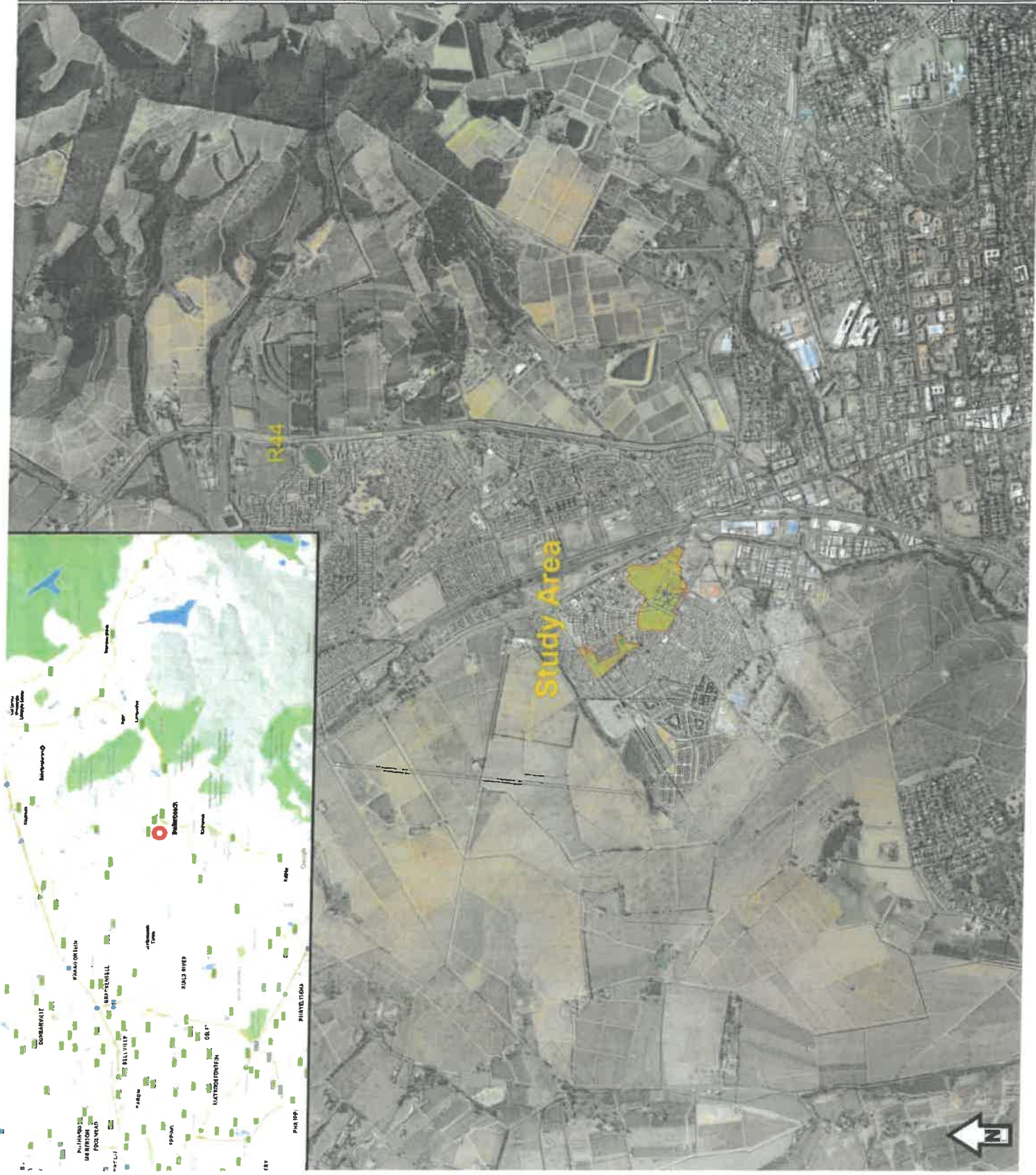


ANNEXURE A

NOTATION:

Application Area



All areas and dimensions are approximate and should be verified by a professional land surveyor.

Drawing:	Plan no.:
Locality Map	1
Date:	Scale:
26/09/2022	1:1 500 (A1)
Project no.:	Drawn:
3461-P	WH
	Checked:
	JVR

Kayamandi Town Centre
Redevelopment

ANNEXURE B

KHAYAMANDI TOWN CENTRE REDEVELOPMENT PROJECT

Prepared for
STELLENBOSCH MUNICIPALITY

12



URBAN DESIGN FRAMEWORK AND TYPOLOGIES

28 SEPTEMBER 2021

Prepared by

lv3 ARCHITECTS
TOWN PLANNERS
URBAN DESIGNERS
since 1991

KHAYAMANDI TOWN CENTRE REDEVELOPMENT PROJECT CONTEXT

INTRODUCTION

Khayamandi was officially established in 1941, although farm workers had been settling there since the turn of the century. The development of Khayamandi can be outlined in four main stages:

1. 1900-1941: Settlement of predominantly farm workers.
2. 1941-1953: Formal housing built by the local authority.
3. 1953-1980: Restriction on family housing/ accommodation for women. Construction of hostels for male workers.
4. 1980 – current: Apartheid laws are rescinded and Khayamandi develops into a dense township with a proliferation of housing types (formal and informal).

Khayamandi is currently projected to be home to over 33 000 people (2011/2012) with an ever-expanding boundary as predominantly informal settlements continue to grow to the North and West. Several new projects (including the Adam Tas Corridor and Khayamandi Town Centre project) have been initiated by both the local authority and private developers to provide more formalised housing options and expanded infrastructure networks.

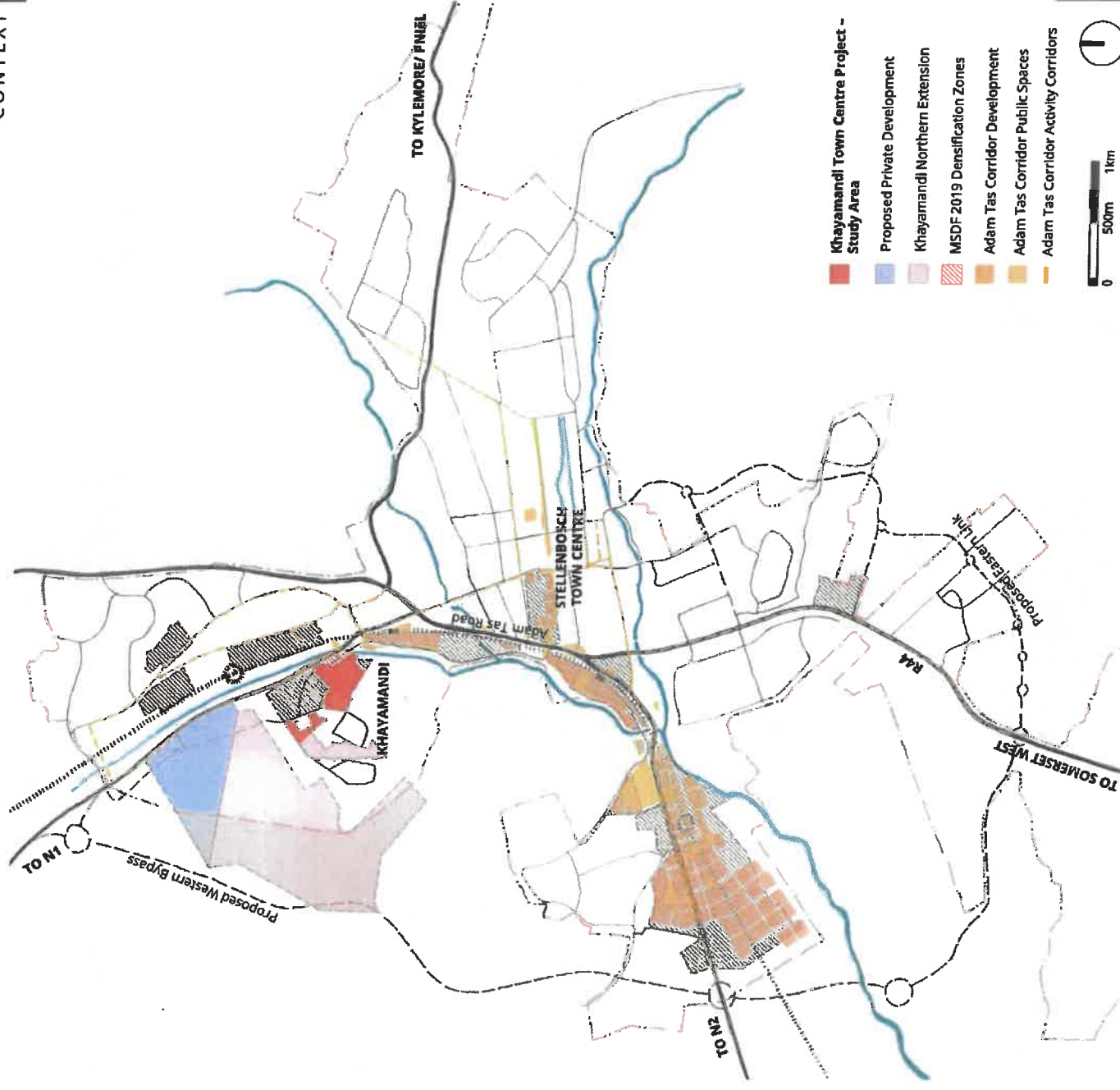
(Data Reference: R. Donaldson (2021) 'Human Geographies of Stellenbosch')

PROJECT BRIEF

TV3 Architects and Town Planners have been appointed by Stellenbosch Municipality as part of a multi-disciplinary team of professional consultants to conduct a feasibility study to assess the redevelopment of the town centre of Khayamandi.

The project brief includes:

1. Determining the status quo of the current Khayamandi human settlement.
2. A contextual and spatial analysis of the site.
3. Outlining spatial framework and urban design guidelines.
4. Proposing a site development plan with housing typologies, proposed land uses, new densities and infrastructure upgrades.
5. Design and planning for the provision of 1854 formal housing units (combination BNG and rental stock) – brief as approved by Stellenbosch Municipality's Department of Human Settlements (Aug 2021)



KHAYAMANDI TOWN CENTRE REDEVELOPMENT PROJECT
STUDY AREA



AERIAL - EXISTING CONTEXT

HIGH RISK

1. Safety on streets at night
 - Availability of street lights good - need more low level lighting for improved facial recognition
 - Effectiveness of street committees
 - Safety and communication systems and devices
2. Crime Prevention
 - SAPS activities - only one station with limited patrol vans
 - Community interventions - Safety devices and alarms, Street/ block CPTs, Security Enterprises
3. Clean and Attractive Environment
 - Need environmental cleanup and conservation
 - Waste management is serious problem
 - Lack of quality and natural open spaces
 - Promote local tourism with quality public spaces
4. Quality of Shelter
 - Market for single standing houses
 - Limited availability of flats and multi-storey dwellings
 - Need safehouses and shelters
 - Need old age homes and places of care
 - Variety of housing options

MODERATE RISK

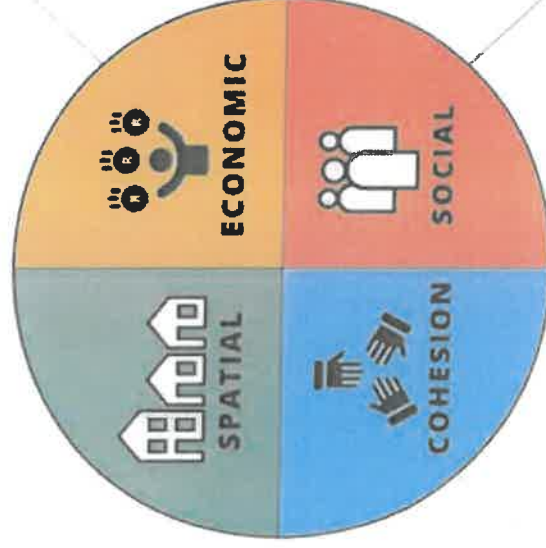
5. Availability of electricity
 - Access to sources of alternative energy
 - Electrical supply and safety - illegal connections/ exposed cables
6. Availability of water - Access to water in informal areas
 - Quality of sewer infrastructure
8. Quality of recreation and play facilities - need to increase access and frequency of the following facilities:
 - Parks and kickfields
 - Community centres and youth centres
 - Play parks or gyms
 - Theatres of movie house
 - Education facilities

HIGH RISK

1. Level of collaboration with the municipality
2. Level of attendance of community activities
3. Quality of inter-cultural relationships
4. Support of crime prevention initiatives

MODERATE RISK

5. Level of active volunteering
6. Level of support for school activities
8. Social media networking



HIGH RISK

1. Ability to Save
 - Access to Banking Services
 - Consumer Finance Education
 - Personal Finance Training
 - 'Stokvel' or savings support
2. Need to Improve Income levels
3. Availability of Business/ Office Premises
4. Quality of Enterprise Development
 - Enterprise Support
 - Market Access
 - Product Development
 - Skills Assessment and Development
5. Support from Local Businesses
 - Violence against foreign shop keepers

MODERATE RISK

6. Access to Business Opportunities
7. Access to Mentorship
8. Access to Technology and Wifi
9. Access to Training

HIGH RISK

1. Incidents of drug/ alcohol abuse
 - Need support and rehabilitation services in closer proximity
 - Need effective and fast reference systems
2. Levels of crime prevention
 - No neighbourhood watches
 - No community policing forum
3. Quality of Education
 - Increased ECD support
 - Improve school safety
 - Strengthen school management and capacity
 - Increase access to bursaries and mentorship
 - Improved access to secondary and tertiary education
4. Quality of Health Care
 - Health Facilities - clinic is always full and Khayamandi residents are not welcome in Cloetesville
 - Mental Health Support - need more access/ facilities, language barrier
 - Need more support/ services for physical health
 - Spiritual Health - support the strong network of churches
5. Quality of programmes to support vulnerable people
 - Gender equality
 - Homeless people
 - Human rights - LGBTQI support
 - Orphans/ vulnerable children
 - People with disability - universal access and support services
 - Prisons and troubled youth
 - The aged
 - Women
 - HIV/AIDS

MODERATE RISK

6. Quality of recreational activities
7. Quality of youth programmes
8. Quality of family planning and support programmes

SOCIAL MAPPING

EXISTING CHALLENGES

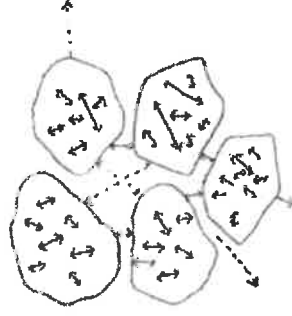


KHAYAMANDI TOWN CENTRE REDEVELOPMENT PROJECT DESIGN APPROACH

DESIGN APPROACH

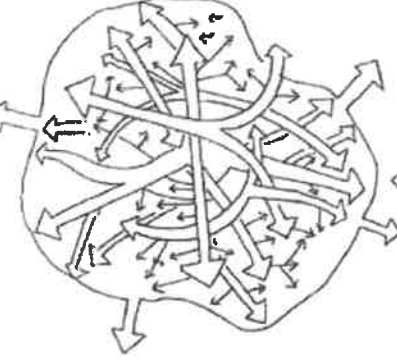
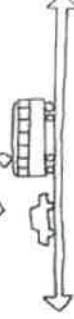
BUILD ON THE EXISTING COMPLEXITY AND RICHNESS OF KHAYAMANDI
AS VIBRANT HUMAN-CENTRED TOWN

THE CITY OF THE PEDESTRIAN



MINIMUM DISTANCES
FOR MAXIMUM ACHIEVEMENT & PLEASURE

THE (Anti-)CITY OF THE MOTORCAR



MAXIMUM DISTANCES,
AND BOREDOM FOR MINIMUM ACHIEVEMENTS

- 'The city of the pedestrian', Leon Krier

"The point of cities is multiplicity of choice."

Dull, inert cities, it is true, do contain the seeds of their own destruction and little else. But lively, diverse, intense cities contain the seeds of their own regeneration, with energy enough to carry over for problems and needs outside themselves."

