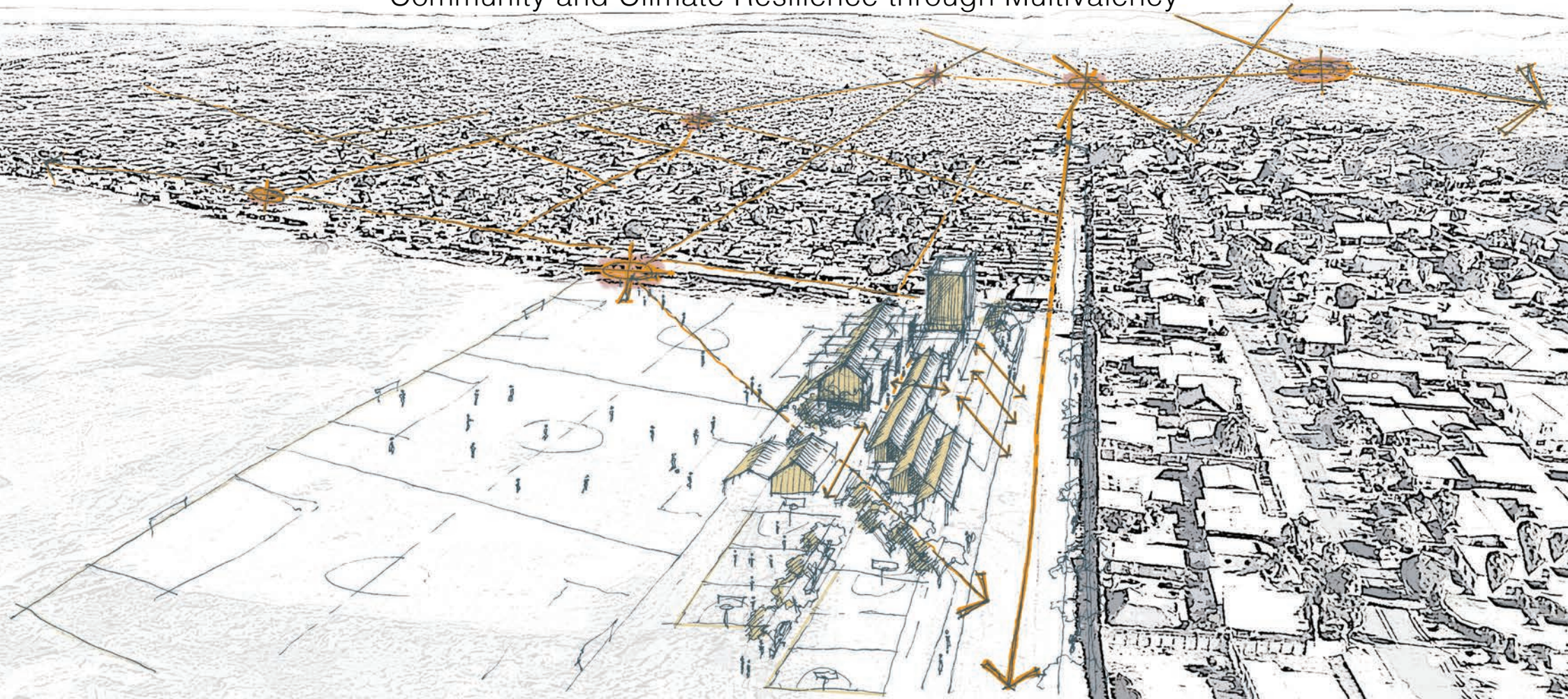


ITIRELENG

Community and Climate Resilience through Multivalency



ABSTRACT

Author:

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Supervisor:

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Project Location:

cnr 1st Avenue and Outline Road, Itireleng, Centurion, City of Tshwane, Gauteng

Project Coordinates:

25°47'12.9"S 28°04'45.5"E

Building Programme:

Community Centre

Primary Stakeholders:

Department of Social Development,
Department of Transport,
Department of Sports, Art and Culture,
Department of Education.

Theoretical Premise:

Incremental Development & Climate Change Adaptation

Keywords:

Incremental development,
Informal settlement,
Socio-economic upliftment,
Flexibility and Multivalency

In response to rapid urbanization and the apartheid scars of spatial segregation, this project proposes a multifunctional community centre in Itireleng, an informal settlement near Laudium, Gauteng. The design explores how architecture can catalyse socio-economic upliftment in marginalized communities by incorporating multivalency, flexibility, and resource efficiency. The project integrates sustainable design principles and incremental urban development, creating resilient, adaptive spaces that fosters community engagement and growth in challenging environmental and social conditions.

Context

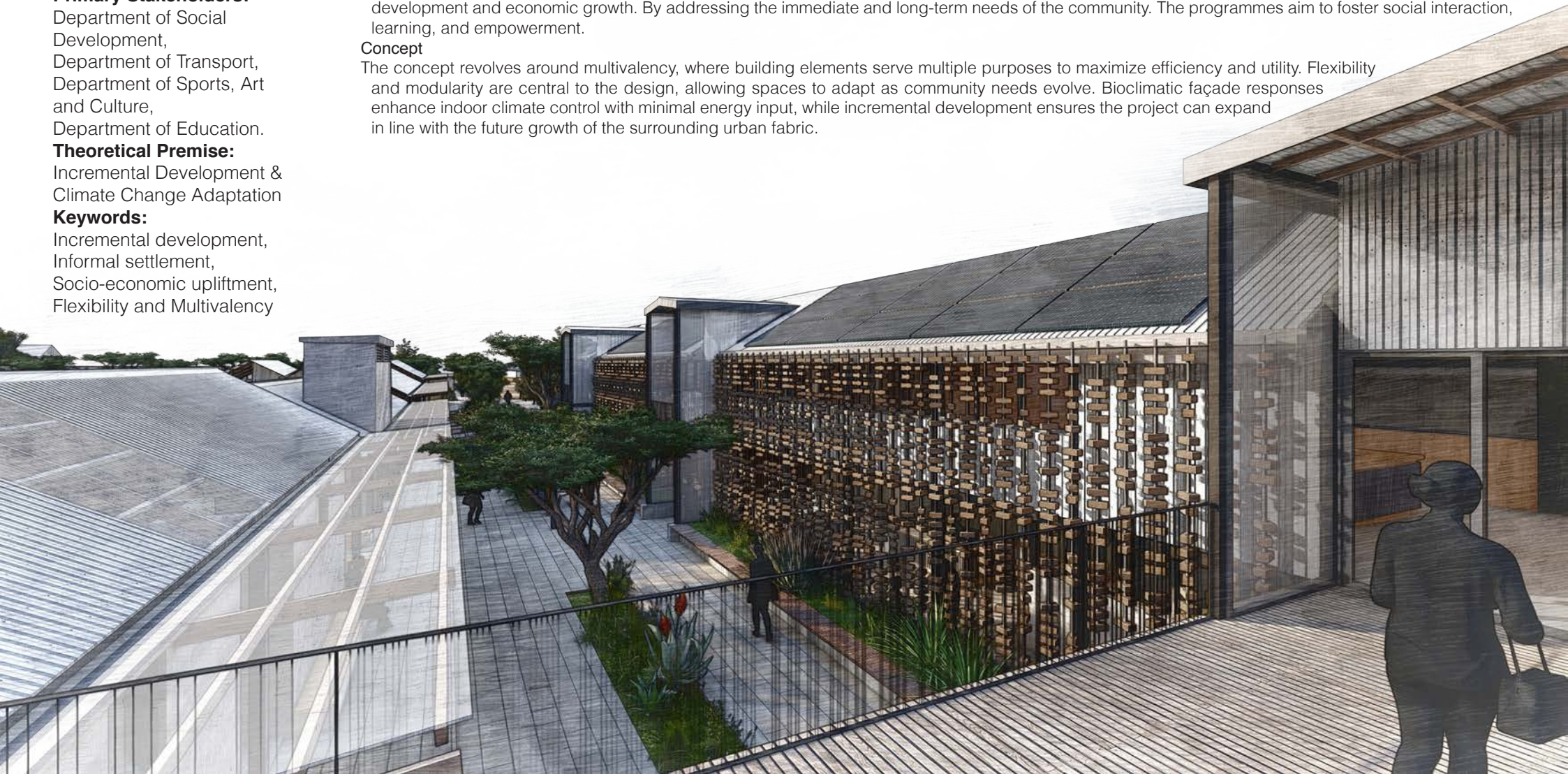
In the post-apartheid era, the city faces the challenge of reintegrating segregated and marginalised communities, which suffer from inadequate infrastructure, unemployment, insecure land tenure, and lack of access to essential services like water, electricity, and sanitation. The population of region 4 in the City of Tshwane is growing at a rate of 4,6% per year, exceeding all other regions. The vulnerability of informal settlements like Itireleng is further exacerbated by climate change risks, with rising temperatures putting added stress on residents and infrastructure. This project seeks to address these pressing socio-economic and environmental challenges through architectural intervention.

Programme

The proposed community centre will serve as a hub for socio-economic development, offering a multiple services and functions. Educational facilities such as an Early Childhood Development Centre, vocational and skills development training and workshop spaces, a library, and digital labs are integral parts of the design. Additionally, transport facilities, sports facilities, market areas, and workshops for mechanics and local traders create opportunities for skills development and economic growth. By addressing the immediate and long-term needs of the community. The programmes aim to foster social interaction, learning, and empowerment.

Concept

The concept revolves around multivalency, where building elements serve multiple purposes to maximize efficiency and utility. Flexibility and modularity are central to the design, allowing spaces to adapt as community needs evolve. Bioclimatic façade responses enhance indoor climate control with minimal energy input, while incremental development ensures the project can expand in line with the future growth of the surrounding urban fabric.



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Fig. 1 (Author, 2024)

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Fig. 2 (Author, 2024)

INTRODUCTION

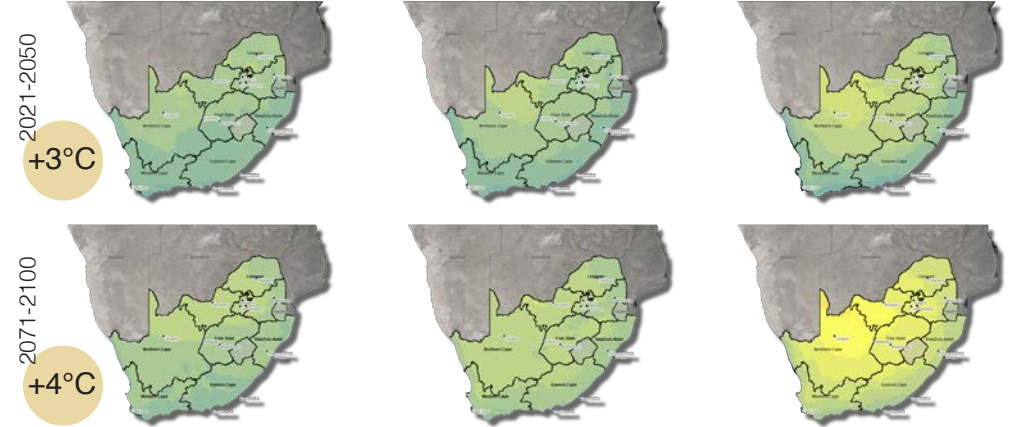
Climate Change

Ambient temperatures in Africa are expected to grow at a pace greater than any other continent (Collins, 2011:3652). It has been revealed that Southern Africa is experiencing a temperature increase that is 1.5-2 times higher than the global average (CSIR, 2019:online; DEA, 2013:3). The factors mentioned above result in informal communities having an extremely low adaptive capacity in response to climate change risks (City of Tshwane, 2022:5; Pieterse, 2011:9) like heat stress, droughts, fires, biodiversity loss, food insecurity, and flooding (IPCC, 2021).

These communities are often neglected when considering climate change adaptation strategies (Hugo, 2023:56), when their vulnerability requires more attention to mitigate climate risks. Governments in low and middle-income countries like South Africa aspire to eradicate informality and provide housing solutions to its citizens (Hugo, 2023:56), although achieving this can take considerable amounts of time and resources (City of Tshwane, 2022:5). Therefore, vulnerable groups like informal settlements require an alternative, more resilient approach to mitigate heat stress exposure (Abdulkareem & Al-Maiyah, 2018:1)

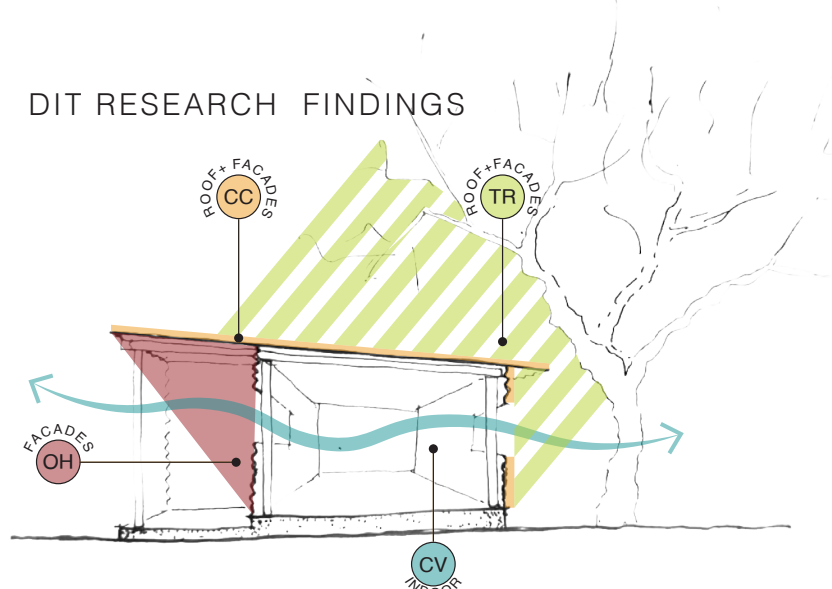
RCP PROJECTIONS

Representative Concentration Pathway 4.5 Intermediate Scenario



DIT RESEARCH FINDINGS

- TR** Tree - solar shading active on highest solar gain envelop element (roof) active on second highest solar gain envelop element (walls)
- OH** Overhangs - solar shading active on second highest solar gain envelop element (walls)
- CV** Cross Ventilation active within indoor environment
- CC** Cool Coating - active on highest and second highest solar gain envelope elements (roof and walls)



CLIMATE ADAPTATION MEASURES

basic services and infrastructure			
	clean, safe, reliable energy provision	quality, dignified water & sanitation systems	improved waste management systems
	housing and construction		
strong, resilient buildings		insulation (thermal comfort)	alternative building materials (fire retardant paint etc.)
neighbourhood level			
	developing green spaces (food gardens contribute to 'greening' the area and can buffer food insecurity)	protecting natural areas	early evacuation plans in case of disaster
			sustainable drainage systems



Rapid Urban Migration and Informality

Region 4 of Tshwane, which includes Itireleng, had a population of approximately 460,000 in 2018, with the highest growth rate in the city at 4.6% per year (City of Tshwane, 2018:33). However, like many other informal settlements in South Africa, Itireleng faces severe challenges, including a lack of essential services such as water, electricity, and sanitation, as well as the absence of legal land tenure.

The majority of structures in Itireleng are self-built using makeshift materials due to the community's socio-economic constraints and limited resources. These buildings, constructed from the most readily available materials, often have poor thermal properties, leading to uncomfortable living conditions with high indoor temperatures (Natkiewicz, Mastrucci, Rao & Jain, 2022:3; Dovey, 2015:8).

Informal settlements like Itireleng arise due to factors such as rapid urbanization, ineffective planning, a shortage of affordable housing, dysfunctional urban and housing policies, and poverty (UN-Habitat, 2022:48). Across South Africa, an estimated 12.3% of households live in informal dwellings (Statistics South Africa, 2022). They are typically densely populated, with housing developed out of necessity, often without formal planning or access to basic services. The lack of infrastructure, combined with insecure land tenure, makes residents particularly vulnerable to both economic and environmental pressures (Pieterse, 2011:8).

These conditions highlight the urgent need to address the challenges facing informal settlements to achieve the United Nations Sustainable Development Goals (UN-Habitat, 2022; Kimemia, Niekerk, Annegarn & Seedat, 2020:29).



Fig. 5 adapted from (Google Earth, 2024)



Fig. 6 (Pomerantz, 2019)

Historical Segregation

Adjacent to Itireleng sits Laudium and Atteridgeville, which were developed as a part of the Group Areas Act 1950 allowing the designation of certain geographic areas for use by a single race (Fisher et al., 1998:155).

These policies were responsible for the destruction of large portions of Marabastad and facilitated the forced removal of inhabitants as it was regarded as slum encroachment into “white space” (Fisher et al., 1998:155). Atteridgeville and Mamelodi were designated for Black inhabitants, Ersterust for Coloured, and Laudium for Indian populations (Brandt, 2002:226). The positioning of Laudium and Atteridgeville utilised strategic boundaries such as militarised zones (Thaba Tshwane) and geographical features (Laudium Ridge) intended to separate the townships from the city (Fisher et al., 1998).

