



**Western Cape
Government**

Department of Infrastructure

PPTL Phase 2: Specialists' Assessments and Reports

DOI12/8/1/P2/6

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Appendix F: Electrical Engineering Services Report

Appendix G: Financial Feasibility Report



List of Acronyms

| | |
|-------|--|
| CoCT | City of Cape Town |
| DEADP | Department of Environmental Affairs and Development Planning |
| DOI | Department of Infrastructure |
| EIA | Environmental Impact Assessment |
| GFA | Gross Floor Area |
| GLA | Gross Lettable Area |
| HIA | Heritage Impact Assessment |
| HPOZ | Heritage Protection Overlay Zone |
| MSL | Mean Sea Level |
| NEMA | National Environmental Management Act |
| NMT | Non-Motorised Transport |
| PPTL | Provincial Pavement Testing Laboratory |
| RLV | Residual Land Value |
| TBD | Table Bay District |
| UDF | Foreshore Gateway Urban Design Vision and Framework |
| WCG | Western Cape Government |

1. INTRODUCTION AND BACKGROUND

1.1 Introduction

There are four phases to the PPTL project. The first phase, referred to as Phase 0 is the Inception Phase of the project. The second phase, Phase 1 is described as the Site Development Plan Compilation Phase which comprises two sub-phases: a) A Contextual Analysis Report completed and finalised in June 2023; and b) Development Plan and Development Guidelines Report completed in September 2023.

The third phase, Phase 2 is the Specialist Assessments and Report Phase. This Phase has three sets of deliverables: the first, this report which presents all specialists' reports except for the Heritage Impact Assessment (HIA) and specialists' studies associated therewith, the second deliverable is the HIA process, specialists' studies and reports; and the final deliverable is the record of stakeholder participation, record of pre-planning consultation and stakeholder engagement report for submission to the Western Cape Government (WCG): Steering Committee. It is emphasised that the HIA process deliverable is a separate deliverable and does not form part of this report.

The last phase, Phase 3, is described as the Statutory Process and Final Development Plan when all relevant land use applications will be prepared and submitted for the City of Cape Town's (CoCT) consideration and decision. Refer to Figure 1.1, below.

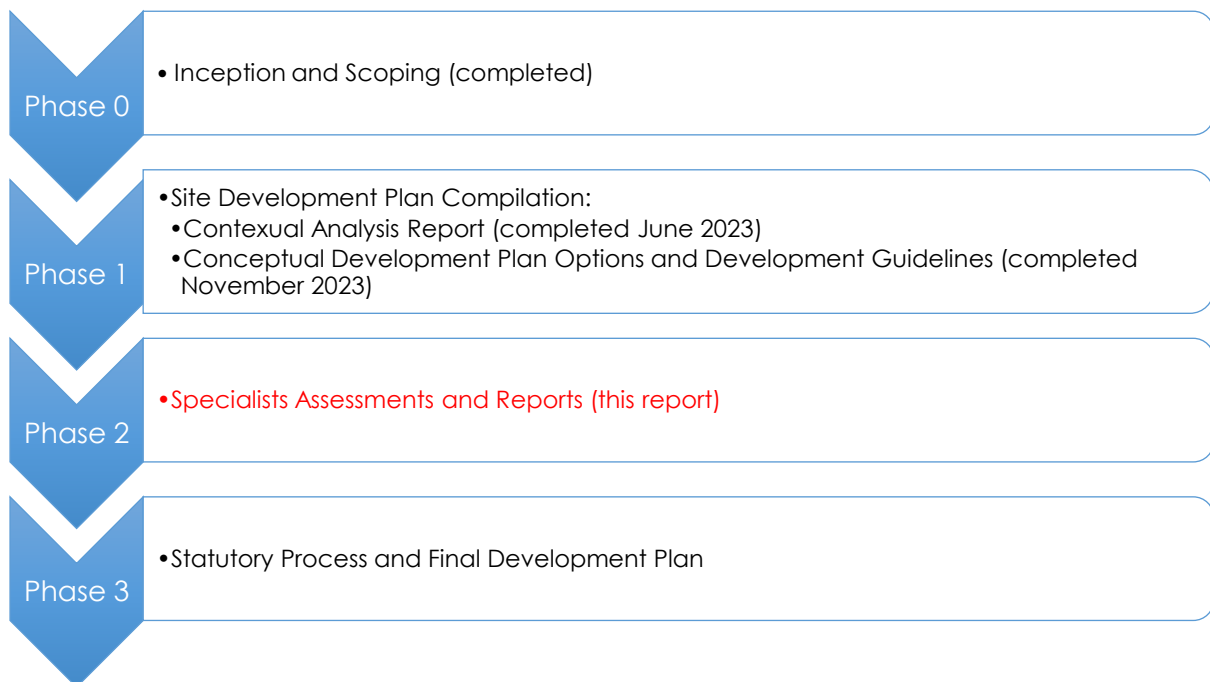


Figure 1.1: PPTL Project Phases

The purpose of this overarching report is to present the first set of deliverables, that is, the specialists' assessments reports that are provided in the following appendices:

- Appendix A – Environmental Impact Assessment Report (Checklist)
- Appendix B – Architectural Guidelines Report
- Appendix C – Landscape Plan and Guidelines Report
- Appendix D – Traffic Engineering Report
- Appendix E – Civil Engineering Infrastructure Report
- Appendix F – Electrical Engineering Services Report
- Appendix G – Financial Feasibility Report

Summaries of key proposals and recommendations in respect of these reports are provided for the Conceptual Development Plan Proposals, in Chapter 2.

On 10 November 2023, the WCG: Steering Committee (SteerCom) approved the PPTL Conceptual Development Plan Preferred Option 3: as an outcome of a conceptual development plan options report that was completed in September 2023 for the enablement of the proposed consolidated Erven 734-RE and 738-RE, Cape Town and a Portion of Buitengracht Street, Riebeek Street and Somerset Road, Road Reserve namely Erven 735, 737 739, 9564 and 9565, Cape Town. Refer to Figure 1.2.

The SteerCom resolved as follows.

- To support "Option 3 as the preferred concept development option. However, it is noted that Option 3 had 3 iterations and at the right time only one of these will be approved taking into account detailed feasibility studies during the project packaging phase."
- That "the project team may proceed to Phase 2: Specialists assessment and reports."

