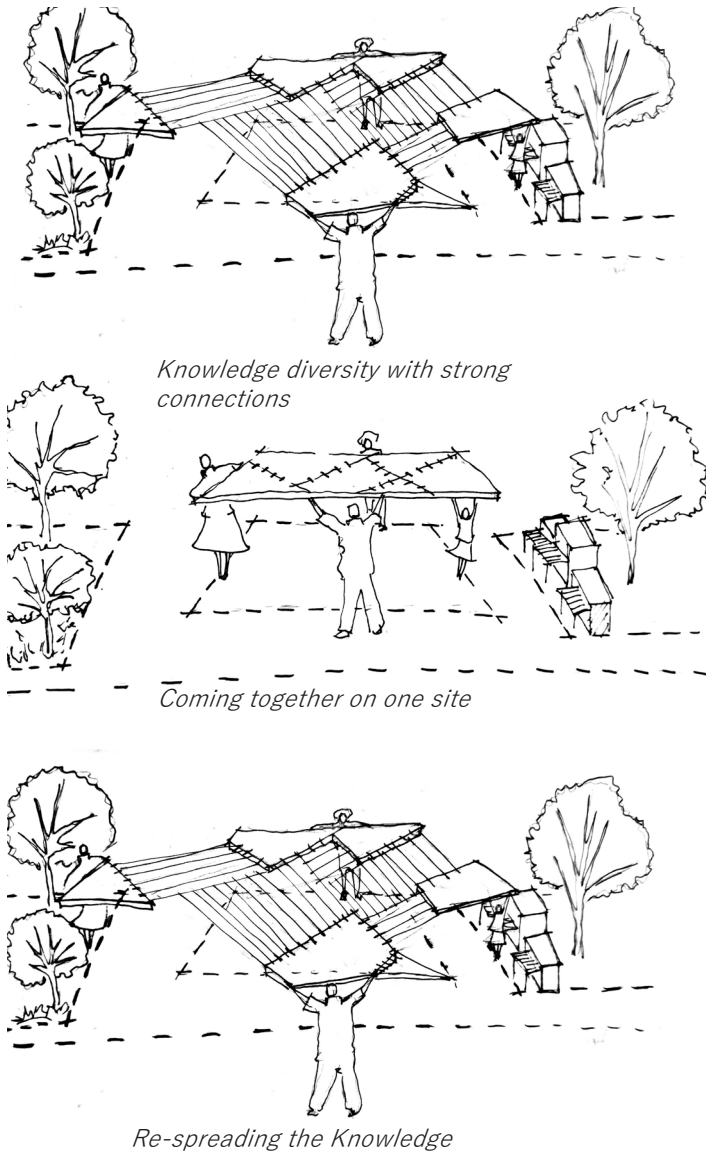


Figure 1.14: Spatial Agency, beyond the site, collaborations, epistemic diversity (Author 2021).

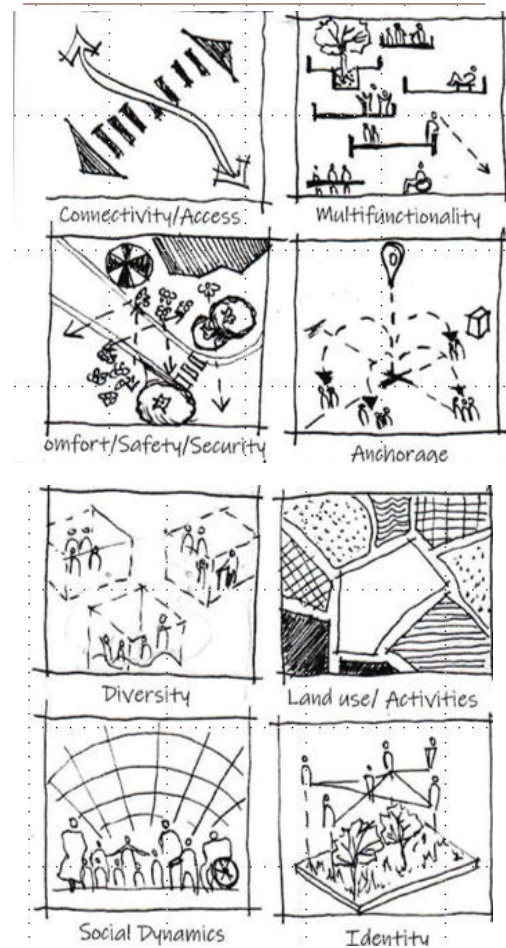


Figure 1.15: Pinto & Remesar (2012) urban cohesion best practice (Author 2021)

## //Spatial Agency and African Urbanism

The three previous sections constantly presented the South African situation in regards to public spaces conforming to and challenging international literature, thus evoking the need for contextual responses which can be found in the theories of spatial agency and the paradigm of African Urbanism.

Spatial agency is a placemaking mindset about the plethora of ways to design rather than a strict universal design guideline (Awan *et al.* 2011: 26-27). It also questions authorship and highlights different bottom-up approach to design. Actions such as “expanding the brief” (Awan *et al.* 2011: 69-70) or “initiating” (Awan *et al.* 2011: 72) among others, present experimentations that challenge the limits of site boundaries and relying on epistemic diversity for when to act and define spaces in the city (figure 1.14).

By extension, public spaces cannot fully exist in isolation. They exist beyond their boundaries as streets and boulevards extending into squares or parks and active social networks; potentially “weaving” the city together, especially when integrated with best practice principles (figure 1. 15, to be elaborated in the next portion of the dissertation) (Pinto & Remesar 2012: 10-11, 2015: 9). This cohesion demarch can incorporate large-scales communities focused on public works programmes which encompass the provision of economic, ecological and socio-cultural services while maintaining and repairing infrastructures (Pietterse 2011b: 4). The “beyond” of a site (Awan *et al.* 2011: 70) and its synergy with the interventions thus becomes a design concern instead of an obsolete.

## 2- THE SEARCH FOR RECREATION

### 2.1 THE “MAMELODI-SCAPE”

The established case for recreation sets the premises for the general basis of public spaces’ situations and perspectives. Onwards, to support the importance of contextual enquiry, the paper further delves into the township of Mamelodi as a site for investigation.

Mamelodi is full of history and culture (Figure 2.1-2.5). Its name meaning ‘Mother of melodies’, it is nestled at the foot of the Magaliesberg mountain ridge (Breed 2012: 8, Van der Waal 2000: 1). The timeline (Figure 2.5) recalls many historical events contributing to the current character of Mamelodi. Many of these moments have ties to recreation; from the establishment of infrastructures to the allocation of open spaces and sports facilities.

Moreover, it is through walking the site that one begins to latch onto the smaller grain- human scale moments of recreation (Figures 2.1-2.2 and 2.4). Each scenario presents a type of ‘dispositif’ which spontaneously begins to reduce Mamelodi ‘s physical scale (on a map) to a rather human-sized one. These nuances require further investigation due to their potential to influence the making of future public spaces.

In the case of Mamelodi East, NPOs (Non-Profit Organisations) and CBOs (Community-Based Organisa-

tions) were identified as major actors and influencers in the community (Urban Studio 2020). Their various endeavours paired with their anchorage into the neighbourhood set them as relevant informants for the projects. Therefore, the study will focus on Mamelodi East’s Ward 23 (Figures 2.6-2.9), sitting at the intersection between Mamelodi West (i.e., the older portion of the township) and Mamelodi East (i.e., the later portion) chosen for its NPO activity, its spatial location and diverse population (Breed 2012, Urban Studio 2020, Wazimaps 2011).



Figure 2.1-2.2: People agencies in the Public realm (Author 2021). Tent used for events between houses and small garden along Tsako Thabo School’ fence.



Figure 2.3: Poster of cultural and community events in Mamelodi (Author 2021). Mamelodi is well known for its recreational endeavours such as its annual jazz festival, dances and its famous soccer team Mamelodi Sundown’s (Breed 2012: 28). It is also home to heritage sites such as Solomon Mahlangu Square and the rondavels and hosted several important freedom struggle role-players.

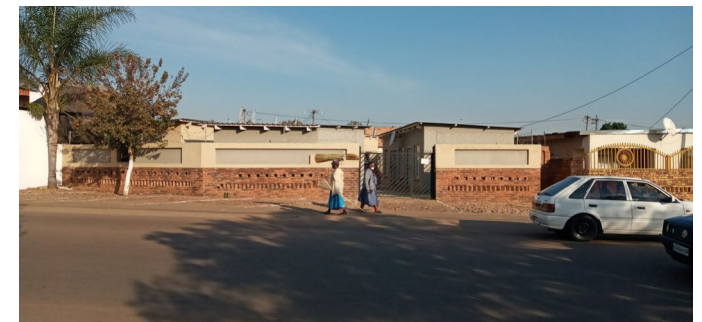
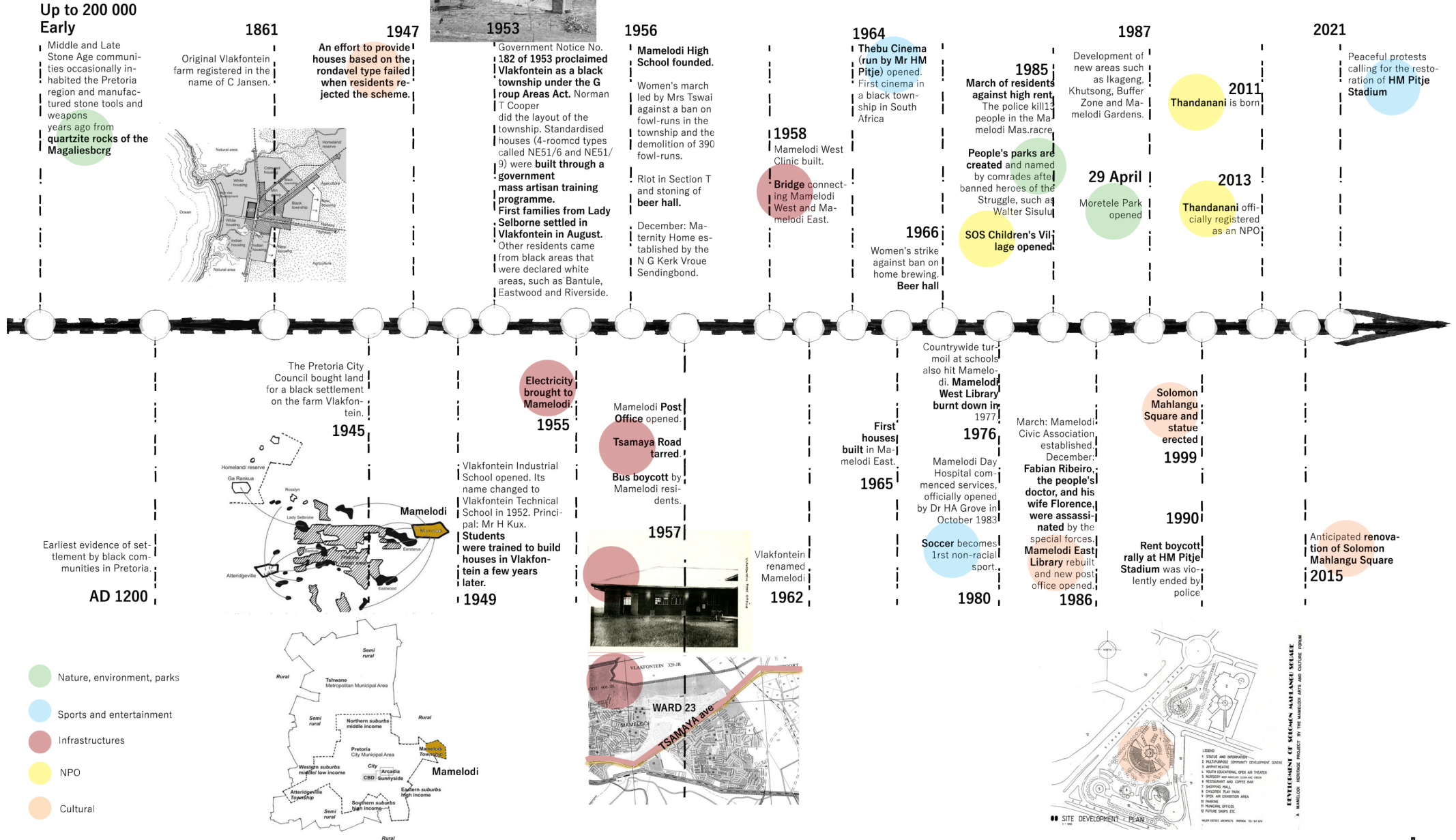


Figure 2.4: Housing , decorated fences and streetscape (Author 2021)

Figure 2.5: Timeline of Mamelodi with a focus on recreation throughout the years. Adapted from the van der Waal collection 2000 (Author 2021).



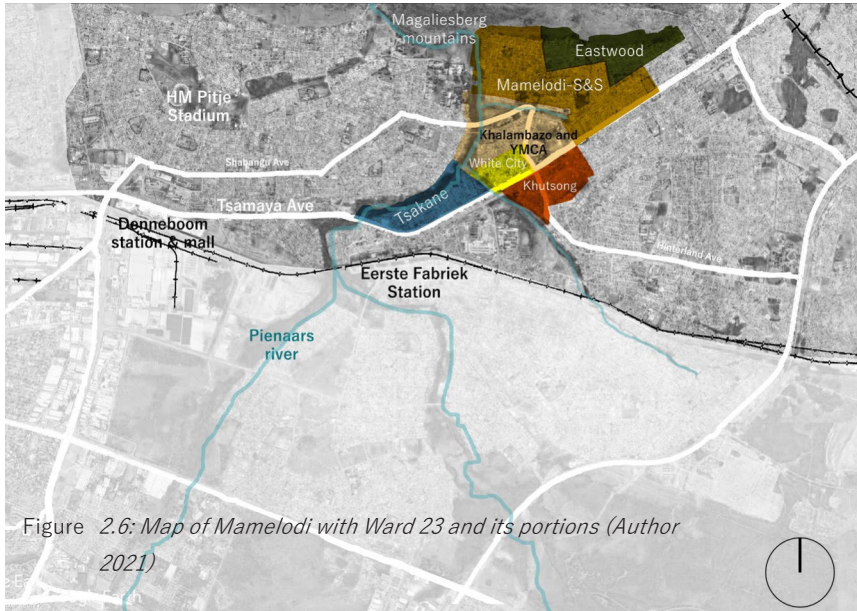


Figure 2.6: Map of Mamelodi with Ward 23 and its portions (Author 2021)

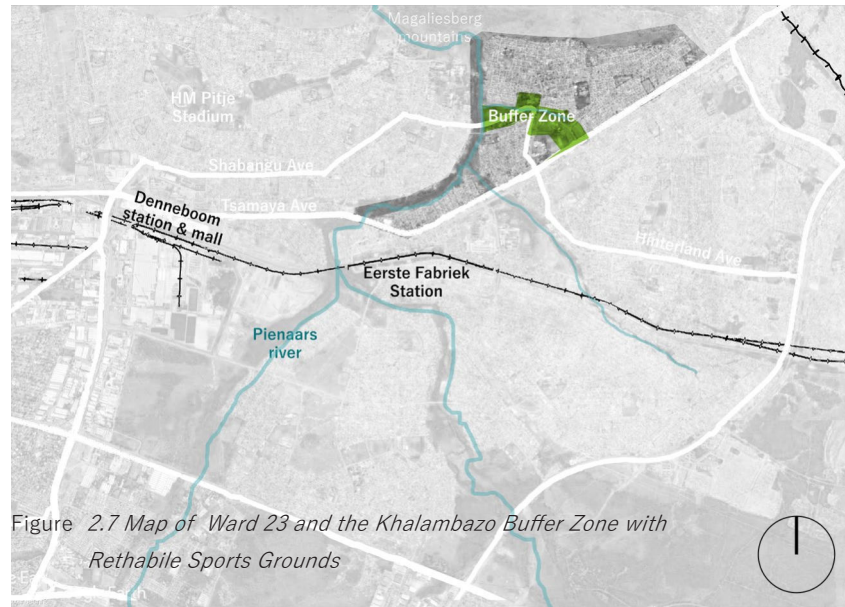


Figure 2.7 Map of Ward 23 and the Khambazo Buffer Zone with Rethabile Sports Grounds



Figure 2.8: Map showing the NPOs' locations in Ward 23a (Author 2021)

- Thandanani Drop Inn Centre
- Tshedza Projects
- SOS Children's Village
- Tsamaya Ave
- Railway



Figure 2.9: Buffer Zone portions (Author 2021). The totality of the above will be referred to as the Buffer Zone.



## 2.2 PROBLEM STATEMENT AND RESEARCH QUESTION

The paper has established the importance of recreational spaces in cities as areas that should be sustainably balanced, economically and physically accessible, contextually integrated and diverse; where people benefit from infrastructure provision and opportunities while themselves contribute to city living.

However, the disparate provision of public space with a heavy focus on monofunctional parts of the city and less holistic forms of sustainability, create a 'domino effect' where recreational spaces are less efficient, valueless, lost or negatively perceived.

One can begin to look at people's small acts of agency as a network (the use of space as a necessity leading to the spontaneous creation of recreation opportunities) as a starting point towards a subsequent investigation aiming at answering the following question:

**“How can recreational spaces in the township of Mamelodi East be designed as devices to contribute towards a socio-culturally sustainable and cohesive urban environment?”**

## 2.3 AIM AND OBJECTIVES OF THE STUDY

The aims of the study would be to find a way to design sustainably-balanced and multifaceted recreational spaces in Mamelodi East, which would allow people to exercise a sense of agency in placemaking while strengthening their sense of values and belonging in public space. Furthermore, it would necessitate these hybrids spaces to contribute towards an ease of movement and access across the township, thus improving interfaces with the existing recreational spaces. Lastly, the dissertation should produce a well-documented and expandable methodology capable to contribute to the space-planning discourse and aid future recreational spaces development approaches in Tshwane's townships.

Therefore, the objectives of the research are as followed:

- assess the nature, use and values attributed to current and aspiring recreational sites in Ward 23
- explore the meaning and situation of “people as infrastructure” in Ward 23

- discover and interpret the possible networks related to recreation in Ward 23 and test social network analysis as a tool for public space design (in terms of its efficiency in identifying community relationships and needs, programmes towards hybridity and the synthesis of adequate recreation and informants) (inspired by Casakin & Valera 2020: 12)
- undertake a typology study for a spatial understanding of public spaces' best practice characteristics and idiosyncrasies (locally and internationally)
- propose a design development to answer the research question.

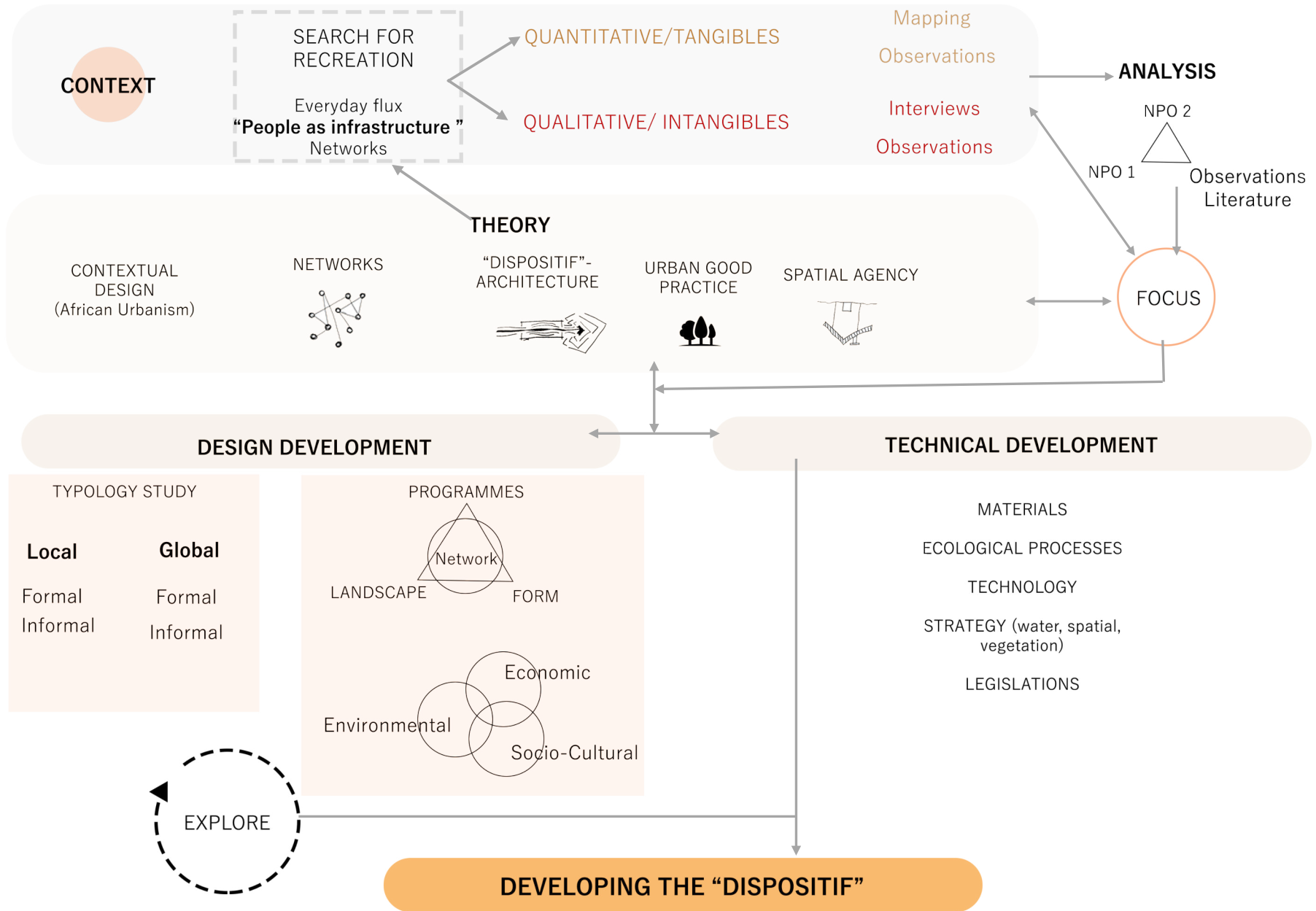


Figure 2.10: Design by research methodology employed (Author 2021)

## 2.4 METHODOLOGY

The research adopts a pragmatic view of the uncovered situation, an acceptance of multiple interpretation towards a layered understanding of a place, leading to a case study of Ward 23 as a research design (Figures 2.10-2.13) (Wang & Groat 2013: 442). A mixed-method of enquiry was used (figure 2. 10) encompassing: qualitative data and quantitative data collection, a typology study and data analysis.

The process for the extraction of data and analysis involves the classification of the results into emerging themes and the categories proposed for urban cohesive public spaces, the triangulation of data between the different sources of information and finally the tabulation of the results followed by a subsequent social networks diagram generated through the program GEPHI (figure 2.12).

## 2.5 DELIMITATION AND LIMITATIONS

The field research is delimited to the boundaries of Mamelodi-S&S, Mamelodi-YMCA, Khalambazo (Figure 2.6-2.9) and the two NPOs, Thandanani Drop Inn Centre and SOS Children Village (figure 2.8) as 'microsites'. As a research-led dissertation, the work was divided between field visits, desktop studies and design development (Figure 2.11). It is further noted that due to the availability of many NPOs in Mamelodi, only two were able to participate. Additionally, the focus of the interviews was placed on the quality rather than the quantity of the information as part of the qualitative side of the study.

### LEGEND

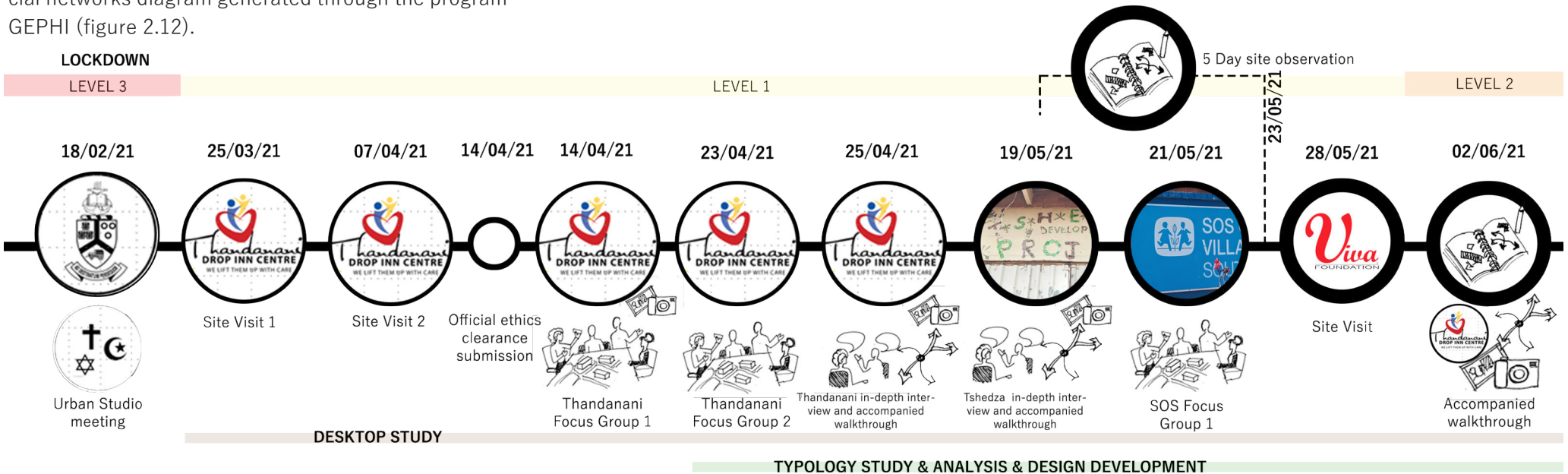


Figure 2.11: Research timeline (Author 2021)

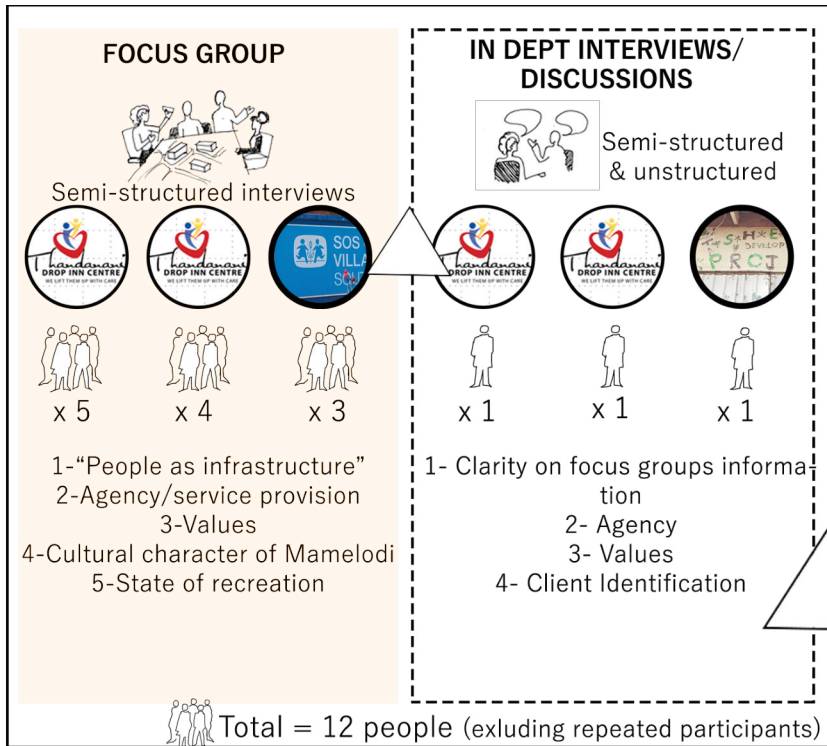


Figure 2.12: Interview process (Author 2021)

- 
- 1- Agency in public space
  - 2- Affordance in public space
  - 3- Patterns in public space
  - 4- Spontaneous recreation

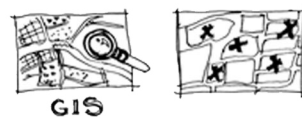
### QUALITATIVE/ INTANGIBLES

Systemic and descriptive observation of Ward 23 focus area public space.



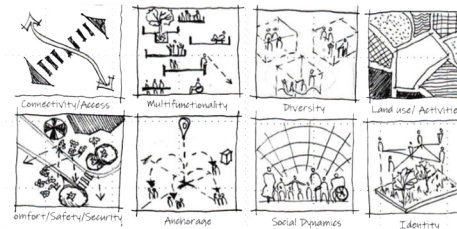
### QUANTITATIVE/TANGIBLES

Mapping of routes, behaviour patterns, landscape, cultural artefacts and entertainment.



### TYPOLGY STUDY

Global and Local examples analysed through Pinto and Remesar (2012) public space principles for urban cohesion.



### ANALYSIS

- 1- Analysis of qualitative data through framework method (Smith and Firth 2011, Srivastava and Thomson 2009), see Appendix
- 2- Social networks analysis (Caskin and Valera 2020)

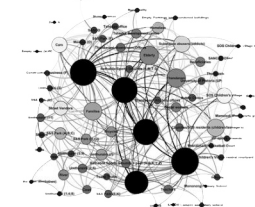


Figure 2.13: Instruments and data analysis (Author 2021)

## 2.6 ETHICAL CONSIDERATIONS

As this dissertation's data collection relies heavily on the observation and mapping of everyday practices of recreation it is essential the due process is followed in terms of ethical considerations. Therefore, the researcher takes on the precaution to adhere to the University of Pretoria's research rules and regulation, plagiarism and data accuracy protocol as per the codes of the Faculty Committee for Research Ethics and Integrity of the EBIT faculty (Faculty of Engineering, Built Environment and IT c2021). Additionally, the current pandemic measures were internalised as part of the scheduling for fieldwork (Figure 2.11) (South African Government c.2021).

The researcher acknowledges that any work produced will form part of the intellectual property of the University of Pretoria; nonetheless in the case that the information gathered highly benefits the community, arrangements will be made to deal with privacy in order to make the work more accessible.

The use of interviews soliciting particular ethical procedures, the researcher has aimed at fulfilling all the necessary criteria and documentation (see appendices A-D) involving:

- Application for ethical clearance through blanket ethics
- No involvement of minors nor vulnerable groups
- Informed procedure and consent, including

the use of recording, note-taking and disclosure about the storage of information.

# 3- FOUND RECREATION

## 3.1 INITIAL INSIGHT INTO FINDINGS: the value of recreation

Through the site visits undertaken at the two NPOs, it was possible to draw a primary understanding of the state of recreation in the area.

### //Perspectives and Values

Firstly, it is important to note that both Thandanani (along with its affiliate Tshedza Project) and SOS provide services related to social matters (Figures 3.1-3.3). However, it is in their multifunctional character that one can start to experience the notion of “people as infrastructure” (AbdouMaliq Simone 2004 in *Exploratory Notes on African Urbanism* 2009: 8).

It was found that due to the number of schools in the vicinity and the percentage of young adults, a great focus was placed on providing programs for children, teenagers and the youth (Figure 3.1-3.5). Additionally, the concept and value of family was also prevalent, either as an aspiration for future programmes (Thandanani) or as a current conceptual organisation system (SOS) (SOS focus group 1 2021; Thandanani focus group 1 2021). One can also note a high regard for the value of unity despite some recognised tensions among ethnic groups (especially in schools) (Niebuhr 2021; SOS Children’s village Mamelodi focus group 1 2021; Thandanani focus group 2 2021).

Each organisation provided a variety of recreation (Figures 3.2-3.3). In both instances, the inclusion of recreation was not only considered as a mean for leisure and play but was found to be rooted in the NPOs’ values and perspectives of recreation. Indeed, this service provision was highly tied to the improvement of societal endeavours such as: education, self-improvement, self-discovery, self-value, relationship building, and a way to help the community in solidarity. Programmes to aid the homeless and substance abusers were also knitted into sports and skills development amongst others (Mr J, verbal communication 2021; Mrs K Verbal communication 2021; SOS focus group 1 2021; Thandanani focus group 1, 2 2021).

### //Skill Developments through Recreation

Skills development seemed to form a crucial component of the NPOs services and values (for all demographics) along with their acceptance for change and constant interest in trying to introduce new activities and programmes such as: multiple awareness campaigns and interests in the outdoors and environmental endeavours (Figures 3.1-3.3). One can sense the commonalities in recreation and a sense of agency of NPOs despite them often facing the limitations of funds and physical space (site boundaries and economic opportunities) (Mr J, verbal communication 2021; Mrs K, verbal communication 2021; SOS focus group 1 2021; Thandanani focus group 1, 2 2021).

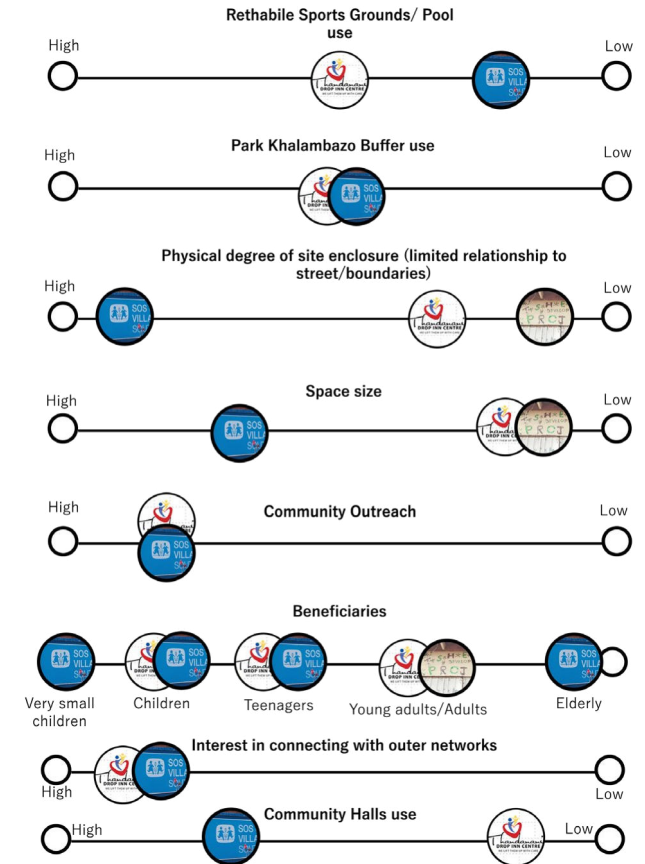


Figure 3.1: NPO comparisons (Author 2021)



Newspapers (From Thandanai's archive 2021)



Aerial photograph (Google Earth 2021)



TSHEDZA Teknikon Project: Manual Skill Development for the youth and unemployed



After-school care



Feeding schemes



Support for post rehab



Community support



Support for homeless



Old TB clinic (From Thandanai's archive 2021)

Evolution of Thandanai, a history of appropriation for the benefit of the community



Thandanai's adapted building and adapted basketball court (Author 2021)

Figure 3.2: Thandanai Drop Inn Centre, matrix collage of activities and site and assets

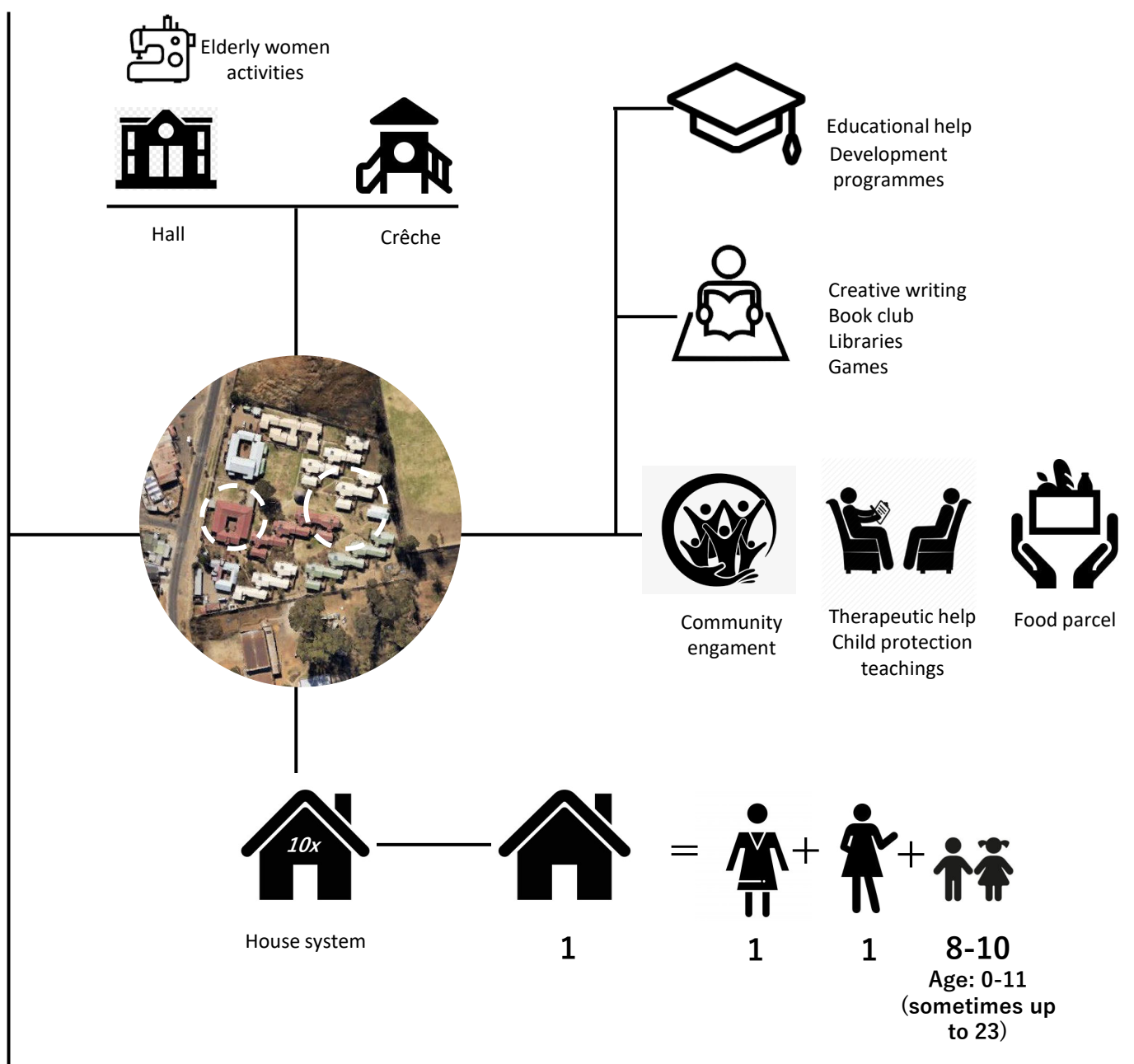


Figure 2.3: Thandanani Drop Inn Centre, matrix collage of activities and site and assets



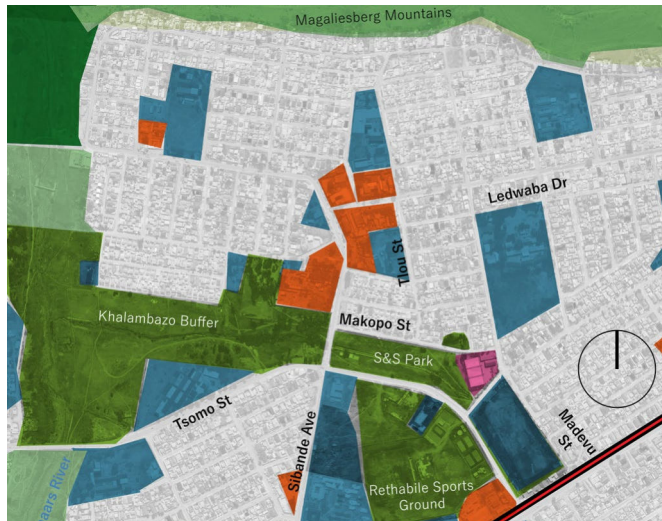


Figure 3.4: Zoning map around the site, information from Tshwane GIS (Author 2021)



### //Perspectives on the Provision of Formal Recreation

The dereliction, lack of appeal and maintenance status of cultural and public spaces in Mamelodi has been confirmed by all parties (Mr J, verbal communication 2021; SOS focus group 1 2021; Thandanani focus group 2 2021). As responses, Thandanani’s adapted basketball court and SOS’s small libraries and hall become substitute facilities to further away well-main-

tained sites. Nonetheless, while Thandanani attempts to still make use of the surroundings to an extent, SOS resorts to ‘insourcing’ (i.e., within their own premises) or ‘outsourcing’ recreational facilities at a greater scale (Mamelodi West’s and the University of Pretoria’s sports grounds) (SOS Children’s village Mamelodi focus group 1 2021; Thandanani Focus group 1 2021).

## 3.2 DISCUSSION

The above findings confirm the idea that public spaces “are never finished products” (Casakin & Valera 2020: 11) regardless of scale. They can be re-appropriated, changed, and reinterpreted or form a network of actors, activities and sites. Elements and resources that do not appear to correlate may in reality share inconspicuous connections such as groups of people from different parts of the neighbourhood finding themselves together due to similar objectives at various points in the environment.

The much-needed diversity of recreational infrastructure in the township is found in its smaller grain with “invisible” agents (NPOs) in need of opportunities to fully act as catalysts for infrastructure provision (Pietterse 2011a: 313; Urban Studio 2020: 44). As suggested by Salat *et al.* (2011) this fine grain phenomenon should be scalable. Scaling this found multifunctionality would tackle people’s agency limited by space (size), distance and specified structures (figure 3.1 -3.5).

The variety of programmes presented by the organisations are in fact contextual responses to immediate

social needs. The emphasis on sports was always paired with other forms of programmes and objectives (outdoor excursions, post-rehab programmes, cultural activities such as music and dance) making sports more polyvalent in nature, thus, adding diverse layers to the monofunctional focus of the White Papers. These varied expressed interests provide clues for better holistic, hybrid and ecological direction and responses in the design phase (Figure 3.6).

From here onwards one can decipher that the term ‘people as infrastructure’ seems to be assimilated to the manner in which community members impact and iterate their environments through their connections and actions while aiming for the betterment of each other’s lives. As a result, this phenomenon can be suitably restated as ‘social fabric or networks as infrastructure’.

Tatjana Schneider and Jeremy Till (2012:41) argue that creating something that was not needed is a waste of resources and advocate for the careful observation of the present situation to redefine the problems in other ways. Following on this statement it was only natural to view the Buffer Zone spine as a chosen block for further investigation to draw links between the finer grain of NPOs, daily users of the sites and the greater scale of the neighbourhood. The potential of the zone’s character unpacked in the following section should later influence the design development.

*“A child must play, rest, work hard but be careful of the word “play”. How do they play? “ (Ms K, verbal communication 2021)*

*“Yes, they vandalise [Solomon Mahlangu]. But now there is no security in place. [...] a tourist attraction site, people coming in would be educated about the history of Mamelodi.” (Ms K, verbal communication 2021)*

*“So, we also invite the government to come and see what we are doing here every day. They will be shocked. They will be shocked.” (Mr A, verbal communication 2021)*

*“Family support is very very important.” (Mr A, verbal communication 2021)*

*“You know someone who knows someone, you take him with the hand, “there’s a job for you there”, at least you give him a direction in life.” (Mr S, verbal communication 2021)*

*“An idle mind is the devil’s playground.” (Mr S, verbal communication 2021)*

*“So, most of the time there are children who play soccer most of the time. Whether it is in the morning or in the afternoon. Even after 5 o’clock, they still want to play soccer there. “ (Mr L, verbal communication 2021)*



Figure 3.5: Voices from the volunteers (Thandanani focus group 1,2 2021)

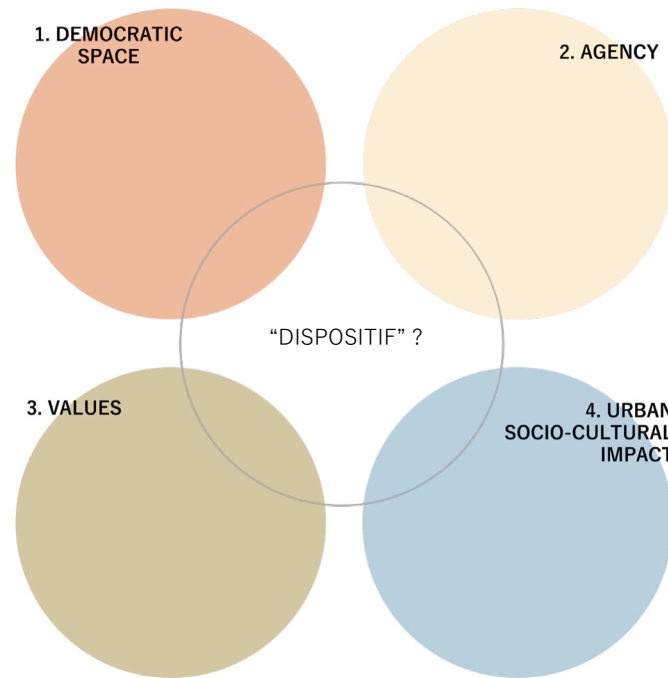


Figure 3.6: Finding the dispositif (Author 2021)

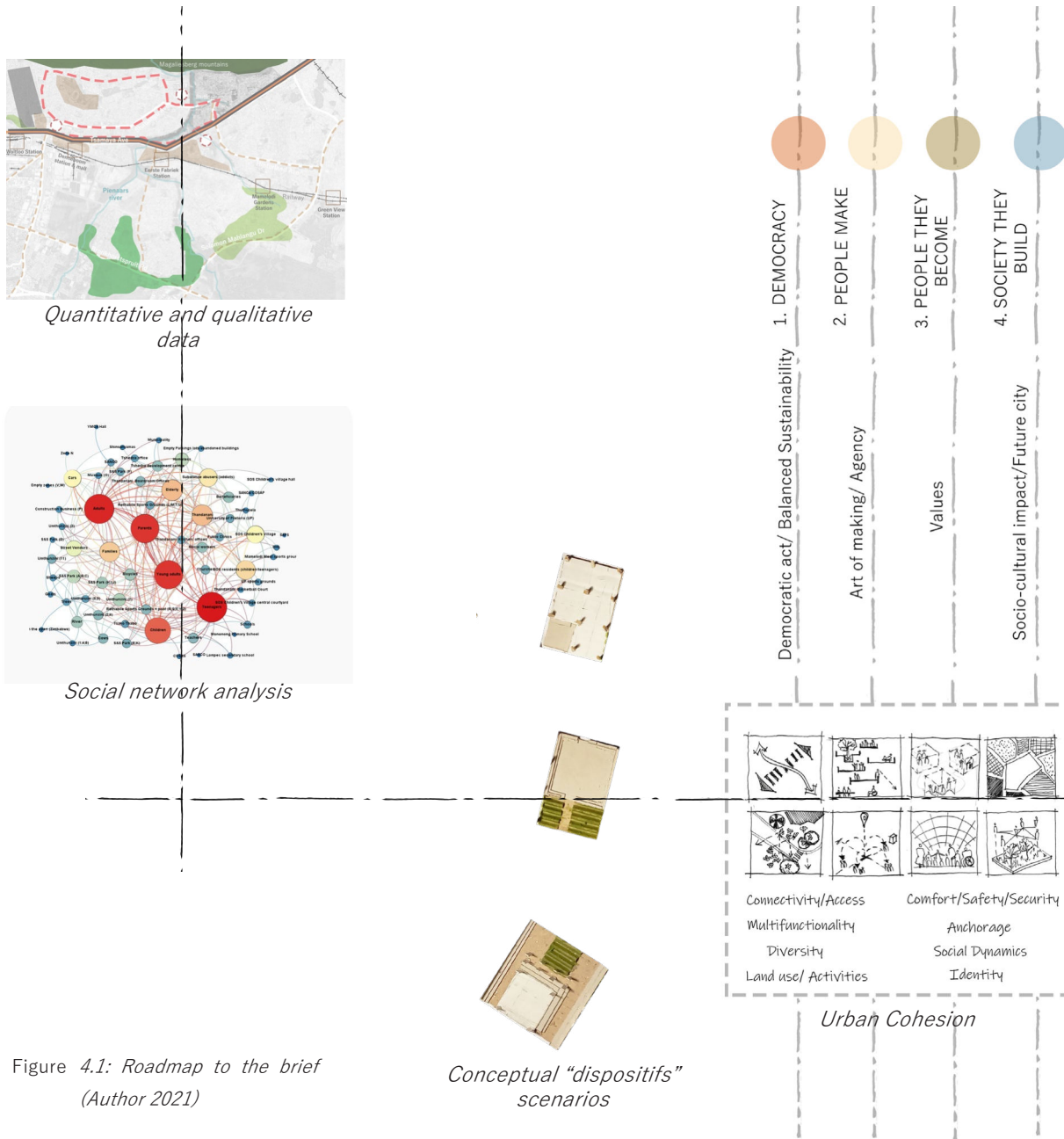


Figure 4.1: Roadmap to the brief  
(Author 2021)

## FROM NETWORKS TO BRIEF

In line with what has been presented in the prior sections, recreation can be understood as a flexible and layered concept as well as an important component for urban living. However, in townships such as Mamelodi, the loss of public spaces resulting from the apartheid era's spatial planning, issues of housing, and/or lack of maintenance has led to issues in achieving proper urban cohesion.

As a mitigation strategy, residents of such townships have often resorted to making use of smaller sites in a bid to exercise various agencies and relations. However, these attempts can and have been met with some limitations, with connections not being fully realised. It is in these situations that the notion of 'dispositif' architecture, introduced in this paper, is investigated as a device to anchor networks into space as an initial conceptual design enquiry.

Firstly, this paper delves into the understanding of 'flow' as established relations (i.e., as networks) in terms of recreation, which can then be used to formulate and comprehend clients, programmes, sites, and, ultimately, the physical form of the intervention.

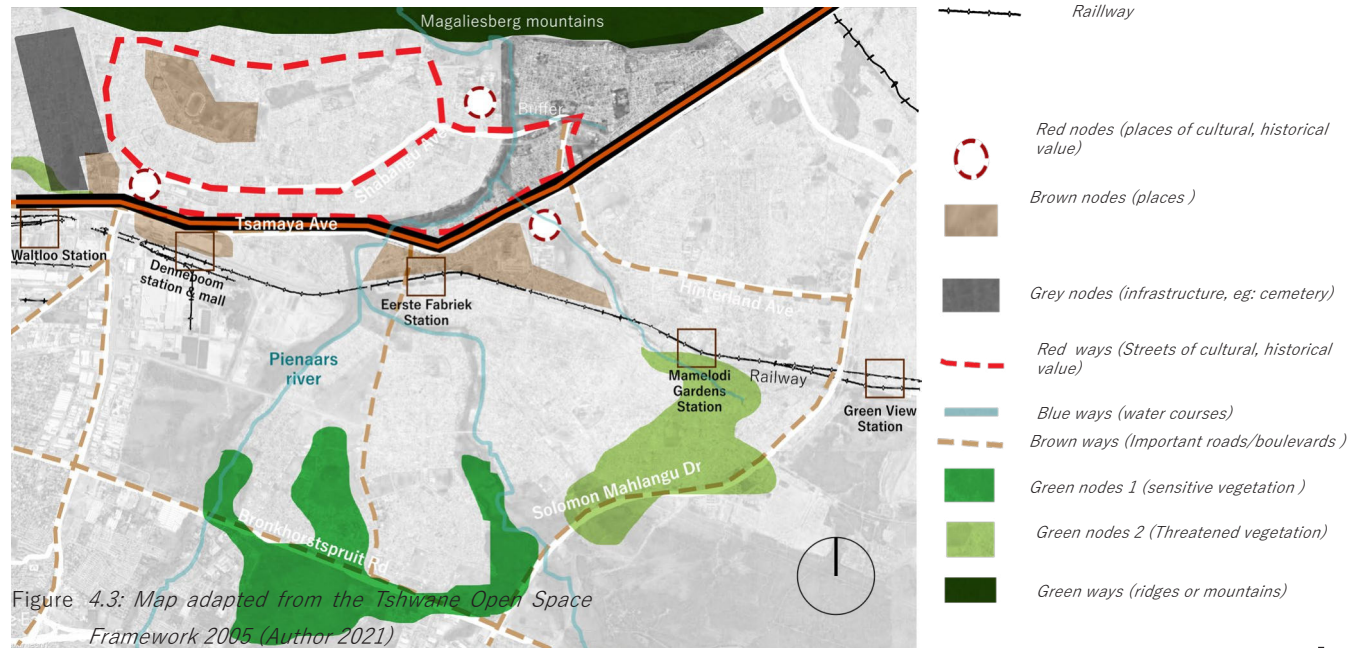
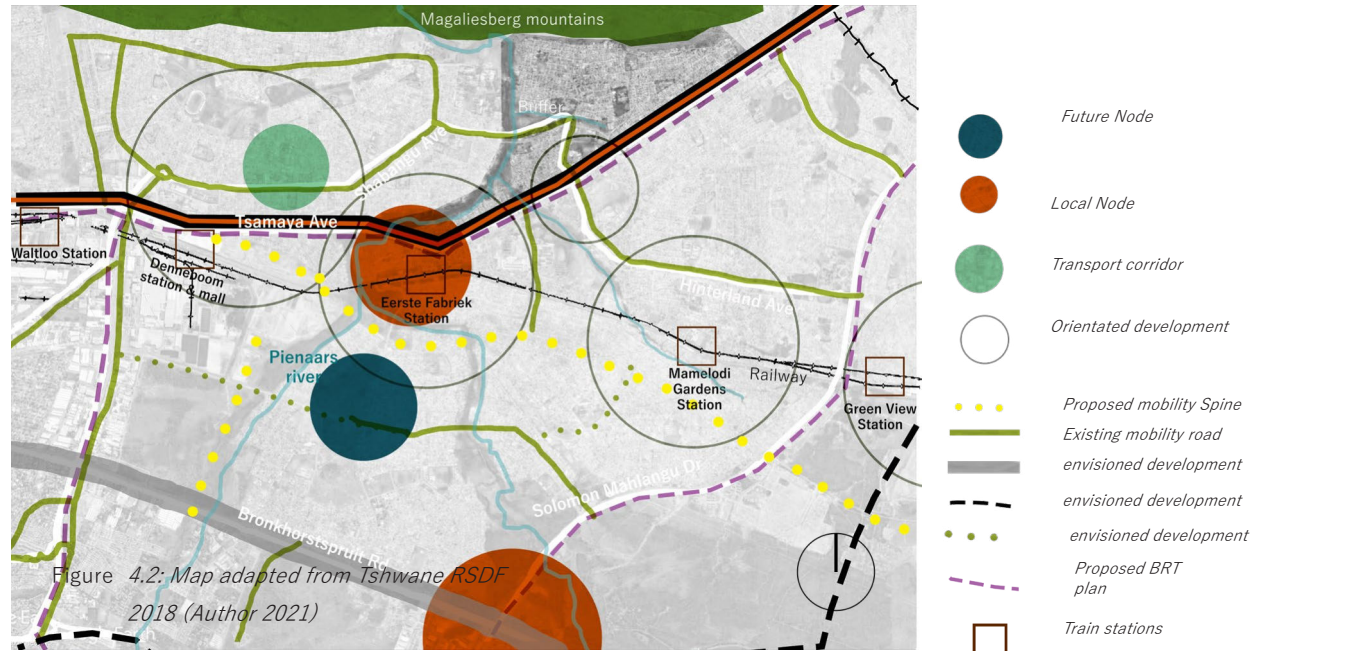
Deliverables such as the social network analysis procedure, along with a thorough typology study, form part of this section, and act as tools towards internalising common public spaces benchmarks. This approach, in turn, provides a deeper dive into 'social fabric as infrastructure', leading to a design approach that incorporates networks while simultaneously considering related physical representations, narratives, and options. The uncovered relationships of people-to-people, places-to-places, and people-to-places are also examined. Figure 4.1 presents a road map for the investigations detailed in this portion of the paper – from analyses to conceptual prototyping.