The City of Tshwane identifies the western part of Region 4 is currently still not sufficiently served by bulk transport infrastructure despite this being the direction of residential development (City of Tshwane, 2018:41).

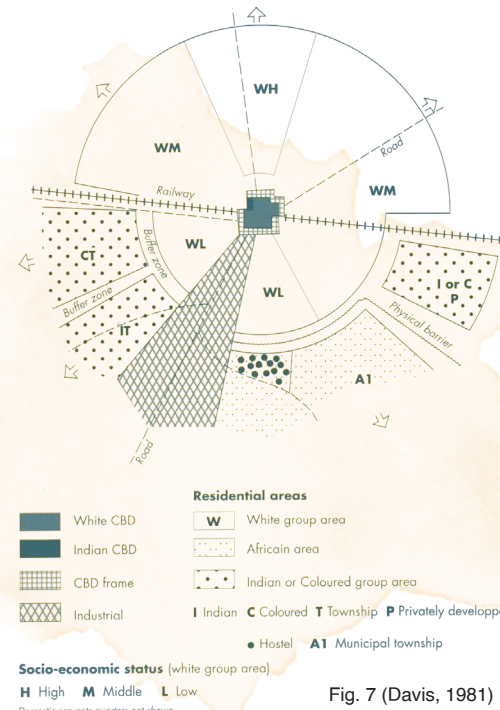


Fig. 7 (Davis, 1981)



Fig. 8 adapted from (Chipkin C, 1990:169)

THEORETICAL FRAMEWORK

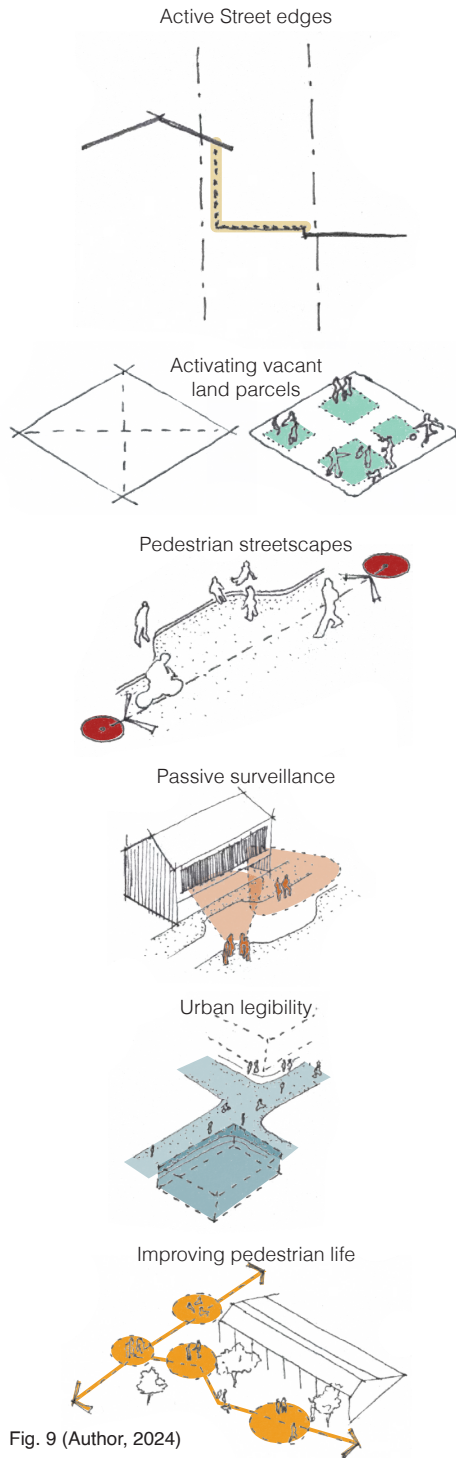


Fig. 9 (Author, 2024)

Incremental Development - Jane Jacobs (1989)

Jane Jacobs' *The Death and Life of Great American Cities* (1961) critiques the large-scale, top-down urban planning of her era and champions incremental development to foster vibrant, functional neighbourhoods. Jacobs argues that successful cities thrive on complexity and diversity, with neighbourhoods blending residential, commercial, and public spaces that promote interaction. Incremental development supports this organic growth by allowing small, gradual adjustments rather than imposing rigid, sweeping changes. She believes that small-scale, incremental changes prevent the social and structural disruptions typical of large projects, preserving community identity and continuity.

Jacobs emphasizes “eyes on the street,” the idea that active streets with diverse uses enhance community safety. Incremental development fosters this by encouraging engaged street presence through a variety of local activities and businesses, creating both a lively and safer urban environment. Furthermore, Jacobs underscores the value of local knowledge, advocating for urban changes shaped by residents’ insights rather than distant planners. This approach supports economic vitality, allowing local businesses to thrive and neighbourhoods to evolve in response to actual needs. Her idea of urban experimentation aligns with incremental development, suggesting that cities improve by trying small changes, learning, and adapting over time.

Through her focus on mixed-use spaces, small-scale evolution, and community involvement, Jacobs presents a vision of urban growth grounded in organic change, ensuring neighbourhoods develop with diversity, allowing for flexible, adaptable strategies that grow with the community. Fostering resilience, and responsiveness grounded in human experience and gradual, meaningful change.

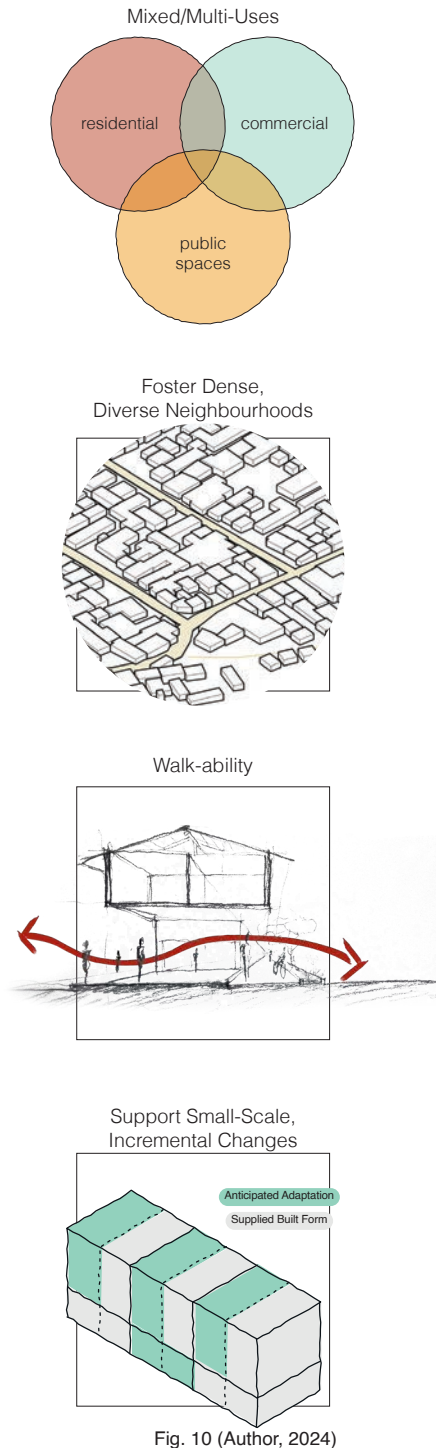


Fig. 10 (Author, 2024)

Cities for People - Jan Gehl (2013)

Jan Gehl's *Cities for People* emphasizes human-scale urban design, focusing on elements that make public spaces comfortable, engaging, and accessible for all. A central aspect of his approach is walkability, where streets are designed to be pleasant and easy to navigate on foot. Gehl advocates for wide, obstacle-free sidewalks with visual interest and varied paths to keep pedestrians engaged. He also promotes proportional building heights that complement human scale, creating a sense of comfort rather than overwhelming people with towering structures. Streets should be human-scaled, balancing traffic needs while preserving inviting pedestrian environments.

Active ground floors are another key element in Gehl's design philosophy. By ensuring that ground levels are filled with lively shops, cafes, and services, these spaces draw pedestrians into vibrant streetscapes. Gehl also advocates for street furniture and amenities—benches, lighting, and restrooms—which add comfort and encourage people to linger in public spaces. Additionally, safety and accessibility are prioritized through well-lit streets, visible crosswalks, and accessible ramps, ensuring that public areas are navigable for everyone, including those with disabilities.

Gehl's approach includes designing with public transportation integration and social interaction in mind. Conveniently located transit stops with smooth connections between pedestrian zones and transport nodes improve access while inviting public spaces like plazas and parks to promote socialization. Gehl also supports incremental change, encouraging small-scale improvements and adaptations over time-based on real-world use and feedback. Through these human-centred strategies, Gehl's principles foster urban environments where people feel comfortable, connected, and valued.

Resilience through Flexibility

The growing need for the built environment to respond appropriately to climate risks and ever-changing and rapidly developing cities in Africa has resulted in the need for flexible solutions that are sustainable for long-term use.

Flexibility refers to the ability of a building to adapt to users' changing needs and incorporate the potential to employ new technologies (Till & Schneider, 2005:287). Thus facilitating the adaptive capacity of a multitude of transient developing conditions including demographics, socioeconomic, and technical, allowing adaptability not only through building services but also through multi-programmed and multifunctional spatial arrangements (Hugo, 2021:731). Adaptation therefore aims to limit the adverse effects of climate change, while exploiting any beneficial outcomes from these impacts (Hugo, 2021:732).

Key architectural principles to achieve flexibility include: being highly responsive to diverse climatic conditions; allowing for a variety of functions to be performed within spaces; enabling and exploiting a series of multivalent building components to achieve both resource efficiency and comfort; as well as allowing for adaptation and development of a building over time.

This approach also becomes particularly relevant in the given context as users are given a sense of spatial agency to adapt spaces as needed, where authorship of more flexible spaces allows for ownership by the community. This fosters a connection to the site where pride is taken in using and maintaining the spaces.

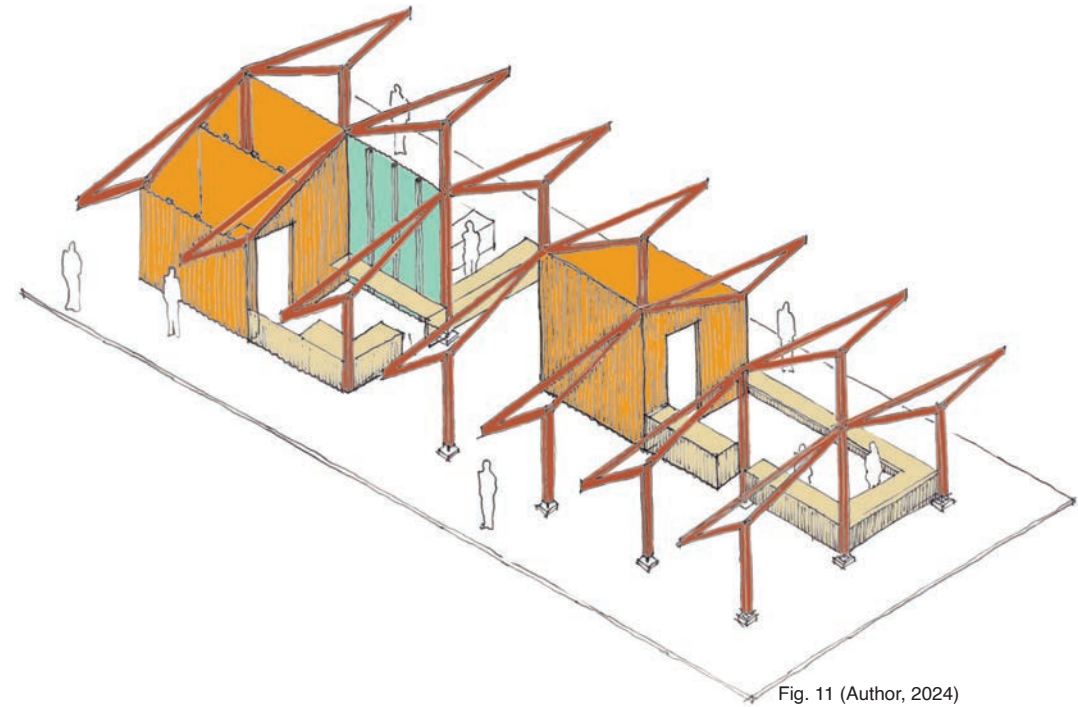


Fig. 11 (Author, 2024)

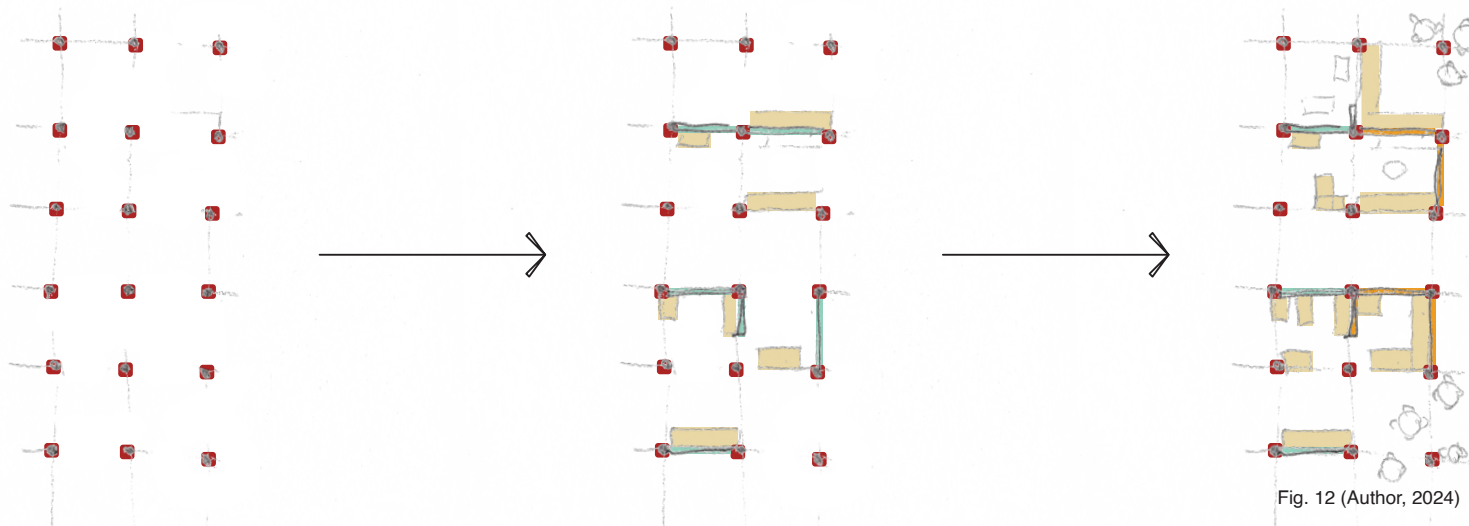


Fig. 12 (Author, 2024)

SITE ANALYSIS

MACRO SCALE

Itireleng is located in Gauteng, South Africa, approximately 12 km southwest of Pretoria's CBD. Situated on the urban fringe of the Western residential extension in Laudium within Region 4 of the City of Tshwane, the project site defines the formal-informal boundary. This settlement is geographically isolated, with limited infrastructure connecting it to established urban areas (City of Tshwane, 2018:41).

Region 4 is identified as the southern gateway to the city, but its spatial structure relies heavily on private vehicle transport, with public transport infrastructure underdeveloped (City of Tshwane, 2018:41). Rapid, uncoordinated development has left bulk services and road infrastructure struggling to keep pace. Uncontrolled informal expansion toward the west threatens ecologically sensitive areas (City of Tshwane, 2018:41). Since 2004, Itireleng has rapidly expanded westward, establishing an informal connection to Atteridgeville and surrounding informal settlements.