In terms of the resolutions above, the project team was instructed to prepare their specialists reports on the basis of Preferred Option 3 (39% social / affordable and 61% open market split) with a business-related component and does not take into account the other two iterations mentioned in the resolution above, which were theoretical iterations developed purely for financial modelling purposes.



Figure 1.2: Locality of subject sites

1.2 Background

This section provides the necessary background to the Conceptual Development Proposals noting that it is important to point out the following three instructions to the appointed consultant team.

The first instruction is the appointed Team's brief within its terms of reference namely: To develop at least 3 residentially led conceptual development options which respond to a set of programmatic informants in response to the WCG's project objectives of not only achieving a feasible development proposal to 'leverage significant land value', but also to address the government's commitment to provide more affordable and / or social housing

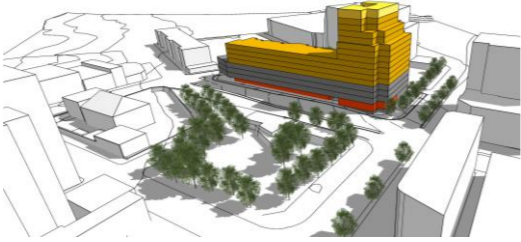



(ideally 50% social / affordable - 50% open-market split) in well located areas such as the Cape Town CBD.

The second instruction to the WCG appointed professional team is that the development options should include an option reflecting the City's concept for the subject sites contained in the Foreshore Gateway Urban Design Vision and Framework Report (2021). The third instruction includes the requirements identified in the terms of reference from the WCG: DOI that specifically refers to the 'Preferred development option / plan (layout, bulk, values, densities) based on informants and constraints as an outcome of testing feasible development options for the subject sites (WCG: Bid Document No. L108/22, Page 58).

Four conceptual development plan Options namely, Options 1A, 1B, 2 and 3, were developed, for the proposed consolidated properties. In summary the programme and envelope of the conceptual development options were informed by the following. Refer to Table 1.1 below for the characteristics of each option developed during Phase 1 of the project.

- All options were informed by the Demacon Market Assessment Report (2023) which is appended to the September (2023) report in Appendix 2.
- All options should provide some on-site parking to support back of house activities at the very least, notwithstanding the fact that the site is located in a PT2 zone within which no parking is required.
- All options should retain the graded (Grade IIIA) PPTL building although the high bulk options look to adding additional storeys.
- All options are informed by the need to keep open market related residential and affordable / social housing separate (separate buildings / separate sites within the envelope) due to subsidy and management requirements and constraints.
- All options provide for medium bulk form along Somerset Road edge and higher bulk along Buitengracht Street edge.

Table 1.1: PPTL Proposed Conceptual Development Plan Options (November 2023)

| | Option 1A: High Bulk with structured parking above ground | Option 1B: High Bulk with full basement | Option 2: Medium Bulk with full basement | Options 3: Medium Bulk with limited basement |
|--|---|--|---|---|
| |  |  |  |  |
| Total max building height and storeys | <ul style="list-style-type: none"> • Max Height: (54m) • 16 storeys on Buitengracht Street including roof service level but excluding part basement • 4-8 storeys along Somerset Road / Chiappini Street | <ul style="list-style-type: none"> • Max Height: (54m) • 16 storeys on Buitengracht Street including roof service level but excluding basement • 4-8 storeys along Somerset Road/Chiappini Street | <ul style="list-style-type: none"> • Max Height: (40m) • 12 storeys on Buitengracht Street including roof service level but excluding basement • 4-7 storeys along Somerset Road / Chiappini Street | <ul style="list-style-type: none"> • Max Height: (40m) • 12 storeys on Buitengracht Street including roof service level but excluding basement • 4-7 storeys along Somerset Road / Chiappini Street |
| Use of existing Soils Lab Building | <ul style="list-style-type: none"> • Use ground floor for retail • Use existing basement for co-working office environment • Add additional storey to existing building for business use including co-working office environment • Add new 2 storey pavilion for restaurant, cafes etc. | <ul style="list-style-type: none"> • Use ground floor for retail • Use existing basement for co-working environment • Add additional storey to existing building for business use including co-working office environment • Add new 2 storey pavilion for restaurant, cafes etc. | <ul style="list-style-type: none"> • Use the ground floor for retail • Use existing basement for co-working environment / NGO-type offices • Add additional storey to the existing building for business use including co-working office environment • Add new pavilion for community / non-residential purposes | <ul style="list-style-type: none"> • Use ground floor for retail • Use existing basement for co-working environment / offices |
| Total Gross Floor Area (new & existing incl. basements, parking and service levels) | <ul style="list-style-type: none"> • ±31 762 m² GFA | <ul style="list-style-type: none"> • ±33 583 m² GFA | <ul style="list-style-type: none"> • ±29 759 m² GFA | <ul style="list-style-type: none"> • ±23 373² GFA |
| Gross Floor Area: Parking and vehicular circulation | Parking / vehicular circulation GFA: 11 212 m², comprising: <ul style="list-style-type: none"> • Part basement (services / circulation): 403 m² • Ground floor vehicular circulation: 636 m² • Upper-level parking/vehicular circulation: 10173m² | <ul style="list-style-type: none"> • Basement Parking / vehicular circulation/ services GFA: 3 391 m² | <ul style="list-style-type: none"> • Basement Parking / vehicular circulation/ services GFA: 3 520 m² | <ul style="list-style-type: none"> • Basement with services and limited parking GFA: 982 m² |
| Total Residential units Gross Density: | Total units: 230 344 du/ ha | Total units: 352 526 du/ha | Total units: 292 436 du/ha | Total units: 310 463 du/ha |
| Affordable / Social vs Open Market Housing Split | <ul style="list-style-type: none"> • Affordable / Social: 33% • Market: 67% | <ul style="list-style-type: none"> • Affordable / Social: 43% • Market: 57% | <ul style="list-style-type: none"> • Affordable / Social: 45% • Market: 55% | Affordable: 39% Market: 61% |
| Parking provision: | <ul style="list-style-type: none"> • Parking in 3 x levels above ground level • Total of 270 bays on site • Loading bays: 1-2 on-street | <ul style="list-style-type: none"> • Parking in 1 x basement level • Total of 87 bays on site • Loading bays: 1-2 on-street | <ul style="list-style-type: none"> • Parking 1 x basement level • Total of 89 bays on site • Loading bays: 1-2 on-street | <ul style="list-style-type: none"> • Limited parking in mini basement • Total of 15 bays on site • Loading bays: 1-2 on-street |

Conceptual Development Options 1A and 1B emanate from the City's 2021 report and respond directly to the second instruction to the appointed Team. They are variations of the high bulk theme but have different approaches to accommodating parking on site. When Option 1A was modelled in respect of financial returns by Talani Quantity Surveyors, it became apparent that the upper floor levels of parking affect feasibility, negatively. Option 1B was therefore tested which is similar to Option 1A but the parking is provided in a single basement. Conceptual Development Option 2 was based on the site opportunities, constraints, principles, informants and indicators that are contained in the PPTL Contextual Analysis Report (June 2023).