# 4- PUBLIC SPACE PLURALITY OF MA- MELODI

## 4.1 SITE ANALYSIS AND INFORMANTS

As iterated previously, the chosen site encompasses the Buffer Zone and Rethabile Sports Grounds (i.e., that form a spine of public open spaces, a mundane but spontaneous area with the exception of a static and barren portion of the YMCA). The overall site investigation, thus, presents multiple opportunities from the site's position, environmental characteristics, and daily relevance (i.e., cultural, historical, and economic); thereby recognising the 'extraordinary' in the 'everyday' through a recreational lens.

The mapping (Figures 4.2 to 4.8) here involves the flux of people and vehicles, places of pause, and importance of significant routes present throughout the site. This is inclusive of the City of Tshwane's RSDf 2018 and the green, red, brown, grey, and blue routes and nodes from the City of Tshwane's Open Public Space Framework (OPSF) (Figure 4.3 – legend) (City of Tshwane 2005b: 23, 70). The landscape itself is also a major recreational agent and permanent actor; therefore, it has been recorded with all its forms and behaviours, both dependent and independent of people (Figure 4.8) (SANBI c.2021). Sites in close proximity to one another have further provided clues about relations, activities, and safety (or lack thereof) (Figures 4.7-4.8, 4.10).



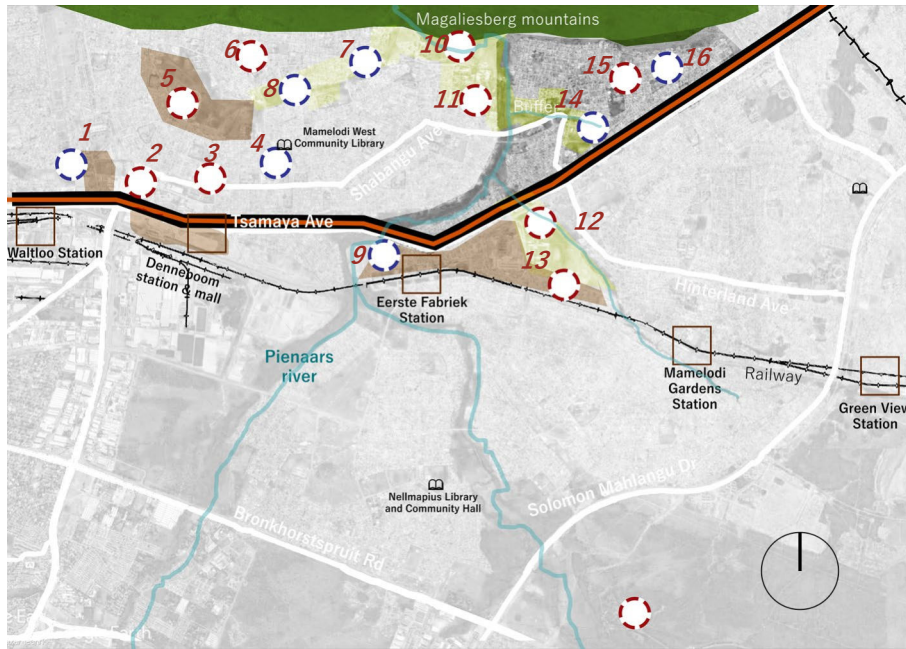








Figure 4.4: Cultural mapping generated from interviews and photographs of sites (Author 2021).

-  Places of entertainment, sports or movement
-  Places of significance, cultural character or local landmarks
-  Brown nodes
-  Green corridor
-  Magaliesberg
-  Pienaars River and tributary (blue way)

- 1: Denlyn Shopping Centre and sports fields
- 2: Solomon Mahlangu Square
- 3: Dr Fabian Riebero's house
- 4: T-section, Jake Budha, "Skener Boom"
- 5: HM Ptje Stadium
- 6: Mothong Heritage Precinct
- 7: Polar Park
- 8: Cricket Oval
- 9: Eerste Fabriek
- 10: Moretele Park
- 11: Rondavels
- 12: Nelson Mandela Park
- 13: That's It Art gallery
- 14: Rethabile Sports Grounds
- 15: "Kanada House"
- 16: Monaco

*Rethabile Sports Grounds' assets*

- Swimming Pool
- Netball courts,
- Soccer fields,
- Tennis courts,
- Caretaker's old building
- Buildings in pool area









-  Pienaars River and free flowing tributary
-  Natural site drainage
-  Stream in concrete channel
-  1:50 years floodline
-  Estimated lowest points on site
-  Magaliesberg Mountain range

Figure 4.5: Site hydrology, information from SANBI c2021 and Open street maps c2021 (Author 2021)



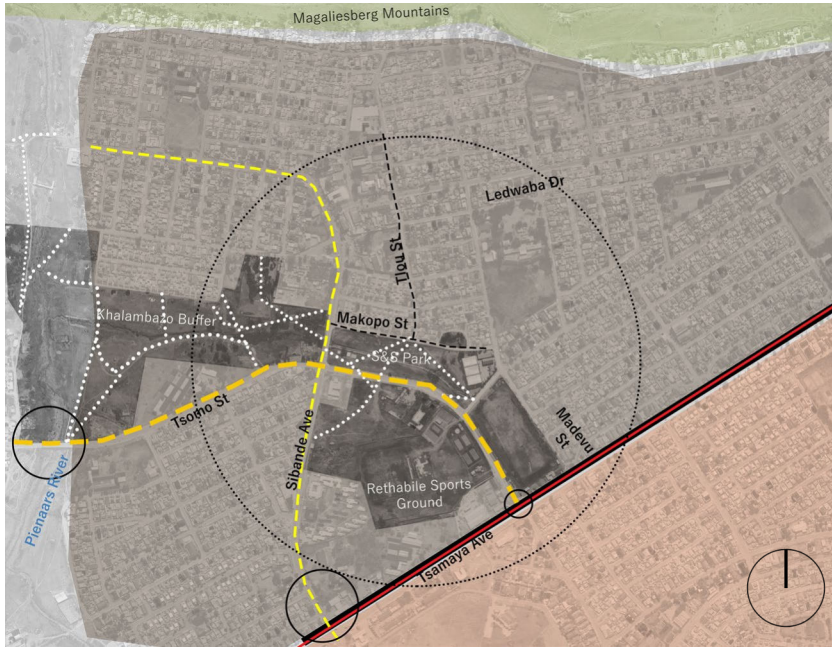


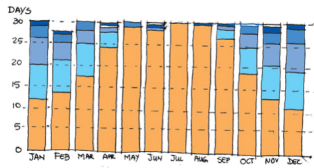
Figure 4.6: Map of movement and transport around the site (Author 2021)

- Desired lines
- Busiest North-South route
- Busiest East-West axis
- Very pedestrian-friendly North South route
- Entry points into the Buffer Zone (small to largest)
- ..... 500m radius
- Zone dominated by private cars and "small business" (residents using private cars as taxis)
- Zone dominated by "Quantams" (Kombi/minibus) including Tsamaya
- Most natural zone



Figure 4.7: Map of activities, unsafe zones and boundaries around the site (Author 2021)

- Street vendors
- Bus stops
- Unsafe zones (observations; interviews;) Niebuhr 2021
- Zones with the homeless/ substance abusers
- Very active zones and gatherings
- Dominant fences with public access
- Dominant fences with controlled access
- Dominant fences breached
- Abandoned children's park
- Glass recycling
- Car wash
- Mechanics



## //Themes and Cohesion

Figure 4.9 indicates the relationship between the interview results (i.e., themes) and their possible urban cohesion factors. It is possible to observe sites of significance in these cases, as well as ideas and objectives for recreation programmes. Similarly, the cultural map (Figure 4.12) is indicative of local landmarks, transport corridors, and recreational sites (used or neglected) that have been deemed part of Mamelodi's cultural experience (SOS Children's Village Mamelodi Focus Group 1 2021; Thandanani Focus Group 2 2021).

It should be noted that most of these sites are found adjacent to Tsamaya Avenue or the Hinterland Avenue-Mamelodi West loop corridor via Tsomo Street – both instances include historically significant routes and nodes (van der Waal 2000). When paired with the information provided by the municipality's frameworks, these places of significance have been translated into Figure 4.12, and all ultimately form part of a greater ecological network of open spaces, historical routes, and major axes of circulation, despite the distances between each and/or their individual characteristics. It is also worth noting that most of the sites only specific to Figure 4.12 originate from the daily experiences of people living and/or working in the neighbourhood, along with their own aspirations.

## // Public Realm

Actors and activities observed on five consecutive days at differing times along Tsomo Street – as a sequence of spaces appropriated to various degrees – are depicted in Figure 4.10. This documentation serves as a partial triangulation for the interviews and mapping, as well as a primary source of qualitative information aimed at better understanding the patterns of recreation unique to the Buffer Zone. Furthermore, the map presented in Figure 4.13 has been bisected and annotated to more easily identify different activities' locations.

Through this graphical representation, it is possible to conclude that various patterns of occupation are visible, with some repeated along the site, while others remain exclusive to certain portions. Although some activities and users tended to change throughout the days and hours, others were found to remain constant (i.e., permanently present). This phenomenon highlights the importance of the landscape as an actor in and of itself, as well as the ways in which its language resonates with users for different uses and interpretations. All this reveals a spectrum of 'affordance' (i.e., elements such as paving for a car wash, water for tent washing, trees for shade, or grass for grazing). The in-between nature of recreation has also been confirmed through the comparison table (Figure 4.13), which reveals a balanced number of binary activities. Of further note is that the movement of actors – such as the stream flowing, or children playing across multiple zones – forms an interesting, intangible connection in the area across both space and time.

Figure 4.8: Zoomed-in site analysis and opportunities (Author 2021)



|   | PROBLEMS & CHALLENGES  | STORIES & CULTURE   | VALUES & INITIATIVES   | IDEAS & CONCEPTS  | PLACES, SITES & FACILITIES  | OCCUPATION   |
|---|--|---|--|---|---|--|
| ACCESSIBILITY/<br>CONTINUITY/ MOBILITY/<br>CONNECTIVITY | <ul style="list-style-type: none"> <li>Convoy/traffic</li> <li>Distances to sport facilities</li> </ul>  | <ul style="list-style-type: none"> <li>Digital posters for events</li> <li>"small business"</li> <li>Foot</li> <li>Putco bus</li> <li>Train</li> <li>Areyeng</li> <li>Kombis</li> </ul>   | <ul style="list-style-type: none"> <li>Junior laptops</li> </ul>   | <ul style="list-style-type: none"> <li>Mobile truck</li> <li>Smartphones</li> <li>Bicycles</li> </ul>   | <ul style="list-style-type: none"> <li>Moretele Park</li> </ul>   |  |
| LAND USE/ ACTIVITIES                                    | <ul style="list-style-type: none"> <li>No soccer fields on site</li> <li>Lack of well maintained recreational activities</li> </ul>  | <ul style="list-style-type: none"> <li>Jazz Festival</li> <li>Motsepe Foundation</li> <li>Pubs/ clubs/ shinsanyamas</li> <li>Popular sport soccer</li> <li>Mobile bus library</li> <li>Dinho Café</li> <li>"sneker corners"</li> <li>Local street tournament</li> </ul> | <ul style="list-style-type: none"> <li>Keep busy</li> <li>Feeding scheme</li> <li>After school care</li> <li>Homework, puzzles, reading, soccer</li> <li>Music/ dance/ sing "Amapiano"</li> <li>Educational tours</li> </ul> | <ul style="list-style-type: none"> <li>Skill hub</li> <li>Youth day event</li> <li>Computer literacy</li> <li>Aftercare for addicts</li> </ul>                    | <ul style="list-style-type: none"> <li>Monaco</li> <li>Jack Buda</li> <li>Tswewe Street</li> <li>Moretele Park</li> <li>Community hall</li> <li>Sianza Bopape library</li> <li>Mutunzini</li> <li>Rethabile sports grounds</li> </ul>   | <ul style="list-style-type: none"> <li>S&amp;S Mosque</li> <li>Jack Buda</li> <li>Homes</li> <li>Basketball court</li> <li>S&amp;S Park</li> <li>Tswewe Street</li> </ul>    |
| SOCIAL DYNAMICS   |  | <ul style="list-style-type: none"> <li>"Skener tree"</li> <li>Local street tournament</li> <li>Good relations with spazas and foreigners</li> <li>S'piton</li> </ul>  | <ul style="list-style-type: none"> <li>Unity</li> <li>Area lit up at night</li> <li>Reinforcing parent-child dynamics</li> </ul>   | <ul style="list-style-type: none"> <li>Support groups</li> <li>Aftercare for addicts</li> <li>Skill Hub</li> </ul>  | <ul style="list-style-type: none"> <li>Monaco</li> <li>Moretele Park</li> <li>Muzutani</li> <li>S&amp;S Park</li> <li>Rethabile Sports ground</li> <li>Jack Buda</li> <li>Tswewe Street</li> </ul>  | <ul style="list-style-type: none"> <li>Pubs and corner gatherings</li> <li>Homes</li> <li>Basketball court</li> <li>S&amp;S Mosque</li> </ul>                                |
| COMFORT/ SAFETY   | <ul style="list-style-type: none"> <li>Xenophobic attacks</li> <li>Abandoned buildings occupation</li> </ul>   | <ul style="list-style-type: none"> <li>S&amp;S constant streets activity brings safety</li> <li>History of gangsterism (past)</li> </ul>  | <ul style="list-style-type: none"> <li>Relationships create safety</li> <li>Area is lit up at night</li> </ul>   | <ul style="list-style-type: none"> <li>Aftercare for addicts</li> </ul>   | <ul style="list-style-type: none"> <li>Solomon Mahlangu</li> <li>Rondavels</li> <li>HM Pitje</li> <li>Rethabile sports ground</li> </ul>  | <ul style="list-style-type: none"> <li>Occupation of degrading/abandoned facilities</li> </ul>   |
| ANCHORAGE   | <ul style="list-style-type: none"> <li>Denlyn mall taking over sports ground</li> </ul>  |   |  | <ul style="list-style-type: none"> <li>Heritage sites for children's excursions</li> </ul>  | <ul style="list-style-type: none"> <li>Village Park</li> <li>Polar Park</li> <li>Cricket oval</li> <li>Rondavels</li> <li>Solomon Mahlangu's house</li> <li>S&amp;S Clinic</li> <li>Fabian D Ribeiro's house</li> <li>Rethabile sports ground</li> <li>HM Pitje</li> <li>Nico Smith's house</li> <li>"Kanada House"</li> <li>Moretele Park</li> <li>Monaco</li> <li>Jack Buda</li> <li>Tswewe street</li> <li>S&amp;S park</li> </ul> | <ul style="list-style-type: none"> <li>Jack Buda</li> <li>Rethabile sports ground</li> <li>S&amp;S Park</li> <li>Basketball court</li> <li>Thandanani's buildings</li> </ul> |
| MULTIFUNCTIONALITY                                      |  |   | <ul style="list-style-type: none"> <li>3 programmes simultaneously</li> </ul>  | <ul style="list-style-type: none"> <li>Skill Hub</li> <li>Aftercare for addicts</li> </ul>  | <ul style="list-style-type: none"> <li>Rethabile sports ground</li> <li>Moretele Park</li> <li>Jack Buda</li> <li>Tswewe Street</li> <li>S&amp;S park</li> </ul>  | <ul style="list-style-type: none"> <li>Thandanani's buildings</li> <li>Basketball court</li> <li>Homes</li> </ul>  |
| DIVERSITY   | <ul style="list-style-type: none"> <li>Xenophobic attacks</li> <li>Homeless coming from other provinces with no ID</li> <li>Lack of diverse evening recreational activities</li> <li>Skills</li> <li>Girls (homeless/substance abusers)</li> </ul> | <ul style="list-style-type: none"> <li>Local street tournament</li> <li>S&amp;S active streets</li> <li>Ethnic groups and Mamelodi sections</li> </ul>  | <ul style="list-style-type: none"> <li>3 Programmes</li> </ul>   | <ul style="list-style-type: none"> <li>Aftercare for addicts</li> <li>Bricklaying, carpentry, welding, car wash, computer, electrical services, sewing</li> </ul> |   |  |
| IDENTITY  | <ul style="list-style-type: none"> <li>Sequence trend for facility degradation</li> </ul>  | <ul style="list-style-type: none"> <li>Mobile truck library</li> <li>Dinho café</li> <li>Jazz festival</li> </ul>   | <ul style="list-style-type: none"> <li>De-stigmatisation</li> <li>Keep busy</li> <li>Use what we have</li> <li>Thandanani's library</li> </ul>   | <ul style="list-style-type: none"> <li>Heritage sites for children's excursions</li> </ul>  | <ul style="list-style-type: none"> <li>Solomon Mahlangu square</li> <li>Moretele Park</li> <li>S&amp;S park</li> <li>Fabian D Ribeiro's house</li> <li>HM Pitje</li> <li>"Kanada House"</li> <li>Monaco</li> </ul>  | <ul style="list-style-type: none"> <li>Jack Buda</li> <li>Tswewe Street</li> <li>Homes</li> <li>Thandanani's buildings</li> </ul>  |

Figure 4.9: Tabulated interview (information according to emergent themes and urban cohesion principles (Author 2021)

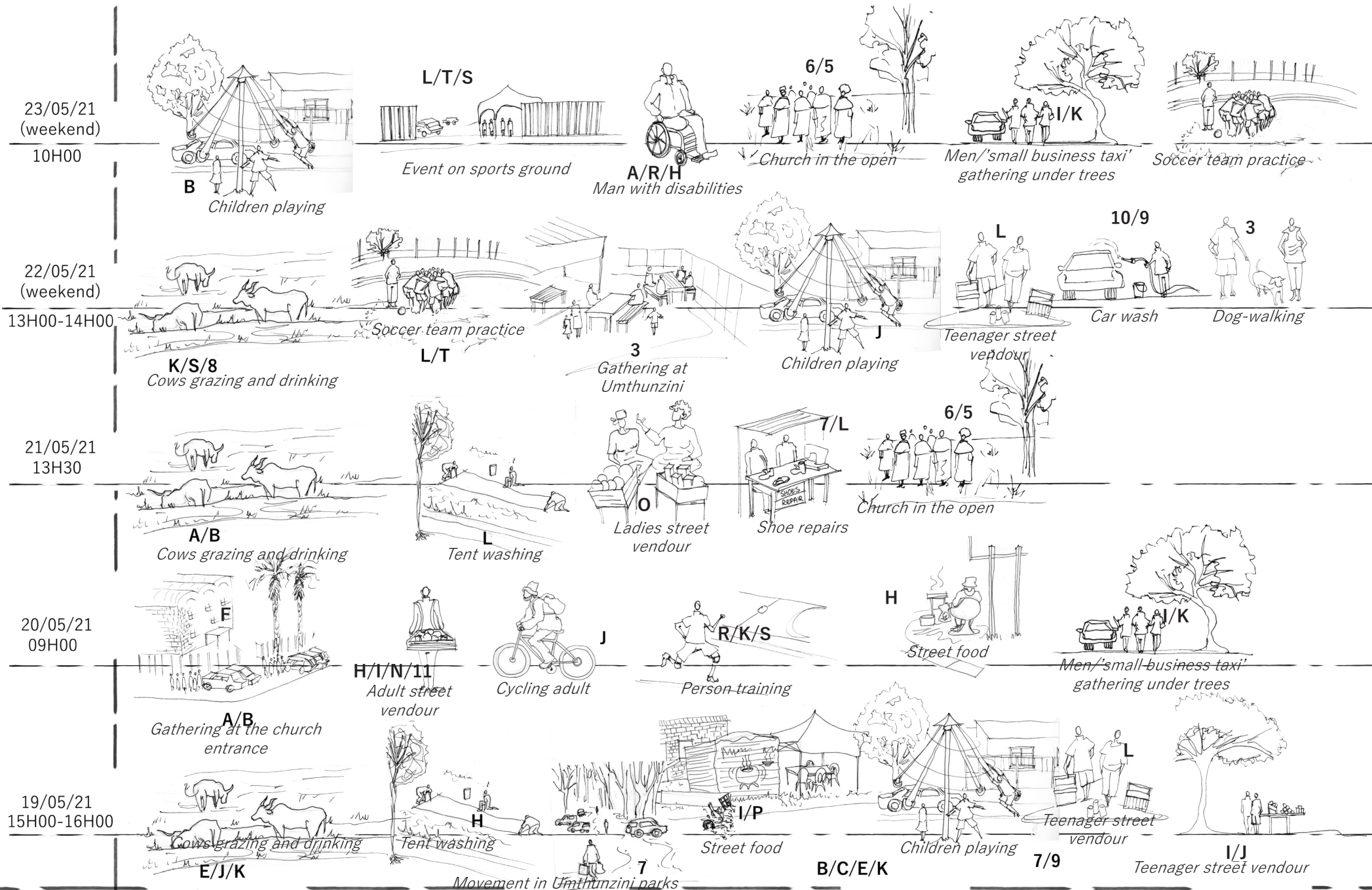
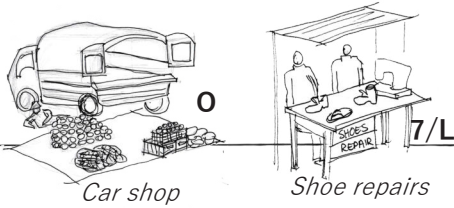
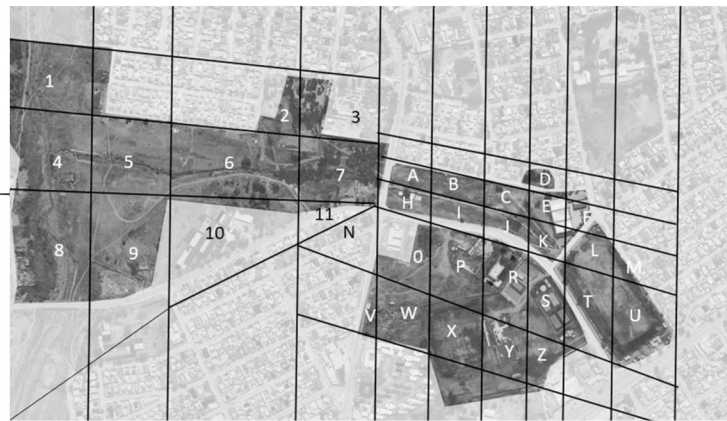
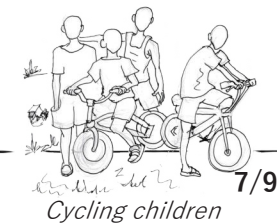
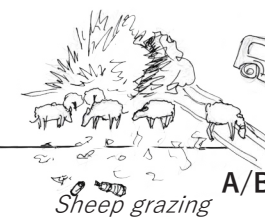
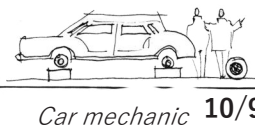


Figure 4.10: Activity mapping of the Buffer Zone (Author 2021)



| Activity                      | Moving | Stationary | Group (G)/<br>Individual (I) | Economic (E)/<br>Recreational/-<br>cultural (R) |
|-------------------------------|--------|------------|------------------------------|---|
| Car wash                      |        | X          | G/I                          | E/R   |
| Jogging                       | X      |            | G/I                          | R   |
| Mechanics                     |        | X          | G/I                          | E/R   |
| Waiting after school          |        |            | G                            |   |
| Dog walking                   | X      |            | G                            | R   |
| Sheeps and cattle grazing     | X      | X          | G/I                          | R   |
| Sitting in grass              |        | X          | G                            | R   |
| Street vendors (adults)       |        | X          | G                            | E/R   |
| Street vendors (teenagers)    |        | X          | G                            | E/R   |
| Shoe repairs                  |        | X          | G                            | E/R   |
| Team soccer                   | X      |            | G                            | R   |
| Children playing              | X      |            | G                            | R   |
| Church outdoors               | X      |            | G                            | R   |
| Street food                   |        | X          | G/I                          | E/R   |
| Tent washing                  | X      |            | G                            | E   |
| Men gathering                 |        | X          | G                            | E/R   |
| Church gathering              |        | X          | G                            | R   |
| Mobile street vendors         | X      |            | I                            | E   |
| Soccer field event with tents |        | X          | G                            | R   |
| Cycling                       | X      |            | G/I                          | R   |
| Transit and parking           | X      |            | G/I                          |   |
| Umthunzini gathering          | X      | X          | G/I                          |   |



## 4.2 NETWORK ANALYSIS AND DESIGN IMPLICATIONS

Intrinsic to their research on public space, Hernan Casakin and Sergi Valera (2020) investigated the use of social network analysis to aid the design of cohesive public spaces. The relevance of this tool lies in the way that the final graphic can aid the designer to quickly identify the people with the most influence, those in need of attention, the most common resources, the networks shared, underused resources or networks, emerging resources, and the cross-generational use of common spaces or places (Casakin & Valera 2020). It is then possible to speculate reasons for the results gained and use the information gleaned as informants that are complimentary to site analyses. Based on these understandings, from this point on, identified entities, groups of people, and environmental components are referred to as ‘actors’ in this work.

The graphic in Figure 4.11 presents the generated product using this approach, and encompasses all the actors gathered through the full data collection process. This figure also includes the relevant actors and connections established beyond the boundaries of NPOs or Ward 23 (such as the municipality or the University of Pretoria). Factoring ‘outer’ networks into the analysis is not only better representative of reality, but it is also a point worth considering in terms of stakeholders and design due to the way in which space is used and perceived (i.e., differing from and between visitors and daily users of and within the area). The perception from the ‘outside’ as well as the space provided for these networks is also, then, important to the overall cohesion of the milieu. Indeed,

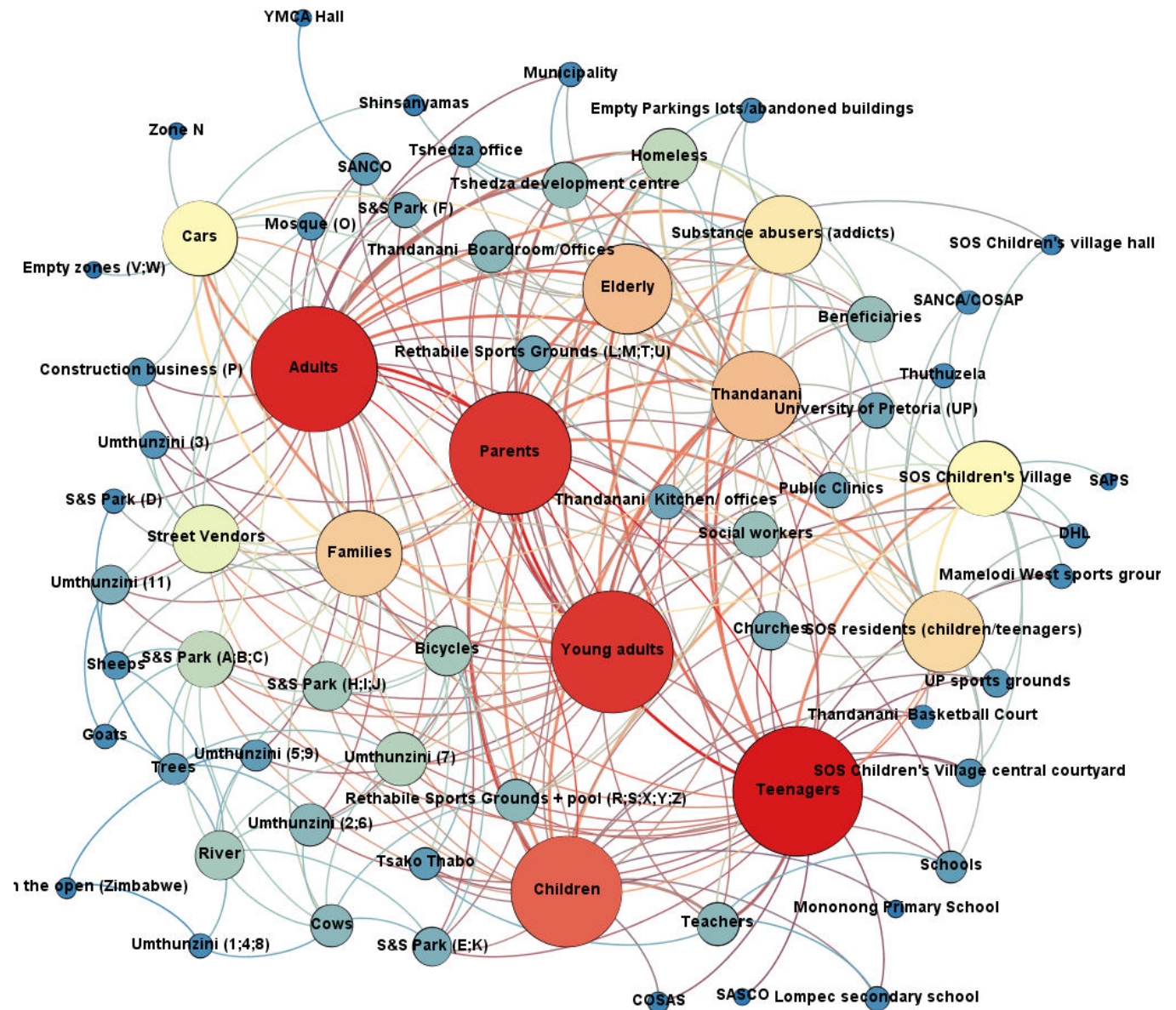
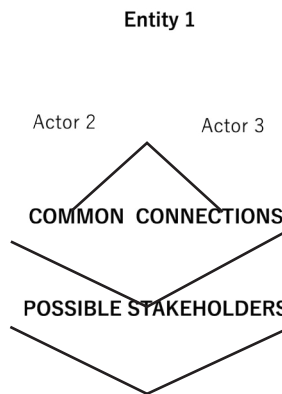
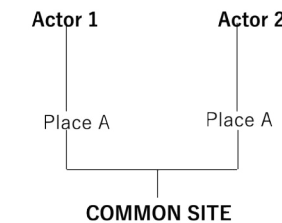
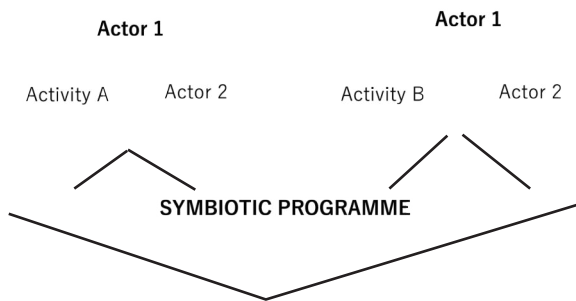
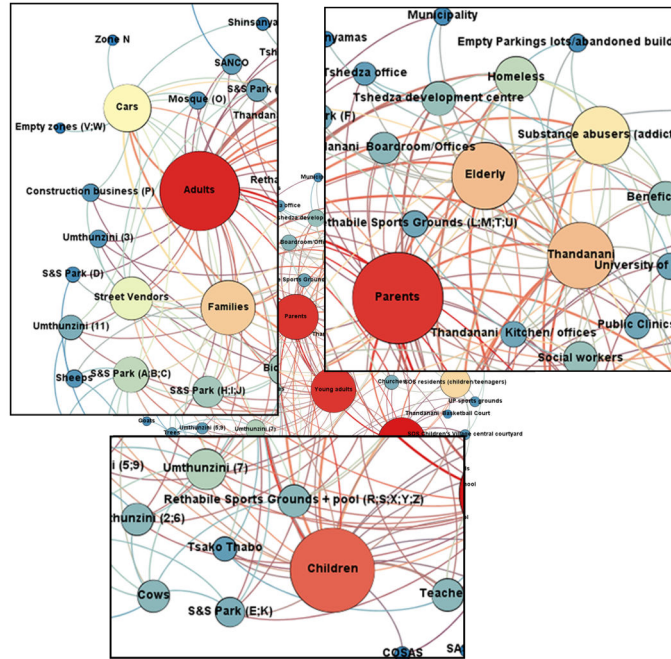
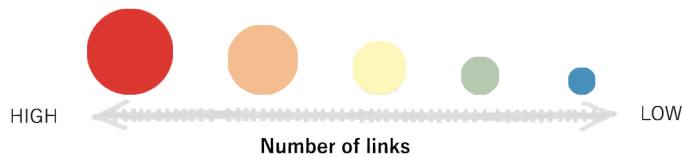


Figure 4.11: Social network analysis of gathered data (Author 2021)



the character of the intervention as a place can, furthermore, repulse or attract people by igniting their curiosity or attachment.

Although not fully representative of Ward 23's totality, the graph has been deemed useful enough to surface important relationships. Similarly, Figures 4.12 provides additional insight into the possible ways in which to read and extract information from the graph for the purpose of interpretations as well as for the upcoming design process. The figure, in particular, presents the set of actors and resources that project some of the most dominant connections and potential; concluding with the significance of such information.

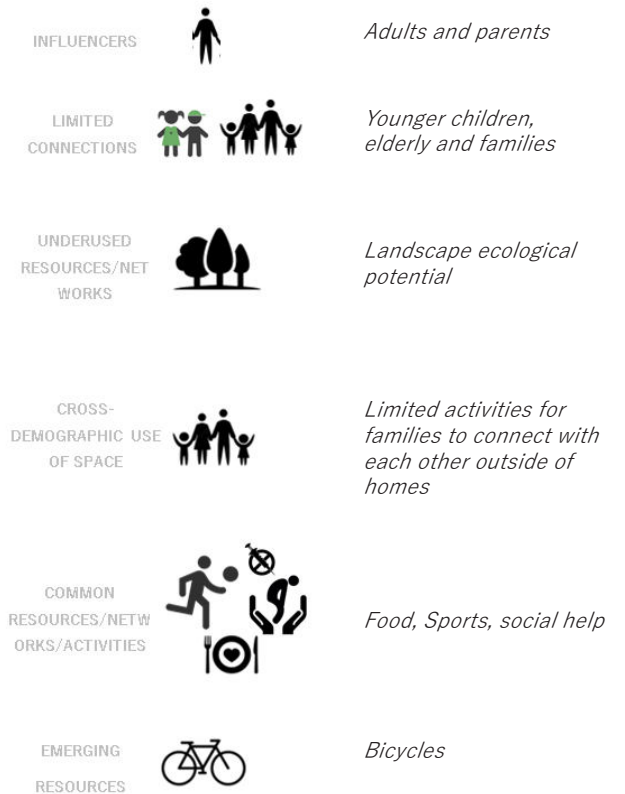


Figure 4.12: Extracting data from diagram (Author 2021)

# 5- FACES OF RECRE- ATION: A TYPOLOGY STUDY

Due to the multifaced aspect of recreation, a typological study has been designed in this paper as a comparative 'game' to unearth the maximum information from a group of precedents. A range of artefacts have been chosen, depicting various ways in which recreation manifests architecturally – from programmatically conspicuous examples to more subtle interventions where certain gestures afford recreation to occur by the articulation of certain parts. The sheer number of precedents presented in this study sustains the argument that public spaces come in numerous typologies and complexities but that, ultimately, they all require certain criteria to be fulfilled in order to be functional and contextually relevant (Pinto & Remesar 2012, 2015). Both local and global examples are, thus, analysed, in this work, including the places in Mamelodi observed for this study's interviews as well as for site visit purposes (e.g., the SOS Children's Village Mamelodi, Thandanani, and Mamelodi RDP housing).

The game takes the form of a deck of cards (Figures 5.1 and 5.2 – see Appendices E-K), where each precedent is fragmented into its parts so as to better understand its whole. All parts were then analysed according to the principles for urban cohesive public spaces, as explored by Ana Júlia Pinto and Antoni Remesar<sup>1</sup>

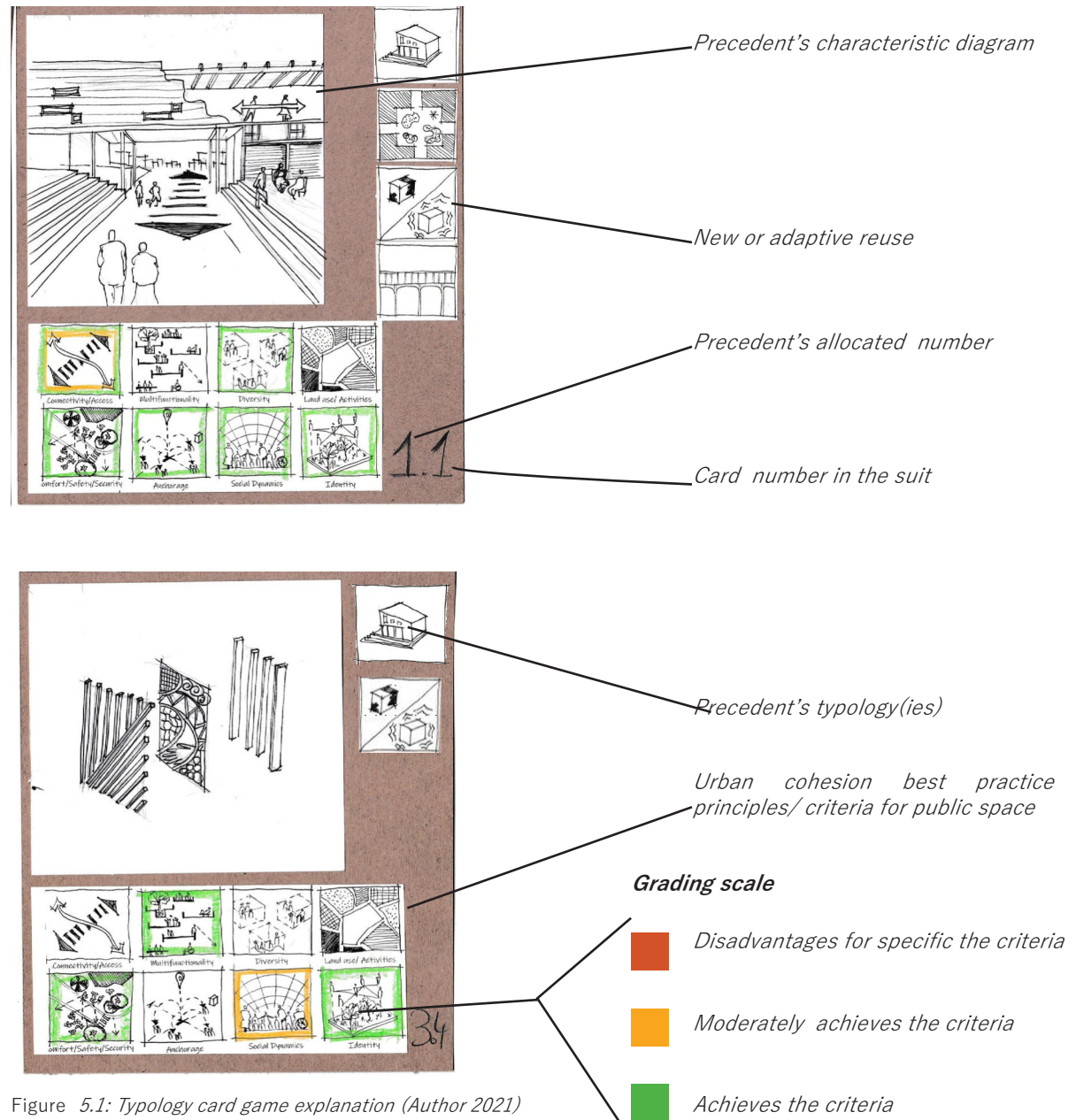


Figure 5.1: Typology card game explanation (Author 2021)

<sup>1</sup> See for definition of terms for all upcoming urban cohesion concepts (From Pinto & Remesar 2012: 10-11, 2015: 7)

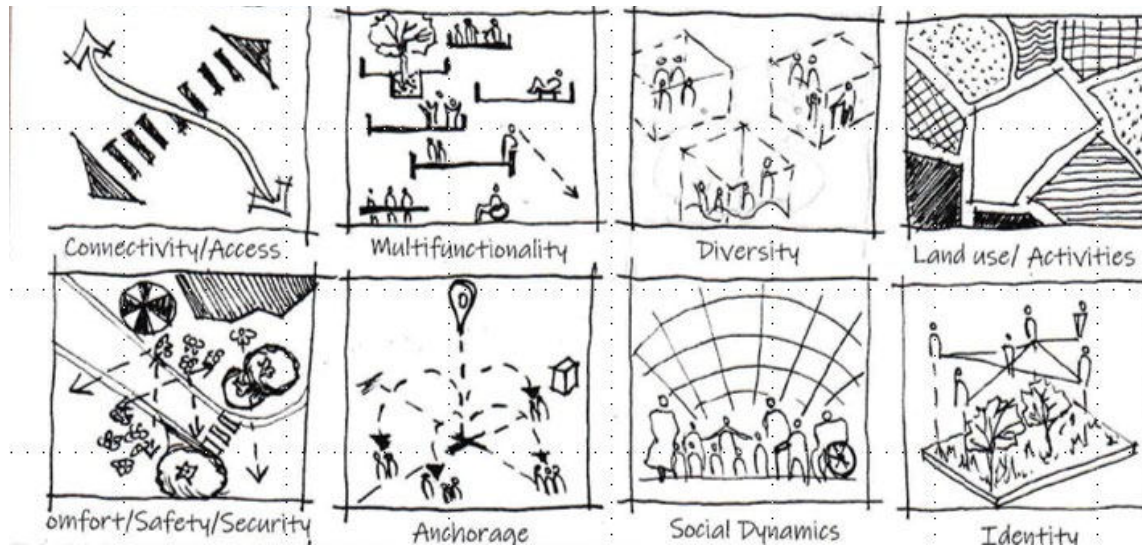


Figure 5.2: Urban cohesion characteristics diagrams (Author 2021)

(Pinto & Remesar 2012: 10-11, 2015:7) (Figure 5.2). Upon completion of the deck, the analysis was tabulated (Appendices E-F), with additional commentary included relating to the types of agencies, networks, 'dispositifs', and affordance exercised by the precedents. It should be noted that Figures 5.3 through 5.20 only present a curated version of the game by extrapolating the most prevalent information.

## 5.1 ACCESSIBILITY, SAFETY & SECURITY

### //Recreation in Movement and Connections

Open public spaces, such as Superkilen (Figure 5.3) and the High Line (Figure 5.4), are likely the most straightforward in terms of continuous, accessible spaces, as they are ultimately urban passages that become places (e.g., urban rooms and event spaces). As such, these spaces function as a type of open-air recreation, with a certain agency, diverse entry points, and a distinctive character (Architecture for Humanities c.2012). The UVA el Paraiso (Figure 5.5) project, the Education Centre (Figure 5.6), the Friends Centre (Figure 5.7), SESC Pompeia (Figure 5.8), and the Writers Theatre (Figure 5.9), for example, all blur the lines between street interface and entrances, where the street ultimately becomes the real entrance to the 'place' (Architecture for Humanities c.2012: , ). Therefore, pedestrians passing by are instantly able to become part of the space without any need to formally enter into it. Some houses in Mamelodi (Figures 1.7 and 5.10) adopt this same principle as a means to connect with street life for business purposes, for leisure in the form of an extension of services (e.g., food, shops, and a car wash), the 'greening' of the pavement

(e.g., playfully contributing to the street similarly to parklets), or the appropriation of the space between rows of houses as playgrounds.

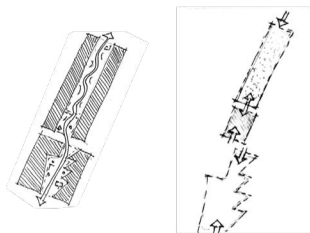
### //Comfort and Safety Characteristics

Both the Maggie's Centres (Figure 5.11) and the Friends Centre pavilion (Figure 5.7) articulate space that exhibits close attention to comfort by using light and transparency as mediums to welcome users, along with inner partitions (i.e., spaces within spaces) to increase levels of privacy (Architecture for Humanities c.2012: , ). The VPUU Active boxes (Figure 5.12), SOS Centre in Lavezzorio (Figure 5.13), and Connect Community's projects (Figure 5.14) all similarly embrace 24-hour occupation, eyes on the street, and scale (e.g., watch towers) to foster safety (Architecture for Humanities c.2012 ). These cases are further linked through a continuity of the street, moments, transportation routes, and mobility spines; thereby supporting the previously noted outcomes (Architecture for Humanities c.2012).

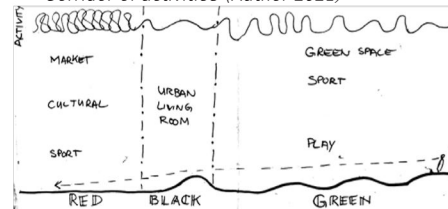
### //Blending security

In comparison to the aforementioned cases, the Nike Football Training Centre (Figure 5.15), due to its function and context, retains its enclosures for security purposes ( ). However, the design and materials of these enclosures become art, and displays of local artists' workmanship are presented in a manner where those barriers no longer feel hostile but rather become "invisible security" ( ). Similarly, UVA el Paraiso (Figure 5.5) adopts a very light meshed front fence and recreational promenade that are directly accessible from the street ( ).

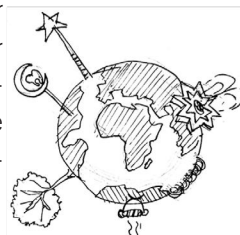
Figure 5.3: SUPERKILEN, Copenhagen, Topotek 1 + BIG Architects + Superflex, 2012 ( Baan 2012)



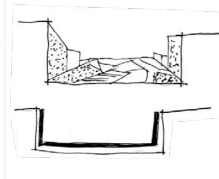
Corridor of activities (Author 2021)



Three parks, different terrain, different themes (Author 2021)

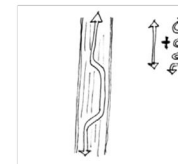
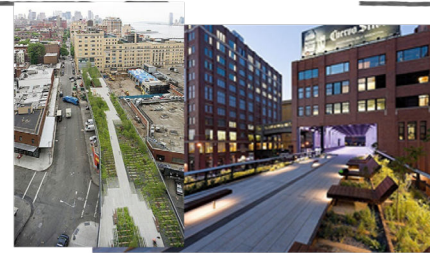


Eclectic aesthetic (Author 2021)



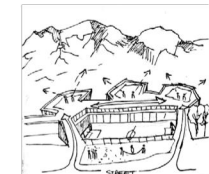
Urban room (Author 2021)

Figure 5.4: HIGH LINE, New York, Diller Scofidio + Renfro, JamesCorner Field Operations ,1999-2011 (Baan 2009)

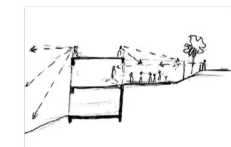


Promenade, ecological corridor, urban room and bridge (Author 2021)

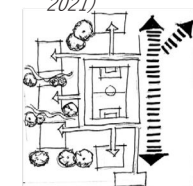
Figure 5.5: UVA EL PARAISO, Colombia, EDU - Empresa de Desarrollo Urbano de Medellin, 2015 (Arango et al. 2015))



Street as entrance and promenade (Author 2021)



Passive surveillance (Author 2021)



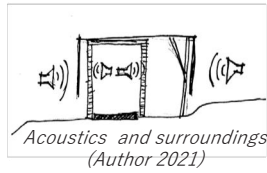
Promenade around the core of the intervention (Author 2021)



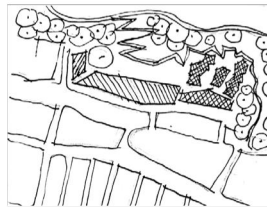
Diversity through terrain and activities (Author 2021)



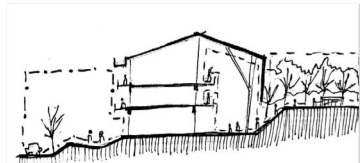
Figure 5.6: EDUCATIONAL CENTER 'MONTE-CARLO GUILLERMO GAVARIA CORREA', Colombia, EDU - Empresa de Desarrollo Urbano de Medellín ,2012 (Arango 2012)



Acoustics and surroundings (Author 2021)



Anchored in landscape (Author 2021)

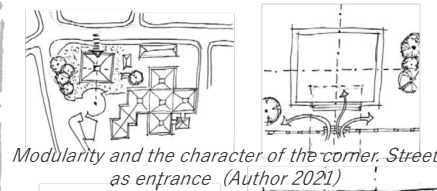


Multifunctionality and the street as a first step (Author 2021)

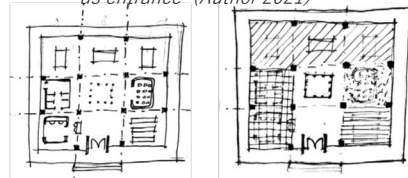


Anchored in site (Author 2021)

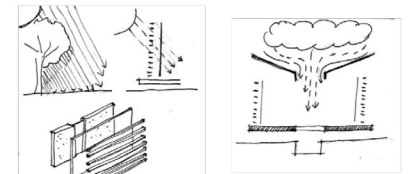
Figure 5.7: FRIENDS CENTRE AT ANGKOR HOSPITAL FOR CHILDREN, Cambodia, Cook + Fox Architects, 2008 (Cookfox 2008)



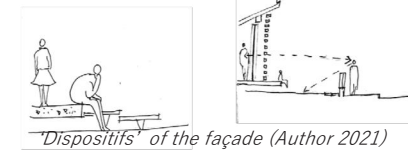
Modularity and the character of the corner. Street as entrance (Author 2021)



Free plan and options (Author 2021)



Materiality, rainwater harvesting, ecology and environmental response (Author 2021)

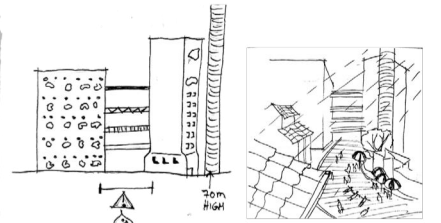


"Dispositifs" of the façade (Author 2021)

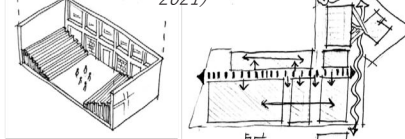


Diverse materials including nature (Author 2021)

Figure 5.8: SESC POMPEIA, São Paulo, Lina Bo Bardi, 1986 (Finotti & Kon S.a.)



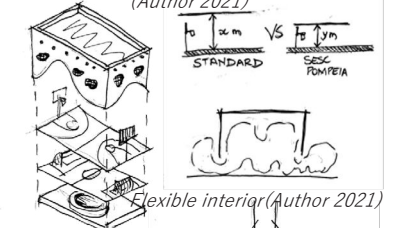
Recreation in appropriation and services (Author 2021)



Everyday theatres, street as theatre (Author 2021)



Diversity and multifunctionality in activities (Author 2021)



Flexible interior (Author 2021)



Inspiration through the existing (Author 2021)

By comparison, Thandanani (Figures 5.16) exhibits an interesting situation between its two main buildings, where the space (i.e., street) unofficially becomes part of Thandanani itself. This phenomenon has been created through the paving having been transformed through a volunteer's greening scheme, children's playing and gathering/waiting to enter, and music played within the premises that reaches out to the streets and, thereby, activating the space. This somewhat unintentional turn of events portrays a simple but effective way of extending human presence, comfort, and safety into the street.

## 5.2 MULTIFUNCTIONALITY, DIVERSITY & ACTIVITY

### //Multifunctionality through Scale

Often, multifunctionality is addressed in a vertical manner due to space constraints or for sustainable reasons (see Gymnasio Vertical or SESC Pompeia – Figures 5.8 and 5.17). However, it is also possible to mitigate both horizontal and vertical use of space (see UVA el Paraiso, the Education Centre, VPUU, and Alexandra Interpretation Centre – Figures 5.5-5.6, 5.12, and 5.18). In certain situations – especially in respect to open spaces – a linear approach to multifunctionality can be appropriate, where negative sustainable impacts are minimal. Interventions in such cases (see Superkilen – Figure 5.3) often cover a lot of ground; thereby creating a promenade of multiuse and recreation (). In the case of the RDP housing (Figure 5.10), and SOS Centre in Mamelodi (Figure 5.19), horizontal developments are preferable due to their affordability and easier construction.

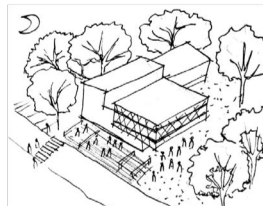
## //Characteristics for Multifunctionality

The Friends Centre accommodates intimacy and spatial multifunctionality through a free plan using modules and partitions that serve to accommodate spatial modification and a variety of activities (Figure 5.7) (). Free plans are also employed for adaptive reuse purposes at SESC Pompeia for similar reasons (Figure 5.8). In comparison, the Connect Community's hall is composed of convertible classrooms permuting into a cafeteria, gymnasium, and auditorium, respectively, in addition to the hall's capacity to accommodate further programmes in the future (Figure 5.14). Thandanani's (Figure 5.16) most multifunctional space is its basketball court (previously noted), which has been adapted to host simultaneous recreational activities, since basketball is not yet a popular activity in the area.

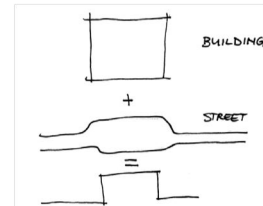
## //Social and Ecological Diversity

The Friends Centre (figure 5.7), UVA El Paraiso (figure Of note is that UVA el Paraiso (Figure 5.5), the Friends Centre (Figure 5.7), the Educational Centre (Figure 5.6), and Maggie's Centres (Figure 5.11) all incorporate ecological principles and/or nature as a core aspect of their designs. Furthermore, the Connect Community achieves diversity through its community's spatial arrangement and sharing of physical resources in the neighbourhood, such as schools offering their gardens as parks (Figure 5.14 ). In the same light, although the Writers Theatre only offers one main programme, it presents this programme in more than five different experiential performance spaces (i.e., both informal and formal), along with a relation to the outdoors, which encourages another type of performance (Figure 5.9). These variations aid to engage audiences

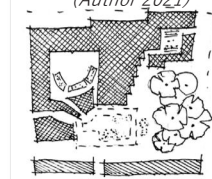
Figure 5.9: WRITERS THEATRE, United States, Studio Gang, 2016 (Studio Gang 2016)



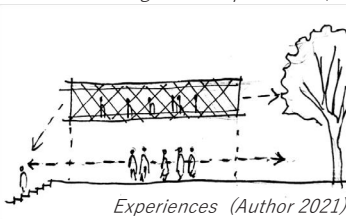
Street entrance (Author 2021)



Theatre presence on the street and merge (Author 2021)

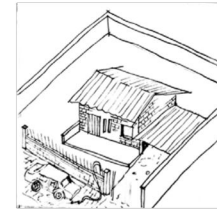


Diverse stages and experiences (Author 2021)



Experiences (Author 2021)

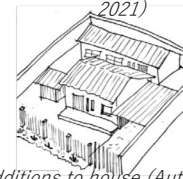
Figure 5.10: RDP HOUSING, Mamelodi, South African Government, c. 1994 (Author 2021)



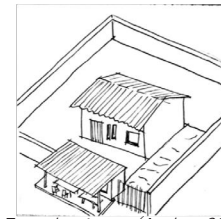
Car wash in front (Author 2021)



Private garden and public 'greening' (Author 2021)

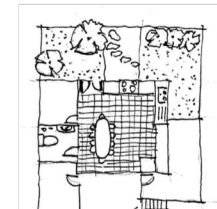


Additions to house (Author 2021)



Front business (Author 2021)

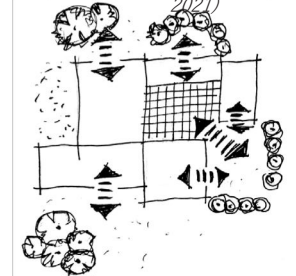
Figure 5.11: MAGGIE'S CENTRES, Multiple architects, Europe and China, c1996 (Maggies S.a.)



