

urban utility merging spatial migration and urban fabric

u_portal

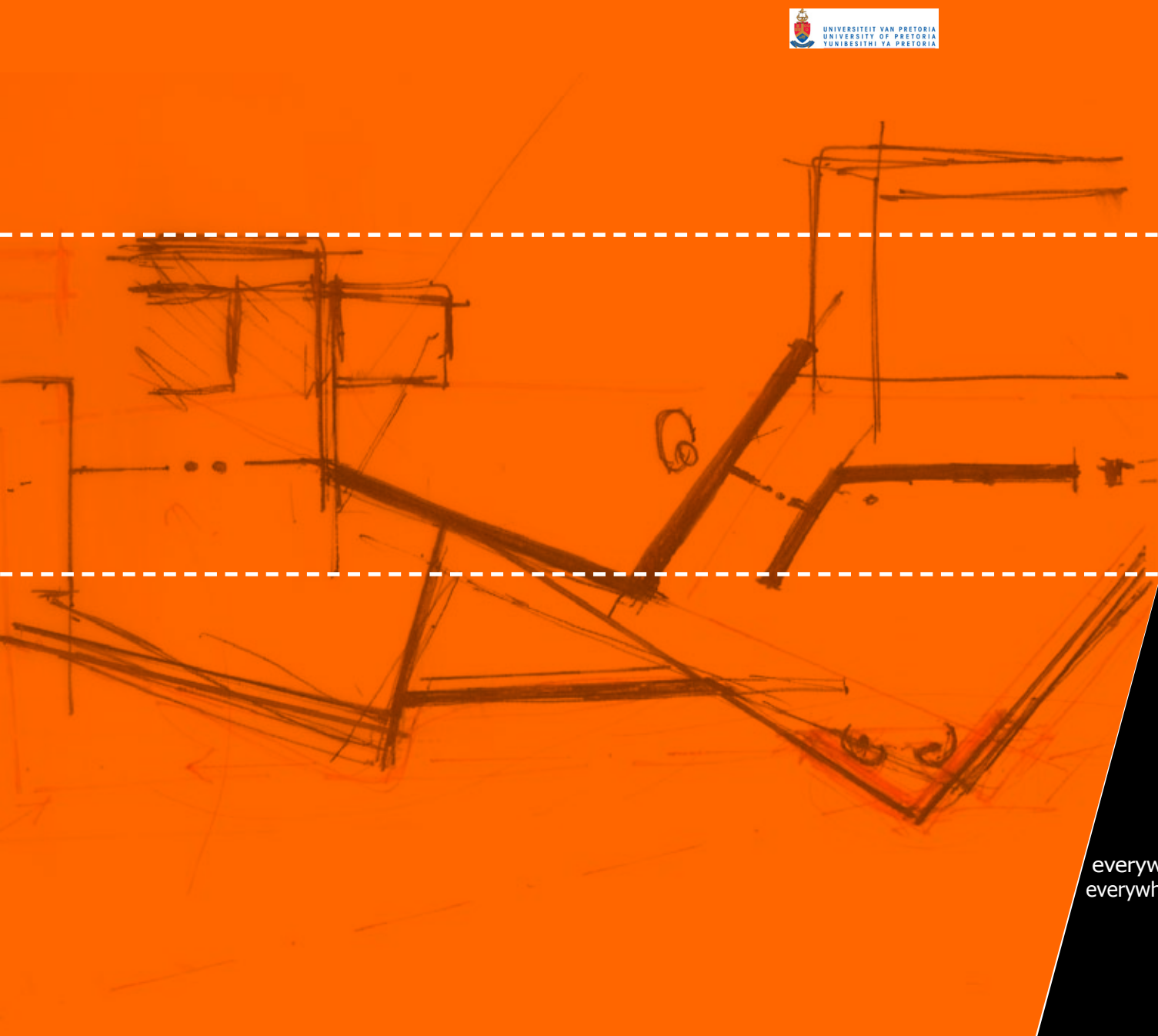
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"Space and time are always and everywhere social. Society is always and everywhere spatial and temporal."

[HILLIER_1984:92]

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[ALL IMAGES ARE REFERENCED IN THE CAPTION OR REFERRED TO BY THE AUTHOR.]

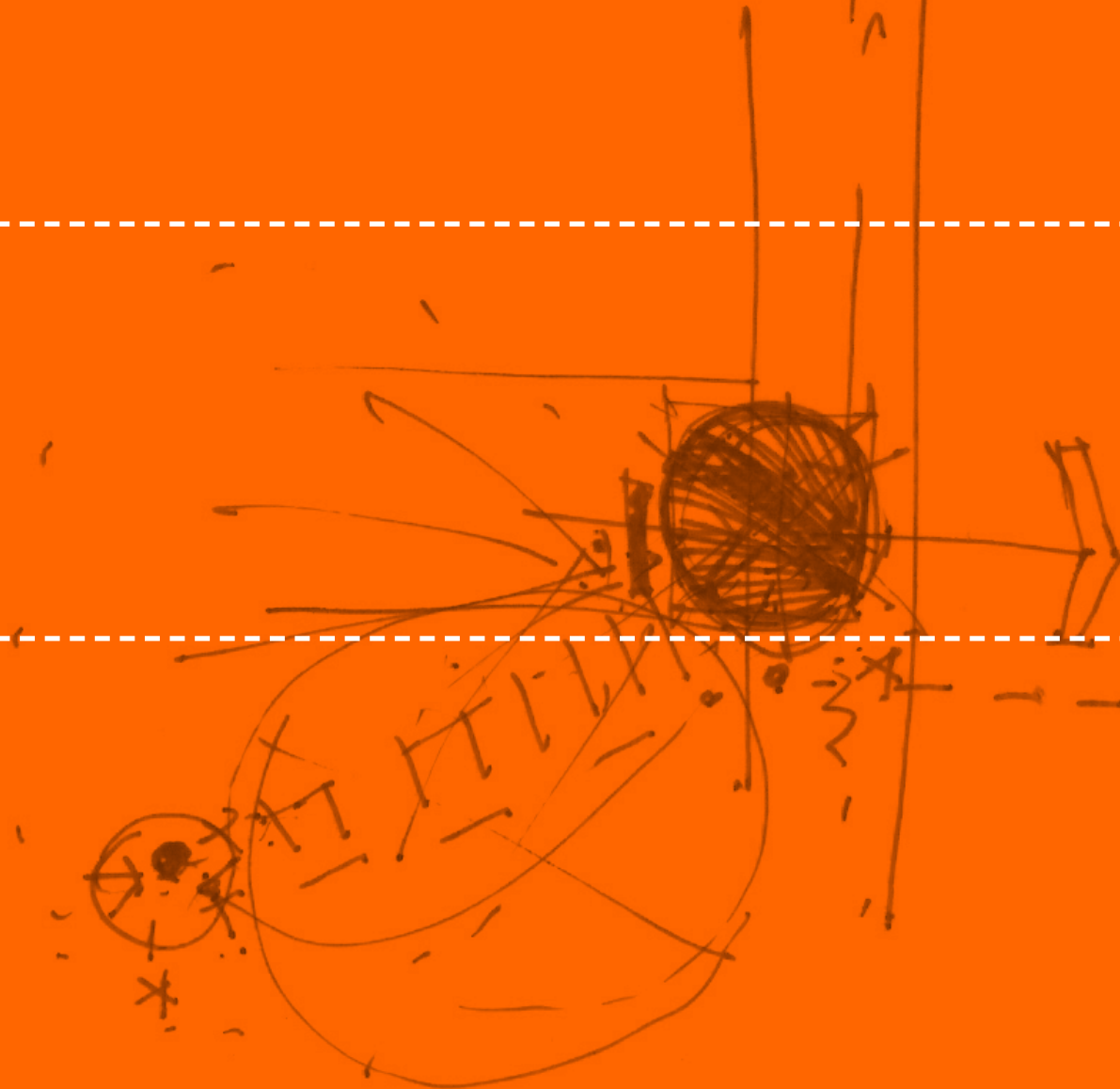
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introduction

“We must become sucked up, drawn into the system, the situation, the arrangement, the combination, the composition: a series of crossings of varying length, a network of knowledge made up of borrowings, detours, figures and passages that cross each other, creating unforeseeable connections and nodes. A conglomeration of different spaces and times, sometimes in harmony, sometimes in discord but always mobile — encountering — alive.”

[DELLEUZE AND GUTTARI_1987:WWW.PUBLICACTS.COM]

The focus of this dissertation is a spatial exploration of urban ground surface infrastructure as catalyst for spatial interaction.

We exist within a **formal urban fabric**, which encompasses a fixed physical urban fabric: built environment, transport infrastructure, information and telecommunication systems. Emerging **evidence of frustration** reveals the **obsolete nature of ground surface infrastructure**, aggravating fragmented **spatial disconnections**, and tension with the public urban territories within which we subsist. Examples of **resistances** can be seen in up and coming car-sharing movements, such as Zip Cars; or bicycle-sharing schemes evident from the Storefront exhibit in New York City more formally known as Yellow-cycles. Even the subversive taxi-bus system in South Africa proves ample confirmation.

Modern society lives at a time of increasing **speed and immediacy**. Our progressive behaviour was made probable by recent electronic-technological advancements. The **accessibility** and **performance** of telecommunication and transport systems are detrimental qualities for the fluid dynamics of our apparent mobility. Our mobile patterns stimulate growth of global cities that foster **diversity, velocity, and connectivity**. Global cities are intrinsically embedded in local fabric and ground networks, while continuously preserving universal activity. Consequentially establishing a cosmos pertinent for the endurance of modern society.



FIG 1: Built and Transport fabric: Elevated commuter rail "L" tracks.



FIG 2: Powerlines: telecommunication infrastructure.



FIG 3: Space disconnect in public space.



FIG 4: Urban frustration: tourist carrying luggage.



FIG 5: Urban frustration: commuter on subway.



FIG 6: Ground surface infrastructure: bus via busstop.



FIG 7: Mobile society: commuters on subway.

Today the human quest for comfort is the search not only for security, protection and privacy but also for **connection**. Opportunities reside in these vibrant cosmopolitan cities, but they pass us unemployed. **Transparent interactions** reveal the apparent anonymity of our modern, virtual society. Albeit electronic technologies that facilitated our mobile behaviour; it **detaches** us from the physical, sensory experience of physical surroundings and collective collaboration thus, we reside in **isolative co-existence**.

Supportive ground surface infrastructure is presented within an **archaic** habitude. These conveniences include: public

transport facilities, (bus stops or bicycles storage apparatus); information services, newspaper equipment and public amenities. Our current **accelerated** existence questions the relativity and **ownership** of these supportive ground surface infrastructures.

My intention is to employ intelligent mutation of the supportive ground surface infrastructure embedded with electronic resources. Facilitating a systemic prototypical egalitarian public territory strategically located as a structural spine of social-networks merged with the urban fabric of a contemporary city.



FIG- 8: Ground surface infrastructure: newspaper stand.



FIG 9: Ground surface infrastructure: bicycle storage.

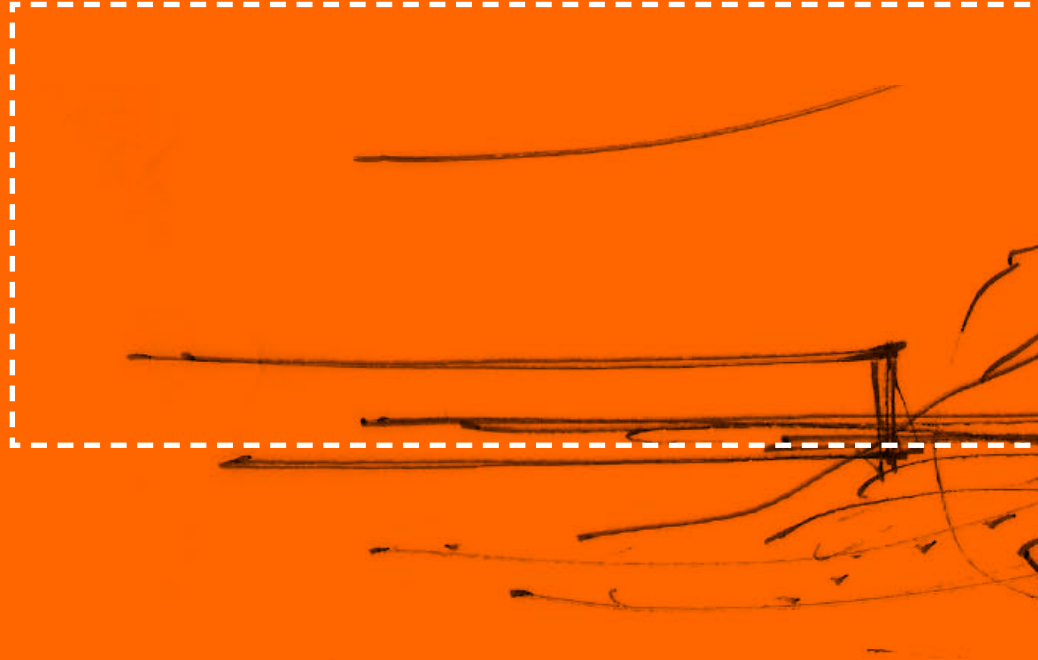


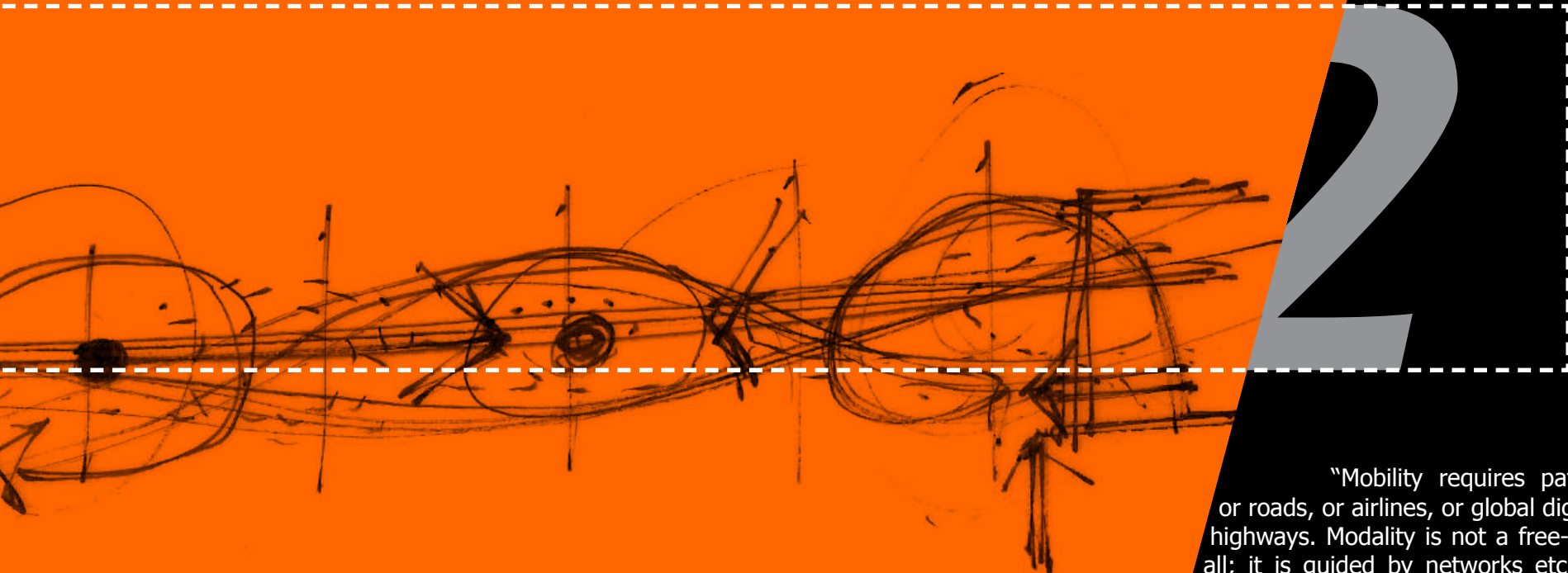
FIG 10: Ground surface infrastructure: bus shelter.



FIG 11: Transition, diversity and isolation: New York.







2

“Mobility requires paths, or roads, or airlines, or global digital highways. Modality is not a free-for-all; it is guided by networks etched onto the ground, by air corridors, by frequencies, by maps by itineraries, even by parking restriction. Then, not least every journey includes stops in places continuity requires discontinuity.”

[GAME 1991 _ IN THRIFT 1996:77]

theoretical discourse

We live in an epoch of increasing speed and immediacy. Within this emergent mobile habitude, electronic media facilitate the fluid interface with formal built, transport and telecommunication infrastructures. Emergent evidences of fragmented ground surface spatial migration reveal the existence of social disconnections and tension between our mobile habitude and the urban fabric. Perceptible transparencies in social affiliation reveal anonymity that constitutes spatial dislocations. Indications of collective predilection suggest occurrence of innovative typology in architecture that consent to the potential of meaningful interaction with space, information, infrastructure and dialogue.



FIG 12: Boundaries on University Road



FIG 13: Urban barrier, UNISA wall

URBAN SPATIAL DISCONNECTS

21



2.1.1 PHYSICAL: *“Modern high- and low-rise housing has in common that they innovate fundamentally in spatial organization, and both produce, in common it seems, lifeless and deserted environments.”* [HILLIER_1984:x]

Mobile migration embodies high frequency momentum and movement. Continuous assimilation of electronic and physical infrastructures engenders probable migratory performance. Infrastructure networks necessary to support the progression of technologies result in unfortunate fragmentation in the urban fabric. **Incoherent responsibility** of urban planning, engineering, and design creates **awkward spatial dialogues** in the urban territory.

“Urbanism, as it is understood by today’s professional planners, is reduced to the practical study of housing and traffic as isolated problems. The total lack of alternatives involving play in the organization of social life prevents urbanism from attaining the level of creation, and the gloomy and sterile appearance of most modern neighbourhoods is a shameful reminder of this.” [HILLIER_1984:xi]

A disconnection lies in the development of the built environment and the supportive transport and information-telecommunication infrastructures, e.g. railways; highways, roads, fibre optic resources, and public parks. **Derelict** spaces are neglected spaces: the remainder of fragmented urban development of a **capitalist driven** society.

“For of course the most significant features of capitalism are its indifference to the particularity and individuality of and between its elements.” [THRIFT_1996:86]

Segregated ownership and development of the urban fabric means that uncomfortable deserted spaces are more often experienced as **impairing boundaries**, visually, mentally or physically.

2.1.2 SPATIAL: Stipulate efficiency of mobile activities constitute discarding substances of idle usage, encouraging **seamless acceleration** in hyperspace. In the experience of urban ground-surface-migration spatial tension is aggravated at the **cross roads** with neglected borderlands. These transition spaces are experienced as irritated disjunctions. The urban fabric evolves slowly; struggling to accommodate the **emergent** demands of a mobile society. Archaic public ground surface infrastructure **lack informative resources** necessary to support our itinerant society. Spatially splintered from the obsolete urban fabric our **isolated existence** dampens further social affiliation.

“Whether or not we know who owns what seems to be public space, there is this idea that a particular sphere exists which is public domain. This sphere is indispensable in creating society, and therefore should be evaluated with a view to what quality of interaction it fosters, and how accessible that interaction is to the members of the society it creates and supports. Living in society has always been an essential part of humanity. The kind of society we live in is shaped by the way we interact with other members of society--how do we form our perceptions about other groups, other individuals? Public space serves as one place where groups and individuals come together, and the key issues of who has access to public space and what kind of interaction is fostered by it are issues important to the discussion of what kind of society we hope to live in.”

[DALKE_1999:WWW.SPARKONLINE.COM]



FIG 14: Sidewalk as a public space, with human interaction

Present-day urbanism's main problem is ensuring the smooth circulation of a rapidly increasing number of motor vehicles. A future urbanism will undoubtedly apply itself to no less utilitarian projects, but in the rather different context of psycho-geographical possibilities. [HILLIER_1984:68]

Transition spaces are **diverse conglomerates** of age, cultures, typologies, influences, habits, and fluctuating routines, this suggests that the transition spaces are the most vital elements of the contemporary city. Urban theorist Manuel Castells, describes, the contemporary city as **networks** of information, exchange, physical and virtual movement and flow. **Transit nodes**, parking lots and sidewalks are the most used public spaces in the city, yet they are primarily designed for **efficiency** and they lack the basic public amenities.



FIG 15: Diversity: Grand central station.



FIG 16: Diversity: Sidewalk China Town, New York.

The Situationists' psycho-geography tries to find specific impacts of the geographical environment on the emotions and **behaviour of individuals**. Their goal was to establish the bases for an experimental life where people can come together to create their own lives. As Constant himself pointed out that the Situationists' conception of **urbanism is social**. Like Henry Lefebvre, Constant saw spatiality as the expression of social relations. In New Babylon, **social space is social spatiality**. Space as a psychic dimension (abstract space) cannot be separated from the space of action (concrete space). His utopian architecture supposes a **new society**.

"A revolution that does not produce a new space has not realized its full potential; indeed it has failed in that it has not changed life itself, but has merely changed ideological superstructures, institutions or political apparatuses. A social transformation, to be truly revolutionary in character, must manifest a creative capacity in its effects on daily life, on language and on space."

[LEFEBVRE_1991:40]

According to Constant a person's living quarter become less important to him due to his increasing mobility and his growing demand for temporary accommodation such as hotels, caravans and tents. He saw the future society bearer of nomadic culture. To him the needs of an **emerging race** of nomads must be satisfied.

[CONSTANT_1957 in THRIFT_1996:87]



FIG 17: Conceptual Diagram: global migration.

2.1.3 VIRTUAL: Technological advancement allows the fluidity of **migratory travel**; it accelerates the velocity at which we operate in **hyperspace**. Progressive performances of electronic technology spur the possibilities of continuous unification and mobile freedom between electronic and physical space. Migrating through the global electronic domain, a connection with electronic space is incessantly upheld, informing and **orientating drift** through physical space.

In contrast to the idyllic performance of electronic media, there is emerging **evidence of spatial disconnections**.

Technological electronic media detaches us from a **tactile sensory experience** of physical space. It suggests that our current dependence on electronic space disengages our relationships with the physical space. Although the electronic media, such as laptops, cell phones and i-pods, are grand technological advances, levelling the discomfoting boundaries between electronic and physical migration, electronic media isolates us from our physical surroundings. In the physical urban domain interaction with space is via **transactions, encounters and dialogues**, while migration through hyperspace the **boundary** between physical and electronic space is **distorted**.



FIG 18: Virtual disconnections: Airmort

2.2.1 SETTING: Cities order locales of migration manifested through a **hierarchical infiltration system** of the urban field. An array of urban nodes is determined by their prevailing behaviour on **global and local** influence; transit hubs (airports), transit anchors (stations) and finally transient nodes are dispersed in the urban field.

Hyper-striated public spaces refer to territories within a city, exemplified by their **sundry conglomerate and progressive tempo**. It is these public spaces in which the isolative disconnections become evident. Eloquent transition is not equally evident on global and ground plain. Within the public realm of striated space, new habitude mutations **hunt a fresh typology of spatial relation**. The space should perform parallel in temperament and be programmed in occurrence to airport hubs.