However, Option 2 was also developed with a single basement parking to support the business-related uses. Again, the financial modelling exercise showed that basements affect feasibility negatively as the rental income derived from parking bays (whether upper floor levels or basement), did not provide a viable return on the high capital investment required to construct parking, especially given that the subject sites (as a consolidated unit) are highly constrained.

Against the above background, Option 3 was born out of Option 2 but excluded a full basement which resulted in improved financial feasibility and better efficiency in the layouts of levels above ground as well, to achieve higher residential unit yields; as well as improved responses to the urban context that the subject sites fall within. All options were taken through a high-level assessment exercise including a range of assessment criteria through which Option 3 came out as the Preferred Option. The Options were also engaged with key stakeholders for their preliminary inputs. Accordingly, as stated above, **Option 3 was supported by the WCG's Steering Committee on 10 November 2023** after considering all conceptual development options and relevant comments received from key stakeholders engaged between October and early November 2023. The preferred Option 3 is henceforth referred to as the Conceptual Development Proposal (refer to Chapter 2).

1.3 The Conceptual Development Proposal

The Conceptual Development Proposal presented in Chapter 2 is a refined version of the preferred Option 3 described above. To arrive at the refined Conceptual Development Proposal, the following revisions were made to the plans depicted in Chapter 2.

- The ground floor external layout has been updated to align with the landscape framework. Sidewalks and parking / loading bays near the site are indicated.
- The ground floor layout has been updated to show indicative floor area allocation for residential support areas (lobbies to upper floor residential areas) and business-related uses.
- The locations of 2 on-street loading bays have been indicated, as well as 2 e-hailing / ride-sharing bays.
- The tower (Building B) roof level has been updated according to the vertical circulation shafts.
- The tower's basement level has been revised to incorporate more parking bays (now 15 instead of 8 bays previously). The parking bays are likely to be allocated for the following purposes:
 - High level management staff for office, retail and residential blocks
 - Operational bays
 - Accessible bays
 - Emergency bays (for sedan vehicles)
- The locations of the refuse area and substation have been revised. A main Distribution Board room is indicated.

Accordingly, the floor areas for the new building have been revised slightly, but on balance have remained close to what was previously proposed for Option 3. The total floor area including the Soils Lab building is 23 373m² as opposed to 23 377m², previously.

1.4 Structure of the report

The report is divided into 3 chapters. This Chapter 1 provides the introduction and background to the four Conceptual Development options explored for the subject properties, the outcome of which favoured preferred Option 3 which was approved by Steering Committee on 10 November 2023. Chapter 2 provides summaries of the Specialists' assessments based on the Conceptual Development Layout Plan Proposals depicted in Section 2.2, Figures 2.1 to 2.5. Chapter 3 concludes the report with recommendations.

2. SUMMARY OF SPECIALISTS' REPORTS

This chapter presents summaries of the following specialists' reports:

- Environmental Impact Assessment Report (Checklist)
- Architectural Guidelines Report
- Landscape Plan and Guidelines Report
- Traffic Engineering Report
- Civil Engineering Infrastructure Report
- Electrical Engineering Services Report
- Financial Feasibility Report

2.1 Environmental Impact Assessment Report (Checklist)

An Environmental Applicability Checklist was prepared and submitted to WCG: Department of Environmental Affairs and Development Planning (DEADP) by Infinity Environmental on 29 November 2023 (see Appendix A). The purpose of the checklist is to obtain comment and confirmation from DEADP as to whether the National Environmental Management Act (NEMA) (No. 17 of 1998), Environmental Impact Assessment (EIA) Regulations (2014, as amended) are applicable to the proposed development bearing in mind that the subject sites have no significant environmental features. Acknowledgement of receipt of the checklist is included in Appendix A.

2.2 Architectural Guidelines Report

The Conceptual Development Proposal has been informed by the outcomes of several investigations by various disciplines including, urban design, landscape architecture, heritage, civil engineering, transportation engineering, town planning and a financial modelling exercise. The summary below is based on the Architectural Guidelines Report prepared by NM & Associates Planners and Designers, contained in Appendix B of this report.

2.2.1 Nature of the Concept Proposal

The architectural guidelines are informed by findings and outcomes of the PPTL Contextual Analysis Report (June 2023) and build on the guidelines contained in the PPTL Conceptual

Development Options & Guidelines Report (September 2023) which have been refined to support the Conceptual Development Proposal. Key components are summarised below.

Height and building articulation

Heights of the new buildings are informed by the spatial role of the site as a gateway and frame to Prestwich Memorial / St Andrews Square, the heights of adjacent buildings and the character of the surrounding areas; and as such range between 4 and 12 storeys maximum depending on the location of the respective building component on the site. The proposal supports higher bulk along Buitengracht Street edge than Somerset Road and Chiappini Street which face Prestwich Memorial / St Andrews Square and the Salesian Institute, respectively.

The new building requires fragmentation to, firstly, allow for pedestrian permeability at ground level and secondly, facilitate the new building being managed as two separate components by different entities in the future. In this respect, the social / affordable housing component is located along Somerset Road and the open market component along Buitengracht Street.

Edge making

The new buildings are proposed to be set back along Buitengracht Street, Chiappini Street and Somerset Road edges to allow for a more generous pedestrian environment.