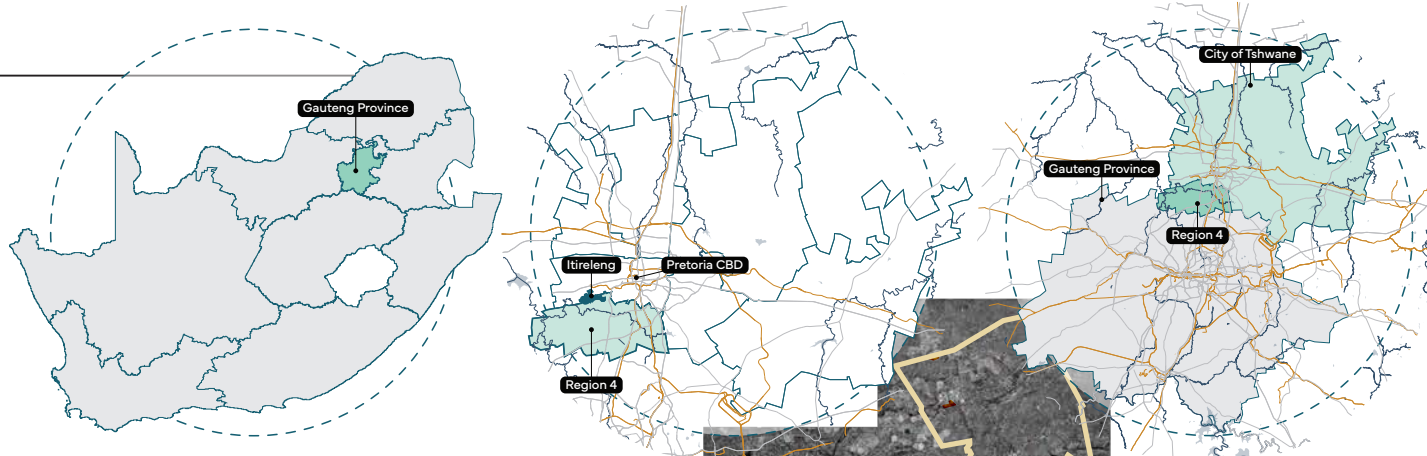


Fig 15. (Author, 2024)

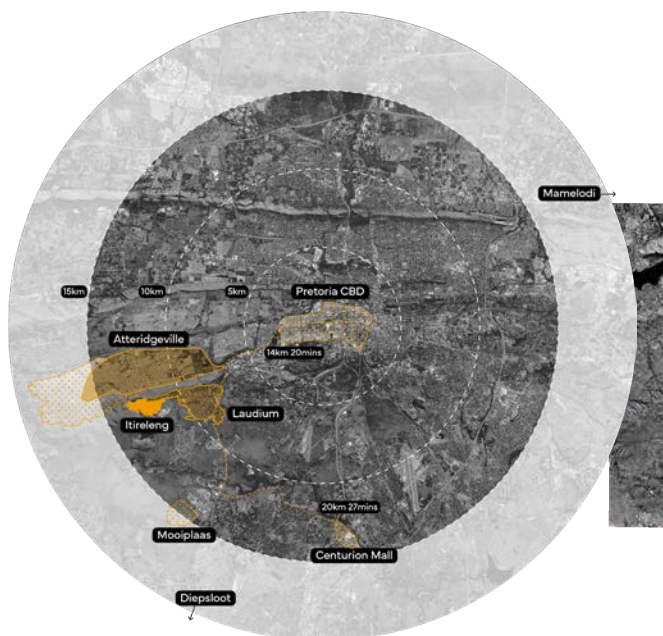
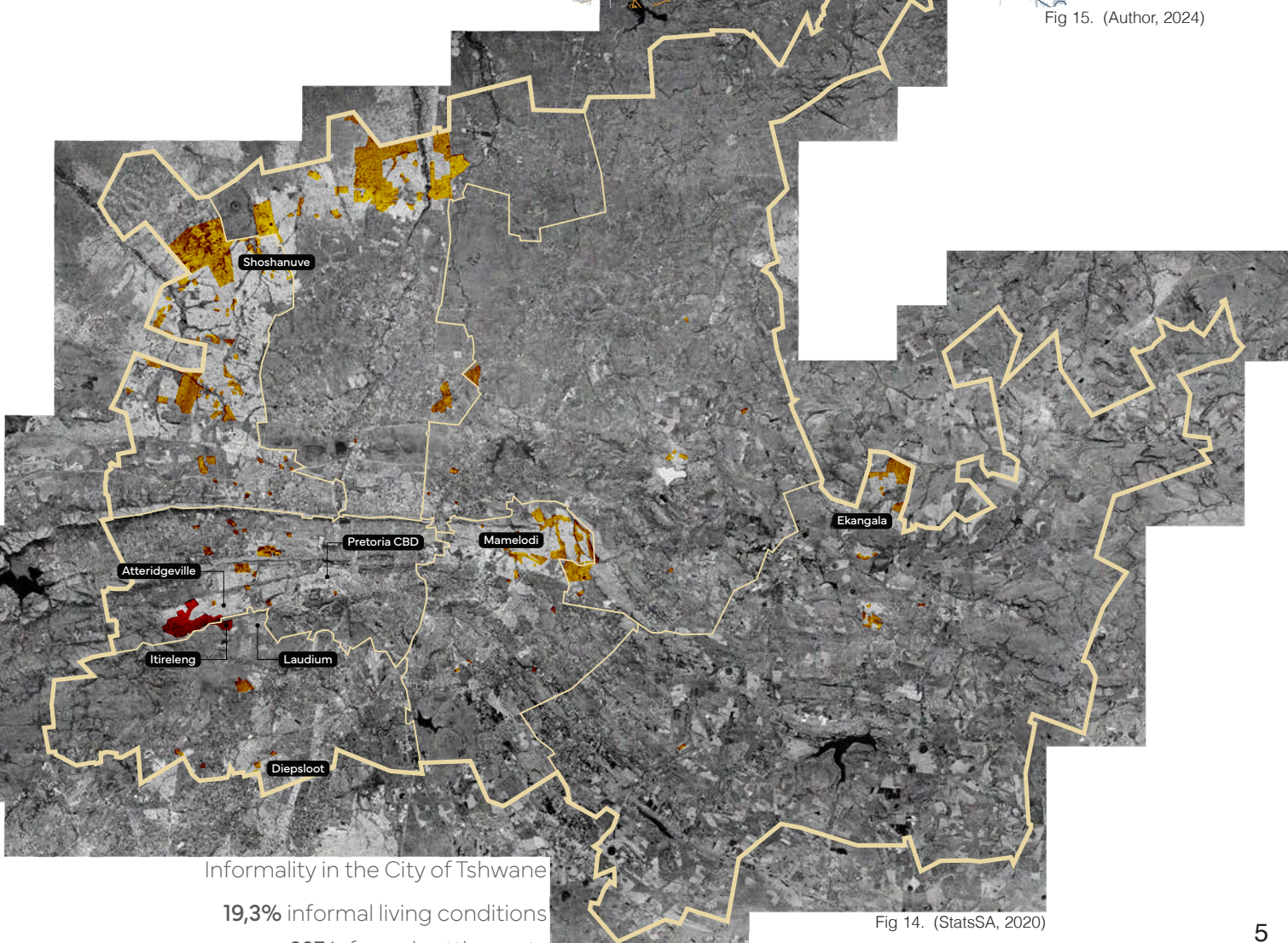


Fig. 13 (Author, 2024)



Informality in the City of Tshwane

19,3% informal living conditions

227 informal settlements

Fig 14. (StatsSA, 2020)

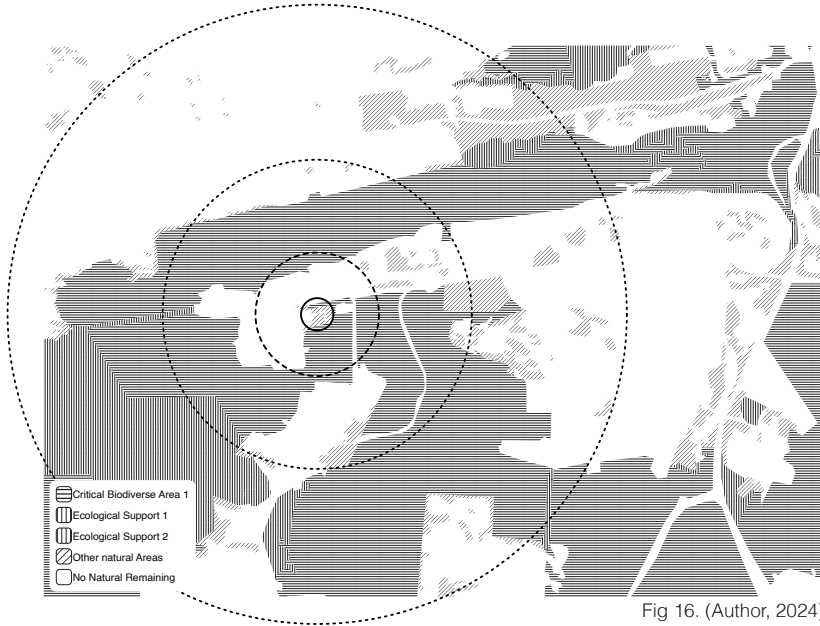


Fig 16. (Author, 2024)

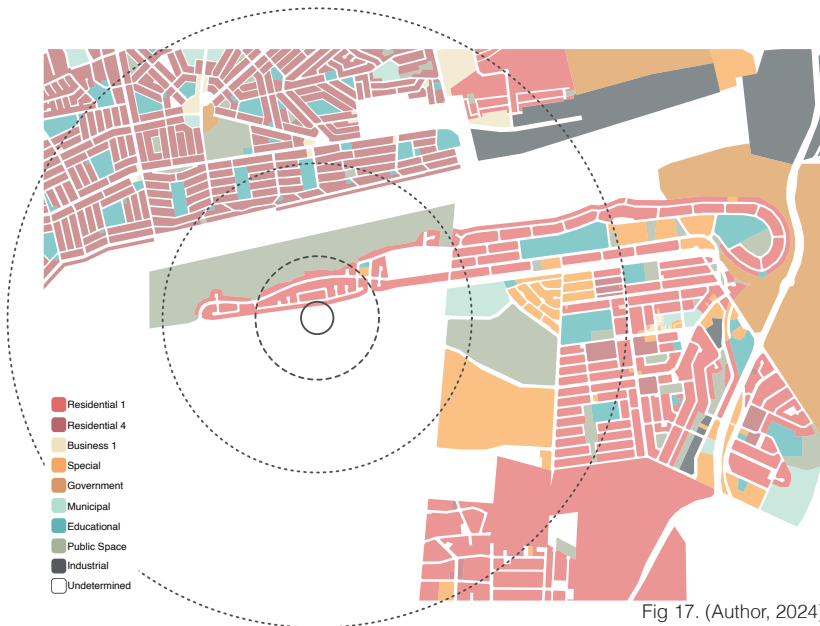


Fig 17. (Author, 2024)

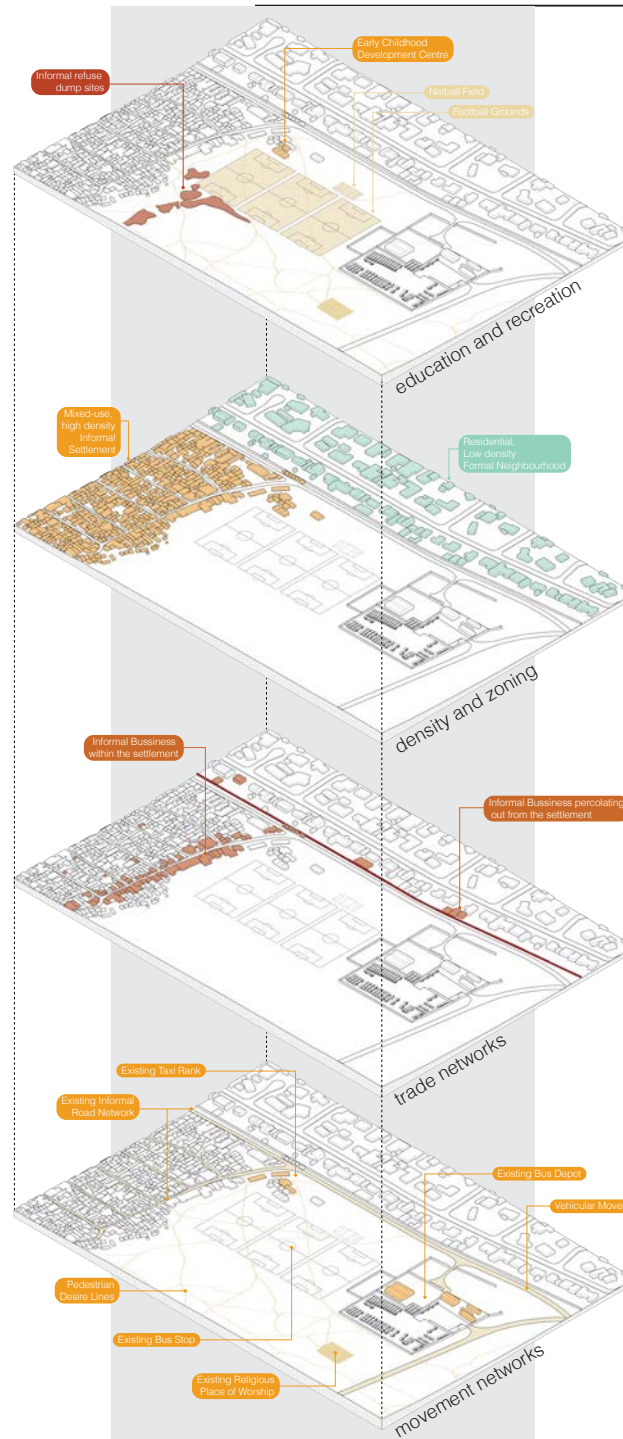


Fig 18. (Author, 2024)

MESO SCALE

The Itireleng community is bordered by the formal residential extension of Laudium to the north, and PPC Aggregate Quarries to the south, where encroachment has resulted in many uncivilized conflicts and the forced removal of dwellings (ref). The setting isolates Itireleng from the urban fabric leaving Outline / Military Road as the only transportation connector to the settlement.

Transport Network

A taxi binding space, which accommodates approximately 35 taxis serves as the primary transport node for residents providing routes to major destinations such as Centurion and Pretoria, as well as minor commutes to Atteridgeville, Erasmus, and Laudium. The city provides six buses daily for transporting schoolchildren to Atteridgeville where more affordable schooling options exist.

Socio-Economic Conditions

Many people find employment at Sunderland Ridge Industrial Park, PPC Quarry however, a large percentage of the community is unemployed. Surrounding land uses are predominantly residential with pockets of educational and municipal. Although small, Laudium has 16 schools, most of which are private and financially inaccessible to Itireleng residents.

The Institute for Islamic Services, a local organisation in Laudium, operates Tokollo Skills Development Centre and food programmes, to feed, educate, uplift and empower vulnerable community members (Institute for Islamic Services, 2024:online). The Red Crescent Society of South Africa (IFRC) also has an office in Laudium offering programmes leadership, capacity building and disaster relief improving conditions for vulnerable communities (International Federation of Red Cross and Red Crescent, 2022:3).

Access to healthcare is provided by the Laudium Hospital and AVR Clinic, located 1km away, although local informal pharmacies exist within the settlement offering limited services. A previous attempt to establish a remote clinic in Itireleng failed as consultations were unaffordable for the residents.