- Jane Jacobs

KHAYAMANDI TOWN CENTRE REDEVELOPMENT PROJECT
URBAN ANALYSIS



SITE ANALYSIS
(slope study, existing buildings and trees to be retained)



Formal
Self-built

EXISTING URBAN FABRIC - INCREMENTAL URBANISM
(formal vs self-built)

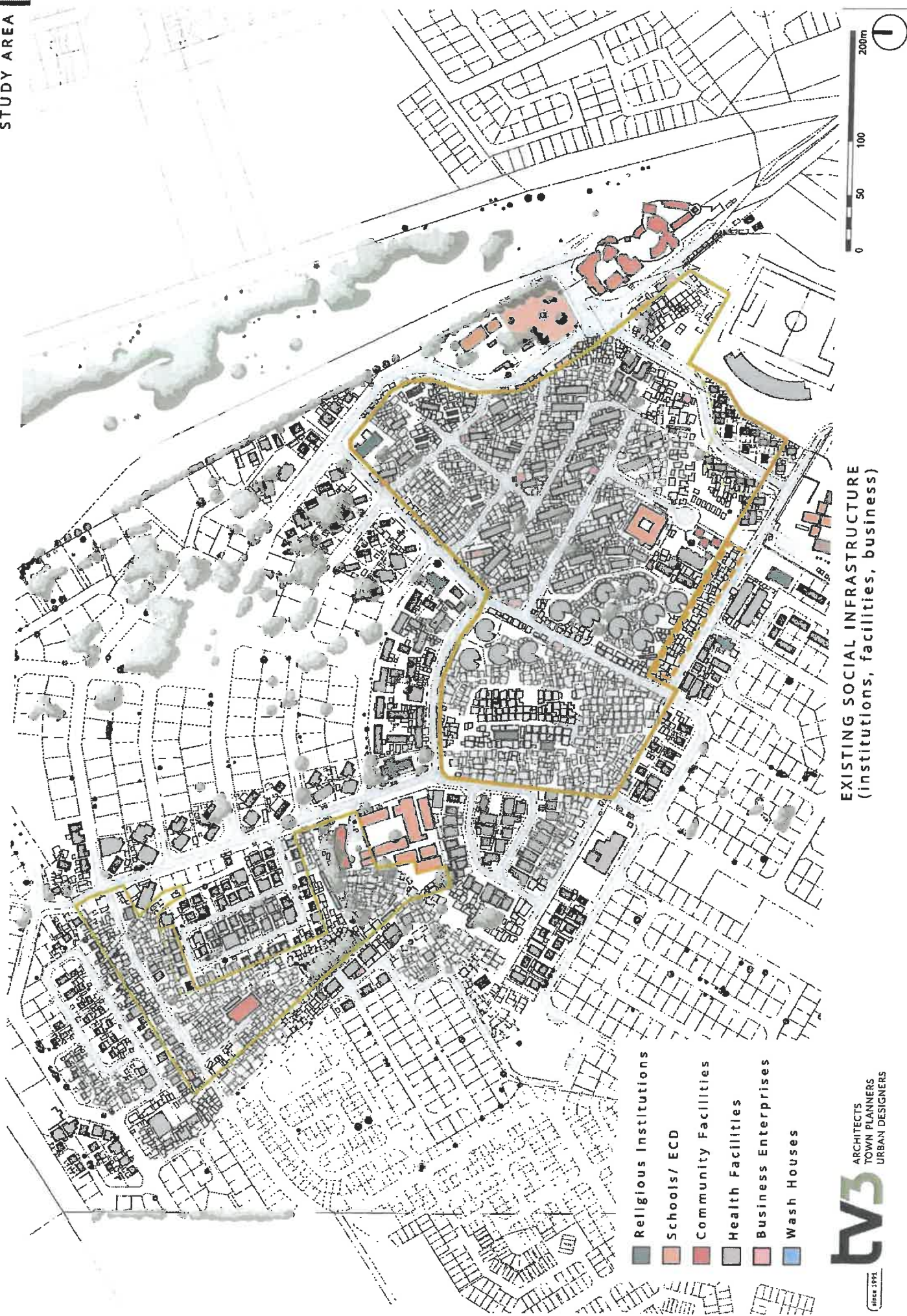
KHAYAMANDI TOWN CENTRE REDEVELOPMENT PROJECT
STUDY AREA



EXISTING DENSITY - NOLLI MAP
(lack of open space)



KHAYAMANDI TOWN CENTRE REDEVELOPMENT PROJECT STUDY AREA



KHAYAMANDI TOWN CENTRE REDEVELOPMENT PROJECT
STUDY AREA



— Pedestrian routes
— Vehicular roads

EXISTING MOBILITY
(‘desire lines’)

tv3

ARCHITECTS
TOWN PLANNERS
URBAN DESIGNERS

© 1997

KHAYAMANDI TOWN CENTRE REDEVELOPMENT PROJECT

DESIGN PRINCIPLES

DESIGN APPROACH
BUILD ON THE EXISTING COMPLEXITY AND RICHNESS OF KHAYAMANDI
AS VIBRANT HUMAN-CENTRED TOWN

“In practice streets trigger a range of benefits for residents and generate multi-dimensional outcomes and prove to be vital for the future consolidation of settlements.

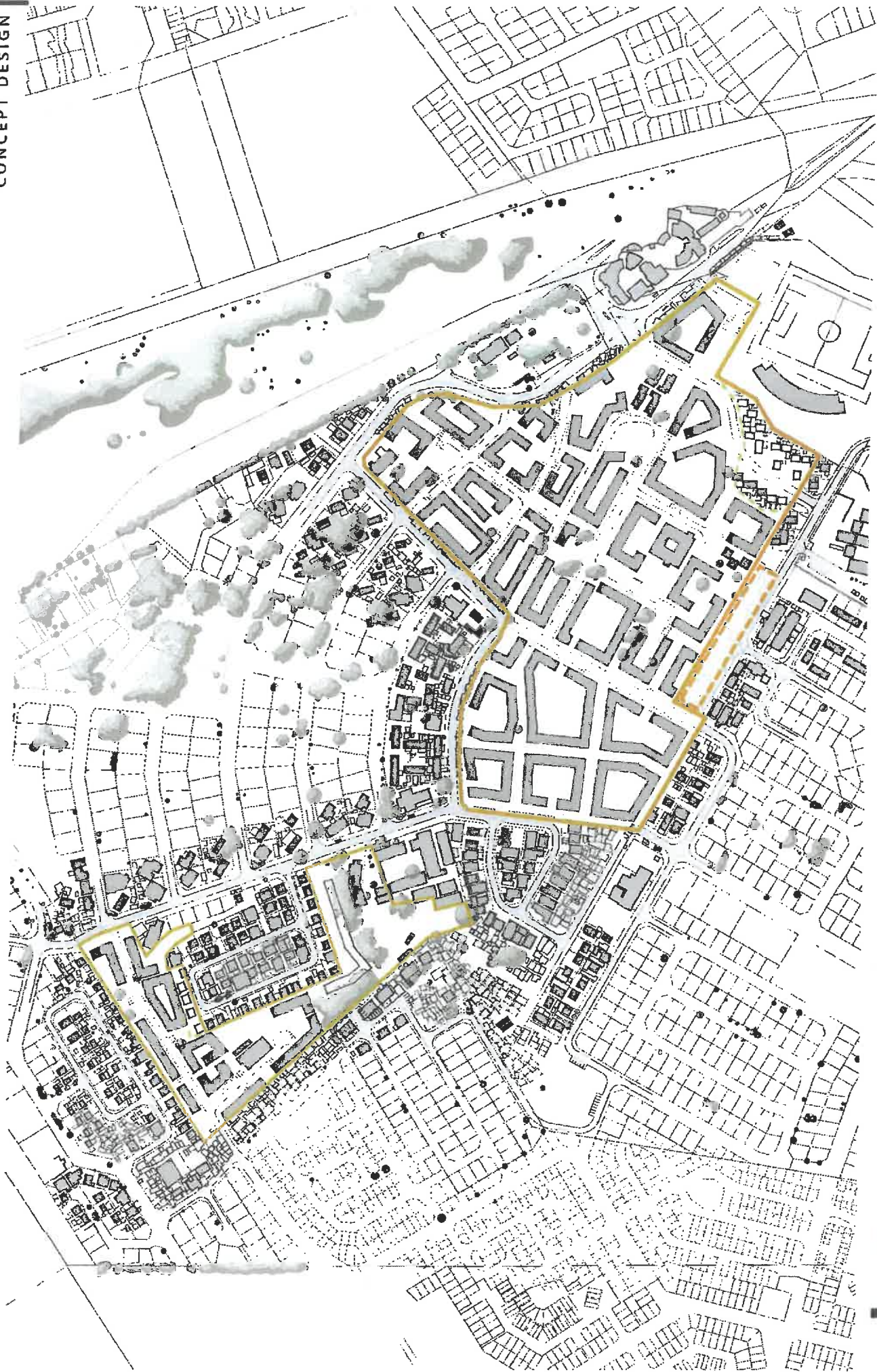
They attract shops and services, and they promote people’s identification with their place of residence, bringing in orderly development and an enhanced sense of public safety, especially for women and children.”

- Streets as Tools for Urban
Transformation in Slums, UN Habitat

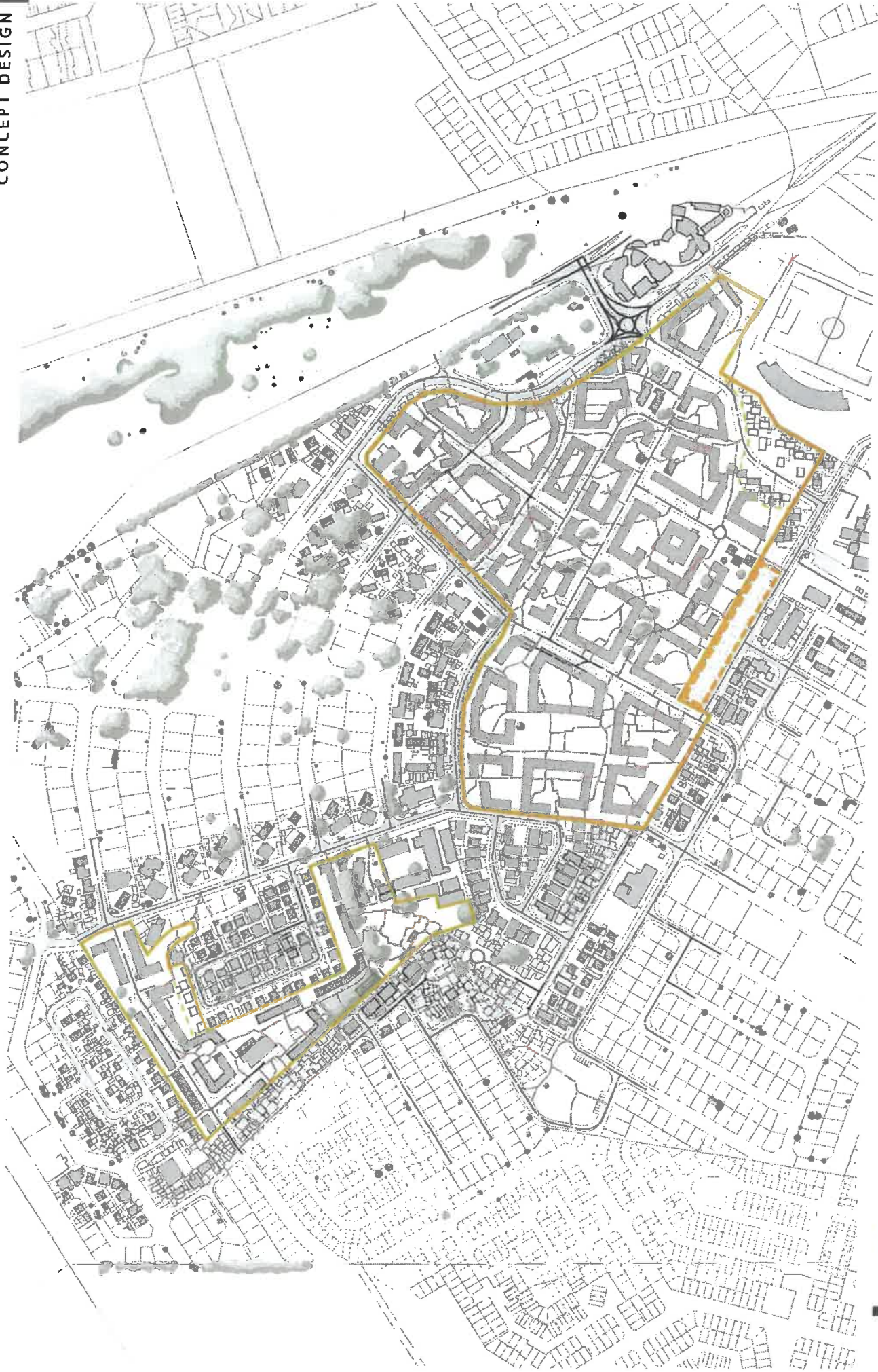
DESIGN PRINCIPLES

1. Conserve existing multiplicity and efficiencies – include current socio-economic networks, pedestrian pathways and established trees.
2. Create well-defined human-scaled streets.
3. Densify along the perimeter of street blocks to provide more open space.
4. Provide choice - create a variety of public and internal courtyards.
5. Design with the topography.
6. Plan for incremental urbanism.





1. CREATE PERIMETER BLOCKS



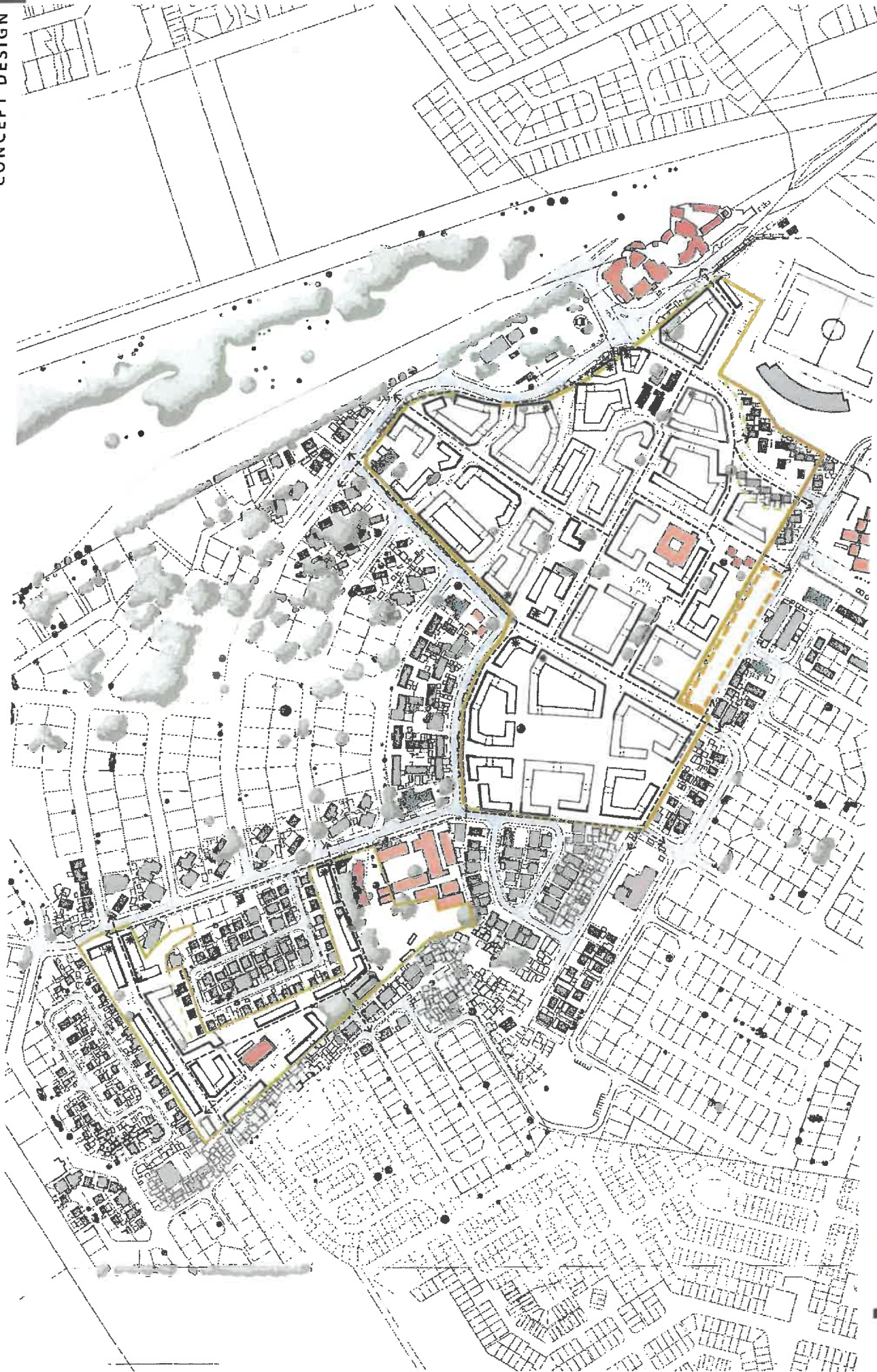
2. REDESIGN BLOCKS
(accommodate main pedestrian pathways
and existing trees)