The new buildings combined with the Soils Lab building create a defined perimeter to the urban block which in turn creates an inner core that is more protected and more private. Furthermore, the new blocks allow the framing of Prestwich Memorial / St Andrews Square open space.

Landscaping

The edges of the site and the interior of the block are proposed to be greened to provide relief and interest for those on foot traversing the area and inner-city residents including those to be accommodated on the site in future. Existing trees have been retained where possible. For further detail refer to Appendix C: Landscape Plan and Guidelines Report.

Aspects retained and aspects discarded

The Conceptual Development Proposal responded to the fact that certain physical remnants of the past such as the Soils Lab building, a remnant of the original Duch Reformed Church graveyard wall and certain trees, need to be retained and acknowledged in the layout. Aspects to be discarded are the prefabricated buildings on site, trees considered to

be of low or medium significance, where these limit the development footprint and the boundary wall with the exception of the old section along Chiappini Street and gateposts on Prestwich Street, which are to be retained.

Deliberate positioning of the building blocks

The Conceptual Development Proposal retains the historic Soils Lab building and proposes a new building on the remainder of the developable area. As a result of the challenging shape of the remaining developable area and the need to set new buildings back from the Soils Lab, the new building is arranged in an L-shape around the perimeter of the site.

Access and parking

The Conceptual Development Proposal allows the ground plane to be traversable by those on foot. Access off the road network for vehicles is limited to Prestwich Street and parking limited to a mini basement to protect the ground plane and public street interfaces for use by pedestrians.

2.2.2 Description of Conceptual Development Proposal

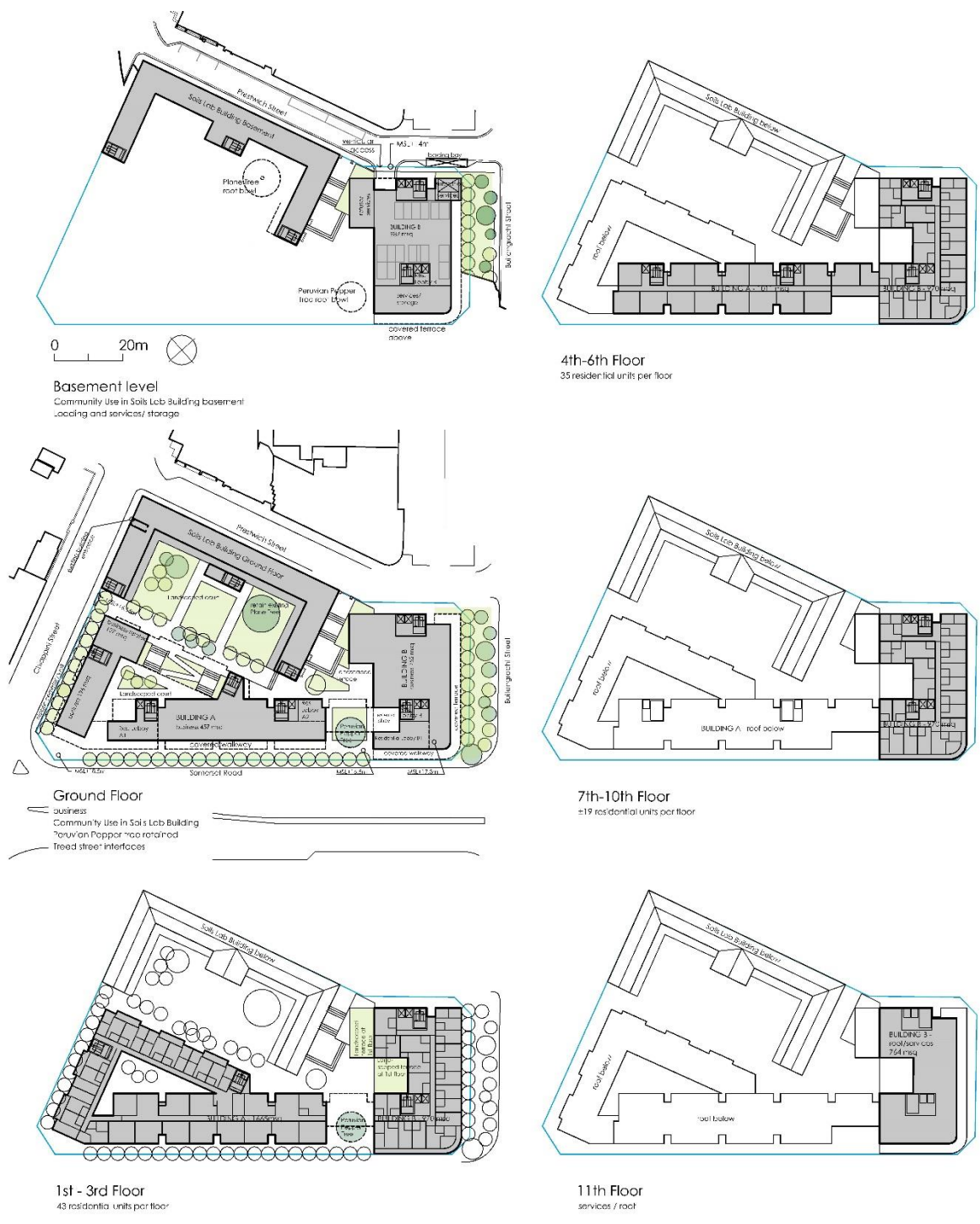
The Conceptual Development Proposal retains the historic Soils Lab Building as a single storey building (and including a small basement) around a soft landscaped courtyard and proposes a new building of approximately 4 to 12 storeys high (excluding the mini basement level) on the remainder of the developable area. The new building is arranged in an L-shape around the perimeter of the site forming a system of interlinking spaces internally for use by those on foot.

The proposed new building envelope comprises an approximately 40m high, 12-storey tower (including the roof services level, excluding the mini basement level) along Buitengracht Street, stepping down to 7-storeys along Somerset Road and then stepping down again to 4 storeys at the corner of Somerset Road and Chiappini Street.

The Conceptual Development Proposal will provide a mix of land uses, with a ground floor of business-related uses and floors above ground being set aside for residential units.

The new building has a mini basement located under the tower on Buitengracht Street. Two loading bays are provided on Prestwich and Chiappini Street to support the retail components of the proposal and facilitate access by refuse collection trucks.