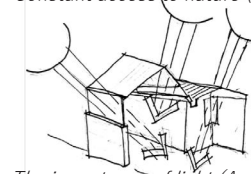
Central kitchen (Author 2021)



Privacy through partitions and/or atmosphere (Author 2021)

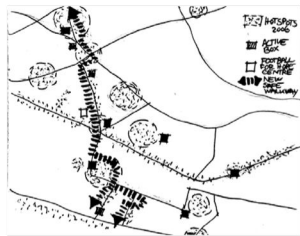


Constant access to nature (Author 2021)

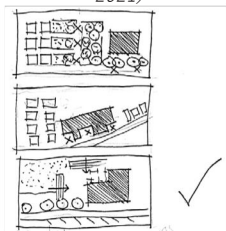


The importance of light (Author 2021)

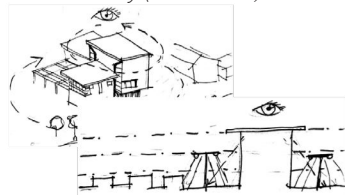
Figure 5.12: VPUU ACTIVE BOXES , West-ern Cape, VPUU, 2006-14 (VPUU 2017)



Danger zones and paths with activities (Author 2021)

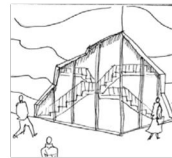


Visibility (Author 2021)

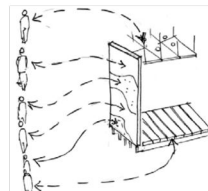


All-a-round passive surveillance (Author 2021)

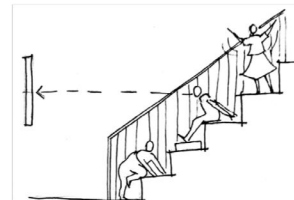
Figure 5.13: SOS CHILDREN'S VILLAGES LAVEZZARIO COMMUNITY CENTRE, Illinois, Studio Gang Architects, 2008 (Studio Gang 2008)



'Opened' corner, visibility and relations (Author 2021)

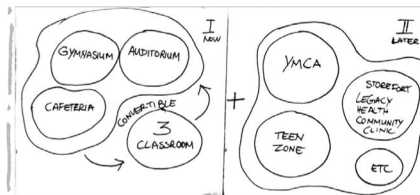


Unity through materiality. Materials donated by several people becomes the identity of the place (Author 2021)

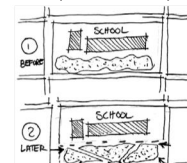


Circulation as play and meeting area (Author 2021)

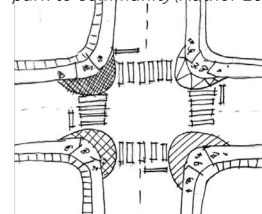
UNIVERSITEIT VAN PRETORIA  
UNIVERSITY OF PRETORIA  
YUNIBESITHI YA PRETORIA  
Figure 5.14: CONNECT COMMUNITY , Houston, Gulfton, Sharptown, Purpose Built Communities (Connect community S.a.)



Polyvalent rooms with possibility of extension (Author 2021)



Sharing resources. School lending garden as park to community (Author 2021)



Traffic intersections as community spaces. Paintings etc (Author 2021)



Parklets as mean of creating small places and/or moments in big spaces like streets (Author 2021)

and performers in different atmospheres and levels of intimacy.

The Educational Centre (Figure 5.6), in turn, plays with acoustics, where sound becomes an intangible material mediating inside and outside, water and nature. The diversity of activities undertaken through the senses further increases people's awareness of the place's parts and whole. Similarly, the notion of 'genius loci' and performance are also present in SESC Pompeia's outdoor and indoor spaces (Figure 5.18), where the articulation of 'moments' attracts cross-generational users, with some areas even becoming unexpected theatres.

### //Transcending activities

SESC Pompeia's design (Figure 5.18) immortalises the cultural and recreational appropriation of an historic space (i.e., in the form of a drum factory). The current set of activities are a blend between the community's recreational endeavours that have been projected onto an abandoned industrial space, with new activities added to complement these endeavours (i.e., mainly sports and water services). This change of land use and activities over time is similar to both the RDP housing depicted in Figure 5.10 and Than-danani in Figure 5.16, where services such as food, information, and leisure programmes have gradually been incorporated. The focus on the possibility of space use rather than the buildings' forms further allows for such flexibility. Similarly, Superkilen's three squares (Figure 5.3) open up such opportunities by suggesting many activities without dictating specific behaviours, while their colour coding and articulation provide a type of 'umbrella' that groups similar actions ().

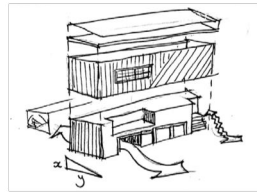
## 5.3 ANCHORAGE, SOCIAL DYNAMICS & IDENTITY

### //Recreation as Various Anchors

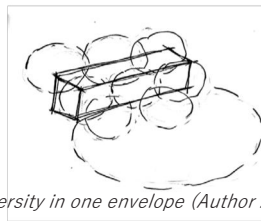
The Friends Centre's pavilion (Figure 5.7) offers a gateway for visitors into the Angkor Hospital for Children without necessarily having to enter the healthcare facility; thereby acting as an information middleman (Architecture for Humanities c.2012). The pavilion's placement and modularity also relate to the healthcare facility and is further enhanced by its integration into the site's corner as a landmark. In addition, the pavilion's materiality alludes to the culture of Cambodia in celebration of the greater context (Architecture for Humanities c.2012).

Of similar note is that the Alexandra Interpretation Centre (Figure 5.18) reflects the culture and character of the township of Alexandra as part of its design and materiality. SESC Pompeia's anchorage (Figure 5.8) also lies in its site's historical context (i.e., the adaptive reuse of a drum factory into a cultural centre, which was inspired by the community's appropriation of the vacant space) and its meaning for and within the community (). Similarly, the LEA Mobile Library (Figure 5.20) is an example of establishing a new space in an existing space as a temporary anchor. Such a space cannot, however, successfully exist on its own, although its mobility can influence the area in which it is placed by changing the surrounding's atmosphere throughout the day ().

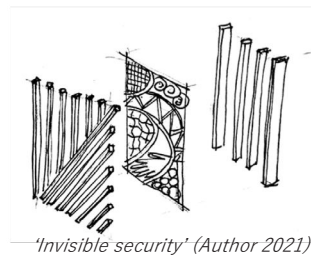
Figure 5.15: NIKE FOOTBALL STADIUM SOWETO, Johannesburg, RUF-Project & Luyanda Mpahlwa DesignSpaceAfrica, 2010 (Living Space 2013)



Materiality and identity of places (Author 2021)

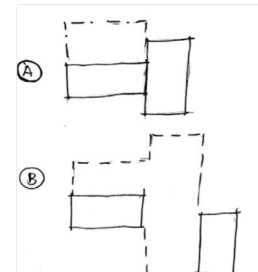


Diversity in one envelope (Author 2021)

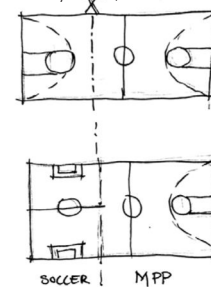


'Invisible security' (Author 2021)

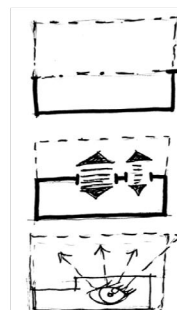
Figure 5.16: THANDANANI DROP INN CENTRE, Mamelodi, 1970 (buildings)/ 2011 (current function) (Author 2021)



The in-between street becomes part of the place (Author 2021)

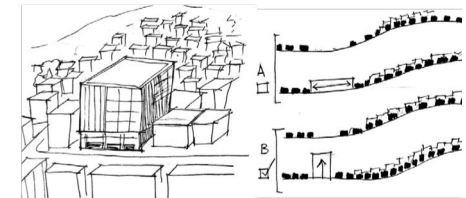


Adaptable basketball court; now soccer and multipurpose (Author 2021)

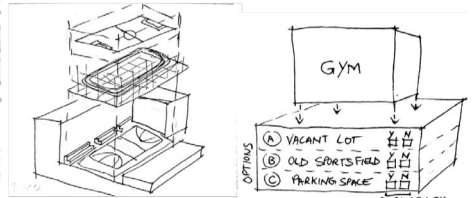


Passive surveillance (Author 2021)

Figure 5.17: GIMNASIO VERTICAL (Vertical gyms), Venezuela, Urban-Think Tank c2001



Verticality and anchorage into the surroundings (Author 2021)

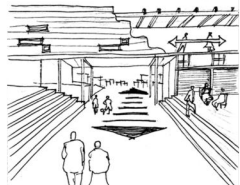
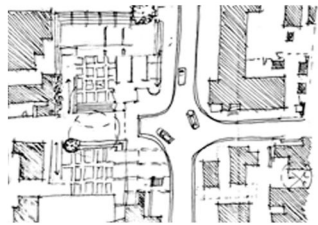


Multifunctional and diverse space. Recycling of vacant lot (Author 2021)

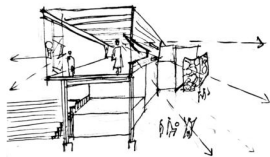


Contextual materiality (Author 2021)

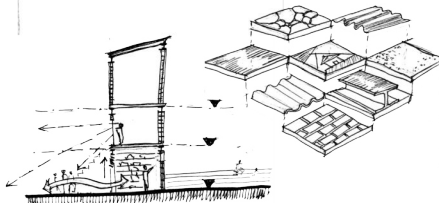
Figure 5.18: ALEXANDRA INTERPRETIVE CENTRE, Johannesburg, Peter Rich Architects, 2010 (Peter Rich Architects 2010)



Anchored into context (Author 2021)



Passive surveillance (Author 2021)



Diversity, multifunctionality and contextual response through materiality and community involvement (Author 2021)

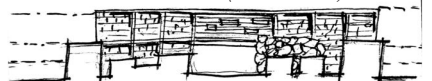
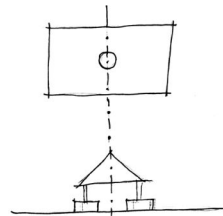
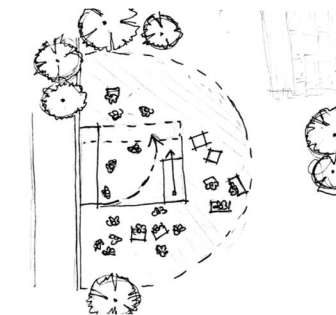


Figure 5.19: SOS CHILDREN'S VILLAGE, Mamelodi, 1985 (Author 2021)



Central point of gathering and event, the rondavel (Author 2021)

Figure 5.20: MOBILE LIBRARY, Foro Lindbergh (Parque México), Project for Public Spaces + Lugares Públicos, 2015 (Project for Public Space c2020)



A space within a space (Author 2021)

## //Articulating Parts for Social Interaction

Based on the previously presented information, in terms of social dynamics, paths and nodes are often used as mediums . For example, both SESC Pompeia (Figure 5.8) and Superkilen (Figure 5.3) employ the crossing of paths and space diversity, while the Writers Theatre focusses on intimacy through proximity for social experiences (Figure 5.9). The SOS Centre's (Lavezzorio) main atrium similarly becomes a 'dispositif' for social encounters through the main circulation space, which acts as an indoor playscape as well as a landmark (Figure 5.13) ().

With regard to the SOS Centre in Mamelodi (Figure 5.19), the rondavel in the courtyard acts as an 'axis mundus' for social interaction. This is a very simple space with a complex connection with and to outside networks during social events and gatherings (see the SOS Children's Village Mamelodi Focus Group 1 2021). In comparison, Thandanani's basketball court (Figure 5.16) forms the equivalent of the SOS Centre's (Mamelodi) rondavel, while the Maggie's Centres (Figure 5.11) articulate kitchens as their core (i.e., where various interactions occur). The Friends Centre's patio 'skirt' (Figure 5.7), in turn, also invites sitting and, thus, offers an activation of the façade.

## //Cohesive space identity through making

Identity is often the realm where multiple agencies operate ; thus, in several of the precedents, such as the Alexandra Interpretation Centre (Figure 5.18), Superkilen (Figure 5.3) (although a very eclectic approach), SOS Centre in Lavezzorio (Figure 5.13), Nike Football Training Centre (Figure 5.15), and RDP houses (Figure 5.10), some materials are given, as-

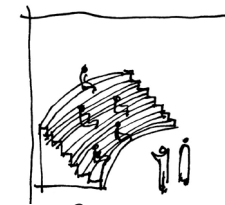
sembled, or made by the future users of the space or close affiliates. In this way, it is possible to create a sense of attachment and connection with the space and people as an additional layer to the inherent social dynamics. The artefacts also become displays of the communities' skills and identity and, through this process, the people are connected to each other – either by working together or by gaining awareness of other's contributions and presence.

### //Cultural identity

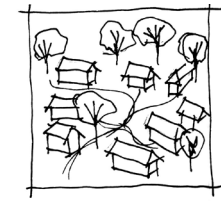
Cultural identity is intrinsic to the Friends Centre (Figure 5.7) – as seen in its local construction methods – while other precedents, such as SESC Pompeia (Figure 5.8), UVA el Paraiso (Figure 5.5), Gymnasio Vertical (Figure 5.17), the Education Centre (Figure 5.6), and Maggie's Centres (Figure 5.11) all build identity through the use of simple cues or principles such as forms, atmosphere, or materials that are familiar to their users.

## 5.4 FINDINGS

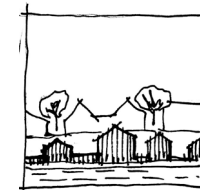
Each recorded precedent can be categorised in at least one of the following typologies, namely 1) centres (i.e., sports, care, leisure, interpretive, drop-in, community, or village); 2) plazas; 3) parks; 3) infrastructures; 4) houses; 5) mobile libraries; 6) precincts or neighbourhoods; 7) bridges 8) theatres; 9) schools; and 10) pavilions. Each category offers different possibilities. The duality of the presented spectrum of typologies against the realities found in Mamelodi further suggest that perhaps the most appropriate response would not be to choose one specific typology and modify it to suit the situation but rather to look at a combination of different typologies. Additionally, it can be confirmed that in different circumstances, the street reoccurs as a 'dispositif'; thereby expressing the polyvalence and efficacy of streets as urban cohesion agents (Figure 5.21).



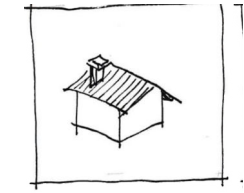
*Centre*



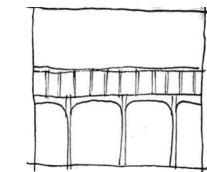
*Precinct*



*Neighbourhood*



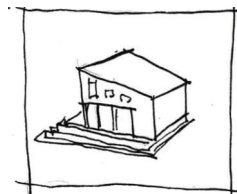
*Homes*



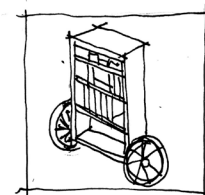
*Bridge*



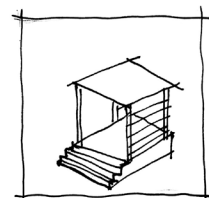
*Park*



*Centre*



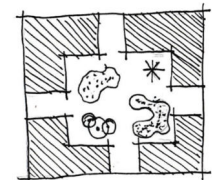
*Mobile library*



*Pavilion*

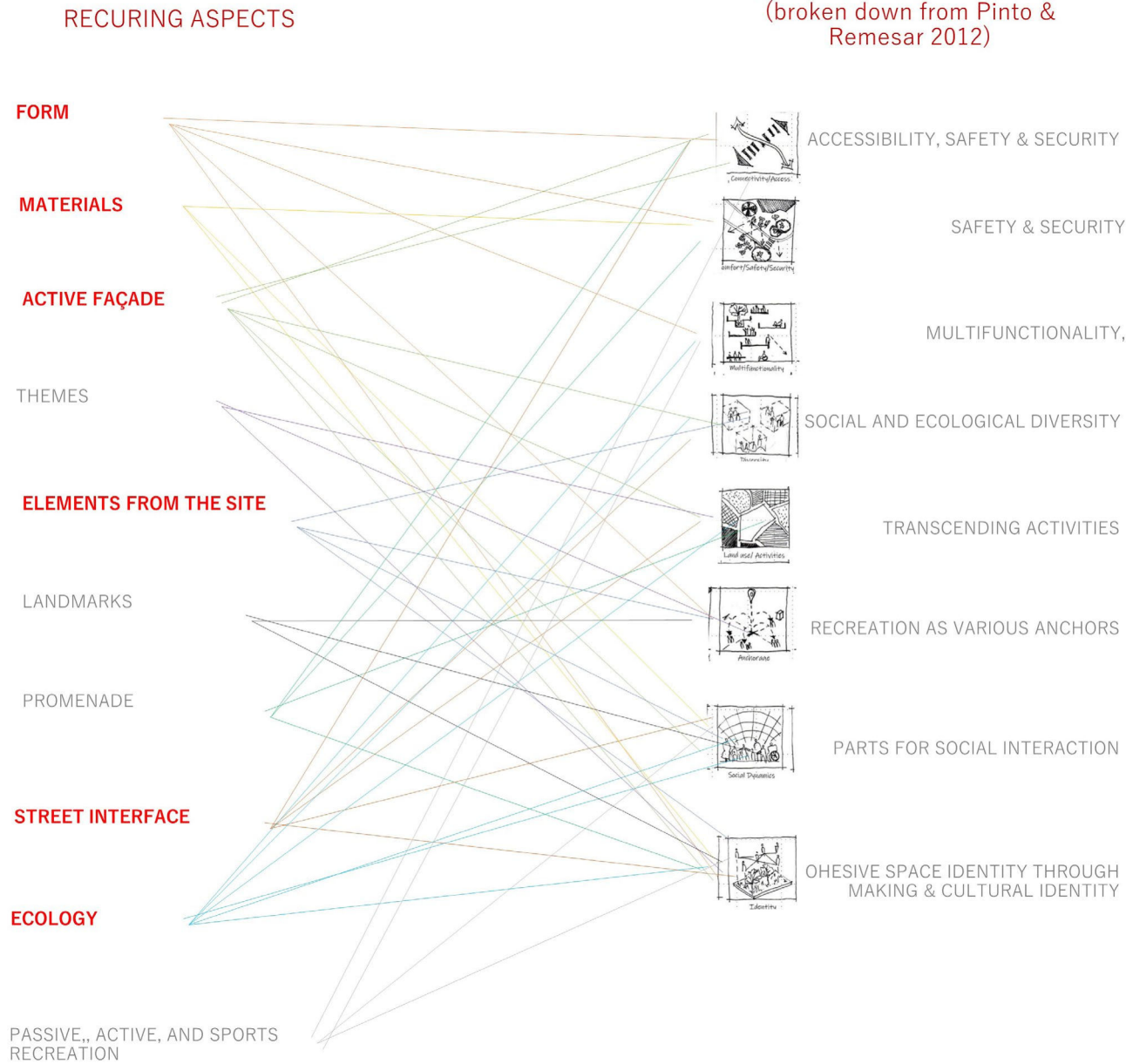


*School*



*Plaza*

URBAN COHESION THEMES  
(broken down from Pinto & Remesar 2012)



*NB: Red writing highlights portions taken into consideration for both design and technology. Black is mainly design*

# 6- CONCEPTUAL INVESTIGATION

## 6.1 PLACE WHERE THE NETWORKS CONVERGE: THE MEETING POINT OF CITY AND HOUSE

The precedent studies presented in the previous section suggest ways to ground networks into physical solutions while still considering urban cohesion. However, it is still possible to notice that a portion of the information to move from networks to form remains slightly broad. As such, in order to move forward in this current project, it was necessary to, despite the preceding information, find a common thread between all the pieces analysed.

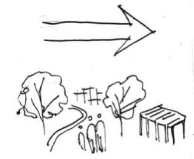
In order to achieve this end, it was important to deal with networks involving many ‘moments’ across both larger and smaller sites. It was also important that, for a cohesive intervention to be realised, these networks be relative to a cohesive city. When these reflections are paired with the plurality of recreational public spaces, it then becomes possible to refer to the following:

“A city is a city because it is also a large house. A house is a house because it is also a small city.”<sup>1</sup>

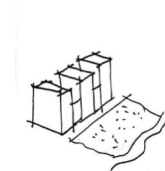
And

“I am concerned with twin phenomena, with unity and diversity; part and whole; small and large; many and

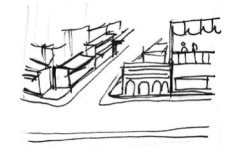
Lynch's principles



PATHS

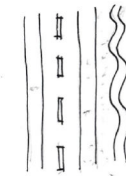


EDGES

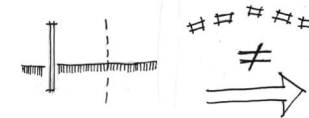


DISTRICTS

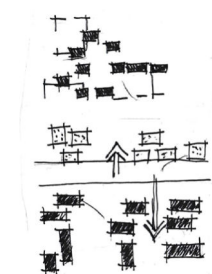
Use



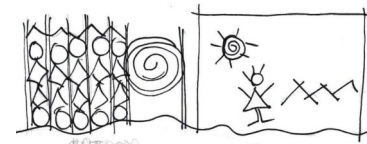
Circulations, channels of movement, streets walkways, transit lines, canals, railroads



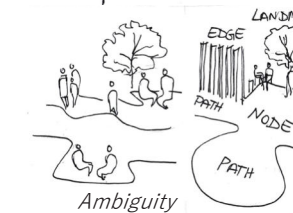
Linear elements excluding paths, boundary



Shortcomings and Complimentary considerations



More than circulation, moments, occasion



Use duality

few; simplicity and complexity; change and constancy; movement and rest; open and closed; inside and outside — with why they too are ignobly halved and the halves hollowed out, and why they are withheld from opening the windows of the mind.”<sup>2</sup>

In both these statements, van Eyck acknowledges that the city and its artefacts are made out of relations that can be perceived in various ways. Built form can, thus,

be treated and explored like a city, while a city, in turn, can be explored as if it were an extension of one’s own home (Figure 6.1). It is a particular kind of design that recognises the importance of interfaces and connectivity, which places itself somewhere between architecture and urban design (Hertzberger 1991: 57, 61). One may even include interior and landscape design. These ideas about how space is experienced and made opens up possibilities of what a built form could be (e.g., a building as a series of urban rooms and a square as a series of free plans) as well as how one might imagine their points of con-

<sup>1</sup> Aldo van Eyck (1962), as presented in Georges Teyssot (2011: 62): Aldo van Eyck and the Rise of an Ethnographic Paradigm in the 1960s.

<sup>2</sup> Aldo van Eyck (1962), as presented in Harm Lammers (2012: 47): Potentially Unravelling and Reconnecting Aldo van Eyck in Search of an Approach for Tomorrow.



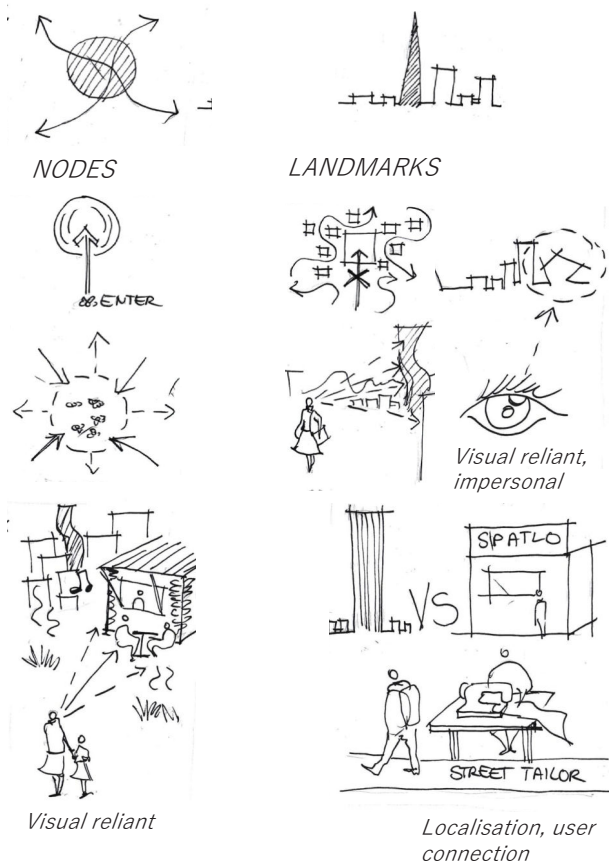


Figure 6.2: Corner shoe tailor {Author 2021}

vergence (e.g., as recreation).

Building on the argument that public spaces can act as connectors in the city, it was deemed appropriate in this paper to pursue the idea that architecture as a ‘dispositif’ can be articulated as a small and accessible city. This understanding then allows for the grounding of networks, multifunctionality, hybridity, and a diversity of processes within the current project’s broader frame. Thus, identifying the right set(s) of parts as well as how they all come together as a complex and legible integrated whole is crucial.

As a departure point to understand the physical legibility of a city, then, it is possible to turn to Lynch’s research on how people read the city through the principles of paths, edges, districts, nodes, and landmarks (Figure 6.2) (Dalton & Bafna 2003; Damayanti & Kosak 2016). Although these elements form a good basis for a general urban navigation, they are still limited by 1) their heavy reliance on visual characteristics or very distinct form, 2) the ambiguity of interpretation of the principles, 3) the lack of inclusion of people, and 4) consideration for contextual idiosyncrasies (Figure 6.2) (Dalton & Bafna 2003: 59.14-59.18; Dalton *et al.*

2019: 4). Therefore, Lynch’s findings, which can essentially be understood as ‘wayfinding principles’, can be complimented by the additional layers of social wayfinding, twin phenomena, the in-between, and the inclusion of a diversity of users (Dalton *et al.* 2019; Farhady & Nam 2009; Farr *et al.* 2012; Gommel 1995; Hertzberger 1991: 54 ).

Since nothing exists in isolation, the presence of people (i.e., social trails) as well as their past activities (i.e., traces) influence the perception of space, safety, navigation, and even landmarks (Figure 6.3) (Dalton

*et al.* 2019: 9; Gommel 1995: 391). Additionally, wayfinding devices can form part of people's everyday lives (e.g., daily shopping, children drawing on pavements, art, tourism displays, etc.) without initially being designed as semiotic elements (Figure 6.3) (Dalton *et al.* 2019: 11; Farr *et al.* 2012: 718-719). This reality is supportive of the twin phenomena, which assert that ambiguities, oppositions, and constraints of elements can elevate design. Furthermore, the in-between considers the many relationships between interfaces and streets, and deems these to be 'thresholds' where the human is made visible (Hertzberger 1991; Lammers 2012; Teysso 2011). The principles of the street and city are, thus, yet again prevalent and can be permuted while also considering orientation, visual fields, and even sensory experiences (Figure 6.4) (Gommel 1995; Lammers 2012: 47).

Contextually, in Mamelodi, a particular shop on the corner can be a local landmark, an edge, and/or a wayfinding device (Figure 6.5). In a series of essays in *Rogue Urbanism, Emergent African Cities* (2013), several authors have set reminders of what makes the African city 'whole'. Of note is that they address African historical and urban realities such as scale, the phenomenon of streets and culture, township economies, public art, and site-specific performance (Barac *et al.* 2013). On the topic of ecology and urban systems integration, authors in the various aforementioned essays have also enticed city makers to "be ambitious" (Makeka 2013: 445) for an equitable world, and to find what 'inspires' in a city in order for it to retain its attributed identity as a platform for continuous networking (Barac *et al.* 2013).

## 6.2 URBAN FRAMEWORK & BLOCK VISION: VISIONS FOR MAMELODI AND WARD 23

By internalising the previously presented ideas of a 'small city', the aim of this paper is to, firstly, create a vision for the area, which involves establishing a system capable of reconnecting existing recreational places in need of enhancement, publicity, maintenance, growth or, simply, regeneration. This attempt occurs as both formal and spontaneous recreational insertions that form 'activators' in or near these spaces. The acupuncture strategy then, secondly, aims to celebrate the richness as well as the actors forming part of the 'social fabric as infrastructure' as well as the public open spaces networks.

Based on prior research, it was found that by exploring the notion of an ecomuseum (Figure 6.6) as a conceptual urban scheme, there lies the possibility to tie this current project together with both present and future recreational spaces as a continuously evolving framework. An ecomuseum can best be defined as "a dynamic way in which communities preserve, interpret, and manage their heritage for sustainable development" (Simeoni & De Crescenzo 2018: 1), which emphasises a "sense of place" (Borrelli & Davis 2012: 31) through the idea of a "museum as place" instead of a "museum as building(s)" (Doğan and Timothy 2020: 137). Hence, this approach opens dialogues for and between a multitude of processes occurring in a community into places that could preserve their essence (i.e., their social and cultural heritage, as presented in this study of Mamelodi). Similarly, with respect to this dissertation's argument on public space,

ecomuseums can form part of networks across a larger area that is never truly 'finite' (Borrelli & Davis 2012: 33).

The framework proposal for this ecomuseum (Figures 6.7 and 6.8), therefore, incorporates two visions, namely "Elke[Bitso]" (i.e., exploring the urban interior and talent library) (Niebuhr 2021) and the 'small city for recreation'. This collaboration with an interior architecture researcher imagines a cultural spine in Mamelodi that focusses on the diversity of recreation as well as the showcasing of children's and adolescents' talents while promoting safety. Each place's created or regenerated aims are focussed on involving different levels of people-participation; thereby providing a platform for the community's advertisement while also engaging with the environment, different cultures, and the broader Tshwane community.

A system of anchors and satellites forms the basis of the framework, in conjunction with relevant heritage and movement corridors. The created gradual spine further allows people to travel safely while also experiencing various stimuli representing the nature of Mamelodi. Figure 6.9 presents the final chosen site for the dissertation's intervention.

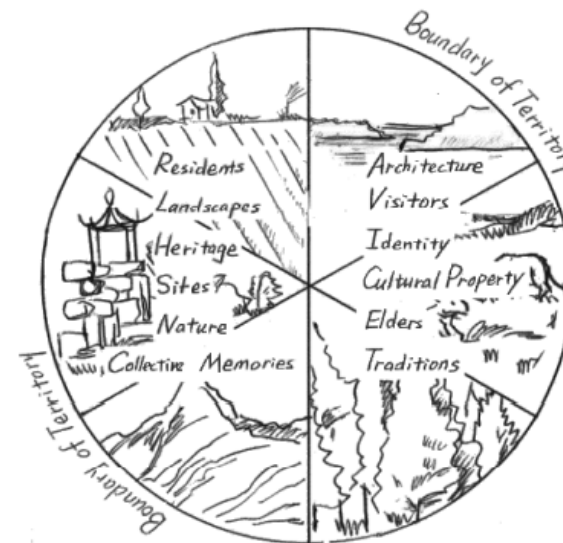
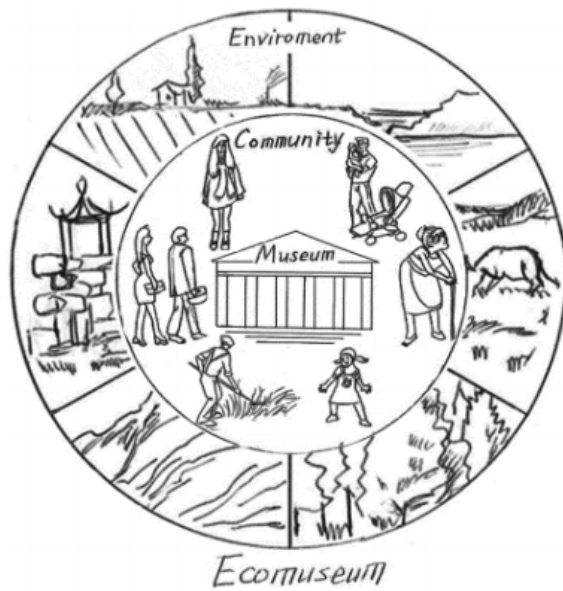
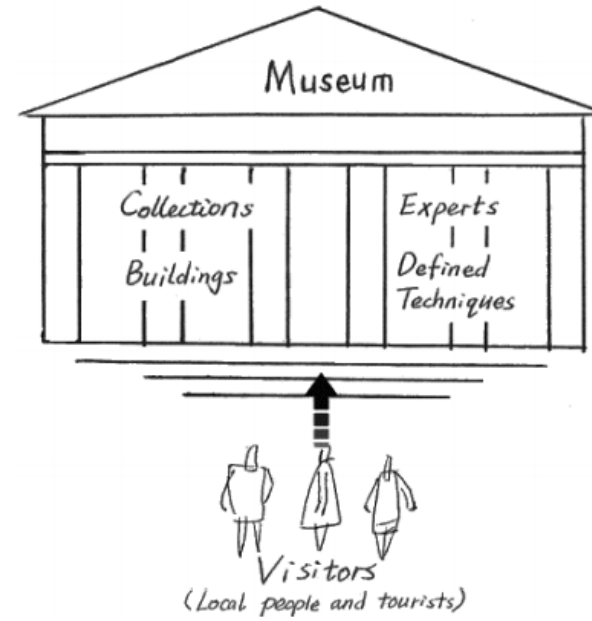
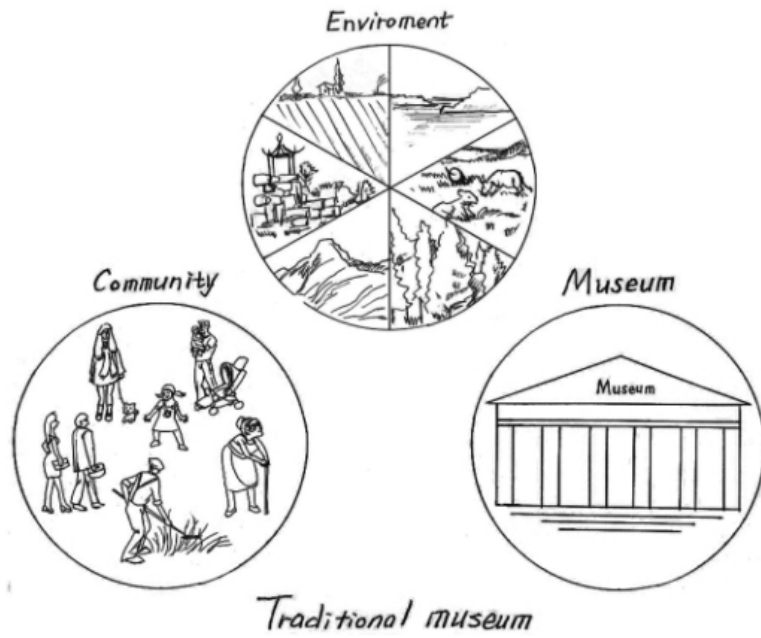


Figure 6.3: Ecomuseum explanation and characteristic diagrams (Chang c2015)

## ECOMUSEUM VISION

*“SMALL CITY”:  
Outreach Precinct*

*PASSIVE RECREATION  
ACTIVE RECREATION  
SPORTS*

*LANDSCAPE AND  
ENVIRONMENTAL  
CELEBRATION*

*COMMUNITY  
ADVERTISEMENT AND  
INFORMATION/HELP*

*SITES EXPLORATION  
AND LINKAGES*

*ELKE[BITSO]: the urban  
interior talent library*

*CREATIVE WRITING*

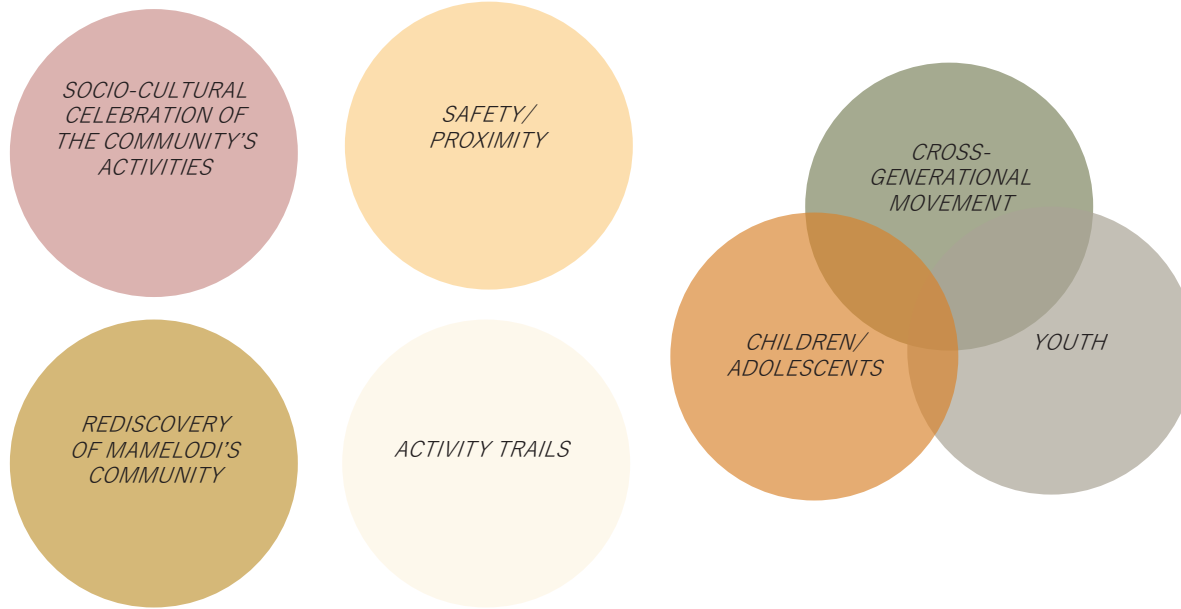
*PERFORMANCE  
ART  
MUSIC*

*TEACH  
EXPRESS*

*SAFETY TRAILS FOR  
CHILDREN AND  
ADOLESCENTS*

Figure 6.4: Mamelodi Vision Combining “Small City and “Urban interior (Elke[Bitsso]) (Author 2021; Niebuhr 2021)

**OBJECTIVES**



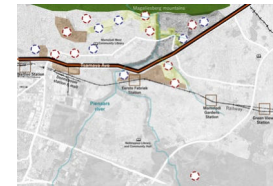
**INFORMANTS**



Education



Safety and danger zones



Cultural mapping



OPSF



RSDF

**STRATEGY**



ANCHORS

**Locations:** Sites with current everyday activities (educational facilities, sports grounds)

**Impact:** Extended safety, cohesion, collaboration, recalling satellites, place for gathering



TRAILS

**Locations:** Between anchors and satellites

**Impact:** Extended safety, anchor and satellite connector, cycling routes, cultural journey



PRIMARY SATELLITES

**Locations:** Smaller hubs near places of significance, neglected recreational sites or local landmarks (attractions)

**Impact:** Extended safety (in proximity of trustworthy members of the community), advertising place of significance and anchors



SECONDARY SATELLITES

**Locations:** Smaller hubs between primary satellites

**Impact:** Extended safety (in proximity of trustworthy members of the community), moments stitching the trails

Figure 6.5: Urban vision objectives, strategy and informants {Author 2021}

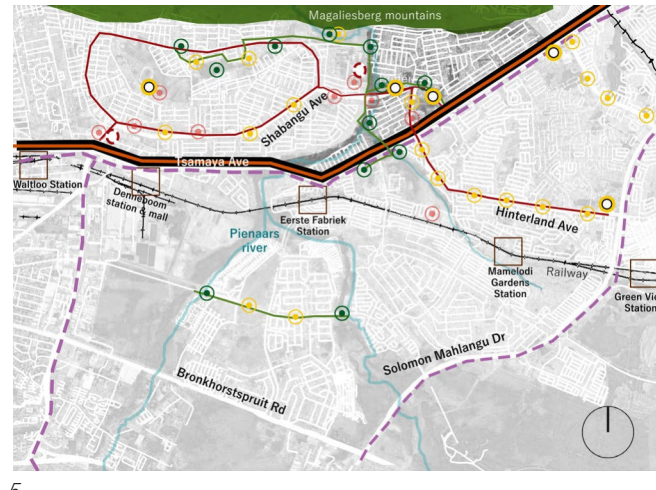
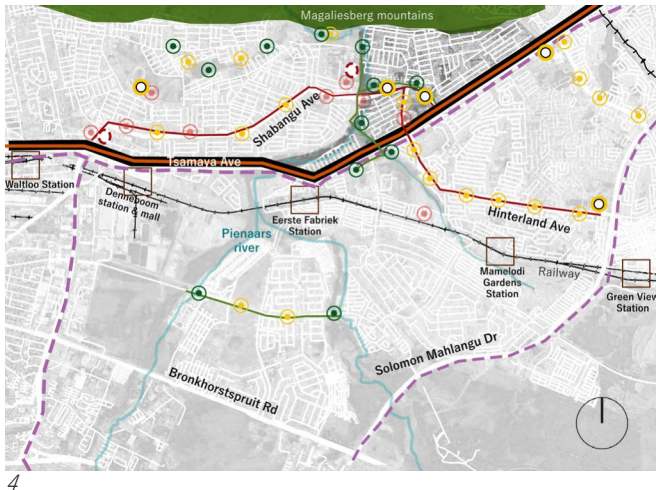
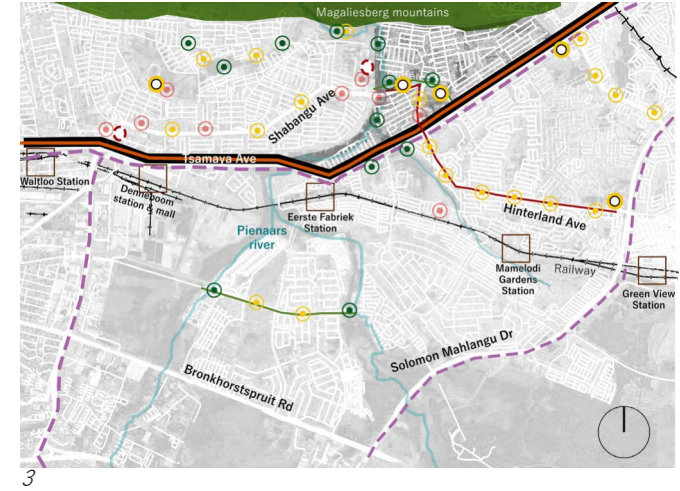
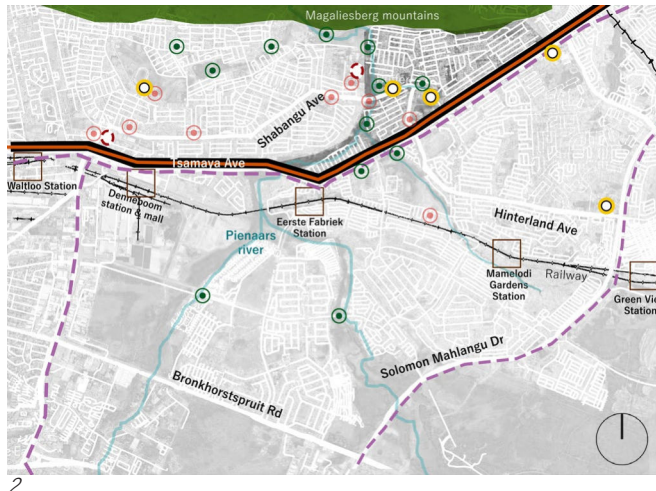
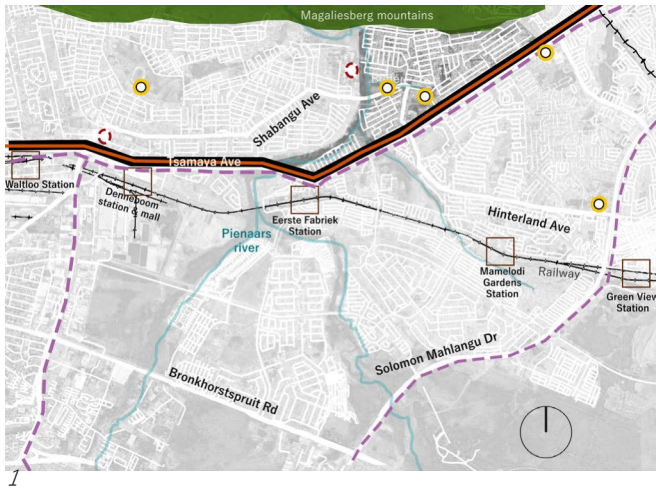


Figure 6.6: Evolution of the urban framework {Author 2021}

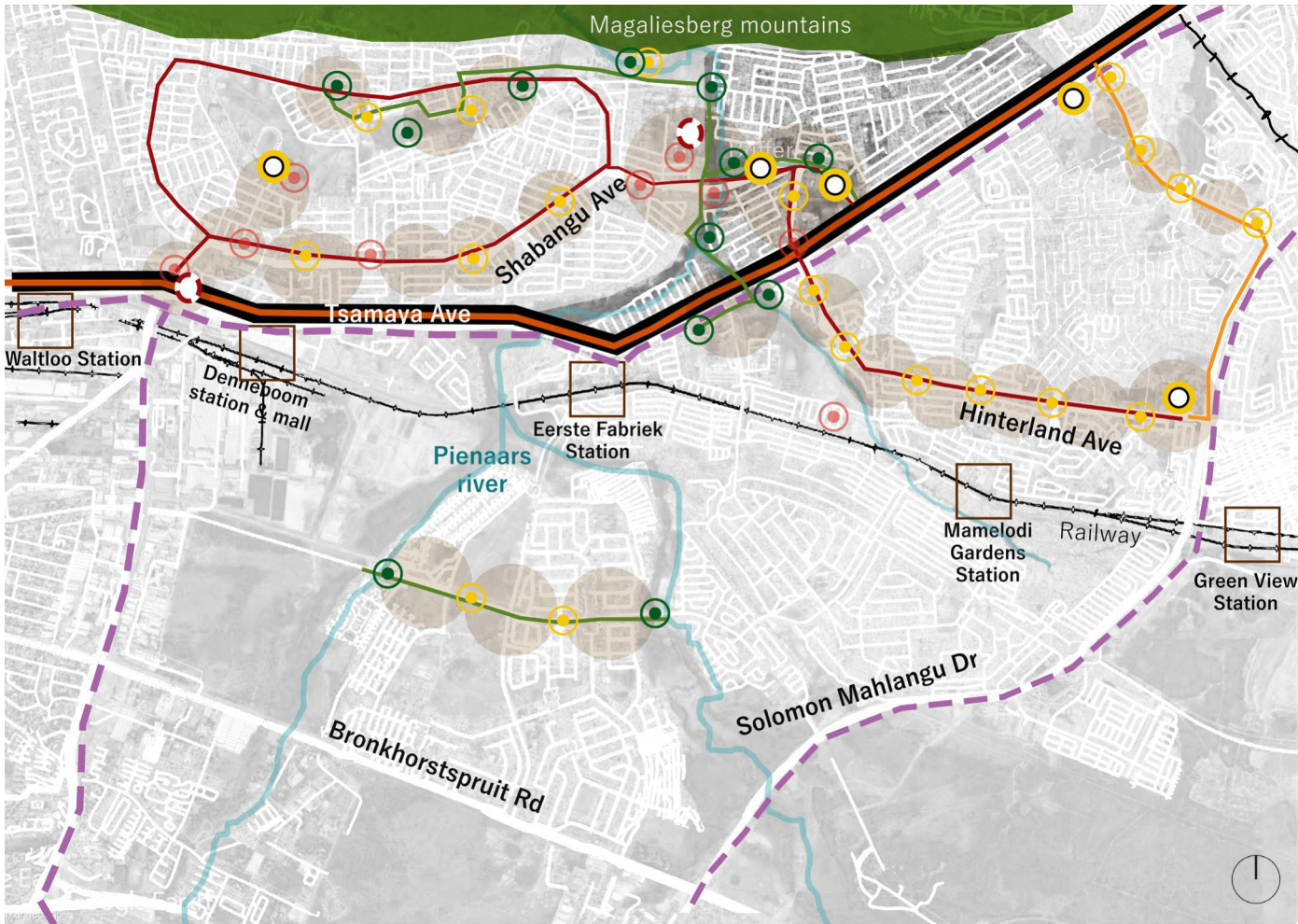


Figure 6.7: Development of urban vision (Author 2021)

# BLOCK VISION



Figure 6.8: Development of urban vision (Author 2021)



Figure 6.9: Development of block vision (Author 2021)

## LEGEND

- |   |  |   |  |   |                 |
|---|--|---|--|---|-----------------|
|  | Cultural precinct                                      |  | Park   |  | Freed up street |
|  | Integration of existing Infrastructures                |  | Home-based activities & parallel pop-up shops/market in the park |  | Tertiary trail  |
|  | "Elke[Bitso]"  |  | Markets  |  | Secondary trail |
|  | Plaza  |  | Small parklets/playgrounds, Showcase gardens                     |  | Primary trail   |
|  | Regenerated vegetation and wetland Grazing,            |  | Bicycle pavilion   |  | Green-way trail |
|  | Community garden, Promenade, Food and plant market     |  | Small business stops   |   |                 |
|  | Sports facilities, small gym, outdoors, fields, courts |  | New one-way street   |   |                 |



## 6.3 PROGRAMMES AND CLIENTS: implications of a public space project

### //Programmes

As a result of the dissertation's investigations, this project proposes a hybrid mix of recreational activities that encompass a balance between sports and both passive and active recreation while also considering what would most benefit the identified actors and their aspirations. The aim is, thus, to create an 'out-reach precinct' that consists of a larger anchor that is complimentary to the satellites and other anchors present in the cultural spine. These programmes are represented in Figures 6.10-11.

| <i>DESCRIPTIONS</i>                             | <i>ACTORS</i>                            |
|---|--|
| <i>Stories, Knitting, chess</i>                 | <i>Families/the Elderly</i>              |
| <i>Employment opportunities</i>                 | <i>Adults/Parents</i>                    |
| <i>Most connected</i>                           | <i>Children/ Adolescents (teenagers)</i> |
| <i>Limited movement</i>                         | <i>Post-rehab groups</i>                 |
| <i>Creativity</i>                               | <i>Bicycles</i>                          |
| <i>Asset</i>                                    | <i>Park/River/Trees</i>                  |
| <i>Needing support and change of atmosphere</i> |  |

Figure 6.10: *Unfolding the interconnected programmes in relation to 'actors' and needs (Author 2021)*

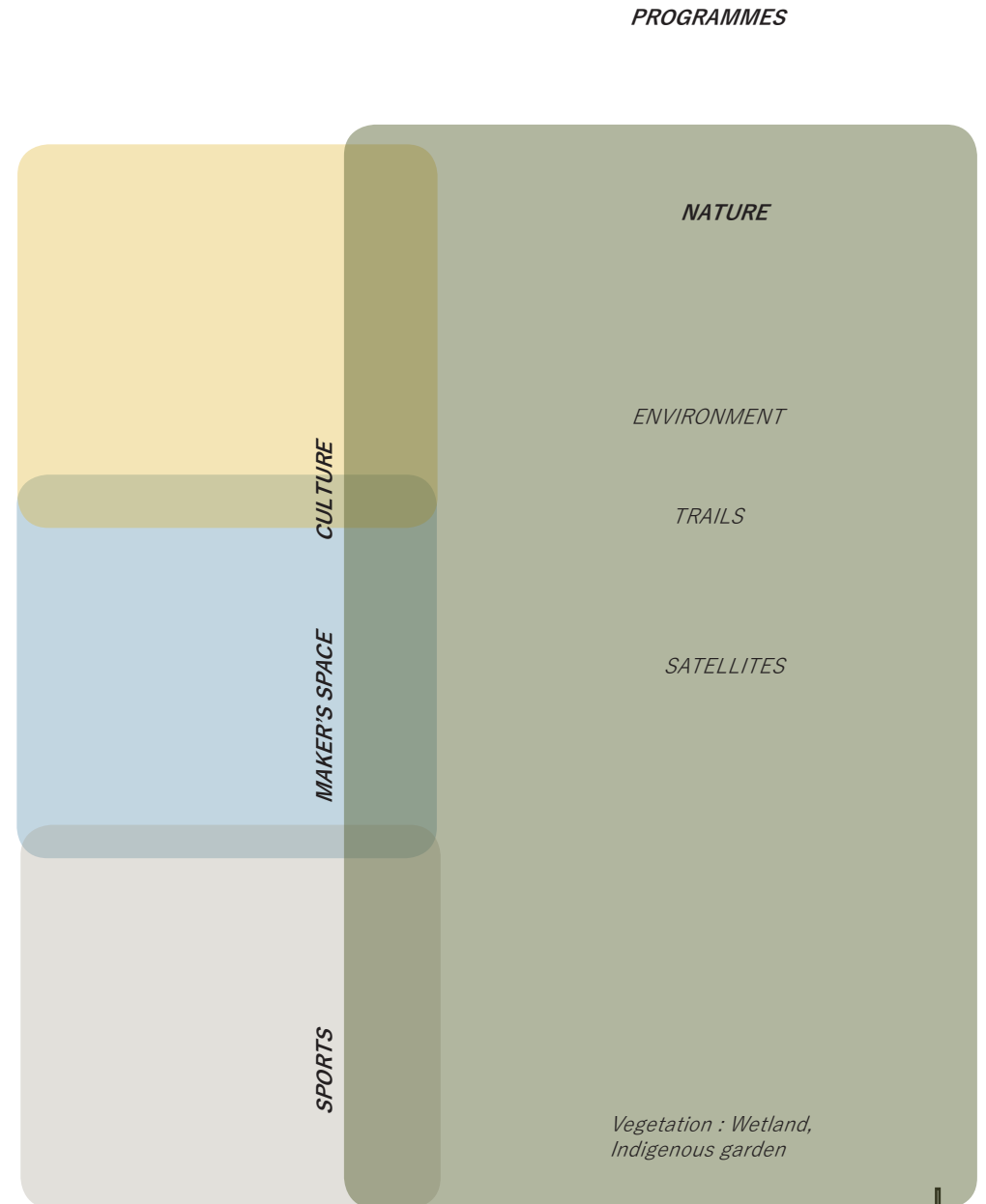
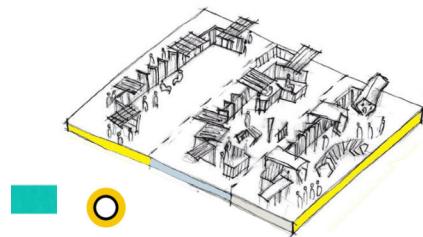
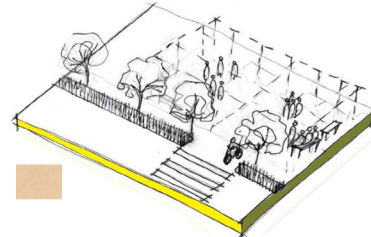


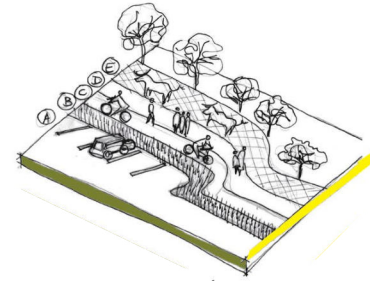
Figure 6.11: Development of programmes in relation to vision and site opportunities (Author 2021)



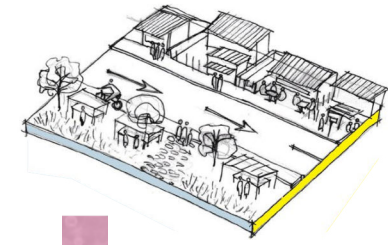
"Elke[Bitso]"



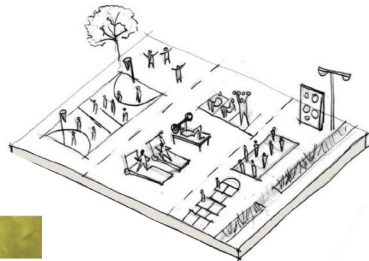
Plaza



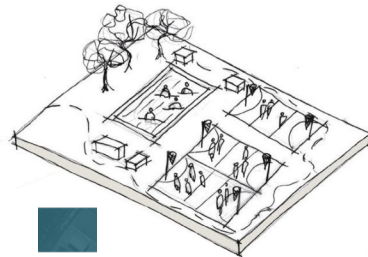
Paths and Parking



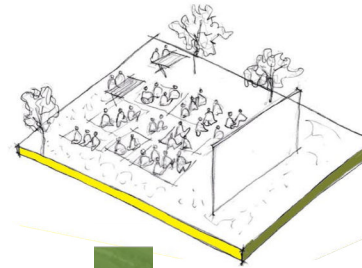
Home-based activities & parallel pop-up shops/market in the park