MICRO SITE ANALYSIS

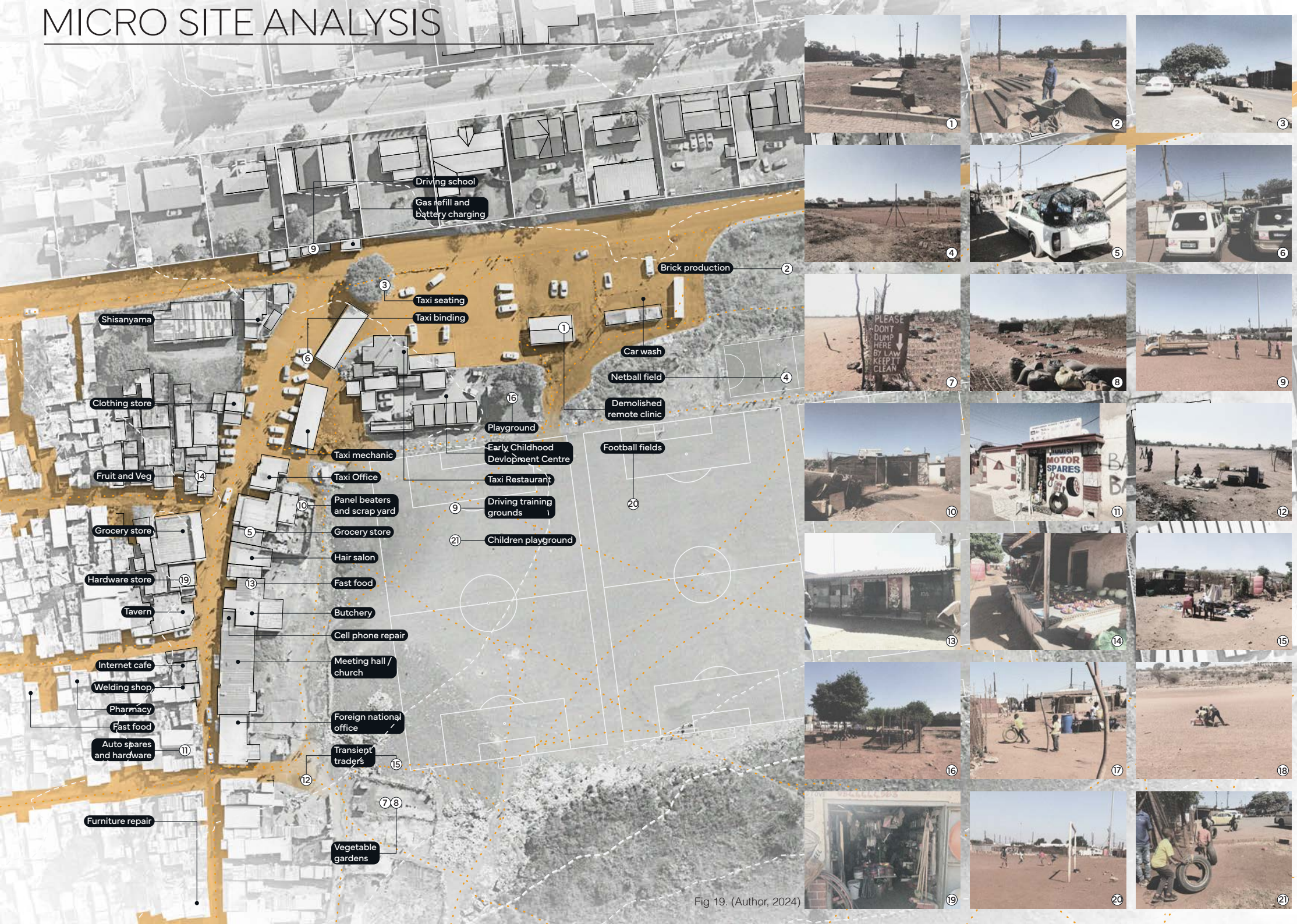
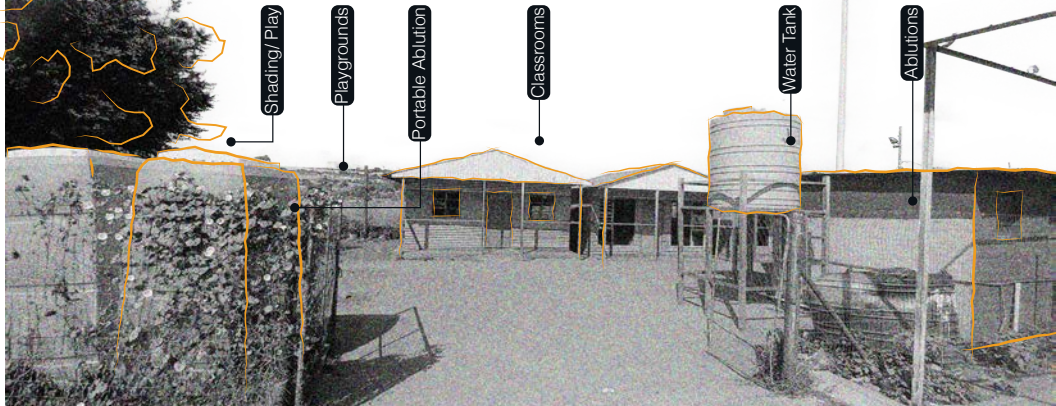
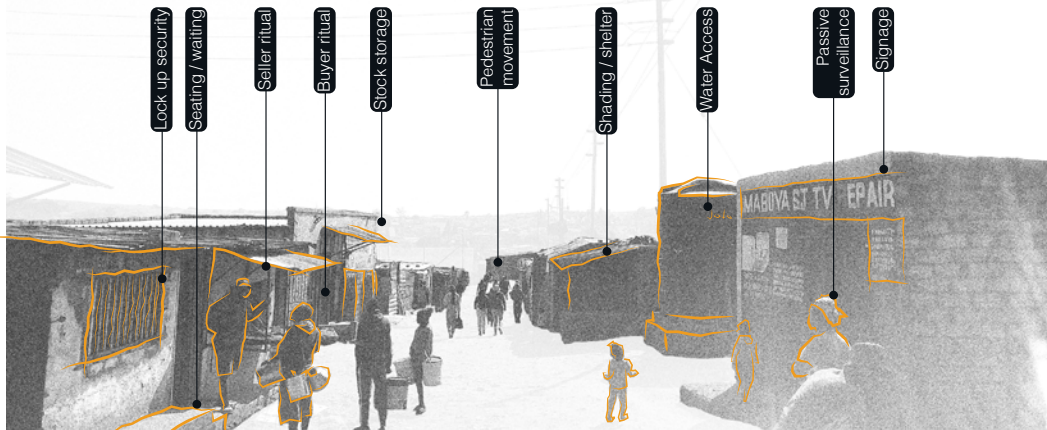


Fig 19. (Author, 2024)

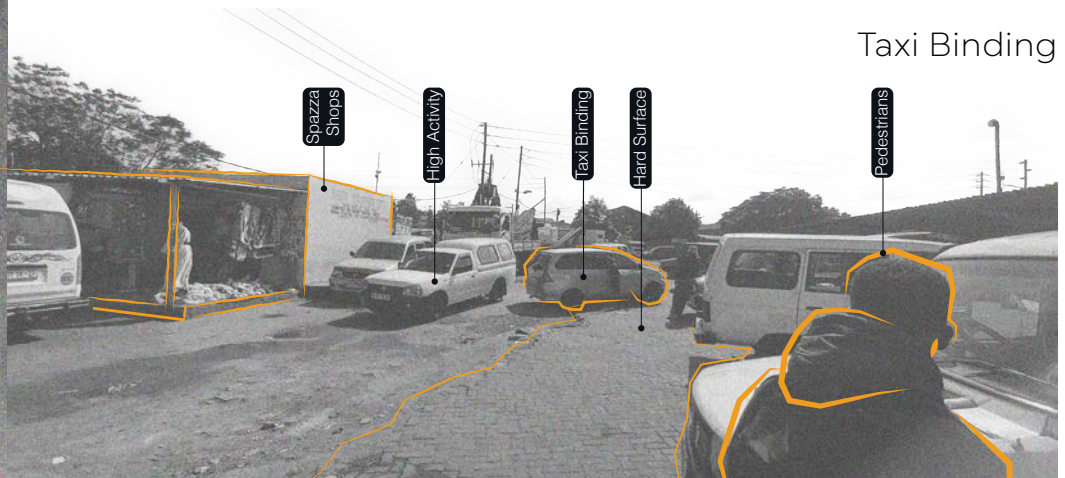
Early Childhood Development Centre



Streetscape



Streetscape



Taxi Binding

Micro Scale

The project site currently facilitates multiple uses within a dense footprint. Primary existing functions include a taxi binding space, bus stop, ECD, and sports grounds. Supplementary functions include a car wash and mechanic to service taxis, driving schools, restaurants and various small businesses. The ECD schools 65 children in three classrooms, with a small kitchen, ablutions and a small play area, fenced off for safety.

The three large football fields are again multi functional and utilised by the buses as a drop-off and collection point for students in the mornings and afternoons, and as a driving school training area. On Sundays, the fields host football matches, where local businesses and restaurants serve food and drinks. During weekdays the fields provide a space for children to play. Adjacent to the fields, areas previously used for dumping have been cleared by community members and converted into food gardens. Concrete brick production is another notable activity; materials are sourced from PPC and Vibro Cement to manufacture building materials for sale within the community. Additional activities around the site include places of worship and transient trade spaces.

DEVELOPMENT FRAMEWORK

Urban Proposal

The urban vision is derived from the City of Tshwane's Regional Spatial Development Framework (City of Tshwane, 2018), and supported by the theoretical framework of Incremental Development, Urban Acupuncture, and City Making. The city identifies the need for transport and service infrastructure for the ongoing rapid development, they propose a class 2 metropolitan distributor road to connect Laudium to Atteridgeville on the western outskirts (City of Tshwane, 2018).

A sensitive site selection framework for Urban Acupuncture application identifies nodes to facilitate incremental development, allowing for progressive in-situ upgrading from the nodes along an activity corridor (Nassar, 2021:15; Warnich & Verster, 2005:345).

Corridor development or the "string of beads" concept suggests nodes and sub-nodes occur along a main movement channel, where infrastructural generation occurs (Warnich & Verster, 2005:344). Thus supporting the notion of urban integration, intensification and containment of urban sprawl (Cape Metropolitan Council, 2000).

The Violence Prevention through Urban Upgrading (VPUU) project in Khayelitsha, Cape Town serves as an urban precedent. The project utilises training services, clinics, ECDs, and schooling-based interventions to facilitate change. The success of the project demonstrates the potential of carefully positioned programmes to improve living conditions, enhance social cohesion and prevent social violence in sub-urban settlements (Violence Prevention through Urban Upgrading, 2024), thus facilitating sustainable incremental change and holistic community upliftment.

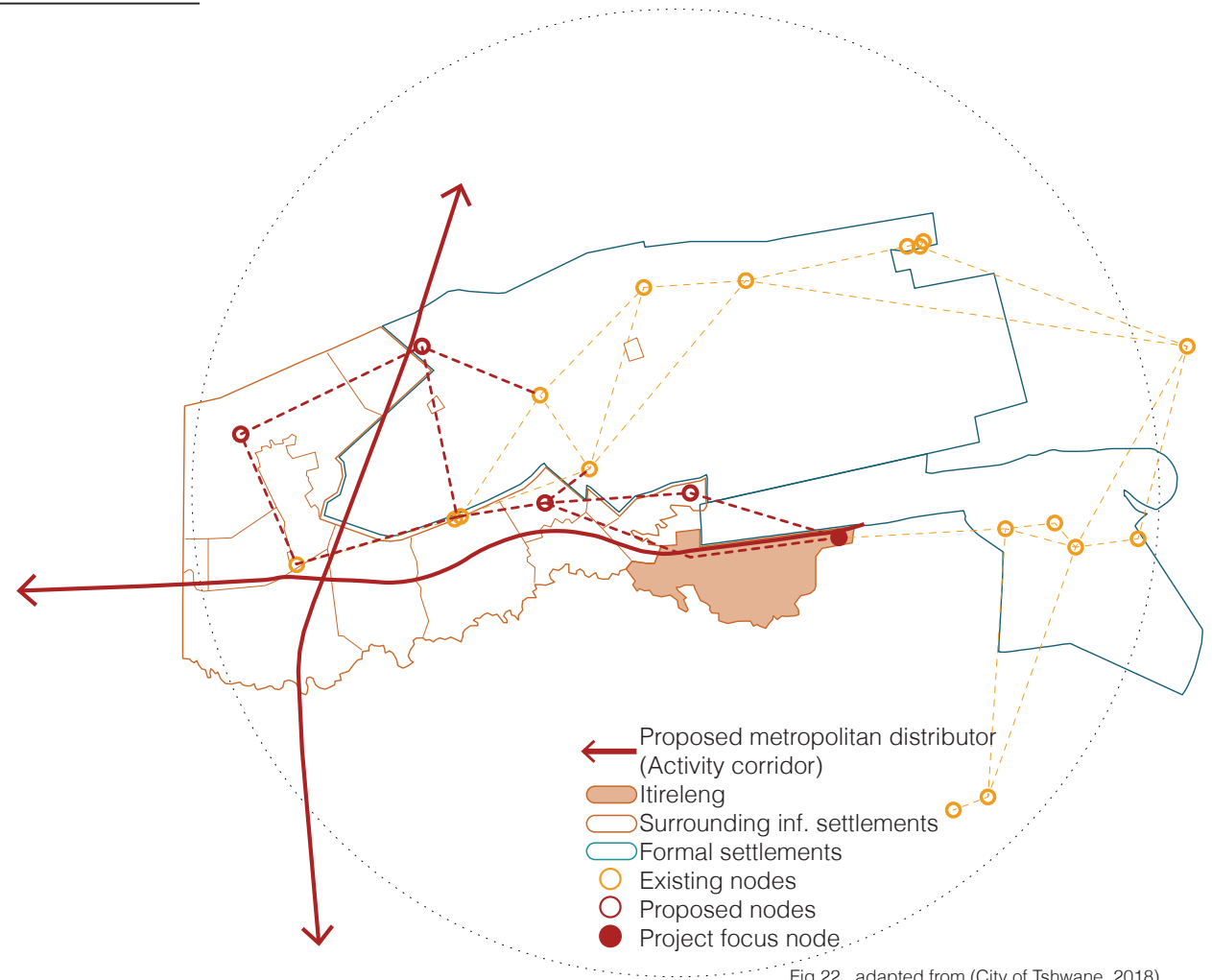


Fig 22. adapted from (City of Tshwane, 2018)

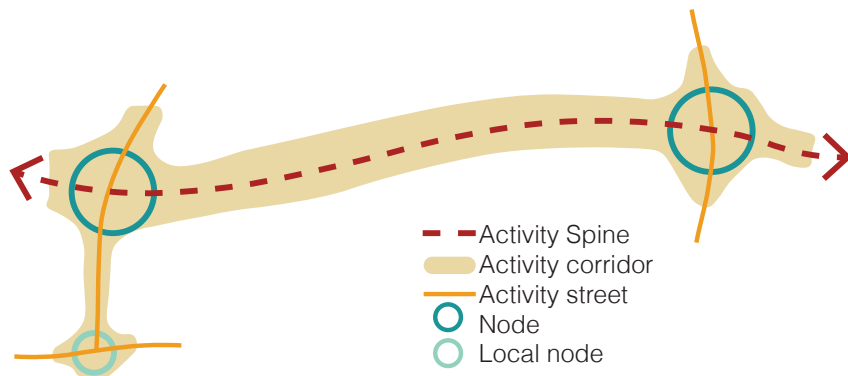


Fig 21. adapted from (Warnich & Verster, 2005)

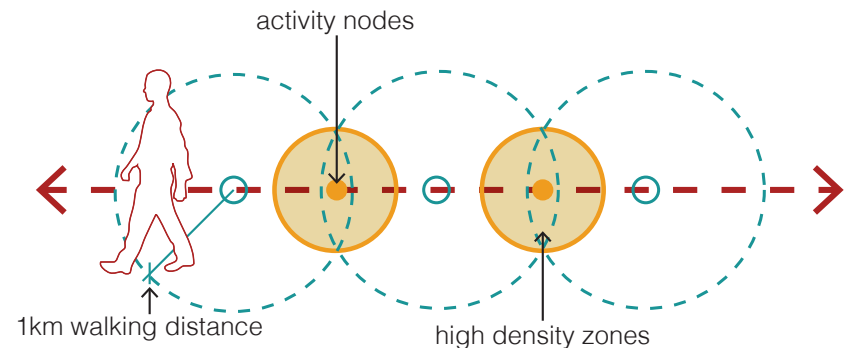


Fig 23. adapted from (Warnich & Verster, 2005)

Conceptual approach

The conceptual approach is described as multivalency, where architectural elements are composed in a manner which not only enhances the spatial experience but increases resource efficiency and comfort. Built elements serve multiple purposes, creating the most architecture with the least amount of building.

Modularity in structural components to facilitate flexibility for long-term spatial efficiency. Bioclimatic façade design compliments the notion of multifunctionality and flexibility, to allow indoor climate control with little to no energy input.

On a larger scale, the concept of incremental development is utilised where the project should be viewed in conjunction with future surrounding nodal developments along the new metropolitan distributor road which acts as the developmental spine. The project aims to create a platform for more holistic civic architecture acting as an oasis to the harsh conditions experienced within the informal settlement.