As noted in Chapter 1, the existing and proposed new buildings have a combined Gross Floor Area (GFA) of $\pm 23\,373\text{ m}^2$. The proposed layout plans and building envelope are shown in Figures 2.1 to 2.5.



Option 3 Medium Bulk: Schematic floor plans
08 November 2023

Floor areas of new building:
 Basement service area - 982 msq
 Ground floor business - 2 028 msq
 Residential floor area: - 17 728 msq
 Roof services area B - 764 msq
Total new floor area: 21 502 msq

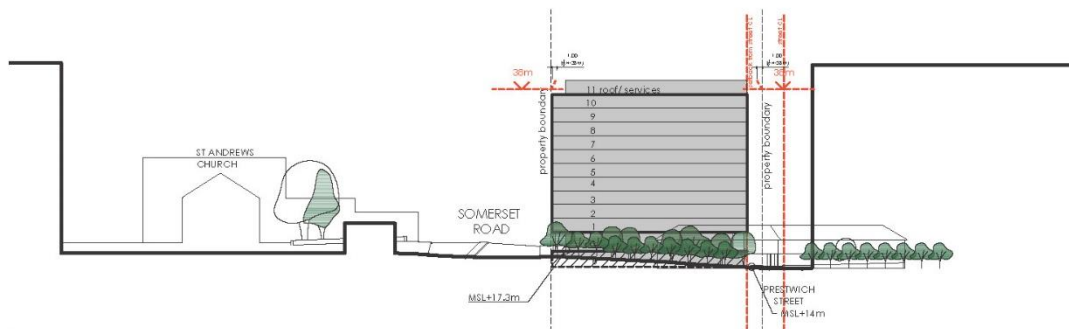
Floor areas of existing building:
 Soils Lab Basement - 842 msq
 Soils Lab Ground Floor - 1029 msq
Total floor area - Soils Lab: 1871 msq

TOTAL FLOOR AREA: 23 373 MSQ

Residential units: 310 no's

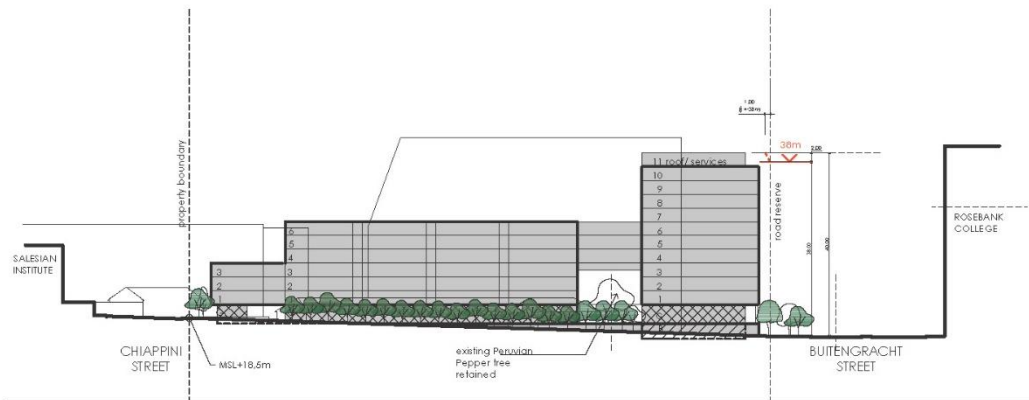
Parking bays - Only loading and service-related parking provided