0 50 100 200m





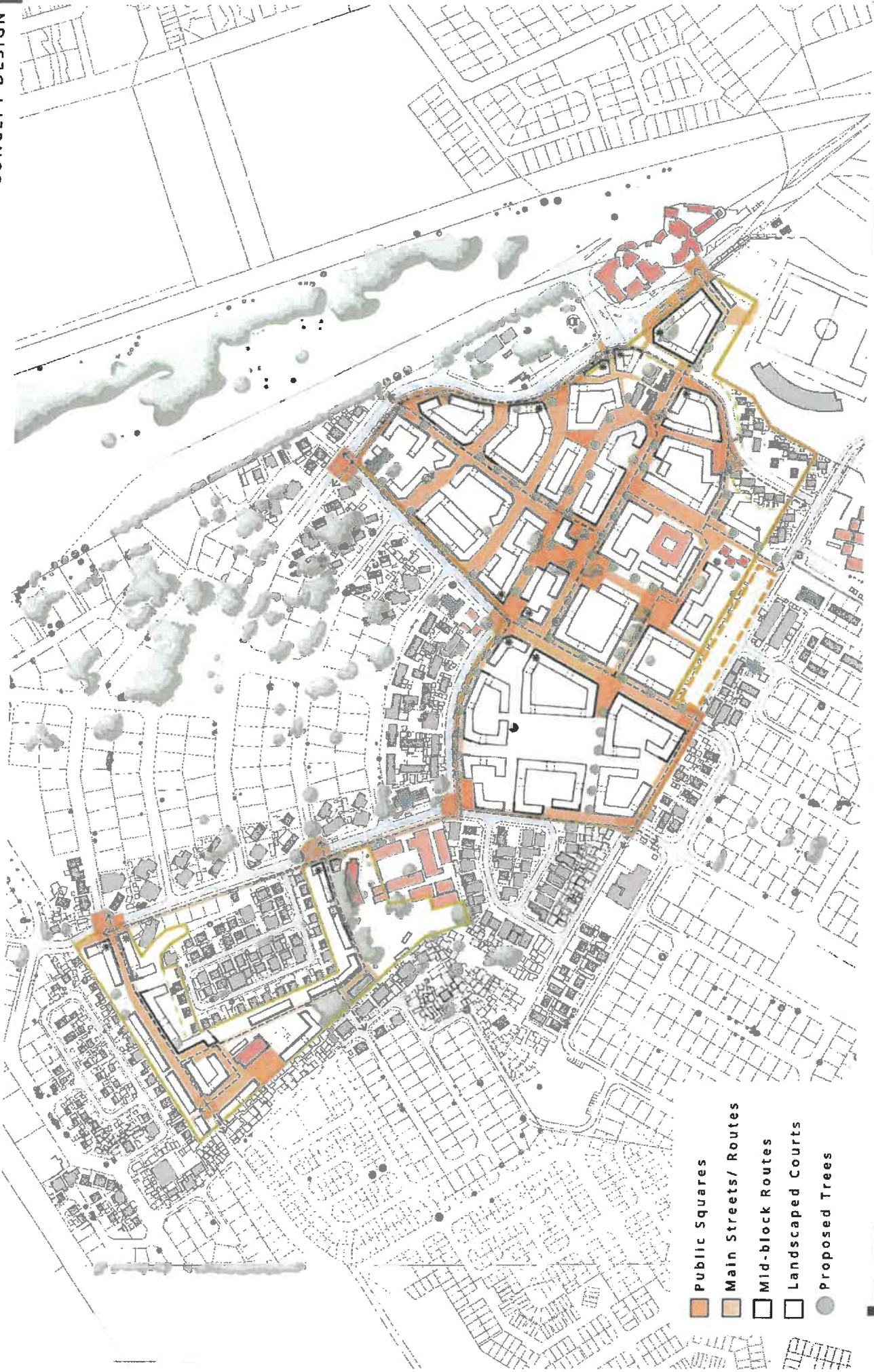
3. NOLLI MAP OF PROPOSED BLOCKS
(proposed density)



4. PROPOSED URBAN FABRIC
(defined streets and variety of courtyards)

0 50 100 200m

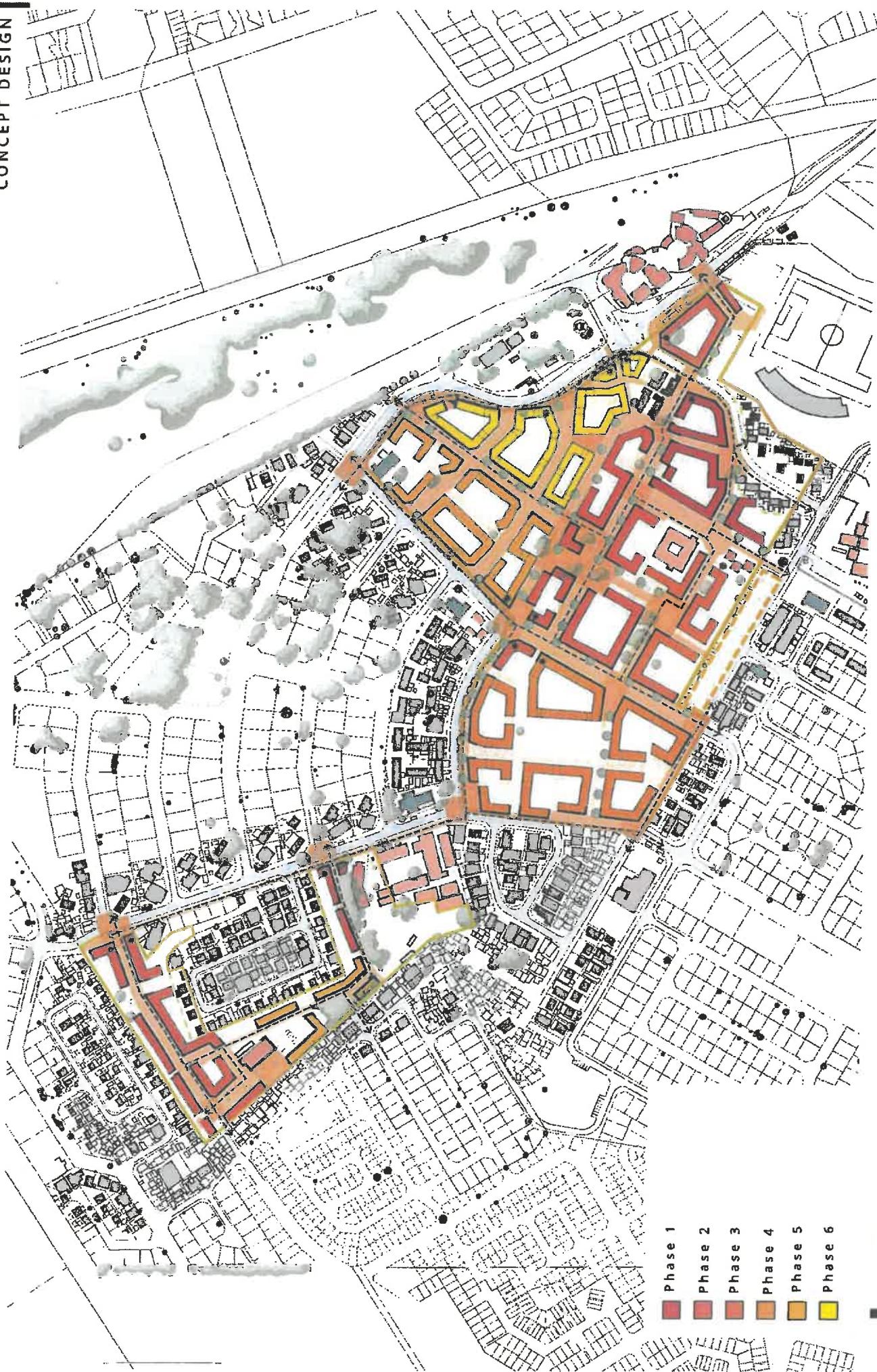




- Public Squares
- Main Streets/ Routes
- Mid-block Routes
- Landscaped Courts
- Proposed Trees

5. PROPOSED PUBLIC SPACE NETWORK

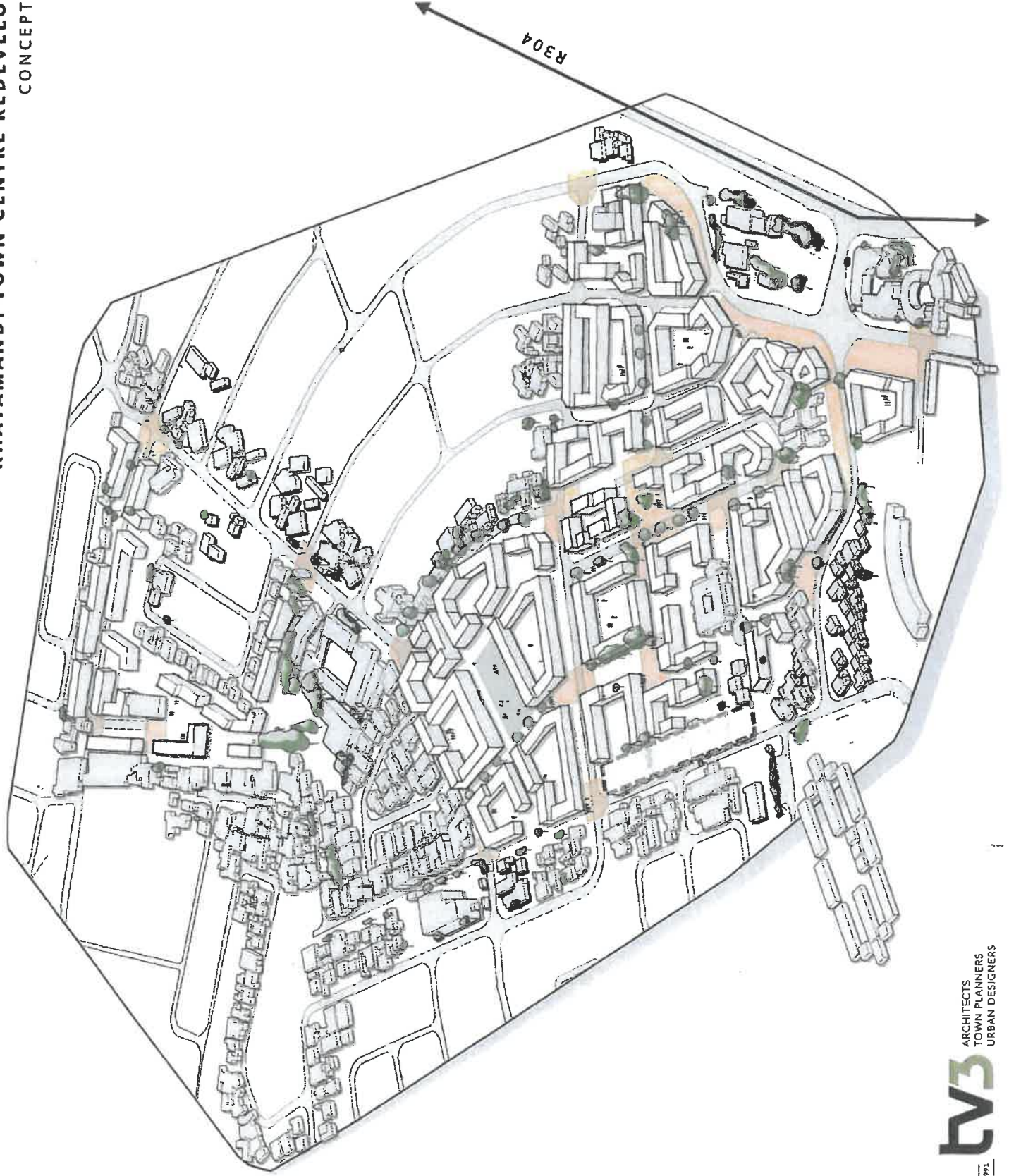
0 50 100 200m



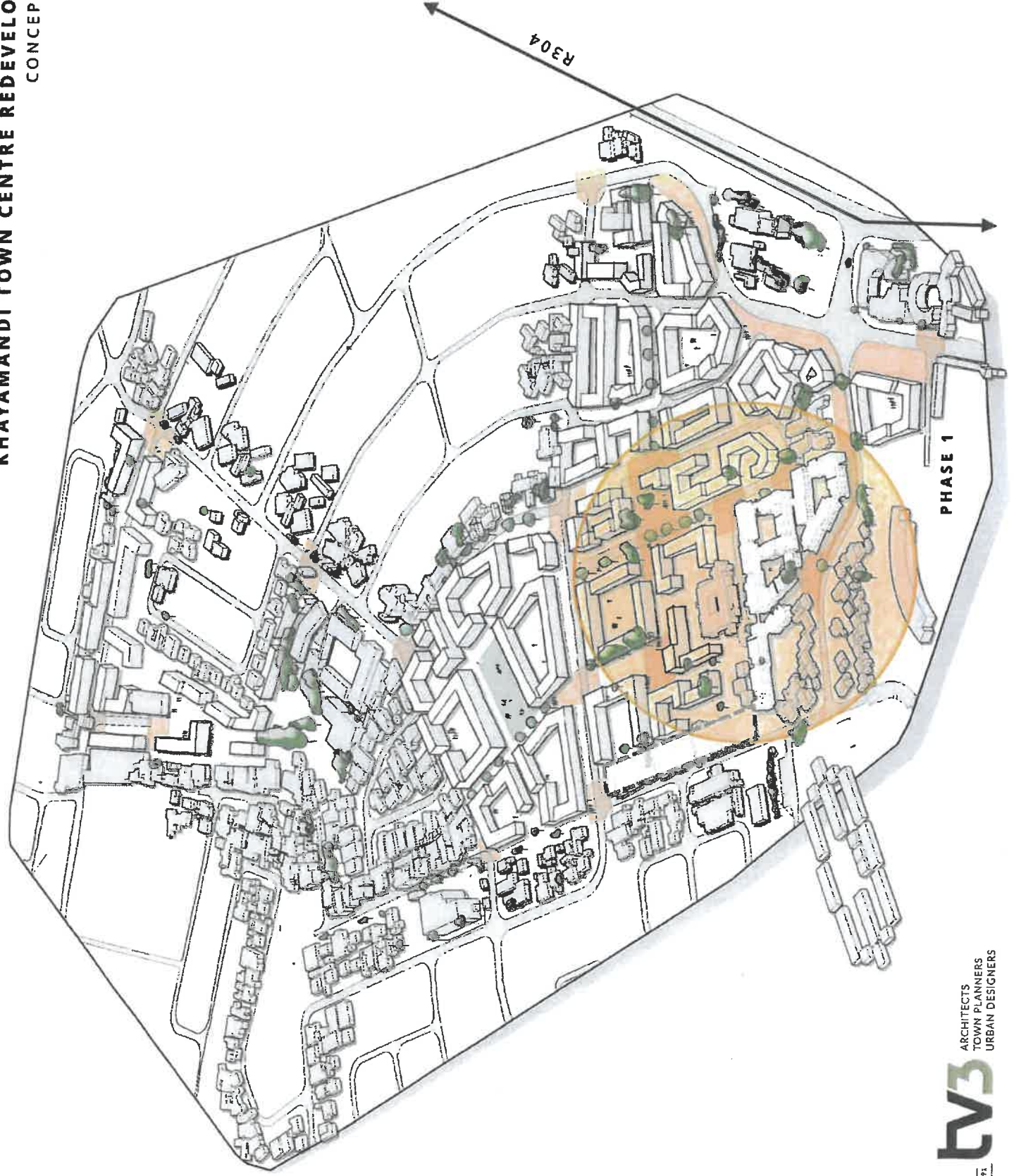
- Phase 1
- Phase 2
- Phase 3
- Phase 4
- Phase 5
- Phase 6