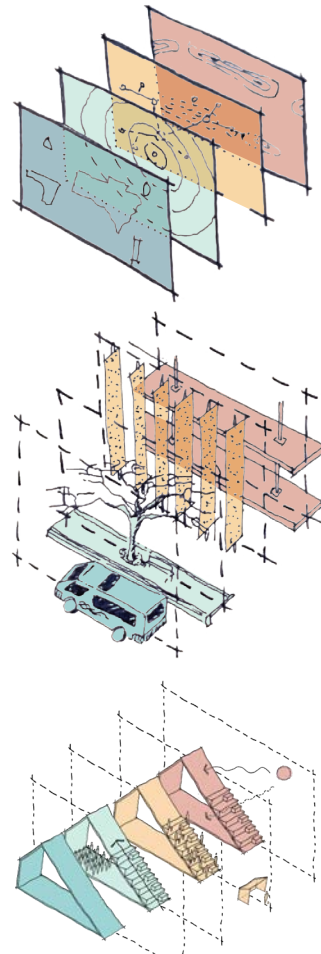


Fig 24. (Author, 2024)

Informants

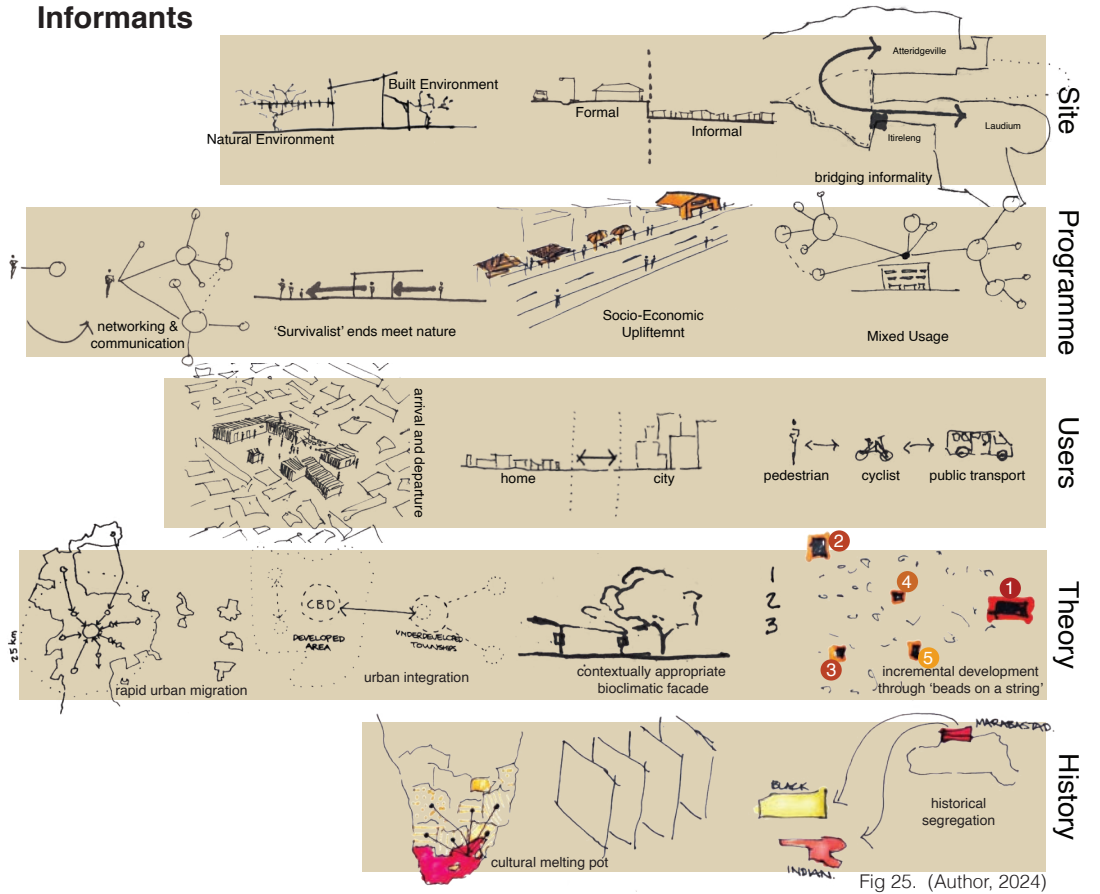


Fig 25. (Author, 2024)

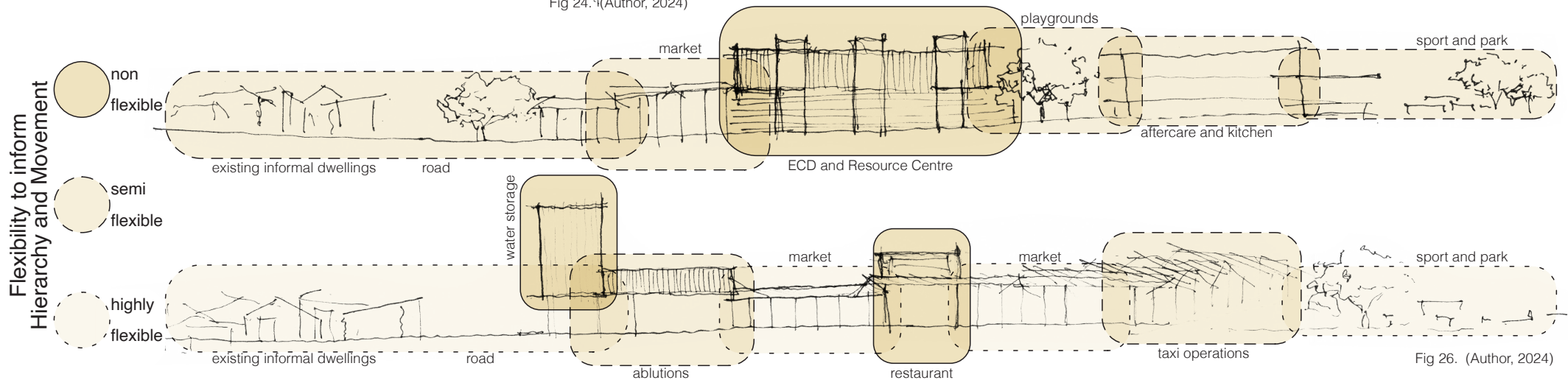


Fig 26. (Author, 2024)

TECHNICAL CONCEPT

Key Principles

MULTIVALENCY

Where architectural elements are composed in a manner which not only enhances the spatial experience but increases resource efficiency and comfort. Built elements serve multiple purposes, creating the most architecture with the least amount of building.

MODULARITY

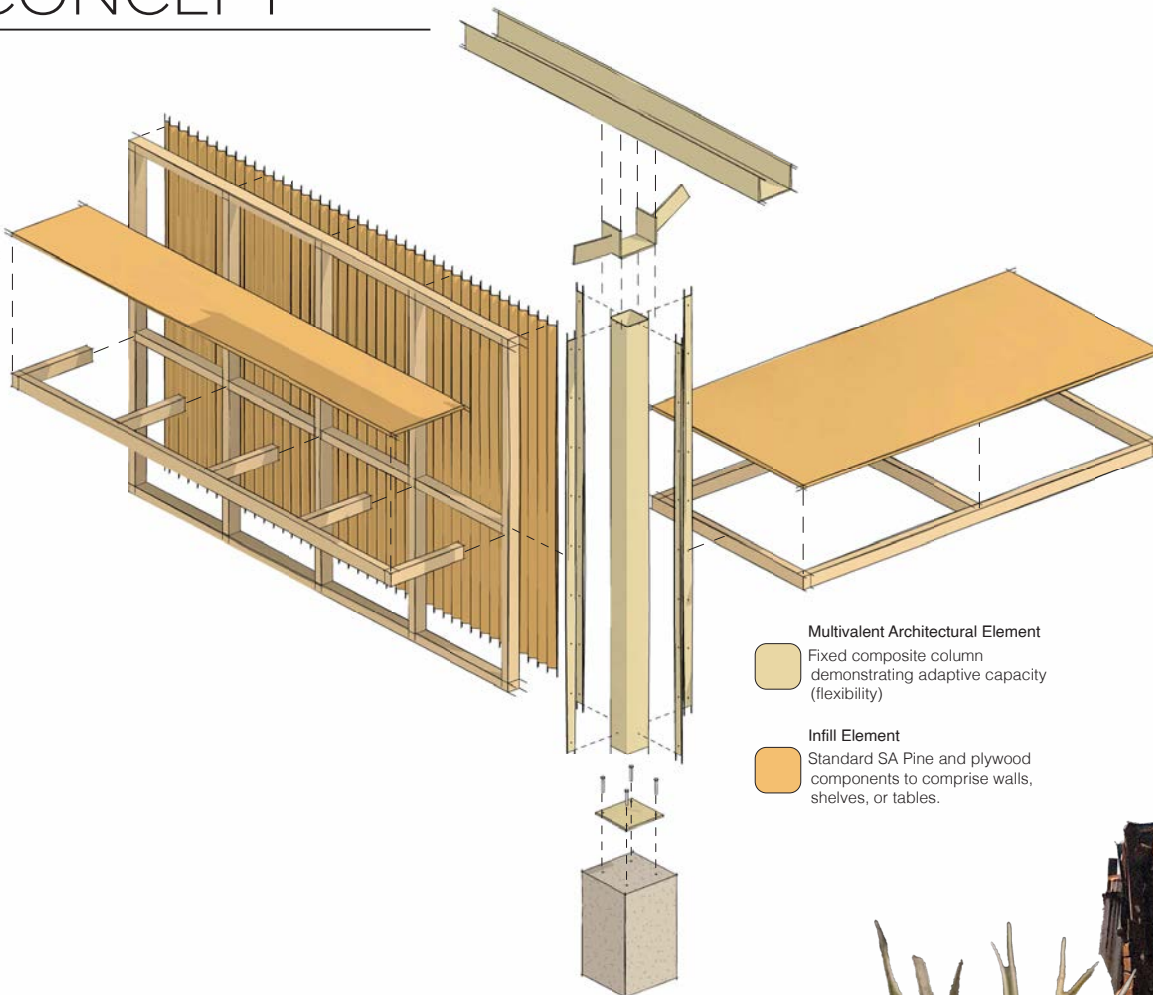
Design that allows standard sized building components to be retrofitted to the primary structural components as required by the community. Allowing resilience through flexibility

DURABILITY

Material selection considers the heavy site usage adjacent to a taxi binding place. Columns are steel, as they are highly durable, allowing ease of assembly as opposed to creating form-work for concrete columns

LOCAL MATERIALS AND LABOUR

Concrete bricks and precast concrete components are produced adjacent to the site and will provide infill for ground floor walls and seating. First floor CLT floor and wall panels allows rapid lightweight, durable and more sustainable infill, clad with locally inspired corrugated sheeting.



- Multivalent Architectural Element**
Fixed composite column demonstrating adaptive capacity (flexibility)
- Infill Element**
Standard SA Pine and plywood components to comprise walls, shelves, or tables.

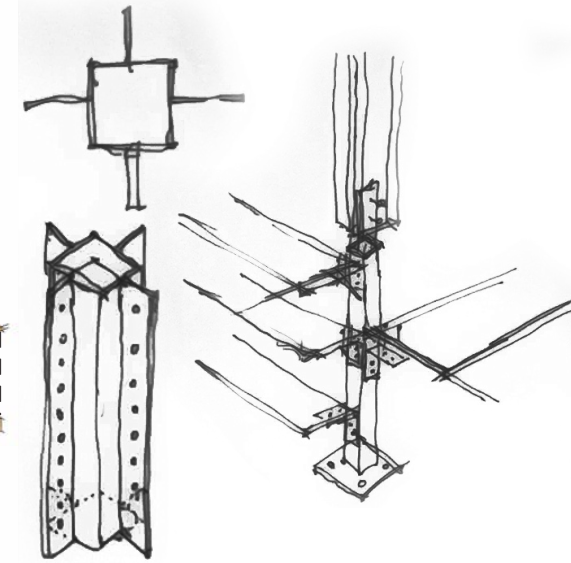


Fig 27. (Author, 2024)



Fig 28. (Author, 2024)



STAKEHOLDERS

User analysis & programme

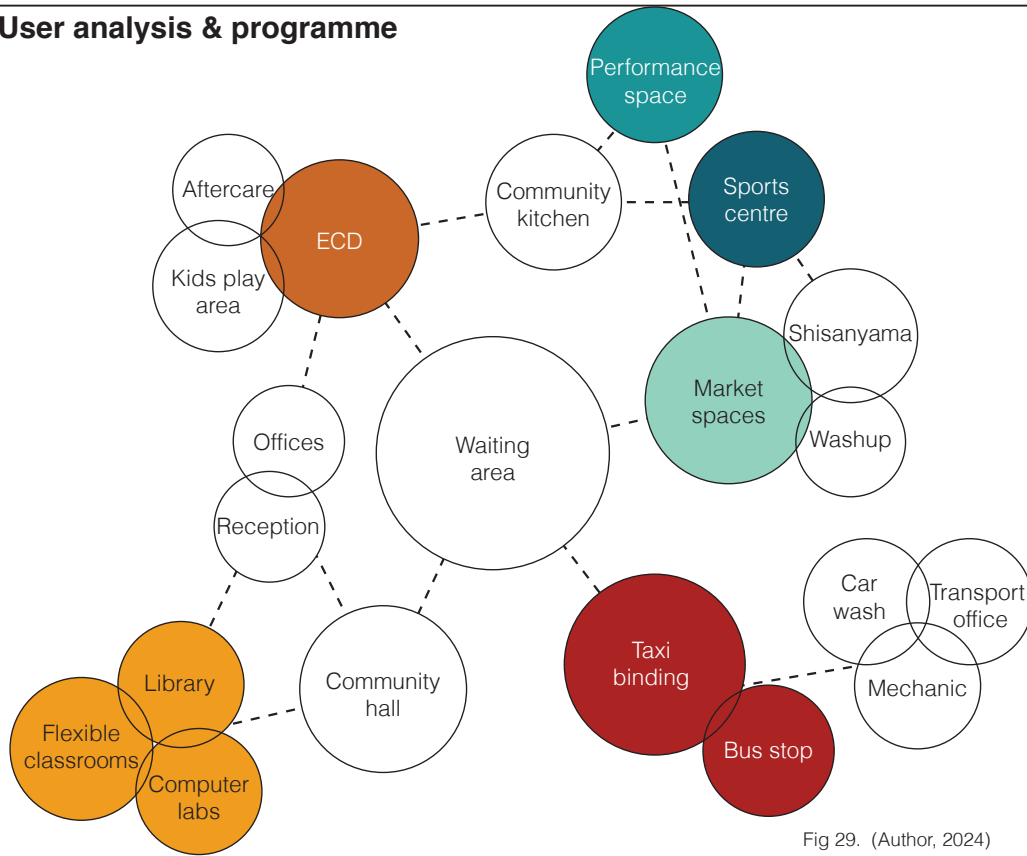


Fig 29. (Author, 2024)

User Group	Needs	Programme
Taxi & Bus Operation	Taxi Space Eating / rest space Clean vehicles Planning space	Parking Shisanyama Washing bays Offices
Early Childhood Development Centre	Education Cooking Playing Storage Napping	Classrooms Kitchen Outdoor jungle gym Lockers + store room Nap rooms
Vocational Training	Education Knowledge Skills development Computer access	Lecture rooms Library Workshops Computer labs
Market Spaces	Cooking Cleaning Flexible trading Eating Refuse	Braais + prep station Washup area Adaptable trading spaces Seating area Bin / recycling room
Performance	Viewing space Comfortable environment Performance area Food & drink	Seating / benches Shading Platform / stage Market access
Sports centre	Viewing space Comfortable environment Food / drinks Rest Cleaning Training Equipment storage	Seating / benches Shading Platform / stage Seating Showers & change room Gym Storage rooms



Taxi / Bus Transport

- 40m² Seating + Shelter
- 30m² Refuse Room
- 30m² Washing Station
- 30m² Service Station
- 6m² Office
- 15m² Classroom
- 20m² Ablutions

141m² Total



ECD

- 9m² Student Ablutions
- 6m² Staff Ablutions
- 8m² Staff Room + Kitchennette
- 30m² 4x Classrooms
- 250m² Playground
- 6m² Store Rooms
- 15m² Kitchen (shared with V Training)
- 20m² Nap Room
- 4m² Changing Room

423m² Total



Vocational Training

- 18m² 6x Classrooms
- 6m² 2x Meeting Rooms
- 50m² Computer Labs
- 50m² Library (shared with ECD)
- 15m² Kitchen
- 5m² 6x Offices
- 20m² Outdoor Lecture Space
- 8m² Staff Room + Kitchennette
- 200m² Outdoor/Indoor Seating (shared with Culture Centre)
- 20m² Ablutions

193m² Total



Market / Trade

- 5m² 20x Stalls
- m² Lock up spaces
- 20m² Ablutions
- 30m² Refuse Room (recycling sort)
- 20m² Ablutions
- 200m² Courtyard / spill out / performance

175m² Total



Cultural Centre

- 200m² Performance
- 12m² 2x Meeting Rooms
- 5m² 3x Offices
- 30m² Reception (foyer)
- 20m² Recording Studio
- 8m² Instrument Storage (lockup)
- 18m² 3x Classrooms
- 25m² Ablutions
- 3m² Storeroom
- 200m² Spill out space

567m² Total



Sports Centre

- 450m² 2x Netball Field
- 7000m² 3x Football Fields
- 40m² Changing Rooms
- 18m² Ablutions
- 3m² Store Room (cleaning)
- 10m² Store Room (equipment)
- 40m² Gym
- 12m² Meeting Room
- 6m² 2x Classrooms