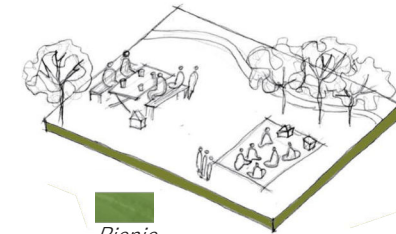
Sports facilities, small gym, outdoors, fields, courts



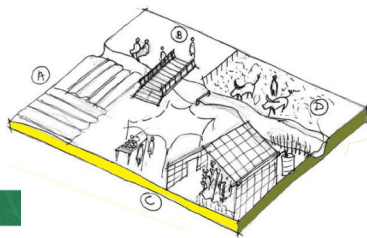
Integration of existing Infrastructures



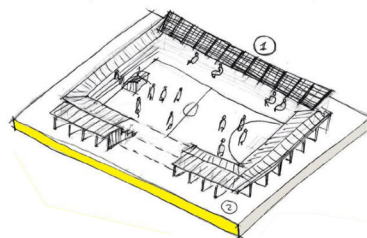
Open air cinema



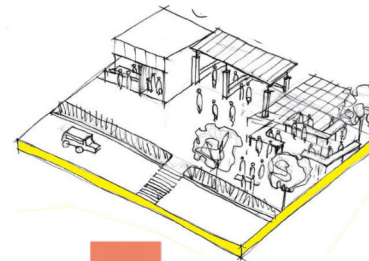
Picnic



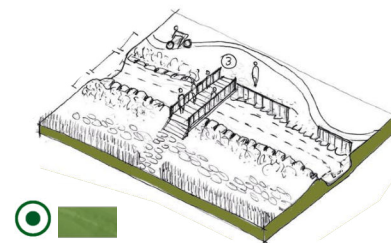
Grazing, Community garden, Promenade, Food and plant market



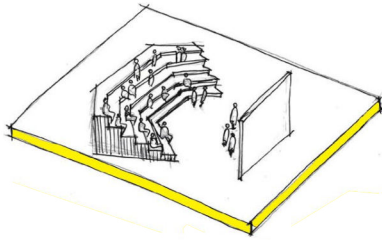
Solar powered bleachers and Small shops



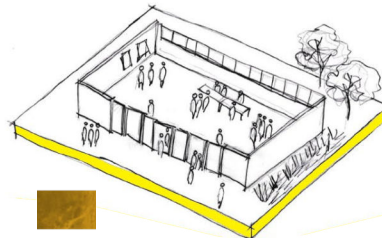
Shops, Small market stalls, Market plaza



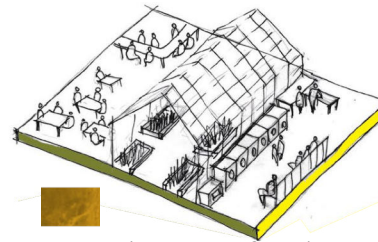
Naturalised banks, Flood control, Revitalised plant palette and Infrastructure



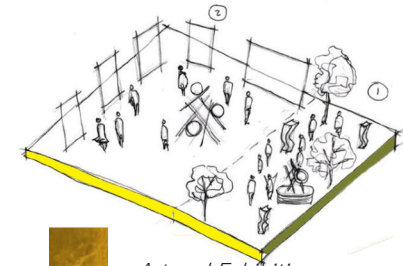
Amphi



Multipurpose hall

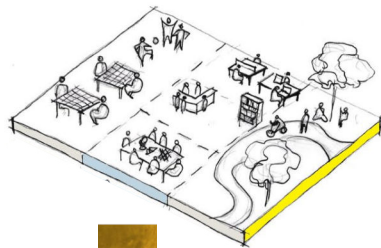


Food, Miniature Greenhouse,  
Laundromat

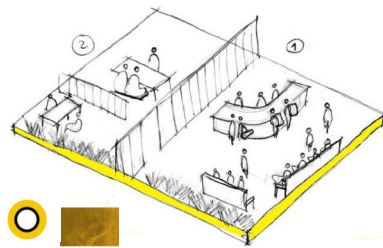


Art and Exhibition

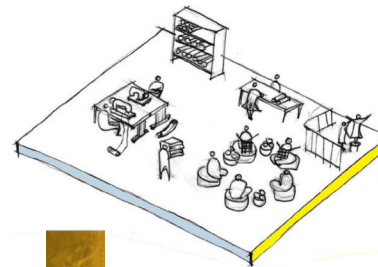
Performance



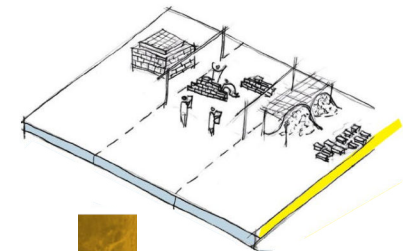
Afterschool, study /  
help centre



Info desk, Consultation (orientation),  
NPO management, office



Sewing/ Knitting  
workshop

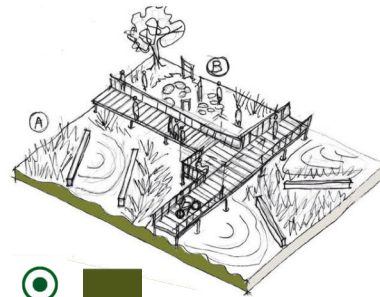


Brick workshop

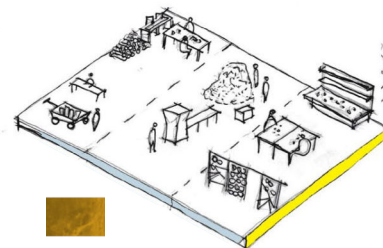


Temporary dorm for post rehab  
programme or sport events

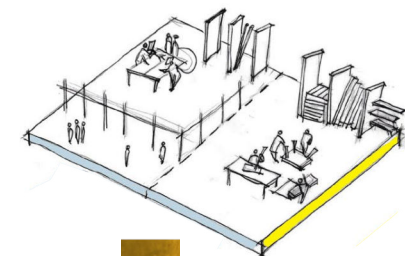
Soccer, Netball, multipurpose  
courts, tennis, Small Gym



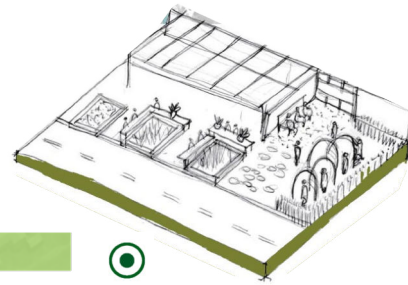
Wetland and Indigenous garden



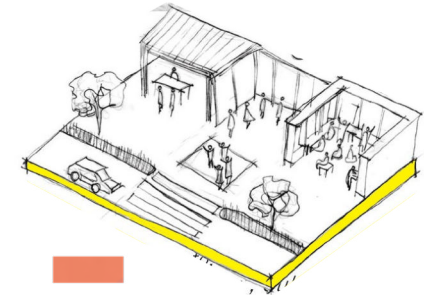
Glass workshop



Welding and Woodwork  
workshops



Small parklets/playgrounds, Showcase gardens

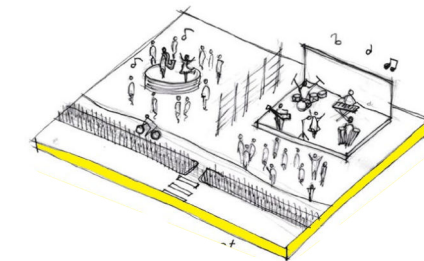


Street info, Cultural "Treasure box", Cultural history games

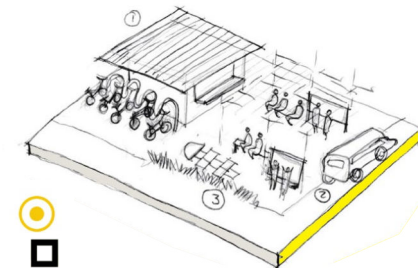
ACCOMMODATION

| Space   | Spatial quality and Requirements | Size (m2)              | Amount                                 | Reference |
|---|----------------------------------|------------------------|--|-----------|
| <b>HELP DESK/SOCIAL SUPPORT</b>                     |                                  |                        |  |           |
| Reception   |                                  | 27-42                  | 1                                      |           |
| Consultation rooms/office                           |                                  | 12                     | 4                                      |           |
| Gallery/lobby                                       |                                  | 151                    | 1                                      |           |
| Shops   |                                  | -21                    | 6                                      |           |
| <b>GYM</b>  |                                  |                        |  |           |
| Reception/gallery                                   |                                  | 27-36                  | 1                                      |           |
| Canteen   |                                  | 135                    | 1                                      |           |
| kitchen/area for food distribution                  |                                  | 216                    | 1                                      |           |
| Showers/toilets                                     |                                  |                        | 6 showers, 6 toilets, 5 urinals        |           |
| Refuse area   |                                  | 5                      | 1                                      |           |
| Pool area   |                                  | 1517                   | 1                                      |           |
| <b>DORMS (temporary)</b>                            |                                  |                        |  |           |
| Shared showers/changing rooms with gym              |                                  | 36                     | 2                                      |           |
| Rooms   |                                  | 9                      | 21                                     |           |
| Outdoor garden                                      |                                  | 324                    | 1                                      |           |
| Common area (relax)                                 |                                  | 72                     | 1                                      |           |
| Repurposed caretaker building, additional dorm area |                                  | 170                    | 1                                      |           |
| <b>ENVIRONMENTAL BUILDING</b>                       |                                  |                        |  |           |
| Exhibition/experiment/lab                           |                                  | 112                    | 1                                      |           |
| Seed library  |                                  |                        |  |           |
| Landscape caretaker quarters                        |                                  | 21                     | 1                                      |           |
| Gardening Storage                                   |                                  | 13                     | 1                                      |           |
| <b>GREENHOUSE</b>                                   |                                  |                        |  |           |
|   |                                  | 5,10,18,28, 37 (plots) |  |           |
| Plant area  |                                  | 41                     | 5x12, 4x12 and 3.5x7, 4x25 (beds each) |           |

|                                      |  |  |  |    |
|--------------------------------------|--|--|--|----|
| Restaurant(s) with kitchen           |  |  | 36   | 1  |
| Eating area                          |  |  | 108  | 1  |
| Laundromat                           |  |  | 6 drying, 6washing machines, folding space |    |
| Repoting area                        |  |  | 31   |    |
| Storage                              |  |  | 5  |    |
|                                      |  |  | 1x8m2, 1x5m2                               |    |
| <b>AFTERSCHOOL</b>                   |  |  |  |    |
| Multipurpose classrooms with storage |  |  | 91min                                      | 7  |
| Library/computer space               |  |  | 205  | 1  |
| <b>CULTURAL</b>                      |  |  |  |    |
| Hall                                 |  |  | 86   | 1  |
| Amphi/Auditorium                     |  |  | 229  | 1  |
| <b>MAKER'S SPACE</b>                 |  |  |  |    |
| Storage                              |  |  | 191 total                                  |    |
| Textile/sewing                       |  |  | 108  |    |
| Construction business office         |  |  | 51   |    |
| Front Shops/miniature office         |  |  | 36   | 3  |
| Wood workshop                        |  |  | 743 (7-8 people) add lumber space          |    |
| Welding workshop                     |  |  | 156  |    |
| Firing area/assembly                 |  |  | 45   |    |
| Arrival and sorting zones            |  |  | 81   |    |
| Glass workshop and assembly          |  |  | 108  |    |
| Toilets                              |  |  | 9 urinals, 17 toilets                      |    |
| Market stalls                        |  |  | 9  | 52 |
| <b>SANITATION/service</b>            |  |  |  |    |



Performance and Street culture



Bicycle Pavilion (repair, rent, park), Bus/"small business" stop, Info/play box

|  |  |  |     |   |
|--|--|--|-----|---|
| Semi-buried greywater collection point |  |  | 4   | 3 |
| <b>BICYCLE PAVILION</b>                |  |  |     |   |
| Repairs, shops                         |  |  | 104 | 1 |

Figure 12: Early speculative accomodation schedule(Author 2021)

## //Clients and Stakeholders

Several components advocate for layered, multifunctional, diverse, and hybrid recreational spaces that present symbiotic relationships and benefits. Due to the possible scale of the intervention when aiming to achieve these criteria, along with the values that members of the community voiced, a range of clients and stakeholders have been identified (Figure 6.13). The right stakeholders in a public space project are crucial, as incorporating a good range of stakeholders can reduce the risk of a top-down structure and can make the endeavour far more inclusive and efficient, particularly when attending to specific needs in the community (Hamdi 2010 , Mr J ., verbal communication, August 2021). This kind of approach is especially necessary when relating to the pertinent issue of management present in townships (Hamdi 2010 , Mr J., verbal communication, August 2021).

Of further importance is that the complete management of a project may not be in the realm of expertise of architects; however, by suggesting collaborations and relations between clients and stakeholders, it is possible to take inspiration from the influence and dedication of NPOs and other stakeholders (Mr J., verbal communication, August 2021 ). Such collaboration, in turn, allows for a created steering committee to transcend into an independent NPO that holds a full understanding of the scheme and which is capable of managing the future intervention(s) (Mr J., verbal communication, August 2021).

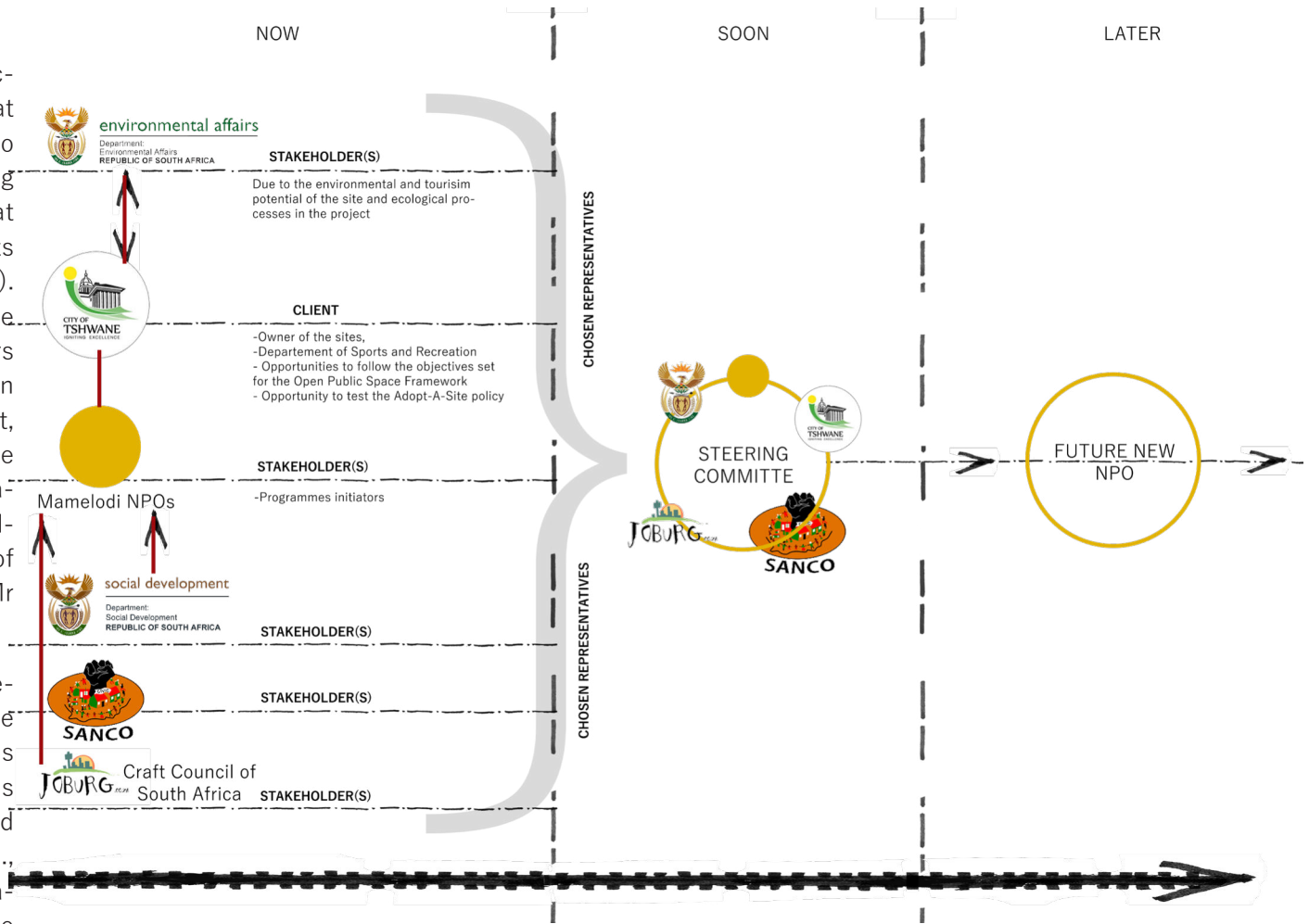


Figure 6.13: Stakeholders and client timeline (Author 2021)

## 6.4 CONCEPTUAL EXPLORATION: ITERATION 1

This project engages with the concept of the ‘connector dispositif’, which is explored in the design of an outreach precinct. The architecture within this project could be said to become an invitation of sorts, as it meshes elements together while simultaneously attempting to capture the hospitality emanating from the community’s actors.

### //Blending Ecologies, Diversity of space and Platforms for Networking

The concept presented in this paper begins by abstractly interrogating spaces in relation to one another through the combination of parts (i.e., green zones, squares/plazas, passages, ramps, indoors, and outdoors) as a way to connect processes and people. This interplay of responses between built form, volumes, and green and blue infrastructures is an attempt to integrate ecology with architecture in a bid to celebrate the environment as an actor while also permuting the possibility of public space devices. Indoor and outdoor passages are also investigated as places for gatherings, activities, and connectors for built forms (Figures 6.14-6.20).

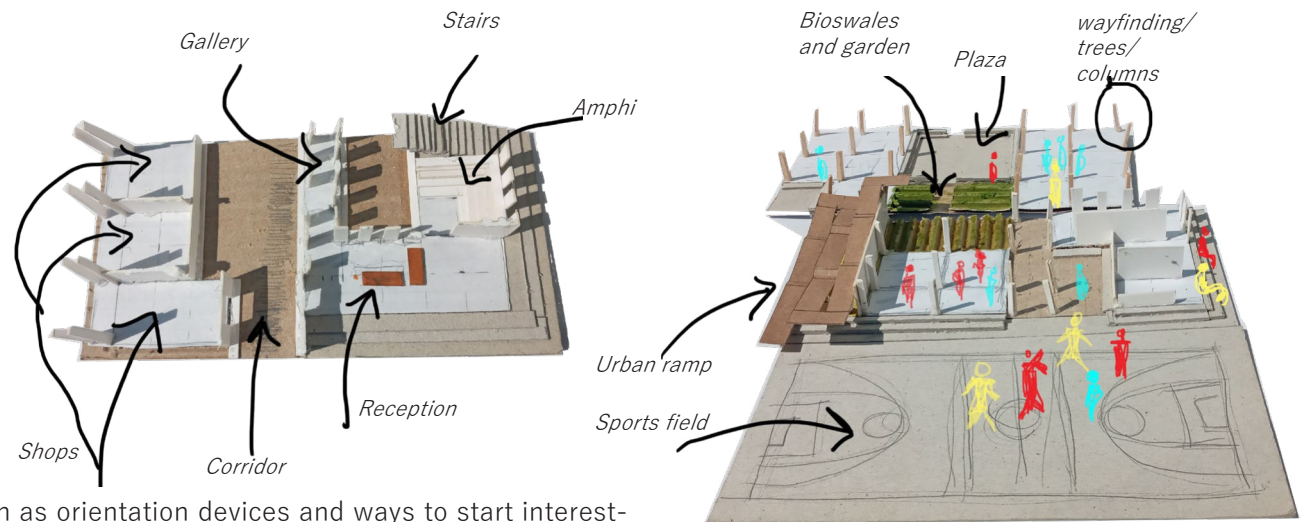
Screens, pavements, window displays, walls, and vertical elements (e.g., columns or trees) further delimit areas, and their distinctive characters can be seen as either static or dynamic elements with which the community members can create or interact through time. This process can, furthermore, involve the networks of schools, craftsmen, and others with transferable skills. Built form can, thus, serve as ‘built boards’ that func-



Figure 6.14: Linking places and creating platforms of spaces (Author 2021)

Figure 6.15: Platform 1

Figure 6.16: Platform 2, 3 and 4 combined



tion as orientation devices and ways to start interesting dialogues at different levels.

## //Acknowledging and Immortalising Social Trails and Traces

The previously noted site analysis portrayed movement (i.e., patterns as a key factor to the site). While this prior exploration handled diversity, it lacked a sense of direction and context. The diversity of the proposed programmes can, thus, potentially benefit from the distinctive aspects of the site's portions by becoming agents that weave together different, disjointed parts (e.g., the sports facilities and the park) (Figures 6.20-6.25).

The current desire lines (i.e., social trails) are, therefore, recognised as natural clues that indicate both points of departure and destinations, along with the tangible and intangible parallels between the stream (i.e., a blue way), Tsomo Street (i.e., a red way in the vision), and Tsamaya Avenue (i.e., a brown and red way). These unique corridors already loosely stitch the site together.

By recalling the agency of the street as well as the interfaces, the site is bisected via two main axes that immortalise the social trails by creating a fourth parallel way (i.e., an inner pedestrian path) that links the park, YMCA, pool, Rethabile Sports Grounds, and soccer field. These two new axes form the backbone for the arrangement programmes that will eventually sprout from them in an attempt to attract cross-generational endeavours and a merge of 'actors'. Miniature versions of these axes can further bisect the main ones so as to create smaller ways. These ways, in turn, can be either landscape- or pedestrian-related. Some programmes can also become 'pillars' that influence the character of the spines while others are not limited to specific areas. Therefore, circulation is

a key device to narrate the site. In order to incorporate ecological diversity, a connection between the stream and the YMCA is also suggested as an ecosystem that poetically rekindles the vestigial flood plain to its water course in the form of a constructed wetland.



Figure 6.17: Placing all anchors and satellites (Author 2021)

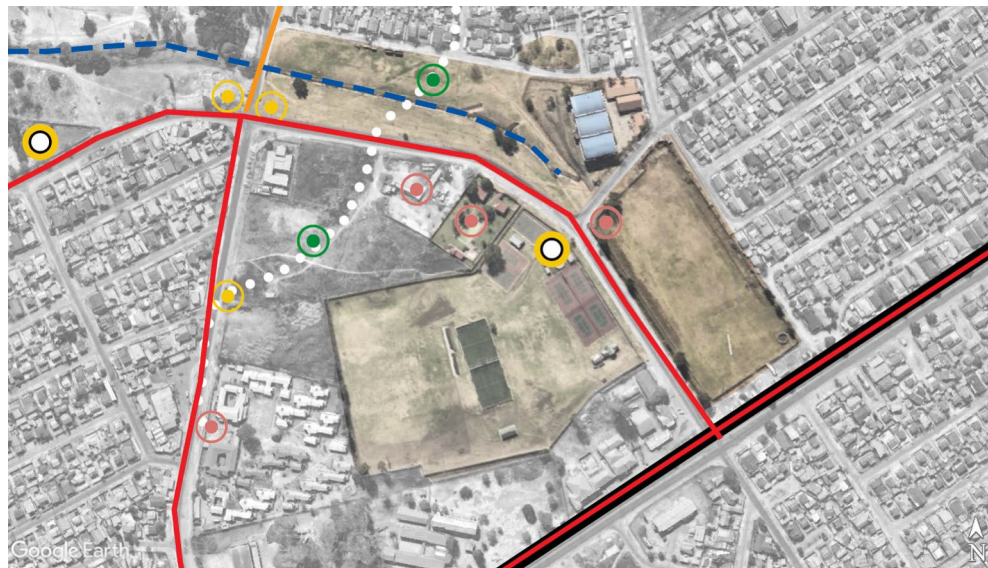


Figure 6.18: Adding the Trails and ways and desire lines

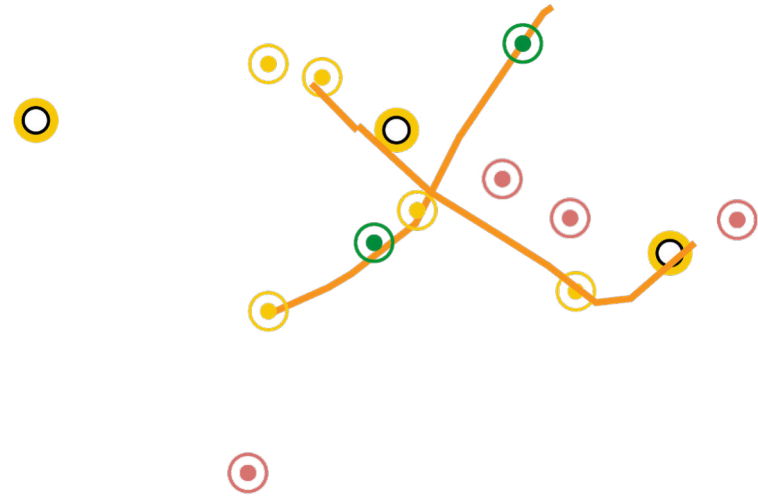
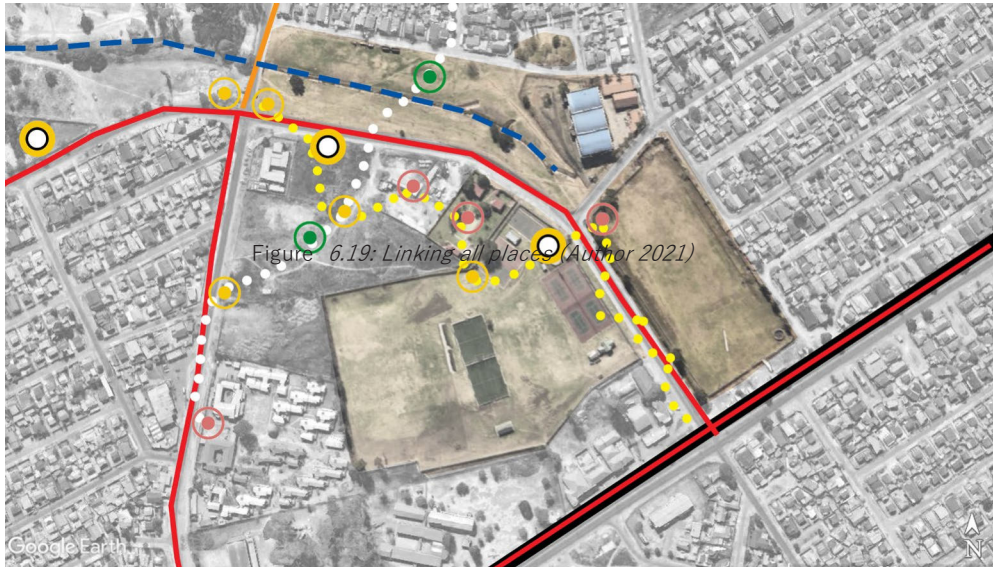


Figure 6.20: Extracting the axes (Author 2021)

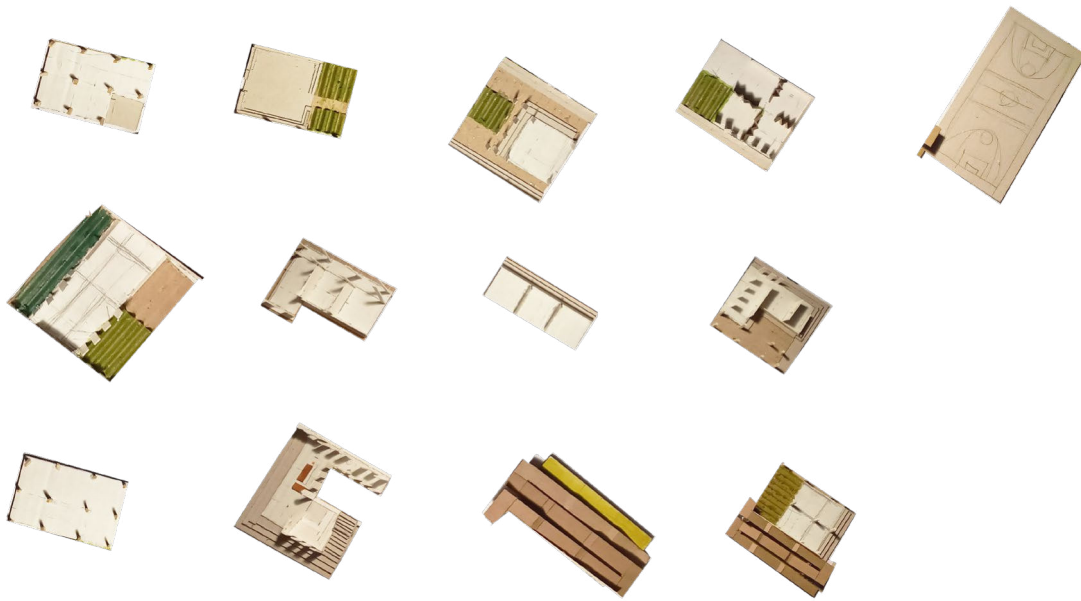
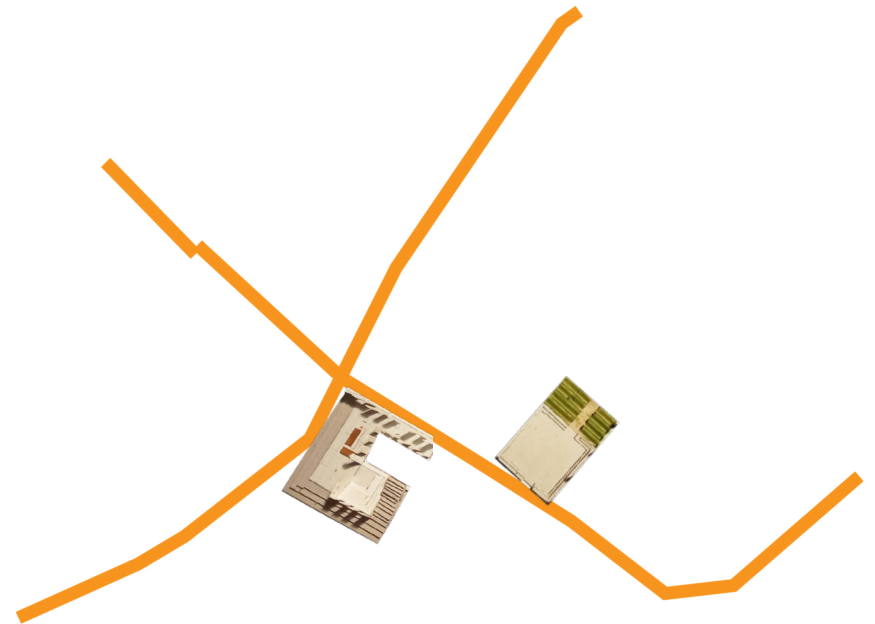


Figure 6.21: Replacing spots with platforms, combining all (Author 2021)





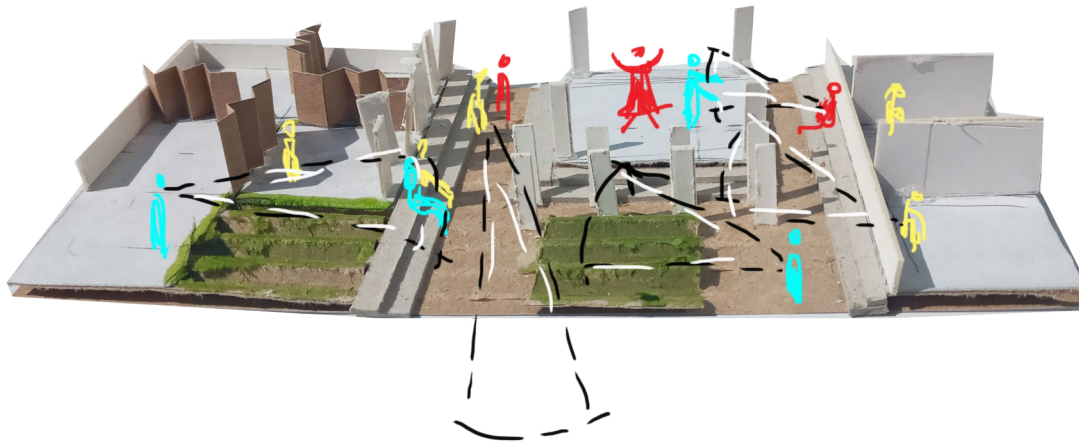


Figure 6.22: Sights lines exploration platform 4 (Author 2021)

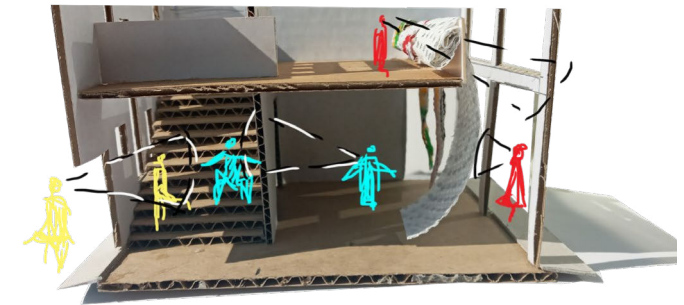


Figure 6.24: Sights lines exploration workshop (Author 2021)

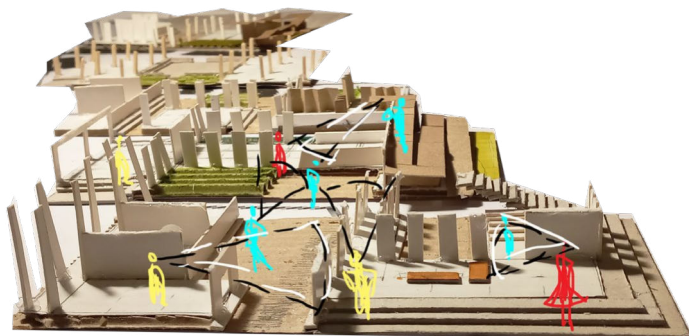


Figure 6.23: Sights lines exploration platform 5 (Author 2021)

### //Views and Sight Lines

A medium to incite comfort, as revealed through the precedents study, is the celebration of views to trigger people's curiosity and reasons to dwell in a place long enough to establish relations with other people as well as the environment (Figures 5.3-5.20). The currently proposed intervention is, thus, located between two natural landscapes (i.e., the Magaliesberg mountains ridge in the distance, and the series of plain 'parks' with their envisioned regenerated gardens and floodplain vegetation). These features make for good vistas and natural landmarks, while the created paths act as streets that provide passive surveillance (Figures 6.22-6.25).

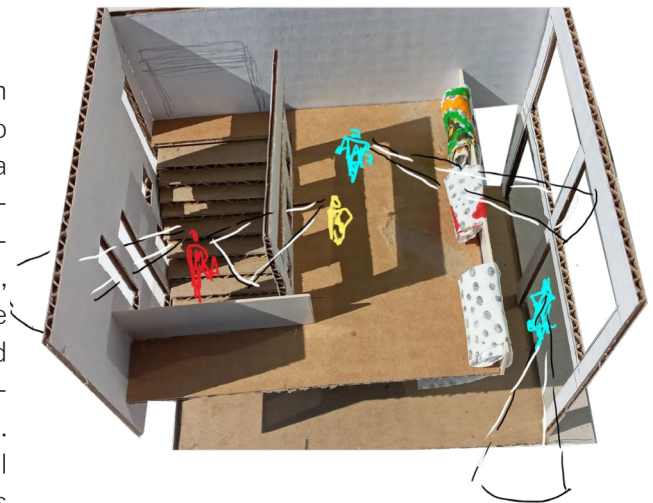


Figure 6.25: Sights lines exploration workshop above (Author 2021)

## //Massing, Form, and Critique

The initial massing of the intervention begun as a series of volumes encompassing complimentary programmes for resource efficiency as well as a means to anticipate the types of interactions that could emerge in-between buildings (Figures 6.26-6.27). Most administrative and other spaces dependent on deliveries (e.g., shops, materials, and storage) are set closer to Tsomo Street, while more cultural and ‘behind-the-scenes’ activities take a step back. The latter activities encompass workshops and classrooms to which the public can have visual access as part of an educational and/or touristic exchange.

The design then slowly evolved to become a precinct (Figure 6.28-6.31). While this layering of building functions sets up a narrative of complex and deep thresholds and interfaces, the sheer number of structures, paths, and courtyards can impact the legibility, security, and passive design potential of the scheme. In response to this, the design maintains a sense of playfulness within the combination. The next sets of iterations have, thus, been conducted to refine the hierarchy of the spatial networks while further defining the recreation character in the grain of the streets and thresholds by interrogating their parts relative to their whole.

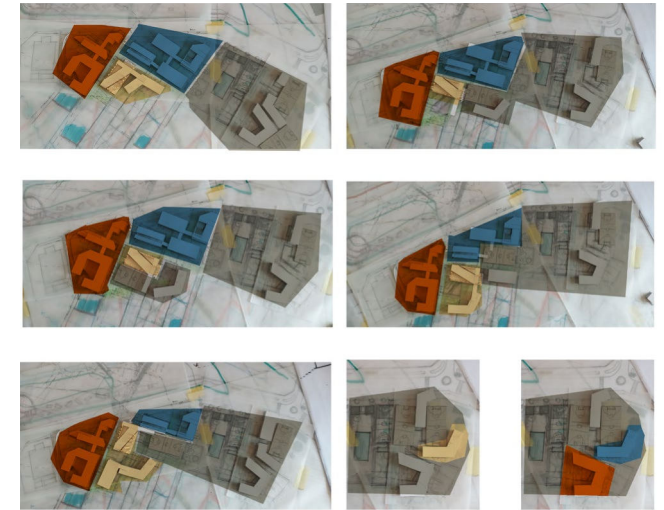


Figure 6.27: Massing model programme combinations (Author 2021)

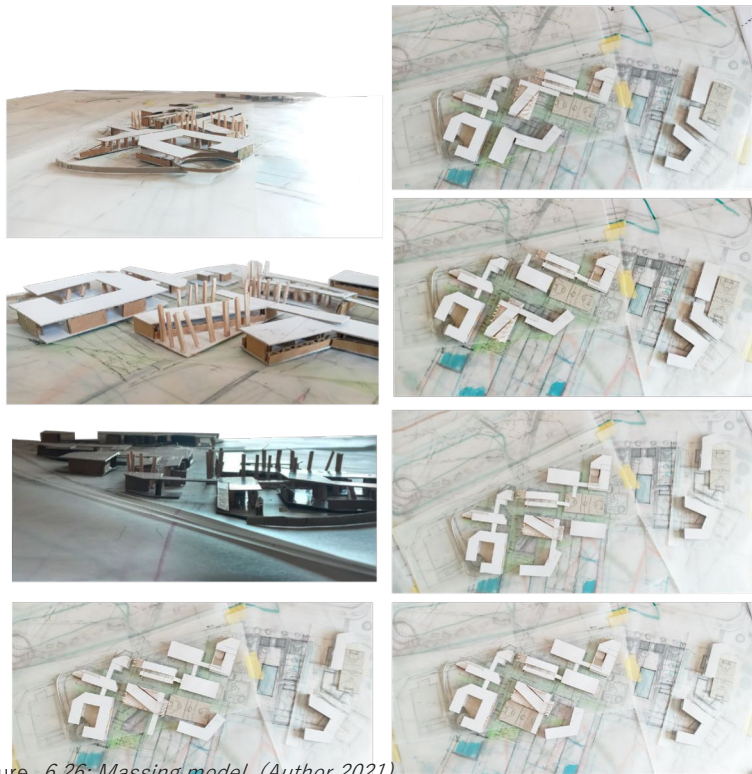


Figure 6.26: Massing model (Author 2021)

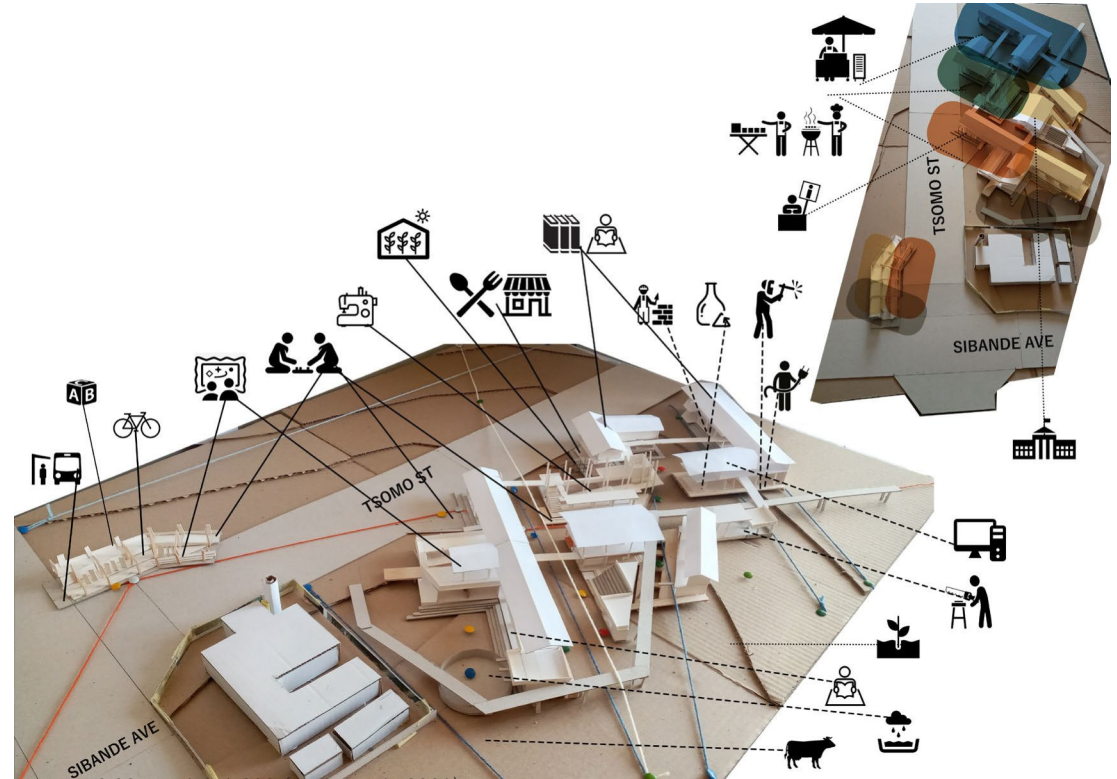
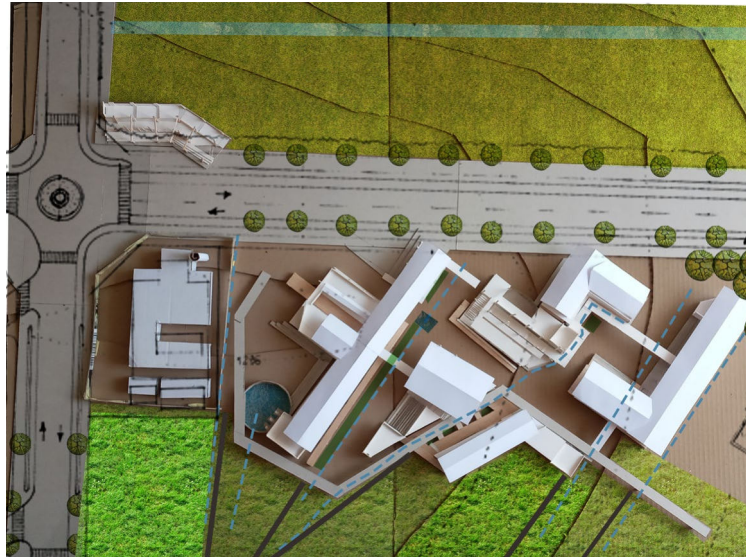


Figure 6.28: Model 1:200 (Author July 2021)



## DESIGN BRIEF

*DOUBLE FUNCTION  
"DISPOSITIFS"*

*INTEGRATED SCHEME*

*ACTIVATED  
THRESHOLD*

*USE OF PROMENADE*

*PASSIVE DESIGN  
CONSIDERATION*

*PASSIVE  
SURVEILLANCE*

*CONNECTION TO THE  
OUTDOORS*

*FLEXIBLE INTERIORS*

*SKILL DISPLAY  
THROUGH ENVELOPE*

*CROSS-  
GENERATIONAL USE*

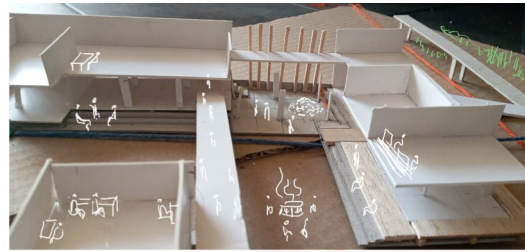


Figure 6.29: Site view model 1:200 (Author July 2021)



Figure 6.30: Water mitigation exploration and vegetation regeneration (Author 2021)

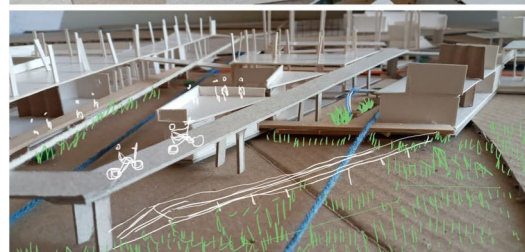
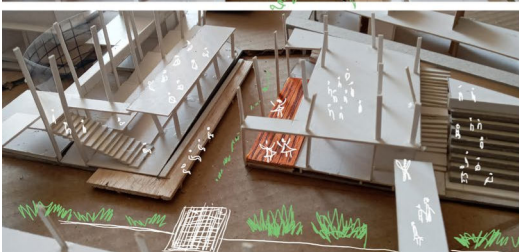
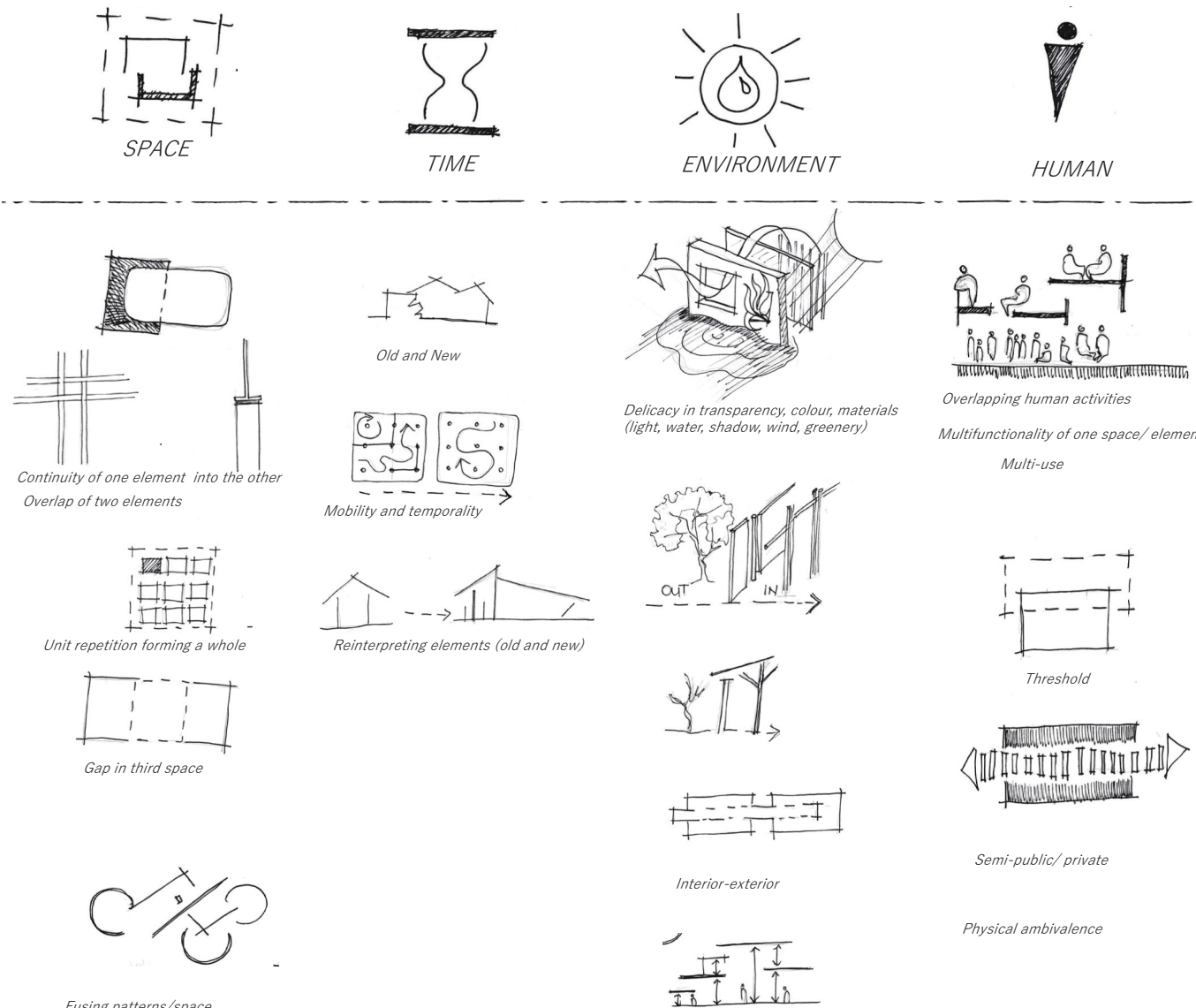


Figure 6.31: Scenarios (Author 2021)



## SHAPING THE “DIS-POSITIF(S)”

*“So start with this: make a welcome of each door, and a countenance of each window. Make of each a place, a bunch of places of each house and each city”*

*(Aldo van Eyck’s 1960 in Potentially…Unravelling and reconnecting Aldo van Eyck in search of an approach for tomorrow 2012: 58)*

The dissertation has currently positioned one way to initiate design through the process of anchoring networks into a place by means of architecture as ‘dispositif’. The previous set of sections offered an insight of possibilities on recreation, its agency, the networks it can link and a diversity of devices to articulate such a space. The smaller grain of the outreach precinct thrives on the consensus that the intervention should constantly connect and reveal places, activities and processes which either ignite curiosity or invite people to celebrate the different endeavours of the community around the site and the greater ecomuseum spine.

With the number of actors retained, activities and series of ‘microsites’, the focus lies on finding the right synergy and balance to connect and unleash the maximum potential of the precinct from a conceptual premise to a technical one.

Thus, various factors have to be taken into consideration to fully achieve a meshed network that transcends into built form and responds to the need, sustainable responsibility and requirements

Figure 7.1: The dimensions of the in-between (including the Twin phenomena) as observed on the works of Aldo van Eyck and Kisho Kurokawa (Author 2021)

for the retained ‘actors’. The previously identified role of the landscape as a connector also leads to a high regard for proper ecological responses which can be explored into tectonics, services (stormwater management and sewage) and site management; therefore, integrating the polyvalence of infrastructure into the narrative of recreation. Instead of being perceived as separate provisions, they can form part of the articulation of recreational devices, fundamentally contributing to the whole. In this case, the whole as the neighbourhood with environmental and educational agency.

The upcoming sections are a refining process to give better clarity and order to the recreational environment’s multi-layered character and create a space which constantly balances poetry, play and the scientific by attempting to further mesh the parts and whole of the precinct.

The technology investigation is followed with a series of spatial devices. While the twin-phenomena and the in-between “frame(s) of mind” (Lammers 2012:50, 88) can be ambiguous in nature, the advantage lies in their focus away from specific architecture renditions and allows for the principles to be shaped through contextual and cultural cues; indeed, even some of the precedents exhibited certain application of these notions (Figure 7. 1). These design perspectives can mitigate the move from a general city scale into architectural elements and structure, which is relevant to the subsequent realisation of spatial and technological intent.

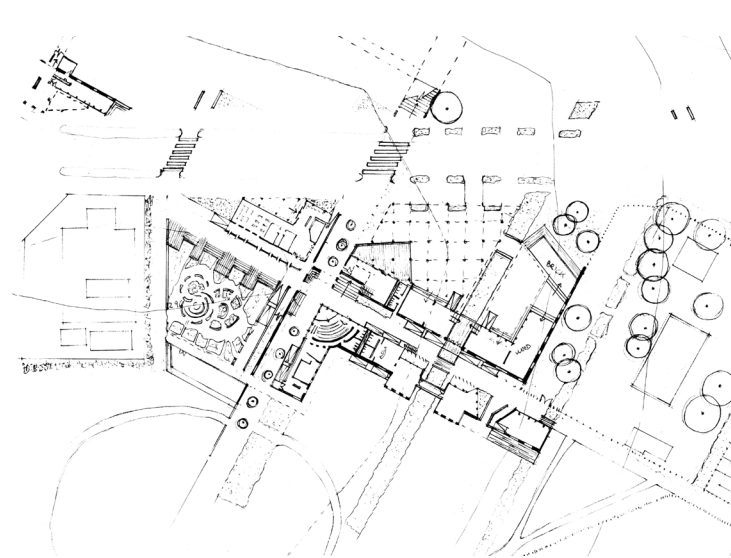
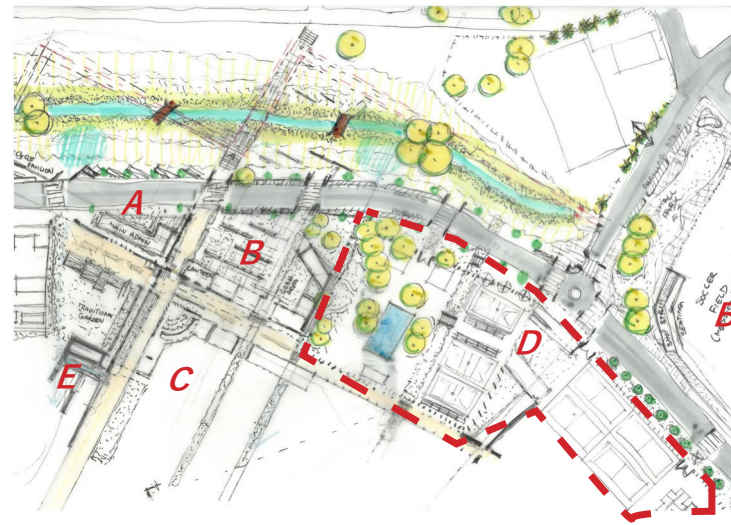
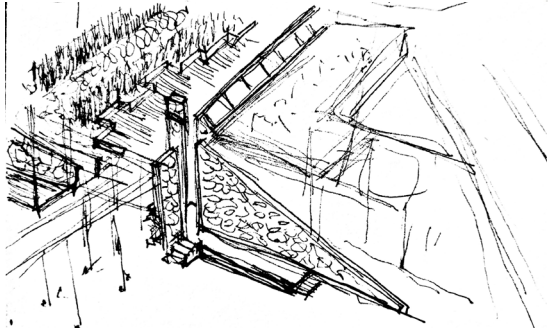
## 7- FROM THE PARTS

---

### 7.1 STREET AS A LANGUAGE AND WAYFINDING: ADDRESSING ACCESSIBILITY, SAFETY AND SECURITY

One can stress that the street is a device closely related to matters of democracy and values and involves the socio-cultural aspects necessary for the future city (Hertzberger 1991: 48-54). The prior investigation’s internal streets were not fully developed; hence, this section begins with the street elaboration as a departure point to properly configure paths as animated theatres for the everyday. In townships, the fact that children play in the streets can be interpreted as a sign of infrastructure deficit or streets as extensions of homes as previously iterated. Thus, these events can be re-imagined in the intervention as an opportunity. Although the street can be semiotic with equality, certain unsafe components such as cars and other dangerous situations set it back.