6. PROPOSED PHASED APPROACH

KHAYAMANDI TOWN CENTRE REDEVELOPMENT PROJECT
CONCEPT DESIGN MASSING



KHAYAMANDI TOWN CENTRE REDEVELOPMENT PROJECT
CONCEPT DESIGN PHASE 1

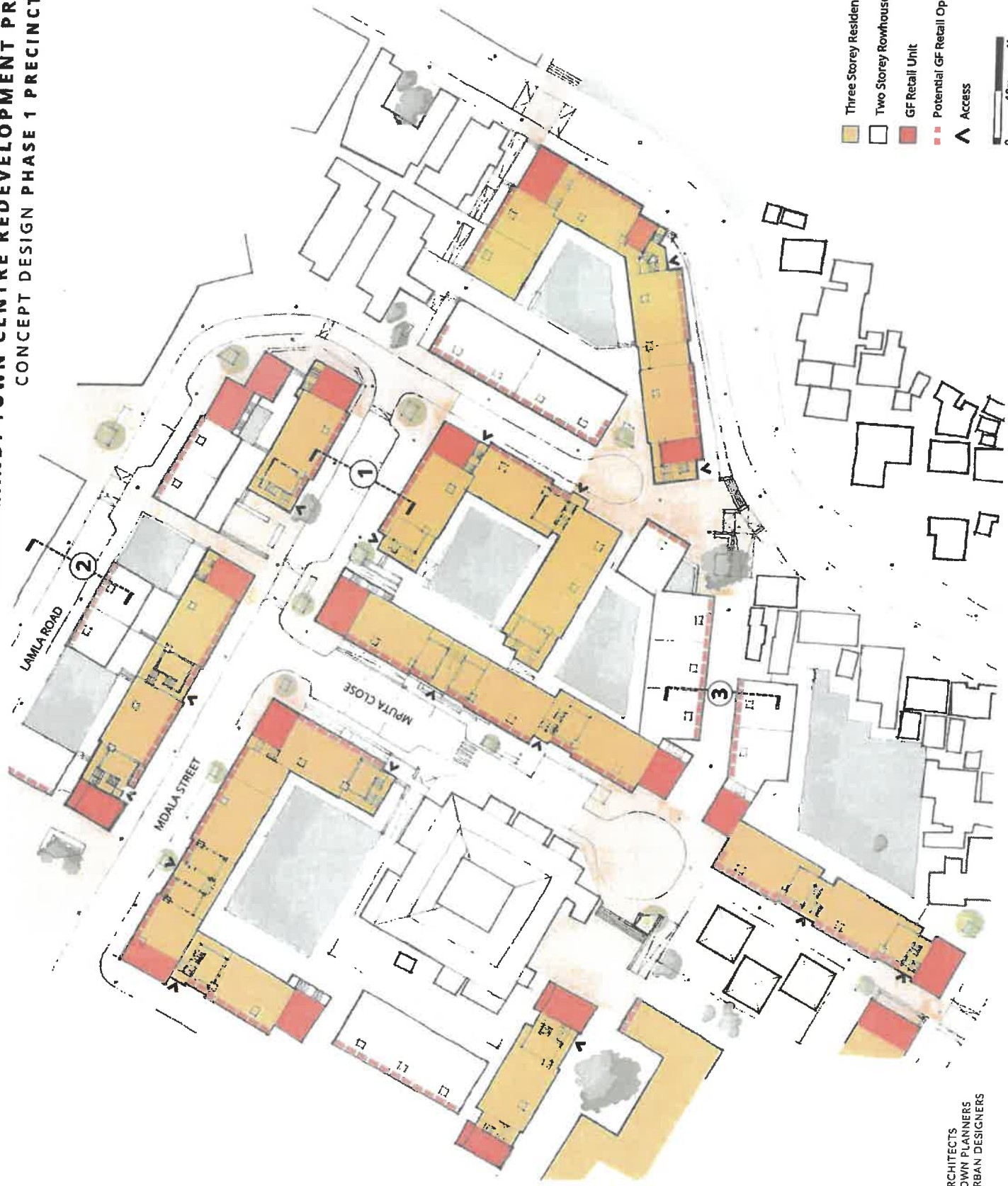


KHAYAMANDI TOWN CENTRE REDEVELOPMENT PROJECT

CONCEPT DESIGN PHASE 1 PRECINCT PLAN



KHAYAMANDI TOWN CENTRE REDEVELOPMENT PROJECT **CONCEPT DESIGN PHASE 1 PRECINCT PLAN**



- Three Storey Residential Block
 - Two Storey Rowhouse Typology
 - GF Retail Unit
 - Potential GF Retail Opportunities
 - Access
- 0 10m 1km
- 1

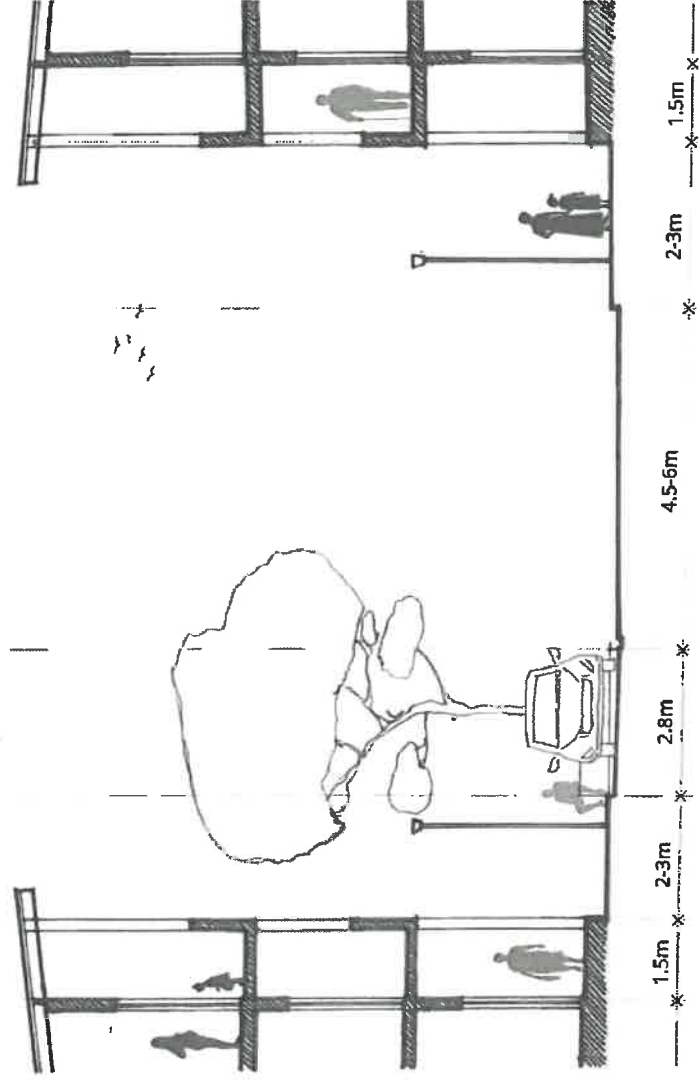
KHAYAMANDI TOWN CENTRE REDEVELOPMENT PROJECT **STREET TYPOLOGY 1 HIGH STREET**



Two-way Street

Walkways
Semi-Public
Public
Sidewalk
Public
Parking/Trees

Sidewalk
Public
Walkways
Semi-Public



KHAYAMANDI TOWN CENTRE REDEVELOPMENT PROJECT **STREET TYPOLOGY 2 RESIDENTIAL STREET**



Slope/ Growth Opportunity
Semi-Private

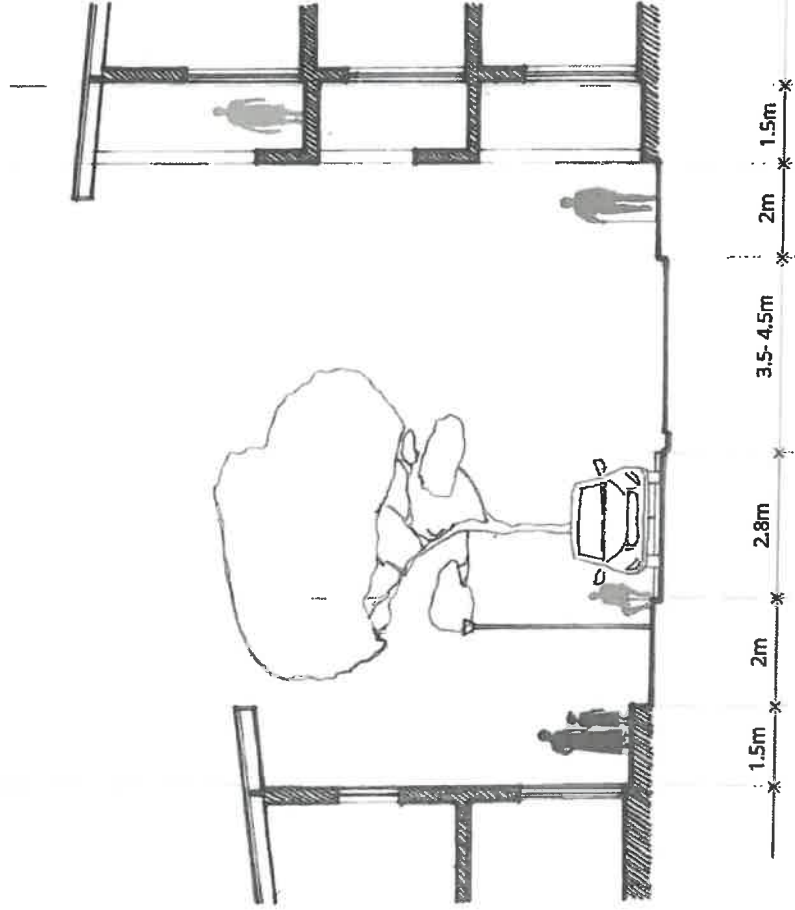
Sidewalk
Public

Parking/ Trees
Public

One-way Street

Sidewalk
Public

Walkways
Semi-Public

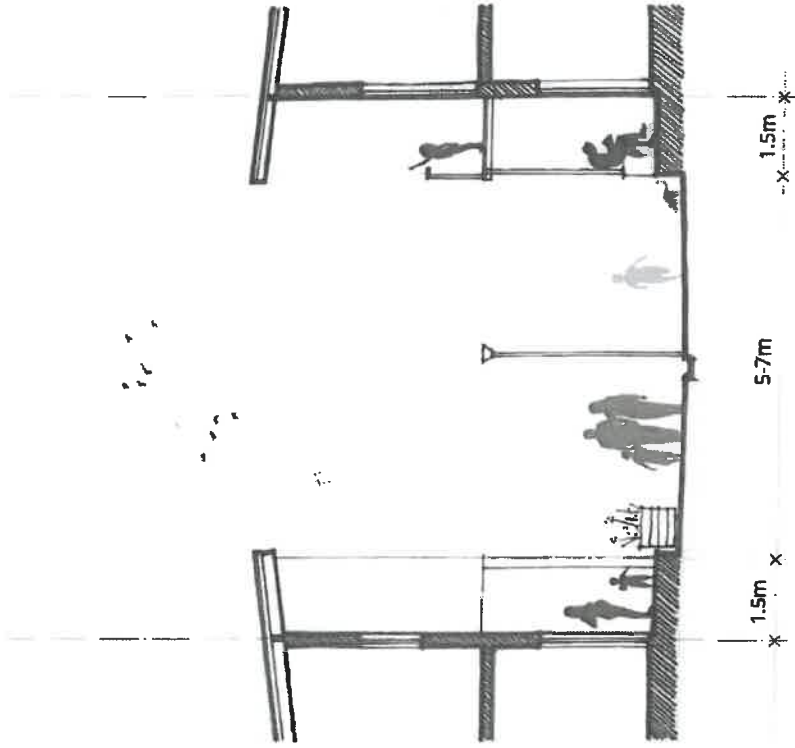


KHAYAMANDI TOWN CENTRE REDEVELOPMENT PROJECT **STREET TYPOLOGY 3 SHARED STREET**

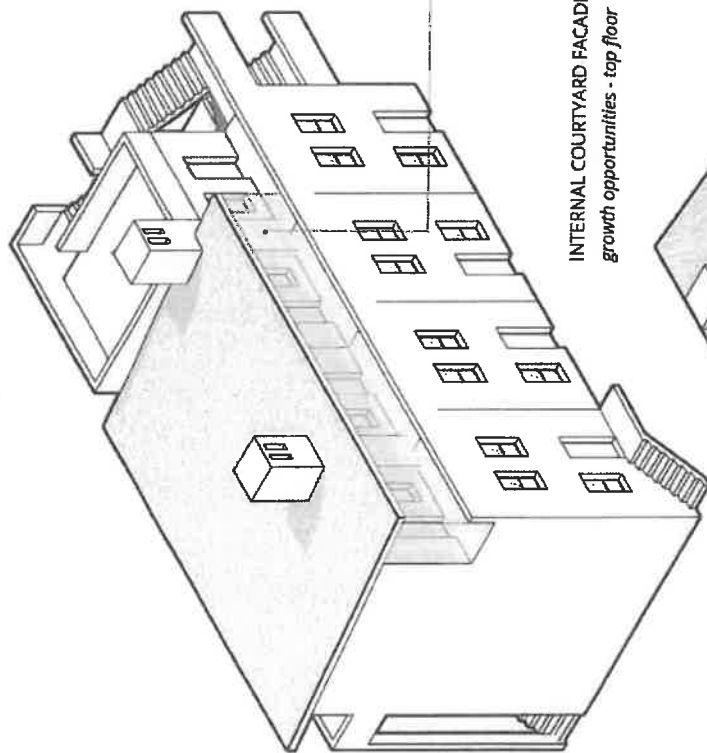


Public
 Pedestrian Street

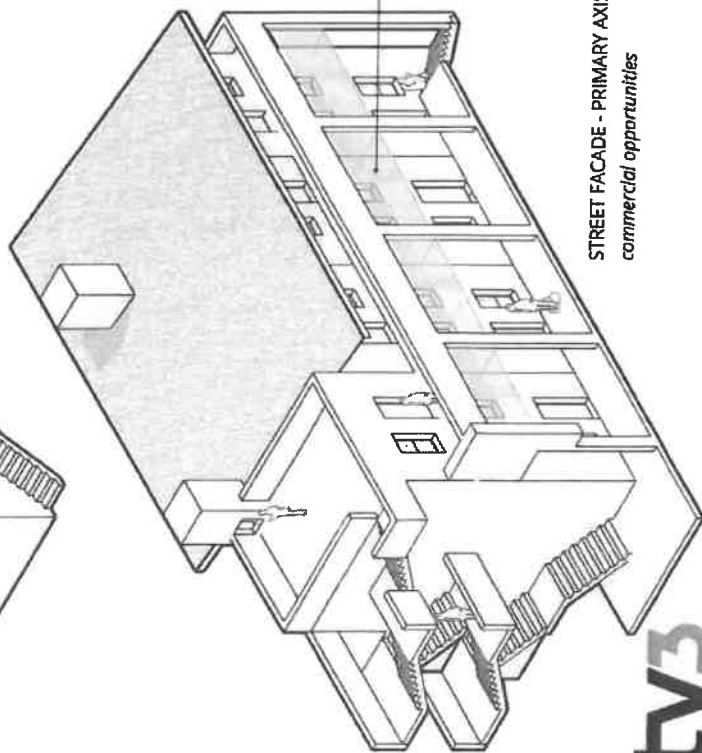
Semi-Private
 'Steep' Growth Opportunity



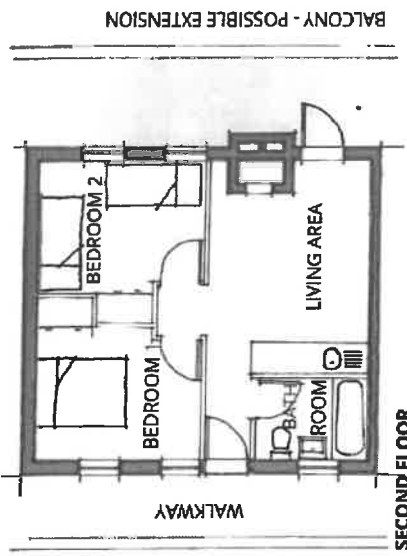
KHAYAMANDI TOWN CENTRE REDEVELOPMENT PROJECT **RESIDENTIAL BLOCK TYPOLOGY A DUPLEX & TWO BEDROOM UNITS**