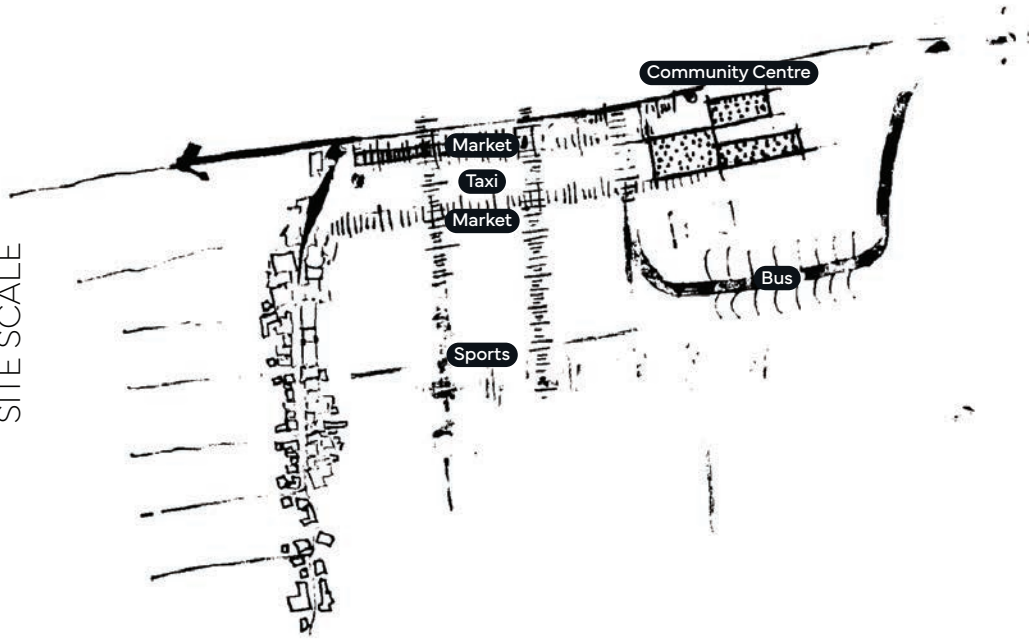
135m² Total (excl fields)

Fig 30. (Author, 2024)

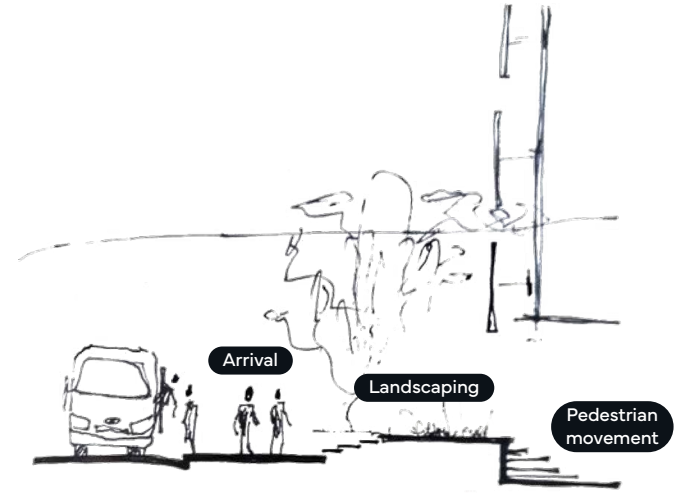
DESIGN DEVELOPMENT

Scaled Spatial Progression

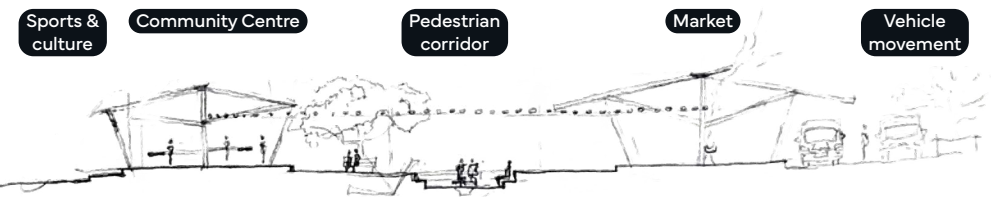
SITE SCALE



FACADE SCALE



BUILDING SCALE



HUMAN SCALE

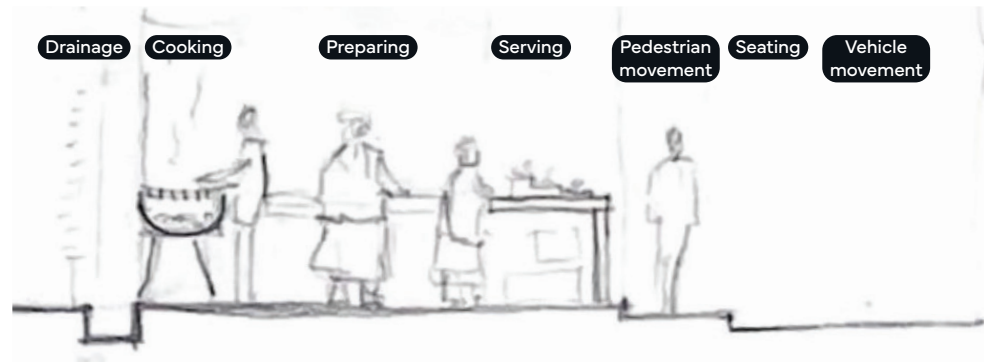


Fig 31. (Author, 2024)

DESIGN DEVELOPMENT

Zoning

Taxi & Bus Operation

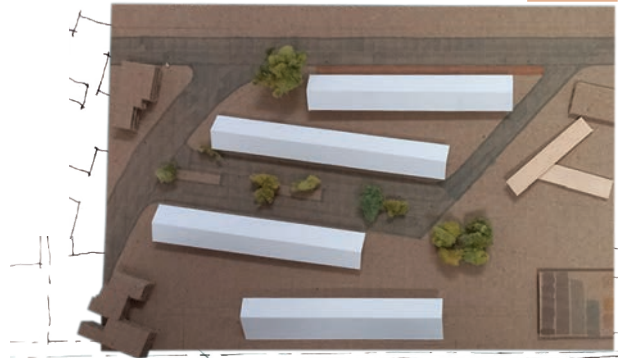
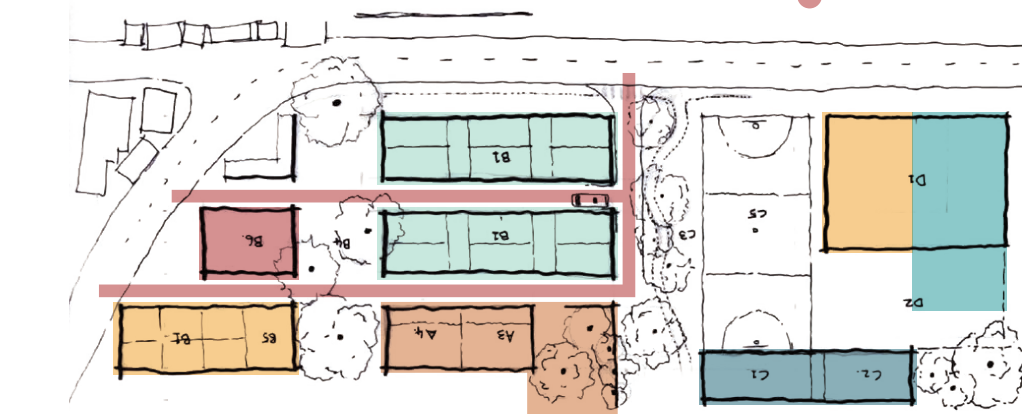
Early Childhood Development Centre

Vocational Training

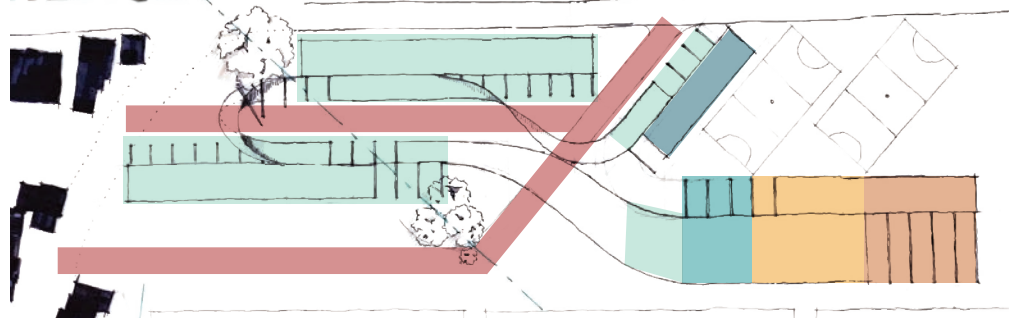
Market Spaces

Performance

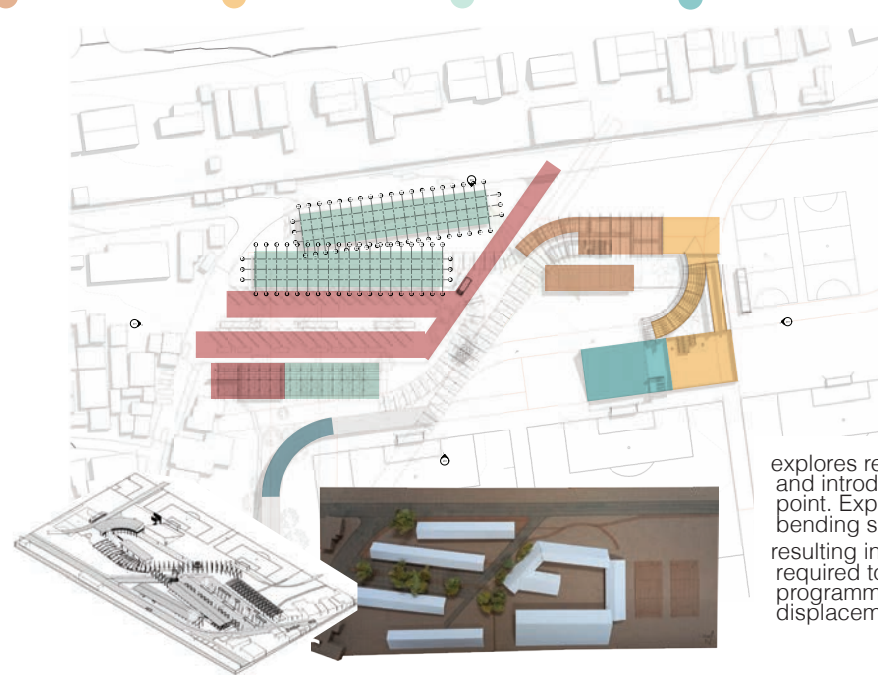
Sports centre



explores taxis in between market spaces
result reduces space available for community centre, displacing it from the arrival space it requires.



explores 'bending' corrugated sheeting .
resulting in larger space required to host programmes, and displacement



explores redirecting taxi flow and introduces bus drop off point. Expanding on bending sheeting resulting in larger space required to host programmes, and displacement



condensing, and reconsidering zoning more intently, introducing modularity to simplify construction
result aids in more flexible spaces better suited to the context

Fig 32. (Author, 2024)

DESIGN DEVELOPMENT

Flexibility and Multi-functionality

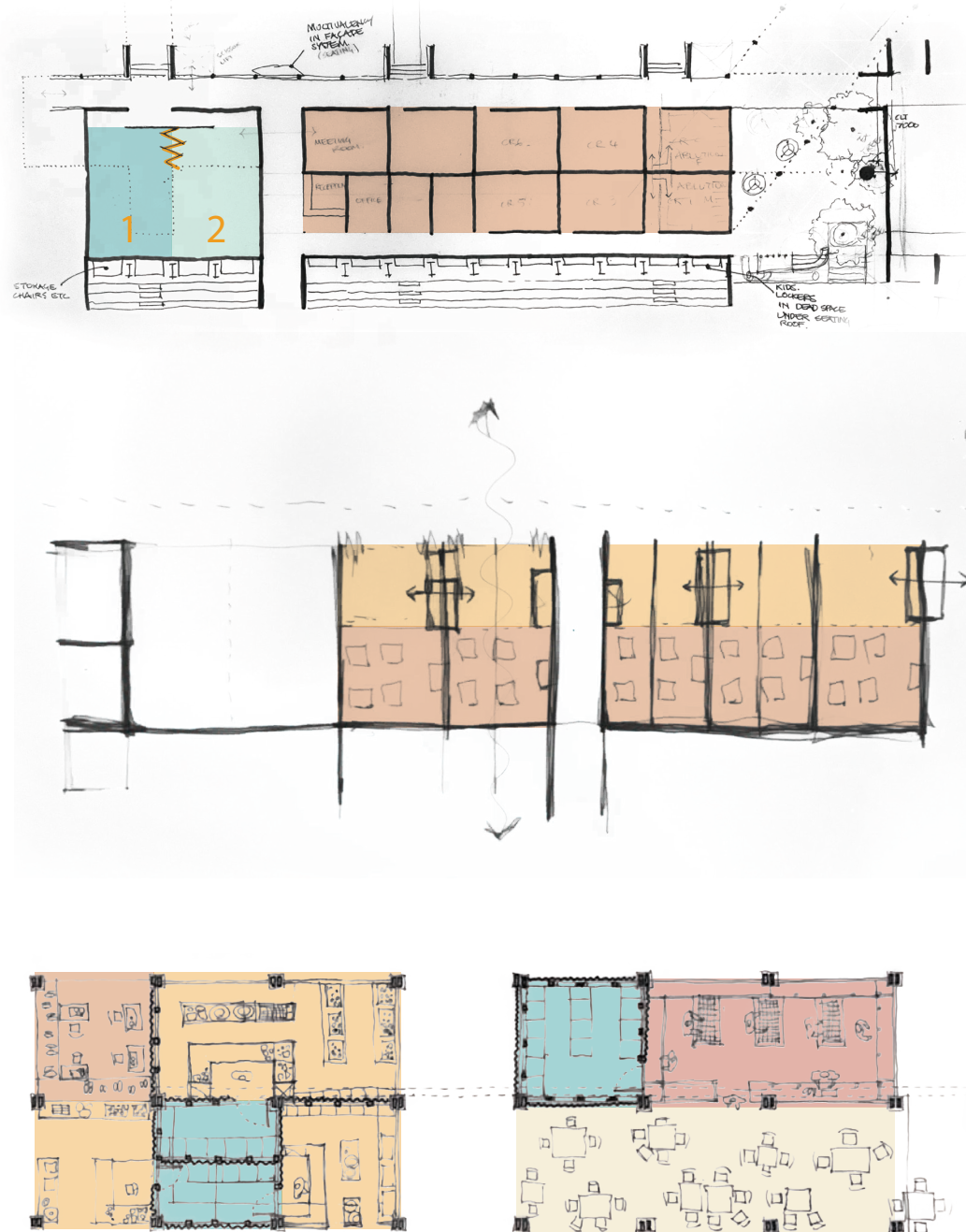


Fig 33. (Author, 2024)

Form Finding

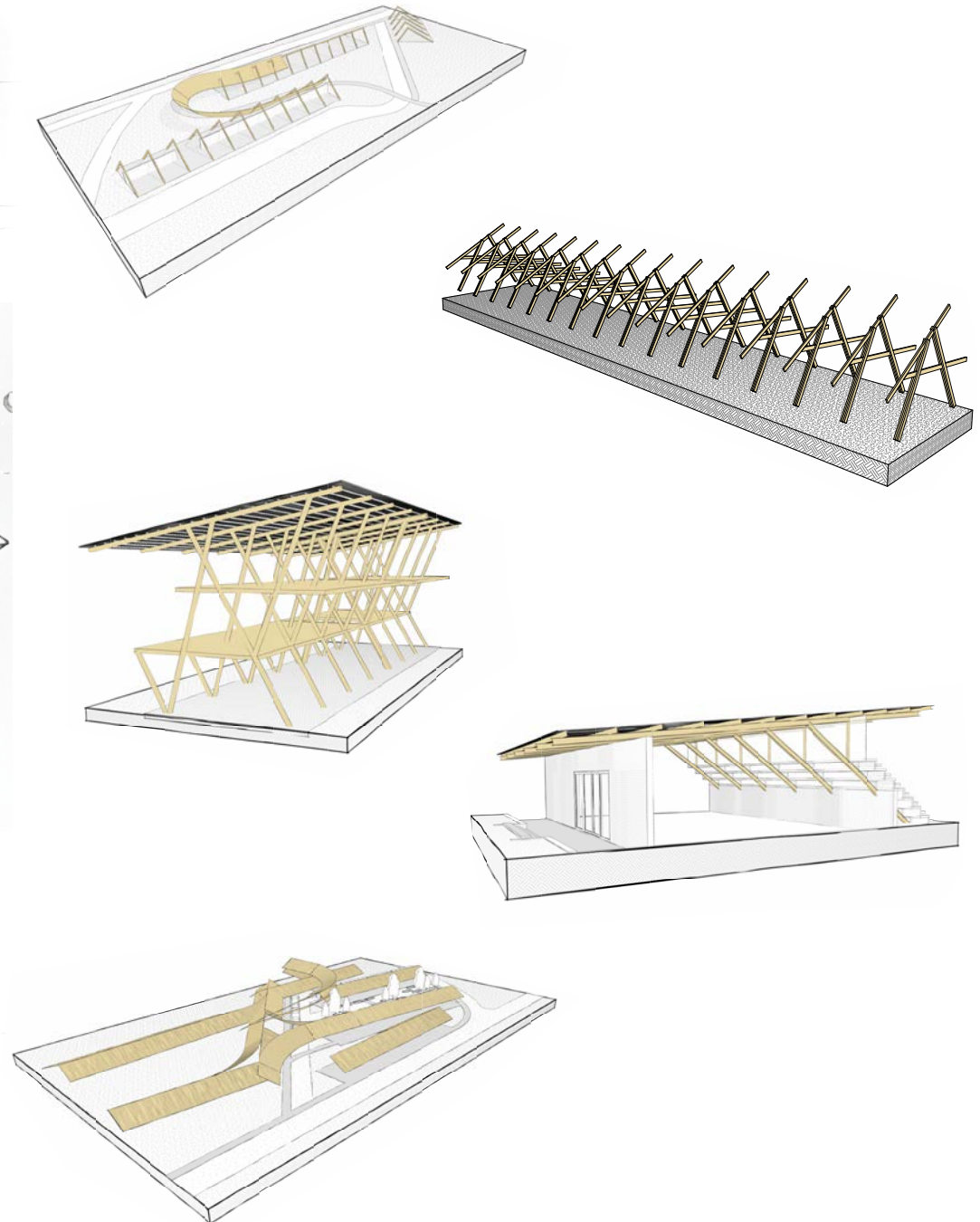


Fig 34. (Author, 2024)