"There is nothing new in choosing to see the work in a microscope rather than a telescope. So long as we accept that we are studying the same cosmos, the choice between microcosm and macrocosm is a matter of selecting the appropriate technique." [THRIFT_1996:77]

Global movement is aligned and navigated between cities as **central points of transit**. Within these cities airports are **facilitators** of express ground and global movement. **Active cores** nourish transit activities and systems of its immediate surrounding. Airports preserve a sense of dominance in the mobile domain, and also on ground level in the city's behavioural systems that operate around it. It is **contextually embedded** in the systemic fabric of a universal city. Airports feed systems on global and ground surface, and its own survival is reliant on these successive systems. Airport hubs manage flow, activities and intersections between the **global and ground** devices. Global and ground crossroads ensure the **concentrated diversity** that is a requisite in the endurance of transit hubs. Airports are self adaptive organic systems, which are elastic to the differentiation of activities and needs; visible and condensed in these nodes. Systems and spaces are intrinsically imbedded in the contextual nature of its global and ground envelopes, discarding redundant objects.

Emergent mobile performance emerges a predatory search for coincident mutation of transient hubs on ground surface. Spatial mediators that constitute grounding sense of place for urban migratory patterns.

Evidentially transit nodes fall within the global hierarchy of transport and transitory activities; it is an intimate unit within a **systemic network** embedded in the urban ground surface. Manifest as an influential transient point in global electronic networks, while simultaneously embedded in the intrinsic local fabric, systems and ground networks. **Urban utility** is an urban tool necessitated seamless **spatial integration**.

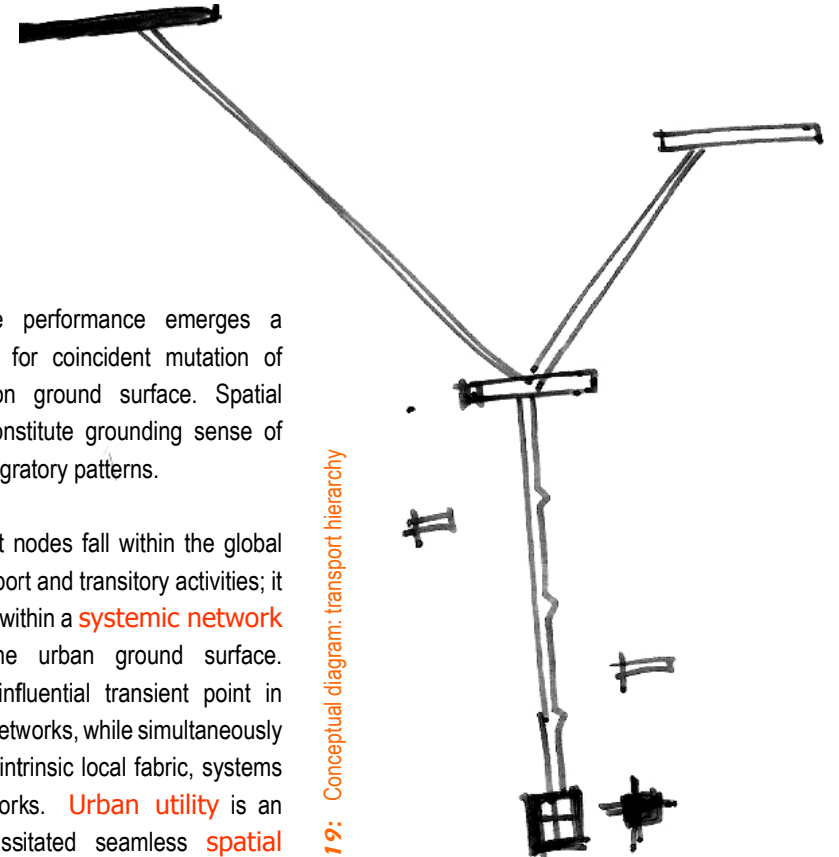


FIG 19: Conceptual diagram: transport hierarchy

2.2.2 BEHAVIOUR: Vibrant micro cosmoses exist at the intersecting fields where social migrating patterns traverse in the interstitial (usually neglected) terrains of urban context. It is here where unchallenged **opportunities reside for innovative architecture** that seals the **fracture** between the mobile social migration and a formal urban fabric.

"from spatial point of view, societies vary; it seems not only in the type of physical configuration, but also in the degree to which the ordering of space appears as a conspicuous dimension of culture." |

[HILLIER_1984:62]

Supportive ground surface infrastructure lie **scattered** in the urban land, like objects in an open field with no substantial spatial relation between themselves or their surroundings. Under closer analysis of supportive ground surface infrastructure it is revealed that they provide a perfect scale to **mend** the social-urban fragment. An infrastructure that is able to **mutate rapidly** to accommodate for the needs of a mobile society.

Urban utility portal [**uportal**] is a transient public space that exists on a **multi-modal intersection** on the **borderlands** of deserted spaces. Employing supporting ground-surface-infrastructure and information systems as a **spatial catalyst** that encourages possibilities of interaction with space, information and infrastructure.

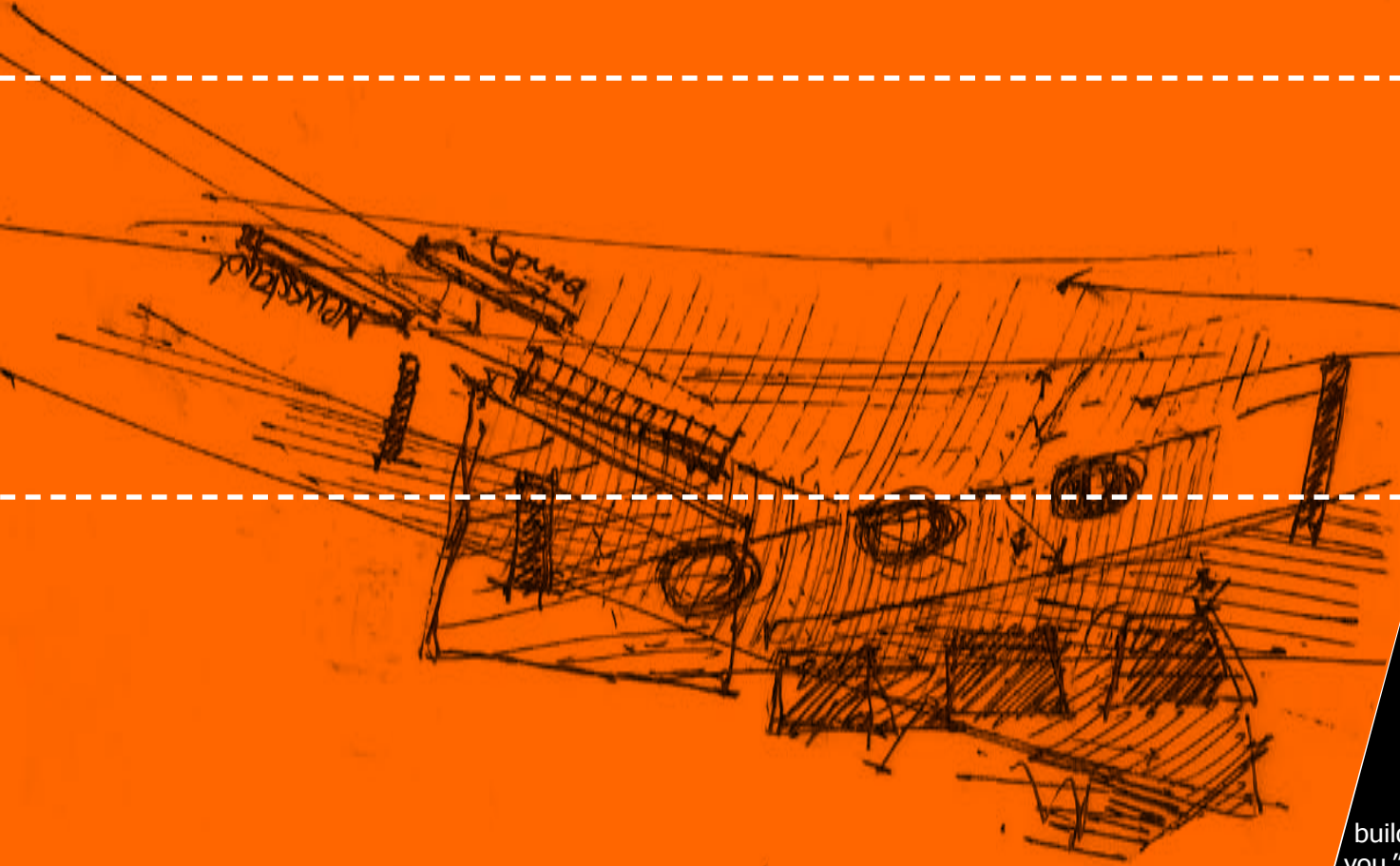
"...social activity in any region takes place as a continuous discourse, rooted in a staggered series of shared material situations that constantly arise out of another in a dielectrically linked distribution of opportunity and constraint, presence and absence. A region is lived through, not in."

[THRIFT_1996:81]



FIG 20: Conceptual diagram: sidewalk speed and diversity.





3

“As you are, so are your buildings; and as your buildings are so are you.”

[LOUIS SULLIVAN_1978:CHICAGO WATER TOWER BUILDING]

context analysis

3.1

ACADEMIC PRECINCT

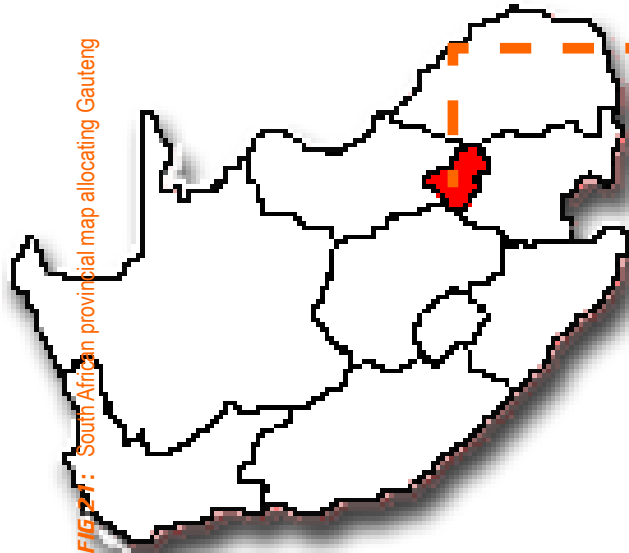


FIG-21: South African provincial map allocating Gauteng

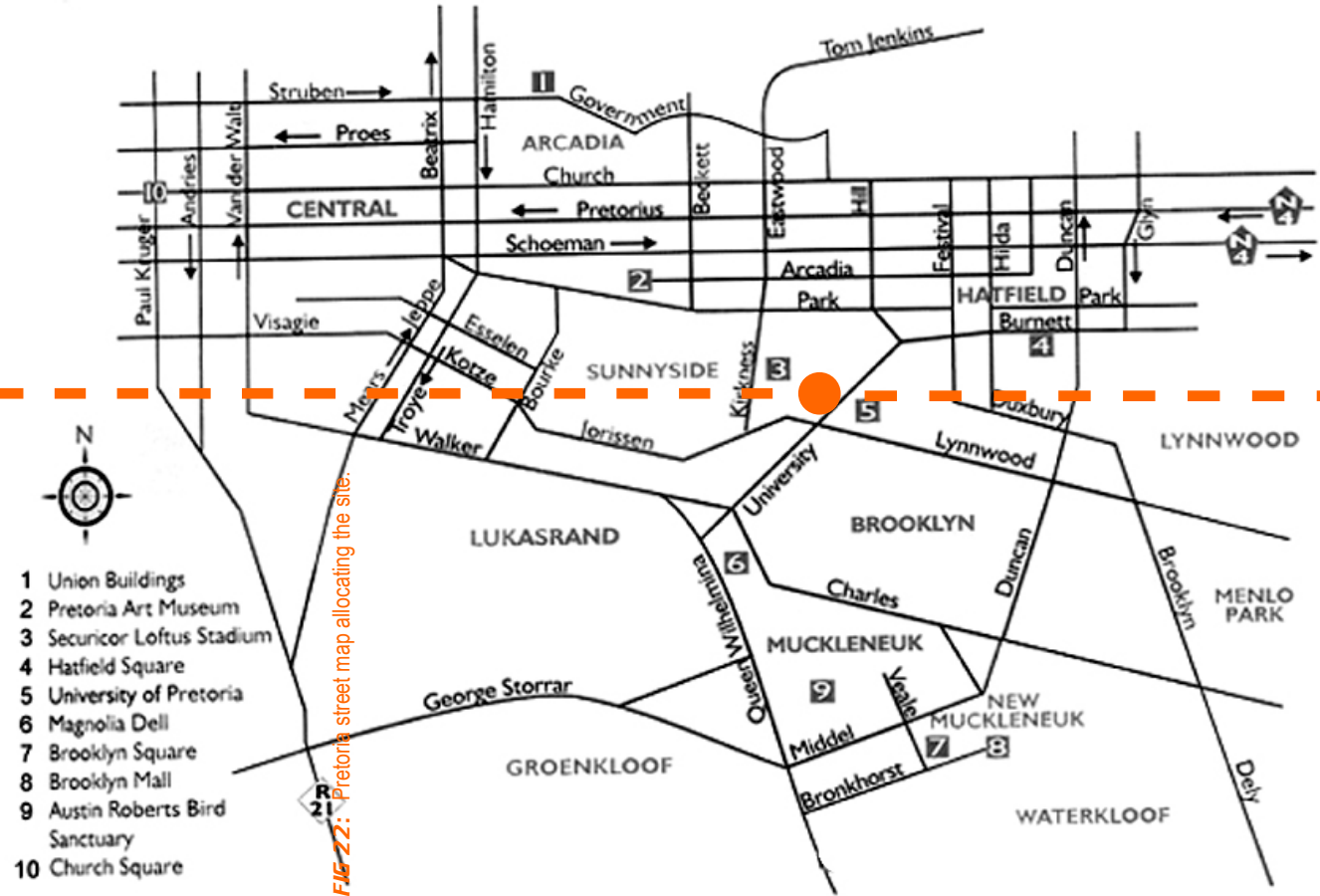


FIG-22: Pretoria street map allocating the site

3.1.1 SECONDARY EDUCATION: North and north-east of the triangle bounded by University Road, Queen Wilhelmina and Walker Streets is the academic precinct comprising the Pretoria Boys High School, the Afrikaanse Hoër Seunsskool, the Afrikaanse Hoër Meisieskool, and the Pretoria High School for Girls as well as the University of Pretoria [UP]. According to the Heritage Impact Assessment act [HIA] under paragraph 6.8.2.1

“this clearly defined precinct constitutes one of the city’s most important and well-known cultural landscapes.”



FIG 23: Aerial photograph of site and surroundings

3.1.2 SENSE OF PLACE: The academic precinct has a legible layered history of **a century**. UP possesses **a rich architectural heritage**, including buildings designed by Gerhard Moerdijk, Brian Sandrock (the Main Administration Building) and Karel Jooste. The character of the University campus is based on its function as a **place of academic discourse**, research and learning. These functions form the basis of the significant character of the campus: low noise levels, slow moving traffic, pedestrian friendly areas, areas of contemplation, calm working environments, safe surroundings and links to the surrounding residences and places of related academic activity. These aspects contribute to the unique character of the University campus and its sense of place.

3.1.3 THE MAIN ADMINISTRATION BUILDING: Completed in 1969 by architect Brian Sandrock who recommended that the new Administration Building be located in the far south-western corner of the campus, in an area known to students as “Die Gat”. It was thought at first that the Loftus Versveld Stadium would be relocated and the campus **expanded to the west**, which would have placed the new building at **the centre of the enlarged campus**. Due to the railway on the West and Lynnwood Road South, it became clear that the expansion would happen to the east. Nevertheless, the site was retained, on the grounds that it would make the building readily **accessible to the public**.

The windowless western façade is covered with a bas-relief and the building has a distinctive ship-like prow, hence the nickname “Die Skip”. The massive concrete wall on the western side, is structurally suspended on rubber brackets and forms an **acoustic shield** for noise from the railway line across the road: functionality on a monumental scale.

FIG 24: The Main Administration Building.



3.2 URBAN LINES OF CONNECTION

3.2.1 PHYSICAL AXIS: The cultural landscape is centred on the **University Road axis** extending north-east from the above-mentioned triangle across Lynnwood Road and the western boundary of the UP campus to the area of the north-east corner of the Pretoria High School for Girls.

University Road **gradually inclines to the north**, from Lynnwood Road intersection until it ends at a T-junction on Burnett Street. On adjacent sides of University Road the embankment on west and fence bordering the UP façade on east side, is set back from the street and the resulting **vacuum** is filled with student cars. Issues of entrances and edges to the UP campus need to be addressed both to respond to the different natures of each street and to create legible and safer points of entry. According to the Hatfield Future Developments [ref] the existing entrance to UP on University road are to be relocated, to establish a **pedestrian link with Loftus Versveld**.



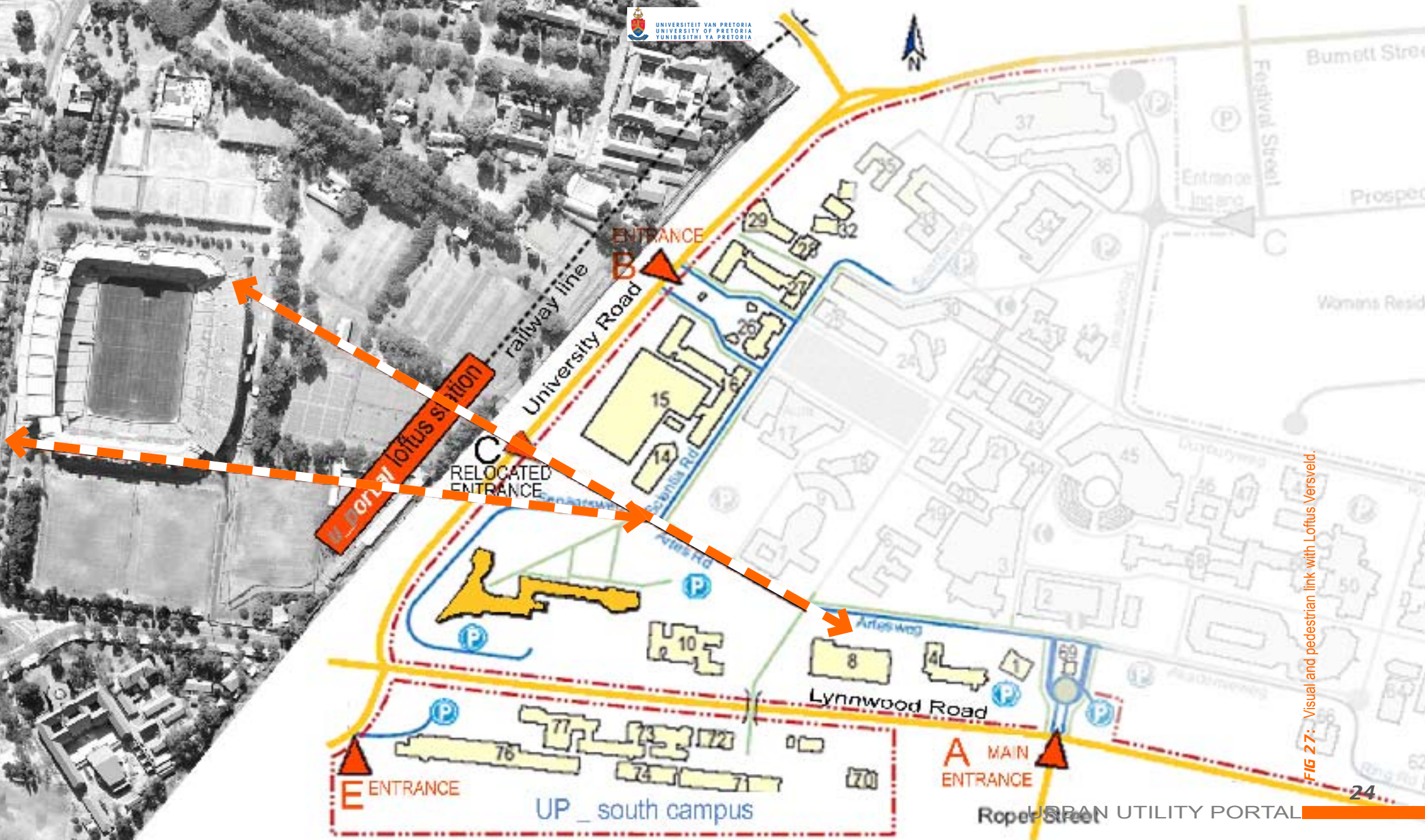


FIG 27: Visual and pedestrian link with Loftus Versveld.

3.2.2 VISUAL AXIS_END OF AN ERA: The palm trees lining **both sides** of University Road date from the 1920's and have been maintained by the Tshwane City Council. The rows of trees used to continue directly parallel to the existing railway line until the construction of a grade separation between the latter and Lynnwood Road necessitated the diversion of University road. From an application of the NHRA assessment criteria, the trees are of cultural significance and **collectively constitute a heritage resource.**

The palm trees are but an element of many that contribute to the historical based **spatial and visual** qualities of the University Road axis. The following comes from the Heritage Chapter of the draft EIA

“University Road spine – The main significance is for its vista and connecting visual character towards the University of Pretoria and Loftus from Magnolia Dell and from the University’s western entrance in University Road towards Magnolia Dell. This road is more than a mere connecting link for motor vehicles and has since its construction been a scenic deviant and walkway for students and residents using this route to the University of Pretoria. This character has been enhanced by old and tall pine and bluegum trees inside the Pretoria Boys High School Grounds.”

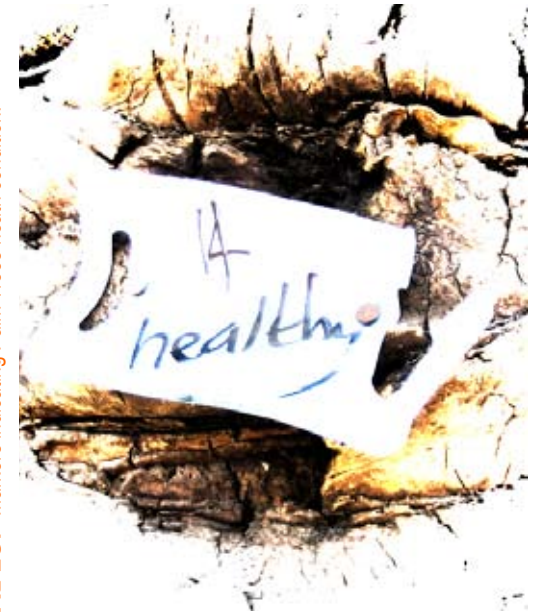


FIG 28: Markers indicating Palm Trees health condition.



FIG 29: Palm Trees on University Road axis removed.