INTERNAL COURTYARD FACADE
growth opportunities - top floor

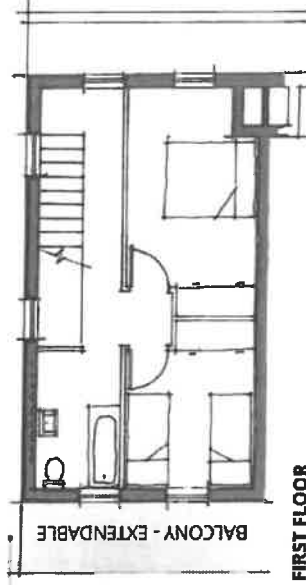


STREET FACADE - PRIMARY AXIS
commercial opportunities



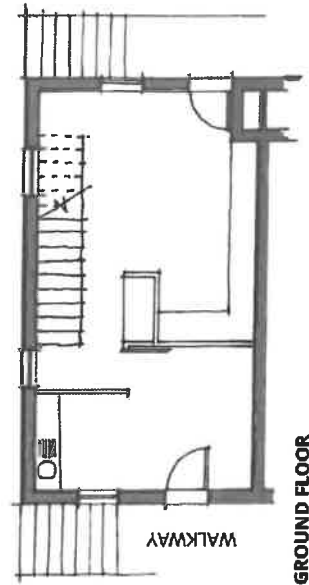
Two Bedroom Unit (38m²)

INCREMENTAL GROWTH OPPORTUNITY
2nd floor



FIRST FLOOR

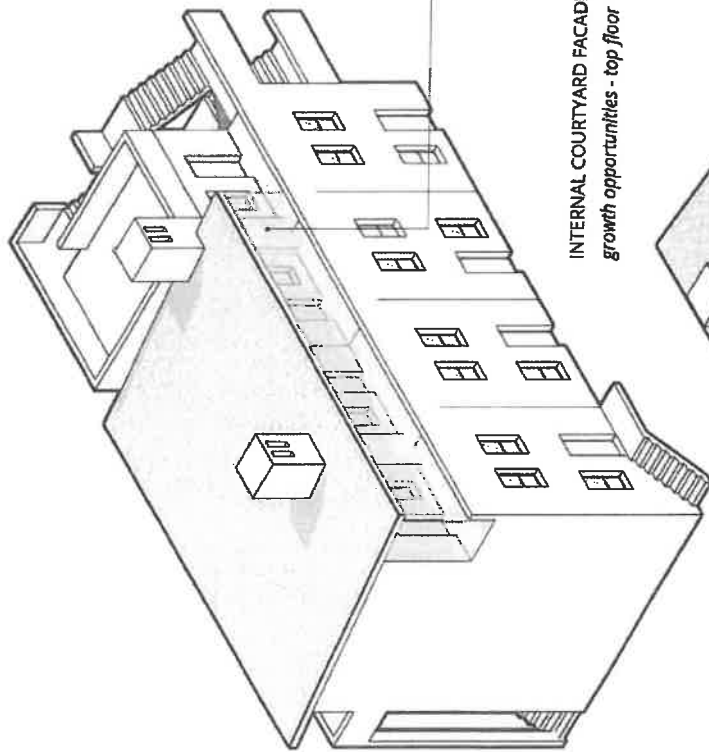
INCREMENTAL GROWTH OPPORTUNITY
1st floor



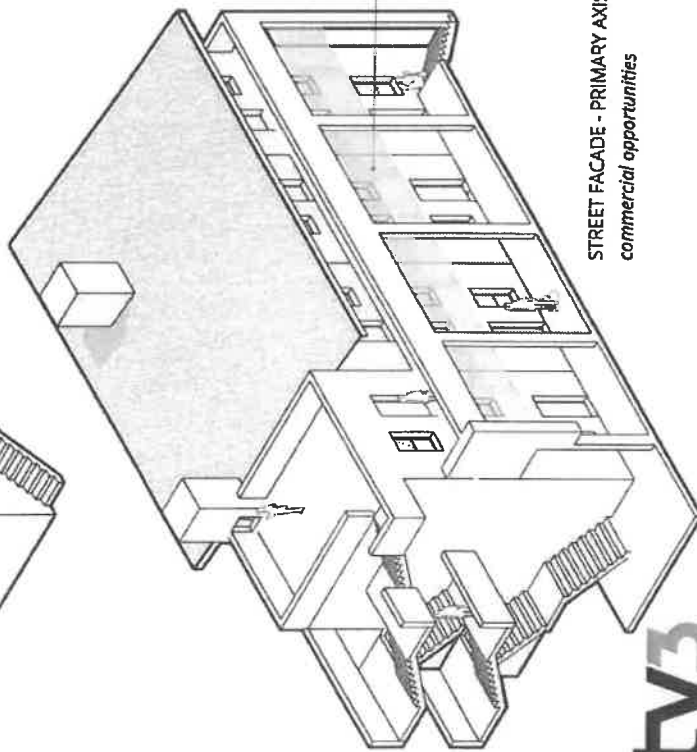
GROUND FLOOR

Duplex Unit with Commercial on the Ground Floor (66m²)

KHAYAMANDI TOWN CENTRE REDEVELOPMENT PROJECT **RESIDENTIAL BLOCK TYPOLOGY B STUDIO AND ONE BEDROOM UNITS**



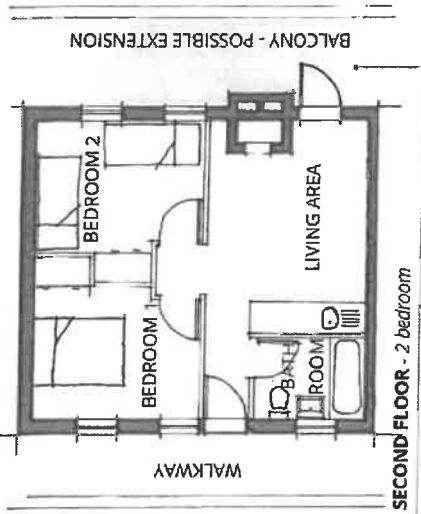
INTERNAL COURTYARD FACADE
growth opportunities - top floor



STREET FACADE - PRIMARY AXIS
commercial opportunities

Since 1995

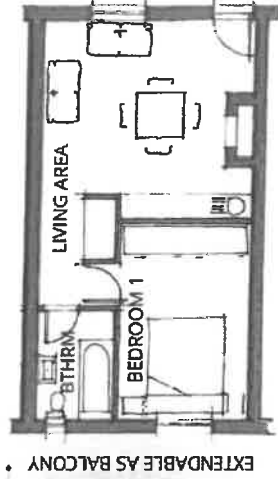
tv3



SECOND FLOOR - 2 bedroom

Two Bedroom Unit (38m²)

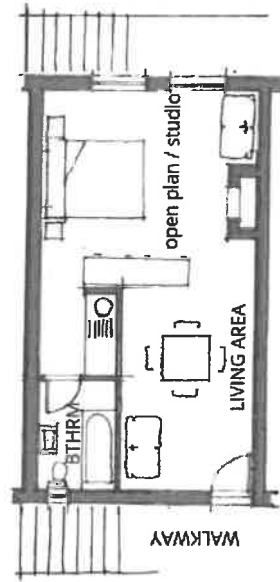
INCREMENTAL GROWTH OPPORTUNITY
2nd floor



FIRST FLOOR - 1 bedroom

One Bedroom Unit (33m²)

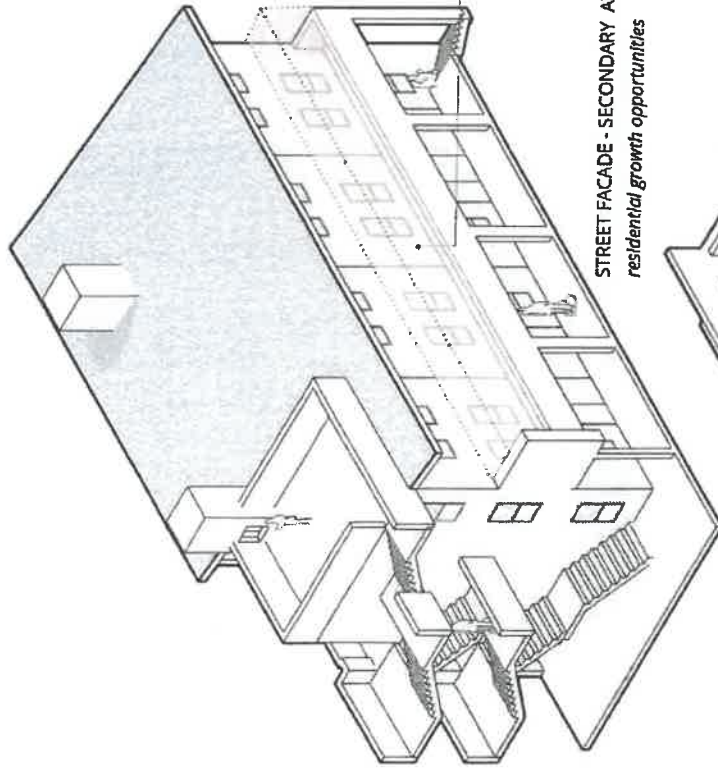
INCREMENTAL GROWTH OPPORTUNITY
1st floor



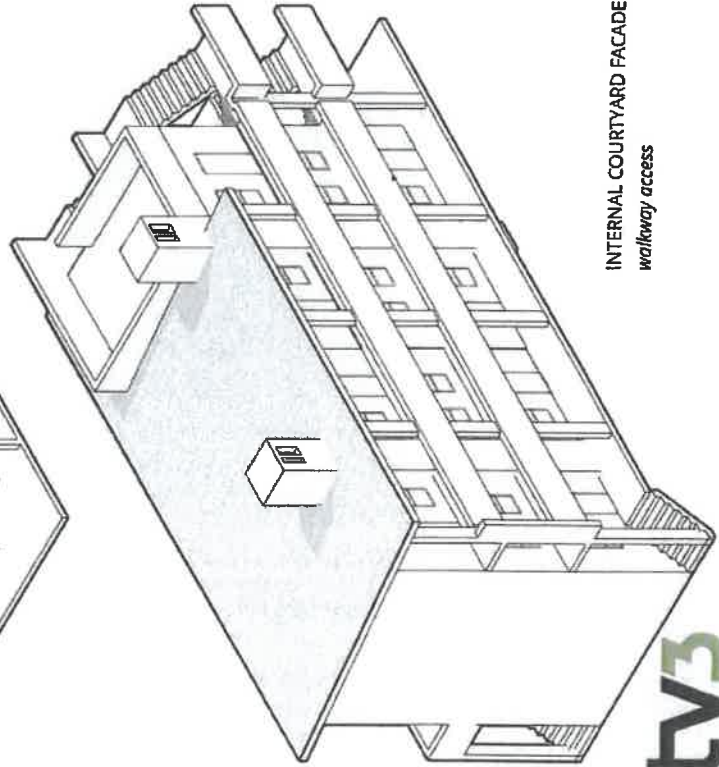
GROUND FLOOR - studio

Studio Unit (33m²)

KHAYAMANDI TOWN CENTRE REDEVELOPMENT PROJECT **RESIDENTIAL BLOCK TYPOLOGY C TWO BEDROOM UNITS (6M DEEP)**

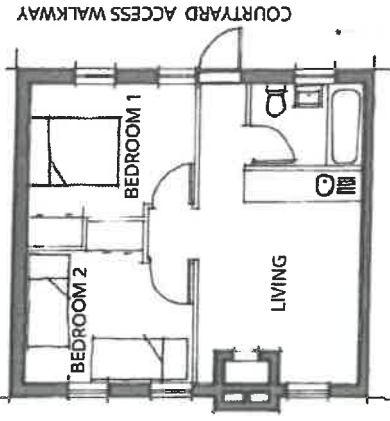


STREET FACADE - SECONDARY AXIS
residential growth opportunities

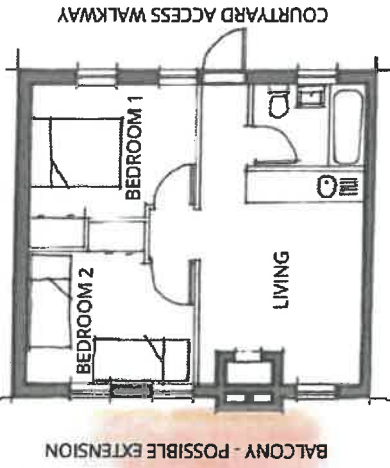


INTERNAL COURTYARD FACADE
walkway access

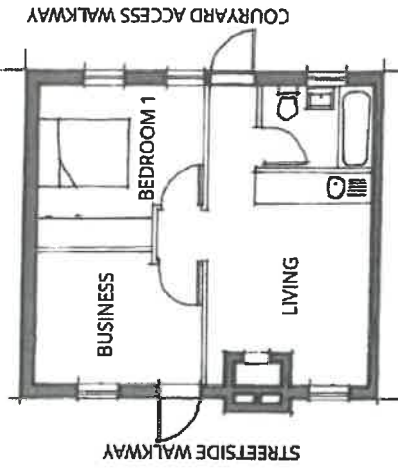
INCREMENTAL GROWTH OPPORTUNITY
1st floor



SECOND FLOOR



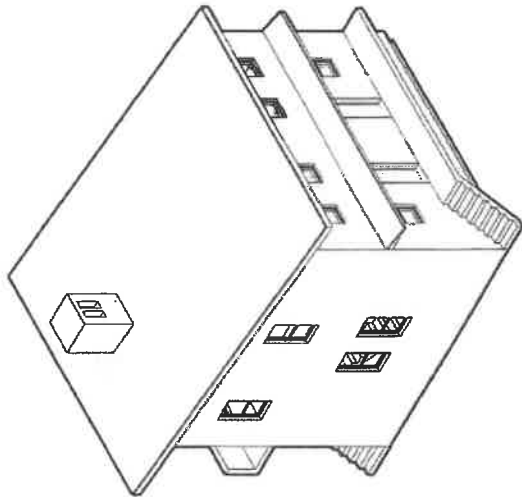
FIRST FLOOR



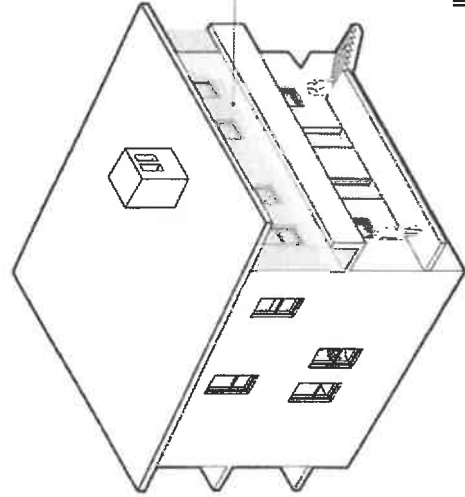
GROUND FLOOR

Two Bedroom and One Bedroom Units (Ground Floor) with Commercial (38m²)

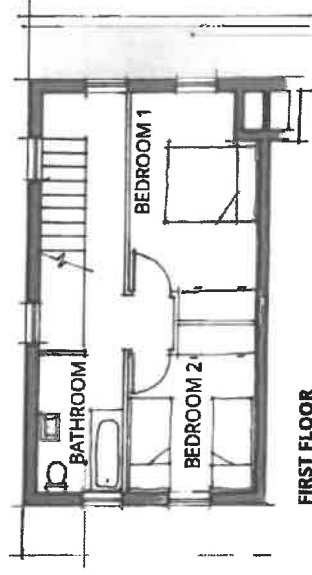
KHAYAMANDI TOWN CENTRE REDEVELOPMENT PROJECT RESIDENTIAL BLOCK TYPOLOGY A ROWHOUSE DUPLEX UNITS



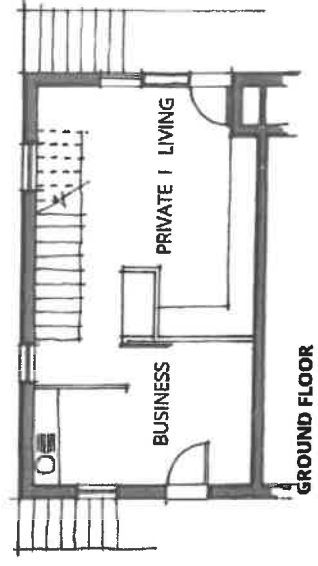
STREET FACADE - PRIMARY AXIS
commercial opportunities