The terms ‘outreach precinct’ suggests a level of freedom (i.e., reaching out to people). Thus, the precinct loosely follows the idea of a park with pavilions; each slightly different from the other . The first approach is to reduce the number of paths, articulate the proximity of built forms while forming habitable thresholds (i.e., transitional spaces and niches); mentally reducing distances between parts, and creating visibility and framing from the street (Figure 7.2) . In tandem, the pavilions’ footprints were minimised to lower the risk of negative environmental impact, and avoid the



obstruction of the natural drainage lines of the site (Figure 7.3).

When mimicking the neighbourhood's streets, adapted by the residents, the built forms begin to appear less as big buildings housing every function but more like sequences of events (Figure 7.3-7.6). A layering strategy functioning as an interface between indoors and outdoors, plays with levels of transparency and porosity while promoting security tightness as one progresses through the layers of the buildings. These layers follow the principles of 'invisible security' (Figure 7.6). Each building is responsible for its own security with the exception of the gym area (Block D figure 7.5) having the option to form a smaller precinct at night. There's also an attempt to place 24 hours surveillance in the form of caretakers and small shops at key points throughout the rest of the precinct.

To add clarity to the overall movements and tie the precinct together, the main administrative/hot desk-ing programmes (receptions areas, bicycle and sports pavilions) act as internal nodes while plazas act as outdoor nodes. These points are linked through materials in the landscape such as continuous and rhythmic lines of gabion walls attached to the specific buildings hosting these activities (Figures 7.4-7.8). These walls are found along the major axes (as wayfinding anchors, acoustic devices and vegetation hosts) while bioswales and other environmental process run perpendicularly and in parallel (Figure 7.3-7.6). When paired with pergolas, they also serve to delimit zones and entrance on the axes. Some specific moments such as the double-facing amphitheatre and shops appear at key decision-making nodes to animate the area, provide social wayfinding queues and open up

Figure 7.2: *Condensing the whole* (Author 2021)

Figure 7.3: *Paying attention to the natural landscape and its regeneration* (Author 2021)

Figure 7.4: *Landscape and architectural elements for wayfinding - gabion towers 'arrows'* (Author 2021)

Figure 7.5: *Condensing the whole* (Author 2021)

Figure 7.6: *Paying attention to the natural landscape and its regeneration* (Author 2021)

corners (Figure 7.6-7.8). These areas also function as points for universal access and central circulation; along with bicycle routes, they stitch nodes and trails together.

The pavilions' orientation makes the interventions act as compasses or directing devices but also is an environmental response for passive design (inclusive of thermal comfort and lighting) (Figure 7.8-7.9).

**Employed principles:**

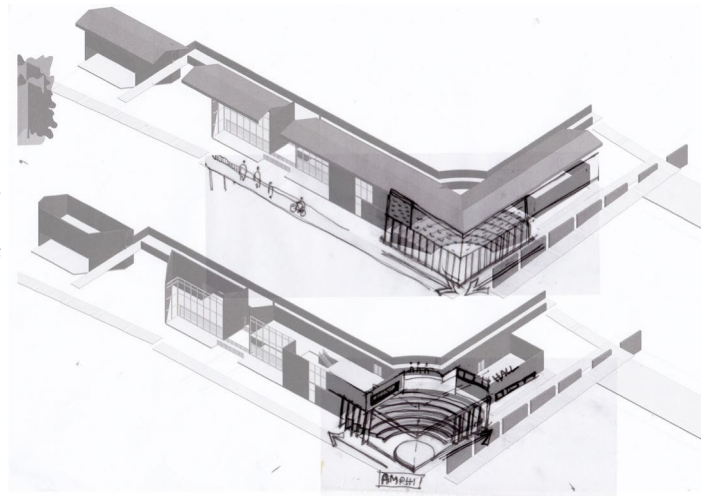
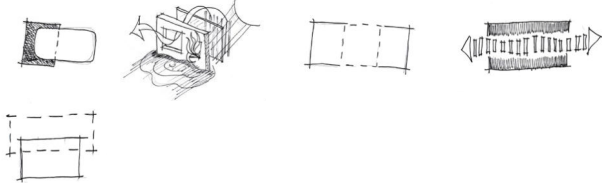


Figure 7.7: Testing the amphitheatre as part of the street corner (Author 2021). (Top) closed for private performances and (bottom) open for public performances and (right) sound experience

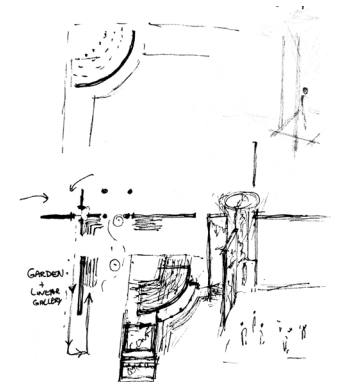
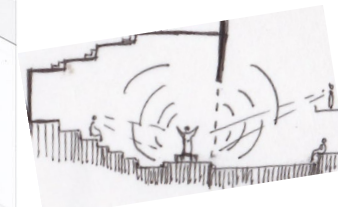


Figure 7.8: Gabions as directional device and space creation (Author 2021).

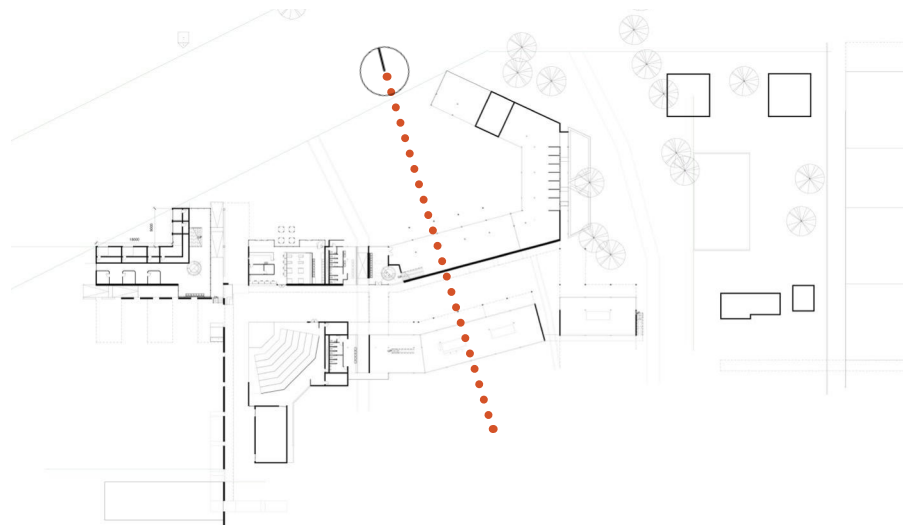


Figure 7.9: Reformed plans with building facing north (Author 2021)

## 7.2 MICROSITES: ADDRESSING DIVERSITY, MULTIFUNCTIONALITY, LAND-USE AND ACTIVITIES

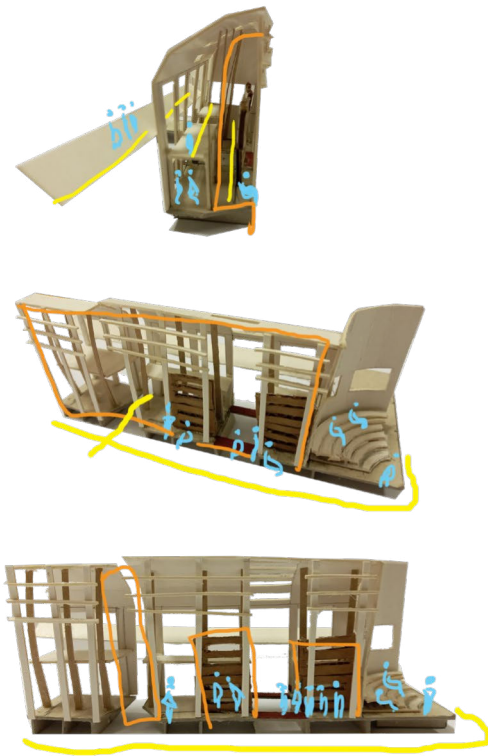
While the paths lead people to specific destinations, they can also aim to satisfy curious users by the creation of ‘microsites’. The upcoming explorations embrace variety and the multiple facets of space use while considering their ‘affordance’. Each pavilion established in the precinct carries an identity through its programmes, placement and relation to neighbouring buildings, eventually affecting the character of their immediate surroundings (Figure 7.10). The device employed here is the deep and polyvalent thresholds at the doorsteps of the buildings. The success of ‘microsites’ depends on the right grouping of ‘dispositifs’ or activities at certain points of the journey to form interesting dynamics or advertise the inner functions of the buildings (Figure 7.10-7.11). The stoep’s occupation can also occur independently of the indoor schedules, thus, becoming a space that the building generously lends to the street.

In sum, these thresholds also act as the first few layers that visitors occupy and pass through as an introduction to the pavilions. Therefore, the building blocks get ‘peeled-off’ as layers to host them (Figure 7.10). Instead of being inert, façades and in-betweens become educational devices, showrooms or informal performance stages (Figure 7.10-7.12). Any actor can occupy these spaces for any of the prior-mentioned activities. Often, showrooms act as displays to invite people in however, one could consider extending them to the outer skin and into the public realm creating miniature exhibitions or furthermore interactive



Figure 7.10: Pavilion maquettes depicting occupation of ‘microsites’ thresholds - movement, niches and sustainable services incorporated into the design (i.e., rainwater harvesting, planters etc). Design devices include: stairs, corridors, stoeps, roofs, change of levels





display spaces (Figure 7.11). Storage facilities that do not have any prerequisite (such as specific light or temperature) could be considered a type of showroom and consequently be integrated on edges as displays. To accommodate such idiosyncrasies, the street can slightly meander and even be continued on the next floor while the boundary walls of buildings step in and out and create gaps allowing the streets to penetrate spaces (Figure 7.10). The pavilions were also organised to have two ‘faces’ in order to ‘breath in and out’ when the twin phenomena in buildings reciprocate human nature (Figure 7.12). This allows for both frontal and back ‘streets’ to be activated.

The multifunctional use of space is continued indoors where the interior spaces function as free plans (when non-detrimental to safety and security) and acoustically-sound partitions can bisect zones or be removed or doors opened to create ‘internal streets’ connecting interior spaces as promenades (Figures 7.6 and 7.10).

As an actor, vegetation is included as part of the ecosystem of a public open space and for its educational value. Due to the distance between sites in Mamelodi such as the Magaliesberg mountain range, the Mothong African Heritage Village and the current neighbourhood, creating and incorporating local vegetation as a part of a miniature botanical garden as well as thresholds to facilitate small excursions closer to the residents (Figure 7.2-7.6, previous section). Plant diversity (types, systems, vertical and horizontal spreads) allows for distinctive atmospheres as an addition to wayfinding and the appropriate vegetation can assist in noise reduction, cooling effect

(i.e., evapotranspiration), thus, reducing heat urban island effect, thermal, dust and air quality control (Falkenberg 2011:24). These solutions can also improve indoor environments (paired with wind direction).

Therefore, vegetation is yet another ‘dispositif’ also capable of defining ‘microsites’ and can be further used to re-establish a connection with the Pienaars river’s tributary in the form of an off-stream diverted wetland addressing the floodplain’s bare ground of the YMCA (see site analysis section). The future wetland adds another layer to the scheme while possibly working in conjunction with the water management of the site.

**Employed principles:**

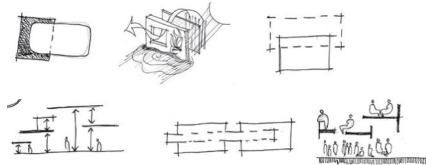


Figure 7.11: Shop-front threshold, local stones and storage as display (Author 2021)

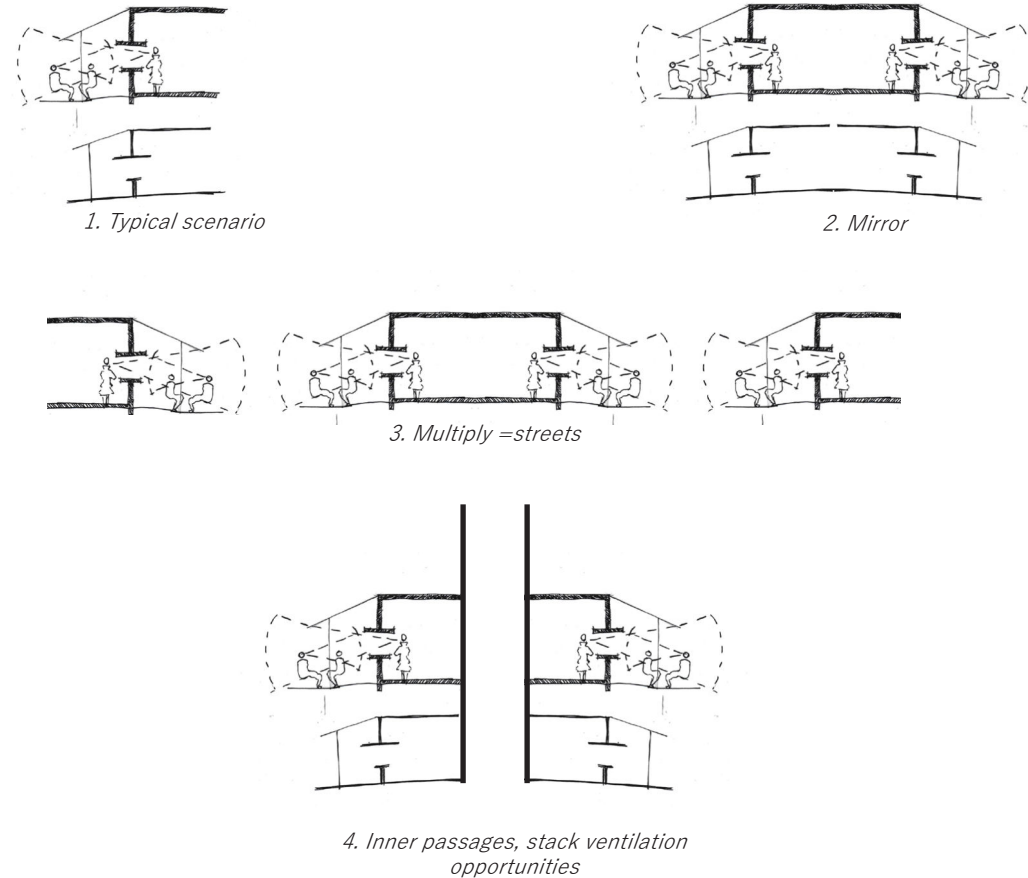


Figure 7.12: The threshold that “breaths”

### 7.3 'COLLECTIVE ACTION' AND CULTURE: ADDRESSING SOCIAL DYNAMICS, ANCHORAGE AND IDENTITY

The last set of factors explored are social dynamics, anchorage and identity. Just as the gleaned precedents, public places require people to form a certain level of attachment with these places. The aim of the intervention is to explore a way to foster the relationships between people (users, visitors and local entrepreneurs) and place.

One important medium to establish these relations other than the street and 'microsites' is through materials. The socio-economic chain provided (Figure 7.14) combines some of the most common materials found in Ward 23 while considering current and future skills sets and programmes (Mr J, verbal communication 2021; Mrs K verbal communication 2021; SOS focus group 1 2021; Thandanani focus group 1, 2 2021). The chart follows a timeline starting from when materials are collected, transformed and used for the construction and/or as products for income generation. Certain 'actors' (entities, schools, the elderly, families) are able to collect materials such as glass bottles and plastic bags, while others are entrepreneurs (i.e., the collection and/or making of materials such as glass bottles or bricks form part of their daily income-generating endeavours. The project can support local recyclers and brick producers by purchasing their products. During the post-construction phase, the relationship between client and supplier is left between local entrepreneurs and the workshops (maker's space).

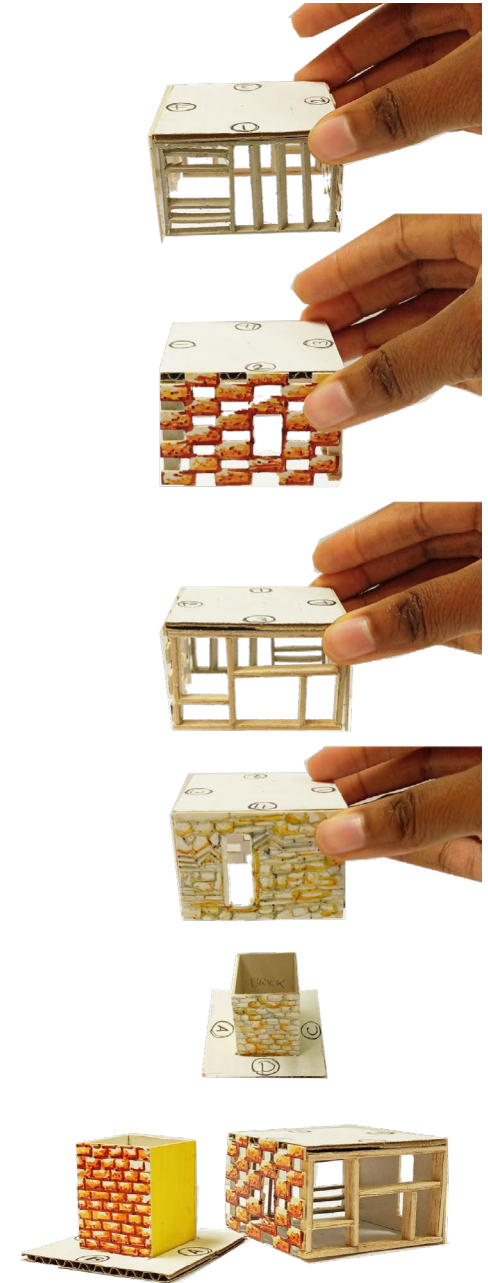


Figure 7.13: Material experimental cube, testing transparency, colour and shading as devices (Author 2021)

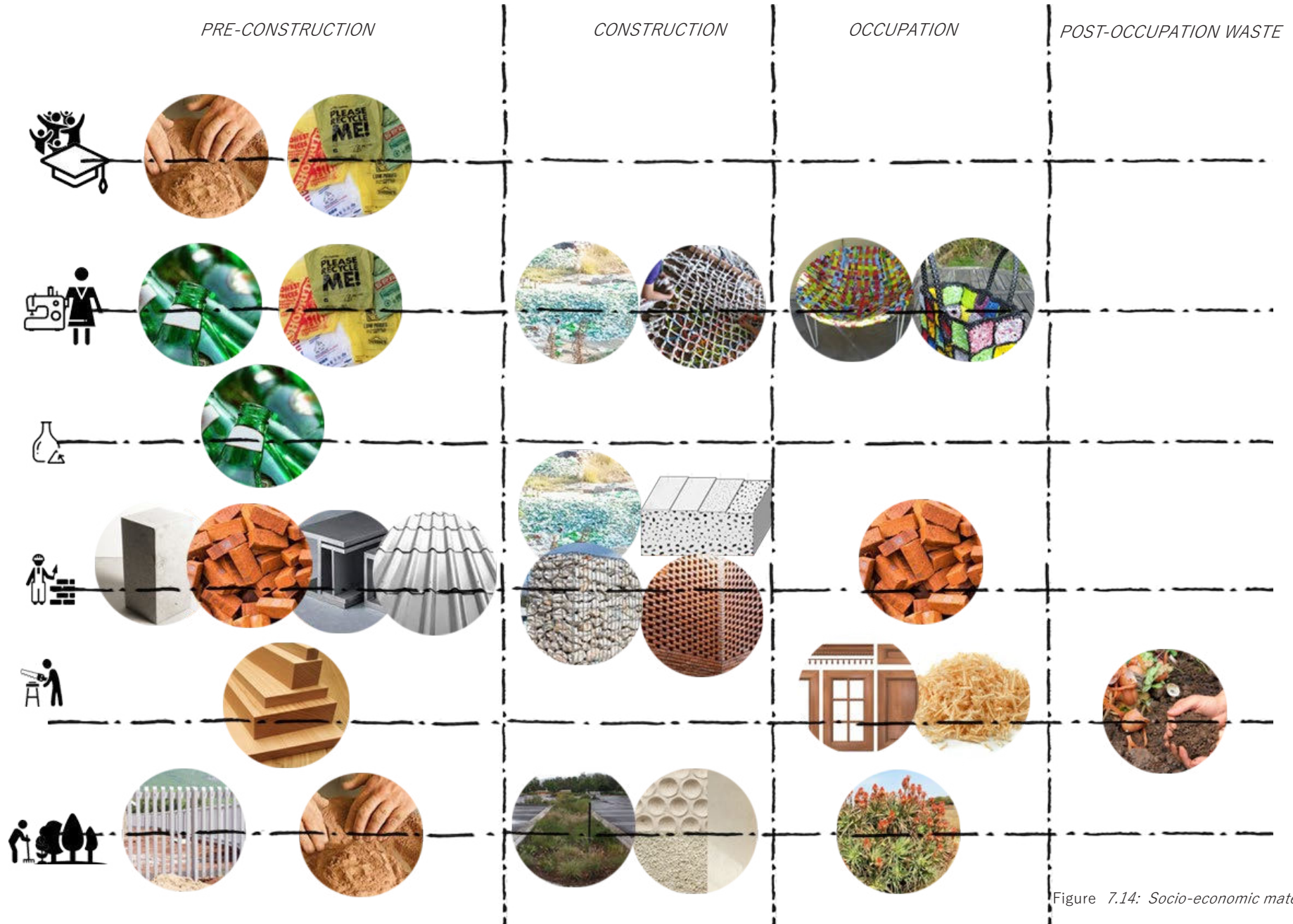


Figure 7.14: Socio-economic material palette

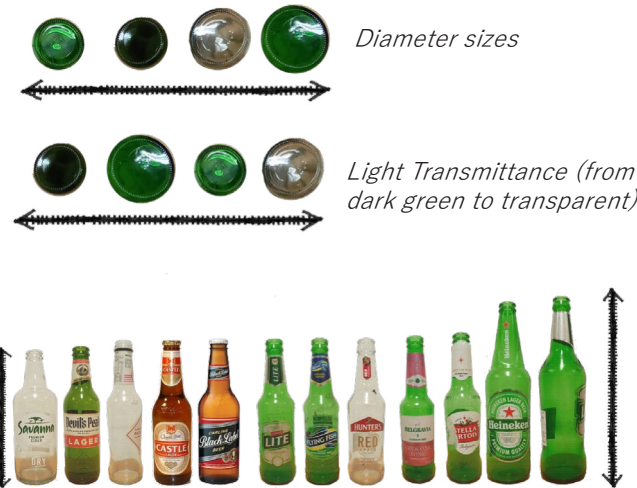


Figure 7.15: Comparing bottles' colour and heights (Author 2021)

The project, thus, incorporates clay bricks as both a socio-economic sustainable act and a reminiscence to the clayey soil present on site. Considering craftsmanship, the malleability of pottery clay and the ceramic and glass knowledge present in the community, there lie an opportunity to produce sensory artefacts for the construction of the precinct and convey the participation of the community (Figure 7.14-23). These pieces can shape recreational moments and also contribute to the environmental strategy of the building or the wayfinding system (Figures 7.20-7.23). A short experiment was conducted (Figures 7.15-7.19) to internalise the construction potential of glass bottles (i.e.s insulation, strenghts and more).

By engaging with both traditional building materials and recycled ones, the aim is to create a network between actors by the strengthening or connecting existing ones. Thus, the design is driven by a 'collective action'; making use of accessible and mundane materials with the objective to ignite familiarity and promote the craft that will be made as part of the programmes (Figures 7.14-7.23). Traditional materials, concrete and bricks, are curated for their reliable structural and thermal performances. Timber, although more susceptible to fire and weathering is used as a contrasting element, as an attractive medium, a means to reconnect indoors and outdoors spaces while contributing to the versatility of 'microsites.'

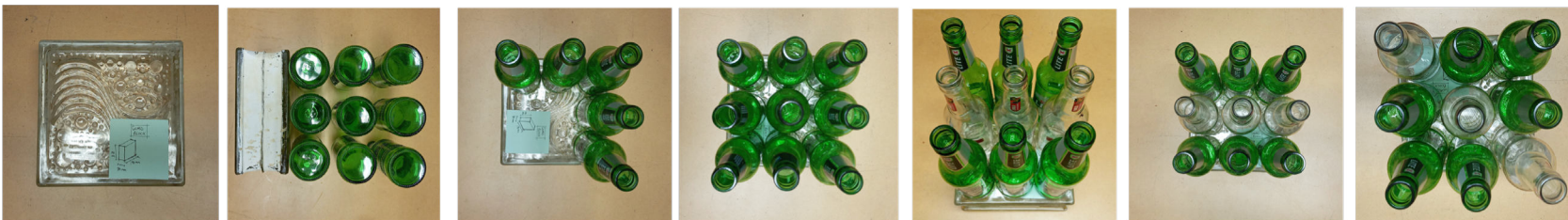
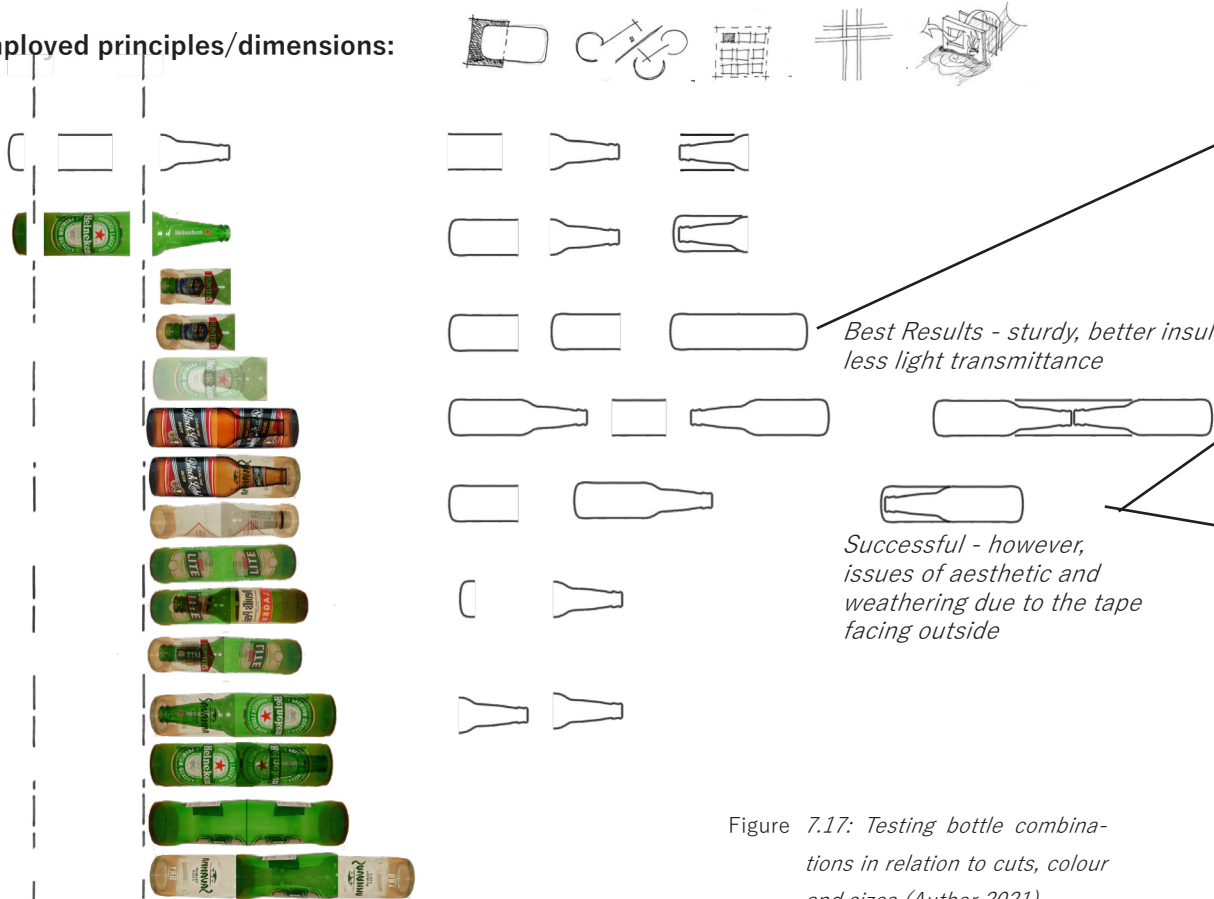


Figure 7.16: Bottle modules in relation to other traditional construction materials (Author 2021)

Its relatively lower price and theft value, multitudes of assemblies and renewability factor (supporting the right suppliers) make it a good material to be used to articulate the 'dispositifs' at the thresholds.

The material palette is further expanded with the inclusion of natural elements such as light, vegetation and water. Colour and transparency are also factors considered to add character, visibility and further the differentiation of spaces (Figure 7.13).

**Employed principles/dimensions:**



Options to test

Figure 7.17: Testing bottle combinations in relation to cuts, colour and sizes (Author 2021)

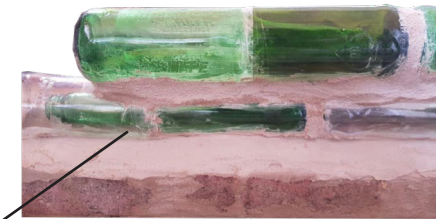


Figure 7.18: Building experiment, miniature bottle walls, mortar, brick and DIY glass bricks (Author 2021)



# 8- TO THE WHOLE: SYNTHESIS

Following the empirical investigation of the parts, this section aims at exploring the whole as an ensemble of technology, structure and services resulting into sets of 'dispositifs'. The technological role of the intervention is to bring together the diversity of the parts as a legible whole capable of expressing the notion of 'social fabric as infrastructure'.

This approach allows for the representation of a holistic design for recreation, as well as a representation of the multitude of processes taking place in streetscapes which are often inconspicuous (all the infrastructures that they handle). The technological resolve incorporates twin-phenomena and the in-between conditions by internalising the principles employed in sections 7.1- 7.3 of the dissertation; meshing them vertically and horizontally, in three dimensions.

## 8.1 STRUCTURAL INTEGRITY

The structural integrity of buildings is often broken into primary, secondary and tertiary structures. For this intervention, the structure has been organised and will be explained in terms of planes (layers): primary structure (first plane), secondary structure (second plane), tertiary structure (third plane) and finally the addition of a fourth plane. The "planes" shape the building; each fulfilling a role ranging between structural and infill.

### //General Ordering Intentions

One can simply explain the structural ordering as the weaving of planes through the continuation of materials from one space to another celebrating vertical and horizontal transitions especially around thresholds. The structure aims to make use of traditional materials especially bricks as the loadbearing and infill elements while the fourth plane's materials are curated to stand out contrasting and complimenting the bricks. The common plan arrangement comprises of 6x9 meters bays divides in their 9 m depth into 3:6 respectively. The aim is to maximise the use of off-the-shelf materials and the ease of transportation.

Externally, stones, leftovers or damaged bricks act as the main physical wayfinding elements, working in tandem with the vegetation, (heaviness of stones and planting as anchorage with minimal to no negative environmental impacts)

### //First plane (Space Dimension)

The first plane is composed of reinforced raft foundations to sustain the weak clay soils of the site. These are then complimented with brick columns with reinforced concrete infills forming the basis of the load-bearing components on the ground floor. This plane is synonymous with ground, anchorage and projection. When this plane occasionally meets with the fourth plane, it acquires the additional dimension of time (Figure 8.1).

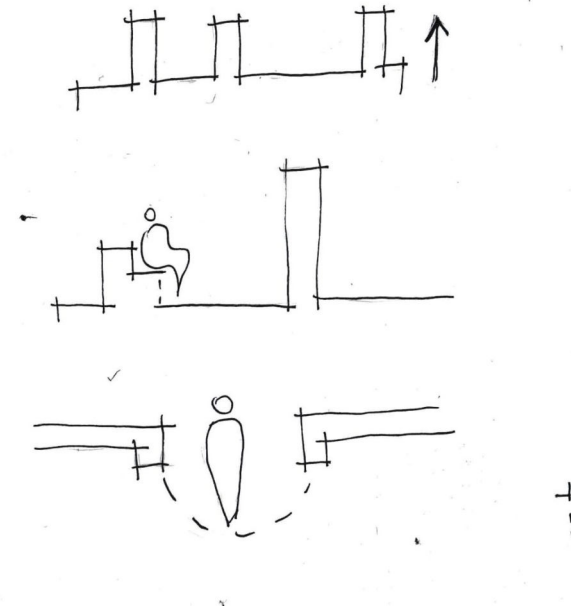


Figure 8.1: First plane (Author 2021)



### //Second Plane (Space Dimension)

The second plane consists of the brick infill (insulated cavity walls) of the buildings, traditional and thermally efficient. Similar to the first plane, this plane interacts with the fourth plane and acquires the time dimension. However, in this case, the relationship is much more dynamic and interactive for the users as it is an easier plane to modify and best implement their identities (Figure 8.2).

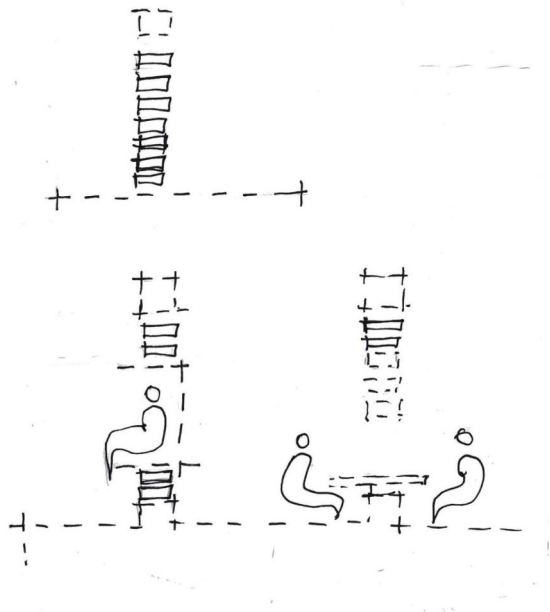


Figure 8.2: Second plane (Author 2021)



### //Third Plane (Space and Environment Dimensions)

The third plane encompasses the roofs, varying from mono-pitched, double-pitched and extensive green roofs. Their relationship lies with natural processes: light, ventilation, water management including storm-water attenuation and water harvesting. When this plane interacts with any other planes, it adds or enhances the space and environment dimension in the relationships (Figure 8.3).

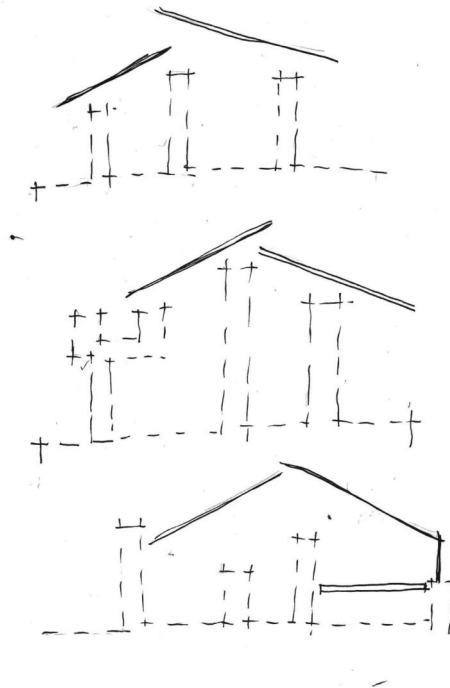


Figure 8.3: Third plane (Author 2021)



### //Fourth Plane (Human and Environment Dimensions)

This plane is meant to contrast and compliment the other planes and is characterised as a dynamic infill. This merging of planes best exemplify the twin-phenomena: opposite yet shaping the same part of the whole: the wall, the ground or the roof. By encompassing the in-between's notions of environment dimension and especially the human dimension, the fourth plane adds vitality and colour to the other planes' dimensions. This fourth plane is the most versatile as it is made from crafted materials (glass bottles, timber and plastic bags) and vegetation. Their detailing remains fairly simple for ease of construction, use and interchangeability. However, it is in their assembly and pairing where one can perceive the identity of thresholds and microsites. The elements forming the fourth plane serve as displays, afterimages or traces of actors' skills or occupation. Although this plane is not loadbearing, it contributes to the sustainable aspect and legibility of the precinct through its overall socio-cultural and economic contribution as well as its involvement in environmental mitigation: solar shading, air quality and light transmittance. The "dispositifs" for this include light wells, light shelves, louvres, screens, planters and vents most of which double up as other useful components (Figure 8.4).

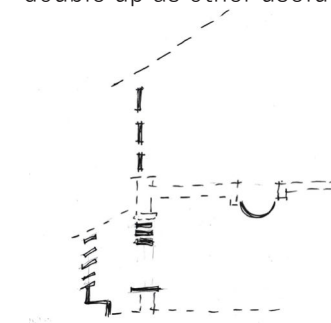
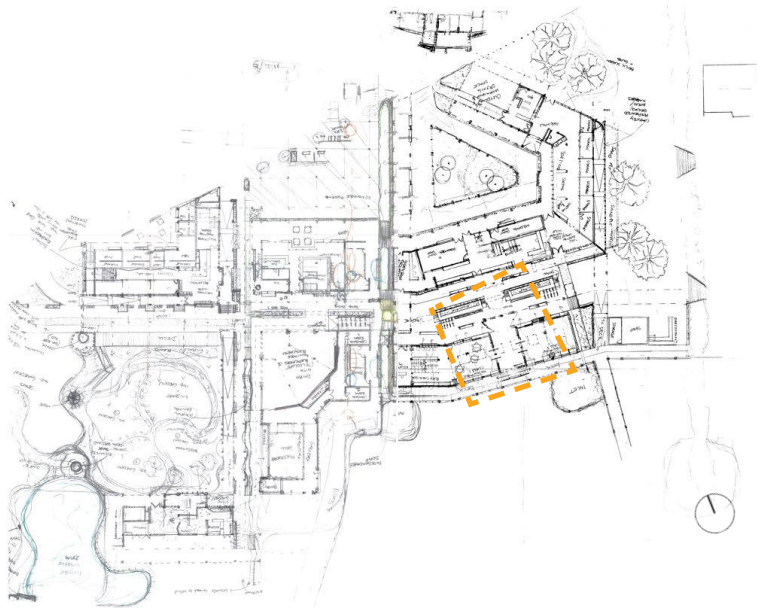


Figure 8.4: Forth plane (Author 2021)





Model section zone

Figure 8.5: Sketch plan Ground Floor at 1:200 (Author 2021)

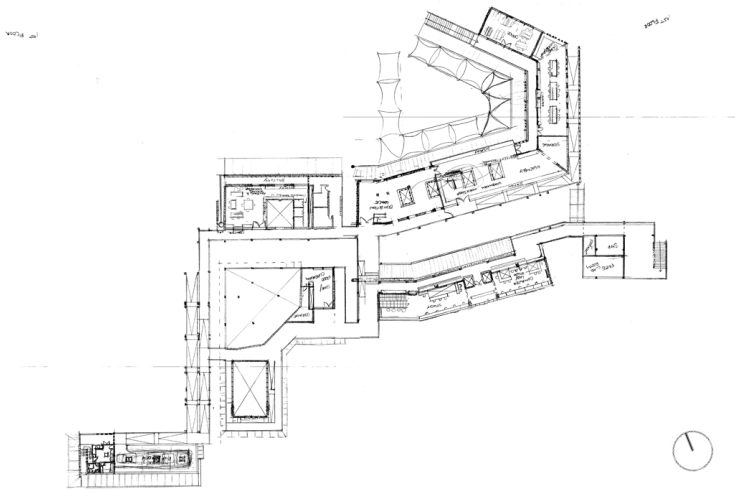


Figure 8.6: Sketch plan First Floor at 1:200 (Author 2021)

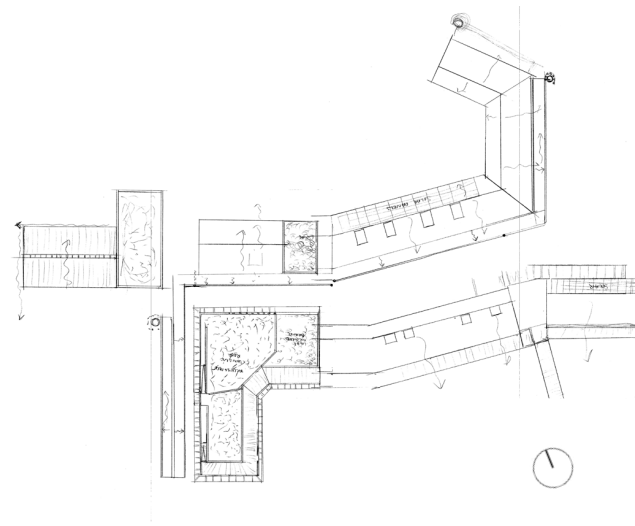


Figure 8.7: Sketch plan Roof level at 1:200 (Author 2021)

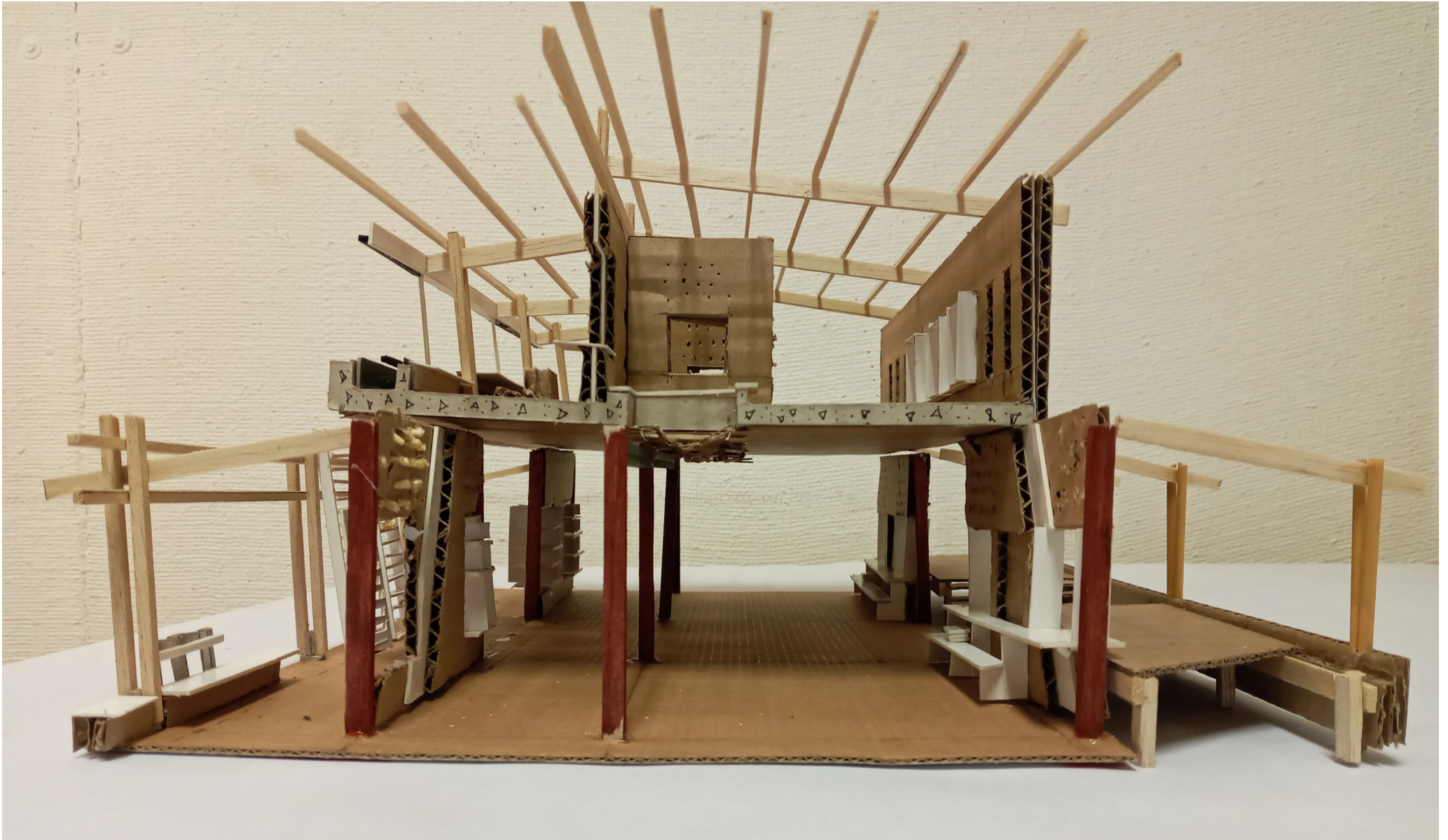


Figure 8.8: 1:50 section model through afterschool centre (Author 2021).  
Brick columns, timber, glass bricks

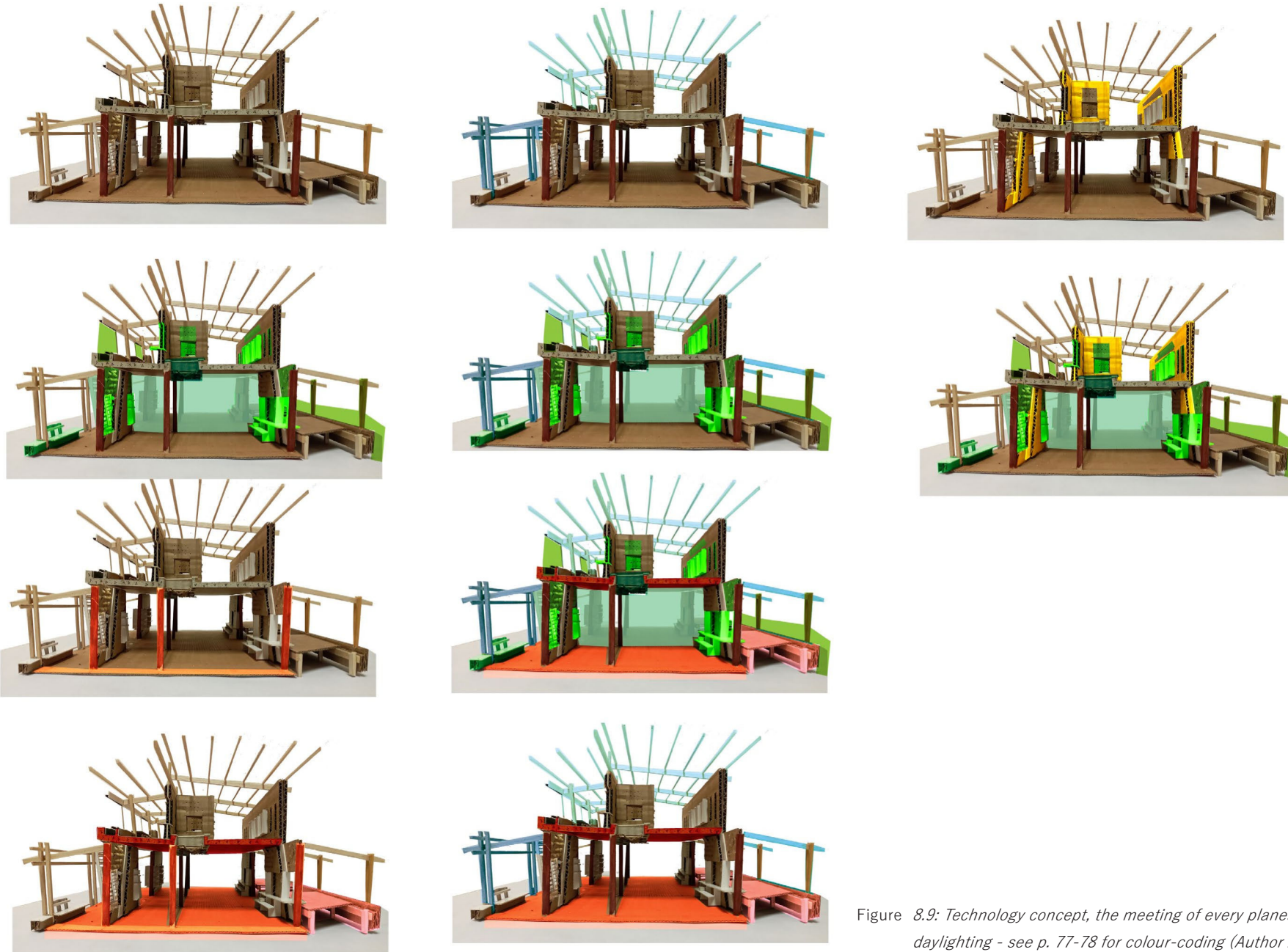


Figure 8.9: Technology concept, the meeting of every planes, ventilation and daylighting - see p. 77-78 for colour-coding (Author 2021)

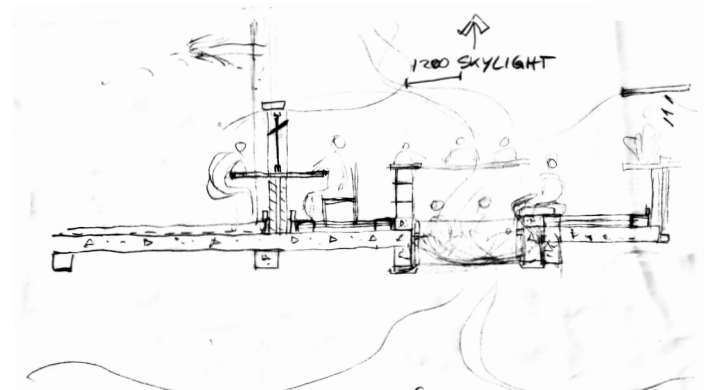
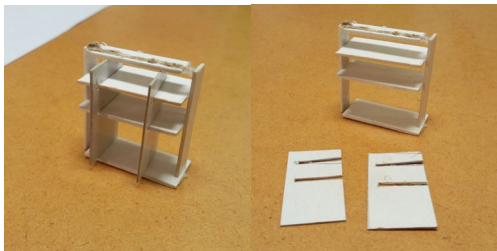
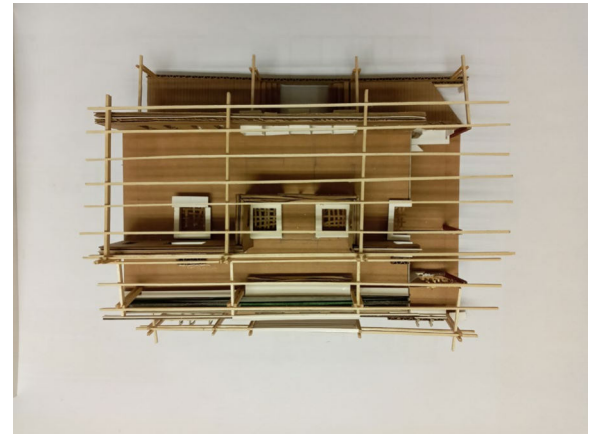
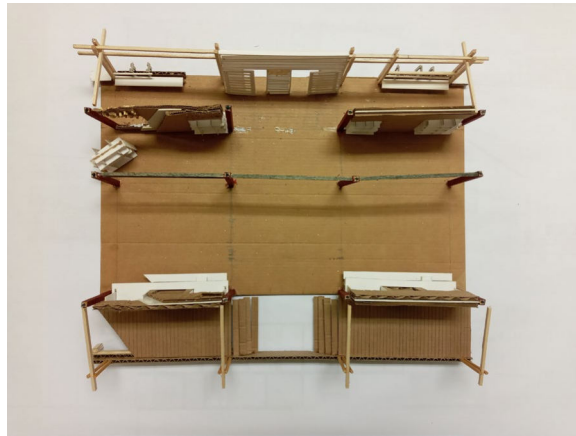
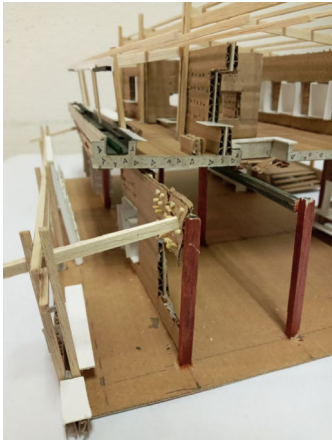


Figure 8.10: Collage exploring the parts of the model: detached façade, outdoor rooms, shelf-windows, light-wells, bottle in walls, hammocks, boardwalks as architecture(Author 2021)

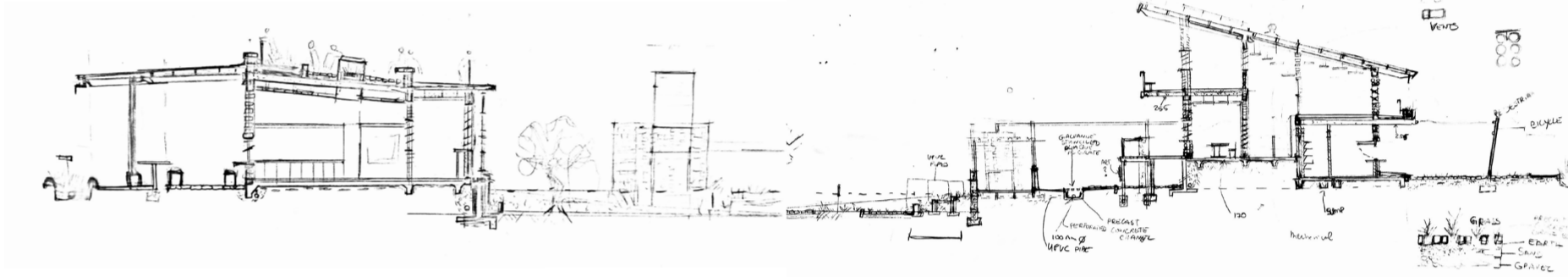


Figure 8.11: 1:100 Sketch section through admin block, garden and seed bank (Author 2021)

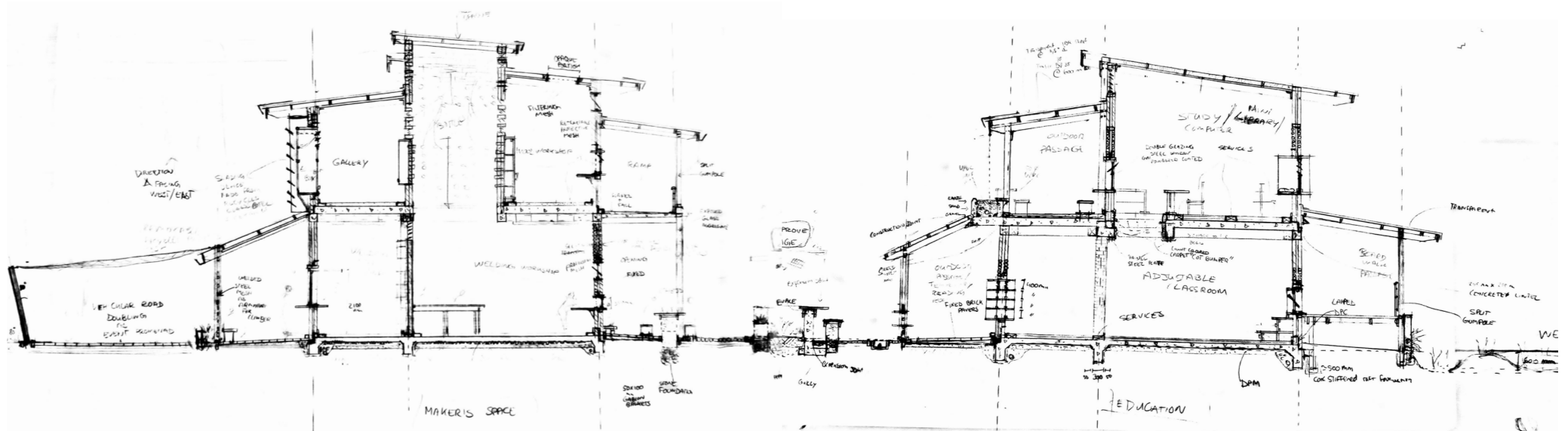


Figure 8.12: 1:50 sketch section through Maker's space and afterschool centre (Author 2021)

## 8.2 FULL ENVIRONMENTAL STRATEGY

The environmental objective of the precinct is to set a precedent for the integration of a balanced ecological and rehabilitation scheme into a recreational space. Once again, the twin-phenomena and the in-between theories are applied by constantly considering the environmental potential or role of the architecture's parts.