Figure 2.1: Conceptual Development Proposal Schematic Floor Plans



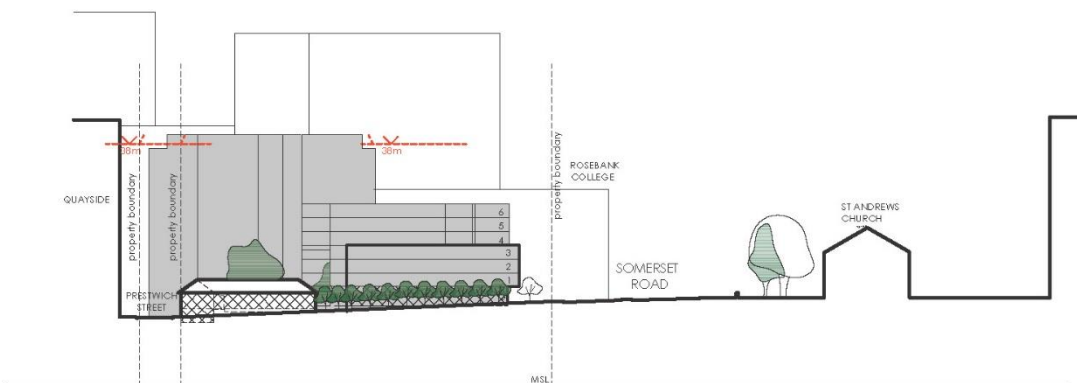
Buitengracht Street Elevation

0 20m



Somerset Road Elevation

0 20m



Chiappini Street Elevation

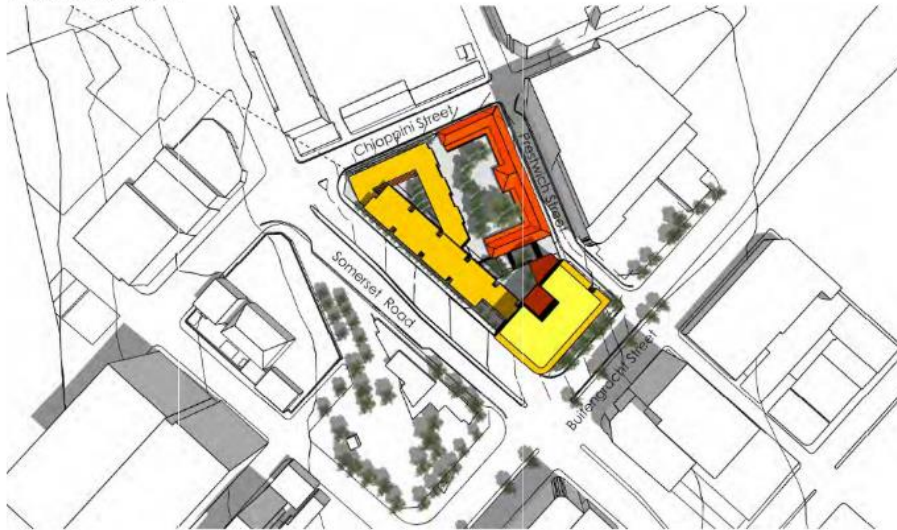
0 20m

Schematic Building envelope
Option 3 Medium Bulk
08 November 2023

Figure 2.2: Conceptual Development Proposal Schematic Building Envelope

OPTION 3 3-DIMENSIONAL IMAGES

View 1. Plan View



View 2. View at Buitengracht Street and Somerset Road intersection



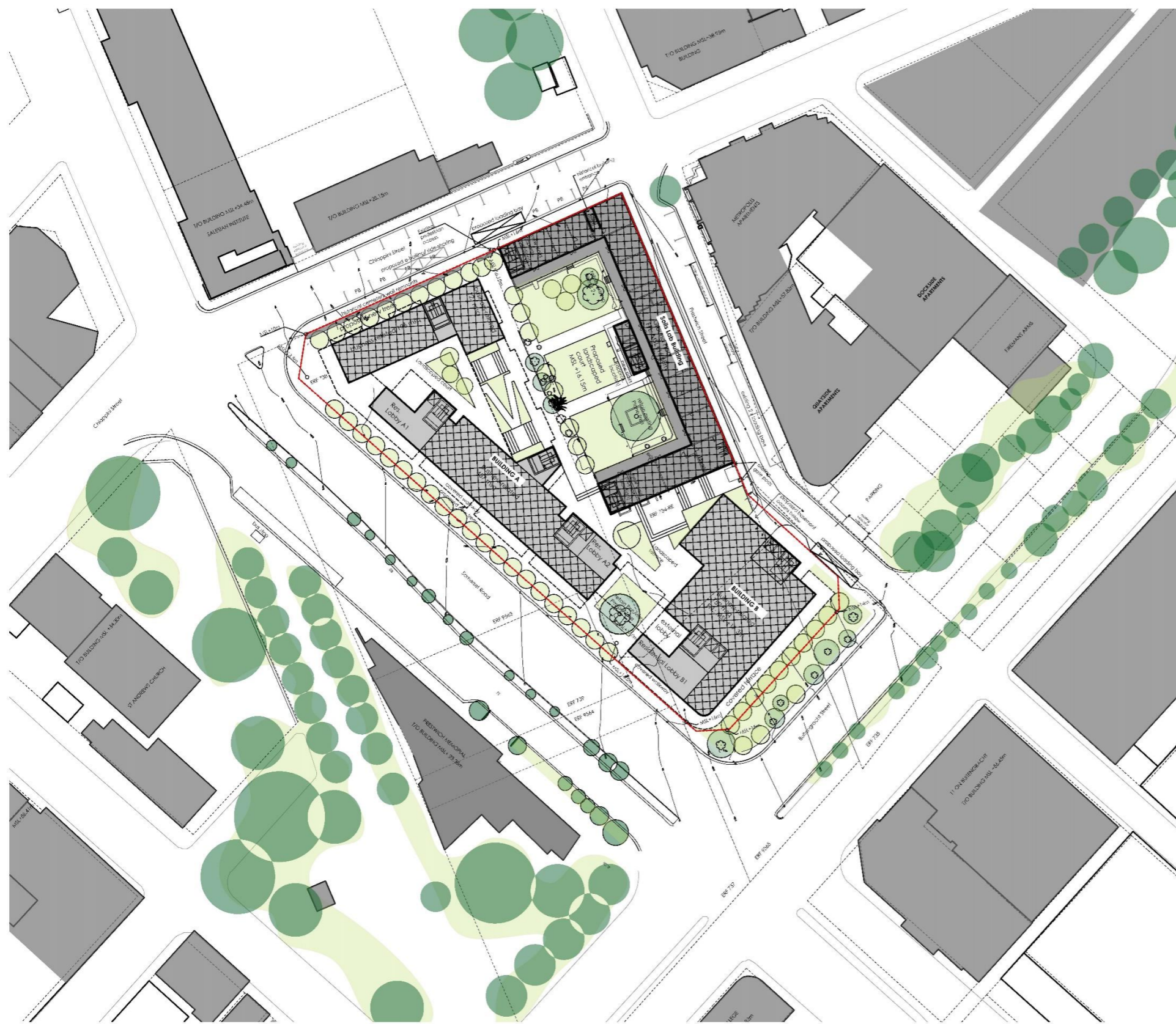
View 3. View at Somerset Road and Chiappini Street intersection



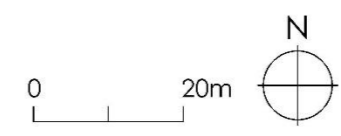
View 4. View at Chiappini Street and Prestwich Street intersection