INTERNAL COURTYARD FACADE
growth opportunities - top floor



FIRST FLOOR

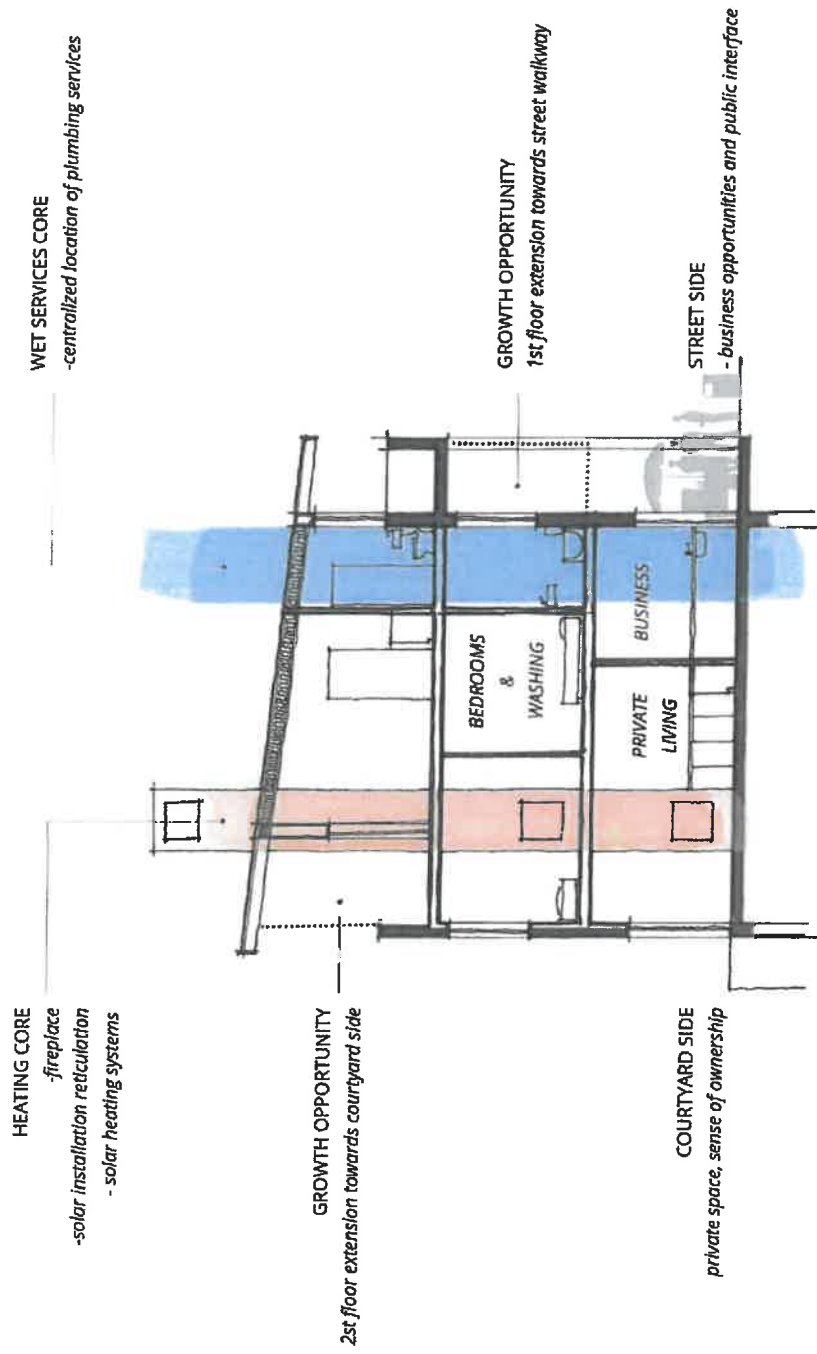


GROUND FLOOR

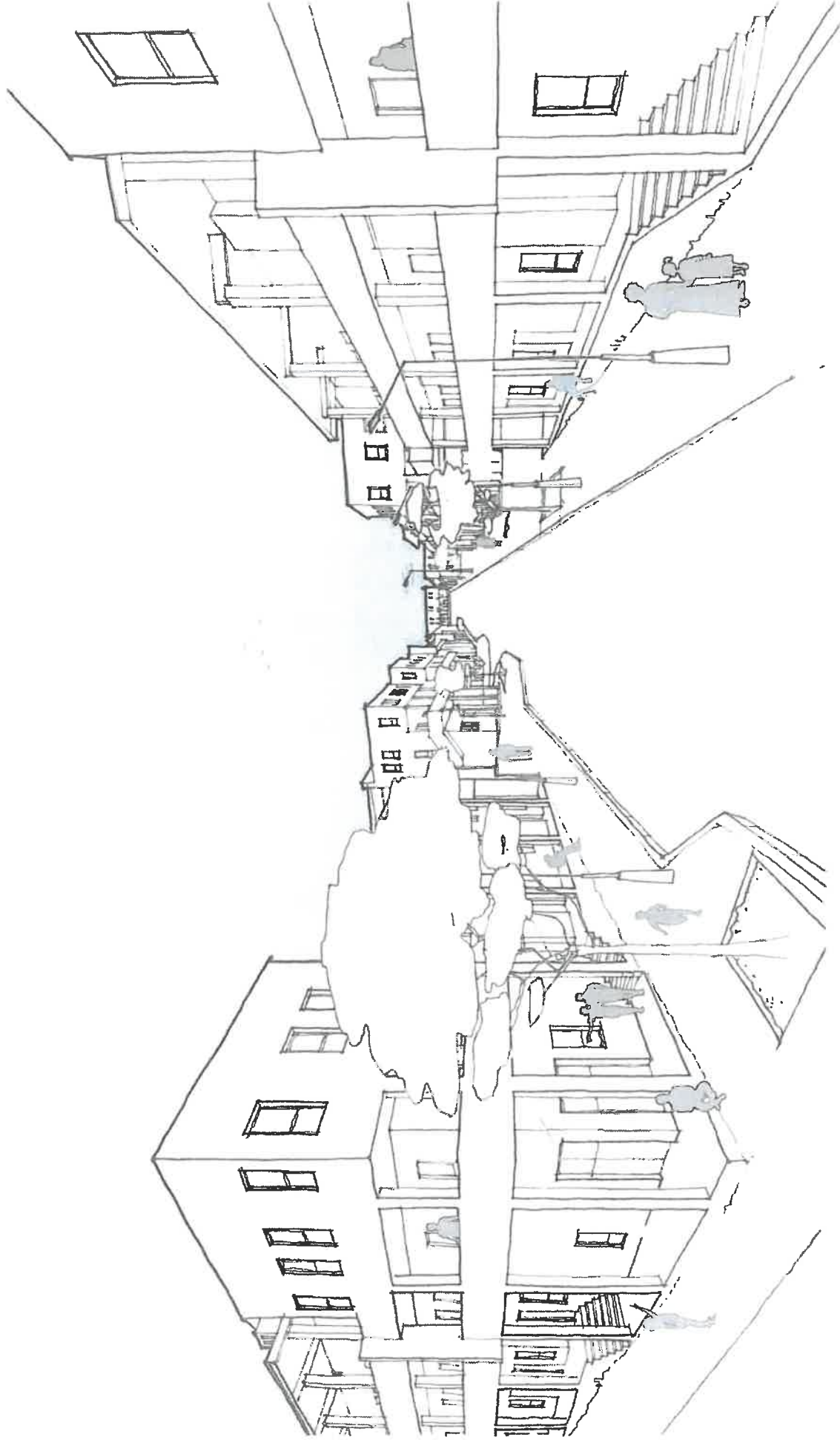
OPPORTUNITY FOR UNIT EXTENSION
 1st floor

KHAYAMANDI TOWN CENTRE REDEVELOPMENT PROJECT

CONCEPT DESIGN STRATEGIES

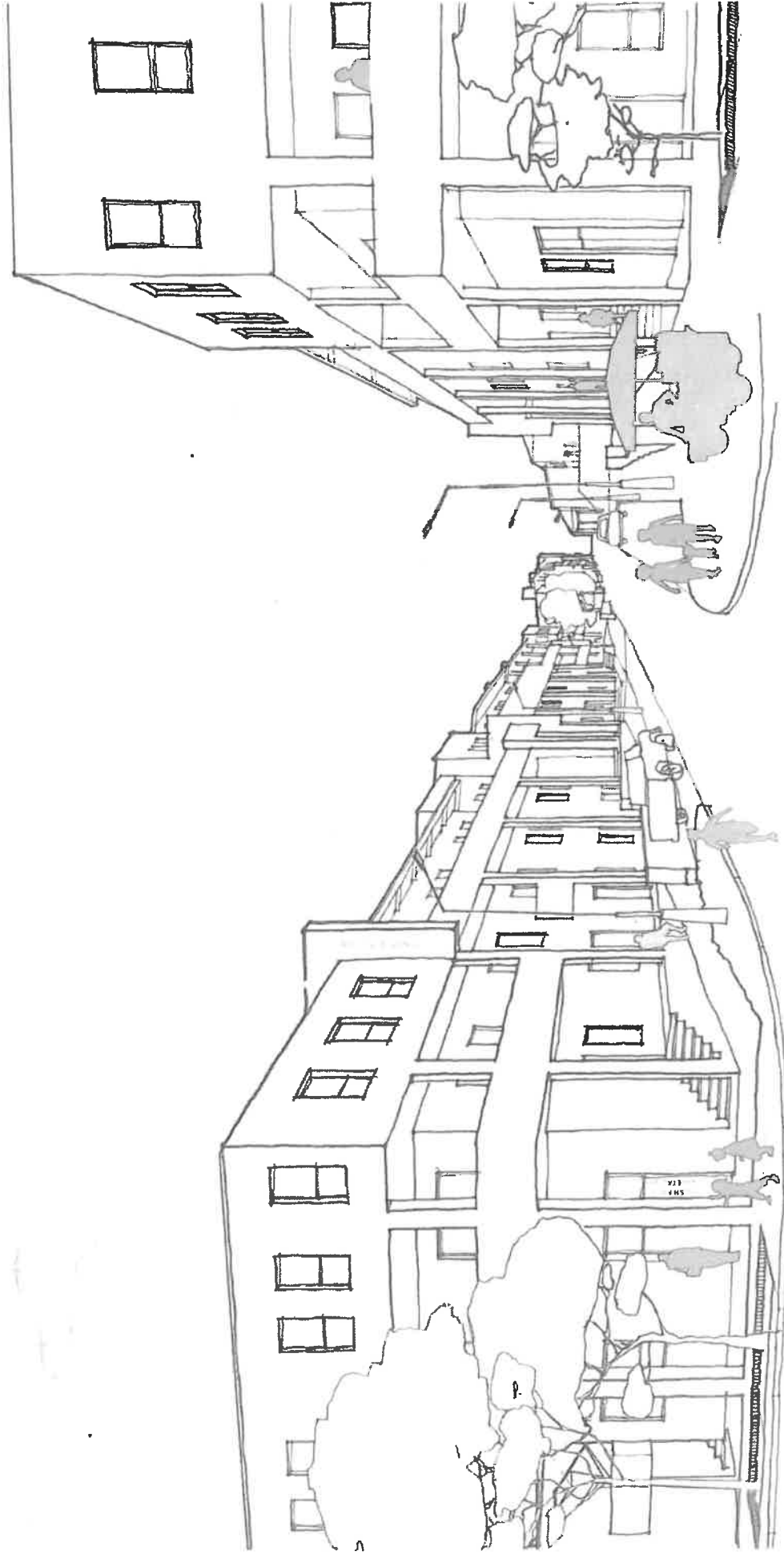


KHAYAMANDI TOWN CENTRE REDEVELOPMENT PROJECT
STREET VIEW PERSPECTIVE



MDALA STREET

KHAYAMANDI TOWN CENTRE REDEVELOPMENT PROJECT
STREET VIEW PERSPECTIVE



MPUTA CLOSE

THANK YOU

ANNEXURE C



Date: 13 April 2022

Our Ref: UDS510/Reports/TIA

Jubelie Projects
The Cliffs, Block 1
Niagara Way
Tyger Falls
BELLVILLE
7530

ATTENTION: Mr Vincent Phiri

Dear Sir,

**APPLICATION FOR CONSOLIDATION, REZONING, SUBDIVISION AND RELEVANT
DEPARTURES IN ORDER TO REDEVELOP THE KAYAMANDI TOWN CENTRE, STELLENBOSCH:
TRAFFIC IMPACT ASSESSMENT**

This company was appointed by *Jubelie Projects* to prepare a Traffic Impact Assessment (TIA) for the proposed redevelopment of the Kayamandi Town Centre, Stellenbosch.

1. BACKGROUND AND LOCALITY

Kayamandi is a township situated northwest of Stellenbosch Town, bordered by the R304 (Main Road 174) to the east and the Plankenbrug Industrial Area to the south. See the attached *Locality Plan*.

A report providing traffic input was previously prepared (*Ref: ICE/S/1187, 12 Dec 2017*) for the feasibility study of the potential redevelopment of the town centre of Kayamandi.

This TIA accompanies the Land Use Application for the Proposed Redevelopment of Kayamandi Town Centre, Stellenbosch.

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Stellenbosch

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V&A Waterfront
8002

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general enquiries
Elmarie Els 021 880 0443

managing member
A Khan PrEng

associates
JW Wessels PrEng
P v Blerk PrEng
JN Louw PrCPM

offices
Clanwilliam, Stellenbosch,
Somerset West

Reg no. 2003/043709/23

urban development solutions



2. PROPOSED DEVELOPMENT

2.1 Previously Assessed Development Data

The Study Area identified for the feasibility study included approximately 2 000 existing households. The proposal assessed at the time included a mix of studio-, one- and two-bedroom apartment units, BNG living units, and accompanying community facilities such as schools, churches, etc. The total number of units included in the then conceptual layout calculated to 1 909 residential units (55 existing units within the study area plus 1 854 new units).

2.2 Proposed Development Data

Since the submission of the feasibility study, discussions with Stellenbosch Municipality resulted in a change in the location of some of the proposed land uses within the study area, however, according to the information provided by the project team, the proposed number of residential units remain 1 854 new units, plus 55 existing units.

The proposed site layout as prepared by *tv3 architects, town planners, urban designers* is indicated below:



Diagram 1 : Proposed Site Layout (*tv3 architects, town planners, urban designers*)

2.3 Access to the Property

Access to the subject area is obtained from the R304 via either Masitandane Street or Sokuqala Street, or from Plankenbrug via George Blake Street. See **Diagram 2** below. Access will be further discussed in *paragraph 4* below.

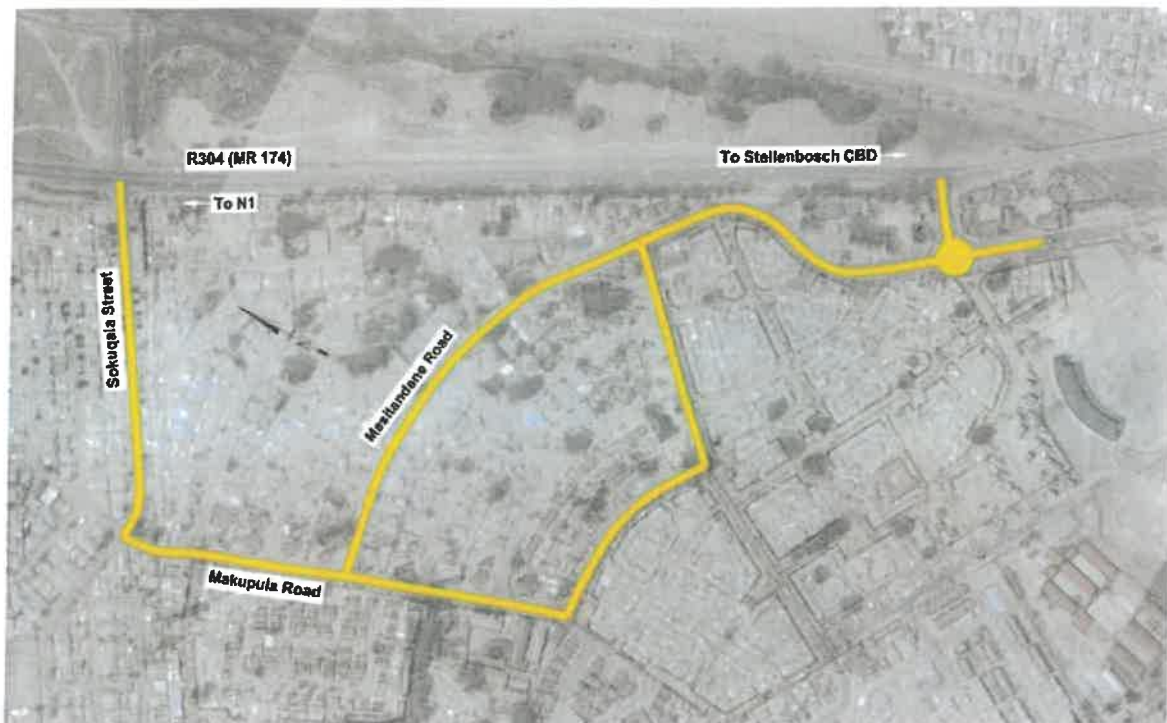


Diagram 2 : Access to subject area

3. TRAFFIC

3.1 Existing Traffic

For the feasibility study, traffic counts were conducted in 2017. As discussed with Stellenbosch Municipality, updated traffic counts are required for the purpose of this study. Updated traffic counts were thus conducted on Thursday, 17 March 2022 from 06h30 to 09h30, and again from 15h30 to 18h30 at the following intersections:

- R304/Sokuqala Street (stop-controlled)
- Sokuqala Street/Makupula Road (all-way stop-controlled)
- Masitandane Road/Makupula Road (stop-controlled)
- Masitandane Road/George Blake Street (roundabout)
- R304/Masitandane Road (traffic signals)

The peak hour volumes derived from these counts are indicated in **Figure 1** below.