3.3

GAUTRAIN DEVELOPMENT

3.3.1 GAUTRAIN RAPID RAIL LINK: The Gautrain Rapid Rail Link [GRRL] is a rail connection comprised of two links, the first between Tshwane and Johannesburg, and another link between OR Tambo International Airport and Sandton. This GRRL service brings Gauteng in line with the global domain, **linking cities by rail to international airports**. The GRRL is aimed at providing an alternative public transport mode to vehicular transport and therefore to attract private car-users to the train. This service's intention is to alleviate the congestion on the roads between Johannesburg and Tshwane. The modern train will offer international standards of public transport with high levels of safety, reliability, predictability and comfort

3.3.2 HATFIELD STATION: Hatfield is the last station on the primary north-south axis of the Gautrain system. A critical element of the Gautrain Station at Hatfield is the connection to the existing Hartebeetspruit railway station where passengers will be able to **transfer from the Metro rail commuter rail service to the Gautrain**. It is anticipated that Gautrain passengers will make use of walking, cycling, private vehicles, as well as the feeder-and-distribution services that form part of the Gautrain system. Also incorporated are the existing commuter rail service provided by Metrorail and the existing public transport services on the road network surrounding the stations precinct.

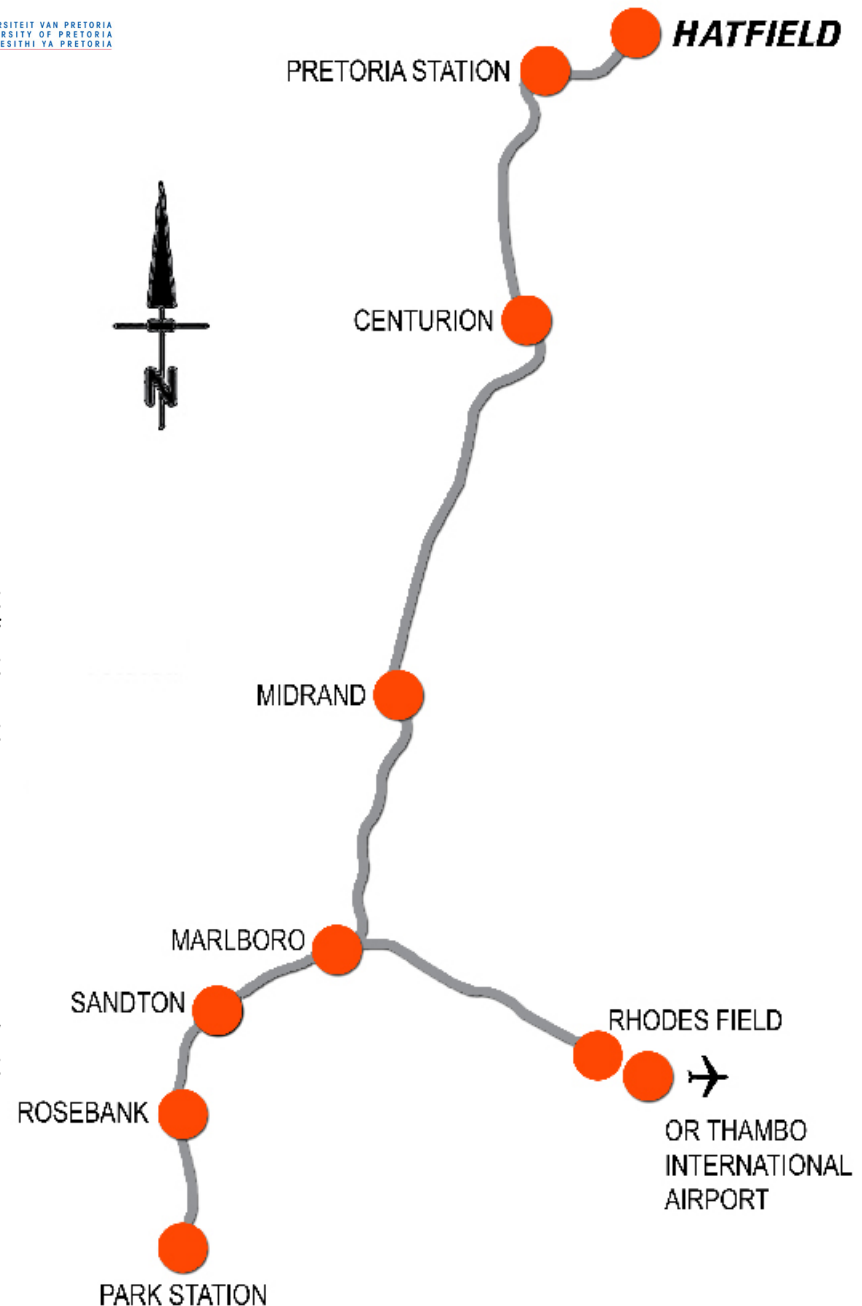


FIG 30: Gautrain rapid rail Link route.

3.4 FEEDER AND DISTRIBUTION TRANSPORT

The City of Tshwane is faced with a challenge to improve public transport within the city. Currently the image of public transport is poor, but events such as the Soccer World Cup 2010 provide a window of opportunity to address the situation. An attempt to improve the image, quality and utilization of public transport have now been implemented by the City of Tshwane. These include: the construction of three Gautrain stations within the Tshwane area (Centurion, Pretoria and Hatfield).; the taxi recapitalization programme and the Rea Vaya Bus Rapid Transit[BRT].

Commercial nodes, Loftus sport stadium, industrial nodes, dense residential areas and Gautrain stations are critical nodes that will be linked in a fast and effective way.

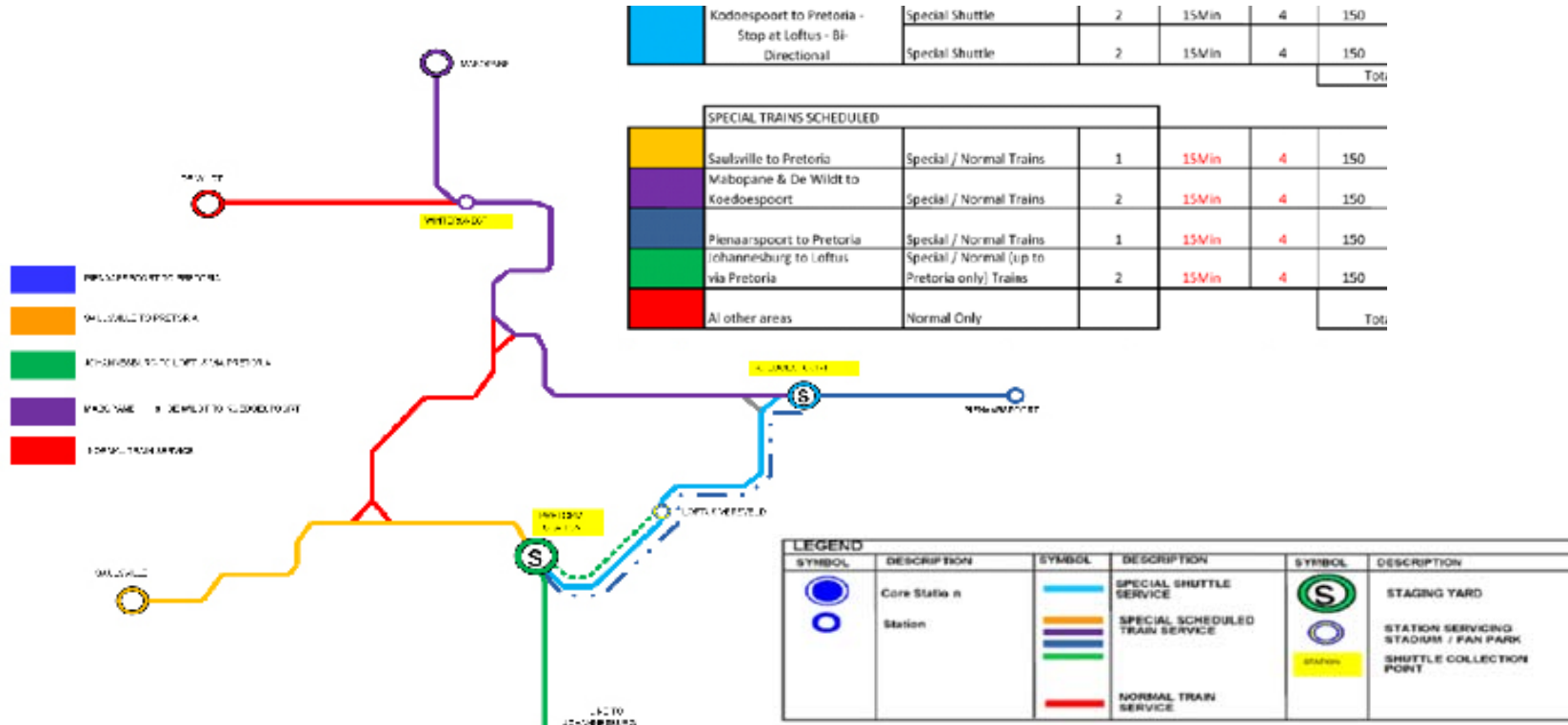
3.4.1 SARCC: "SARCC, as a subsidised public organisation, focused on fulfilling the government's social obligation by providing affordable commuter services."

Metro rail was transferred to the SARCC in 2006 to improve service levels, the convenience of commuters and ensure that an effective, safe, and efficient commuter rail service is provided to commuters. The SARCC has since embarked on a programme of upgrading and improving stations, station facilities, communications systems and security at both stations and inside trains. The Metro rail service provides a feeder service to a wide area throughout the City of Tshwane Metropolitan area and **makes the Gautrain service accessible** to a large component of the community that relies on public transport.



FIG 33: Metro commuter rail at Loftus Versveld Station.

FIG 34: SARCC commuter rail distribution route.



3.4.2 RAPID BUS TRANSIT: Due to the increasing congestion on the city's roads as well as long commuter waiting times for traditional public transport Tshwane will be implementing a mass rapid transit system, a high-quality, customer-orientated bus service that delivers fast, comfortable and low-cost urban mobility, by 2010. The BRT public transport system is the first phase of a four-phase project to develop public transport in the city. It involves busway corridors on segregated lanes and modernized bus technology.

The BRT stations will feature **pedestrian access, bicycle parking, park-and-ride facilities, and rail-road interfaces**

where applicable. The BRT system will stop at the Hatfield and Pretoria Gautrain stations, and the Pretoria Metro-rail station. Commuters will be able to make use of an associated distribution service within the inner city once they step off the main line. Busses will operate at two to four minute intervals during peak periods, and seven to ten minutes during off-peak periods. The system will be operational from five in the morning to midnight. The busses will stop at dedicated stations, placed at 750 m intervals along the route. Tickets will not be issued on the bus, but at the stations a pre-boarding ticketing system to ensure fluidity of migration.



"The new Tshwane Bus Rapid Transit (BRT) System will also service Loftus via a BRT Station in University Road close to Lynnwood Road. Regional bus services, mainly from Johannesburg, will drop off passengers in University Road and then park at peripheral coach park areas.."

[PUBLIC TRANSPORT ACT _ 2006]

FIG 36: Tshwane municipality distribution bus



3.5

LOFTUS VERSVELD STATION

3.5.1 SARCC AND GAUTRAIN RAILS: Loftus Versveld Station is situated between Pretoria and Hatfield Gautrain substations and serves the **Metro commuter rail**. Two rails from the existing SARCC run parallel with University road. The existing SARCC rails will be aligned to accommodate the Gautrain rails that largely follow, at surface, the existing Metro rail corridor. Two Gautrain tracks sandwiched between University Road and the SARCC are currently under construction. At this time the Gautrain is not planned to stop at the Loftus Versveld Station, although for the nature of the dissertation it is assumed that the Gautrain could potentially stop at the Loftus Versveld Station during peak hours, or on occasion for Loftus Versveld sports events usually over weekends. For the construction of the Gautrain support on University Road axis, the empty space adjacent the embankment will be filled with compressed groundwork. A **concrete retaining wall imprisons an impermeable boundary** on UP western facade, leaving a mere 1m sidewalk for pedestrians; this causes an uncomfortable physical and mental impact on University Road.

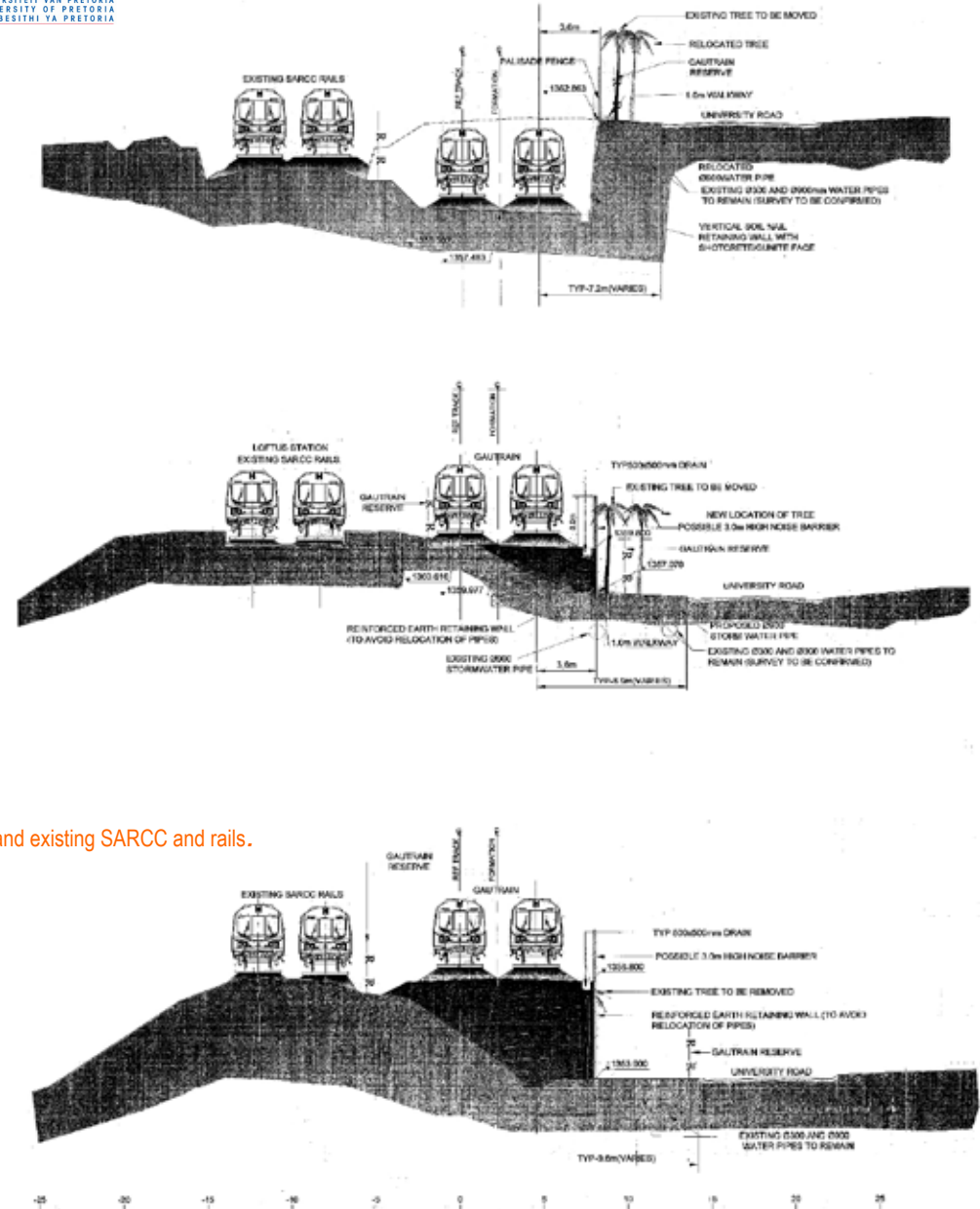


FIG 37: Alignment of Gautrain and existing SARCC and rails.



FIG 38: Urban frustration: commuters carrying luggage.



FIG 39: Existing entrance: inactive.

3.5.2 PLATFORM: Each open air platform on adjacent sides of the existing SARCC rails is fed from the ground level by a flight of concrete stairs. The entrances and underpass below the railway is positioned at a very close proximity with each other, making the use of the secondary entrance unfeasible. As a result only the **main entrance** is currently in use to **access** the trains, with **no alternative for the physically disabled**. Access through the entrance gates are supervised by security officers, but due to the lack of security infrastructure (electronic ticketing) the groundwork revealed that they are not stationed in all operation hours. This in return causes unsupervised access on the metro commuter rail. In an attempt to address the seating and shading needs of commuters waiting on the platform, two ineffective enclosed brickwork structures were constructed one on each platform. A pungent stench fills the air around the entrances to the platform, suggesting the lack of other necessary public infrastructure such as **ablution facilities**.



FIG 40: Main existing entrance: active.



FIG 4.1: Main entrance access gate.

Furthermore, there is a lack of informative resources on or around the platform. Although there is evidence of an information stall on the platform, it is unmanned and partially dismantled. Commuters are forced to **waste large amounts of time waiting** for the train; because no means to gain access to the train schedules exists. Hawkers position themselves at the main entrance gate, right next “to the hawkers will be prosecuted” sign a clear indication of inconsistent supervision. In general, the Loftus Station Platform currently disconnected from other transport systems. There is a **lack of public and informative resources** as well as a concern for commuter’s safety around entering and exiting the platform.



FIG 4.2: Hawkers and insufficient disposal infrastructure.



FIG 4.3: Ticket officer.



FIG 44: Urban frustration: ineffective shelter on platform. /



FIG 45: Ground surface infrastructure: weathered dustbin. /

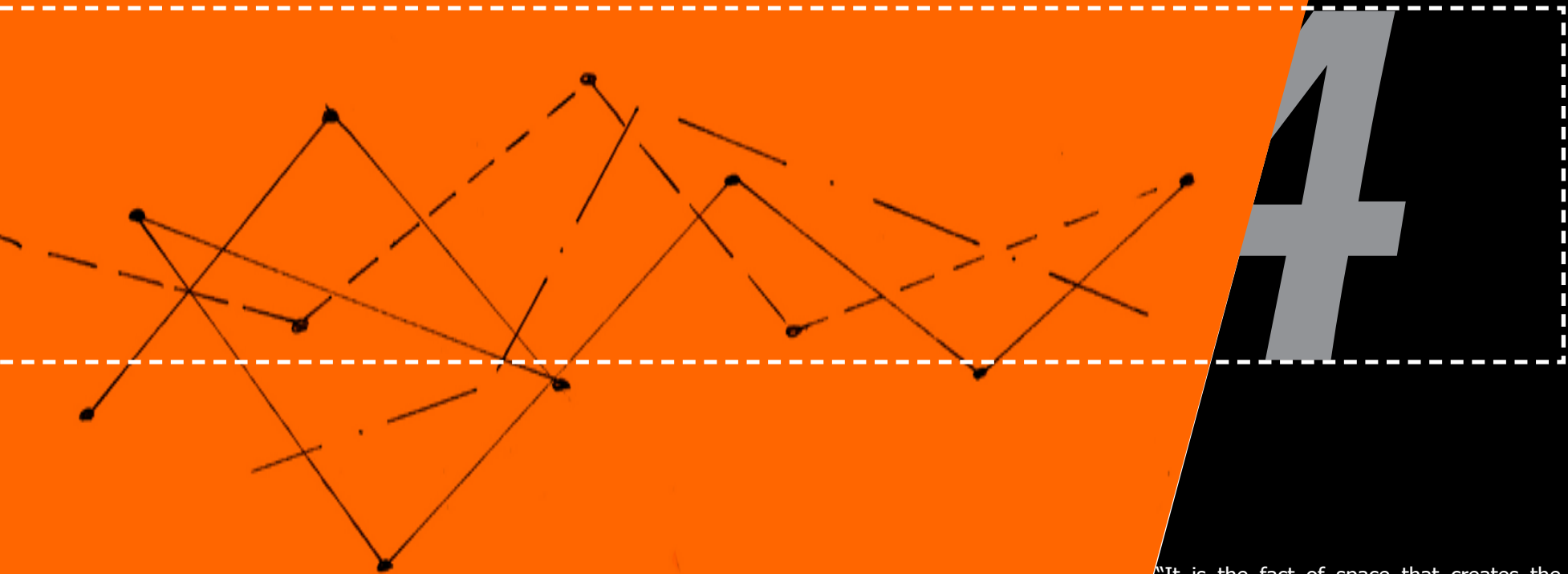


FIG 46: Dismantled information building on platform. /



FIG 47: Unintelligent damaged signage. /





4

"It is the fact of space that creates the special relation between function; and social meaning in buildings. The ordering of space in buildings is really about the ordering of relations between people."

[HILLIER_1984:96]

precedent studies

4.1 STOREFRONT FOR ART AND ARCHITECTURE

4.1.1 NO WALL; NO BOUNDARIES: Storefront for Art and Architecture is located in a unique triangular ground-level space on Kenmare Street in the Chinatown/Little Italy/Soho area of New York City. Situated on a major downtown thoroughfare between three radically different cultural sectors, Storefront attracts a **diverse audience**. Storefront for Art and Architecture is a non-profit organization committed to the advancement of innovative positions in architecture, art and design

"...intended to generate dialogue and collaboration across geographic, ideological and disciplinary boundaries. As a public forum for emerging voices..." [HOLL_2000]

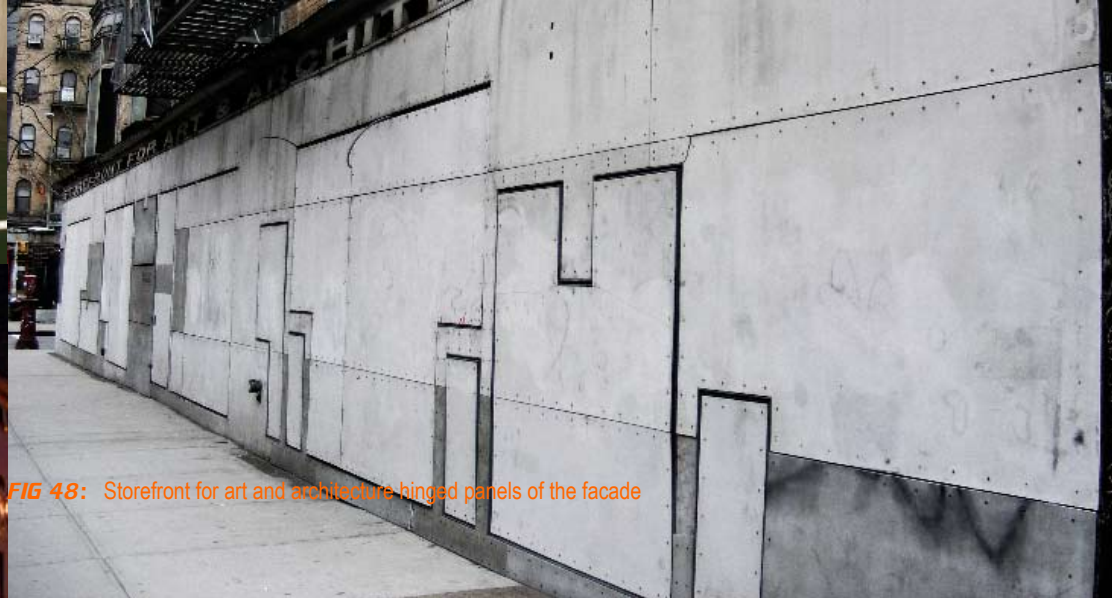
In 1992, Steven Holl and artist Vito Acconci were commissioned as a collaborative team to renovate the aging facade of the Storefront for Art and Architecture. The gallery itself is a limited, narrow wedge with a triangulated exhibition interior, such that the most dominant structure for the Storefront is the building's long facade. The project replaced the existing facade with a series of twelve irregularly shaped panels that **pivot vertically or horizontally** to open the entire length of the gallery

directly onto the street. The hinged panels are constructed of **fibre reinforced concrete** arranged in a puzzle-like configuration; rotating on both axes, which allows some to become tables and benches.