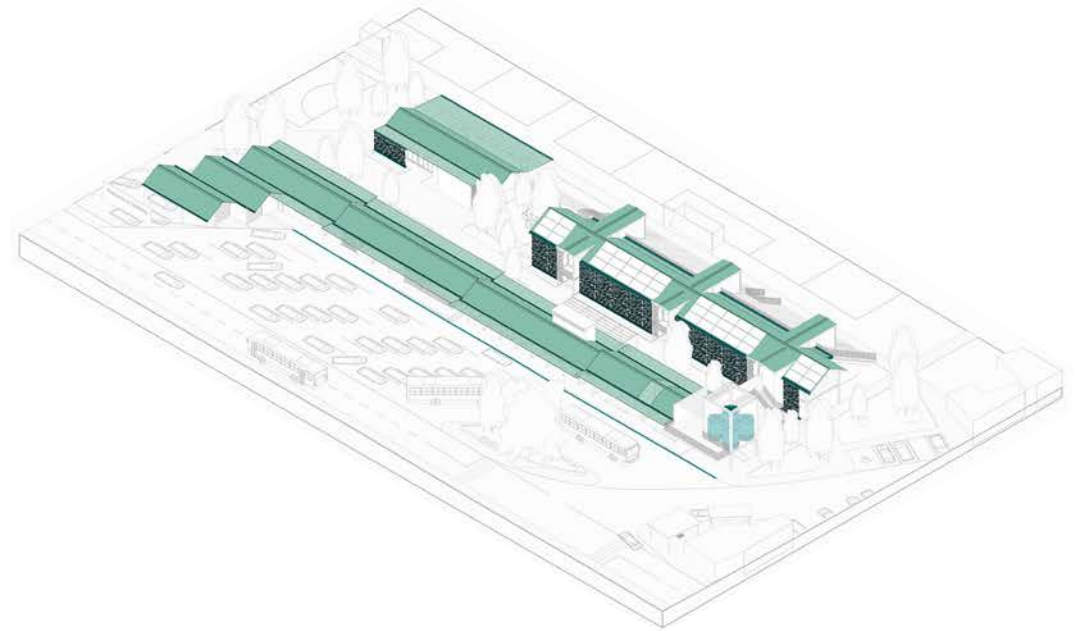
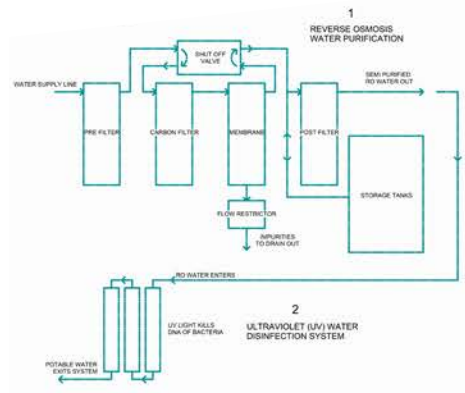
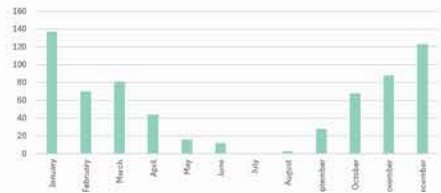
PERFORMANCE ASSESSMENT

Water Harvesting

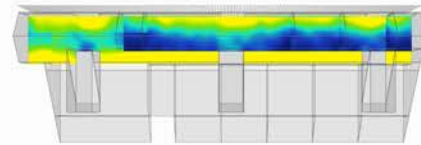
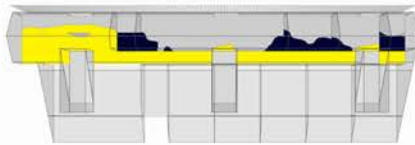
Average Water Yield			Average Local Rainfall	
Month	Average monthly Precipitation, P (m)	Yield (m3) =PxAvC	Month	Average monthly Precipitation (mm)
January	0.137	228.67	January	137
February	0.07	116.84	February	70
March	0.081	135.20	March	61
April	0.044	73.44	April	44
May	0.016	26.71	May	16
June	0.012	20.03	June	12
July	0	0.00	July	0
August	0.003	5.01	August	3
September	0.028	46.74	September	28
October	0.068	113.50	October	68
November	0.088	146.89	November	88
December	0.123	205.33	December	123
Annual Average	0.067	1118.33		

Roof Catchment area = 1069.15m²
 Run-off coefficient (steel roof) = 0.8
 Run-off coefficient for suburban areas = 0.65

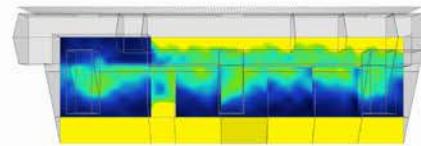
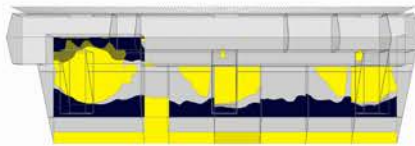
Average Monthly Precipitation (mm)



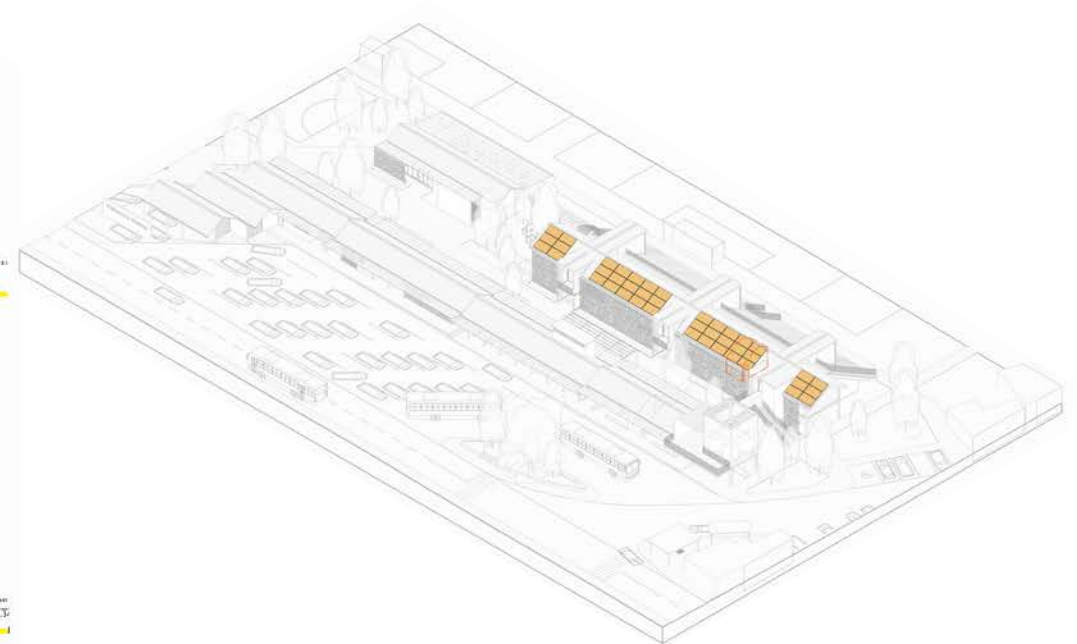
Solar Harvesting



Reference: Table 4.1



Reference: Table 4.1





OUTLINE ROAD

WASH BAYS

TAXI

MECHANIC

FUTURE EXTENTION

REFUSE

ABLUTIONS

ARRIVAL

MARKETS

NETBALL COURTS

COMMUNITY CENTRE

KITCHEN

BUS DEPO

CULTURAL PERFORMANCE

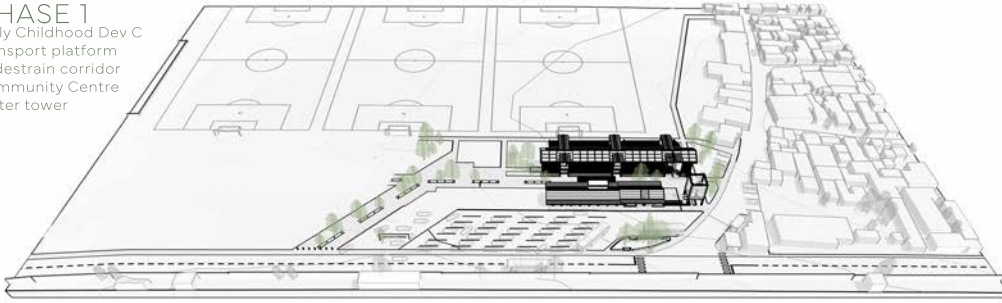
FOOTBALL C

FOOTBALL B

FOOTBALL A

SITE PHASING MASTERPLAN

PHASE 1
Early Childhood Dev C
Transport platform
Pedestrian corridor
Community Centre
Water tower



PHASE 2
Pedestrian extension
Mechanic workshops
Transport offices
Washbay awning
Playgrounds
Afterschool
Kitchen
Netball



PHASE 3
Pedestrian extension
Transport platform 2
Landscape extension
Netball 2



PHASE 4
Market extension
Training workshops
Sports centre
Ablutions



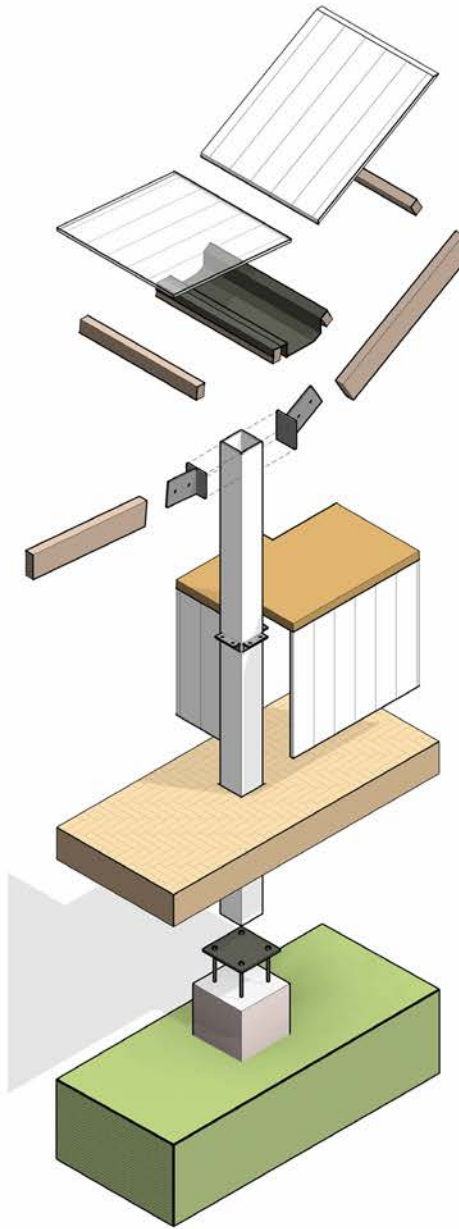
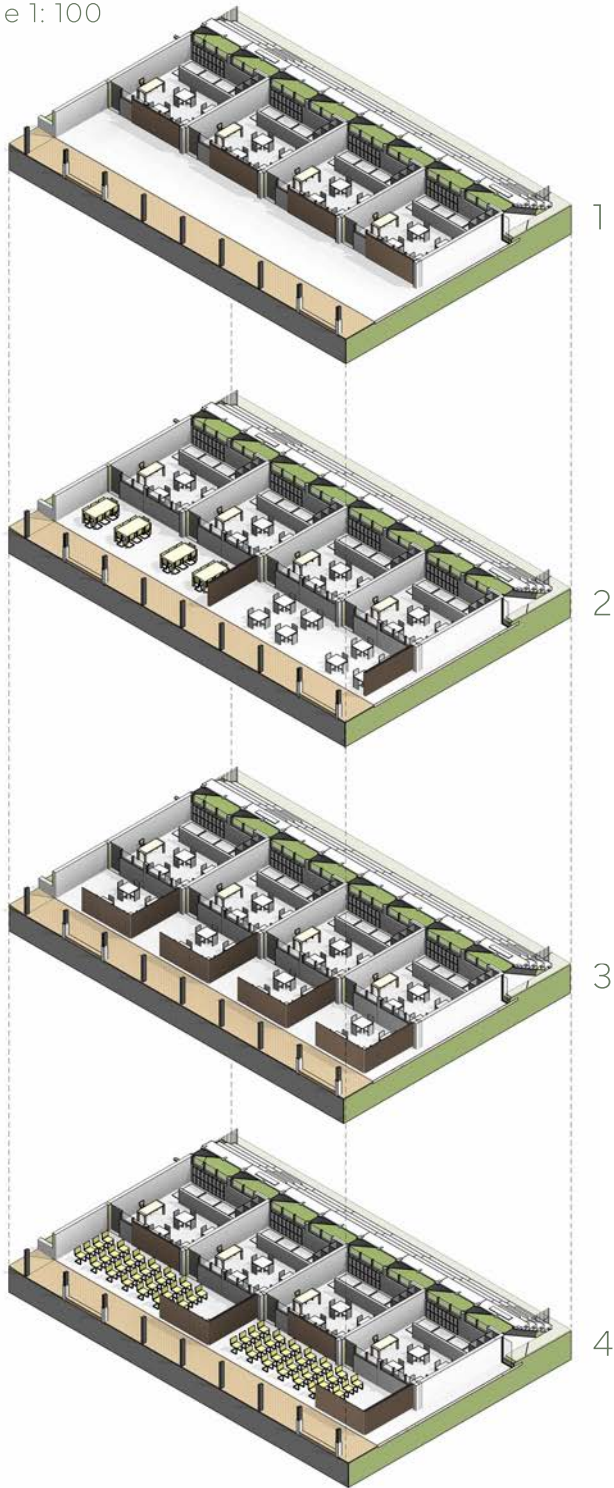


GROUND FLOOR PLAN
 scale 1: 100



FLEXIBLE FLOOR PLANS

scale 1: 100



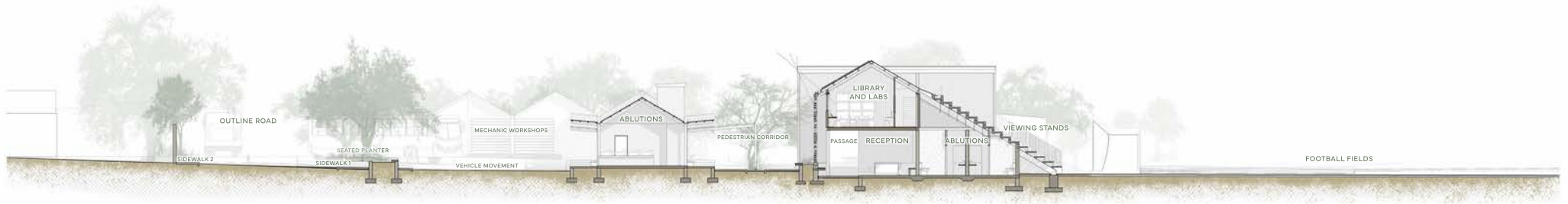
EXPLODED AXO - MULTIVALENT COLUMNS
scale 1: 10