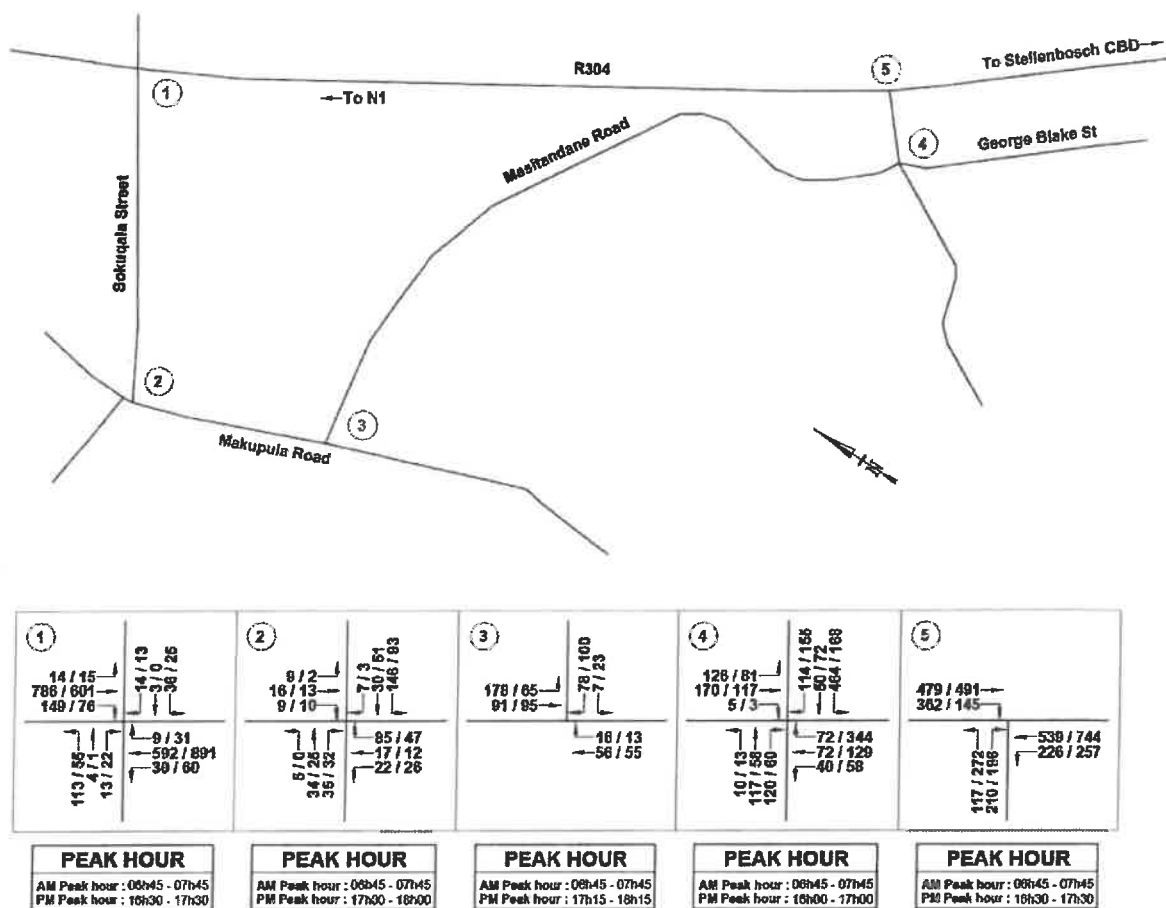


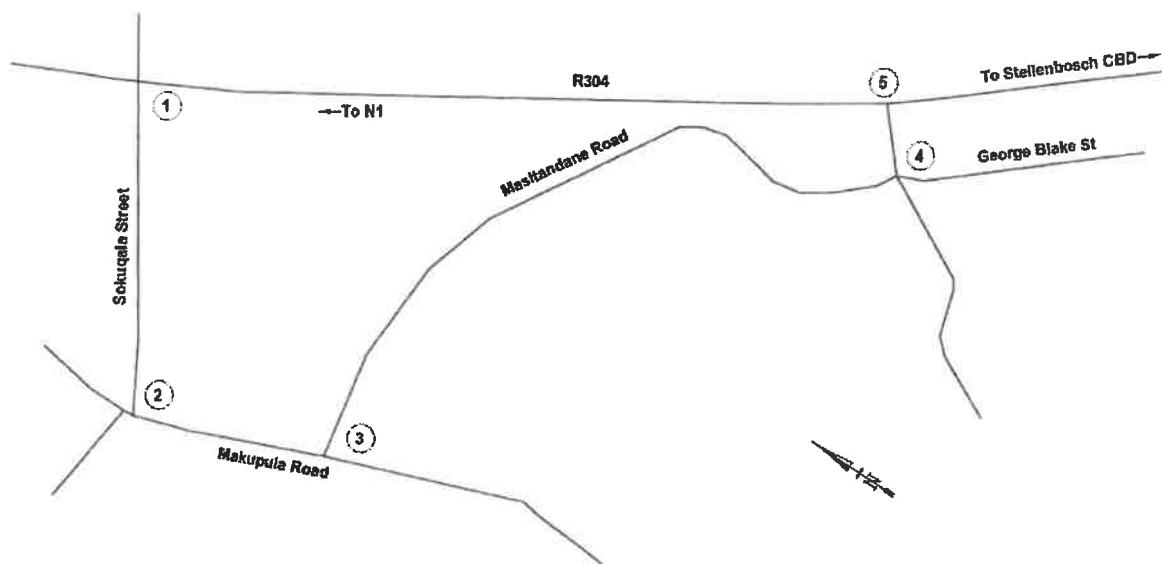
Figure 1 : Existing 2022 AM/PM Peak Hour Traffic Volumes (Thursday, 17 March 2022)

3.2 Traffic Growth

As mentioned above, counts were conducted in 2017 for the previous study, and updated counts more recently. Peak hour traffic along the R304 at its intersection with Masitandane Road during the 2022 peak hours were fewer than the 2017 peak hours. The peak hour traffic along Masitandane Road increased by about 1% per annum from the 2017 to 2022 peak hour volumes.

Information obtained from the *Road Network Information System* (RNIS) of Western Cape Government, suggests annual traffic growth along the R304 of 1,08% per annum in the vicinity of the study intersections. This is based on Annual Average Daily Traffic (AADT) volumes of years 2000, 2006, 2009, 2016 and 2018.

Based on the above, average 1%- and 2% per annum growth rates were applied to the existing 2022 traffic volumes along the streets and along the R304, respectively, for five (5) years to obtain the 2027 estimated background volumes as indicated in **Figure 2** below.



<p>①</p> <p>14 / 15 888 / 684 157 / 80</p> <p>14 / 13 310 36 / 25</p> <p>118 / 68 4 / 1 14 / 23</p> <p>9 / 31 854 / 984 32 / 63</p>	<p>②</p> <p>8 / 2 17 / 14 9 / 11</p> <p>7 / 3 32 / 64 163 / 88</p> <p>8 / 0 38 / 28 37 / 34</p> <p>89 / 49 18 / 13 23 / 27</p>	<p>③</p> <p>187 / 68 68 / 100</p> <p>63 / 105 7 / 24</p> <p>17 / 14 59 / 58</p>	<p>④</p> <p>132 / 85 179 / 123 5 / 3</p> <p>120 / 163 63 / 76 486 / 177</p> <p>11 / 14 123 / 61 128 / 63</p> <p>76 / 382 76 / 136 42 / 61</p>	<p>⑤</p> <p>529 / 542 380 / 152</p> <p>123 / 286 221 / 208</p> <p>595 / 821 238 / 270</p>
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Figure 2 : Estimated 2027 AM/PM Peak Hour Traffic Volumes (including annual traffic growth)

3.3 Traffic Generation

The *South African Trip Generation Rates Manual* (SATGR) suggests 0,5 trips per residential unit for the low income bracket (35/65 in/out split during the AM peak hour and vice versa during the PM peak hour). Based on this, the 1 909 units can be expected to generate 954 peak hour trips (620 in, 334 out during the AM peak hour and vice versa during the PM peak hour). However, as previously mentioned, **these residential units will not be new or additional to the existing, but will replace the existing units/households.** Furthermore, the other land uses proposed on-site can be viewed as accompanying facilities to the residential. Significant external trips are not expected to be generated by the said facilities.

The existing peak hour traffic entering/exiting the total Kayamandi-area, based on the traffic counts recently conducted at the R304/Sokuqala Street- and Masitandane Road/George Blake Street intersections, are 1 151 during the AM peak hour (473 in, 678 out) and 976 during the PM peak hour (566 in, 410 out). The trip generation rate applied above can thus be considered high.

3.4 Traffic Analysis

Traffic analyses of the intersections were done by means of the Sidra Intersection 9.0 software. Service levels A to D are considered acceptable, with D the critical.

3.4.1 Intersections Analysed

The intersections analysed consist of lane layouts as follows:

R304/Sokuqala Street intersection:

This intersection is currently stop-controlled on the side streets, with free-flow conditions along the R304. Dedicated right-turn lanes exist on all approaches, with dedicated left-turn lanes along the R304-approaches as well. The lane layout is indicated below.

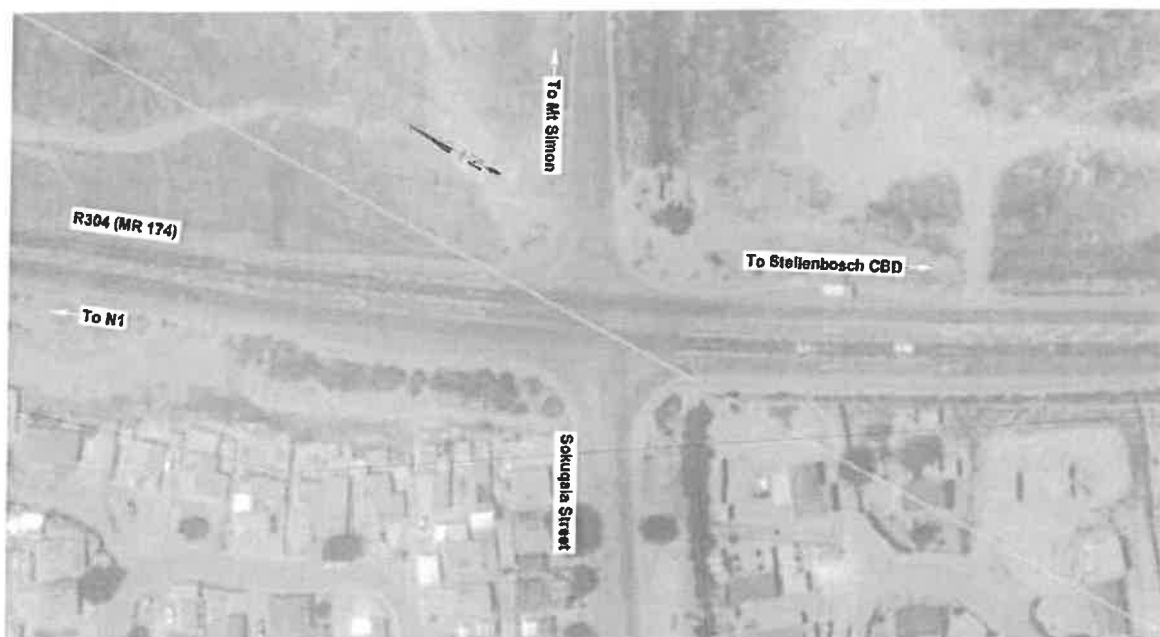


Photo 1 : Existing R304/Sokuqala Street intersection lane layout

Sokuqala Street/Makupula Road intersection:

This intersection is currently an all-way stop-controlled intersection with no dedicated turning lanes. The lane layout is indicated below.



Photo 2 : Existing Sokuqala Street/Makupula Road- and Masitandane Road/Makupula Road intersection lane layouts

Masitandane Road/Makupula Road intersection:

This T-intersection is currently stop-controlled on the Masitandane Road-approach, with free-flow conditions along Makupula Road. The lane layout is indicated in **Photo 2** above.

Masitandane Road/George Blake Street intersection:

This intersection is currently a roundabout with single circulating lane. Two lanes per direction exists along the north eastern Masitandane Road-approach as result of the close proximity to the R304-

intersection. A yield-controlled left slip-lane exists along the said Masitandane Road-approach. The lane layout is indicated below.

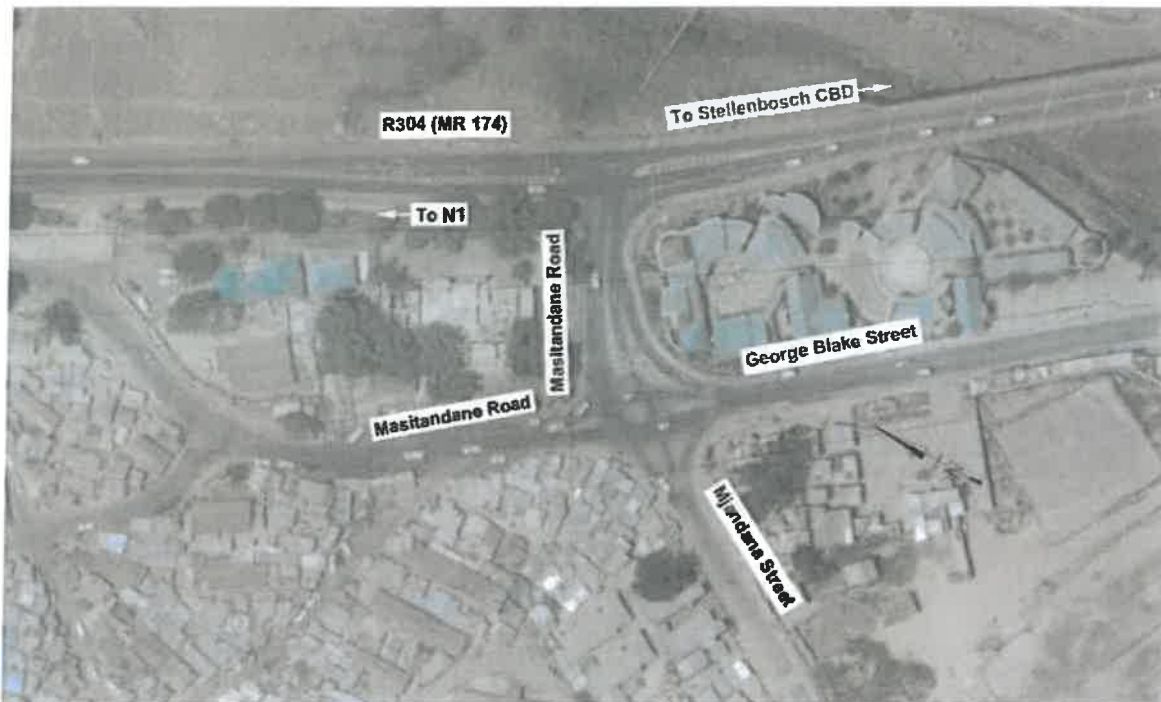


Photo 3 : Existing Masitandane Road/George Blake Street- and R304/Masitandane Road intersection lane layouts

R304/Masitandane Road intersection:

This intersection is currently signalised, with dedicated turning lanes on all approaches. The lane layout is indicated in **Photo 3** above.