The project **blurs the boundary between interior and exterior**, and by placing the panels in different configurations, creates a multitude of different possible facades. It is focused on creating space through detailing, proportion, and the manipulation of light. The different configurations of panels, coupled with the ever-changing exterior weather conditions create **unique vignettes of the city** from the inside, while changing the framed glimpses into the gallery. The dynamic interactive façade reflects the behaviour of the city. Acconci and Holl challenged the static border underlined when the facade is closed, it takes the typological form of a Manhattan triangular shop front and when open, the **facade dissolves** and the interior space of the gallery expands out on to the sidewalk.

"The three dimensional volume can be disposed towards the four dimensional with changes in time. With this facade, the Storefront realized a new type of dynamic, urban interactive space..." [Holl_2000]





4.2 MCCORMICK TRIBUNE CAMPUS CENTRE

4.2.1 FUNCTIONAL BOUNDARIES: The McCormick Tribune Campus Centre is located at the historic campus of the Illinois Institute of Technology (IIT) at 33rd and State Street, Chicago. The IIT campus, designed by Mies van der Rohe is bordered by an expressway and effectively bisected by the **elevated commuter rail** ("L") tracks which rumble along the north-south axis of the site, separating physically and psychologically the dormitories to the east from the main campus to the west. As students walk to and from class, they routinely cut beneath the tracks. Rather than disguising the elevated railway Koolhaas encircles it as

it crosses the top of the building. Thereby effectively constructing one of the primary components of the new campus: a stainless steel tube that sits directly above the building's roof, significantly muffling the noise and vibration generated by passing trains. The other main federating element is the roof, a **continuous concrete slab** that shields the centre from the noise of the elevated railway while **unifying the heterogeneity below**.

...the conundrum implies a building that is able to (re)urbanize the largest possible area with the least amount of (built) substance. Illinois Institute of Technology's situation is exacerbated by the no-man's-land either side of the elevated railway."

[KOOLHAAS_2003:WWW.LYNNBECKER.COM]

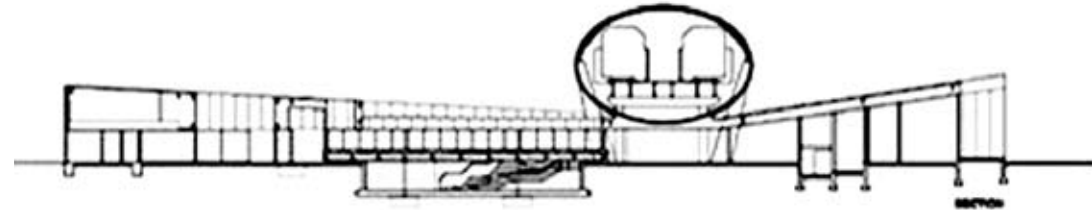


FIG 49: Section of the McCormick Tribune Campus Centre



FIG 50: Elevated "L" tracks segregating the site.

4.2.2 SPACES THAT EVOLVE FROM BOUNDARIES:

Student flows are captured as a web of lines that connect the eastern and western campus destinations. The migration patterns are organized through the campus centre to **differentiate activities** into streets, plazas and urban islands. Without fragmenting the overall building, each part is articulated according to its specific needs and positioned to create neighbourhoods (24-hour, commercial, entertainment, academic, utilitarian), parks and other urban elements in miniature.

The interior layout was inspired by **pre-existing footpaths** that criss-crossed under the train tracks, formed by students walking back and forth between residence halls and classroom buildings on the IIT Main Campus over the past 70 years. The **diagonal walkways** were incorporated into the building's design and criss-crossed with shiny aluminium tiles paved in the interior floor plan. The walls are layers of transparent and translucent panels. Activities are not stacked but by positioning each programmatic particle as part of a dense mosaic, the building **contains the urban condition itself**. The interior is full of sleek and angular vistas, accented by bright colours as highlights throughout.

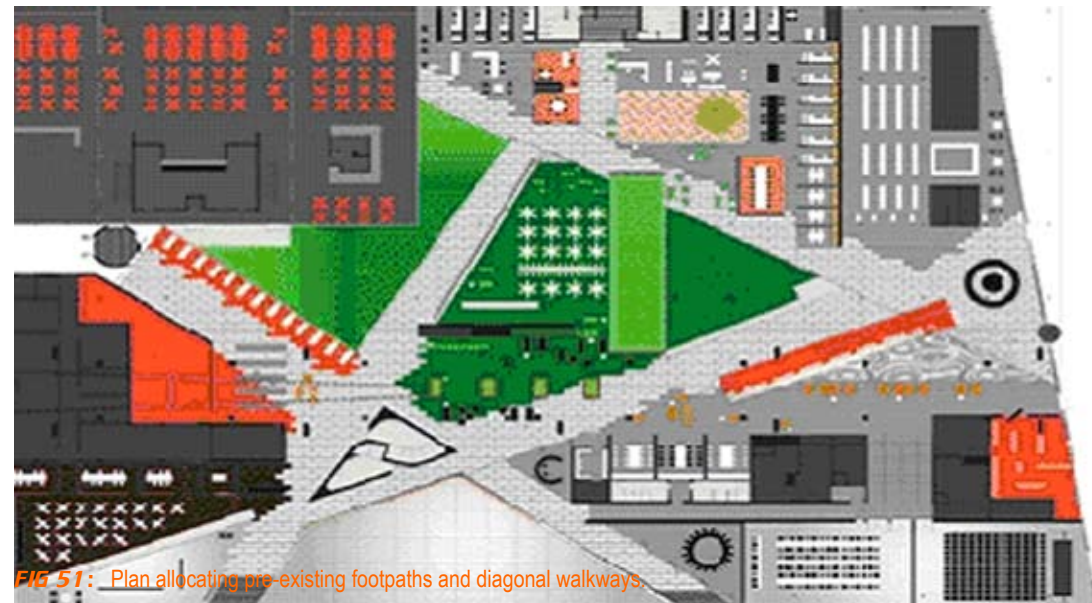


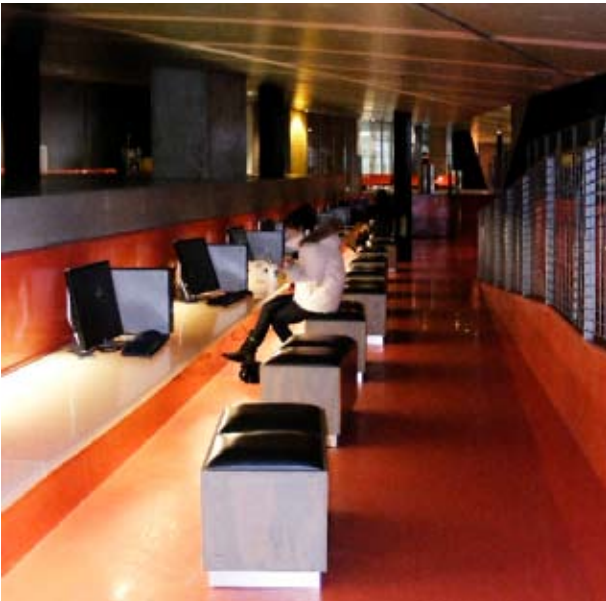
FIG 51: Plan allocating pre-existing footpaths and diagonal walkways.



FIG 52: Furniture of interior public spaces.



FIG 53: Interactive interiors accentuated in bright colours.



4.2.3 UNIVERSAL LANGUAGE: Koolhaas also posted universal icons of male figures in action of various sizes throughout the space; he sees the **iconography** as a response to **globalization**. The current generation enters a building like the IIT experience a weird absence of information, therefore it is evident to try and develop a **language of fundamental information** that is effective in these circumstances of cultural diversity.



FIG 54: Iconography used as a universal language system.

4.3

DAIRY MALL TAXI RANK

4.3.1 SHARED PUBLIC SPACE: The Dairy Mall Taxi Rank located west of Pretoria Station consists of old industrial stores and factories (previously an ice-cream factory) and a few later additions. In 1988 renovations of the historical buildings and construction of the new buildings was undertaken by the firm Meiring Van der Lecq Thomas and Rhonga [Le Roux 1993:25]. The buildings spill out in a central open space that stretches all the way to Bosman Street with the main activity that of which is commercial. On Bosman Street provision is made for an informal street market, bordering the elongated Dairy Mall Taxi Rank. What is fascinating about this public space is the way that the sidewalk exists by juxtaposing movement and programme; the urban fabric accommodates seating and shading elements that have been successfully integrated with the informal commercial activities resulting in a dynamic interactive sidewalk façade.

“When architects describe how they create their buildings, they talk about logic and objectivity, but the more subjective element of personality plays a stronger role than many would care to admit. How architects see the world and how they respond to the values of their time can mark their buildings as distinctively as fingerprints.” [KOOLHAAS_2003: WWW.IIT.EDU.COM]



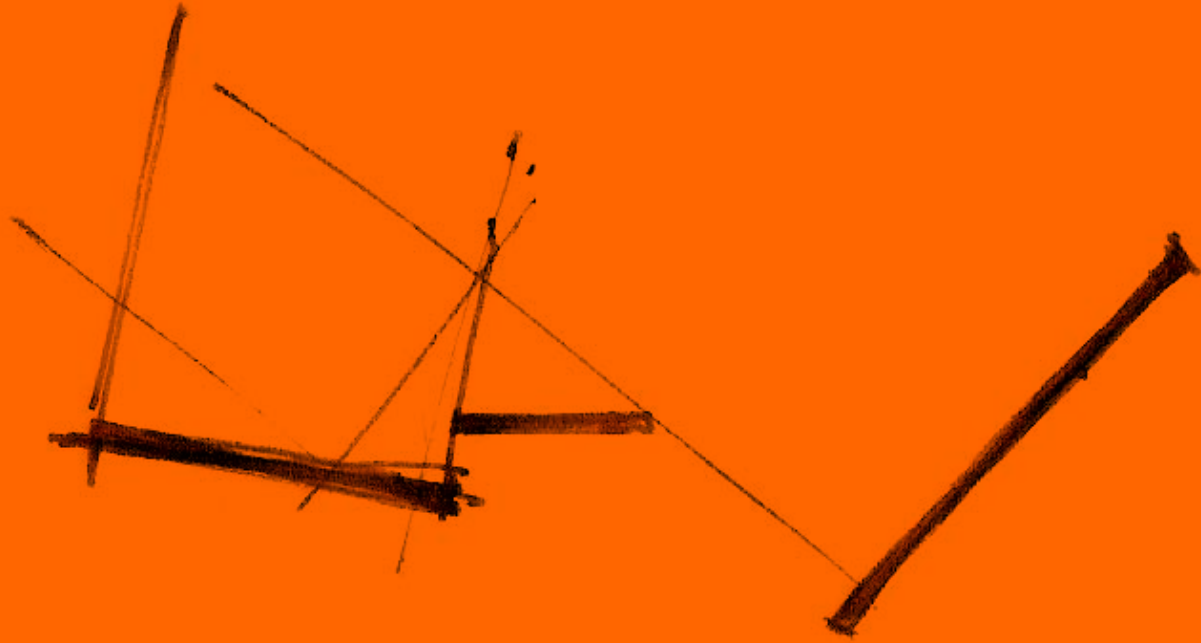
FIG 55: Diversity at Dairy Mall Taxi Rank on Bosman Street



FIG 56: Public street furniture integrated with activities of sidewalk.



FIG 57: Fluid integration of urban spatial activities and transport systems



“In everyday life and language, it seems, that experience of spatial formation is an intrinsic, if unconscious dimension of the way in which we experience society itself. We read space, and anticipate a lifestyle.”

[HILLIER_1984:26]

design development

5.1.1 WINDOW IN THE WALL: UP's impermeable relationship with the city is perforated; rendering the campus accessible to the public sphere and dispersing knowledge into the city. This permeability is significant in integrating the **campus as part of the city fabric** rather than a remote academic preserve. Currently it also generates a flow of traffic, both bicycle and pedestrian, which increases the congestion of movement through campus.

The choice of site for this dissertation has been argued in Chapter 3. The design objective is **reactivating a derelict space** that envelops the retaining wall, along the edge of the Loftus Versveld platform, which currently sits as an obtrusive **urban boundary** on University Road. Preserving the initial ideals of UP; to expand the campus towards the south, the dissertation aims to perforate the boundary on the western side of University Road and establish a thriving pedestrian link between UP campus and both the Loftus Versveld platform and its sports grounds. Furthermore, it is concerned with an **exploration of the boundaries of interior spaces that lie hidden in the urban setting**.

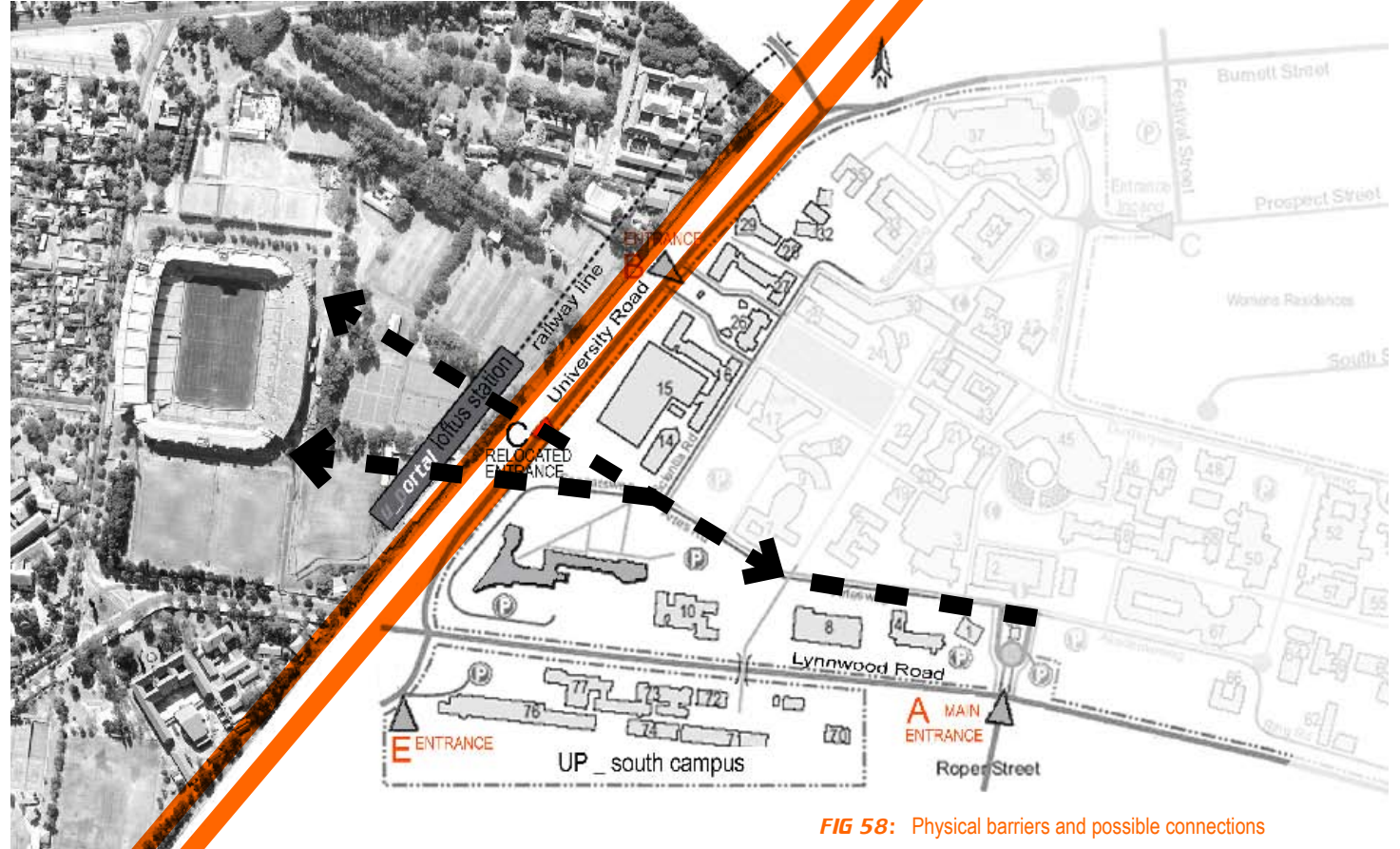


FIG 58: Physical barriers and possible connections

u_portal is designed as a **linear space** which exists in the boundary along the edge that separates the sidewalk from the platform, interior from exterior; and UP from permeable penetration. ***u_portal*** is an urban tool that **unlocks the sidewalk as a vibrant public space**, equipped with **intelligent resources** which facilitate the merge of social patterns and a formal urban fabric.

“In the city, public life orders itself around exchanges of all kinds: material and non-material, objects and words, signs and products. Spatial pattern can, and does, in itself carry social information and content. The formation of non hierarchical, abstract notions of spatial relations which in our view were essential to giving a proper account of spatial organization.”

[HILLIER_1984:91]

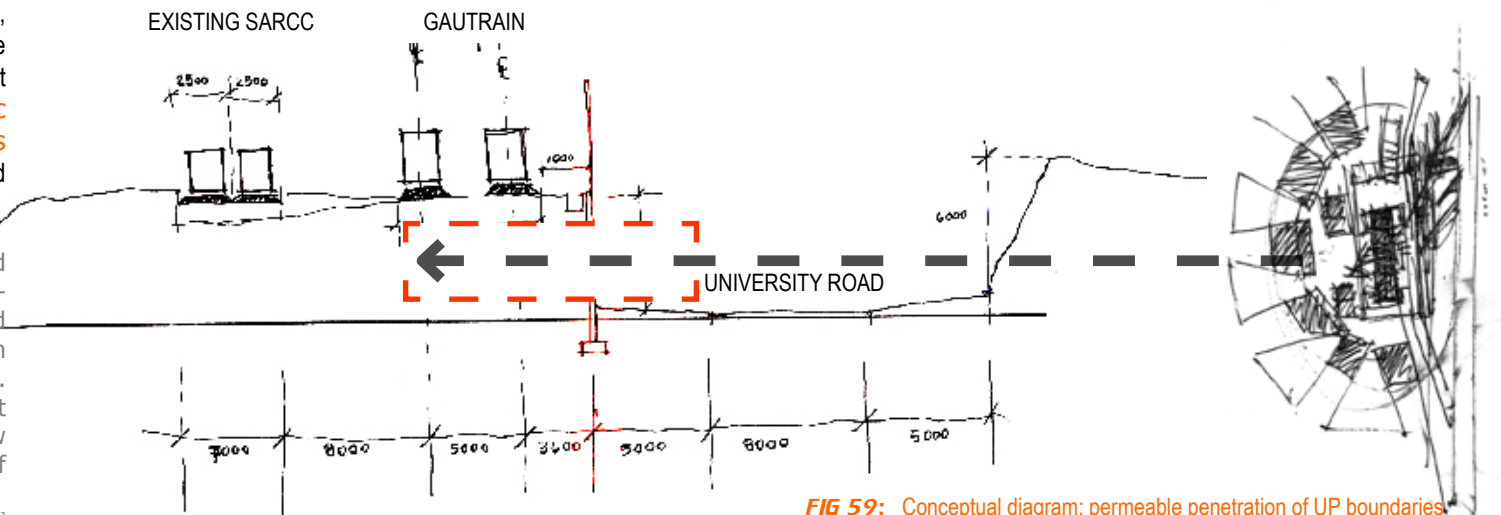


FIG 59: Conceptual diagram: permeable penetration of UP boundaries

5.1.2 RE-DEFINE A BOUNDARY: A concrete skin defines the perimeter of the space revealed underneath the two Gautrain rails. Using surfaces that morph from the ground (platform) expands the elongated space as an extension of the sidewalk. Acknowledging the linearity of the sidewalk, the space is fragmented into smaller more accessible spaces. What is important about these compacted spaces is the communicative relationship between the spaces and a dynamic transition from one space to the next as a singular entity. Through surfaces that resonate from the ground, it preserves continuity and succeeds in creating a seamless space: an essential quality for mobile migration. Each compact space; a fragment from entire linear space, is dismantled and analysed through the nature of its boundaries. Intelligent manipulating of each horizontal and vertical surface by virtue of its height, depth, inclination and material, caused the desired seamless spatiality to evolve from the ground.



FIG 60: Conceptual diagram: fragmentation of linear space.

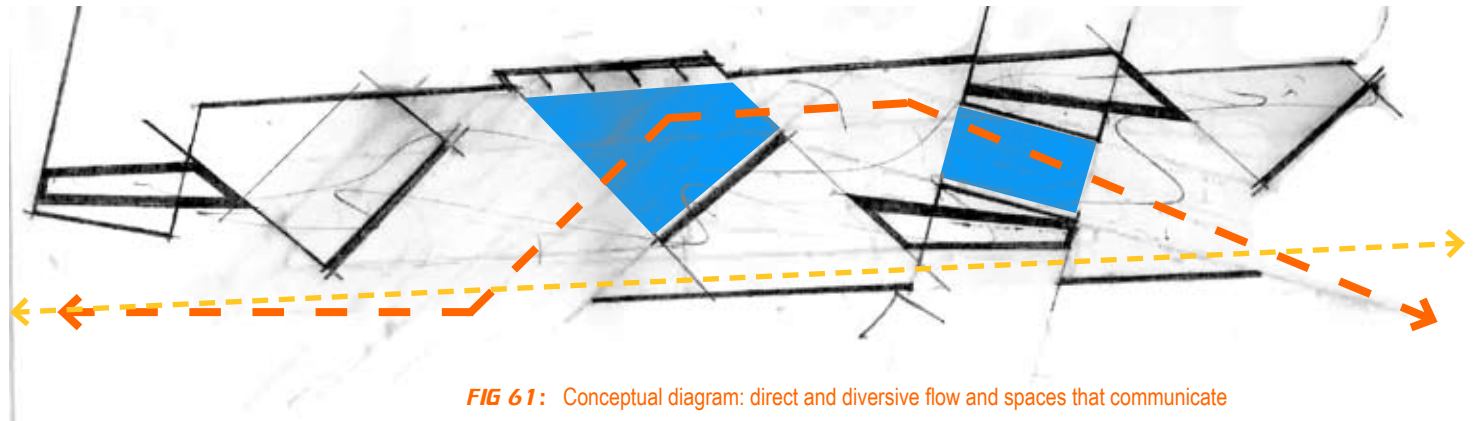


FIG 61: Conceptual diagram: direct and diversive flow and spaces that communicate

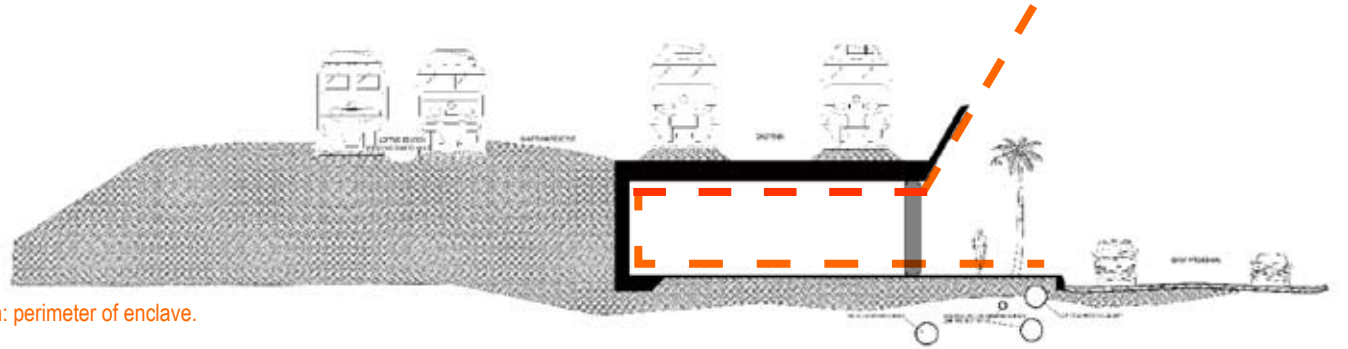


FIG 62: Site section: perimeter of enclave.