The primary strategy consists of the management of the site itself and its resources such as existing constructions, soil and vegetation by making use of best practice strategies (see previous sections). It is firstly about acknowledging the responsibilities that any intervention has towards its site, by either preserving or bettering the existing ecosystem; turning injured site into a healthier one (Calkins 2012). Additionally, attention should be placed on the positive and negative impacts that the development could have beyond the site's boundaries (Calkins 2012).

The secondary strategy is concerned with passive design; in particular daylighting, ventilation and thermal comfort provided by the built form allowing for reduced energy consumption (Figures 8.8-8.12). These are primarily explored for the maker's space, the consultation pavilion and the educational pavilion. Daylighting scenarios are tested for the maker's space keeping up with the lighting demands for such spaces (Figure 8.13) (Muller 2013: 372-377). Acoustics and air quality will not be addressed in this paper, nonetheless, it is understood that a good envelope and ventilation design will consequently play a role towards their application (Brophy 2011). In continua-

tion with the conceptual approach of twin-phenomena and sustainable practice, lighting and passive ventilation are considered in conjunction to one another shaping openings and wells (figure 8.18). Because each building differs, the technological approach was adjusted accordingly while keeping passive design principles.

Finally, the third environmental contribution is the water management incorporating several systems and services which will be detailed in the next section.

### TESTING DAYLIGHTING IN THE MAKER'S SPACE

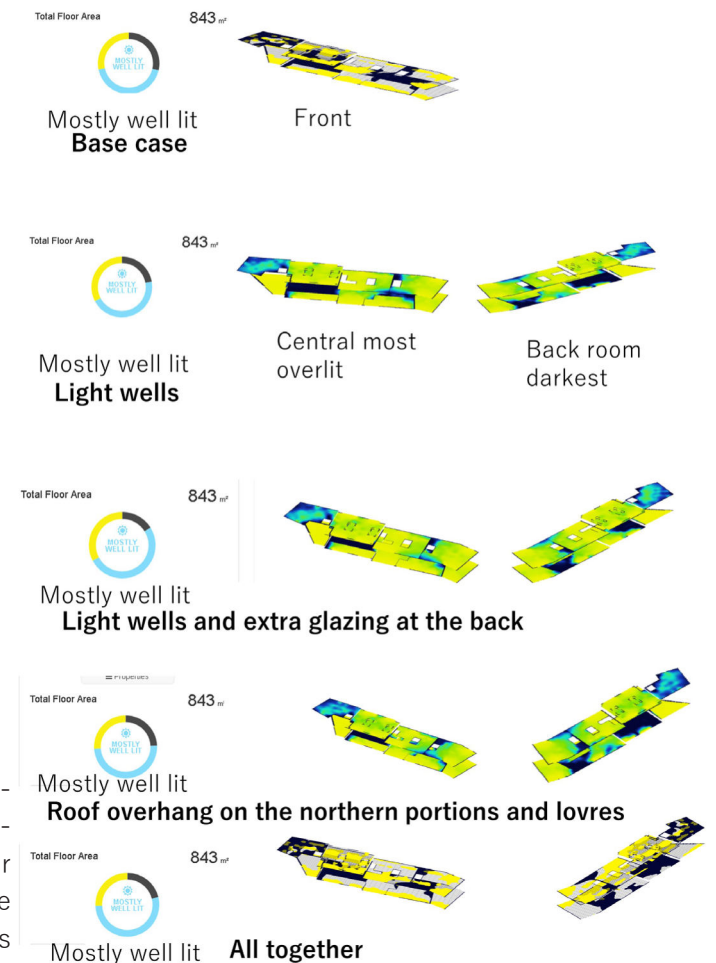


Figure 8.13: Sefaira daylight speculations (Author 2021)

### 8.3 SERVICES (THIRD ENVIRONMENTAL STRATEGY)

The main objective for the precinct's services is to present a way for these to also shape the space, raise awareness amongst the users and to be able to perform in a manner that caters for the future city while adding value to the open public space (figure 8.19). Figure 8.20 is a reminder to the hydrology of the site along with its climatic data. As the intervention sits in a former floodplain, the scheme proposes a change to the concrete channelled tributary in the park as the first step to achieve the rehabilitation of the natural hydrology and vegetation systems of the sites. Secondly, the scheme aims to explore opportunities for water harvesting and onsite treatment stormwater and greywater. Figure 8. presents the full water strategy for the precinct while figures 8.22 to 8.23 diagram their spatial implications.

#### //SuDs and wetland ecology (figures 8.23- 8.25)

The objective of the series of systems is to alleviate the load on the municipal sewerage system, stormwater channels and prevent the penetration of unhealthy stormwater into the Pienaar's River downhill. SuDs systems (bioswales and raingardens) and the constructed wetland designed on the southern area of the precinct are primary actors in the water management strategy. It was found that the area has the right soil condition and slope to establish such a system, thus artificially restoring the ecology between the stream and flood plain.

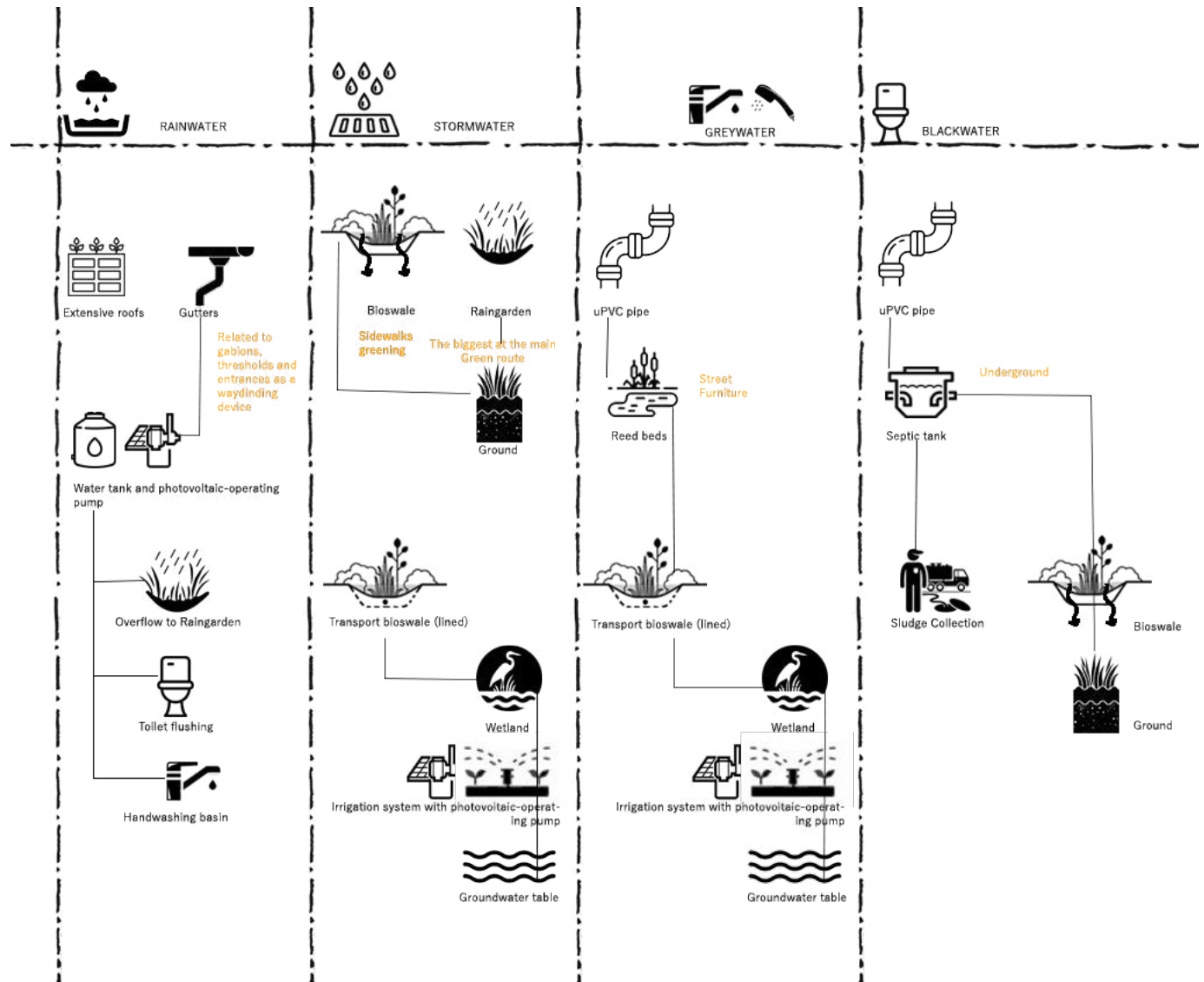


Figure 8.14: Water strategy diagram (Author 2021)



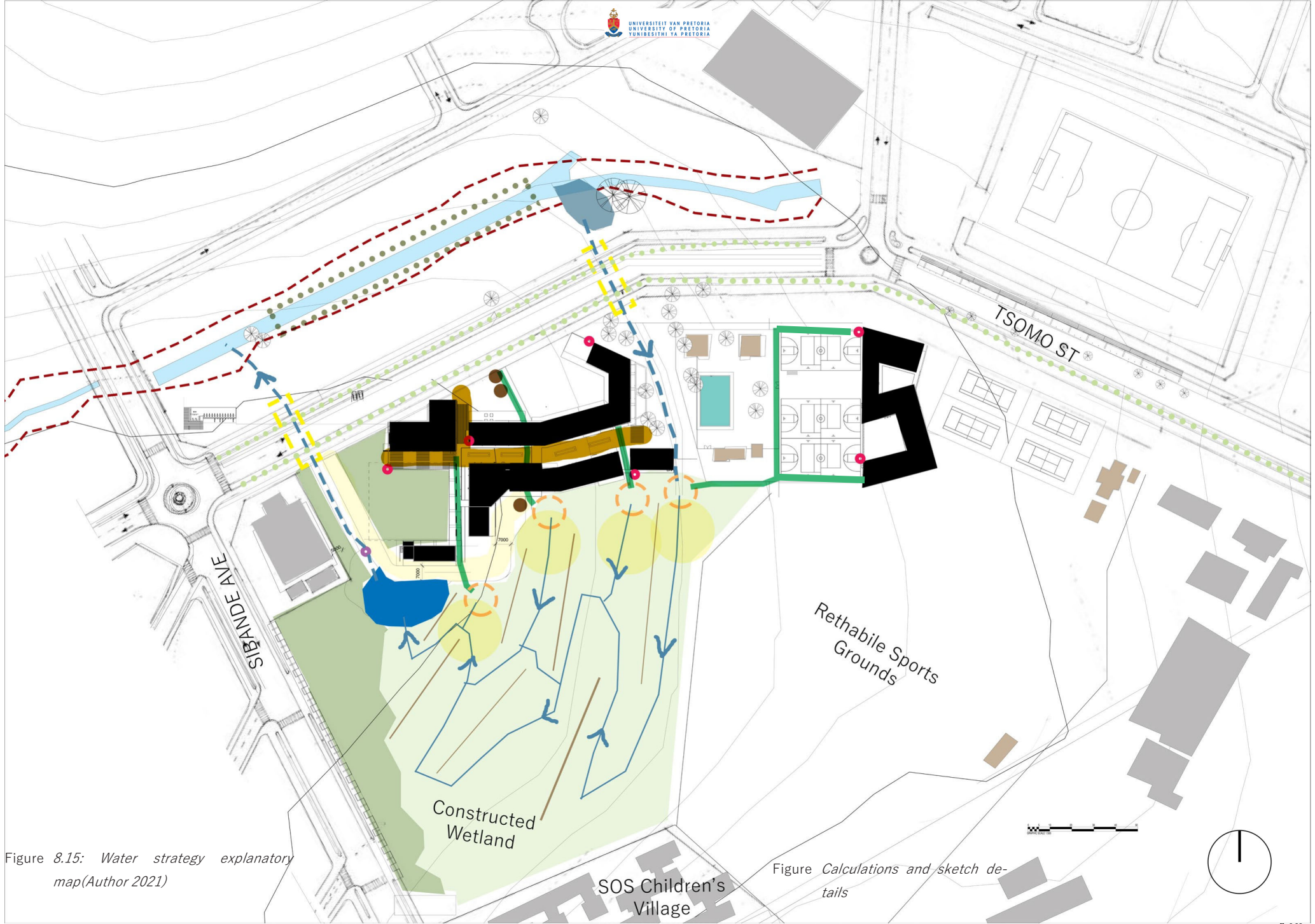






















Figure 8.15: Water strategy explanatory map(Author 2021)

Figure Calculations and sketch details

LEGEND

|  |   |   |   |   |
|--|---|---|---|---|
| <br>Existing buildings  | <br>Pool   | <br>Reused existing buildings for intervention   | <br>1:50 years Flood line  | <br>Box culverts zone under street |
| <br>Diversion dam constructed with gabions and weirs (designed for a 2/3 stream flow towards transport bioswale ) | <br>1/3 stream flow, vegetated zone. Naturalised riparian stream with flood control (gabions and vegetation) | <br>Stream transport bioswale                    | <br>Meandering berns   |   |
| <br>Wetland Inlet zones   | <br>Septic tanks zones for blackwater and washing machines   | <br>Macrophyte zones                             | <br>Storage dam tank for irrigation with overflow to stream transport bioswale Includes man hole with ball valve and Pump towards tank |   |
| <br>Rainwater harvesting tank with outflow to bioswales/ gravel trenches  | <br>Lined bioswales  | <br>Indigenous garden                            |   |   |
| <br>Gravel trenches and Event bioswales   | <br>Street raingardens   | <br>Service access road, permeable stone paver |   |   |
| <br>Storage dam   |   |   |   |   |

LAWS & REGULATIONS

EIA  
WULA water use license  
National Water Act under section 21 (c) and 21 (i)  
Feasibility of the stream modification

Stream deviation ratio  
2/3 towards wetland  
(Personal communication 2021)

WATER DEMANDS AND STORAGE SUMMARY  
(see appendix J)



## Green Star SA - Public & Education Building v1 Graphical Summary

Summary for:

**Official GBCSA certification NOT permitted. The Project must achieve a minimum final point score of 45 weighted points for certification**

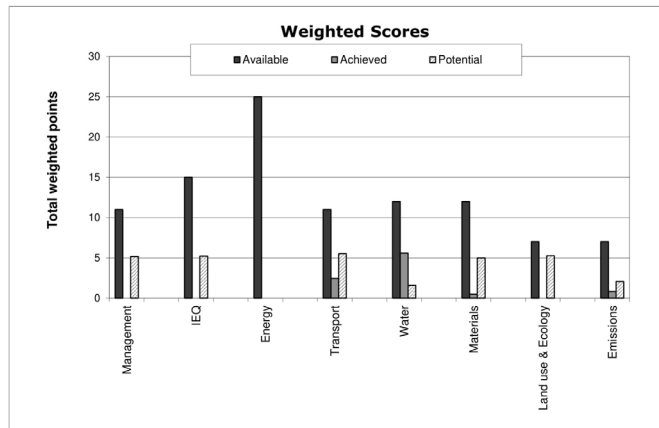
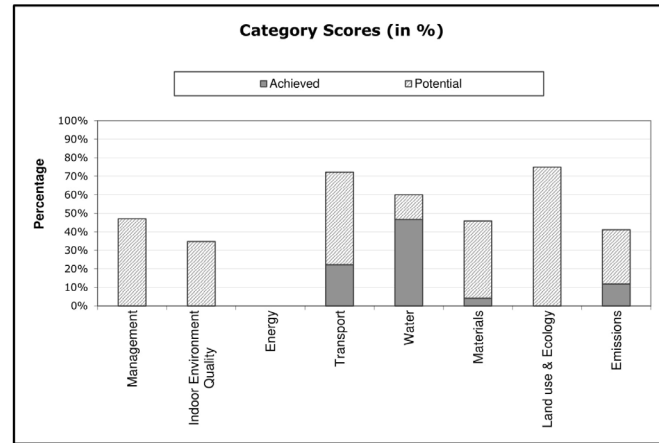
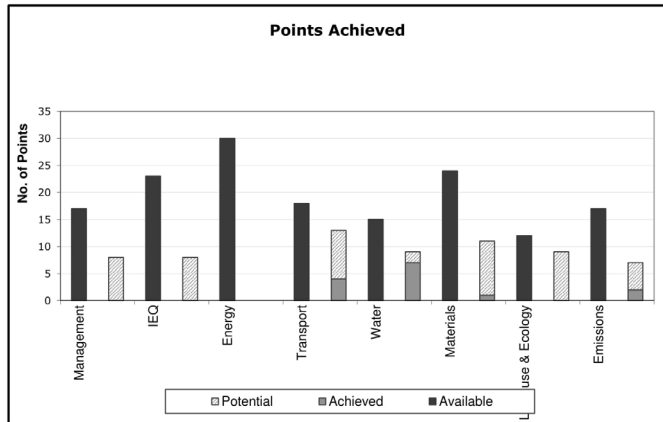
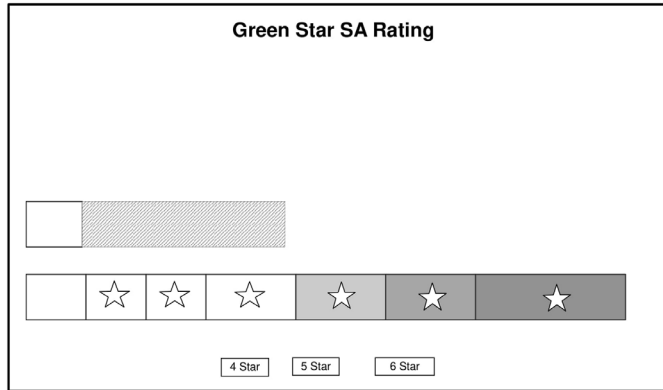


Figure 8.17: Green Star summary report (Author 2021)

# 9- DESIGN RESOLVE

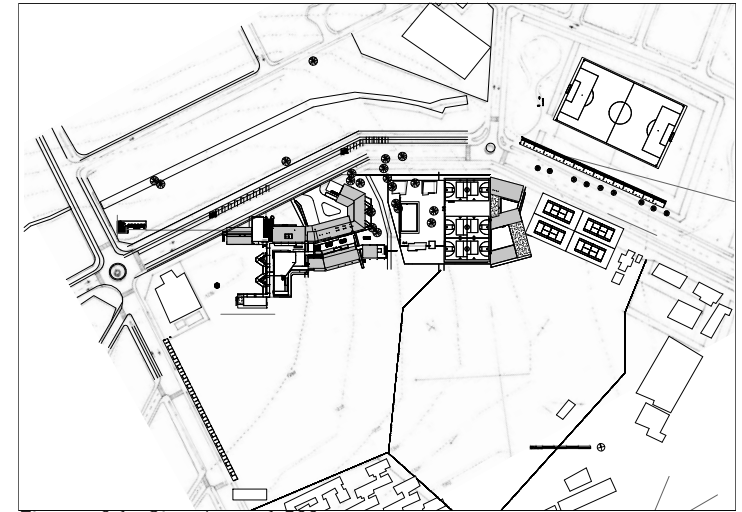


Figure 9.1: Site plan at 1:500

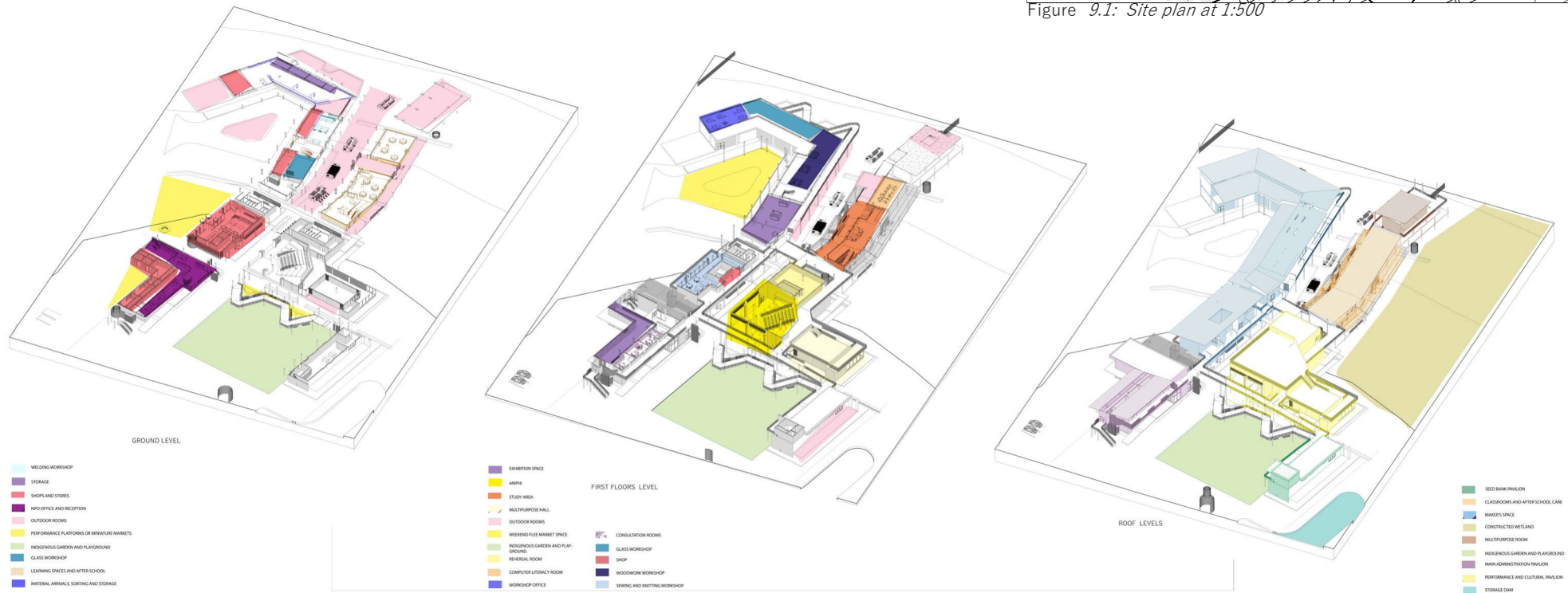


Figure 9.2: Programme layout 3D (Author 2021)

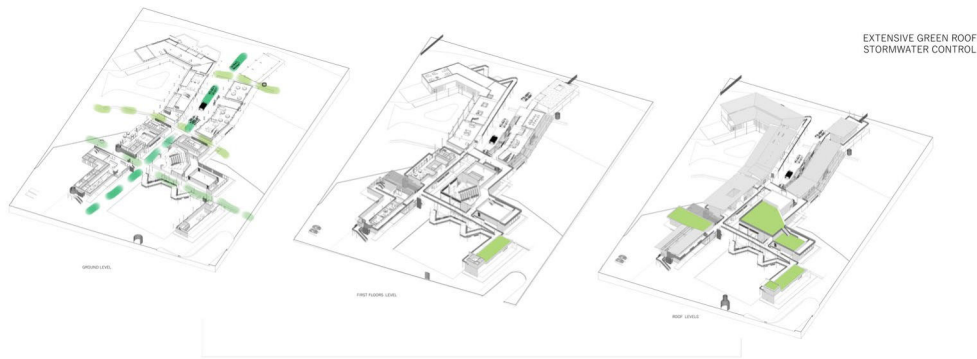


Figure 9.3: Greenscaping (Author 2021)

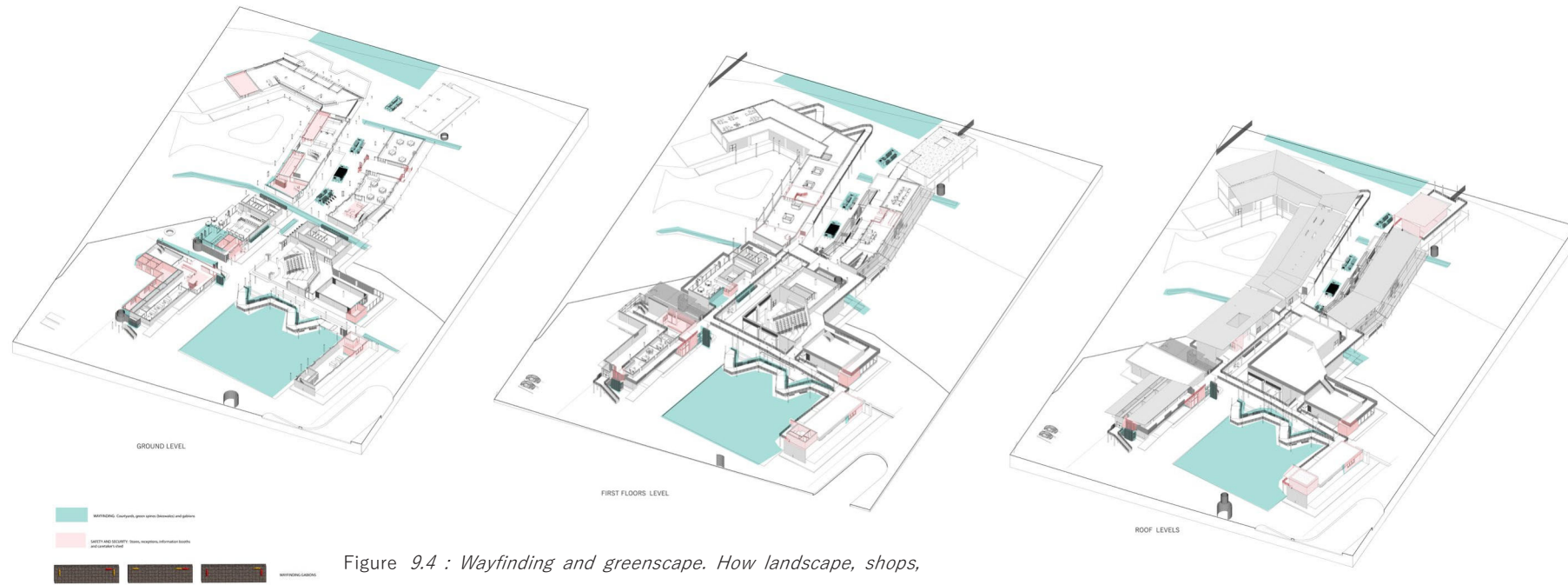


Figure 9.4 : Wayfinding and greenscape. How landscape, shops, outdoor rooms and receptions orientate users (Author 2021)

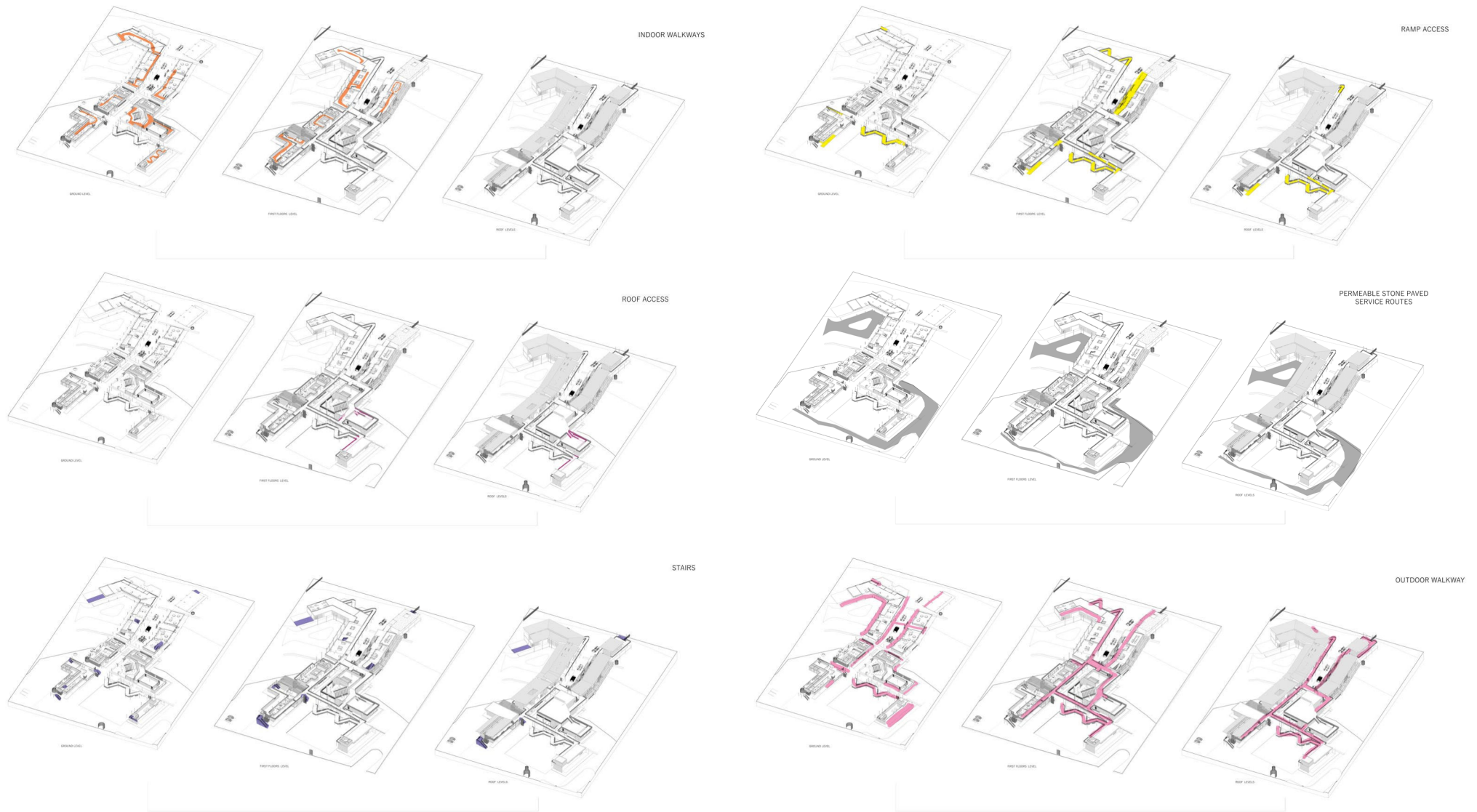


Figure 9.5: Parts of the precinct (Author 2021)

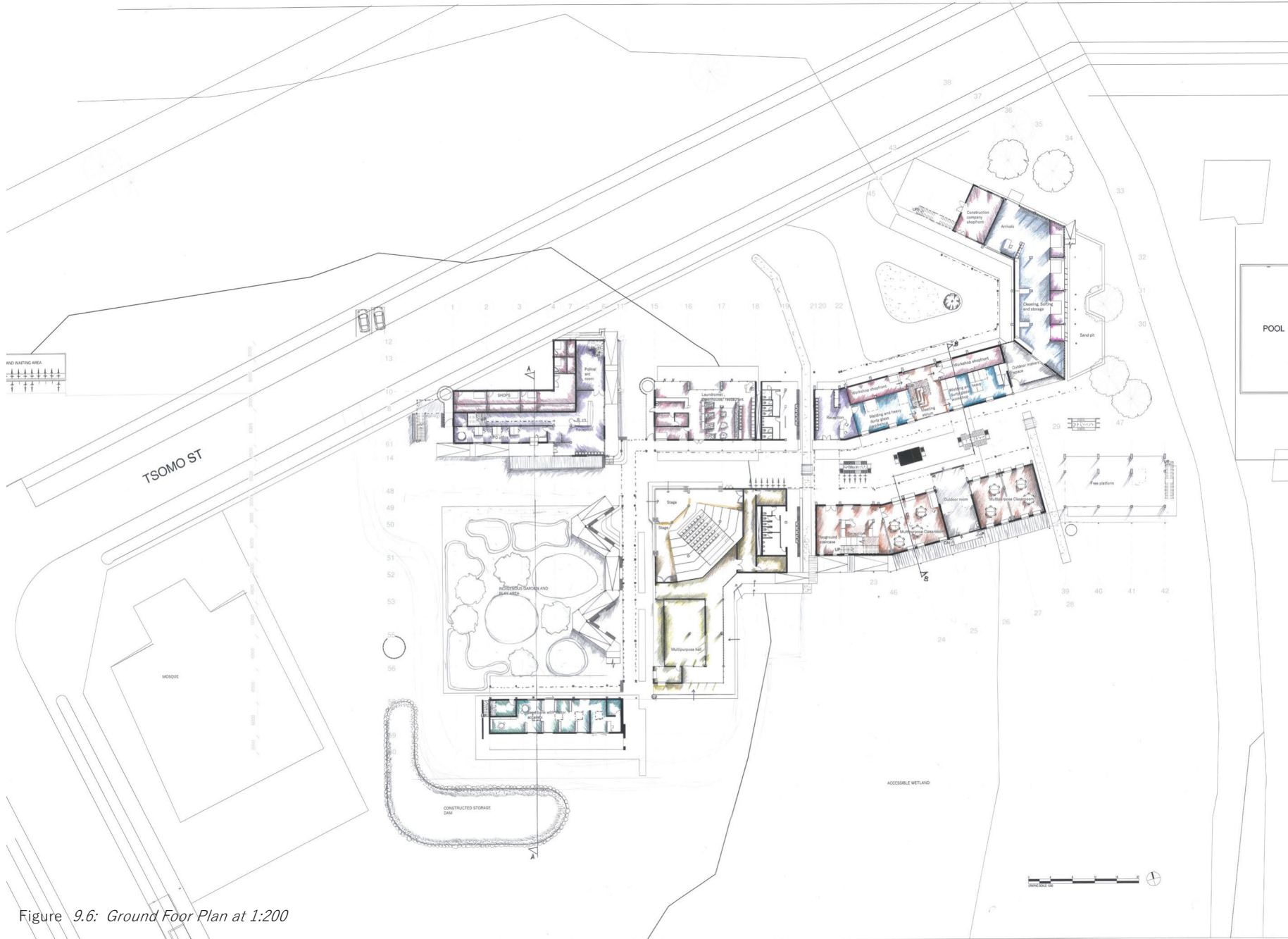


Figure 9.6: Ground Floor Plan at 1:200



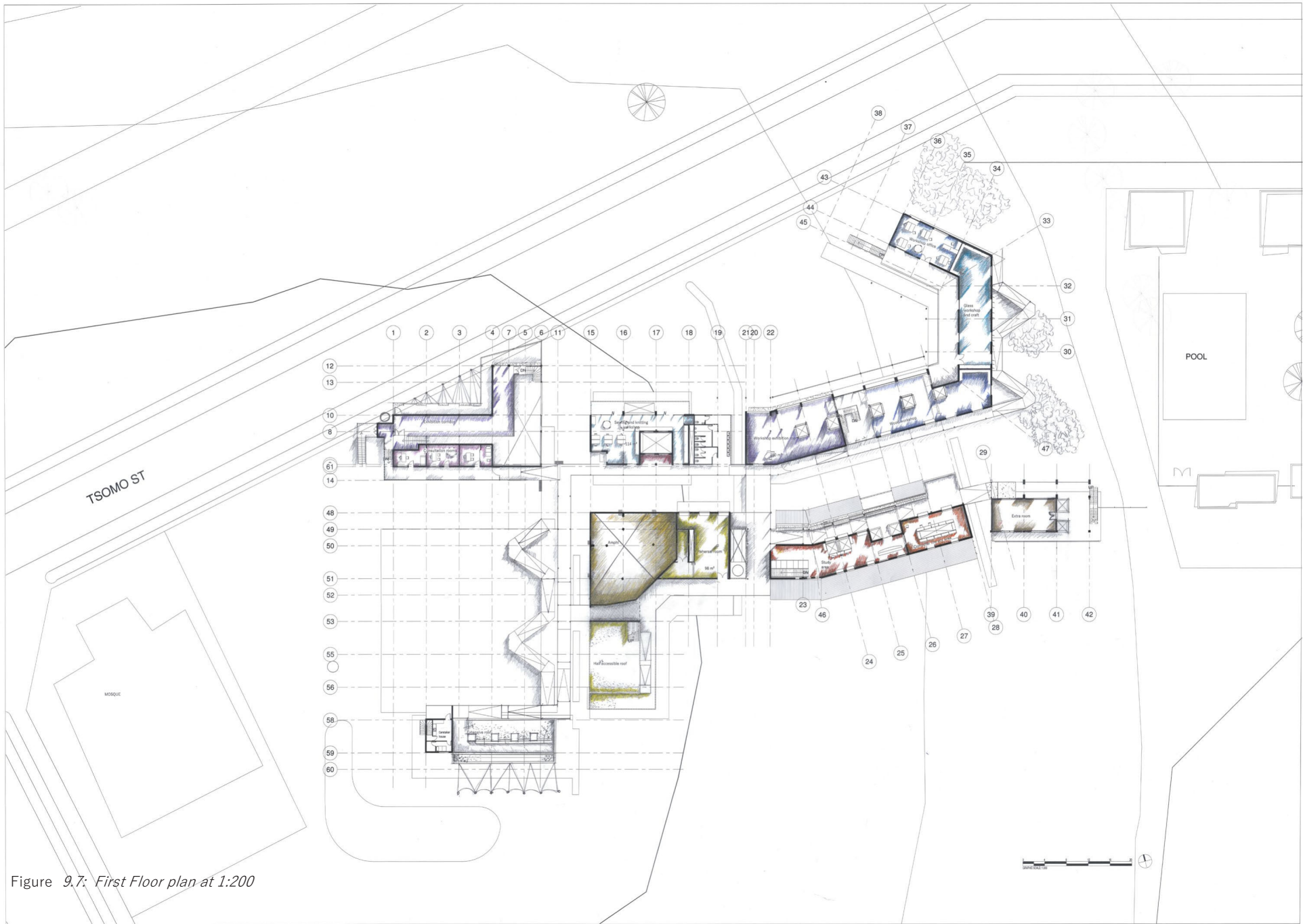
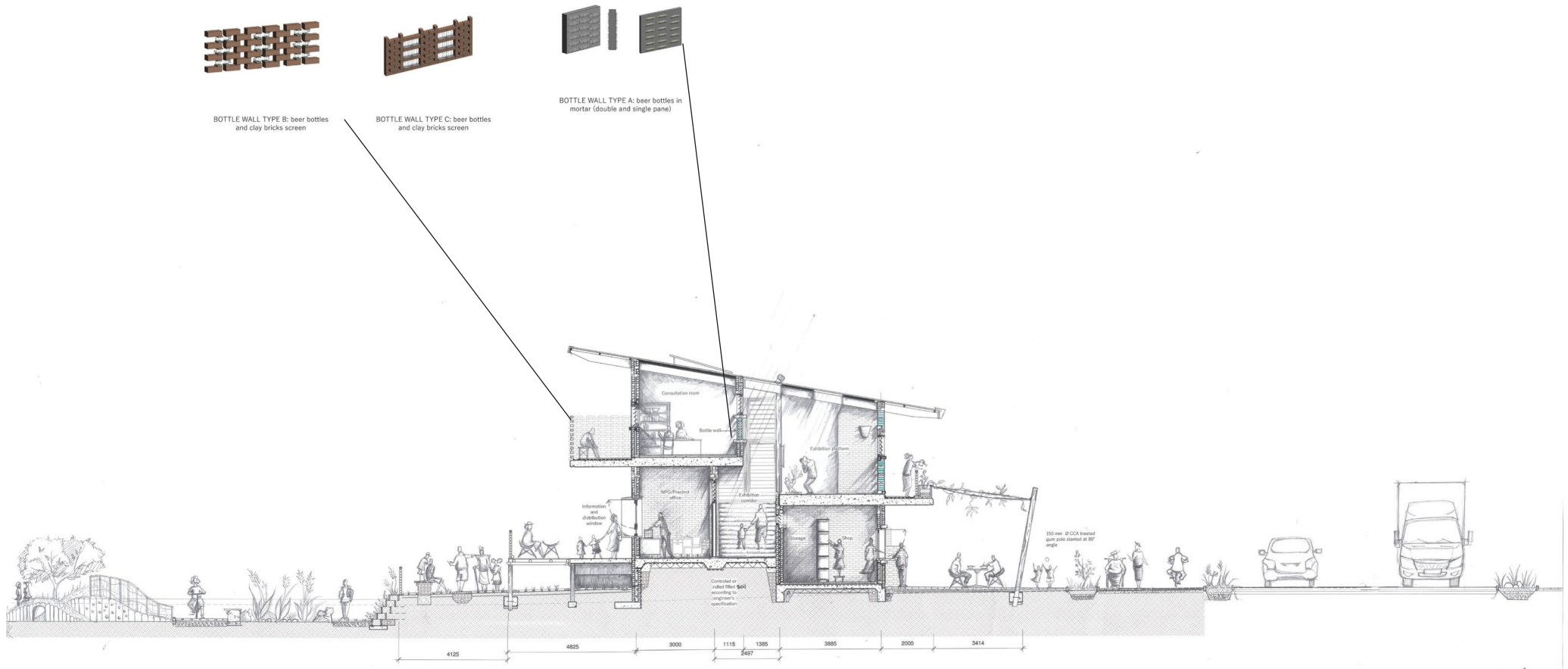


Figure 9.7: First Floor plan at 1:200





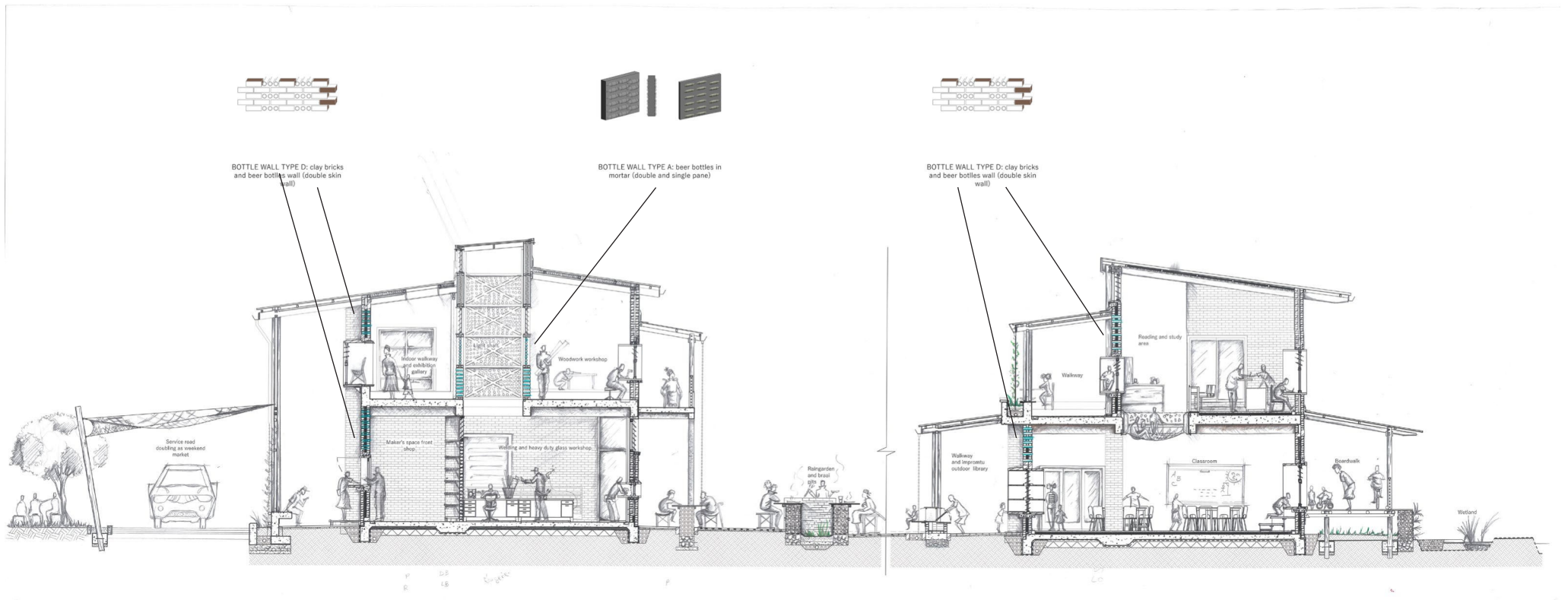


Figure 9.9: Section BB at 1:50

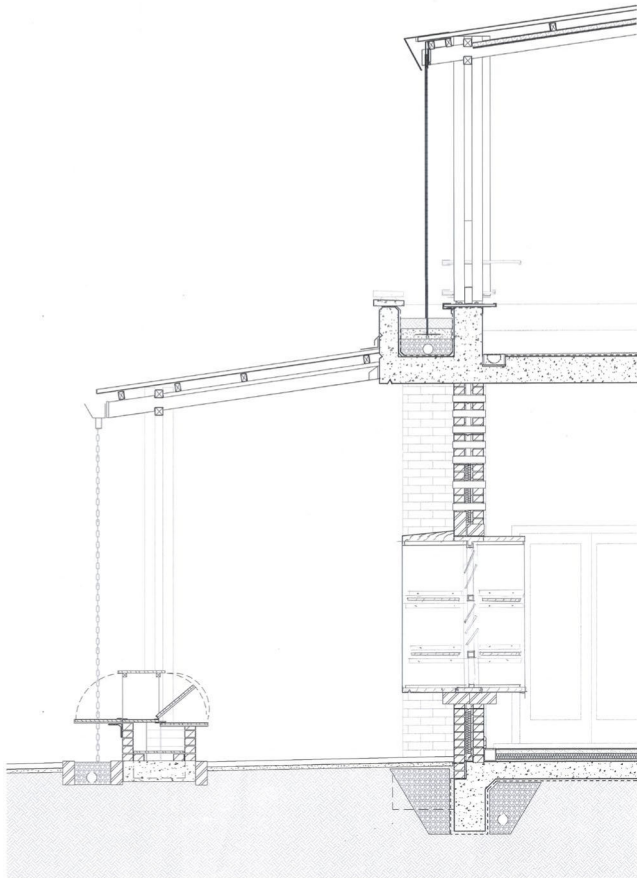


Figure 9.10: Section 1: 20 of afterschool centre

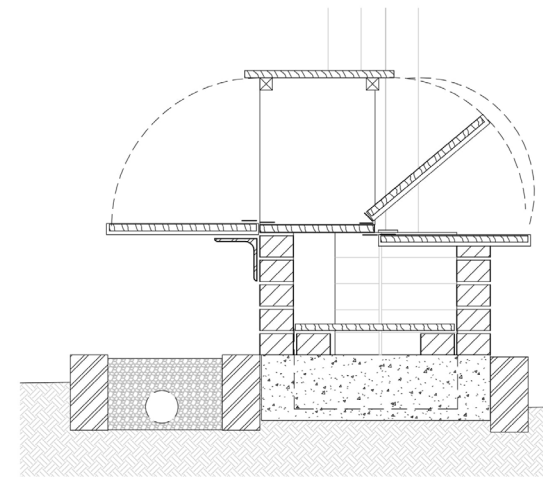


Figure 9.11: Detail library seat at 1: 10

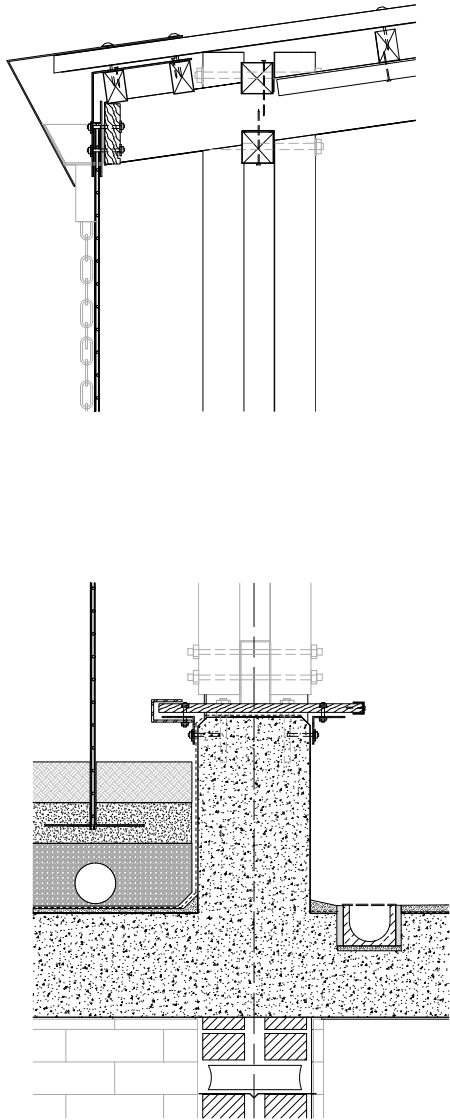


Figure 9.13: Detail eave and planter seat at 1:5

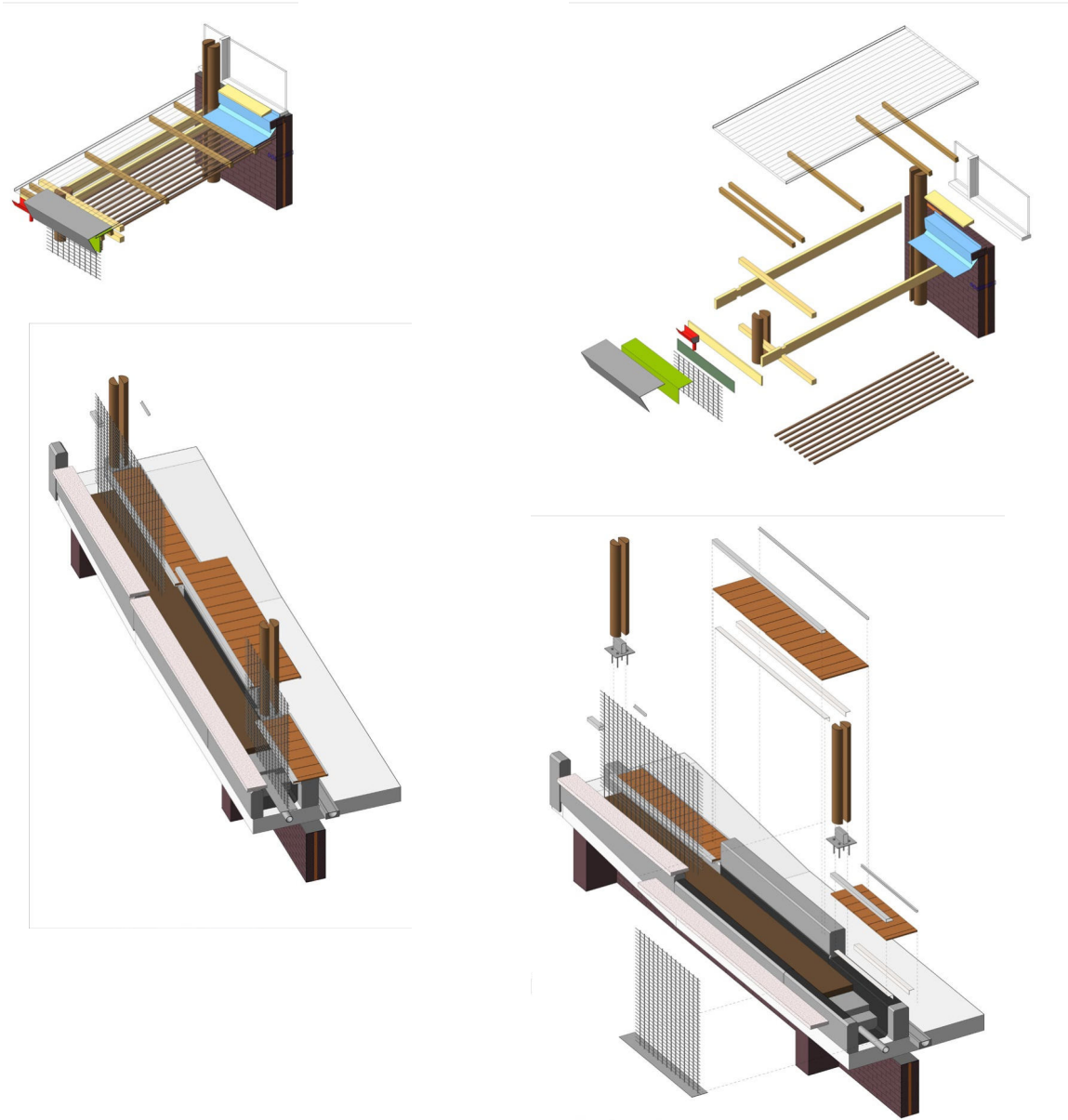


Figure 9.14: 3D details of afterschool walkway elements



Figure 9.15: Section model 1:20, the urban room



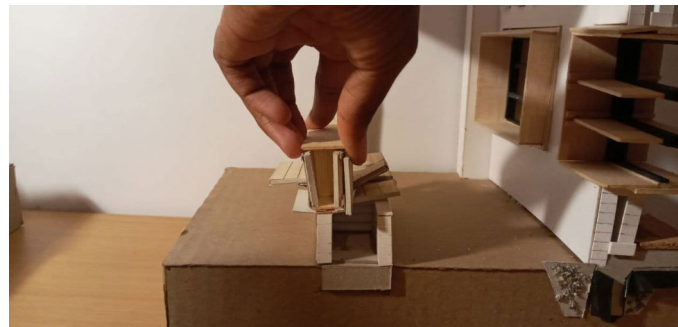


Figure 9.16: Section model 1:20, the outdoor library

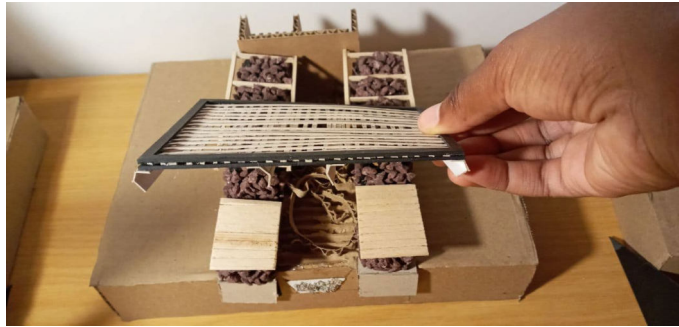
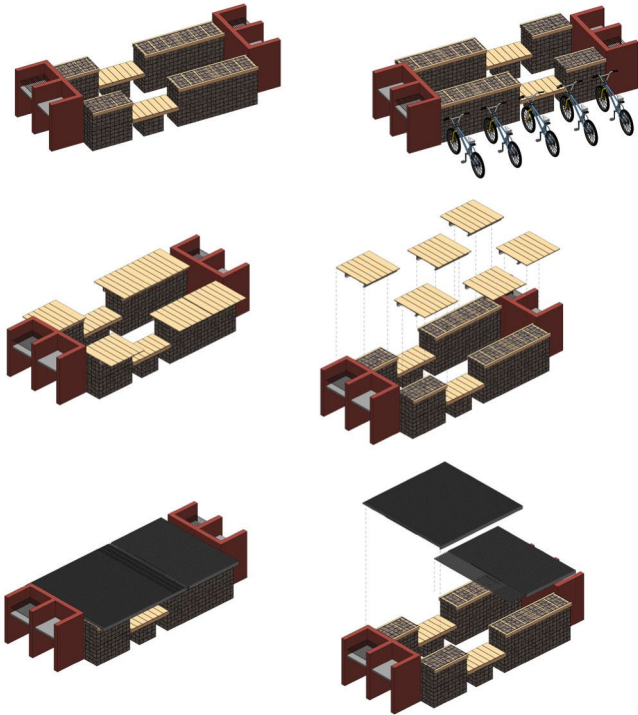