3.4.2 Analysis of Weekday AM and PM Peak Hour Volumes

R304/Sokuqala Street intersection:

According to the Sidra analyses, acceptable service levels A, B and C are currently experienced on the movements along R304-approaches, whilst unacceptable service levels F are experienced on the right-turn movements on the side street-approaches (Sokuqala Street and Mt Simon-access). According to the Sidra analyses, average queuing of between 20 and 60 metres are experienced on these movements, with average delays of over 10 minutes.

Based on the Access Management Plan of the R304, this intersection could be signalised if/when warranted. Based on the peak hour volumes and the delays/queuing as per the Sidra-analyses, it is suggested that the signalisation of this intersection be considered by the Roads Authorities. Should the Road Authorities consider it necessary, a 4Q/6Q traffic signal warrant can be undertaken.

With this intersection signalised, acceptable service levels C and above can be expected on all movements along all approaches during the expected 2027 peak hours.

It can thus be concluded that the signalisation of the R304/Sokuqala Street intersection is considered necessary.

Sokuqala Street/Makupula Road intersection:

According to the Sidra analyses, acceptable service levels C and above are experienced on all approaches during the existing AM and PM peak hours. During the 2027 peak hours, these service levels can be expected to remain, with marginal increase in queuing/delays.

It can thus be concluded that no upgrades to the Sokuqala Street/Makupula Road intersection are considered necessary.

Masitandane Road/Makupula Road intersection:

According to the Sidra analyses, acceptable service levels A are experienced on all approaches during the existing AM and PM peak hours. During the 2027 peak hours, these service levels can be expected to remain, with marginal increase in queuing/delays.

It can thus be concluded that no upgrades to the Masitandane Road/Makupula Road intersection are considered necessary.

Masitandane Road/George Blake Street intersection:

According to the Sidra analyses, acceptable services levels B and above are currently experienced on all approaches to this intersection during the existing AM and PM peak hours. During the 2027 peak hours, these service levels can be expected to remain, with marginal increase in queuing/delays.

It can thus be concluded that no upgrades to the Masitandane Road/George Blake Street intersection are considered necessary.

R304/Masitandane Road intersection:

According to the Sidra analyses, acceptable services levels C and above are currently experienced on all movements to this intersection during the existing AM peak hour, whilst service levels D and above are experienced on all movements during the existing PM peak hour. On-site, however, significant queuing is experienced along the R304, especially across the road-over-rail bridge.

During the 2027 peak hours, acceptable service levels D and above can be expected on all movements along all approaches, based on the Sidra analyses.

It can thus be concluded that no upgrades to the R304/Masitandane Road intersection are considered necessary.

4. GEOMETRY

The existing roads within Kayamandi are surfaced, with some gravel roads between the informal structures. According to information, the existing roads are planned to be retained as far as possible. It can be anticipated that the existing condition of the said roads will be improved (e.g. resurfaced). It would be suggested that the existing gravel roads remaining in the study area also be surfaced.

Based on the typical cross-sections as per the urban design, it is anticipated that the two-way streets within the study area will measure 4,5 to 6,0 metres, whilst the one-way streets are indicated with widths of 3,5 to 4,5 metres. These should be sufficient to accommodate the expected traffic within the study area.

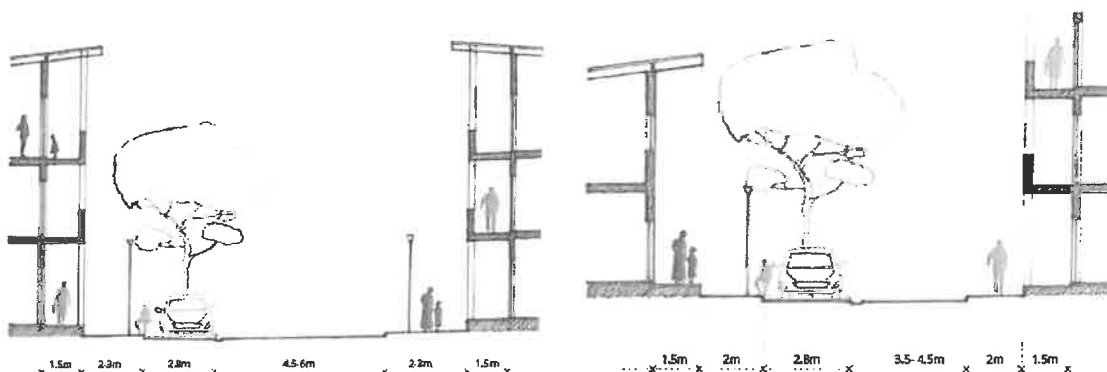


Diagram 3 : Urban Design typical cross-sections (two-way street left; one-way street right)

Detail such as refuse removal and deliveries are not yet available – this should be addressed at Site Development Plan submission stage.

5. PARKING

According to the Kayamandi Town Planning Scheme, the following parking requirements are applicable:

Multi Storey Living Units	1 bay per 50 m ² floor space
Semi-Detached Walk Up Units	1 bay per 50 m ² floor space
Single Dwelling	1 bay per unit
Commercial	1 bay per 30 m ² floor space
Church	1 bay per 20 seats
School	1 bay per classroom
Community Facilities	1 bay per 20 seats / 1 bay per 50 m ² floor space
Regional Services	(depends on specific use)
Crèche	1 bay per classroom

As these rates are considered relatively high, additional information was collected from similar types of developments. The following information was obtained from a document referencing a parking survey conducted by the City of Cape Town in 2011:

Steenvilla, Survey:	0,24 bays per unit
Drommedaris, Survey:	0,28 bays per unit
Joe Slovo, Survey:	0,17 bays per unit
Kew Town, Survey:	0,14 bays per unit

The average of the surveyed rates calculates to $\pm 0,2$ bays per unit.

Furthermore, an informal survey of existing vehicles within the study area in Kayamandi was conducted based on aerial photos (2016). Approximately 160 parked vehicles were counted within the study area. As previously mentioned, approximately 2 000 households currently exist in the study area. This calculates to a rate of 0,08 bays per household. This rate is considerably lower than those surveyed (as listed above), which is assumed to be the result of unreliable information./aerial photo – all vehicles not necessarily on-site at the time of the photo).

Based on all of the above, it is suggested that parking to the redeveloped town centre be provided at a rate lower than suggested in the town planning scheme. To adopt a more conservative approach than the average surveyed rate mentioned above, a rate of 0,25 bays per unit is suggested, as also discussed with Stellenbosch Municipality during the feasibility stage.

As can be seen on the typical cross-sections above, parking is proposed along the streets. Detail on the number of parking bays provided, as well as the layout of the parking, should be addressed at Site Development Plan submission stage.

6. PUBLIC- AND NON-MOTORISED TRANSPORT

As mentioned in the previous report prepared for the feasibility stage of the project, an informal taxi rank currently exists at the R304-Kayamandi Bridge. Since the previous report, the then informal taxi rank on the corner of the R304/Masitandane Street intersection, has since been formalised. The location of these facilities are indicated below.

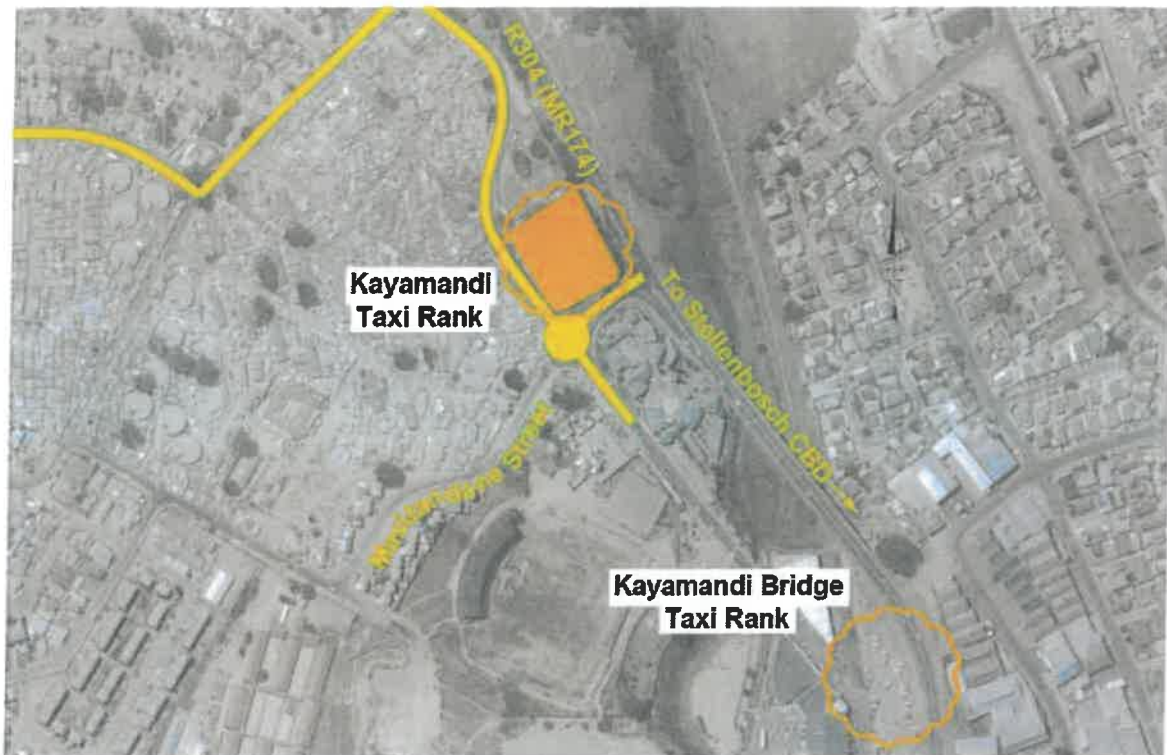


Diagram 4 : Existing taxi ranks in/around Kayamandi – recently formalised Kayamandi Taxi Rank and informal Kayamandi Bridge Taxi Rank

Sidewalks exist along the 'main roads' within Kayamandi. Within the study area, the urban design suggests sidewalks along all streets, with some of the lower order internal streets (where low volumes of vehicular traffic currently exist and larger volumes of pedestrians are present) proposed as 'shared streets'. A typical cross-section is indicated below.

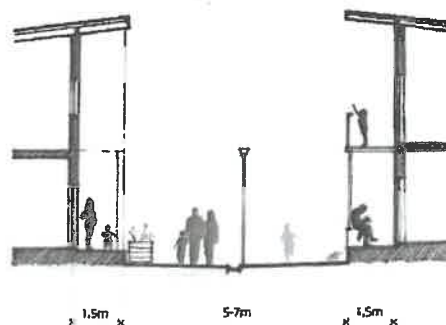


Diagram 5 : Urban Design typical cross-section ('shared street')

As discussed in the previous report, the existing midblock crossing across the R304 does not currently align with the existing desire line between Kayamandi and Cloeteville. Similar to the recommendation of the previous report, it is suggested that the midblock crossing be moved to align with the desire line.

Studies were previously conducted to investigate the possibility of a pedestrian bridge over the R304 (between Kayamandi and Cloeteville). It is not clear whether it is planned to implement the said bridge in the near future, however, proposals/layout plans have been viewed in the past few years.

Alternative to the pedestrian bridge over the R304, the signalisation of the midblock crossing could be considered in the meantime.

7. CONCLUSIONS AND RECOMMENDATIONS

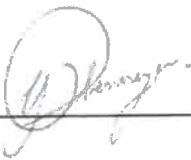
From the above, it can be concluded that the proposed redevelopment of the Kayamandi Town Centre will include the improving/relocation of existing residential units, with the provision of accompanying community facilities. As the number of dwelling units will not be increased, the traffic impact of the proposed redevelopment is anticipated to be insignificant.

To accommodate the background traffic, it is recommended that the R304/Sokuqala Street intersection be signalised, and that the existing midblock crossing across the R304 be relocated to align with the existing pedestrian desire line between Kayamandi and Cloetesville.

Detail such as refuse removal and parking layouts should be addressed at Site Development Plan submission stage, whilst parking provision to the residential units are proposed at a rate of 0,25 bays per unit.

We trust that the Traffic Impact Assessment will be to your satisfaction and will gladly provide any additional information required on request.

Yours faithfully,



Compiled by: Yolandi Obermeyer (B Eng)



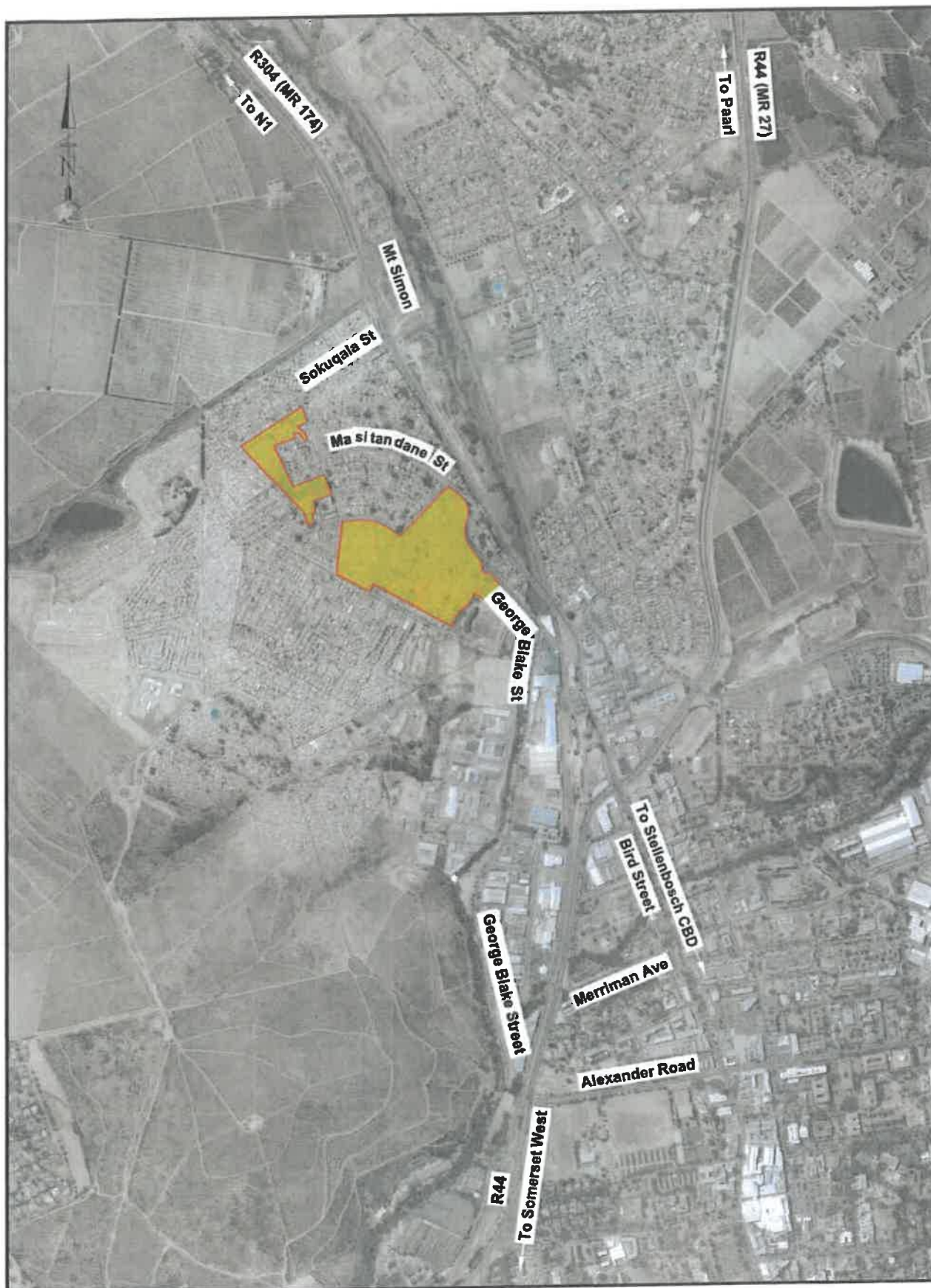
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UDS AFRICA



Attachments:

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Locality Plan