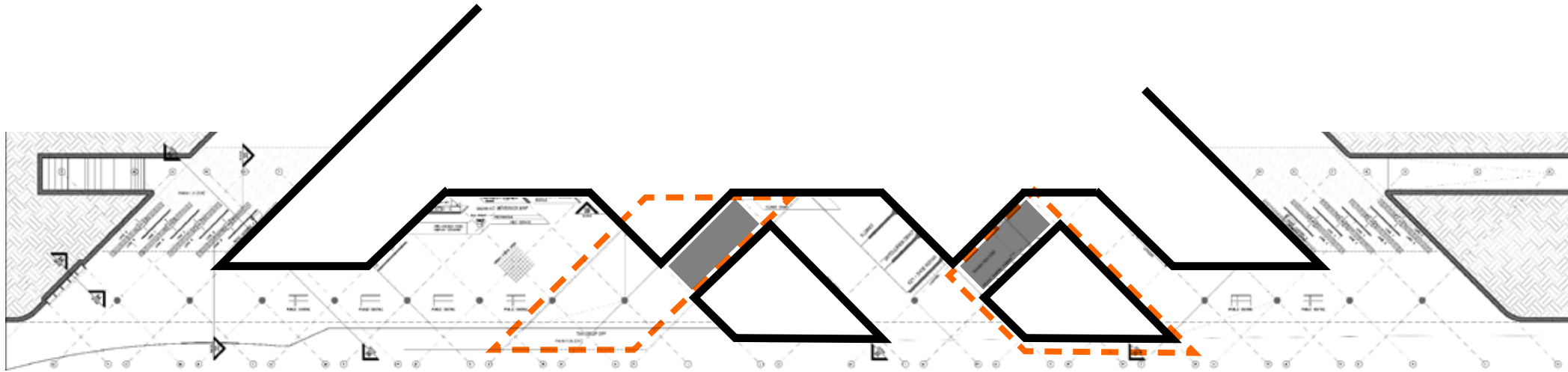


FIG 63: Conceptual diagram: surfaces that morph from the ground,

FIG 64: Conceptual model: surfaces that morph from the ground.

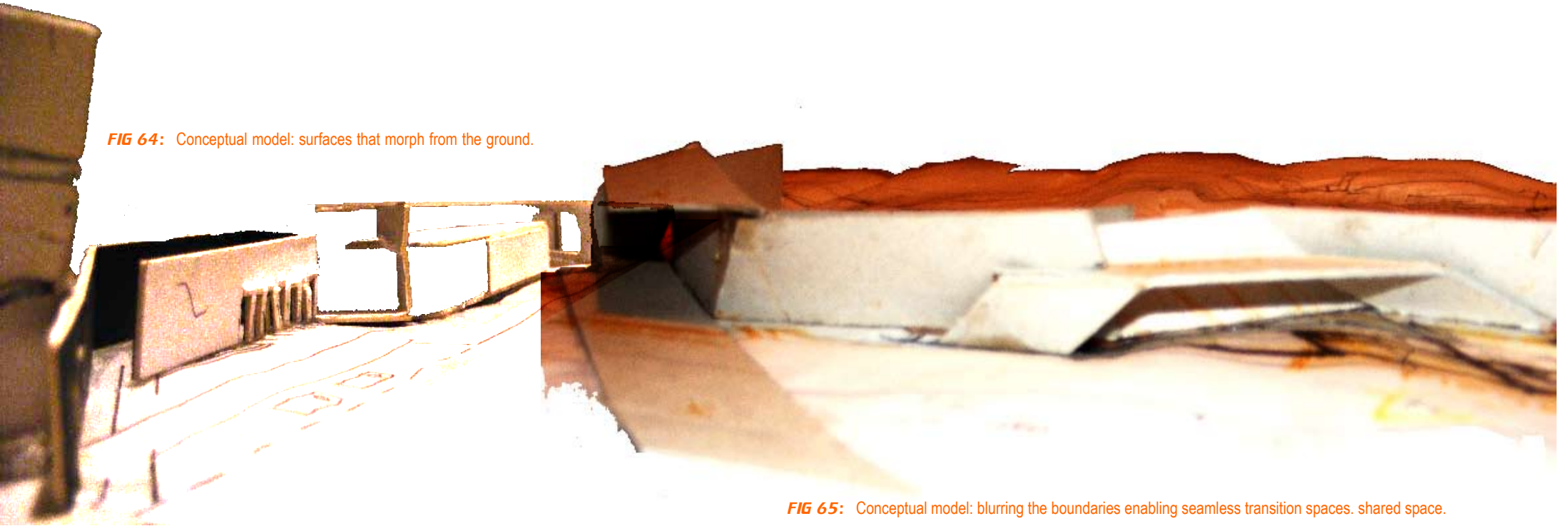


FIG 65: Conceptual model: blurring the boundaries enabling seamless transition spaces. shared space.



5.1.3 OUTLINE OF THE ENCLAVE: The site shares a **subtle formalistic relationship** with the Main Administration Building (“the Ship”) across the street, in respect to the heritage significance “the Ship” is an **axial icon for UP**. Using a series of platforms that gradually incline with University Road, a natural form develops in the wall: a void that outlines contrast in the solidity of the wall. Due to the nature of the site, the enclave is distinguished as an inverse that mirrors the Main Administration building.

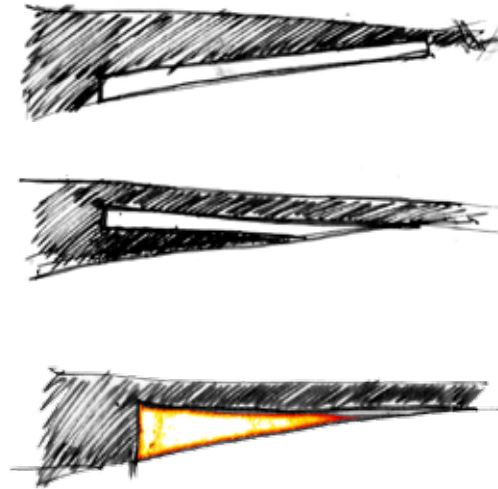


FIG 66: Conceptual sketches: outline of the enclave.



FIG 67: The Main Administration Building.

5.1.4 ENTERING THE ENCLAVE: The entrance closest to the intersection; currently not in use will be restored as a functional entrance. The main entrance that is currently the only functional entrance will be demolished and a new entrance relocated at a more feasible position. Both entrances will be widened and individually aligned with UP. A third throughway positioned across from the relocated UP entrance establishes an accessible bicycle and pedestrian link between Loftus Versveld Sports grounds and UP campus. Entrances to the platform define the end of the enclave, like runways that signify the final transition, using a repetition of LED down lights to stimulate the experience of transition.

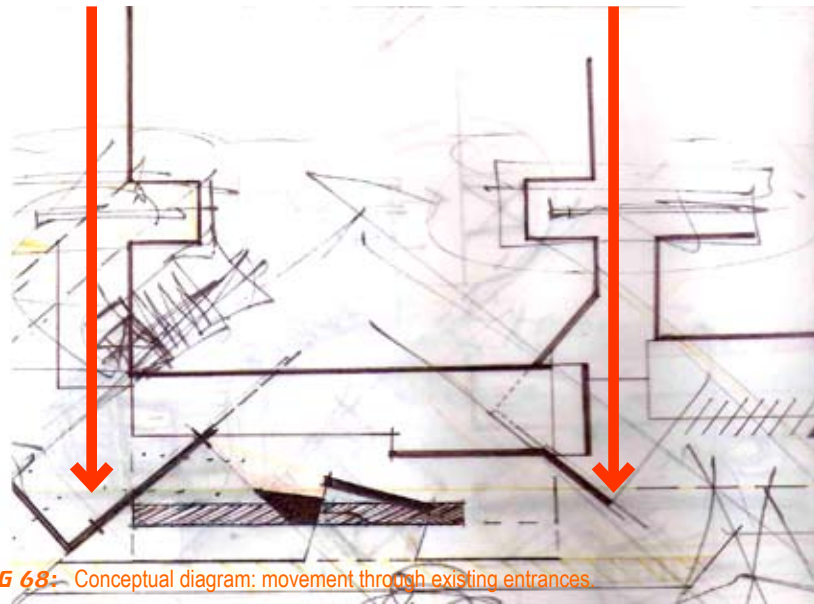


FIG 68: Conceptual diagram: movement through existing entrances.

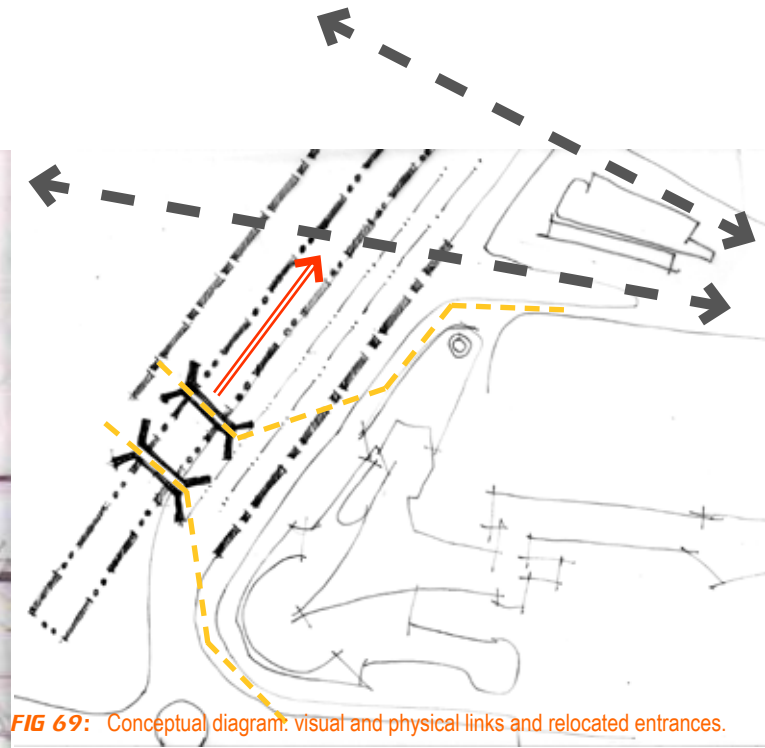


FIG 69: Conceptual diagram: visual and physical links and relocated entrances.

The inclination of the individual visual and physical alignments with UP's relocated entrance and its pedestrian path that curves around the Main Administration Building established the 45° grid detrimental to the design. The 45° grid is spaced with the alignment of the palm trees, accentuating the cultural prominence they signify in this educational precinct, and enhancing a rhythmic transition in the linear space.

Planes aligned with the 45° grid indicate surfaces which have morphed from the ground (platform) identified as the urban fabric. Organised around activities and functions that are fundamental to the existence of the *u_portal*; nodes that exist of public infrastructure and information resources.



FIG 70: Rhythmic alignment of Palm Trees on University Road..

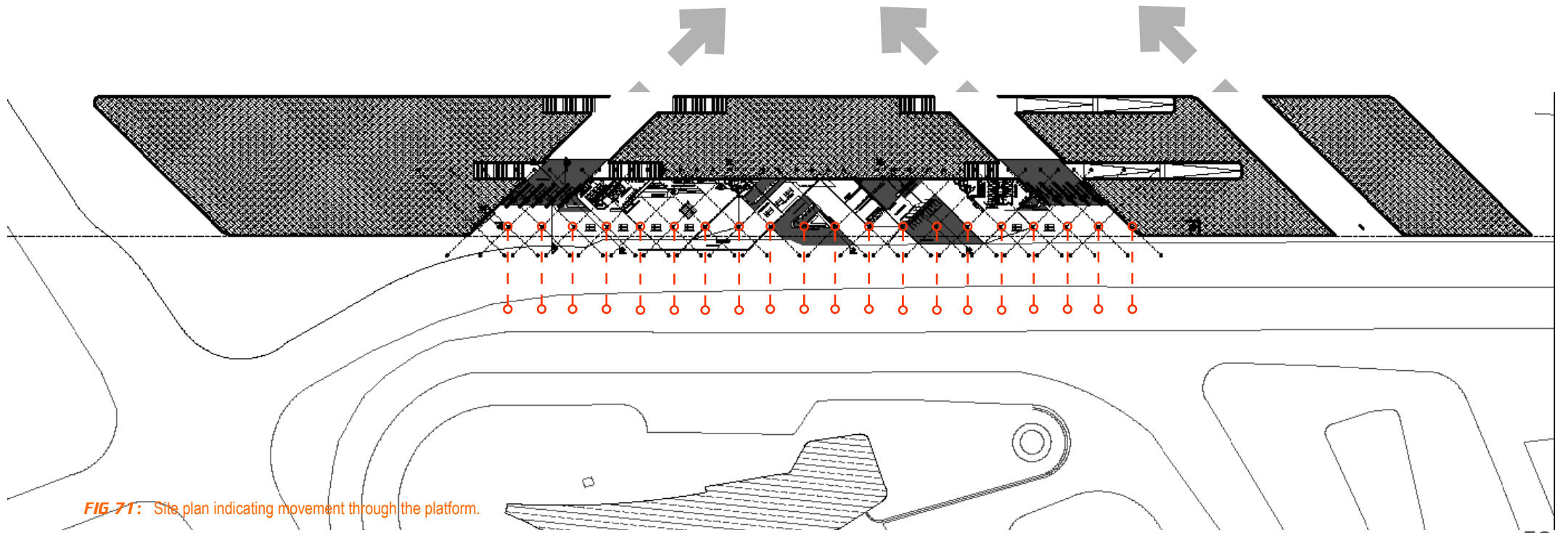


FIG 71: Site plan indicating movement through the platform.

5.2.1 SPATIAL HIERARCHY: A core structure embedded with supportive ground surface infrastructure is rooted in the space as the spine that ties the spatial programming. Juxtaposing movement with infrastructure, it accounts for a dynamic spatial interface. Hierarchy of the spatial organisation is directly related to the duration spent at each compact space, where each spatial program consists of a **transaction pod** as the functional anchor, a **self service** interface and an **activity generator**.

5.2.2 INFRASTRUCTURE GENERATES PU

The main priority of the **u_pod** is to create and sustain a public space that addresses factors of:

- a.) **safety** which includes 24/7 security and sufficient lighting during day and night.
- b.) **access** with a multi modal interchange between trains, busses, taxis and bicycles.
- c.) **public amenities** such as seating, shading, water fountains and ablutions. Establishing a different type of transport interchange at each entrance.

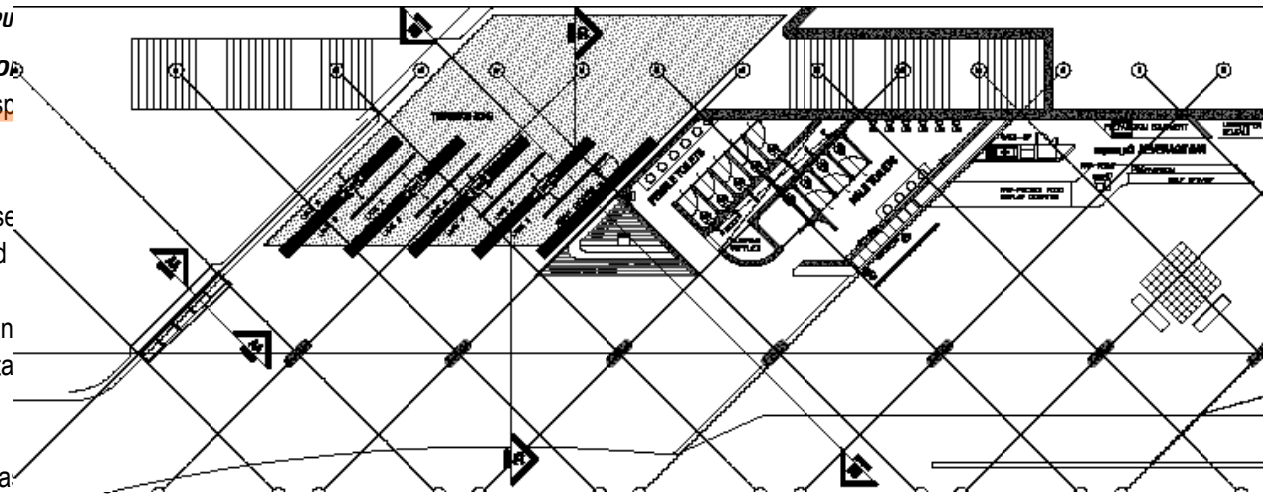
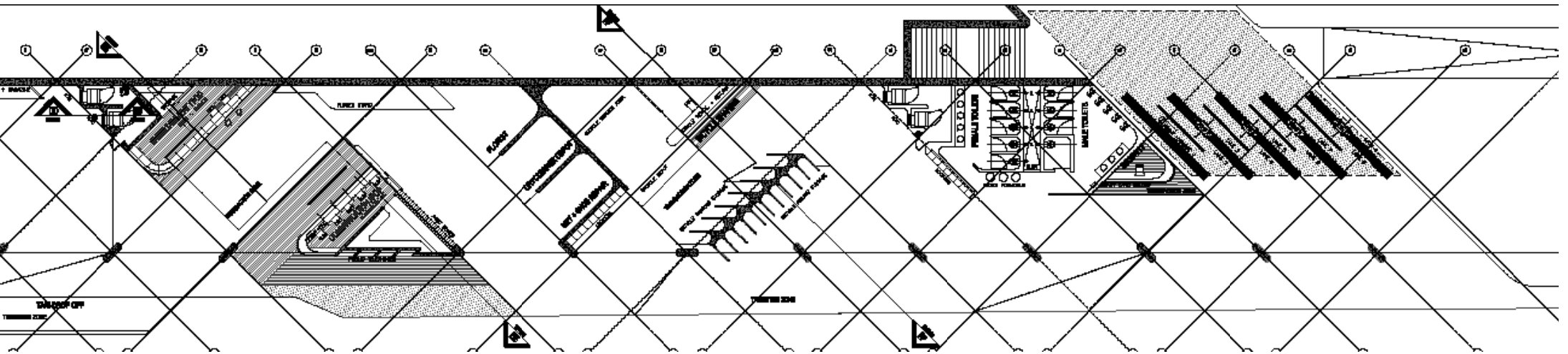


FIG 72: Plan showing core structure that ties the ground surface infrastructure.

DURATION: SHORT



DURATION: INCREASE



DURATION: INCREASE



DURATION: SHORT

Near the traffic circle provision is made via a taxi curb, for fluid integration of the train, taxis, and busses where the noise levels on the site are higher. A prominent horizontal surface grows from the platform ceiling and disappears into the ground and visually connects pedestrian and vehicular interchange. At the same time it blurs the boundaries between ceiling, wall and floor; also between the street and sidewalk.

Infrastructure which supports the public transport interchange are located closest to the entrances that feed the railway, these include a Security Transaction Pod, automated ticket vending machines, ablutions and turnstiles.

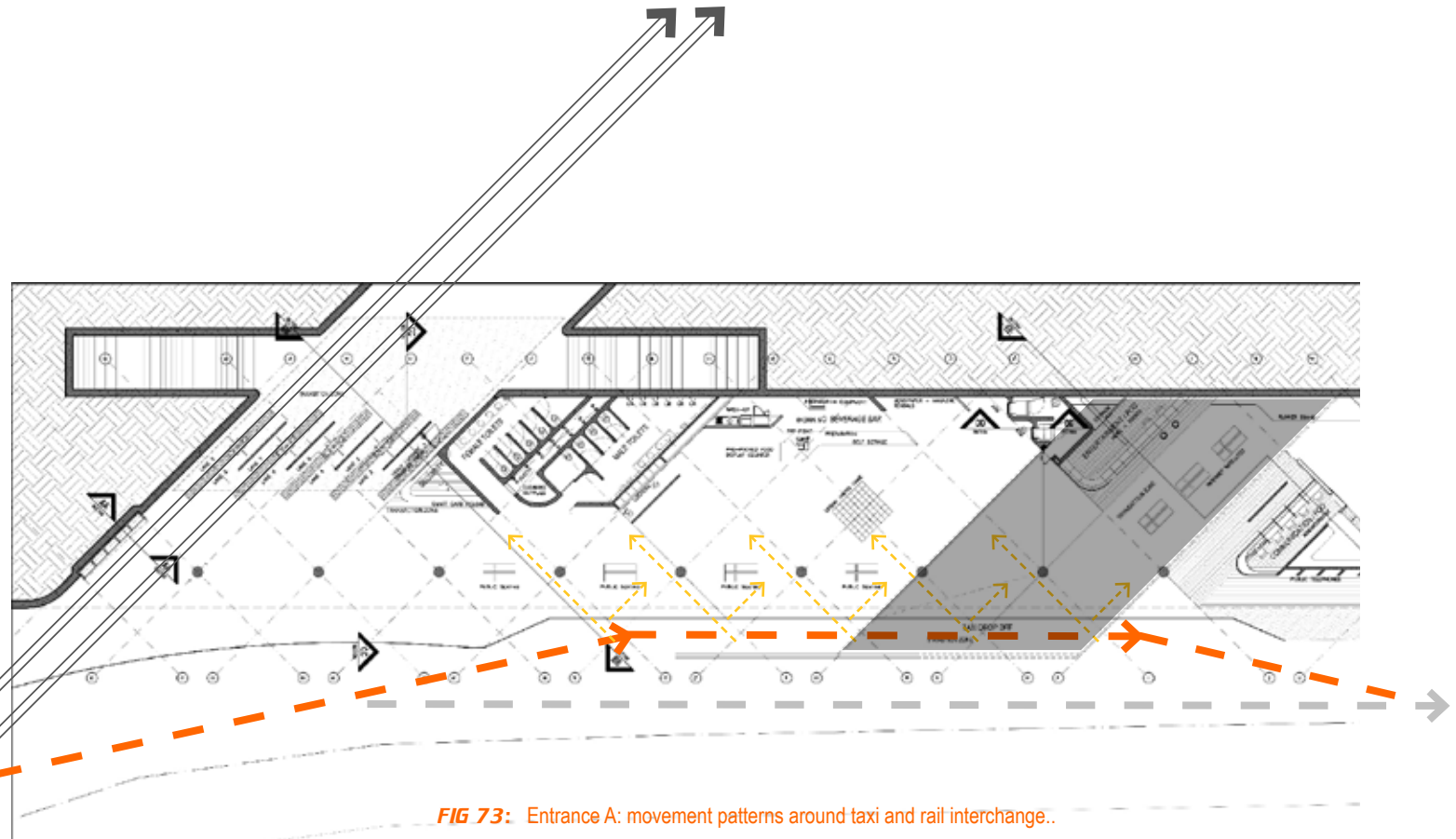


FIG 73: Entrance A: movement patterns around taxi and rail interchange..