FIRST FLOOR PLAN
scale 1: 100

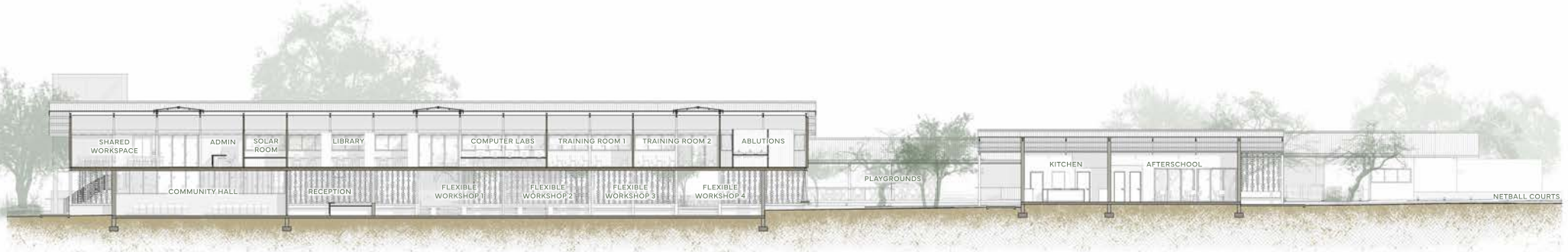




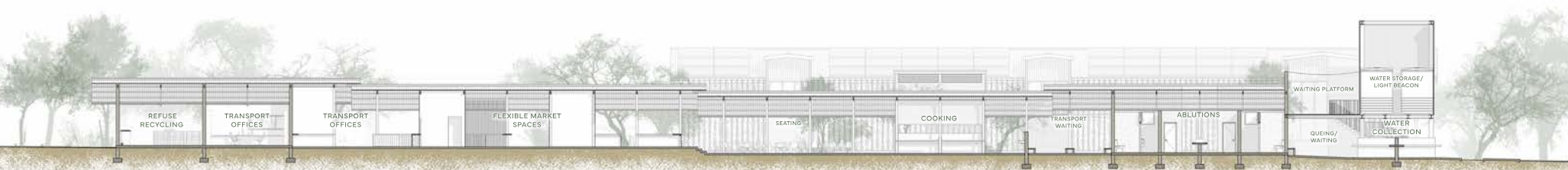
SECTION A
scale 1: 100



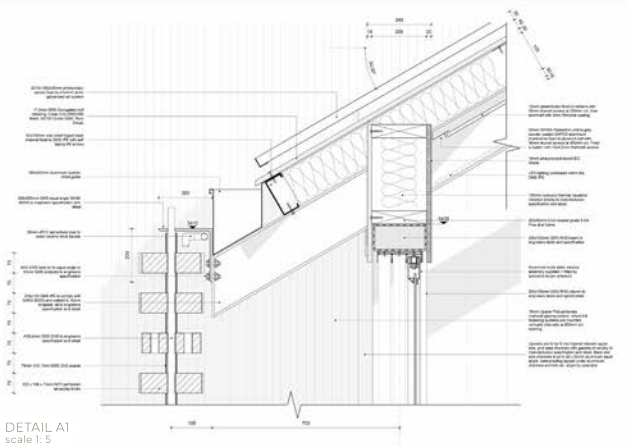
SECTION B
scale 1: 100



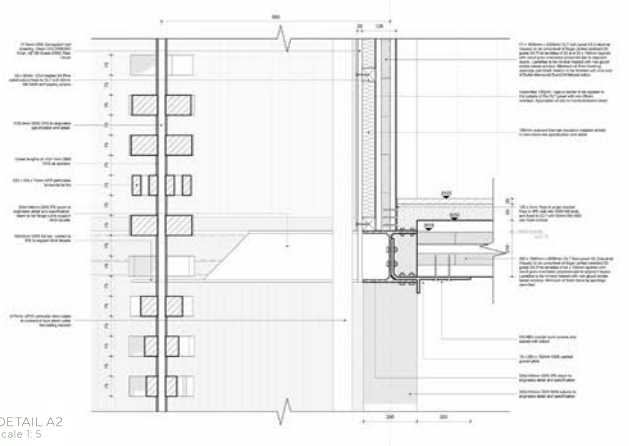
SECTION C
scale 1: 100



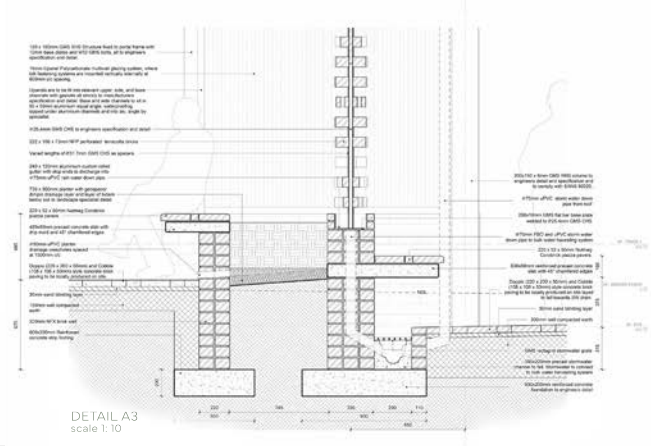
SECTION D
scale 1: 100



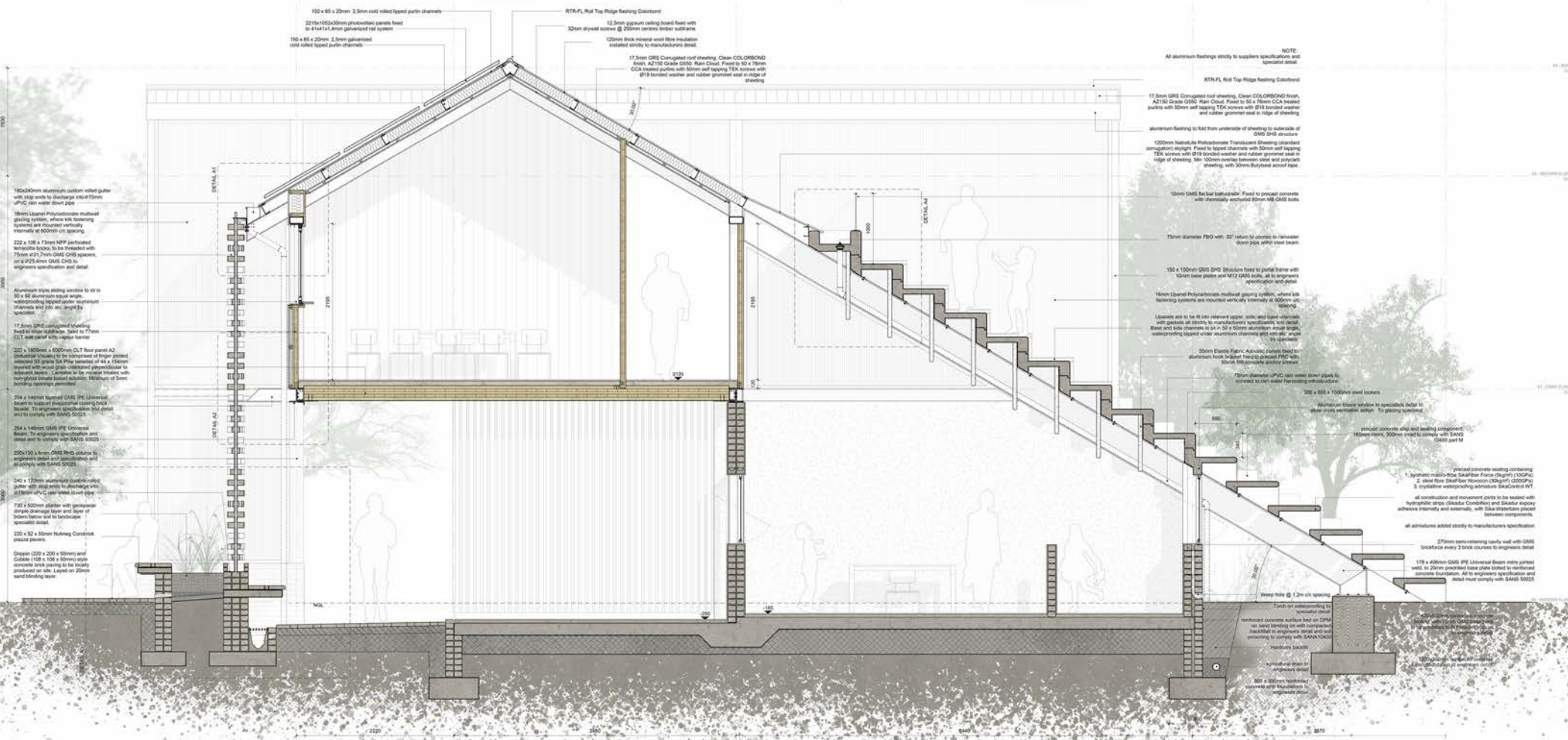
DETAIL A1
scale 1:5



DETAIL A2
scale 1:5



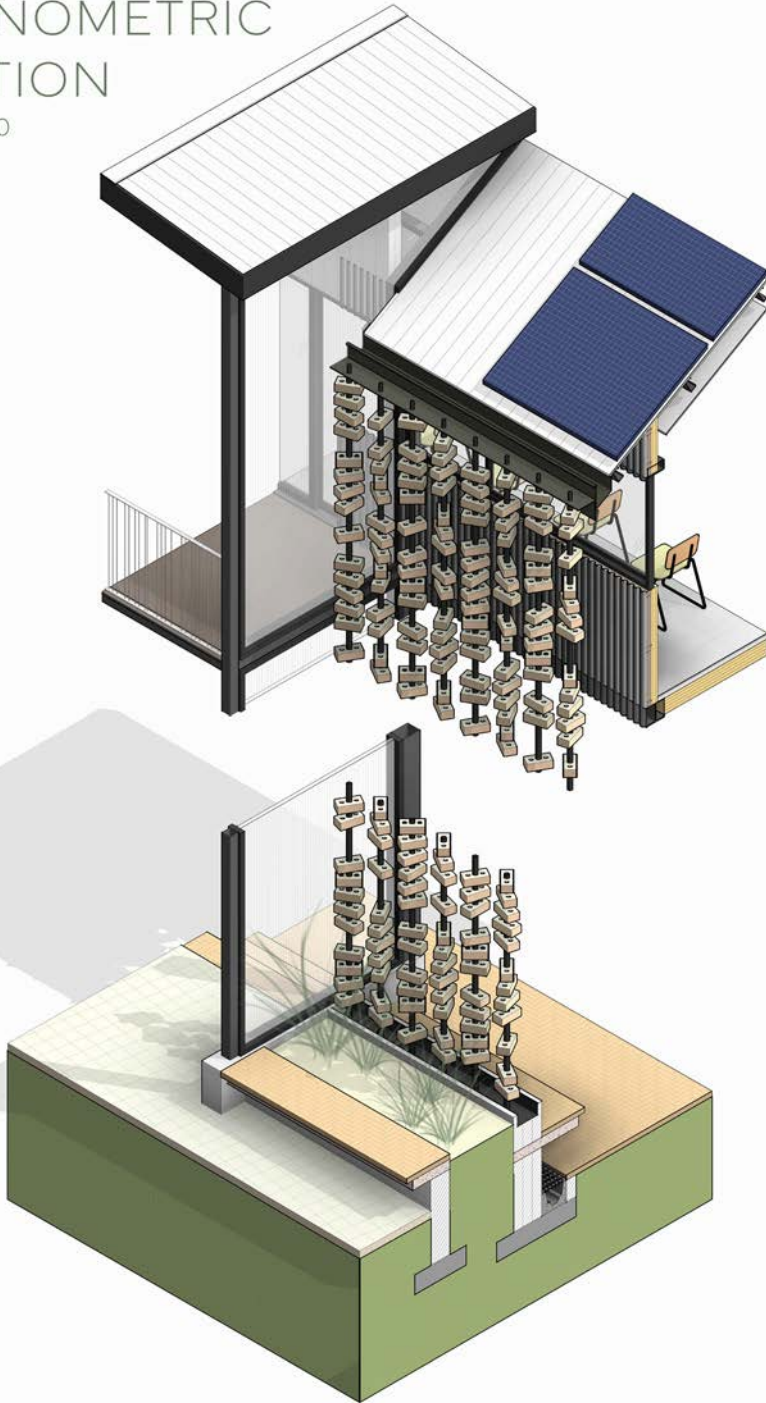
DETAIL A3
scale 1:10



DETAIL SECTION A
scale 1:50

AXONOMETRIC SECTION

scale 1: 20



Critical Reflection

This project sought to address intricate historical, urban, and climate challenges within the vulnerable and complex context of Itireleng's informal settlement. Spending extensive time in Itireleng during my postgraduate studies, documenting and simulating contextually appropriate and feasible climate-adaptive facades. Which enriched my understanding of the unique limitations and opportunities inherent in designing for informal settlements. Furthermore, my involvement in a live build as part of the Urban Citizens Co-Creating Wellness studio deepened my appreciation for the complexities of working within this environment.

Throughout the design process, the community's needs emerged as the primary informant, complemented by considerations of future climatic and socio-economic conditions, as well as the urban

framework outlined by the City of Tshwane. This approach led to low-tech design strategies that prioritize flexibility and multifunctionality, enabling built elements to serve multiple purposes. The project ultimately presents a sustainable model aimed at uplifting the community, with the potential to inspire broader urban regeneration and development along the activity corridor.

While community engagement for this project was constrained by time and ethical considerations, input from numerous community members proved invaluable in shaping a more contextually appropriate architectural response. This experience has highlighted the importance of incorporating community insights to create meaningful and sustainable interventions in informal settings.

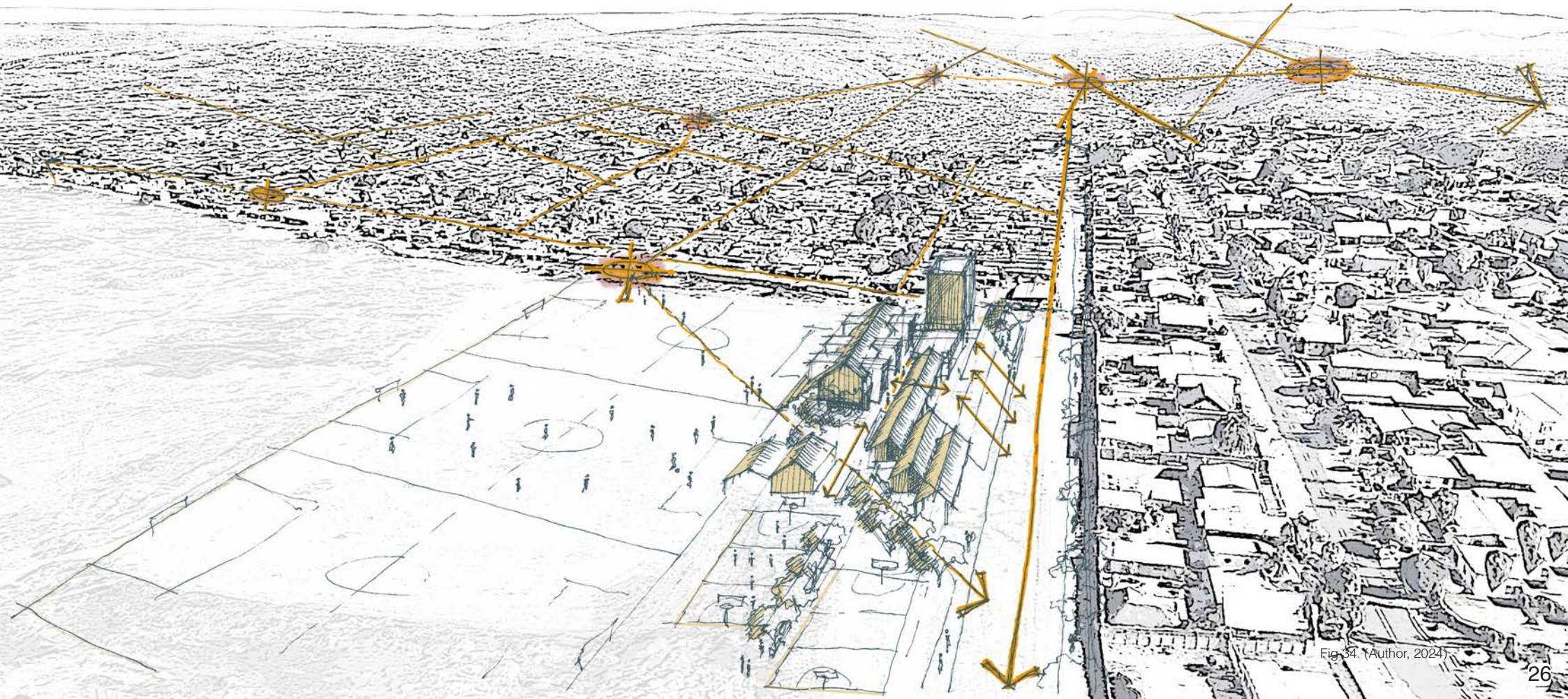


Fig. 34. (Author, 2024)

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