Figure 9.17: Section model 1:20, the raingarden/braai

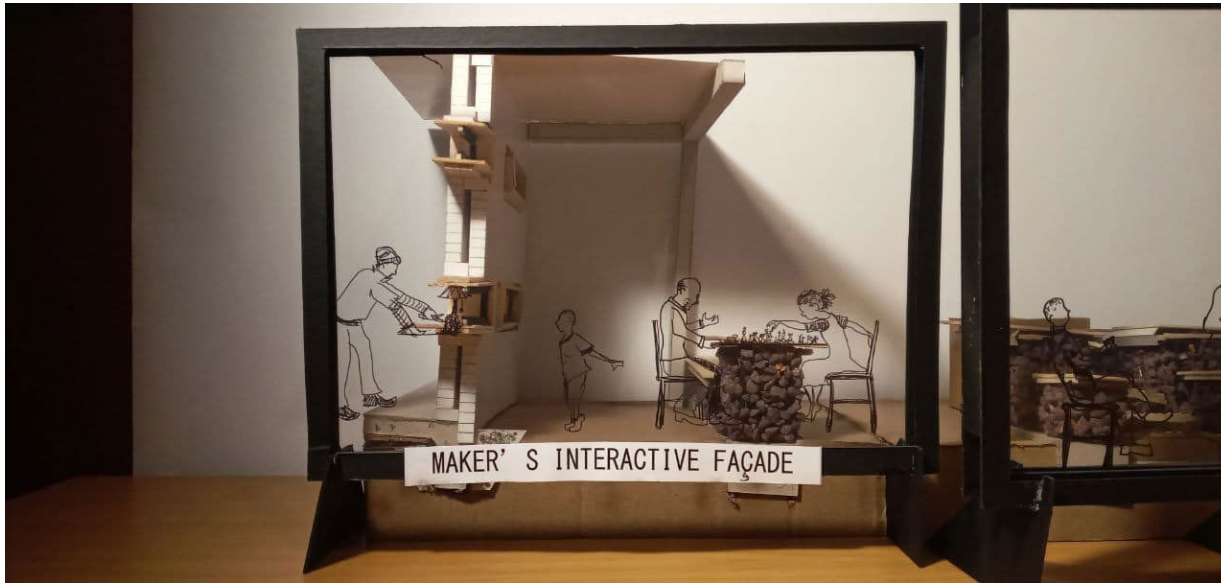


Figure 9.18: Section model 1:20, Maker's space stoep

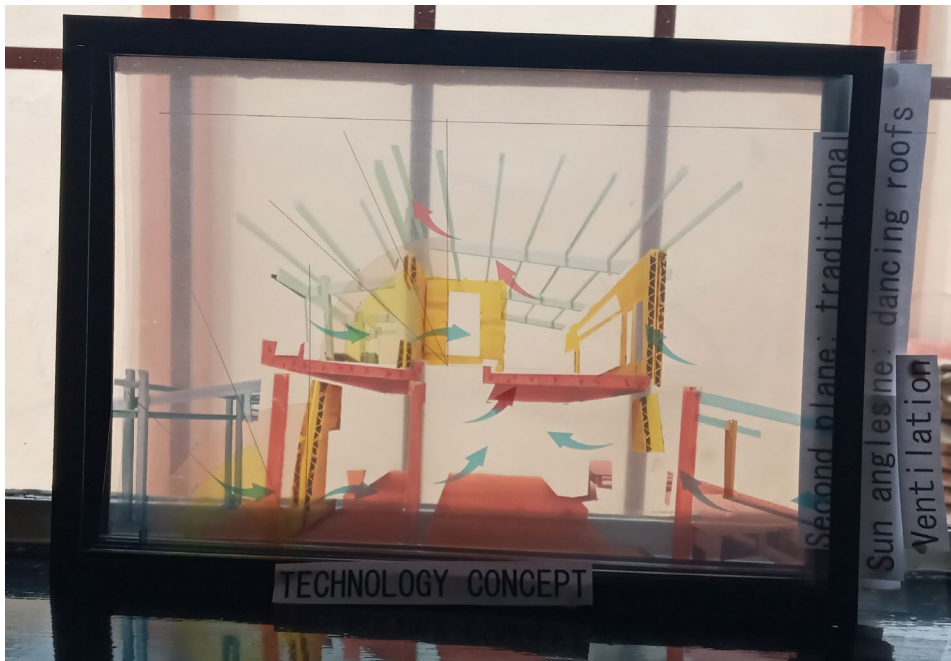


Figure 9.19: Diaporama concept, technology planes, ventilation and day-lighting



Figure 9.20: Inside the Afterschool centre (Author 2021)



Figure 9.21: Afterschool centre outdoor room (Author 2021)



Figure 9.22: *Maker's space's east façade - ramp and sandpit playground with view into storage (Author 2021)*



Figure 9.23: *Afterschool centre first floor passage*



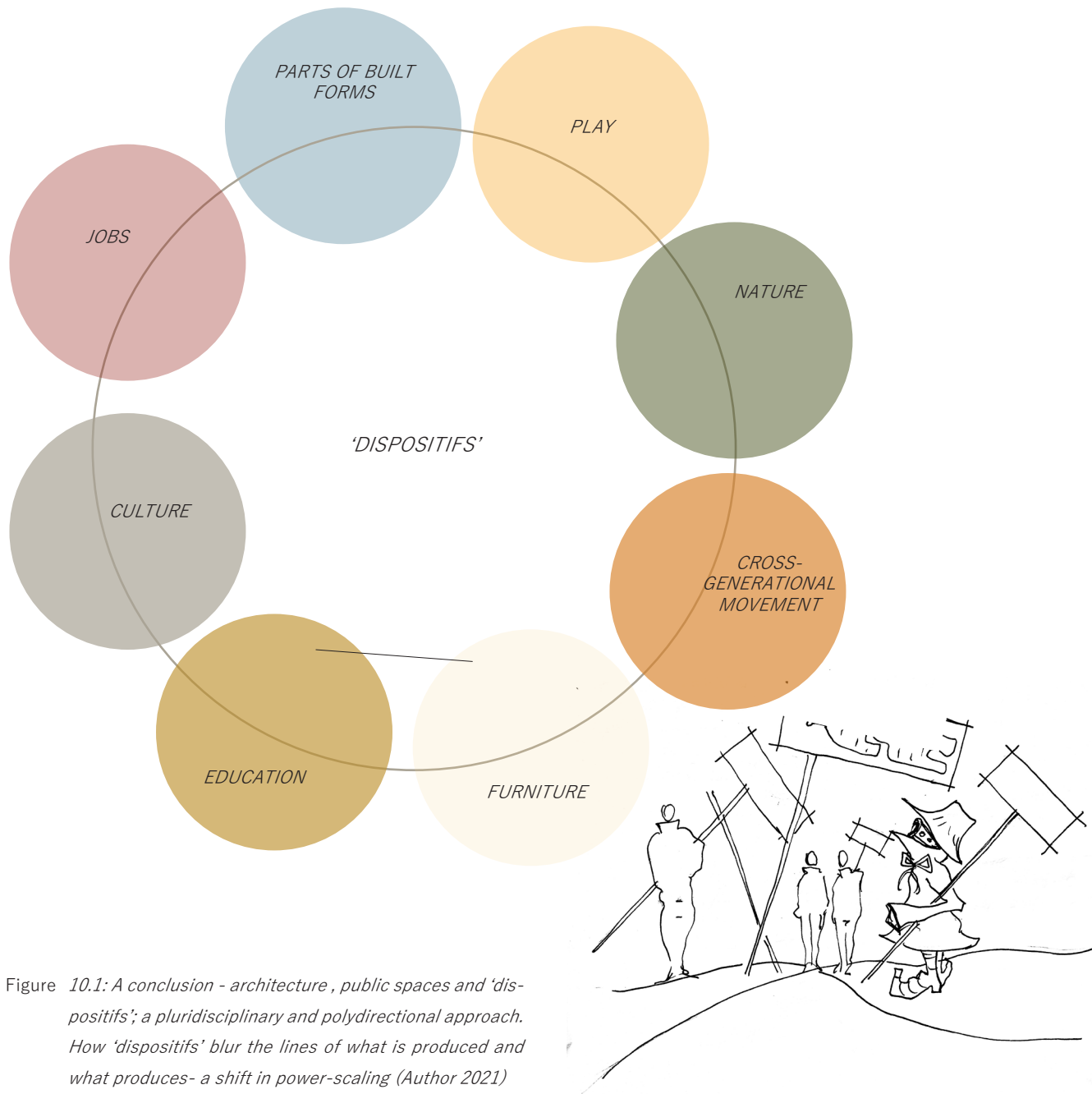


Figure 10.1: A conclusion - architecture , public spaces and 'dispositifs'; a pluridisciplinary and polydirectional approach. How 'dispositifs' blur the lines of what is produced and what produces- a shift in power-scaling (Author 2021)

## CONCLUDING THE JOURNEY

Formulating a technology language for the intervention served as an extension and physical embodiment for the narrative of recreation. The technology attempted to reflect the notions of the twin-phenomena and the in-between by using the four dimensions (i.e., space, environment, time and human) into the structure and the environmental systems by contrasting, continuing and meshing components. Each of the latter often facilitates more than two purposes - whether it be wayfinding, skill displays, activities, services or environmental processes.

As an 'outreach precinct' founded on various gleaned networks, technology and services serve their pragmatic functions while simultaneously -through the relations established with other systems and elements- create places for people to occupy, interpret and explore, thus, also acknowledging their contribution to the precinct and beyond.

Ultimately none of the technology used is completely novel and is mostly incorporated in best practice principles. Nonetheless, the merit is found in the translation and configuration of these techniques in a manner that is subservient to the showcasing of the community's current and future endeavours and the contextual response to open public spaces in townships.

As a concluding step to this research paper, the initial design question has to be answered:

"How can recreational spaces in the township of Mamelodi East be designed as devices to contribute towards a socio-culturally sustainable and cohesive urban environment?"

# 10- RECREATION AND THE ARCHITECTURAL DISCOURSE

Indeed, the issues at hand in the township were the following: 1) a lack of balance between economic; 2) cultural and environmental livelihood; 3) an issue of recreational spaces' provision and maintenance and finally 4) the sheer number of interpretation and values attached to typologies; the latter often secluded.

Therefore, to be able to present reach an answer one should foremost reflect upon the design journey which began with **THE PROCESS OF DISCOVERING THE QUOTIDIAN.**

The design enquiry began with a pragmatic world view, based on the understanding that the topic of recreational spaces, due to their very nature, would benefit from this approach. The researcher's intent was to pursue the research as a 'detective'. The research demarche meant trusting a process to look for answers by searching attentively and observing the context to identify the socio-cultural sphere of Ma-

melodi East and decide upon a sustainable strategy and a way forward to achieve cohesion.

In the field of architecture and throughout the years, one can observe many returns to the everyday as a source. This common place is revisited as a rhetorical contrast to high-tech endeavours, for contextual integrity, economic reasons or practical responses as well as gestures to reconnect cities with people (Haddad & Rifkind 2016: 190-205).

In the case of this dissertation, the search into the quotidian was undertaken to capture 'flow'; the various linked interactions or activities that may be conspicuous or not. Unearthing 'flow' portrays another outlook for architecture's character and opportunities. In the latent South African segregated setting, this was captured where people made use of the spatial agency principle of "initiating" (Awan *et al.*: 72). Although initially not purposefully intended as architectural gestures, the hospitality and the

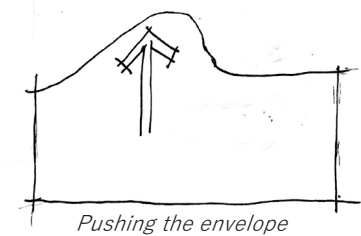
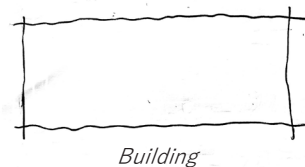


Figure 10.2: Building sharing its façade with the public and the city (Author 2021)



clever multiuse of existing spaces already presented socio-cultural resolve and certain levels of cohesion. This was internalised as an extension of the community's culture and values. In response, the researcher aimed to design a recreational place as a 'dispositif' to enhance the uncovered 'flows' as "a network which is sometimes expressed into a built space" (Dascalu 2013: 207). The 'flows' were many, varied from different points of origins, overlapping and constantly influenced one-another (Figure 10.1).

The eclectic nature of these 'flows' is where **ARCHITECTURE IS AT A CROSSROAD.**

The unexpected connections gleaned required a flexible arsenal of knowledge to be able to make sense of the milieu and create space out of networks. From the methodology to design and technology, one could understand that the immersion into the realms of sociology, urban landscape and even interior design, allowed to rediscover the 'humane' at different scales and from various positions while approaching sustain-

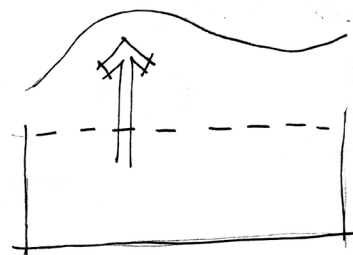
ability as a systemic whole.

The above process is reminiscent of Mostafavi's (2010) points on Ecological Urbanism. This paradigm sitting within the greater scheme of sustainability, promulgates the notion that architecture should not be isolated. When practice becomes interdisciplinary and even transdisciplinary, challenges regarding sustainability are better perceived as a holistic picture.

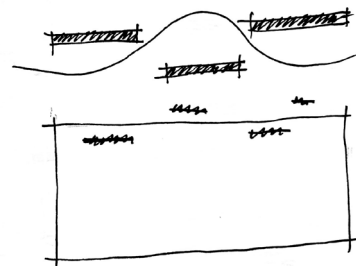
Elements from each disciplines gets reinterpreted, combined in technology and design and can lead to projects that do not stop at the end of construction nor at the primary occupation of buildings. The ingrained systems and strategies serve the future city. When built form becomes a prototype for future endeavours in recreational spaces such as art, shelter or environmental mitigation, it also presents what the community has to offer in including maintenance and healthier public spaces. Moreover, emergent collaborations potentially ignite further innovation inspired by rudimentary technology (Mostafavi & Doherty 2016). This

is reminiscent of recreation as an act of agency and making. In this dissertation plastic bags, glass bottles and clay were used and/or recycled as 'artisanal' materials. Although viewed as small gestures, one can refer back to many more examples where these types of actions (waste reuse) influenced a different manufacturing approach for these banal products. New ones can be designed with attributes suited for a life in the construction industry after their primary use (i.e., the Heneken WOBO bottle) (Hebel *et al.* 2014: 127-145). More than ever, and in alignment with the United Nations (c.2021) goals for healthy environments, architectural practices can look at the banal as a source for innovation and continue conversations with other industries to further the polyvalence of everyday products life for construction and landscape purposes.

When Rowe (Rowe 1987: 53) presents two realms of architecture enquiry, the architecture object (self-referential) and the one finding legitimisation within



*Slight detachment*



*The 'dispositif' threshold*

Figure 10.2: (suite) Building sharing its façade with the public and the city (Author 2021)

and outside of architecture, this paper leans into the latter where architecture is not simply self-referential or single-authored (Figure 10.1 and 10.4). It becomes a tool for education, for holistic technology ideation or much more.

This is where the dissertation interrogates and concludes the situation between **PUBLIC SPACE, THE ARCHITECT AND AUTHORSHIP.**

Public spaces are in dire need of epistemic diversity in their making. City dwellers and designers in general have a duty towards the public interface, which do not simply end on designated public space lots.

Every structure designed is encompassed into the city's giant sequence of space and should be treated as such, while acknowledging safety and security and leaving a margin for appropriation. The paper explored an iterative rhetoric between parts, their different nature and their contribution to the whole beyond the space. However, there is a moment when one should

recognise when to design, when to suggest and when to stop. At times, over-designing the 'dispositif' also seemed too reductive; narrowing interpretations (Figure 10.3 and explorations in section 7). The researcher realised that an overly-designed façade loses its affordance and can confuse users by either highly reducing the space to one function or by giving too many queues; in both instances, the playfulness of recreation is hindered. This situation reflects the weakness of the twin-phenomena; being too ambiguous can also result in the extreme opposites with little synergy (Lammers 2012).

It is important to note that buildings' thresholds appeared as appropriate devices between 'city' and 'house' with an array of opportunities (Figures 10.2 and 10.3). They could entice the eye of the child, the democracy of public spaces and exhibit overlooked moments. They can be interpreted as the generous space that many buildings could offer to the public regardless of buildings typologies and programmes

with the right security in place (Figure 10.2). These explorations exemplified an attempt to "expand[ing] the brief" (Awan *et al.*: 69-70) allowing constructions to always give back to the public realm.

The initial position of the 'detective' can also be expanded. It is not simply a question of searching and revealing but a matter of choosing the appropriate design strategy and complementary knowledge to be able to decide where to stitch, facilitate, regenerate or build a new and even recognise when built form is not always the answer.

In conclusion, the 'non-finite' nature of recreational spaces in relation to cohesion transcends the physical, and involves many role-players. In the process, they create places, form new networks and ways of working which can serve other projects with similar challenges at a faster pace. Designing for sustainability, especially while involving a myriad of knowledge sources and methods can be a slow process, and not immediately profitable, nonetheless the benefits seem to far outweigh these concerns.

This topic is wide and full of possibilities, nonetheless, a dissertation such as this is constrained to a time-frame and a built form deliverable. However, the research contributions of this paper does not solely lie in the structural achievement, instead it resurfaces the significance and sustainability potential of the return to the everyday, disciplinary combinations and the generous space that architecture can provide towards the creation of recreational spaces in South African townships.

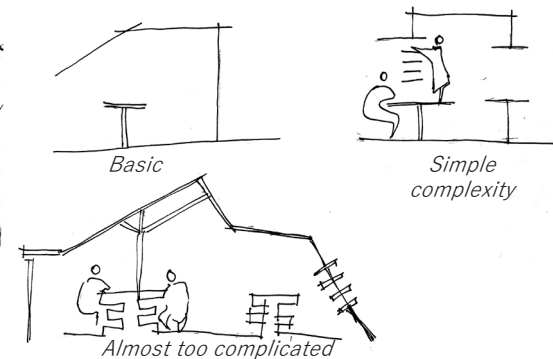


Figure 10.3: From simple to over-designed threshold (Author 2021)

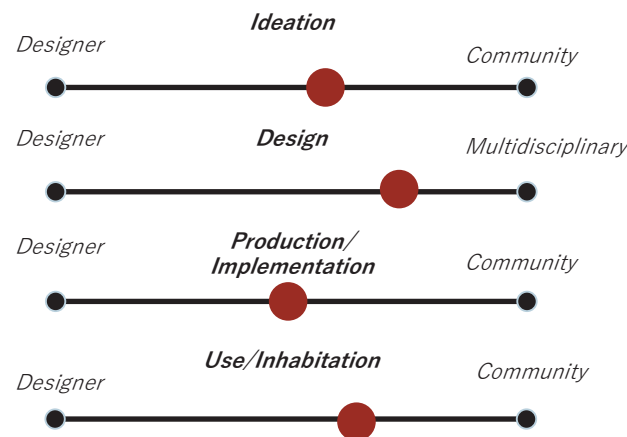


Figure 10.4 : Diagram summary, the spectrum while designing for recreational spaces (Author 2021)

# 11- REFERENCES

- Afshinni, K. 2019. *Waste Glass in Concrete has Advantages and Disadvantages*. 19(8). Available from: <https://www.concretedecor.net/departments/concrete-placing/waste-glass-in-concrete-has-advantages-and-disadvantages/> [Accessed: 25 November 2021].
- Arango, A. 2012. *Educational Center 'Montecarlo Guillermo Gaviria Correa'* [photographs]. Available from :<https://www.archdaily.com/790755/educational-centrality-montecarlo-guillermo-gaviria-correa-edu-empresa-de-desarrollo-urbano-de-medellin> [Accessed: 28 May 2021].
- Arango, A., García, V. & Gómez, J.E. 2015. *UVA El Paraiso* [photographs]. Available from: <https://www.archdaily.com/782851/uva-el-paraiso-edu-empresa-de-desarrollo-urbano-de-medellin> [Accessed: 28 May 2021].
- Architecture for Humanity. c2012. *Design like you give a damn [2]*. 2n edition. China: Abrams.
- Awan, N., Schneider, T. & Till, J. 2011. *Spatial agency: Other ways of doing architecture*. London: Routledge.
- Baan, I. 2009. *The New York High Line officially open* [photographs]. Available from: <https://www.archdaily.com/24362/the-new-york-high-line-officially-open/> [Accessed: 28 May 2021].
- Baan, I. 2012. *Superkilen* [photographs]. [Online] Available from: <https://www.archdaily.com/286223/superkilen-topotek-1-big-architects-superflex/> [Accessed: 28 May 2021].
- Barac, M. 2013. Places resists: Grounding African urban order in an age of global change, in *Rogue Urbanism Emergent African Cities*, edited by E. Pieterse and A. Simone. University of Cape Town: Jacana Media (Pty) & African Centre for Cities: 37-54.
- Bass, O. 2013. Palimpsest African Urbanity: Connecting pre-colonial and post-apartheid urban narratives in Durban, in *Rogue Urbanism Emergent African Cities*, edited by E. Pieterse and A. Simone. University of Cape Town: Jacana Media (Pty) & African Centre for Cities: 161-182.
- Borrelli, N., Davis, P. 2012. How Culture Shapes Nature: Reflections on Ecomuseum Practices. *Nature and Culture* 7(1, Spring): 31-47.
- Breed, C. 2012. The transient aspects of city life: their understanding and interpretation for design purposes, in *South African Landscape Architecture Publisher*, edited by H. Stoffberg, C. Hindes and L. Muller. Pretoria: UNISA PRESSEditors: 1-33.
- Botes, K. 2021. Verbal communication with author. 01 November, Pretoria.
- Calkins, M. 2012. *The Sustainable Sites Handbook: A Complete Guide to the Principles, Strategies, and Best Practices for Sustainable Landscapes*. Hoboken: John Wiley & Sons, Incorporated.
- Casakin, H. Valera, S. 2020. The complexity of Urban public space and social network analysis: a case study of Barcelona. *Architext*, 8(2020):8-23.
- Chang, C. 2015. Community Involvement & Ecomuseums Towards a Mutual Approach to Eco-museology and Landscape Studies. Doctoral thesis, Swedish University of Agricultural Sci-ences, Alnarp.
- Charman, A., Petersen, L. & Govender, T. 2020. *Township economy: people, places and practices*. Cape Town: HSRC Press.
- Choe, S. 2007. Creating cultural identity for sustainability: A case study of Cheongju, Korea, in *Urban crisis: culture and the sustainability of cities*, edited by M. Nadarajah & A.T. Yamamoto. Tokyo, New York: United Nations University Press.
- City of Tshwane. 2005a. *Proposed Tshwane Open Space Frameworks Volume 1 Status Quo*. Available from: <http://www.tshwane.gov.za/sites/residents/Services/OpenSpaceManagement/Framework/Open%20Space%20Framework%20Vol%201.pdf> [Accessed: 05 May 2021]
- City of Tshwane 2005b. *Proposed Tshwane Open Space Frameworks Volume 2 Open Space Plan*. Available from :[://www.tshwane.gov.za/sites/residents/Services/OpenSpaceManagement/Framework/Open%20Space%20Framework%20Vol%201.pdf](http://www.tshwane.gov.za/sites/residents/Services/OpenSpaceManagement/Framework/Open%20Space%20Framework%20Vol%201.pdf) [Accessed: 05 May 2021].
- Cilento, K. 2009. *The New York High Line officially open*. Available from: <https://www.archdaily.com/24362/the-new-york-high-line-officially-open/>

com/24362/the-new-york-high-line-officially-open/ [Accessed: 28 May 2021].

Connect Community. [S.a.]. Connect Community, our initiatives. Available from: <https://myconnectcommunity.org/pf/bth-connect/> [Accessed: 05 June 2021]

Cookfox Architects. 2012. *Friends Center at Angkor Hospital for Children* [photographs]. Available from: <https://www.archdaily.com/289652/friends-center-at-angkor-hospital-for-children-cookfox-architects> [Accessed: 05 June 2021].

Cordes, A.K. 2013. *Applications in recreation & leisure for today and the future*. 4th edition. [S.I.]: Sagamore Publishing LLC.

Daly, A. & Smith, C. L. 2011. Architecture, Cigarettes and the Dispositif. *Architectural Theory Review*, 16(1):22-37.

Dalton R. C., Hölscher, C. & Montello, D. R. 2019. Wayfinding as a Social Activity. *Frontiers in Psychology*, 10:1-14.

Dalton, R.C. & Bafna, S. 2003. The syntactical image of the city: A reciprocal definition of spatial elements and spatial syntaxes. *Proceedings presented at the 4th International Space Syntax Symposium*, London :1-22.

Damayanti, R. & Kossak, F. 2016. Extending Kevin Lynch's concept of imageability in third space reading; case study of Kampung, Surabaya-Indonesia. *ITU A/Z*, 13(1):57-67.

Dascalu, D.S. 2013. Architecture as Tool for Building Social Capital. *Conference paper in Acta Technica Napocensis: Civil Engineering & Architecture*, 56(3):204-220.

Denoon-Stevens, S.P. & Ramaila, E. 2018. Community facilities in previously disadvantaged areas of South Africa. *Development Southern Africa*, 35(4):432-449.

Doğan, M., Timothy, D. J. 2020. Beyond tourism and taxes: the ecomuseum and social development in the Ak-Chin tribal community. *Journal of Tourism and Cultural Change*, 18 (2): 133-149.

EDU - Empresa de Desarrollo Urbano de Medellín. 2012. *Educational Center 'Montecarlo Guillermo Gaviria Correa*. Available from :<https://www.archdaily.com/790755/educational-centrality-montecarlo-guillermo-gaviria-correa-edu-empresa-de-desarrollo-urbano-de-medellin> [Accessed: 28 May 2021].

EDU-Empresa de Desarrollo Urbano de Medellin. 2015. *UVA El Paraiso*. Available from: <https://www.archdaily.com/782851/uva-el-paraiso-edu-empresa-de-desarrollo-urbano-de-medellin> [Accessed : 28 May 2021].

Faculty of Engineering, Built Environment and Information Technology. c2021. *Faculty Committee for Research Ethics and Integrity*. Available from: <https://www.up.ac.za/faculty-of-engineering-built-environment-it/article/15815/faculty-committee-for-research-ethics-integrity> [Accessed: 23 March 2021].

Farhady, M & Nam, J. 2009. Comparison of in-between concepts by Aldo Van Eyck and Kisho Kurokawa. *Journal of Asian Architecture and Building Engineering*, 8(1):17-23.

Farr A. C., Kleinschmidt T., Yarlagadda P. & Mengersen, K. 2012. Wayfinding: A simple concept, a complex process. *Transport Reviews*, 32(6):715-743.

Finotti, L & Kon, N. [S.a.]. *SESC Pompéia Factory, São Paulo* [photographs]. Available from: <https://arquitecturaviva.com/works/sesc-fabrica-pompeia-9> [Accessed: 05 June 2021].

Gardiner, K. 2013. Natural ventilation principles, in *Architective building construction standards for South Africa*, edited by S, Schmidt [*et al.*]. [S.I.]: Architective Publications:132-137.

Gardiner, K. 2013. Grey water and rainwater harvesting, in *Architective building construction standards for South Africa*, edited by S, Schmidt [*et al.*]. [S.I.]: Architective Publications: 177-181.

Gehl, J. 2010. *Cities for People*. Washington DC: Island Press.

Gommel, J. 1995. Wayfinding: You Are Here/You Are There. In *Eyes on the Future: Converging Images, Ideas, and Instruction*. Selected Readings from the 27th Annual Conference of the International Visual Literacy Association, Chicago, IL, 18-22 October:386-393.

Grabski, J. 2013. Market logics: How locality and mobility make artistic livelihoods in Dakar, in *Rogue Urbanism Emergent African Cities*, edited by E. Pieterse and A. Simone. University of Cape Town: Jacana Media (Pty) & African Centre for Cities: 265-274.

Groff, E. and McCord E., S. 2011. The role of neighbourhood parks as crime generators. *Security Journal*: 1-24.

Hertzberger, H. 1991. *Lessons for students in architecture*. Rotterdam: Uitgeverij 010 Publishers: 48-63.

Jansen van Vuuren, G. [GawievV@tshwane.gov.za]. 2021. Re: Architecture Master's enquiry. Email to: titine.dem97@gmail.com 02 September.

Kowaleski, M. 2014. Producing the space, contesting the city: Urban wild swimming, in *Understanding the City: Henri Lefebvre and Urban Studies*, edited by G. E. Lelandais. Cambridge Scholars Publisher: Newcastle-upon-Tyne.

Lammers, H. 2012. *Potentially...Unravelling and reconnecting Aldo van Eyck in search of an approach for tomorrow*. Thesis for the master Architecture, Building and Planning, Eindhoven University of Technology, Netherlands.

Landman, K. 2016. The transformation of public space in South Africa and the role of urban design. *Urban Design International*, 21(1):78-92.

Landman, K. 2018. *Evolving Public Space in South Africa, towards Regenerative Space in the Post-Apart-*

*heid City*. First edition. London: Routledge.

Leatherbarrow, D. 2002. Architecture, the city and nature: Part and whole. *Oz*, 24(4):14-19.

Leff, C. 2019. The Afropolitan flâneur: Literary representations of the city and contemporary urban identities in selected African and transnational texts. Doctorate of Philosophy Thesis, Rhodes University, Grahamstown.

Living Spaces. c2021. *Nike Football Training Center in South Africa by RUF Project and Nike Global Football*. Available from: <https://www.livinspaces.net/projects/architecture/nike-football-training-center-south-africa-ruf-project-nike-global-football/> [Accessed: 28 May 2021].

Maggies. [S.a.]. *Our buildings*. Available from: <https://www.maggies.org/about-us/how-maggies-works/our-buildings/> [Accessed: 08 June 2021].

Magi, L. M. 1999. Township recreation patterns and the new order in South Africa. *Tourism Geographies*, 1(3):293-312.

Makeka, M. 2013. Thoughts on architecture, design & the emergent African city, in *Rogue Urbanism Emergent African Cities*, edited by E. Pieterse and A. Simone. University of Cape Town: Jacana Media (Pty) & African Centre for Cities: 445-454.

Malaquais, D. & Diallo, K. 2013. Igniting SPARCK, in *Rogue Urbanism Emergent African Cities*, edited by E. Pieterse and A. Simone. University of Cape Town: Jac-

ana Media (Pty) & African Centre for Cities: 55-64.

McConnachie, M. M. & Shackleton, C. M. 2010. Public green spaces inequality in small towns in South Africa. *Habitat International*, 34:244-248.

McLean, D. D. & Hurd, A. R. c2015. *Kraus' Recreation and Leisure in Modern Society*. 10th edition. Burlington: Jones & Barlett Learning.

Memmott, P. & Keys, C. 2015. Redefining architecture to accommodate cultural difference: designing for cultural sustainability. *Architectural Science Review*, 58(4):278-289.

Metin, C.T., Katırcı, H., Yüce, A., Sarıçam, S. & Cabuk, A. 2017. An inventory study on the categorization and types of recreational activities. *International Journal of Social Science*, 59 (Autumn I):547-561.

Moreleta Park Integration Project. 2020. Moreleta park integration project\_phase 1\_community mapping. Student Honour research project, University of Pretoria, Pretoria.

Mostafavi, M. 2010. Why Ecological Urbanism? Why now. *Harvard Design Magazine*, 32(Spring/Summer 2010):1-12.

Mr J. 2021. Verbal communication at Tshedza Project with the author on 19th of May and 25th of August. Tshwane. (Notes in possession of author).

- Mrs K. 2021. Verbal communication at Thandanani with the author on 25th of April. Tshwane. (Notes in possession of author).
- Muller, P. 2013. Climatic zones, SANS 204 and passive design strategies in SA, in *Architective building construction standards for South Africa*, edited by S, Schmidt [et al]. [S.I.]: Architective Publications: 104-127.
- Muller, P. 2013. Lighting, in *Architective building construction standards for South Africa*, edited by S, Schmidt [et al]. [S.I.]: Architective Publications: 366-377.
- Nawa, L. L. 2017. Uneven distribution of cultural facilities in the City of Tshwane, South Africa: a call for a cultural turn in spatial planning. *South African Geographical Journal*, 100(3):249-270.
- Ndlazi, S. 2019. *Heritage, what heritage?* Available from: <https://www.iol.co.za/pretoria-news/heritage-what-heritage-33590756> [Accessed: 19 April 2021].
- Niebuhr, K. S. 2021. Elke[Bitso]: Creating a sense of belonging and identity for adolescents within the urban interior and streetscape of Mamelodi East. Unpublished Master's dissertation, University of Pretoria, Pretoria.
- Ohara, K. 1998. The Image of 'ecomuseum' in Japan. *Pacific Friends, Jijigaho-sha*, 25 (12): 26-27.
- Oosthuysen, L. 2013. Thermal mass principles, in *Architective building construction standards for South Africa*, edited by S, Schmidt [et al]. [S.I.]: Architective Publications:128-131.
- Ose, E., D. 2013. What makes a place a city? Untimely contemporary artists and the African city, in *Rogue Urbanism Emergent African Cities*, edited by E. Pieterse and A. Simone. University of Cape Town: Jacana Media (Pty) & African Centre for Cities: 383-396.
- Pather, J. 2013. Shifting Spaces, tilting time, in *Rogue Urbanism Emergent African Cities*, edit-ed by E. Pieterse and A. Simone. University of Cape Town: Jacana Media (Pty) & African Centre for Cities: 433-444.
- Peter Rich Architects. c2020. *Alexandra Heritage Centre*. Available from: <https://www.peterricharchitects.com/alexandria-interpretation-centre> [Accessed: 25 May 2021].
- Pienaar, M., Pienaar, M & Vollmer, B. 2013. Super-structure: roofs, in *Architective building construction standards for South Africa*, edited by S, Schmidt [et al]. [S.I.]: Architective Publications: 278-303.
- Pieterse, E. 2009. *Exploratory notes on African Urbanism. African Centre for Cities*: University Cape Town.
- Pieterse, E. 2011a. Recasting Urban Sustainability in the South. *Development*, 54(3):309-316.
- Pieterse, E. 2011b. Rethinking African urbanism from the slum. *Urban Age, Cities, Health and Well-being*: 1-6.
- Pinto, A. J. & Remesar, A. 2012. Urban cohesion: a guiding concept for new urban realities. *Ambivalent landscapes: Sorting out the present by designing the future Public Spaces*. Paper presented at Urban Cultures Conference, 2012, Lisbon: 1-18.
- Pinto, A.J. & Remesar, A. 2015. Urban cohesion: A Public space network assessment. *On the W@terfront*, 39(2):7-25.
- Project for Public Space. c2020. *Foro Lindbergh (Parque México)*. Available from: <https://www.pps.org/projects/foro-lindbergh-parque-mexico> [Accessed 08: June 2021].
- Republic of South Africa. 1998. National Environmental Management Act, Act 107 of 1998.
- Rynners, J. & Backpagepix. 2013. *Nike Football Training Center in South Africa by RUF Project and Nike Global Football* [photographs]. Available from: <https://www.livinspaces.net/projects/architecture/nike-football-training-center-south-africa-ruf-project-nike-global-football/>[Accessed: 28 May 2021].
- Salat, S., Labbé, F., Nowacki, C. & Walker, G. 2011. *Cities and forms: On Sustainable Urbanism*. Paris: CSTB Urban Morphology Laboratory.

- Sanbi. c2021. *Geological information* [BGIS Map Viewer]. Available from: [http://bgisviewer.sanbi.org/html5viewer/index.html?configBase=http://bgisviewer.sanbi.org/Geocortex/Essentials/REST/sites/NFEPA\\_themes/viewers/National\\_wetlands\\_and\\_NFEPA/virtualdirectory/Resources/Config/Default&user=&extent=&layerTheme=](http://bgisviewer.sanbi.org/html5viewer/index.html?configBase=http://bgisviewer.sanbi.org/Geocortex/Essentials/REST/sites/NFEPA_themes/viewers/National_wetlands_and_NFEPA/virtualdirectory/Resources/Config/Default&user=&extent=&layerTheme=) (Accessed: 07 June 2021).
- SANS. 2010. *SANS 10400-P, The application of the National Building Regulations : Drainage*.
- SANS .2011. *SANS 10400-O, The application of the National Building Regulations : Lighting and ventilation*.
- SANS. 2011. *SANS 204: 2011 Energy efficiency in Buildings*.
- SANS. 2011. *SANS 10400-XA: 2011: The Application of the National Building Regulations: Part X: Environmental sustainability and Part XA: Energy usage in buildings*.
- SANS. 2012. *SANS 10400-R, The application of the National Building Regulations : Stormwater*.
- Schneider, T. & Till, J. 2012. Invisible Agency. *Architectural Design*, 82(4):38-43.
- Smith, J. & Firth, J. 2011. Qualitative data analysis: application of the framework approach. *Nurse Researcher*, 18(2):52-62.
- SOS Children's village Mamelodi focus group 1. 2021. Verbal communication with the author on 21st May. Tshwane. (Notes in possession of author).
- South Africa. Department of Sport and Recreation. 2012. *Sport and Recreation White Paper 2012*. White Paper. [S.I.]: Minister of Sport and Recreation.
- South African Government. c2021. *COVID-19/novel coronavirus*. Available from: <https://www.gov.za/covid-19/about/about-alert-system> [Accessed: 28 July 2021].
- Srivastava, A. & Thomson, S. B. 2009. Framework analysis: A qualitative methodology for applied policy research. *JOAG*, 4(2):72-79.
- Steynberg, D. 2013. Drainage, in *Architective building construction standards for South Africa*, edited by S, Schmidt [et al.]. [S.I.]: Architective Publications: 335-352.
- Studio Gang. 2008. *SOS Children's Villages Lavezzorio Community Center*. Available from: <https://studiogang.com/project/sos-children-s-villages-lavezzorio-community-center> [Accessed: 08 June 2021].
- Studio Gang. 2016. *Writers Theatre*. Available from: <https://studiogang.com/project/writers-theatre> [Accessed: 07 June 2021].
- Swelling, M. 2013. Reconceptualising urbanism, ecology and networked infrastructure, in *Rogue Urbanism emergent African cities*, edited by E. Pieterse & A. Simone. University of Cape Town: Jacana Media (Pty) & African Centre for Cities: 65-82.
- Teyssot, G. 2011. Aldo Van Eyck and the rise of an ethnographic paradigm in the 1960s. *Re-vista de Cultura Arquitectonica, Johelho* (2):50-67.
- Thandanani focus group 1. 2021. Verbal communication with the author on 14th of April. Tshwane. (Recording, transcript and notes in possession of author).
- Thandanani focus group 2. 2021. Verbal communication with the author on 23rd of April. Tshwane. (Recording, transcript and notes in possession of author).
- Topotek 1, BIG Architects & Superflex. 2012. *Superkilen*. Available from: <https://www.archdaily.com/286223/superkilen-topotek-1-big-architects-superflex/> [Accessed: 28 May 2021].
- Tosi, A. 2007. Homelessness and the control of public space – criminalising the poor. *European Journal of Homelessness*, 1 (December): 225-236.
- Touludi, Z. 2016. Are we in the midst of a public space crisis?. Available from: <https://theconversation.com/are-we-in-the-midst-of-a-public-space-crisis-56124> [Accessed: 02 June 2021].
- UN-Habitat. 2015. *Global public space toolkit: from global principles to local policies and practice*. [S.I.]. UN-Habitat.
- United Nations. c2021. Make cities and human settlements inclusive, safe, resilient and sustainable. Available from: <https://unstats.un.org/sdgs/report/2019/goal-11/> [Accessed: 14 May 2021].
- Urban Citizen Studio. 2019. Mamelodi Educational Ecosystem-Education in Mamelodi. Student Honour research project, University of Pretoria, Pretoria.
- Urban Studio. 2020. Healing Urban Fractures, Inside a pandemic, Vulnerability, imagination, innovation in the

City of Tshwane. De Beer, S., Thomos, L., Nnorom, J (eds), University of Pretoria, Pretoria.

Van der Waal, G. 2000. *Mamelodi heritage route*. University of Pretoria: Pretoria.

Vinnitskaya, I. 2012. *Friends Center at Angkor Hospital for Children*. Available from: <https://www.archdaily.com/289652/friends-center-at-angkor-hospital-for-children-cookfox-architects> [Accessed: 05 June 2021].

VPUU. 2017. *Active Box*. Available from: <http://vpuu.org.za/safe-node-area/active-boxes/> [Accessed: 15 April 2021].

Wang, D. Groat, N.L. 2013. *Architectural research methods*. 2nd edition. Hoboken: Wiley.

Watson, S. 2009. The magic of the marketplace: sociality in a neglected public space. *Urban Studies Journal*, 46(8):1577–1591.

Wazimaps. 2011. *City of Tshwane Ward 23 (79900023)*. Available from: <https://wazimap.co.za/profiles/ward-79900023-city-of-tshwane-ward-23-79900023/> [Accessed: 12 May 2021].

Wegeling, H. 2011. *Construction Primer for Southern Africa*. Pretoria: Visual Books.

Wilson G.D.H. & Hattingh P.S. 1992. Environmental preferences for recreation within deprived areas: the case of black townships in South Africa. *Geoforum*, 23(4):477-486.

Withagen, R. & Calijouw, S. R. 2017. Aldo van Eyck's playgrounds: Aesthetics, affordances, and creativity. *Frontiers in Psychology*, 8(1130):1-9.

Zack, T. 2013. Seeking logic in the chaos precinct: The spatial and property dynamics of trading space in Jeppe, in *Rogue Urbanism Emergent African Cities*, edited by E. Pieterse and A. Simone. University of Cape Town: Jacana Media (Pty) & African Centre for Cities: 283-292.



# APPENDICES

## APPENDIX A: Faculty approved ethics clearance approval statement



Faculty of Engineering,  
Built Environment and  
Information Technology

Fakulteit Ingenieurswese, Bou-omgewing en  
Inligtingtegnologie / Lefapha la Boetšenere,  
Tikologo ya Kago le Theknolotši ya Tshedimošo

9 June 2021

Reference number: EBIT/79/2021

Ms A van Aswegen  
Department: Architecture  
University of Pretoria  
Pretoria  
0083

Dear Ms A van Aswegen

### FACULTY COMMITTEE FOR RESEARCH ETHICS AND INTEGRITY

Your recent application to the EBIT Research Ethics Committee refers.

Conditional approval is granted.

This means that the research project entitled "Masters Professional Mini-Dissertation in Architecture, Landscape Architecture and Interior Architecture (Group / Blanket)" is approved under the strict conditions indicated below. If these conditions are not met, approval is withdrawn automatically.

#### Conditions for approval

This application is approved based on the summaries provided.

Applications from each student (including application forms and all necessary supporting documents such as questionnaire/interview questions, permission letters, informed consent form, etc) will need to be checked internally by the course coordinator/ supervisor. A checklist will need to be signed off after the checking.

All of the above will need to be archived in the department and at the end of the course a flash disc / CD clearly marked with the course code and the protocol number of this application will be required to be provided to EBIT REC administrator.

No data to be collected without first obtaining permission letters. The permission letter from the organisation(s) must be signed by an authorized person and the name of the organisation(s) cannot be disclosed without consent. Where students want to collect demographic the necessary motivation is in place.

This approval does not imply that the researcher, student or lecturer is relieved of any accountability in terms of the Code of Ethics for Scholarly Activities of the University of Pretoria, or the Policy and Procedures for Responsible Research of the University of Pretoria. These documents are available on the website of the EBIT Ethics Committee.

If action is taken beyond the approved application, approval is withdrawn automatically.

According to the regulations, any relevant problem arising from the study or research methodology as well as any amendments or changes, must be brought to the attention of the EBIT Research Ethics Office.

The Committee must be notified on completion of the project.

The Committee wishes you every success with the research project.

**Prof K.-Y. Chan**

Chair: Faculty Committee for Research Ethics and Integrity  
FACULTY OF ENGINEERING, BUILT ENVIRONMENT AND INFORMATION TECHNOLOGY

## APPENDIX B: Questionnaire (interviews)

### Semi-structured interviews' question examples [Form for research interviews]

#### Title of Research Project:

The agency of recreation: The study of community-led initiatives in Mamelodi East to uncover a typology for recreational spaces with the potential to act as a device contributing to a culturally sustainable and cohesive urban environment

#### Researcher's details

Denambaye Martine Demba/ Student Number: 16070713 /, Department of Architecture, EBIT, University of Pretoria.

**Disclaimer: For the purpose of this form, the name of the NPO Thandanani has been used however the name will change according to the entity being interviewed. Similarly, the sets of questions are to be adapted to the conversations and sites of interview appropriately. Therefore, the order and number of questions will vary accordingly. This form only provides an insight on the types of questions that may be used.**

#### Question examples for small focus group

##### A. INTRODUCTION

- Could you describe Mamelodi in a few words?
- What is culture and how would you describe Mamelodi's culture?
- What is very unique to Thandanani [or insert name of CBO/NPO] (as a place, values)?
- What is the organogram of Thandanani (no names should be mentioned)?

##### B. POPULATION

- In your opinion, which of the following seem to be the dominant demographic in Mamelodi (ages 0-10/10-15/15-19/19-30/35-50/50+)?
- In which age bracket do the children using the center fall in?
- Which of these age groups appear to be less involved in specific recreation?
- Do elderly people also take part in some sort of recreation (at Thandanani or in the neighbourhood)?

##### C. THANDANANI'S [or insert name of CBO/NPO] RECREATION PROGRAM

- Which recreation-like activities does Thandanani hosts?
- Where do they occur? If possible, could you explain how the spaces are adapted when you use them? What is already available there?
- Which of these activities are the most open to the public (anyone from anywhere can take part in it) and which are specifically open to the people who are "regulars" of Thandanani?
- When they are not at Thandanani where do children gather?
- What does a typical sport and recreation Friday look like at Thandanani? Which places or spaces are used? Any interesting stories?
- Which activities are the most successful amongst the children?

- Are they receptive to new activities you introduce?
- In terms of sports and recreation Fridays, could you rank the places/activities in terms of accessibility (financially, physically)?
- What made it possible for Thandanani to be able to maneuver during the pandemic? Which activities were able to go on and how did the community respond?
- Which recreation activities are the most accessible to children when they are not at Thandanani?
- Are there any games that the children take part in that they initiated themselves?
- In which situations do the different generations in the community gather? How are those interactions made possible and where do they occur?
- Please tell me more about the story of the mobile toy library that you launched
- What can a library be?
- How would you see the future of "mobile" recreation?
- How important is technology in recreation today? Could you think of examples?
- Are there other recreation elements/events that you are aware of that are also mobile/ not fixed? If so how/where do they take place?
- Could you tell me about Sport and recreation success stories (Thandanani or in the neighbourhood)?

##### D. NETWORKS

- Approximately how many people visit the center per day?
- Generally, where are the visitors from (not the addresses, could be general areas, nationalities)?
- How are the centers' users welcomed (spatially, upon arrivals, sequences of spaces they move through)? How do they find out about the center?
- How are you able to break barriers with the diverse groups of people (from different backgrounds) that visit the center?
- Are you aware of other NGOs/NPOs/CBOs in Mamelodi East? Have you partnered with any of them? If so for which events or activities?
- For the sports and recreation aspect of Thandanani, have you collaborated with other entities (NPO,CBO,NGO,Universities, schools)?

##### E. MAMELODI'S RECREATION

- Which formal recreation facilities in Mamelodi (East) would you say are successful?
- Are they easily accessible (financially or physically)?
- Which are the biggest nodes of transport in Mamelodi East?
- Which are the closest places to Thandanani to catch public transport?
- Which would you say are less successful?
- The city of tshwane has allocated a few areas in Mamelodi as open public space and open space but they are not parks and remain vacant. What are your feelings about them?
- Are the parks in the area used by the community?
- Do you know of any other similar situations where communal or recreational spaces are left vacant? What has taken over these spaces?
- Is vandalism common in recreational spaces? Which recreational spaces in Mamelodi East (or Mamelodi as a whole) are the most well maintained?
- Please tell me more about the story of the dumpsite that you turned into a community garden.

#### F. OCCUPATION AND CROSS-PROGRAMMING

- Please tell me more about the story of the occupation phases of Thandanani? What had to be changed from the original buildings and setup?
- What were the sequences of activities that got implemented, starting from when Thandanani first began?
- How are Thandanani's buildings organized (in terms of programs)?
- Thandanani holds several functions, do all the programs run at the same time?
- How is privacy/safety and security ensured in Thandanani (cross-over of activities and groups of people substance abuse, homeless, feeding scheme, children)?
- Where do you feel are the most social spaces inside Thandanani's property or around Thandanani? What makes them so?
- Which activities/programs in the buildings do you think should be more visible to the public? Which ones should be more accessible to the public?

#### G. SAFETY AND SECURITY

- At what time does Thandanani close?
- Are there any recreation-like activities that happen at night in the neighbourhood/ township?
- Which activities/places (not necessarily recreational) in the neighbourhood/ township remain open at night or close late?
- Is the area surrounding Thandanani lit up at night? Which other areas are lit at night?
- How is safety and security ensured in the community?

#### Question examples for individual participants

##### 1. INTRODUCTION

- Do you live in Mamelodi (yes or no)?
- How long have you lived in Mamelodi?
- How long have you worked here?
- Describe Thandanani in 3 words.
- What does the journey coming to Thandanani feel like?

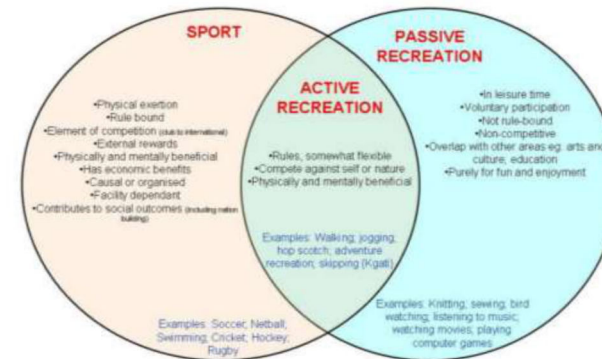
##### 2. MAMELODI'S RECREATION

- Are there any interesting cultural events in Mamelodi that you take part in? Which spaces are used for these events?
- How has recreation evolved in Mamelodi?

##### 3. SAFETY AND SECURITY

- Where do you feel the most comfortable/safe/unsafe around Thandanani? In the neighbourhood? Which physical element in these places/spaces make you feel that way?

##### 4. "SITES" OF RECREATION



- South African Government. 2020. Sport and Recreation White Paper. [Online]: <https://www.gov.za/documents/sport-and-recreation-white-paper> [Accessed 08 March 2020].
- This is the chart taken from the 2012 official White Papers on Sports and Recreation, do you agree with how recreation has been classified? Which other activities do you think are missing?
- What do you do in your spare/free time?
- What do you not consider recreation?
- What should recreation achieve for you?
- Do you take part in it on weekends mainly or throughout the week?
- How often per week/per month do you take part in this (these) activity?
- Do you take part in group recreation? Which one (s)?
- How far from your home is this (these) activity you take part in, at home, in front of your home, in your block, in another neighbourhood (NB: In case of homes, no addresses to be mentioned)?
- 5. **ACCESSIBILITY**
  - If getting to that place requires travelling, how is your journey there like? Any interesting/important spots/stops? Anything you enjoy doing on the way there?
  - Which modes of transport do you use: car, train, bus, foot, bicycle, other?
  - Which one do you use the most/longest time?
- 6. **RECREATION IMPRESSIONS**
  - Would you be able to perform this (these) activity(ies) elsewhere?
  - How does the space you use for these activities feels like? Which characteristics of the place present make you feel that way?
  - Have you visited [inserting name of a recreational facility mentioned during the focus group] facility? As a recreational facility, how did the space make you feel upon arrival/ while in the perimeters? Which physical elements/ characteristics of the space made you feel so?
  - How often do you visit the place?

## APPENDIX C: Informed consent form example

### Informed consent form [Form for research participant's permission]

#### 1. Project information

1.1 Title of Research Project:

*Masters Professional Dissertation:* The agency of recreation: The study of community-led initiatives in Mamelodi East to uncover a typology for recreational spaces with the potential to act as a device contributing to a culturally sustainable and cohesive urban environment

1.2 Research Field: Future Studio

1.3 Researcher's details:

Denambaye Martine Demba/ Student Number: 16070713 /, *Department of Architecture, EBIT, University of Pretoria.*

1.4 Research Study Description:

In the Department of Architecture, the students of the Professional Master's Program annually engage in research activities related to specific areas in Gauteng (or area outside this region that has been well motivated). The students investigate specific architectural issues related to their chosen contexts, to enable them to respond to these conditions through a design proposal. These design projects, while resulting in real life recommendations, are neither implemented nor built.

This study forms part of a MArch (Prof) dissertation as part of the Department of Architecture at the University of Pretoria. The research considers the notion of recreation within the township of Mamelodi East and aims to understand the meaning and types of recreation preferences amongst the community to derive subsequent spatial outcomes. Additionally, the study's objectives will be to uncover the community's cultural activities along with the social and physical nature of spaces or places appropriated by the community. The data/information will be collected through semi-structured interviews and unstructured interviews appropriately. No minors or vulnerable groups of people shall take part in the interviews.

The conversation will be recorded. All information gathered shall be kept safely in a device protected by a secure password only accessible by the researcher. Some of the results may be published and although participants will remain anonymous some of their words might be quoted in the publications.

#### 2. Informed consent

- 2.1 I, \_\_\_\_\_ hereby voluntarily grant my permission for participation in the project as explained to me by the researcher.
- 2.2 The nature, objective, possible safety and health implications have been explained to me and I understand them.
- 2.3 I understand my right to choose whether to participate in the project and that the information furnished will be handled confidentially. I am aware that the results of the investigation may be used for the purposes of publication.
- 2.4 Upon signature of this form, the participant will be provided with a copy.

I will remain anonymous my comments may be used without giving any specific geographic or personal references (name, address, ID, occupation, age, income etc.) that may accidentally imply my identity

- I give permission for the interview to be recorded: Y / N
- I give permission for notes to be taken: Y / N

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

Witness: \_\_\_\_\_ Date: \_\_\_\_\_

Researcher: \_\_\_\_\_ Date: \_\_\_\_\_

APPENDIX D: Informed Consent  
form example for entity

**Informed consent form  
COMPANY/ENTITY APPROVAL**

MProf Research project [The agency of recreation: The study of community-led initiatives in Mamelodi East to uncover a typology for recreational spaces with the potential to act as a device contributing to a culturally sustainable and cohesive urban environment]

Department of Architecture  
EBIT Faculty  
University of  
Pretoria.