FIG 74: SECTION CC: INTERACTIVE AND TRANSITION SPACES.

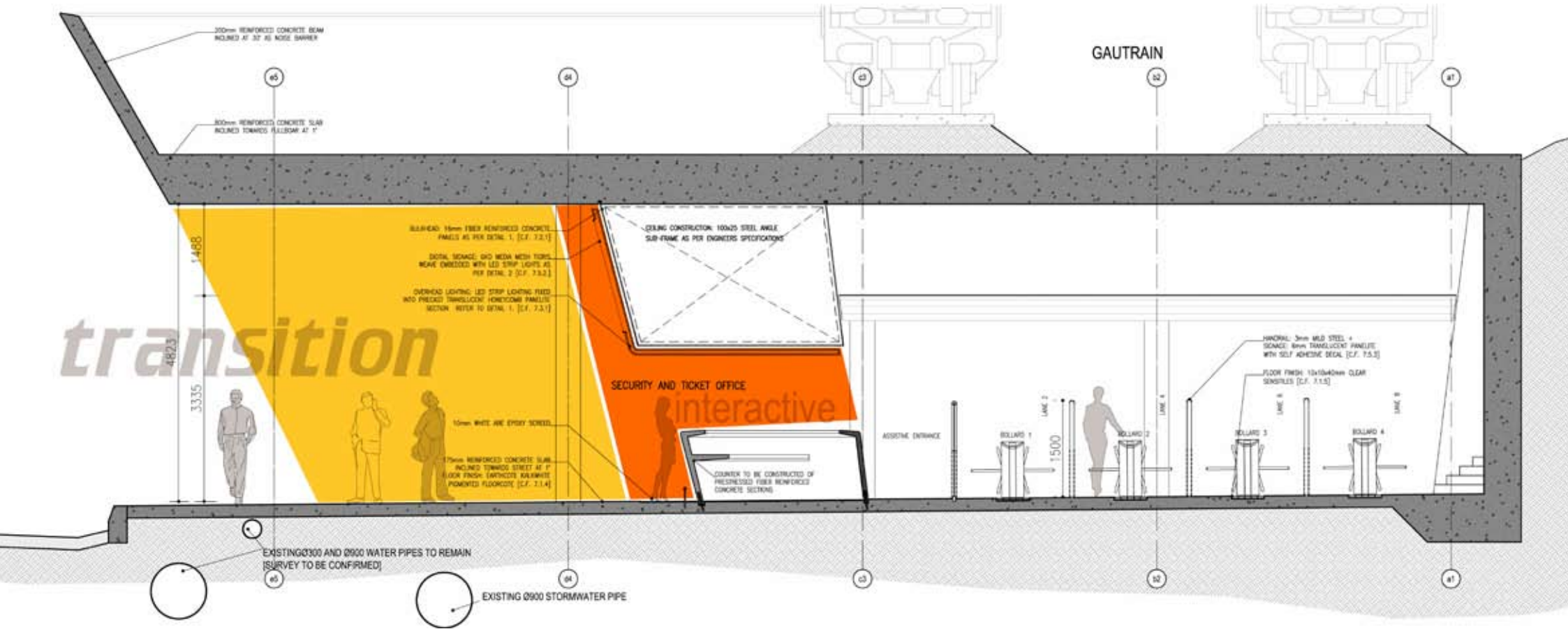




FIG 75: Rendered perspective of entrance A



FIG 76: Rendered perspective of security ipod

At the entrance aligned with the relocated UP entrance a bicycle and train interchange is introduced. This location for the bicycles is due to the lower ceiling height and slightly slower moving traffic. Here a Bicycle Rental Pod communicates directly with the bicycle sharing and private storage 'display' unit. The ground surface again acknowledges the transition between the sidewalk and interior space, and is subjected into the space protruding the infrastructure as a surface that grows from the ground.

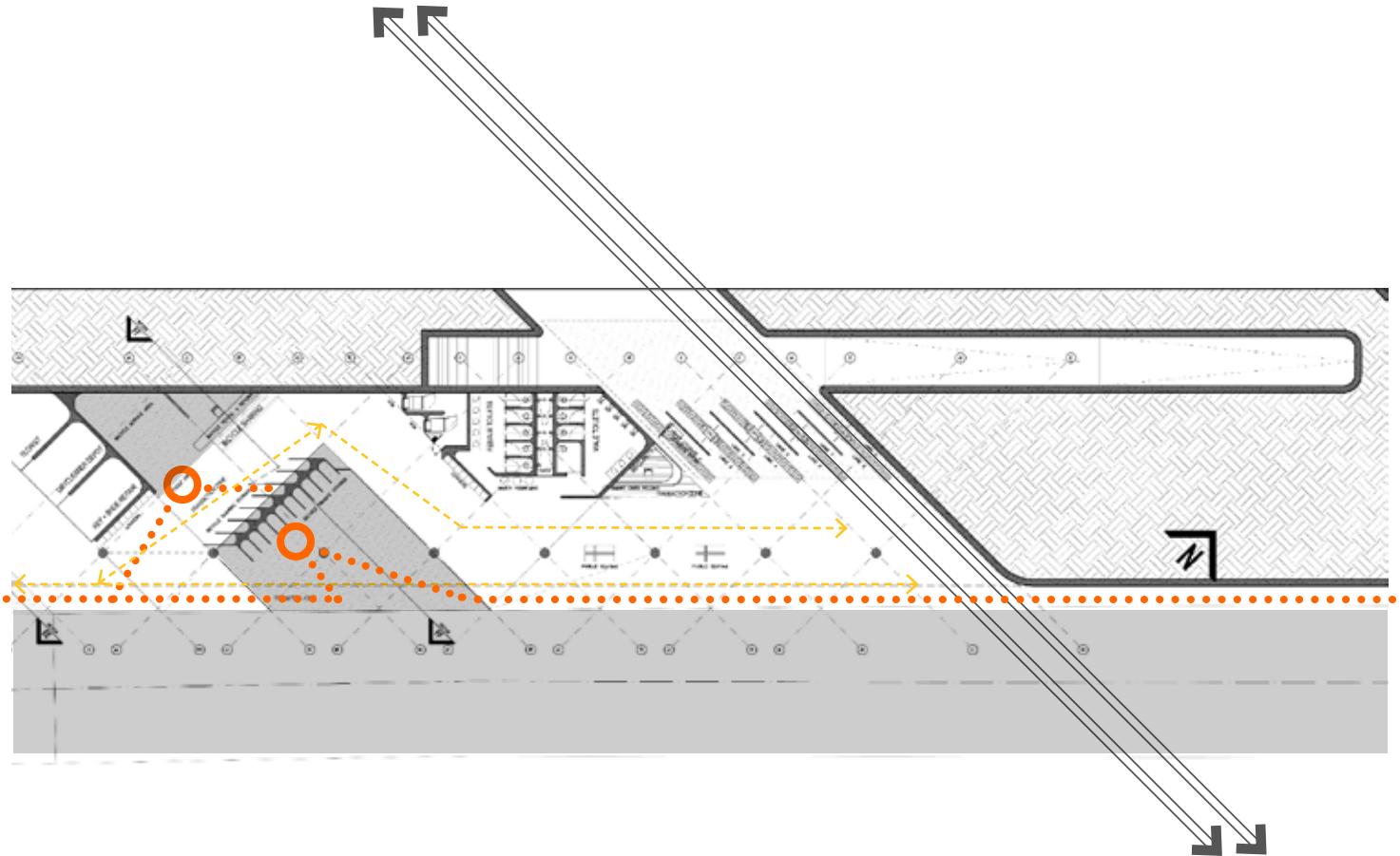


FIG 77: Entrance B: movement patterns around bicycle and rail interchange.

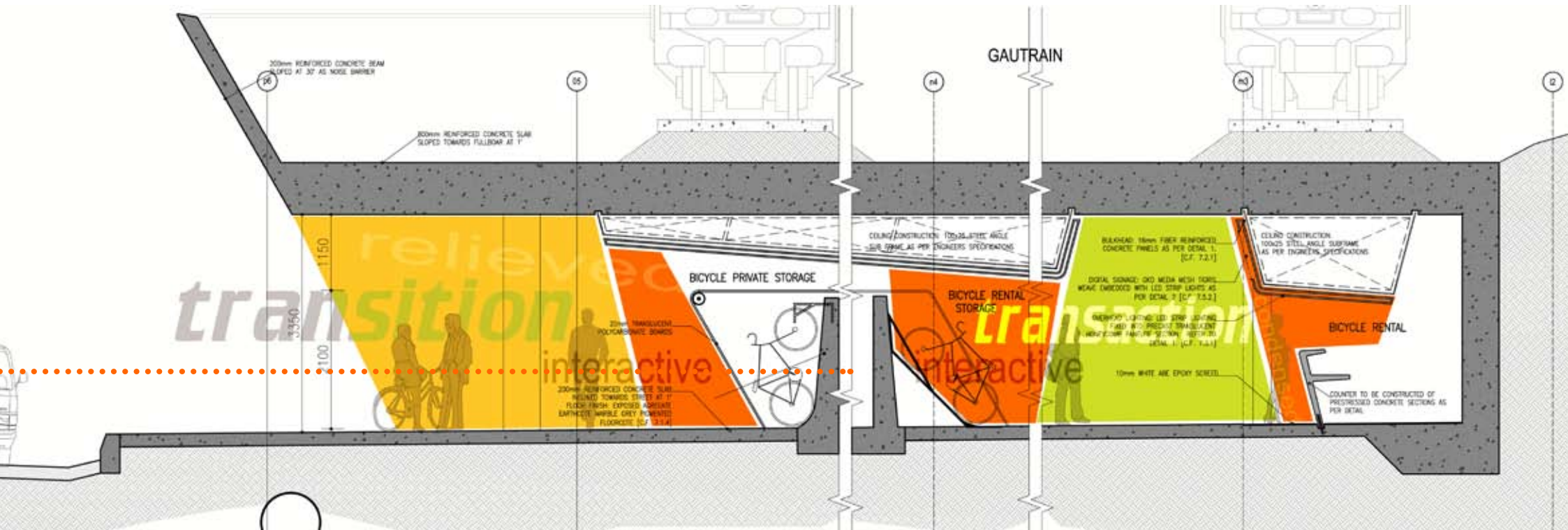


FIG 78: Section FF communicative spaces that informs the Bicycle Pod.



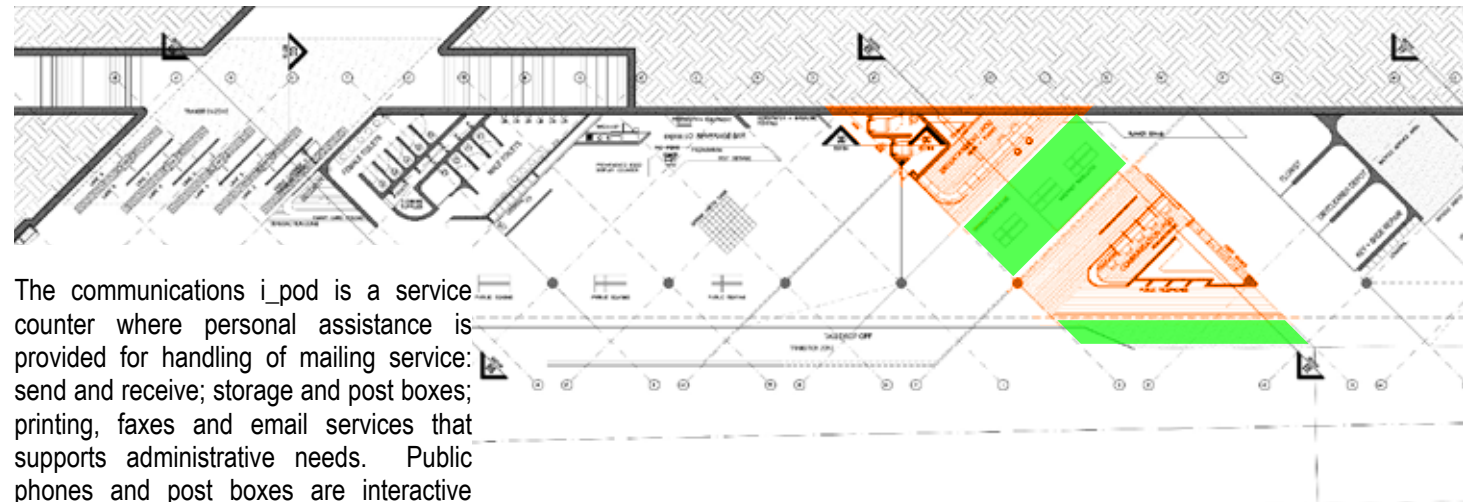
FIG 79: Rendered perspectives of Bicycle ipod: communicative spaces

FIG 80: Rendered perspectives of Bicycle ipod: communicatve spaces

5.2.3 INFORMATION ACCOMMODATES MOBILITY:

The entertainment i_pod and communication i_pod are both informative transaction zones. They are positioned at the heart of the *u_portal*, in a linger zone, which is further removed from the entrances because the duration of time interacting with the space, transactions and infrastructure is longer. These pods are introduced to the programme of the *u_portal* functioning as supportive information resources that maintains mobile migration in the urban field. Way finding information systems and digital information technologies facilitate a fluid transition between multi-modal systems.

At the entertainment i_pod commuters have access to information relevant to events of the academic precinct, such as sport events at Loftus Versveld, concerts from UP aula, Masker theatre and shows or movies in Brooklyn and Hatfield centres. Interactive music and photo downloading booths are the entertainment activity generators where commuters can listen to premiers of the shows and events.



The communications i_pod is a service counter where personal assistance is provided for handling of mailing service: send and receive; storage and post boxes; printing, faxes and email services that supports administrative needs. Public phones and post boxes are interactive supportive ground surface infrastructure classified as the communication activity generators.

FIG 81: Entertainment and Communications iPod sharing a transaction space.

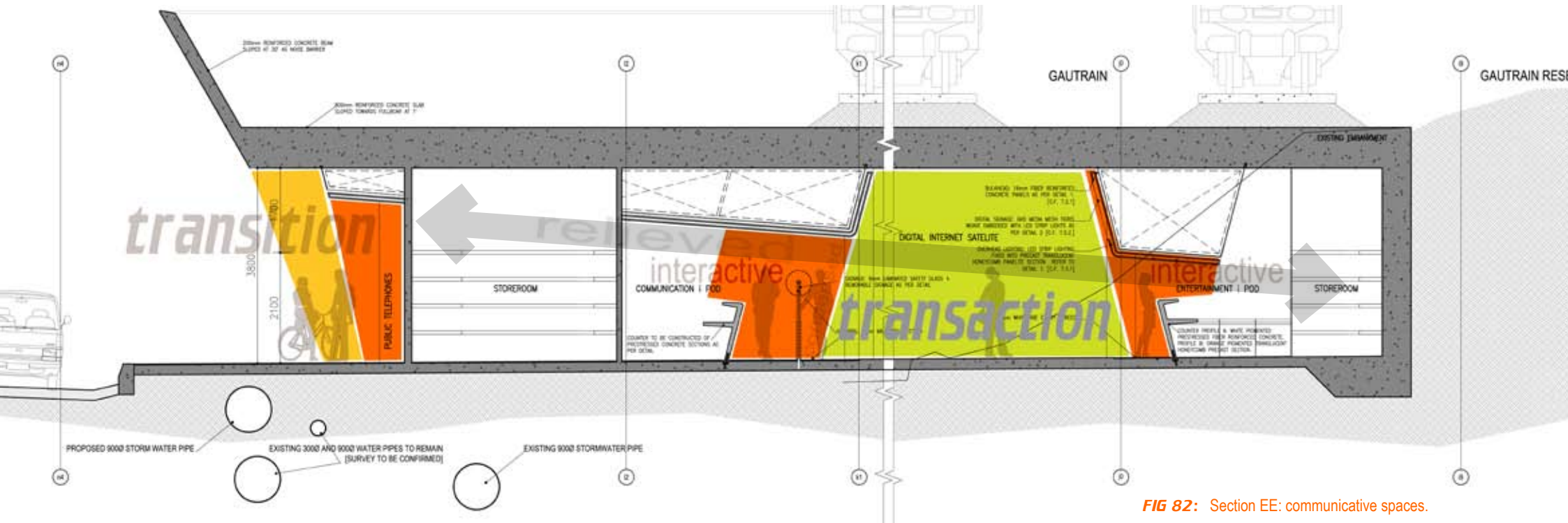


FIG 82: Section EE: communicative spaces.



FIG 83: Rendered perspective of communication and entertainment ipods

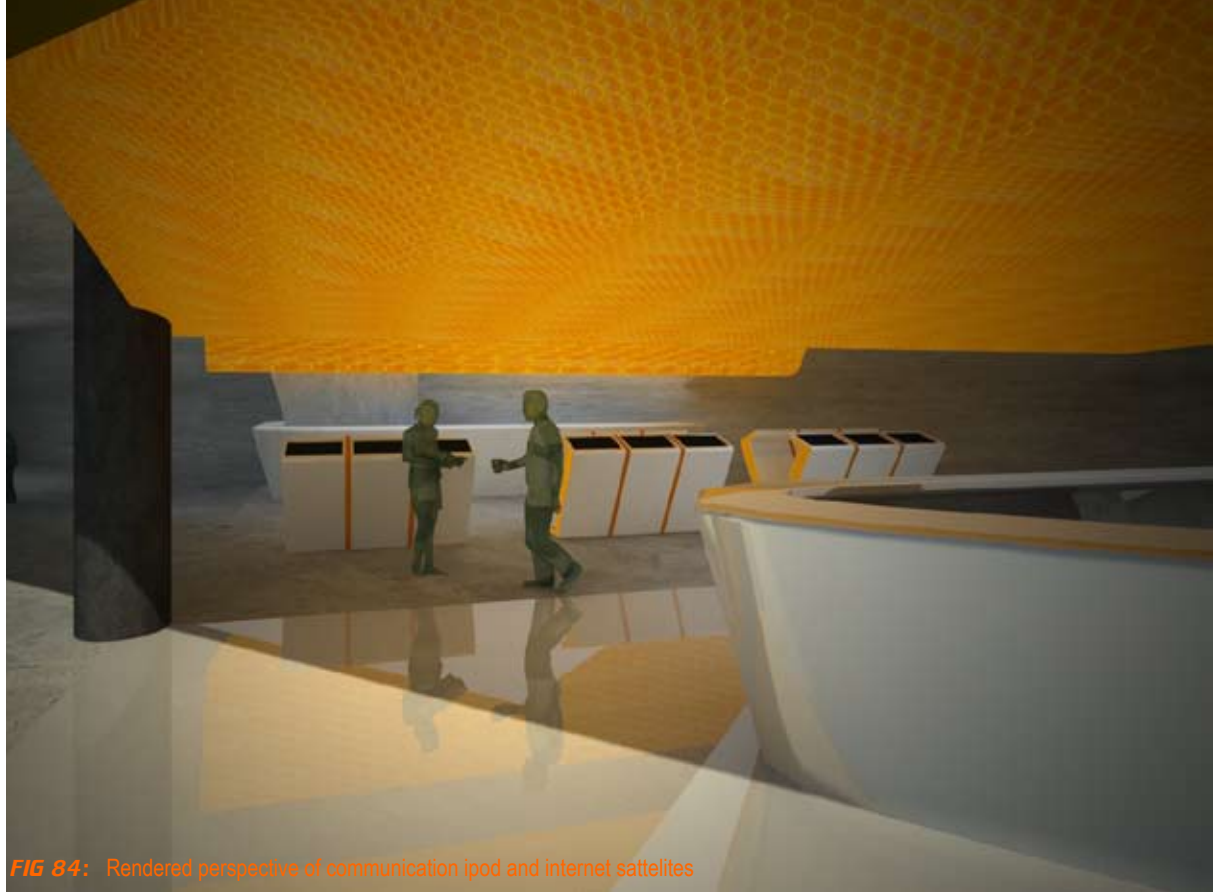


FIG 84: Rendered perspective of communication ipod and internet satellites

A digital network of **internet satellites** is shared by the entertainment and communications i_pods as their self-service infrastructure. These satellites evolve from public seating into internet access units. The objects are designed as elements that morph from the ground, because they are part of the fundamental functions of a **u_portal**. A secondary digital spine intertwined in the physical infrastructures spine located in particular transaction spaces.

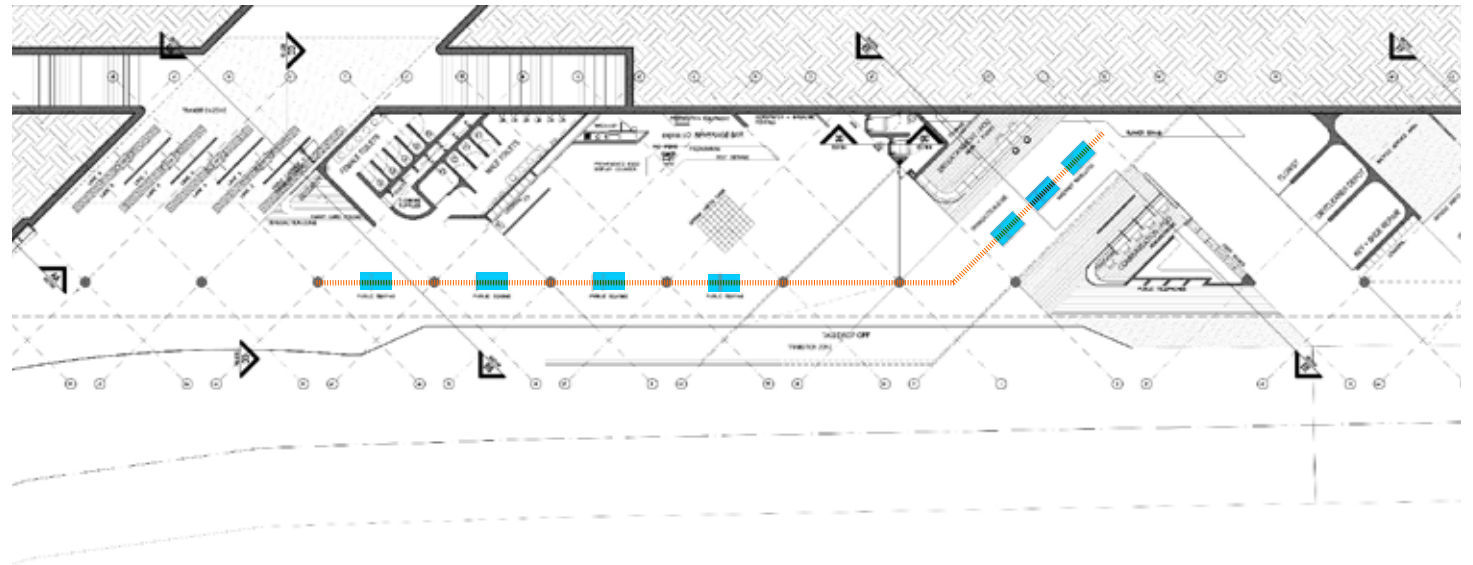
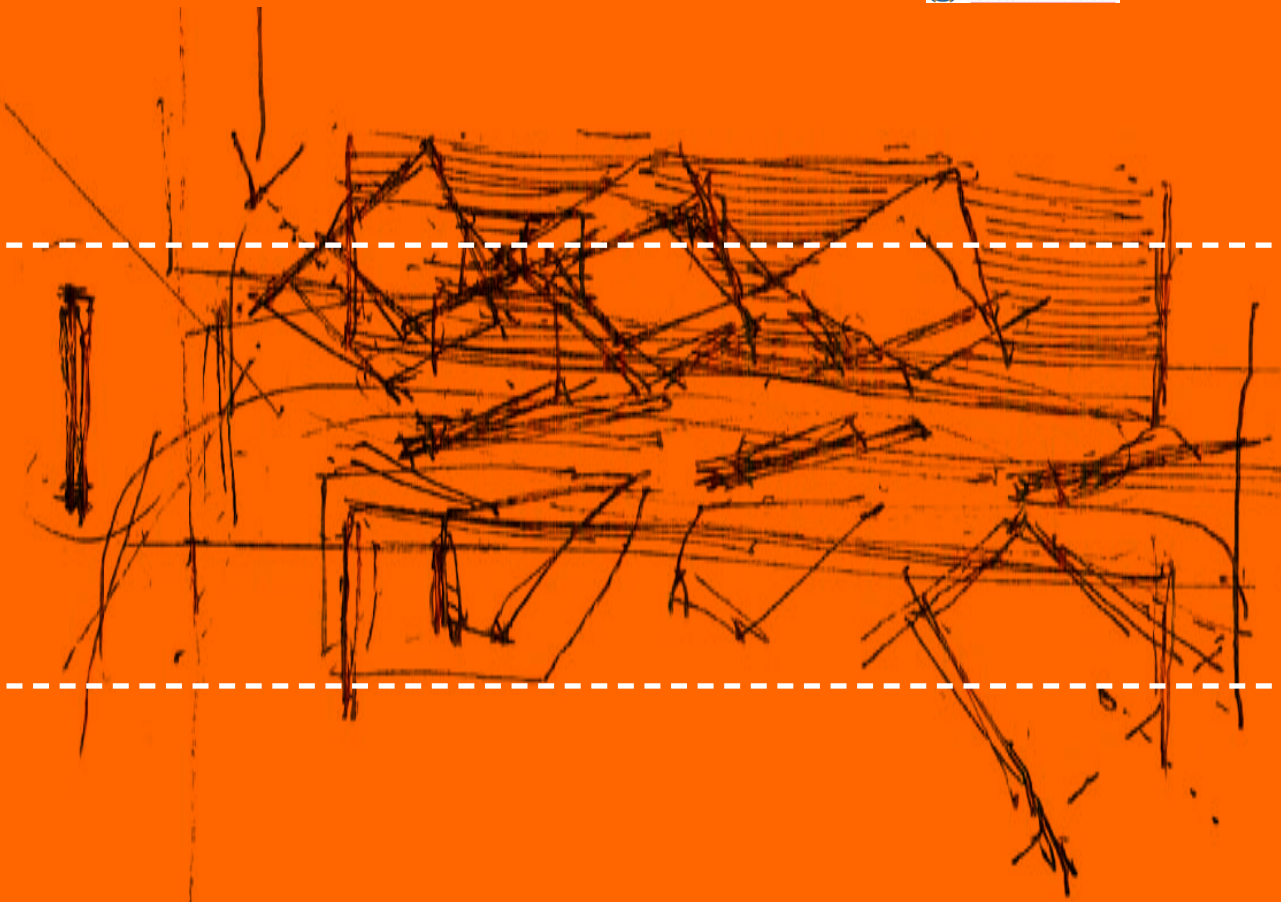


FIG 85: Plan allocating the internet satellites and public seating network.



FIG 86: Rendered perspective of objects in space: public seating and internet satellites





5

conclusion

“Experience of space is the foundation and framework of all our knowledge of the spatio-temporal world.”

[HERMAN WEYL in HILLIER_1984:29]



"The total perception of architectural spaces depends as much on the material and detail of the haptic realm as the taste of a meal *depends* on the flavours of authentic ingredients."

[HOLL_2000:WWW.CURBED.COM]"

technical resolution

SITE PERIMETER

7.1.1 CONCRETE SKIN: A cast in-situ concrete structure defines the perimeters of the enclave. It is an 800mm **slab and beam** construction and spans 10m. The concrete slab is filled with **lightweight concrete panels** made of moulded Styrofoam contained between two sheets of wire meshes, a product known as **B-panels®**. The **B-Panels®** are primarily used for its light weight qualities; decreasing the structures dead weight, and reducing column sizes. The Styrofoam panels have excellent **noise, vibration and thermal insulative** properties.

An **up stand beam** that expands the whole length of the enclave is **inclined** at 15° on

the edge and **cantilevers** over the sidewalk. The inclination of the beam transfers noise over the street restoring the precincts sense of educational place. The **angularity blurs the boundary** between interior and exterior. Two movement joints are spaced at intervals of 100m. The continuous beam is based on a principle of Christopher Alexander from his book *The Nature of Order*; **NOT SEPARATE**. The space is fragmented in different spaces, each with its own function. Although they function separately, a continuous element ties them into a unified space. The beam is painted two coats **Plascon®** white Professional Low Sheen Pure Acrylic subtly contrasting with the grey retaining wall on adjacent

sides of the enclave, and also mirroring the stylistic qualities of the Main Administration Building across the street.

7.1.2 COLUMNS: **700mm Ø columns** support the weight of the structure. The columns are spaced at 6,750m intervals throughout, aligned on the reference grid of the palm trees. The columns are **set back 1m from** the edge of the sidewalk to allow the exterior space to flow into the interior. The columns are painted two coats **Plascon®** grey Professional Low Sheen Pure Acrylic with a 150mm top and bottom shadow gap, allowing them to appear as if they are floating in space; suspended between the concrete skin.

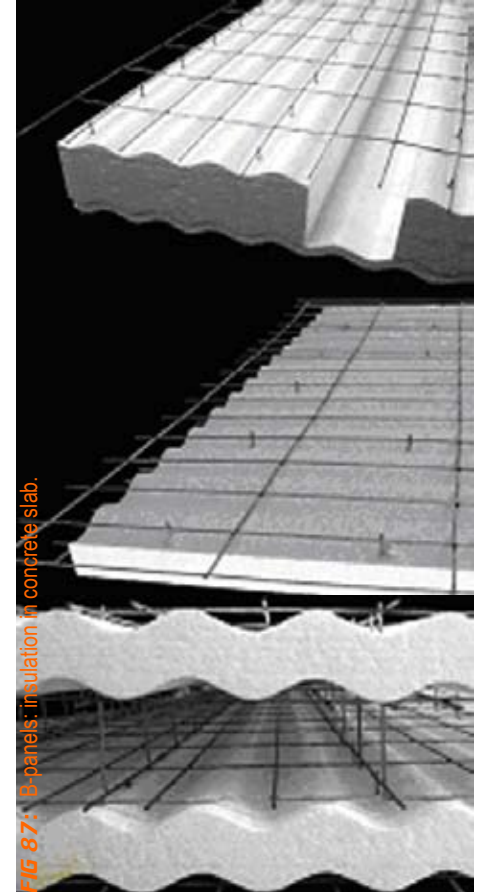


FIG 87: B-panels: insulation in concrete slab.

7.1.3 SOFFIT SURFACE: The soffit is painted two coats white **Plascon®** Professional Copolymer Acrylic continuing the exterior into the interior. The white reflects the light and enhancing the **ambient light quality** in the space.

7.1.4 FLOOR SURFACE: Kalk white Pigmented Floorcote is used as a unified floor finish allowing flow through a seamless space. The Bicycle transition zone is defined with marble grey exposed aggregate Pigmented Floorcote integrating the sidewalk and the interior space. Pigmented Floorcote is a **hard wearing utilitarian floor coating** system from **Earthcote®**, specifically for high traffic areas. Transaction zones are accentuated with 10mm **bright reflective white epoxy** screed.



7.1.5 TRANSITION ZONE: High traffic and density in the Transition zones are accentuated with the installation of Scintilla light-reactive polymer in the floor surface. **SensiTiles®** are made of a light conducting matrix embedded within a substrate. Similar to the process that makes fibre optics possible, the tiles transport light from one surface point to another by a process called 'total internal refraction'. **SensiTiles®** respond to shadows that fall on their surfaces. They redirect and scatter any incoming light. The overhead light fitting increases the ambient light, which allows shadow-producing movements around a **SensiTiles®** to produce a rippling effect.

SensiTiles® also absorb and bleed colours. If coloured light falls on a **SensiTiles®**, echoes of that colour are dispersed throughout its surface. If multiple colors are present, they become blended, rearranged, and scrambled. **SensiTiles®** properties are inherent, therefore no power is required. The light effects are created passively from external light sources and they last as long as the material does. Scintilla incorporates a translucent acrylic polymer, giving the tiles a high density of light-reactive points.

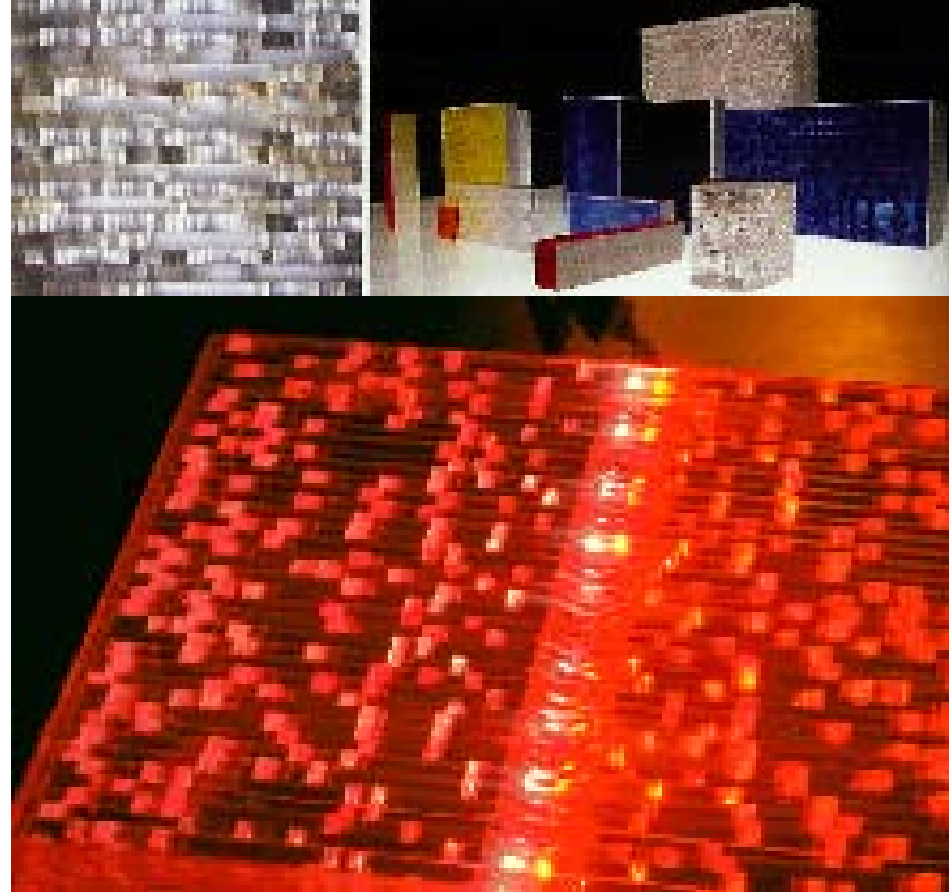


FIG 90: SensiTiles

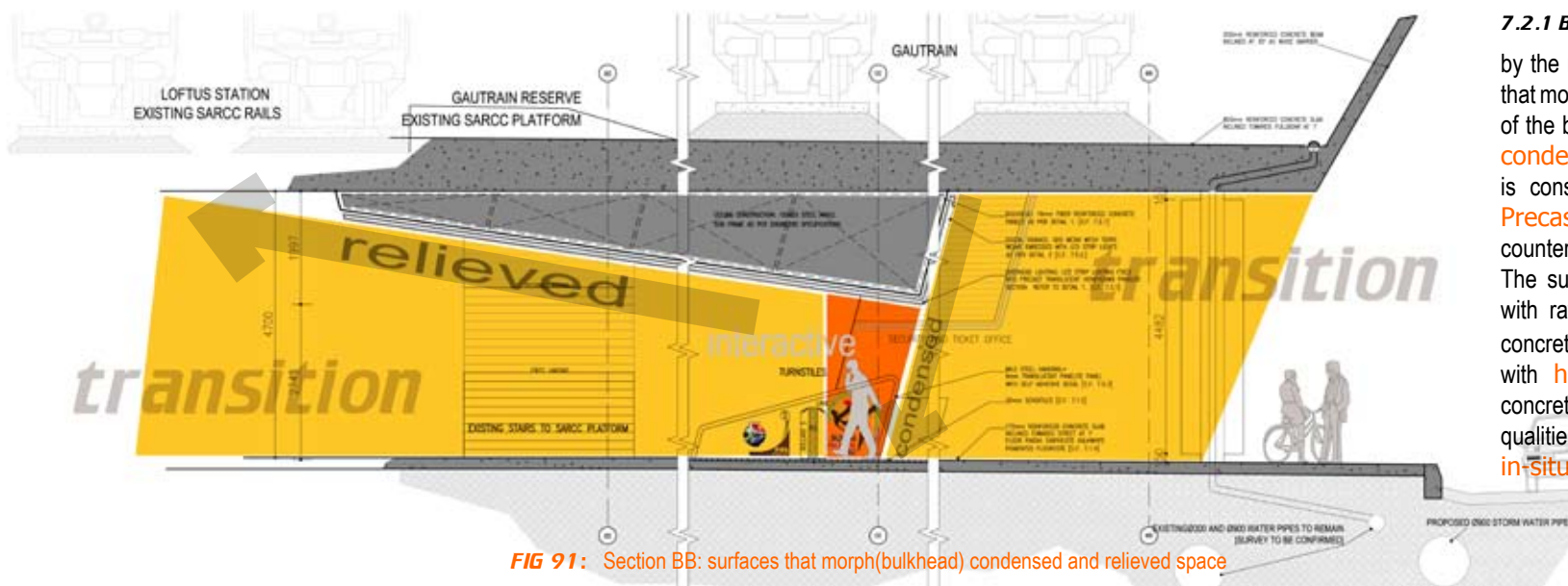


FIG 91: Section BB: surfaces that morph(bulkhead) condensed and relieved space

7.2.1 BULKHEAD: Spatial typologies are defined by the manipulation of space through surfaces that morph from the platform (ceiling). Inclination of the bulkhead determines how the space is condensed and relieved. The bulkhead is constructed of 16mm Fibre-Reinforced Precast Concrete panels, bolted with countersunk steel bolts on a steel sub-frame. The sub-frame is bolted to the concrete slab with rawl bolts. The fibre-reinforced precast concrete panels are lightweight structures with high strength. Reinforced precast concrete panels are also used for its aesthetic qualities; seemingly growing from the cast in-situ structure.

7.2.2 COUNTER: The counter of each transaction pod is designed as objects that develop out of the ground (floor) in the same boundary line as the bulkhead. Juxtaposed from the 15° inclined boundary these objects manipulate the spatial edge to accommodate a condensed interactive space. The counter is constructed of white precast Fibre-Reinforced Precast Concrete sections. The durable material has excellent **hard wearing qualities** essential for high density public space. The precast **lightweight** counter saves time on installation and precast methods ensure **precision cut aesthetics**. A distinctive **texture** from the synthetic fibres embedded in the concrete **reveals visual depth** in the finished material. The counter is cast as separate 700mm modular components, then each section is bolted to the floor with two chemical bolts.

The counter has an orange tinted **translucent structural honeycomb cast section**. The translucent section is warmer to touch and claims the interactive point of contact in the transition space. **Signage** is incorporated in the translucent material casting a solid colour that floats in the translucent counter. Continuous **fibreglass reinforced-resin edging** each side exposes the honeycomb pattern while providing **additional structural strength**.



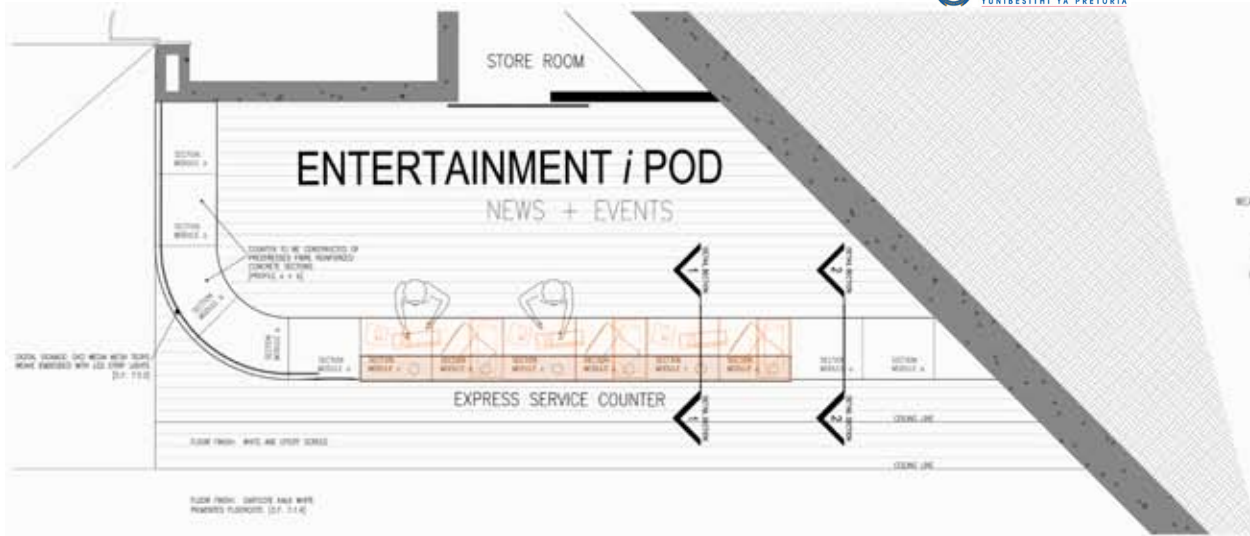
FIG 92: Storefront for art and architecture: fibre reinforced precast concrete panel.

FIG 93: Extreme concrete: fibre reinforced concrete counter

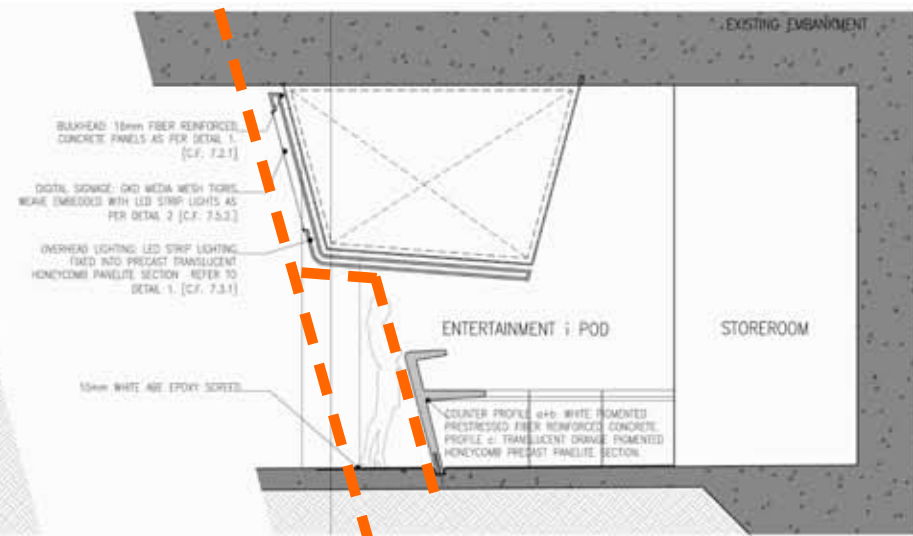


FIG 94: Orange tinted, honeycomb Panelite section

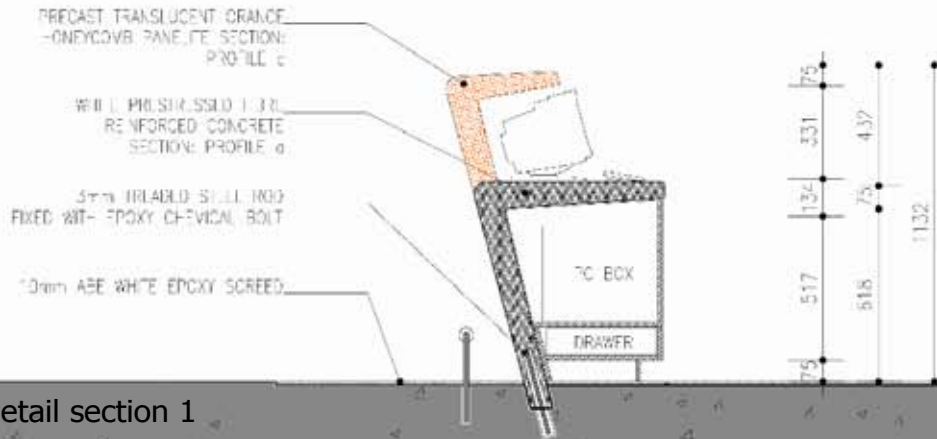
FIG 95: Orange tinted, honeycomb Panelite counter



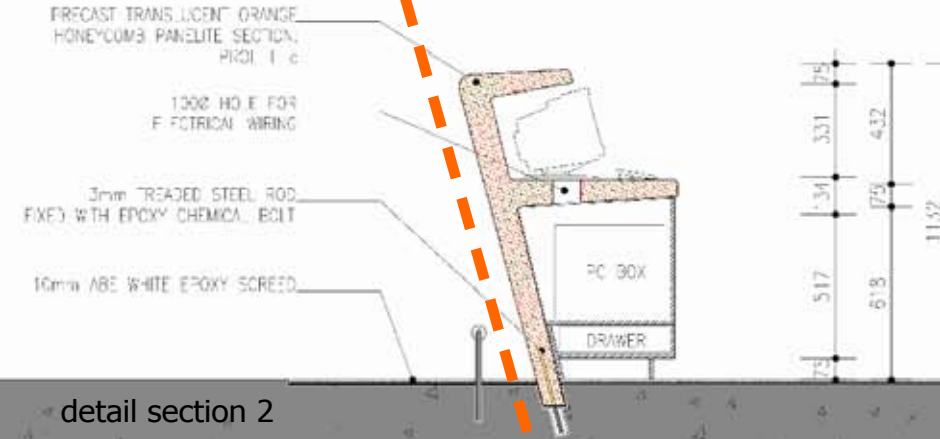
entertainment ipod plan



section ee



detail section 1



detail section 2

FIG 96: Technical drawings of surfaces that morph: transaction ipod counter.