1. Project Information:

1.1. Title of research project:

The agency of recreation: The study of community-led initiatives in Mamelodi East to uncover a typology for recreational spaces with the potential to act as a device contributing to a culturally sustainable and cohesive urban environment

1.2. Researcher's details:

Full Name: Denambaye Martine Demba  
Student Number: 16070713  
Email: u16070713@tuks.co.za

1.3. Research Study Description:

**This study forms part of a MArch (Prof) dissertation as part of the Department of Architecture at the University of Pretoria. The research considers the notion of recreation within the township of Mamelodi East and aims to understand the meaning and types of recreation preferences amongst the community to derive subsequent spatial outcomes. Additionally, the study's objectives will be to uncover the community's cultural activities along with the social and physical nature of spaces or places appropriated by the community. The data/information will be collected through semi-structured interviews and unstructured interviews appropriately. No minors or vulnerable groups of people shall take part in the interviews.**

**The conversation will be recorded. Some of the results may be published and although participants will remain anonymous some of their words might be quoted in the publications.**

2. I....., performing the role of ..... and representative for ..... hereby voluntarily grant permission for employees of ..... to participate in the project as explained to me by

**Denambaye Martine Demba.**

3. The nature, objective, possible safety and health implications have been explained to me and I understand them.
4. I understand that employees of the company I represent have the right to choose whether to participate in the project and that the information furnished will be handled confidentially. I am aware that the results of the investigation may be used for academic purposes and / or publication.
5. I understand that the respondents representing the above stated company will remain anonymous their comments may be used without giving any geographic or personal references (name, address, ID, occupation, age, income etc.) that may accidentally imply our identity.
6. Upon signature of this form, you will be provided with a copy.
7. I, as representative of the above stated company, agrees that no specific data will be shared with the company. The company will have access to the final report.
8. This Informed consent form accompanies a letter from the above-mentioned company confirming permission to be granted. This letter is signed and states the company name (include the letterhead), date and role and identity of the person giving permission.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_


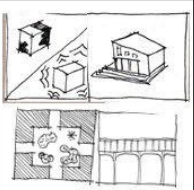

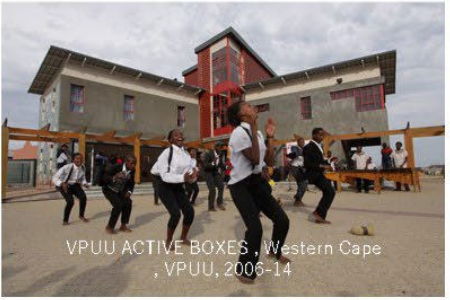


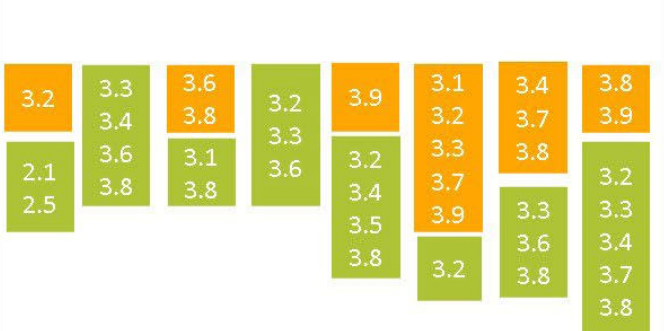
Witness: \_\_\_\_\_ Date: \_\_\_\_\_


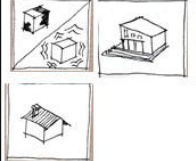
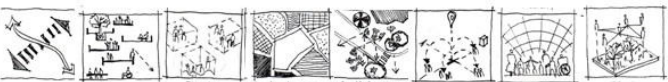




Researcher: \_\_\_\_\_ Date: \_\_\_\_\_

APPENDIX E: Deck of cards for  
typology study (Author 2021)

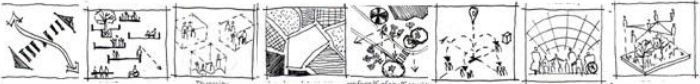

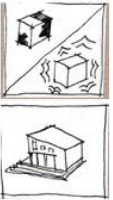





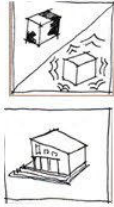

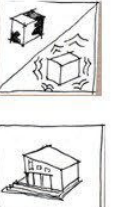

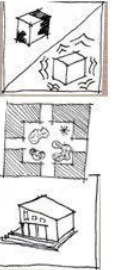
APPENDIX F: Typology study rating tables (Author 2021)











| PRECEDENT   | TYPOLOGY   | URBAN COHESION RESPONSE   | AGENCY/ AFFORDANCE/ DISPOSITIF /NETWORK   |
|---|--|---|---|
|  <p>ALEXANDRA INTERPRETIVE CENTRE, Johannesburg, Peter Rich Architects, 2010</p>                                       |  <ul style="list-style-type: none"> <li>• New Interpretive Centre</li> </ul> |    | <ul style="list-style-type: none"> <li>• <b>Agency:</b> people telling their stories and participation into design, job opportunities</li> <li>• <b>Affordance</b> of interpreting the plazas/squares</li> <li>• <b>'Dispositifs':</b> materials</li> <li>• <b>Networks:</b> community, visitors, stories</li> </ul>  |
|  <p>VPUU ACTIVE BOXES, Western Cape, VPUU, 2006-14</p>  | <ul style="list-style-type: none"> <li>• New on vacant lot in dangerous zones</li> <li>• Series of Multipurpose community centres</li> </ul>                   |   | <ul style="list-style-type: none"> <li>• <b>Agency:</b> acupuncture recreation for safety</li> <li>• <b>Affordance:</b> open options for recreation</li> <li>• <b>'Dispositifs':</b> 24 Hour activities through articulation outdoors with routes protruding from active boxes</li> <li>• <b>Networks:</b> identity of a network of active boxes rejuvenating place on a spine thus knitting communities otherwise dispersed</li> </ul>                   |
|  <p>NIKE FOOTBALL TRAINING CENTRE SOWETO, Johannesburg, RUFProject &amp; Luyanda Mpahlwa DesignSpaceAfrica, 2010</p> | <ul style="list-style-type: none"> <li>• New addition to existing soccer facility</li> <li>• Sports/ training centre</li> </ul>                                |  | <ul style="list-style-type: none"> <li>• <b>Agency:</b> a training centre recognizing its users, giving an identity to sports facility in a culturally distinct Soweto, use of local artists for security design</li> <li>• <b>Affordance:</b> More presence from the street</li> <li>• <b>'Dispositifs':</b> "Invisible security", materiality</li> <li>• <b>Networks:</b> local and international sports clubs and state of the art facility</li> </ul> |







| PRECEDENT  | TYPOLOGY   | URBAN COHESION RESPONSE  | AGENCY/ AFFORDANCE/ DISPOSITIF /NETWORK |     |     |     |     |     |     |     |     |     |  |     |     |     |     |  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |     |  |     |     |  |  |     |  |     |   |     |  |  |  |     |  |     |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |     |  |
|--|--|--|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|-----|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|--|-----|-----|--|--|-----|--|-----|---|-----|--|--|--|-----|--|-----|--|--|--|--|--|--|--|-----|--|--|--|--|--|--|--|-----|--|
|  <p>SOS CHILDREN'S VILLAGE, Mamelodi, 1985</p>  |  <ul style="list-style-type: none"> <li>New</li> <li>Village Centre</li> </ul>  |  <table border="1"> <tr> <td>4.2</td> <td>4.1</td> <td>4.2</td> <td>4.5</td> <td>4.2</td> <td>4.2</td> <td>4.1</td> <td>4.5</td> </tr> <tr> <td>4.4</td> <td>4.2</td> <td></td> <td></td> <td>4.1</td> <td>4.2</td> <td>4.3</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>4.1</td> <td>4.1</td> <td></td> <td></td> <td>4.1</td> </tr> <tr> <td></td> <td></td> <td></td> <td>4.2</td> <td></td> <td>4.1</td> <td></td> <td>4.2</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td>4.2</td> <td></td> <td>4.3</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td>4.3</td> <td></td> <td></td> </tr> </table>   | 4.2                                     | 4.1 | 4.2 | 4.5 | 4.2 | 4.2 | 4.1 | 4.5 | 4.4 | 4.2 |  |     | 4.1 | 4.2 | 4.3 |  |     |     |     | 4.1 | 4.1 |     |     | 4.1 |     |     |     | 4.2 |     | 4.1 |     | 4.2 |     |     |     |     |     | 4.2 |  | 4.3 |  |     |     |  |  | 4.3 |  |     | <ul style="list-style-type: none"> <li><b>Agency:</b> Social structure centred around family, a space where non' blood-related people come together</li> <li><b>Affordance:</b> Interpretation of the rondavel as a multifunctional "room" outdoors</li> <li><b>'Dispositifs':</b> Central rondavel, houses, hall</li> <li><b>Networks:</b> Children/ teenagers and family, elderly and child headed-homes and help, children/teenagers and recreation in all its aspects (including self-discovery and education)</li> </ul> |     |  |  |  |     |  |     |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |     |  |
| 4.2  | 4.1  | 4.2  | 4.5                                     | 4.2 | 4.2 | 4.1 | 4.5 |     |     |     |     |     |  |     |     |     |     |  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |     |  |     |     |  |  |     |  |     |   |     |  |  |  |     |  |     |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |     |  |
| 4.4  | 4.2  |  |   | 4.1 | 4.2 | 4.3 |     |     |     |     |     |     |  |     |     |     |     |  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |     |  |     |     |  |  |     |  |     |   |     |  |  |  |     |  |     |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |     |  |
|  |  |  | 4.1                                     | 4.1 |     |     | 4.1 |     |     |     |     |     |  |     |     |     |     |  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |     |  |     |     |  |  |     |  |     |   |     |  |  |  |     |  |     |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |     |  |
|  |  |  | 4.2                                     |     | 4.1 |     | 4.2 |     |     |     |     |     |  |     |     |     |     |  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |     |  |     |     |  |  |     |  |     |   |     |  |  |  |     |  |     |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |     |  |
|  |  |  |   |     | 4.2 |     | 4.3 |     |     |     |     |     |  |     |     |     |     |  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |     |  |     |     |  |  |     |  |     |   |     |  |  |  |     |  |     |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |     |  |
|  |  |  |   |     | 4.3 |     |     |     |     |     |     |     |  |     |     |     |     |  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |     |  |     |     |  |  |     |  |     |   |     |  |  |  |     |  |     |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |     |  |
|  <p>THANDANANI DROP INN CENTRE, Mamelodi, 1970 (buildings) / 2011 (current function)</p> |  <ul style="list-style-type: none"> <li>Adaptive reuse of TB clinic and Feeding scheme building</li> <li>Drop-in Centre and after school care facility</li> </ul> | <table border="1"> <tr> <td>5.2</td> <td>5.1</td> <td>5.4</td> <td>5.2</td> <td>5.4</td> <td>5.2</td> <td>5.1</td> <td>5.4</td> </tr> <tr> <td>5.3</td> <td>5.4</td> <td></td> <td>5.4</td> <td></td> <td>5.2</td> <td>5.2</td> <td></td> </tr> <tr> <td></td> <td></td> <td>5.1</td> <td></td> <td>5.2</td> <td></td> <td>5.3</td> <td>5.3</td> </tr> <tr> <td></td> <td></td> <td>5.2</td> <td></td> <td>5.3</td> <td></td> <td></td> <td>5.4</td> </tr> <tr> <td></td> <td></td> <td>5.3</td> <td></td> <td></td> <td></td> <td></td> <td>5.2</td> </tr> </table>   | 5.2                                     | 5.1 | 5.4 | 5.2 | 5.4 | 5.2 | 5.1 | 5.4 | 5.3 | 5.4 |  | 5.4 |     | 5.2 | 5.2 |  |     |     | 5.1 |     | 5.2 |     | 5.3 | 5.3 |     |     | 5.2 |     | 5.3 |     |     | 5.4 |     |     | 5.3 |     |     |     |  | 5.2 | <ul style="list-style-type: none"> <li><b>Agency:</b> Appropriation of old municipality-owned buildings, Constant re-appropriation of space</li> <li><b>Affordance:</b> Basketball court as an open space flexible enough for reinvention, free plan office where studying, playing, eating and working happens in synergy</li> <li><b>'Dispositifs':</b>Basketball court, in-between street, pavement greening scheme, volunteers vehicles</li> <li><b>Networks:</b> School children and older school children tutoring each other, Children and recreation, Food and homeless/substance abusers, Access to help and information, afterschool care</li> </ul> |     |     |  |  |     |  |     |   |     |  |  |  |     |  |     |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |     |  |
| 5.2  | 5.1  | 5.4  | 5.2                                     | 5.4 | 5.2 | 5.1 | 5.4 |     |     |     |     |     |  |     |     |     |     |  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |     |  |     |     |  |  |     |  |     |   |     |  |  |  |     |  |     |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |     |  |
| 5.3  | 5.4  |  | 5.4                                     |     | 5.2 | 5.2 |     |     |     |     |     |     |  |     |     |     |     |  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |     |  |     |     |  |  |     |  |     |   |     |  |  |  |     |  |     |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |     |  |
|  |  | 5.1  |   | 5.2 |     | 5.3 | 5.3 |     |     |     |     |     |  |     |     |     |     |  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |     |  |     |     |  |  |     |  |     |   |     |  |  |  |     |  |     |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |     |  |
|  |  | 5.2  |   | 5.3 |     |     | 5.4 |     |     |     |     |     |  |     |     |     |     |  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |     |  |     |     |  |  |     |  |     |   |     |  |  |  |     |  |     |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |     |  |
|  |  | 5.3  |   |     |     |     | 5.2 |     |     |     |     |     |  |     |     |     |     |  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |     |  |     |     |  |  |     |  |     |   |     |  |  |  |     |  |     |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |     |  |
|  <p>RDP HOUSING, Mamelodi, South African Government, c. 1994</p>                        |  <ul style="list-style-type: none"> <li>New</li> <li>Subsidised Housing</li> </ul>  | <table border="1"> <tr> <td>6.3</td> <td>6.1</td> <td>6.3</td> <td>6.1</td> <td>6.1</td> <td>6.4</td> <td>6.4</td> <td>6.1</td> </tr> <tr> <td>6.4</td> <td>6.2</td> <td></td> <td>6.4</td> <td>6.8</td> <td></td> <td>6.5</td> <td></td> </tr> <tr> <td>6.6</td> <td>6.3</td> <td>6.4</td> <td>6.5</td> <td>6.5</td> <td>6.5</td> <td>6.6</td> <td>6.2</td> </tr> <tr> <td>6.8</td> <td>6.4</td> <td>6.5</td> <td>6.6</td> <td>6.6</td> <td>6.5</td> <td>6.6</td> <td>6.3</td> </tr> <tr> <td>6.5</td> <td>6.5</td> <td>6.6</td> <td>6.7</td> <td>6.6</td> <td>6.6</td> <td></td> <td>6.4</td> </tr> <tr> <td>6.6</td> <td>6.6</td> <td>6.7</td> <td></td> <td></td> <td>6.7</td> <td></td> <td>6.5</td> </tr> <tr> <td></td> <td>6.7</td> <td></td> <td></td> <td></td> <td>6.8</td> <td></td> <td>6.6</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>6.7</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>6.8</td> </tr> </table> | 6.3                                     | 6.1 | 6.3 | 6.1 | 6.1 | 6.4 | 6.4 | 6.1 | 6.4 | 6.2 |  | 6.4 | 6.8 |     | 6.5 |  | 6.6 | 6.3 | 6.4 | 6.5 | 6.5 | 6.5 | 6.6 | 6.2 | 6.8 | 6.4 | 6.5 | 6.6 | 6.6 | 6.5 | 6.6 | 6.3 | 6.5 | 6.5 | 6.6 | 6.7 | 6.6 | 6.6 |  | 6.4 | 6.6  | 6.6 | 6.7 |  |  | 6.7 |  | 6.5 |   | 6.7 |  |  |  | 6.8 |  | 6.6 |  |  |  |  |  |  |  | 6.7 |  |  |  |  |  |  |  | 6.8 | <ul style="list-style-type: none"> <li><b>Agency:</b> A house under the control of the user (without accounting for forces outside their control)</li> <li><b>Affordance:</b> RDP house is very standard therefore there is an abundance of possibilities for modifications</li> <li><b>'Dispositifs':</b> Materiality, courtyard, front yard, street interface</li> <li><b>Networks:</b> Neighbourhood ties and associations, eyes on the street</li> </ul> |
| 6.3  | 6.1  | 6.3  | 6.1                                     | 6.1 | 6.4 | 6.4 | 6.1 |     |     |     |     |     |  |     |     |     |     |  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |     |  |     |     |  |  |     |  |     |   |     |  |  |  |     |  |     |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |     |  |
| 6.4  | 6.2  |  | 6.4                                     | 6.8 |     | 6.5 |     |     |     |     |     |     |  |     |     |     |     |  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |     |  |     |     |  |  |     |  |     |   |     |  |  |  |     |  |     |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |     |  |
| 6.6  | 6.3  | 6.4  | 6.5                                     | 6.5 | 6.5 | 6.6 | 6.2 |     |     |     |     |     |  |     |     |     |     |  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |     |  |     |     |  |  |     |  |     |   |     |  |  |  |     |  |     |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |     |  |
| 6.8  | 6.4  | 6.5  | 6.6                                     | 6.6 | 6.5 | 6.6 | 6.3 |     |     |     |     |     |  |     |     |     |     |  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |     |  |     |     |  |  |     |  |     |   |     |  |  |  |     |  |     |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |     |  |
| 6.5  | 6.5  | 6.6  | 6.7                                     | 6.6 | 6.6 |     | 6.4 |     |     |     |     |     |  |     |     |     |     |  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |     |  |     |     |  |  |     |  |     |   |     |  |  |  |     |  |     |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |     |  |
| 6.6  | 6.6  | 6.7  |   |     | 6.7 |     | 6.5 |     |     |     |     |     |  |     |     |     |     |  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |     |  |     |     |  |  |     |  |     |   |     |  |  |  |     |  |     |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |     |  |
|  | 6.7  |  |   |     | 6.8 |     | 6.6 |     |     |     |     |     |  |     |     |     |     |  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |     |  |     |     |  |  |     |  |     |   |     |  |  |  |     |  |     |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |     |  |
|  |  |  |   |     |     |     | 6.7 |     |     |     |     |     |  |     |     |     |     |  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |     |  |     |     |  |  |     |  |     |   |     |  |  |  |     |  |     |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |     |  |
|  |  |  |   |     |     |     | 6.8 |     |     |     |     |     |  |     |     |     |     |  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |     |  |     |     |  |  |     |  |     |   |     |  |  |  |     |  |     |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |     |  |



| PRECEDENT  | TYPOLOGY   | URBAN COHESION RESPONSE  |  |   |                                  |  |  |   |  | AGENCY/ AFFORDANCE/ DISPOSITIF /NETWORK  |
|--|--|--|--|---|----------------------------------|--|--|---|--|--|
|  |  |  |  |   |                                  |  |  |   |  |  |
|  <p>WRITERS THEATRE, United States, Studio Gang, 2016</p>                                     |  <ul style="list-style-type: none"> <li>• New with reuse of old library materials and park</li> <li>• Theatre Centre</li> </ul> | <p>7.3</p> <p>7.1</p> <p>7.2</p> <p>7.3</p> <p>7.5</p> <p>7.6</p> <p>7.7</p>       | <p>7.3</p> <p>7.5</p> <p>7.6</p> <p>7.8</p>            | <p>7.3</p> <p>7.1</p> <p>7.5</p> <p>7.9</p> | <p>7.1</p> <p>7.3</p> <p>7.6</p> | <p>7.1</p> <p>7.2</p> <p>7.4</p> <p>7.6</p> <p>7.9</p> | <p>7.8</p> <p>7.1</p> <p>7.3</p> <p>7.6</p> <p>7.8</p> | <p>7.1</p> <p>7.3</p> <p>7.5</p> <p>7.6</p> <p>7.9</p>            | <ul style="list-style-type: none"> <li>• <b>Agency:</b> Transformation of old Woman Library Club Park, Transfer of the spirit of the Writers theatre group</li> <li>• <b>Affordance:</b> An intervention which embodies the experience of Writers theatre group and link it to the environment</li> <li>• <b>'Dispositifs':</b> Spatial organisation, street and outdoor interface</li> <li>• <b>Networks:</b> Network of performers and their audience, theatre and outdoors, theatre and neighbourhood</li> </ul>  |  |
|  <p>FRIENDS CENTRE AT ANGKOR HOSPITAL FOR CHILDREN, Cambodia Cook + Fox Architects, 2006</p> | <ul style="list-style-type: none"> <li>• New addition to existing care facility</li> <li>• Outreach Pavilion</li> </ul>  | <p>8.2</p> <p>8.1</p> <p>8.2</p> <p>8.3</p> <p>8.7</p>                             | <p>8.1</p> <p>8.5</p> <p>8.3</p> <p>8.5</p> <p>8.7</p> | <p>8.1</p> <p>8.7</p> <p>8.8</p>            | <p>8.2</p> <p>8.3</p> <p>8.8</p> | <p>8.8</p> <p>8.1</p> <p>8.6</p> <p>8.7</p>            | <p>8.6</p> <p>8.3</p> <p>8.5</p> <p>8.6</p> <p>8.7</p> | <p>8.3</p> <p>8.4</p> <p>8.5</p> <p>8.6</p> <p>8.7</p> <p>8.8</p> | <ul style="list-style-type: none"> <li>• <b>Agency:</b> a gateway into the clinic without being in the clinic, mediator space, incorporation of culture and people's participation in the making of the pavilion</li> <li>• <b>Affordance:</b> Free plan allowing for interpretation of space, diversity, multifunctionality</li> <li>• <b>'Dispositifs':</b> Free plan, Materiality, transparency, pond/water catchment, roof, partitions</li> <li>• <b>Networks:</b> Public and information, Public and Clinic, public and cultural knowledge</li> </ul> |  |
|  <p>UVA EL PARAISO, Colombia, Empresa de Desarrollo Urbano de Medellín, 2015</p>            | <ul style="list-style-type: none"> <li>• New and adaptive reuse of a soccer field</li> <li>• Sport and Leisure centre</li> </ul>   | <p>9.2</p> <p>9.1</p> <p>9.2</p> <p>9.3</p> <p>9.4</p>                             | <p>9.5</p> <p>9.1</p> <p>9.3</p> <p>9.4</p>            | <p>9.2</p> <p>9.1</p> <p>9.3</p> <p>9.4</p> | <p>9.5</p> <p>9.1</p> <p>9.3</p> | <p>9.1</p> <p>9.4</p> <p>9.2</p> <p>9.3</p>            | <p>9.3</p> <p>9.5</p> <p>9.1</p> <p>9.2</p> <p>9.3</p> | <p>9.1</p> <p>9.3</p> <p>9.4</p>                                  | <p>9.5</p> <p>9.1</p> <p>9.2</p> <p>9.3</p> <p>9.4</p>   | <ul style="list-style-type: none"> <li>• <b>Agency:</b> Appropriation of underused soccer field, democratic provision of recreation</li> <li>• <b>Affordance:</b> Site affording form and atmosphere of intervention, diversity of platforms for activities, good circulation tied to activities</li> <li>• <b>'Dispositifs':</b> Sports fields and outdoor gym/ playground as introductions, sloped site, street interface, nature (streams and vegetation)</li> <li>• <b>Networks:</b> Community, nature and recreation</li> </ul> |

| PRECEDENT  | TYPOLOGY  | URBAN COHESION RESPONSE |              |              |              |              |              |              |              | AGENCY/ AFFORDANCE/ DISPOSITIF /NETWORK   |
|--|---|-------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---|
|  <p>EDUCATIONAL CENTER 'MONTECARLO', GUILLERMO GAVARIA CORREA, Colombia. EDU - Empresa de Desarrollo Urbano de Medellin, 2012</p> |  <ul style="list-style-type: none"> <li>New centre on old factory footprint</li> <li>Educational centre</li> </ul> | 10.4<br>10.5            | 10.5<br>10.8 | 10.8         | 10.3<br>10.5 | 10.4<br>10.5 | 10.1<br>10.2 | 10.1<br>10.2 | 10.1<br>10.2 | <ul style="list-style-type: none"> <li><b>Agency:</b> Democratic provision of recreation</li> <li><b>Affordance:</b> Multipurpose ground floor</li> <li><b>'Dispositifs':</b> Gallery and promenade, roof, soundproofing</li> <li><b>Networks:</b> Community and nature/ music, activities/ sports/ kindergarten</li> </ul>   |
|  <p>GIMNASIO VERTICAL (Vertical-gyms), Venezuela. Urban-Tink Tank c. 2001</p>  |  <ul style="list-style-type: none"> <li>Kit of Parts on existing vacant lot</li> <li>Gymnasium centre</li> </ul>   | 11.3<br>11.5            | 11.2<br>11.4 | 11.3         | 11.1<br>11.2 | 11.3<br>11.2 | 11.3<br>11.7 | 11.4<br>11.5 | 11.1<br>11.2 | <ul style="list-style-type: none"> <li><b>Agency:</b> Democratic provision of recreation, appropriation of leftover space, community participation into design</li> <li><b>Affordance:</b> Multilevel space for diversity of activities (play, active and passive sports like chess)</li> <li><b>'Dispositifs':</b> promenade, kit of parts, atrium</li> <li><b>Networks:</b> Community and recreation, social aspect</li> </ul>  |
|  <p>SESC POMREIA, São Paulo (Lina Bo Bardi) 1936</p>  |  <ul style="list-style-type: none"> <li>Adaptive reuse</li> <li>Sport and Leisure centre</li> </ul>              | 12.1<br>12.2            | 12.9         | 12.2<br>12.4 | 12.1<br>12.2 | 12.1         | 12.1<br>12.2 | 12.3         | 12.6         | <ul style="list-style-type: none"> <li><b>Agency:</b> community used as inspiration for organisation and atmosphere of the place, adaptive reuse of cultural artefacts</li> <li><b>Affordance:</b> Passages for activities, non standard sports courts to avoid competition, bridges as viewing decks</li> <li><b>'Dispositifs':</b> Passages, three towers, bridges, concrete openings, materiality</li> <li><b>Networks:</b> Community and recreation, cross generational network, Old factory worker and new space with some genius loci from the old</li> </ul> |

| PRECEDENT  | TYPOLOGY  | URBAN COHESION RESPONSE   | AGENCY/ AFFORDANCE/ DISPOSITIF /NETWORK |              |  |                                      |  |                                      |                                      |  |   |
|--|---|---|---|--------------|--|--------------------------------------|--|--------------------------------------|--------------------------------------|--|---|
|  <p>MAGGIE'S CENTRES<br/>Multiple architects, Europe and China, c1996</p>  |    <ul style="list-style-type: none"> <li>• New</li> <li>• Series of drop-in centres</li> <li>• Home-like</li> </ul> |  <table border="1"> <tr> <td>13.2</td> <td>13.1<br/>13.6</td> <td>13.1<br/>13.2<br/>13.6</td> <td>13.2</td> <td>13.1</td> <td>13.1<br/>13.1<br/>13.4<br/>13.5<br/>13.6</td> <td>13.1<br/>13.2<br/>13.6</td> <td>13.1<br/>13.2<br/>13.3<br/>13.4<br/>13.5<br/>13.6</td> </tr> </table> | 13.2                                    | 13.1<br>13.6 | 13.1<br>13.2<br>13.6                         | 13.2                                 | 13.1   | 13.1<br>13.1<br>13.4<br>13.5<br>13.6 | 13.1<br>13.2<br>13.6                 | 13.1<br>13.2<br>13.3<br>13.4<br>13.5<br>13.6 | <ul style="list-style-type: none"> <li>• <b>Agency:</b> Architect's interpretation of briefs for contextual responses, Architecture for well-being</li> <li>• <b>Affordance:</b> Brief set around a kitchen surrounded by outdoor connections setting, various interpretation of what these spaces can be</li> <li>• <b>'Dispositifs':</b> Kitchen, gardens, windows and openings</li> <li>• <b>Networks:</b> Cancer suffering patients and care facility and activities</li> </ul> |
| 13.2   | 13.1<br>13.6  | 13.1<br>13.2<br>13.6  | 13.2                                    | 13.1         | 13.1<br>13.1<br>13.4<br>13.5<br>13.6         | 13.1<br>13.2<br>13.6                 | 13.1<br>13.2<br>13.3<br>13.4<br>13.5<br>13.6 |                                      |                                      |  |   |
|  <p>COMMUNITY CONNECT, Houston, Gulfport, Sharotown, Purpose Built Communities,</p>  |   <ul style="list-style-type: none"> <li>• New and adaptive reuse</li> <li>• Neighbourhood</li> </ul>   | <table border="1"> <tr> <td>14.1</td> <td>14.3<br/>14.4</td> <td>14.1<br/>14.1<br/>14.2<br/>14.3<br/>14.4<br/>14.5</td> <td>14.2</td> <td>14.4</td> <td>14.1<br/>14.1<br/>14.2<br/>14.5</td> <td>14.1<br/>14.2<br/>14.3<br/>14.4<br/>14.5</td> <td>14.1<br/>14.1<br/>14.2<br/>14.2<br/>14.4</td> </tr> </table>   | 14.1                                    | 14.3<br>14.4 | 14.1<br>14.1<br>14.2<br>14.3<br>14.4<br>14.5 | 14.2                                 | 14.4   | 14.1<br>14.1<br>14.2<br>14.5         | 14.1<br>14.2<br>14.3<br>14.4<br>14.5 | 14.1<br>14.1<br>14.2<br>14.2<br>14.4         | <ul style="list-style-type: none"> <li>• <b>Agency:</b> Synergy in a neighbourhood, Community-driven project</li> <li>• <b>Affordance:</b> Shared spaces , use of the neighbourhoods streets, roads and infrastructures for small spatial moments</li> <li>• <b>'Dispositifs':</b> Institutions' spaces, infrastructures, streets</li> <li>• <b>Networks:</b> Community and its members, community and visitors</li> </ul>  |
| 14.1   | 14.3<br>14.4  | 14.1<br>14.1<br>14.2<br>14.3<br>14.4<br>14.5  | 14.2                                    | 14.4         | 14.1<br>14.1<br>14.2<br>14.5                 | 14.1<br>14.2<br>14.3<br>14.4<br>14.5 | 14.1<br>14.1<br>14.2<br>14.2<br>14.4         |                                      |                                      |  |   |
|  <p>SOS CHILDREN'S VILLAGES LAVEZZARIO COMMUNITY CENTRE, Illinois Studio Gang Architects, 2008</p>  | <ul style="list-style-type: none"> <li>• New</li> <li>• Community Centre</li> </ul>   | <table border="1"> <tr> <td>15.2</td> <td>15.2<br/>15.3</td> <td>15.2<br/>15.3<br/>15.4</td> <td>15.2</td> <td>15.5</td> <td>15.1<br/>15.2<br/>15.3</td> <td>15.1<br/>15.4<br/>15.5<br/>15.6</td> <td>15.1<br/>15.3<br/>15.4<br/>15.5<br/>15.6</td> </tr> </table>  | 15.2                                    | 15.2<br>15.3 | 15.2<br>15.3<br>15.4                         | 15.2                                 | 15.5   | 15.1<br>15.2<br>15.3                 | 15.1<br>15.4<br>15.5<br>15.6         | 15.1<br>15.3<br>15.4<br>15.5<br>15.6         | <ul style="list-style-type: none"> <li>• <b>Agency:</b> A community centre for people's comfort, social life and safety</li> <li>• <b>Affordance:</b> Articulation of atrium and circulation to accommodate activities</li> <li>• <b>'Dispositifs':</b> Materiality, openings, circulation</li> <li>• <b>Networks:</b> Children and recreation, families and communities</li> </ul>   |
| 15.2   | 15.2<br>15.3  | 15.2<br>15.3<br>15.4  | 15.2                                    | 15.5         | 15.1<br>15.2<br>15.3                         | 15.1<br>15.4<br>15.5<br>15.6         | 15.1<br>15.3<br>15.4<br>15.5<br>15.6         |                                      |                                      |  |   |

| PRECEDENT   | TYPOLOGY  | URBAN COHESION RESPONSE   | AGENCY/ AFFORDANCE/ DISPOSITIF /NETWORK   |      |      |      |      |      |      |      |      |  |      |  |      |      |  |      |      |      |      |      |      |      |  |      |  |      |      |      |  |  |      |      |  |      |      |      |  |  |      |      |  |  |      |  |  |  |  |  |   |
|---|---|---|---|------|------|------|------|------|------|------|------|--|------|--|------|------|--|------|------|------|------|------|------|------|--|------|--|------|------|------|--|--|------|------|--|------|------|------|--|--|------|------|--|--|------|--|--|--|--|--|---|
|  <p>SUPERKILEN, Copenhagen, Tøpotek 1 + BIG Architects + Superflex, 2012</p>                                     |   <ul style="list-style-type: none"> <li>• Street/ plaza adaptive reuse</li> <li>• Park/Plaza</li> </ul>                      |   | <ul style="list-style-type: none"> <li>• <b>Agency:</b> Public space for a diverse community, ethnic and nationality representation in public space, public participation for representation opinion</li> <li>• <b>Affordance:</b> linearity of space for promenade and thematic, integration into urban fabric and the everyday, gallery-like aspect</li> <li>• <b>'Dispositifs':</b> International artefacts, materiality, thematic, colour, promenade, in-between</li> <li>• <b>Networks:</b> Diverse community and public space, and diverse community discovering itself, people and recreation</li> </ul> |      |      |      |      |      |      |      |      |  |      |  |      |      |  |      |      |      |      |      |      |      |  |      |  |      |      |      |  |  |      |      |  |      |      |      |  |  |      |      |  |  |      |  |  |  |  |  |   |
|  <p>HIGH LINE, New York<br/>Diller Scofidio + Renfro, JamesCorner Field Operations ,1999-2011</p>               |   <ul style="list-style-type: none"> <li>• Infrastructure adaptive reuse</li> <li>• Infrastructure</li> <li>• Park</li> </ul> | <table border="1"> <tr><td>17.1</td><td>17.6</td><td>17.1</td><td>17.7</td><td>17.2</td><td>17.2</td><td>17.2</td><td>17.1</td></tr> <tr><td>17.3</td><td></td><td>17.2</td><td></td><td>17.6</td><td>17.3</td><td></td><td>17.2</td></tr> <tr><td>17.4</td><td>17.4</td><td>17.4</td><td>17.4</td><td></td><td>17.7</td><td></td><td>17.4</td></tr> <tr><td></td><td>17.6</td><td>17.5</td><td>17.5</td><td></td><td></td><td>17.1</td><td>17.5</td></tr> <tr><td></td><td>17.7</td><td>17.6</td><td>17.6</td><td></td><td></td><td>17.4</td><td>17.7</td></tr> <tr><td></td><td></td><td>17.7</td><td></td><td></td><td></td><td></td><td></td></tr> </table> | 17.1  | 17.6 | 17.1 | 17.7 | 17.2 | 17.2 | 17.2 | 17.1 | 17.3 |  | 17.2 |  | 17.6 | 17.3 |  | 17.2 | 17.4 | 17.4 | 17.4 | 17.4 |      | 17.7 |  | 17.4 |  | 17.6 | 17.5 | 17.5 |  |  | 17.1 | 17.5 |  | 17.7 | 17.6 | 17.6 |  |  | 17.4 | 17.7 |  |  | 17.7 |  |  |  |  |  | <ul style="list-style-type: none"> <li>• <b>Agency:</b> Adaptive reuse of infrastructure and different ways</li> <li>• <b>Affordance:</b> Industrial and urban presence for genus loci, growth of wild plants as indicator for future vegetation in the design, linearity and promenade, proximity to buildings, height, linkages and destinations</li> <li>• <b>'Dispositifs':</b> the infrastructure/bridge, rails</li> <li>• <b>Networks:</b> People and park/recreation, people and destinations</li> </ul> |
| 17.1  | 17.6  | 17.1  | 17.7  | 17.2 | 17.2 | 17.2 | 17.1 |      |      |      |      |  |      |  |      |      |  |      |      |      |      |      |      |      |  |      |  |      |      |      |  |  |      |      |  |      |      |      |  |  |      |      |  |  |      |  |  |  |  |  |   |
| 17.3  |   | 17.2  |   | 17.6 | 17.3 |      | 17.2 |      |      |      |      |  |      |  |      |      |  |      |      |      |      |      |      |      |  |      |  |      |      |      |  |  |      |      |  |      |      |      |  |  |      |      |  |  |      |  |  |  |  |  |   |
| 17.4  | 17.4  | 17.4  | 17.4  |      | 17.7 |      | 17.4 |      |      |      |      |  |      |  |      |      |  |      |      |      |      |      |      |      |  |      |  |      |      |      |  |  |      |      |  |      |      |      |  |  |      |      |  |  |      |  |  |  |  |  |   |
|   | 17.6  | 17.5  | 17.5  |      |      | 17.1 | 17.5 |      |      |      |      |  |      |  |      |      |  |      |      |      |      |      |      |      |  |      |  |      |      |      |  |  |      |      |  |      |      |      |  |  |      |      |  |  |      |  |  |  |  |  |   |
|   | 17.7  | 17.6  | 17.6  |      |      | 17.4 | 17.7 |      |      |      |      |  |      |  |      |      |  |      |      |      |      |      |      |      |  |      |  |      |      |      |  |  |      |      |  |      |      |      |  |  |      |      |  |  |      |  |  |  |  |  |   |
|   |   | 17.7  |   |      |      |      |      |      |      |      |      |  |      |  |      |      |  |      |      |      |      |      |      |      |  |      |  |      |      |      |  |  |      |      |  |      |      |      |  |  |      |      |  |  |      |  |  |  |  |  |   |
|  <p>LEA MOBILE LIBRARY, Foro Lindbergh (Parque México), Project for Public Spaces + Lugares Públicos, 2015</p> |   <ul style="list-style-type: none"> <li>• Park space appropriation</li> <li>• (Park) Library</li> </ul>                  | <table border="1"> <tr><td>18.1</td><td>18.2</td><td>18.1</td><td>18.2</td><td>18.2</td><td>18.1</td><td>18.2</td><td>18.2</td></tr> <tr><td></td><td></td><td>18.2</td><td></td><td></td><td>18.2</td><td></td><td></td></tr> <tr><td></td><td>18.1</td><td></td><td>18.1</td><td>18.1</td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td>18.2</td><td>18.2</td><td></td><td></td><td></td><td></td></tr> </table>   | 18.1  | 18.2 | 18.1 | 18.2 | 18.2 | 18.1 | 18.2 | 18.2 |      |  | 18.2 |  |      | 18.2 |  |      |      | 18.1 |      | 18.1 | 18.1 |      |  |      |  |      | 18.2 | 18.2 |  |  |      |      | <ul style="list-style-type: none"> <li>• <b>Agency:</b> Democratic provision of libraries</li> <li>• <b>Affordance:</b> Mobility to experience various places, space offered by the park</li> <li>• <b>'Dispositifs':</b> LEA itself, movable furniture</li> <li>• <b>Networks:</b> People and education/recreation/leisure, people and the outdoors, communities</li> </ul> |      |      |      |  |  |      |      |  |  |      |  |  |  |  |  |   |
| 18.1  | 18.2  | 18.1  | 18.2  | 18.2 | 18.1 | 18.2 | 18.2 |      |      |      |      |  |      |  |      |      |  |      |      |      |      |      |      |      |  |      |  |      |      |      |  |  |      |      |  |      |      |      |  |  |      |      |  |  |      |  |  |  |  |  |   |
|   |   | 18.2  |   |      | 18.2 |      |      |      |      |      |      |  |      |  |      |      |  |      |      |      |      |      |      |      |  |      |  |      |      |      |  |  |      |      |  |      |      |      |  |  |      |      |  |  |      |  |  |  |  |  |   |
|   | 18.1  |   | 18.1  | 18.1 |      |      |      |      |      |      |      |  |      |  |      |      |  |      |      |      |      |      |      |      |  |      |  |      |      |      |  |  |      |      |  |      |      |      |  |  |      |      |  |  |      |  |  |  |  |  |   |
|   |   | 18.2  | 18.2  |      |      |      |      |      |      |      |      |  |      |  |      |      |  |      |      |      |      |      |      |      |  |      |  |      |      |      |  |  |      |      |  |      |      |      |  |  |      |      |  |  |      |  |  |  |  |  |   |

# APPENDIX G: Full Green Star report

Green Building Council of South Africa

07:02 2021/11/15

## Green Star SA - Public & Education Building v1 Credit Summary

Comments:

Enter description of project aspects etc.

| Category                          | Title                                 | Credit No. | Points Available | Points Achieved | Points to be Confirmed | Percent of Available Points Achieved | Weighting | Weighted Score |
|-----------------------------------|---------------------------------------|------------|------------------|-----------------|------------------------|--------------------------------------|-----------|----------------|
| <b>Management</b>                 |                                       |            |                  |                 |                        |                                      |           |                |
|                                   | Green Star SA Accredited Professional | Man - 1    | 2                | 0               | 0                      |                                      |           |                |
|                                   | Commissioning Clauses                 | Man - 2    | 2                | 0               | 0                      |                                      |           |                |
|                                   | Building Tuning                       | Man - 3    | 2                | 0               | 0                      |                                      |           |                |
|                                   | Independent Commissioning Agent       | Man - 4    | 1                | 0               | 0                      |                                      |           |                |
|                                   | Building Users' Guide                 | Man - 5    | 1                | 0               | 1                      |                                      |           |                |
|                                   | Environmental Management              | Man - 6    | 2                | 0               | 2                      |                                      |           |                |
|                                   | Waste Management                      | Man - 7    | 3                | 0               | 2                      |                                      |           |                |
|                                   | Building Management Systems           | Man - 10   | 1                | 0               | 0                      |                                      |           |                |
|                                   | Learning Resources                    | Man - 13   | 1                | 0               | 1                      |                                      |           |                |
|                                   | Life Cycle Costing                    | Man - 14   | 1                | 0               | 1                      |                                      |           |                |
|                                   | Maintainability                       | Man - 15   | 1                | 0               | 1                      |                                      |           |                |
|                                   | <b>TOTAL</b>                          |            | <b>17</b>        | <b>0</b>        | <b>8</b>               | 0%                                   | 11%       | <b>0,0</b>     |
| <b>Indoor Environment Quality</b> |                                       |            |                  |                 |                        |                                      |           |                |
|                                   | Ventilation                           | IEQ - 1    | 2                | 0               | 2                      |                                      |           |                |
|                                   | Carbon Dioxide Monitoring and Control | IEQ - 3    | 1                | 0               | 0                      |                                      |           |                |
|                                   | Daylight                              | IEQ - 4    | 3                | 0               | 0                      |                                      |           |                |
|                                   | Daylight Glare Control                | IEQ - 5    | 1                | 0               | 1                      |                                      |           |                |
|                                   | Electric Lighting Levels              | IEQ - 7    | 1                | 0               | 0                      |                                      |           |                |
|                                   | External Views                        | IEQ - 8    | 2                | 0               | 2                      |                                      |           |                |
|                                   | Thermal Comfort                       | IEQ - 9    | 2                | 0               | 0                      |                                      |           |                |
|                                   | Hazardous Materials                   | IEQ - 11   | 1                | 0               | 0                      |                                      |           |                |
|                                   | Internal Noise Levels                 | IEQ - 12   | 3                | 0               | 0                      |                                      |           |                |
|                                   | Volatile Organic Compounds            | IEQ - 13   | 3                | 0               | 1                      |                                      |           |                |
|                                   | Formaldehyde Minimisation             | IEQ - 14   | 1                | 0               | 0                      |                                      |           |                |
|                                   | Mould Prevention                      | IEQ - 15   | 1                | 0               | 1                      |                                      |           |                |
|                                   | Dedicated Exhaust Riser               | IEQ - 16   | 1                | 0               | 0                      |                                      |           |                |
|                                   | Stairs                                | IEQ - 23   | 1                | 0               | 1                      |                                      |           |                |
|                                   | <b>TOTAL</b>                          |            | <b>23</b>        | <b>0</b>        | <b>8</b>               | 0%                                   | 15%       | <b>0,0</b>     |
| <b>Energy</b>                     |                                       |            |                  |                 |                        |                                      |           |                |
|                                   | Conditional Requirement               | Ene - 0    |                  | Not Achieved    | -                      |                                      |           |                |
|                                   | Greenhouse Gas Emissions              | Ene - 1    | 20               | 0               | 0                      |                                      |           |                |
|                                   | Energy Sub-metering                   | Ene - 2    | 3                | 0               | 0                      |                                      |           |                |
|                                   | Lighting Zoning                       | Ene - 4    | 2                | 0               | 0                      |                                      |           |                |
|                                   | Maximum Electrical Demand Reduction   | Ene - 5    | 3                | 0               | 0                      |                                      |           |                |
|                                   | Unoccupied spaces                     | Ene - 11   | 2                | 0               | 0                      |                                      |           |                |
|                                   | <b>TOTAL</b>                          |            | <b>30</b>        | <b>0</b>        | <b>0</b>               | 0%                                   | 25%       | <b>0,0</b>     |
| <b>Transport</b>                  |                                       |            |                  |                 |                        |                                      |           |                |
|                                   | Provision of Car Parking              | Tra - 1    | 2                | 0               | 0                      |                                      |           |                |
|                                   | Fuel Efficient Transport              | Tra - 2    | 2                | 0               | 2                      |                                      |           |                |
|                                   | Cyclist Facilities                    | Tra - 3    | Requires a 'na'  |                 | 5                      |                                      |           |                |
|                                   | Commuting Mass Transport              | Tra - 4    | 5                | 4               | 0                      |                                      |           |                |
|                                   | Local Connectivity                    | Tra - 5    | 2                | 0               | 1                      |                                      |           |                |
|                                   | Vehicle Operating Emissions           | Tra - 7    | 2                | 0               | 1                      |                                      |           |                |
|                                   | <b>TOTAL</b>                          |            | <b>18</b>        | <b>4</b>        | <b>9</b>               | 22%                                  | 11%       | <b>2,4</b>     |
| <b>Water</b>                      |                                       |            |                  |                 |                        |                                      |           |                |
|                                   | Potable Water                         | Wat - 1    | 12               | 7               | 0                      |                                      |           |                |
|                                   | Water Sub-Metering                    | Wat - 2    | 3                | 0               | 2                      |                                      |           |                |
|                                   | <b>TOTAL</b>                          |            | <b>15</b>        | <b>7</b>        | <b>2</b>               | 47%                                  | 12%       | <b>5,6</b>     |
| <b>Materials</b>                  |                                       |            |                  |                 |                        |                                      |           |                |
|                                   | Recycling Waste Storage               | Mat - 1    | 3                | 1               | 2                      |                                      |           |                |
|                                   | Building Reuse                        | Mat - 2    | 5                | 0               | 1                      |                                      |           |                |
|                                   | Reused and Recycled Materials         | Mat - 3    | 2                | 0               | 2                      |                                      |           |                |
|                                   | Concrete                              | Mat - 5    | 3                | 0               | 0                      |                                      |           |                |
|                                   | Steel                                 | Mat - 6    | 3                | 0               | 0                      |                                      |           |                |
|                                   | Timber                                | Mat - 8    | 2                | 0               | 1                      |                                      |           |                |
|                                   | Design for Disassembly                | Mat - 9    | 1                | 0               | 0                      |                                      |           |                |
|                                   | Dematerialisation                     | Mat - 10   | 1                | 0               | 1                      |                                      |           |                |
|                                   | Local Sourcing                        | Mat - 11   | 2                | 0               | 0                      |                                      |           |                |
|                                   | Masonry                               | Mat - 13   | 2                | 0               | 1                      |                                      |           |                |
|                                   | <b>TOTAL</b>                          |            | <b>24</b>        | <b>1</b>        | <b>10</b>              | 4%                                   | 12%       | <b>0,5</b>     |

Green Building Council of South Africa

07:02 2021/11/15

| Category                                     | Title                                | Credit No. | Points Available | Points Achieved | Points to be Confirmed | Percent of Available Points Achieved | Weighting | Weighted Score                           |
|--|--------------------------------------|------------|------------------|-----------------|------------------------|--------------------------------------|-----------|--|
| <b>Land Use &amp; Ecology</b>                |                                      |            |                  |                 |                        |                                      |           |  |
|  | Conditional Requirement              | Eco - 0    |                  | Not Achieved    | -                      |                                      |           |  |
|  | Topsoil                              | Eco - 1    | 1                | 0               | 1                      |                                      |           |  |
|  | Reuse of Land                        | Eco - 2    | 2                | 0               | 1                      |                                      |           |  |
|  | Reclaimed Contaminated Land          | Eco - 3    | 2                | 0               | 0                      |                                      |           |  |
|  | Change of Ecological Value           | Eco - 4    | 4                | 0               | 3                      |                                      |           |  |
|  | Urban Heat Island                    | Eco - 5    | 2                | 0               | 3                      |                                      |           |  |
|  | Community Facilities                 | Eco - 8    | 1                | 0               | 1                      |                                      |           |  |
|  | <b>TOTAL</b>                         |            | <b>12</b>        | <b>0</b>        | <b>9</b>               | 0%                                   | 7%        | <b>0,0</b>                               |
| <b>Emissions</b>                             |                                      |            |                  |                 |                        |                                      |           |  |
|  | Watercourse Pollution                | Emi - 5    | 3                | 0               | 3                      |                                      |           |  |
|  | Discharge to Sewer                   | Emi - 6    | 5                | 2               | 1                      |                                      |           |  |
|  | Light Pollution                      | Emi - 7    | 1                | 0               | 1                      |                                      |           |  |
|  | Legionella                           | Emi - 8    | 1                | 0               | 0                      |                                      |           |  |
|  | Boiler and Generator Emissions       | Emi - 9    | 1                | 0               | 0                      |                                      |           |  |
|  | Atmospheric Deterioration Avoidance  | Emi - 11   | 6                | 0               | 1                      |                                      |           |  |
|  | <b>TOTAL</b>                         |            | <b>17</b>        | <b>2</b>        | <b>5</b>               | 12%                                  | 7%        | <b>0,8</b>                               |
| <b>Sub-total weighted points achieved: 9</b> |                                      |            |                  |                 |                        |                                      |           |  |
| <b>Innovation</b>                            |                                      |            |                  |                 |                        |                                      |           |  |
|  | Innovative Strategies & Technologies | Inn - 1    | 5                | 0               | 2                      |                                      |           |  |
|  | Exceeding Green Star SA Benchmarks   | Inn - 2    | 5                | 0               | 1                      |                                      |           |  |
|  | Environmental Design Initiatives     | Inn - 3    | 5                | 0               | 1                      |                                      |           |  |
|  | <b>TOTAL</b>                         |            | <b>5</b>         | <b>0</b>        | <b>4</b>               |                                      |           | <b>0</b><br>(Innovation is not weighted) |
| <b>Total weighted points achieved: 9</b>     |                                      |            |                  |                 |                        |                                      |           |  |

The GBCSA does not endorse any self-assessed rating achieved by the use of Green Star SA - Public & Education Building v1. The GBCSA offers a formal certification process for ratings of Four Stars and above; this service provides for independent third party review of points claimed to ensure all points can be demonstrated to be achieved by the provision of the necessary documentary evidence. The use of Green Star SA - Public & Education Building v1 without formal certification by the GBCSA does not entitle the user or any other party to promote the Green Star SA rating achieved.

| Weighted Score | Rating    |
|----------------|-----------|
| 45-59          | Four Star |
| 60-74          | Five Star |
| 75+            | Six Star  |

## APPENDIX I: Ecology table (Author 2021)

| Element                                       | Area pre intervention (m <sup>2</sup> ) | Area post intervention (m <sup>2</sup> ) | Information Source |
|---|---|--|--------------------|
| Bio-region type                               | Savana                                  |  | SANBI c.2021       |
| Vegetation type                               | Marikana thornveld                      |  | SANBI c.2021       |
| Impervious/concrete area                      | 5644,59                                 |  |                    |
| Total Impervious/concrete area                |   | 6904,59                                  |                    |
| Permeable Paving                              | –                                       | 1041                                     |                    |
| Bare ground                                   | 34056                                   | 0  |                    |
| Construction company                          | 453                                     | 0  |                    |
| Pool buildings total                          | 290                                     |  |                    |
| Caretaker building                            | 196,2                                   |  |                    |
| Total buildings on site                       | 939,2                                   |  |                    |
| Total buildings kept                          | 486,2                                   |  |                    |
| New Buildings                                 |   | 4326                                     |                    |
| Total kept                                    |   | 4812,2                                   |                    |
| Natural Wetland                               | –                                       | –  |                    |
| Rehabilitation/Creation of Wetland/Riparian   | 0                                       | 19980                                    |                    |
| Natural Grazing                               | 21178                                   |  |                    |
| Existing Natural Waterway/Riparian Zone*      | 21178                                   | 21178                                    |                    |
| Indigenous Garden                             | 0                                       | 1295                                     |                    |
| Indigenous Roof Garden                        | 0                                       |  |                    |
| Regenerated Endemic Habitat (< 10 years old)* |   | 21178 (Riparian zone)                    |                    |
| Consultation pavilion garden roof             | –                                       | 282                                      |                    |
| Workshop pavilion garden roof                 | –                                       | –  |                    |
| Educational Pavilion garden roof              | –                                       | 457,2                                    |                    |
| Garden Pavilion garden roof                   | –                                       | 175,8                                    |                    |
| Sports Pavilion garden roofs                  | –                                       | 469                                      |                    |
| Total gravel roof                             | –                                       | 146                                      |                    |
| Total roof garden                             | –                                       | 1384                                     |                    |

|                  |   |   |      |
|------------------|---|---|------|
| Total flat roofs | – | – | 1530 |
| Pool zone-pool   | – |   | 2845 |

## APPENDIX J: Rainwater calculations (Author 2021)

| Name                       | Area (m <sup>2</sup> ) | Water consumption | Water wasted (L) | Mamelodi Av.<br>Annual rainfall<br>(mm) | Harvesting<br>Capacity (L) | Amount of<br>users | Flow rates<br>(L/flush or<br>L/min) | Information Source  |
|----------------------------|------------------------|-------------------|------------------|---|----------------------------|--------------------|-------------------------------------|---|
| Consultation pavilion roof | 162                    |                   |                  | 708                                     |                            |                    |                                     | <a href="https://en.climate-data.org/africa/south-africa/gauteng/mamelodi-27164/">https://en.climate-data.org/africa/south-africa/gauteng/mamelodi-27164/</a> |
| Workshop pavilion roof     | 690                    |                   |                  | 708                                     | 114696                     |                    |                                     |   |
| Educational Pavilion roof  | 253                    |                   |                  | 708                                     | 488520                     |                    |                                     |   |
| Garden Pavilion roof       | 108                    |                   |                  | 708                                     | 179124                     |                    |                                     |   |
| Sports Pavilion roofs      | 888                    |                   |                  | 708                                     | 76464                      |                    |                                     |   |
| Bicycle Pavilion roof      | 94,5                   |                   |                  | 708                                     | 628704                     |                    |                                     |   |
| Sibande stalls roof        | 520                    |                   |                  | 708                                     | 66906                      |                    |                                     |   |
| Tsomo stalls roof          | 780                    |                   |                  | 708                                     | 368160                     |                    |                                     |   |
| Total IBR                  | 3495,5                 |                   |                  | 708                                     | 552240                     |                    |                                     |   |
| Total flat roof            |                        |                   |                  |   | 2474814                    |                    |                                     |   |
| Stormwater runoff          | 2542                   |                   |                  | 708                                     | 1799736                    |                    |                                     |   |
| Indigenous garden          |                        |                   |                  | 708                                     |                            |                    |                                     |   |
| Shower (4-10 minute )      |                        |                   | 7                |   |                            |                    | 7                                   |   |
| Car wash                   |                        | 15-70 L/wash      |                  |   |                            |                    |                                     |   |

Hand wash basin 4,5

Urinals

[https://www.sawater.com.au/\\_\\_data/assets/pdf\\_file/0006/6693/Factsheet\\_SmallBusiness.pdf](https://www.sawater.com.au/__data/assets/pdf_file/0006/6693/Factsheet_SmallBusiness.pdf)

Toilet flushing

11L/flush

[https://www.sawater.com.au/\\_\\_data/assets/pdf\\_file/0008/6686/Factsheet\\_Amenities.pdf](https://www.sawater.com.au/__data/assets/pdf_file/0008/6686/Factsheet_Amenities.pdf)

Washing machine

72 L/load

<https://www.pub.gov.sg/wels/Documents/Water%20Efficiency%20Requirements%20for%20Products.pdf>

Pool

328



Pool pump

1429,1667

Wetland

Water storage tank

Building's dominant  
occupation type

Information Source

SANS 10400 A

2016: 44-45

**Occupancy**

SANS 10400A 2016:

46

**Design Population**

E3 institutional

(residential) 2/bedroom

G1 offices 1/15 m<sup>2</sup>

A1-A5 (excl A3) 1/m<sup>2</sup>

A3 (instruction) 1/5m<sup>2</sup>

H2 Dorm 1/5m<sup>2</sup>

A1 Entertainment,  
public assembly 1/m<sup>2</sup>

A2 theatre and  
sports 1/m<sup>2</sup>

A5 outdoor sports 1/m<sup>2</sup>

D3-D1 high to low

risk industrial 1/15m<sup>2</sup>

J3-J1 storage 1/50m<sup>2</sup>

**Provision for  
sanitation fixtures**

SANS 10400 P  
2010: 29-33

APPENDIX K: Extracted activity mapping on Hinterland and the Buffer Zone  
(Niebuhr 2021)