7.3.1 OVERHEAD: A translucent light fitting enfolds the edge of the bulkhead rendering the boundary of the surface and space invisible. The light fitting is constructed of translucent honeycomb panels with laminated cast resin facings for additional strength. The lighting panel protrudes with the inclination of the bulkhead revealing the mild steel sub-frame. Way-finding signage is incorporated in the overhead light fitting, which are cast as a bright orange solid resin elements floating in the overhead boundary. LED lights are fixed in the honeycomb panels allowing a luminous glow in the transition and transition zones and increasing overall ambient light.

7.3.2 INTERACTIVE: Interactive spaces require concentrated lighting. Round brushed aluminium down-lights are positioned in the concrete. The Spazio low voltage tilted Edge, utilizes a unique clipping system to hold the lamp in place and secure easy installation.



lighting mund
2211 53W 12V Cx 6.3
Remote transformer required

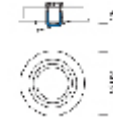
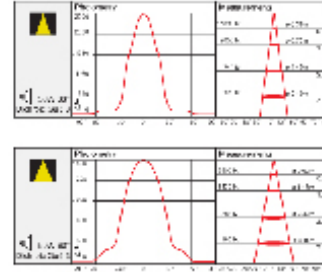
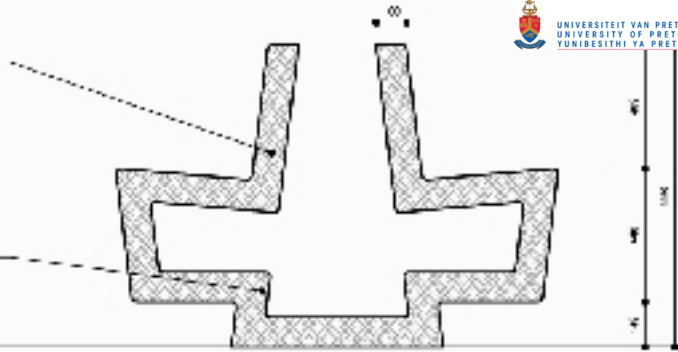


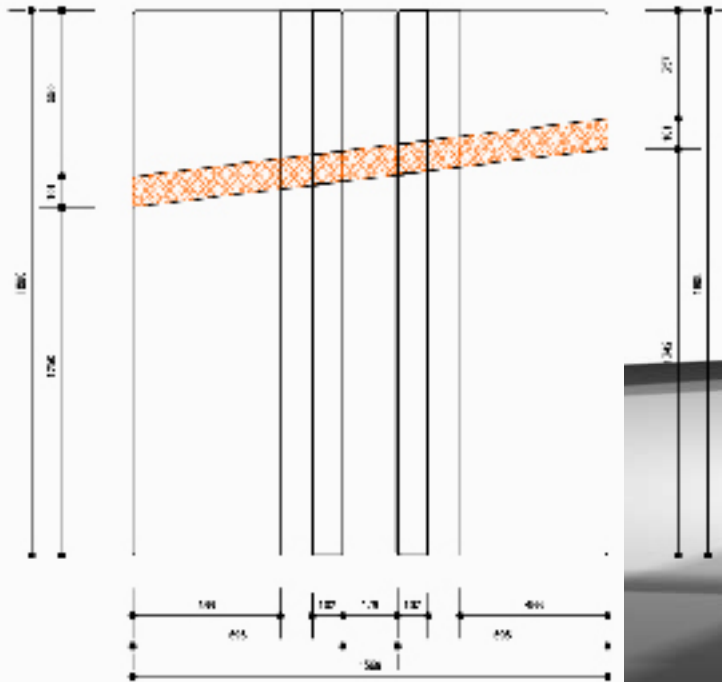
FIG 97: Spazio. Edge Downlight.

WHITE PRESTRESSED FIBRE
REINFORCED CONCRETE

PRECAST ORANGE TRANSLUCENT
HONEYCOMB PANELITE INSERTS
EMBEDDED WITH LED STRIP LIGHT



detail section 3



public seating plan

FIG 99: Technical drawings of public seating

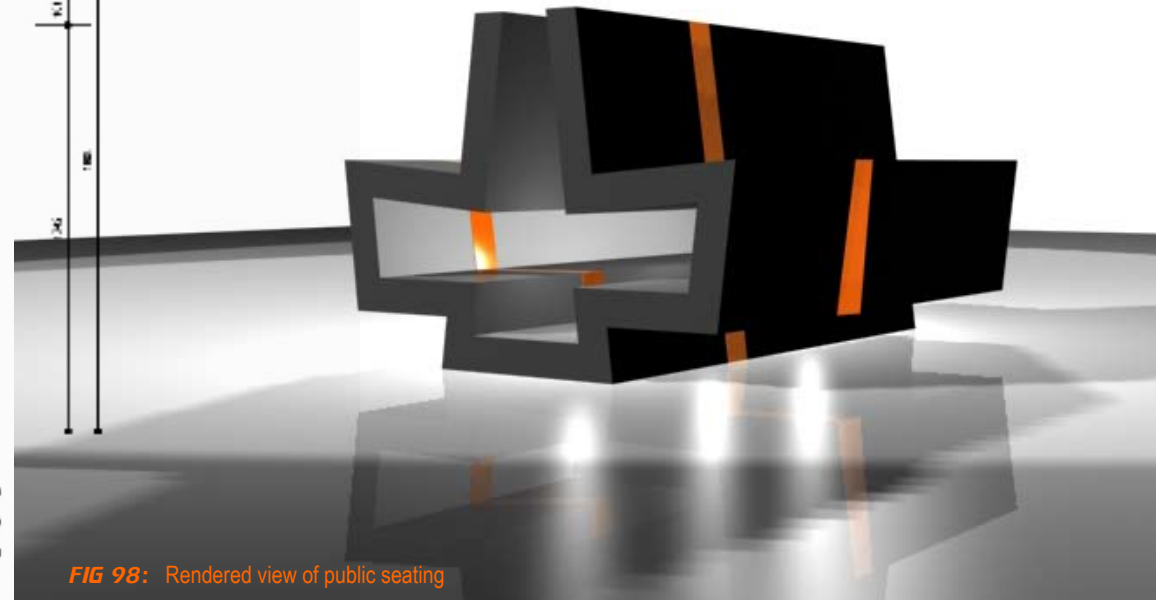


FIG 98: Rendered view of public seating

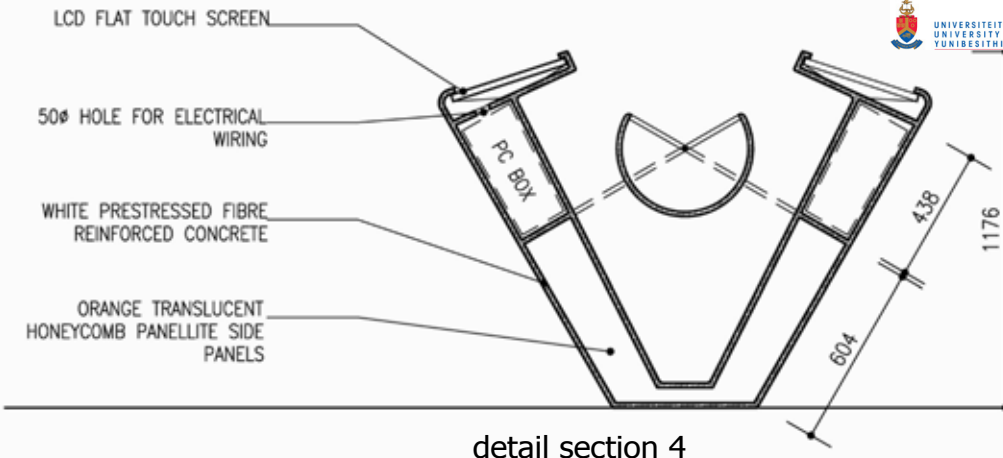
OBJECTS IN SPACE

7.4

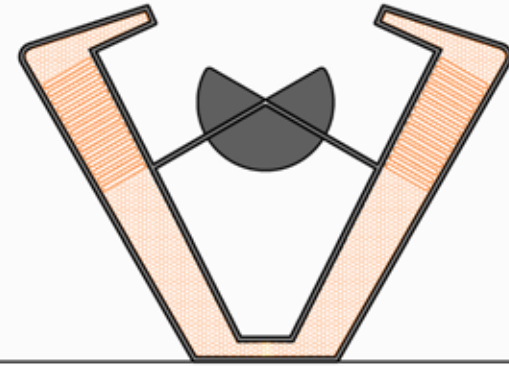
7.4.1 PUBLIC SEATING:

FIG 100:

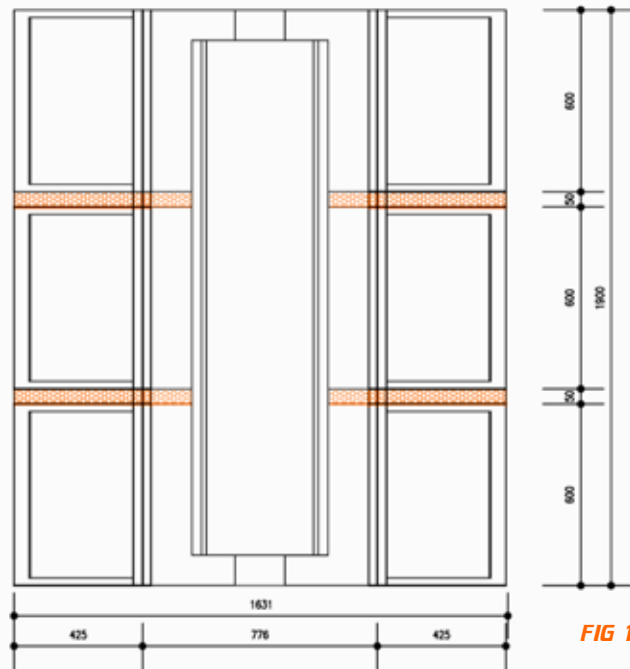
Rendered perspective of internet unit



detail section 4



detail elevation



internet satellite plan

FIG 101: Technical drawings of internet satellite

7.5.1 PERMANENT: Way-finding systems are an integral part of a transit space. Bright orange cast resin signage is incorporated in the translucent honeycomb elements of the overhead light fitting and the counters sections.

7.5.2 DIGITAL: **Mediamesh®** is a stainless steel mesh with LED profiles with integrated and connected media controls. The LEDs reflect the images onto the facade, creating a display for a wide spectrum of graphics, text and video. **Mediamesh®** is weather resistant, which is important for this semi-enclosed public space. **Mediamesh®** is a transparent system, fixed to the overhead light fitting with a mild steel l-angle floating in the boundary between physical and space. The Mesh is easy to install and increases the capabilities of the urban fabric to evolve rapidly in a intelligent connected system. The Mesh has low power capabilities, and live video input keeps commuters globally connected. For ease of installation, **Mediamesh®** can also be produced as prefabricated modules that are ready for installation.

“Mediamesh® is also ideal for transit spaces such as airport terminals and train stations, as well as for shopping and congress centers. It can serve as a flexible, programmable guidance system which is simultaneously an organic element of the interior architecture. As opposed to typical display systems, Mediamesh® combines aesthetic integration capabilities with a highly functional added value: the application can be extended at all times with news or advertising - from logos to animation.”
[www.gkd.com]

7.5.3 ROTARY: Separating the turnstiles in the transition zone are translucent honeycomb panels suspended between mild steel handrails. **3m®** self adhesive decals are fixed to the translucent board creating a three-dimensional ambiance on the panel. The signage is removable and changes as the space reflects the atmosphere of the city's events. A laminated film is placed over the self-adhesive decal to create an extra bright, high gloss finish, which provides wear and weathering fade protection in a high traffic area and ensures a tamper proof material.



FIG 102: GKD Creativeweave: Mediamesh.

NOISE ATTENUATION

7.6

7.6.1 NOISE BARRIER: SARCC operates electrical trains, which are quiet. They are also **set back** from University road to dampen possible noise hazard. With the development of the Gautrain, **noise and vibration impacts** have been raised as a concern during the Environmental Impact Assessment; **noise barriers** will be constructed to ensure that noise levels do not exceed acceptable standards. The concrete beam that sits over the enclave is inclined, functioning as an improved noise barrier. The noise reverberation will not bounce back and forth between the train and vertical barrier but rather be directed over University Road and dampened by the Western Façade of the Main Administration Building.

7.6.2 TRAFFIC CALMING: A **traffic circle** is to be initiated at the Lynnwood and University Roads intersection, to re-establish the cultural sense of place of UP as an academic precinct. (c.f. 3.1.2) The speed and noise of vehicular movement interfere with a calm working environment honoured by UP, and impede on the **pedestrian friendly terrains** in and around the campus.



CHAPTER 7

CONCLUSION

CHAPTER 7 CONCLUSION

Designing for living systems on a local, as well as on a district scale, is an essential component which will contribute to a sustainable future in the 21st Century. By combining urban and natural processes at local level, a new integrated design language emerges. This integrated design is of great value to the evolving form of the city. Borrowing from the bio physical environment involves practicing adaptive management, a process of learning by doing.

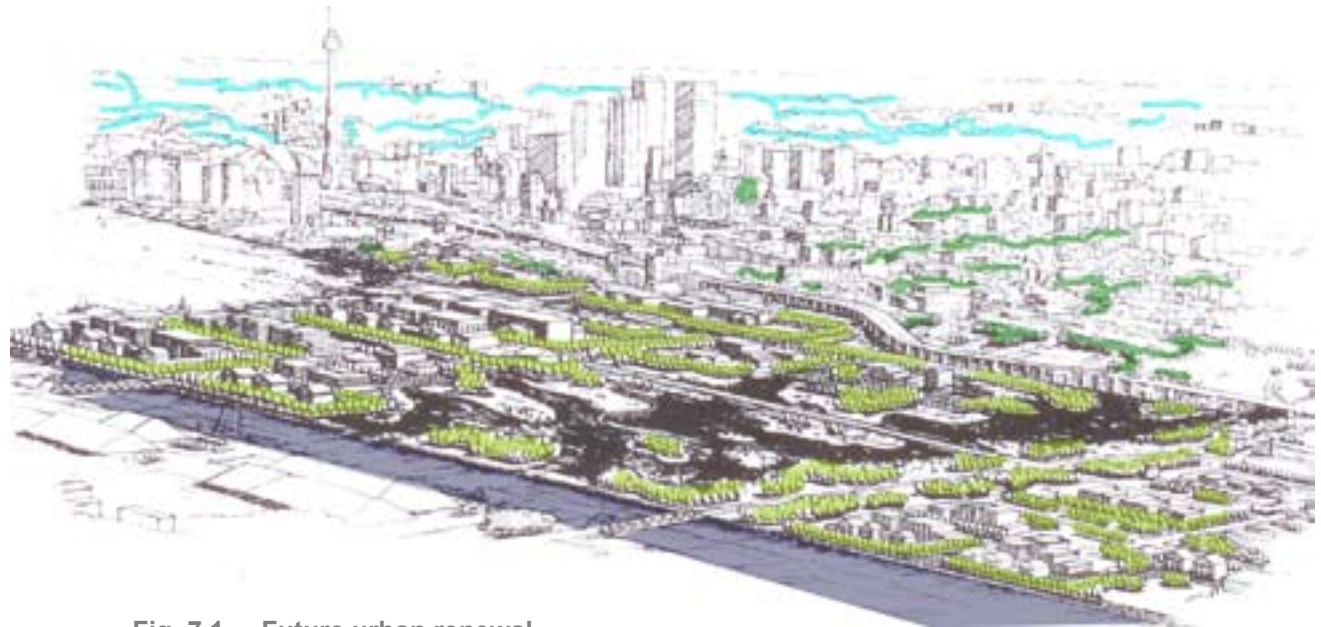


Fig. 7.1 Future urban renewal.



CHAPTER 8

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CHAPTER 9

APPENDICES





APPENDIX 1 : U.P FRAMEWORK

VISION STATEMENT

“TRANSFORMING THE UNIVERSITY OF PRETORIA FROM AN ISOLATED FRAGMENTED KNOWLEDGE PRODUCTION INSTITUTION, TO A **UNIVERSITY CITY, A CITY OF INNOVATION.**”

Transforming the University and the Hatfield precinct in to a **UNIVERSITY CITY**, an integrated networked city of innovation and social cohesion, where public sector interfaces with the private sector, interfaces with the academic sector. Removing physical, social and virtual boundaries that are constraining both the University and Hatfield precincts growth, creating social amalgam that celebrates and empowers the uniqueness, vitality, potential and culture of South Africa’s premiere Academic community.

The transformation is a two phased proposal with a single vision as driving force; it consists of the transformation of the University into a “University City” and concurrently the transformation of Hatfield into a diverse, vibrant and regenerative social hub that enables the conception of a University City.

University Village

The University of the Future is the University of Pretoria, is a city of knowledge. The UP as a village is the first step in achieving the vision of the university as a city. A village that is the “brain” of the “ University City” a village where the urban fabric is design at a human scale, where the buildings become nodes of human and social interaction, and exterior spaces act as outdoor rooms for academic discourse and social play; A village that has its own tangible and definable character , identity and vitality , a village that has clarity of circulation that is dominated by pedestrians; A village that is designed for the night time , which has a vibrant and cultural night life. The

university village will function as a community, working as an inter – related whole a symbolic relationship of allied units. The transformation of the university into a village will prepare it to continue functioning as a holistic entity when integrated with the “University City” precinct.

Social Hub

Hatfield precinct is to be developed to create a destination place. A place of continual social , cultural and civic regeneration; a place that defines its self as the vibrant , multifunctional “ body” of the “ University City” , Hatfield is to be the gateway of the “ University City” precinct . Hatfield’s continual transformation will be driven by the creation of interdependent nodes including, transport, mixed use, culture, commerce and political , allowing a dynamic interface for social expression. Hatfield must become a place for the people, for businessman, academics, students, professionals, politicians, workers; Hatfield must be a place for all.

The University City

To achieve the University of Pretoria’s strategic objective of becoming a world class research institute, the Hatfield “social hub” and the “university village” need to merge from two vibrant successful independent isolated entities to a coherent spatially integrated community, without boundaries and borders. The future is now and that brings with it the world of virtual places, virtual lectures, virtual libraries and virtual paths, thus there is an intense need to allow the community to enter upon campus grounds to fully utilise all facilities that will become obsolete in the virtual age. The unification of these two distinct identities must not allow the dissolution of either’s unique identity but rather reinforce each other’s key strengths and opportunities to allow a true city of knowledge to be born, a “UNIVERSITY CITY”

KEY INDICATORS

- VITALITY
- ACCESSIBILITY
- DIVERSITY
- EQUITY
- CONTROL



APPENDIX 2 : BRT ROUTE

Fase 1 van die Bus Rapid Transport se roete

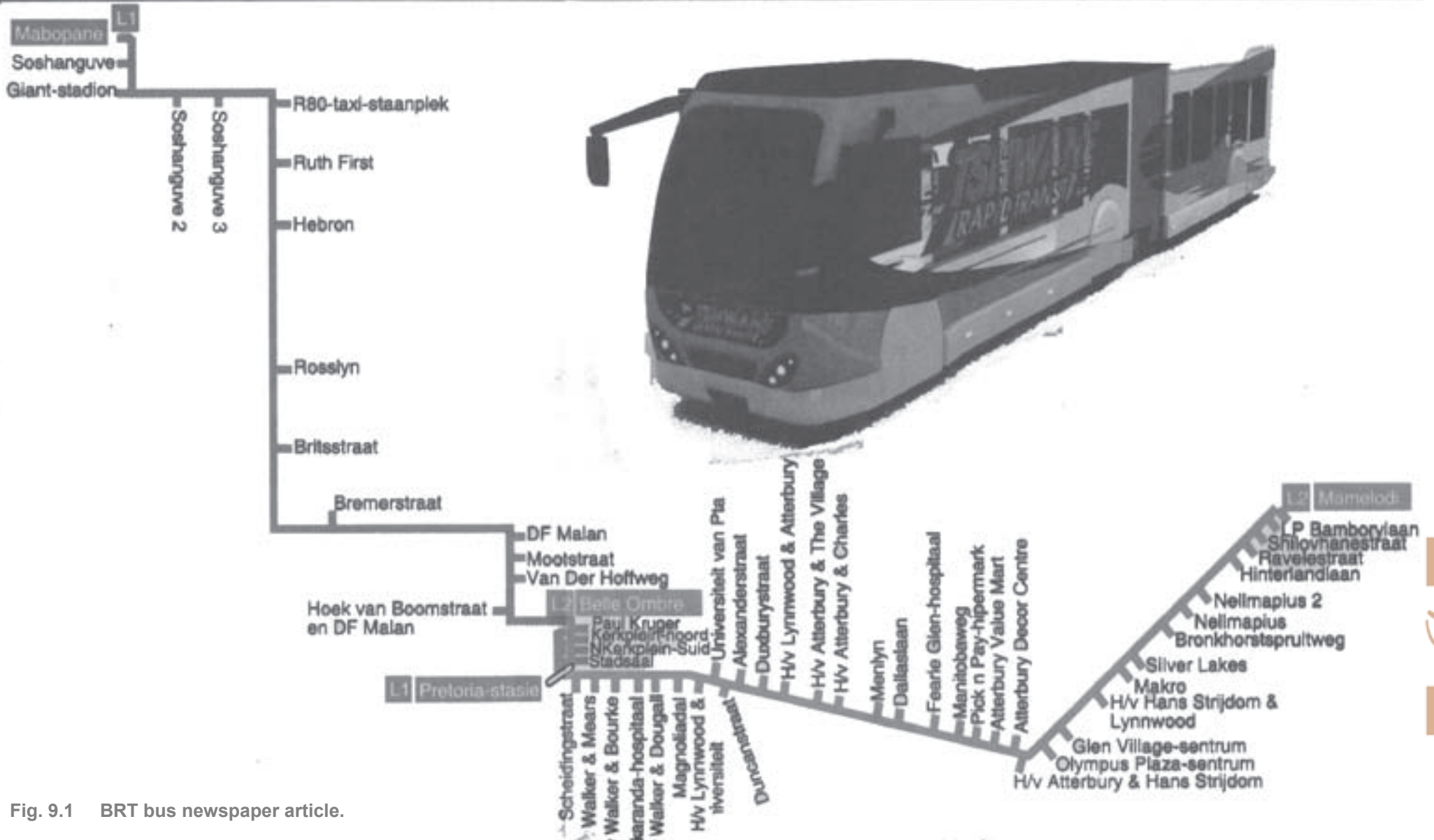


Fig. 9.1 BRT bus newspaper article.