Figure 2.3: Conceptual Development Proposal 3-dimensional Images



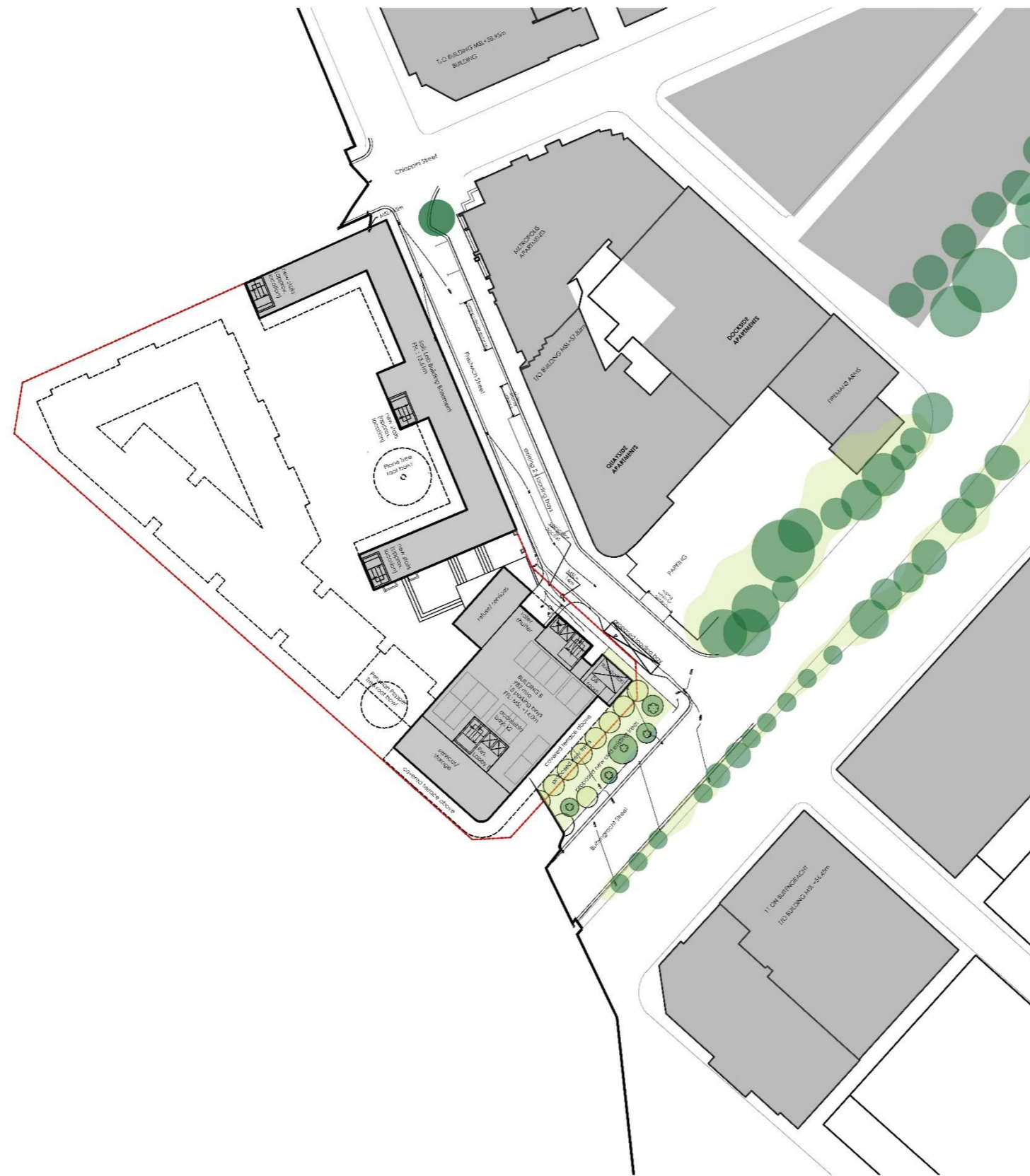
KEY:
Developable area



Option 3 Medium Bulk:
 Site Plan / Ground Floor Plan
 08 November 2023

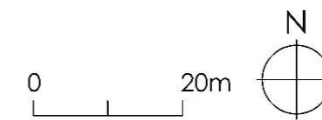
1:1250 @ A3

Figure 2.4: Conceptual Development Proposal Ground Floor Plan



KEY:

 Developable area



Option 3 Medium Bulk:
Basement level
08 November 2023

1:1250 @ A3

Figure 2.5: Conceptual Development Proposal Basement Floor Plan

2.2.3 Proposed Land Uses

The Conceptual Development Proposal is a residentially led development comprising a mix of uses as follows:

Residential:

The new building will provide approximately 310 residential units. Residential accommodation will be located above ground floor level across the new development blocks. The unit mix comprises 39% affordable / social units, located in the Somerset Road / Chiappini Street block, and 61% open-market units, located in the Buitengracht Street tower. The affordable / social residential units are predominantly 2-bedroom units ($\pm 45\text{m}^2$ - $\pm 60\text{m}^2$), while the open-market units are predominantly studios ($\pm 30\text{m}^2$ - $\pm 32\text{m}^2$ in size) with a small number of 1-bedroomed units ($\pm 32\text{m}^2$ - $\pm 35\text{m}^2$). A summary of the unit mix can be found in Table 2.1 below.

Table 2.1: Residential unit mix of the Conceptual Development Proposal

| Unit type | Affordable residential units in the Somerset Road / Chiappini Street Block | Open market units in the Buitengracht Street tower |
|-----------------|--|--|
| Studios | 6 | 120 |
| 1-bedroom units | 0 | 20 |
| 2-bedroom units | 114 | 50 |
| Subtotal | 120 (39%) | 190 (61%) |
| Total | 310 units | |

Business-related uses:

The business-related uses occupy the ground floor of the new buildings, the ground floor as well as the existing basement of the of the Soils Lab building. This allows for the potential of a mix of retail and office activities, the latter in the form of a co-working environment and community-type retail / office for the Soils Lab, to activate the street frontage and internal courtyards.

Retail type activities will include restaurants, cafes, takeaways, small service-related convenience shops such as hairdressers, cell phone repairs etc. It is proposed that the ground floor of the Buitengracht Street tower accommodates a small convenience retail anchor tenant to service the local area and residents on site.

The Soils Lab building at ground floor level is proposed to be repurposed for community-orientated retail. The basement of the Soils Lab has been identified for use as co-working environment / offices.

The gross floor area measures approximately 3432m² in extent. Refer to Table 2.2, below.

The mini basement can accommodate 15 parking bays to support the following:

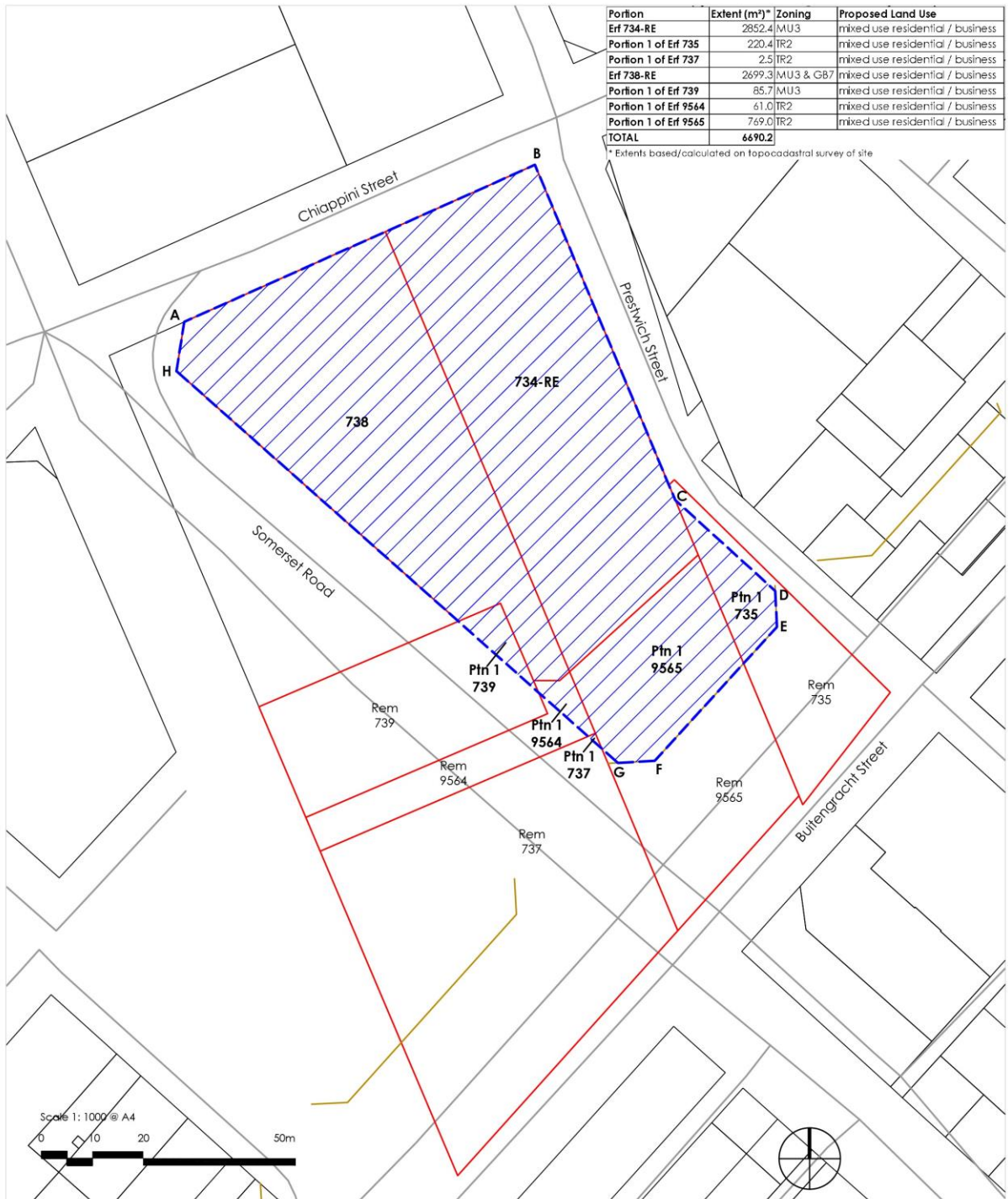
- High level management staff for office, retail and residential blocks
- Operational bays
- Accessible bays for the physically disabled
- Emergency bays (for sedan vehicles)

Table 2.2: Conceptual Development Proposal business-related uses

| SUMMARY TABLE BUSINESS-RELATED USES (SPLIT BETWEEN RETAIL AND OFFICE TYPE ACTIVITIES) | | | | | | |
|--|---|--|--------------------------------|--------------------------------|--------------------------------------|----------------|
| | | Location | GFA (m²) | GLA (m²) | Total GLA (m²) | % split |
| 1 | Retail (convenience supermarket) | Building B (tower) ground floor | 752 | 601,6 | 2072 | 75,47% |
| 2 | Other' retail (incl restaurants, cafes, takeaways, small service-related convenience shops such as hairdressers, cell phone repairs etc) | Building A ground floor (Somerset Rd & Chiappini Street) | 809 | 647,2 | | |
| 3 | Other' retail (incl restaurants, cafes, takeaways, small service-related convenience shops such as hairdressers, cell phone repairs etc) in Soils Lab | Soils Lab ground floor | 1029 | 823,2 | | |
| 4 | Co-working environment / offices in Soils Lab | Soils Lab basement | 842 | 673,6 | | |
| | | | 3432 | 2745,6 | 2745,6 | |

2.2.4 Draft Consolidation Diagram

The subject sites measure approximately 6690.2m² in extent, in respect of gross area available for development intervention. Refer to Figure 2.6 below.



Key

- PPTL Site Erven
- Road Reserve
- PPTL Proposed Consolidation
- Erven
- Road Centreline

Notes:

PPTL Proposed Consolidation Figure A, B, C, D, E, F, G & H comprised of Erven 734-RE & 738-RE, and Portion 1 of Erven 735, 737, 739, 9564 and 9565 (Cape Town)

PPTL

ERVEN 734-RE, 738-RE AND A PORTION OF BUITENGRACHT AND RIEBEEK STREETS AND SOMERSET ROAD ROAD RESERVES, SITE ENABLEMENT

FIGURE
PPTL PROPOSED CONSOLIDATION
(PPTL-20231127-01)



Figure 2.6: Proposed Consolidation Diagram (Source: NM & Associates, 2023)

2.3 Landscape Plan and Guidelines Report

The Landscape Plan and Guidelines report prepared by OVP and attached to this report as Appendix C, describes the site from a landscape perspective to set the scene for the proposed landscape intervention. This is followed by a description of the Plan, its various components and the design intentions. It describes the plan as a series of outdoor rooms and circulation spaces. It also describes proposed interventions along the edge of the site that contribute to improved integration of the site into its context and improvement of the public realm from an urban performance point of view.

A set of principles and guidelines were also provided to inform future phases of work on the landscape component of the development. The guidelines focus on the following aspects to guide future detailed design, material specification and implementation:

- Pedestrian access and circulation;
- Managing surface levels and grading to facilitate inclusive access;
- Managing surface levels to facilitate preservation of existing established trees;
- Stormwater and drainage;
- Hard landscaping;
- Memorialisation and sculpture;
- Soft landscaping;
- Irrigation; and
- Micro-climate management.

Figure 2.7 depicts the Landscape Framework Plan.



Figure 2.7: Landscape Framework Plan (Source: OVP, 2023)

2.4 Traffic Engineering Report

The Traffic Engineering Report, prepared by ITS (2023), is presented in Appendix D. This report conducts an investigation of the transport-related impacts expected as part of the Provincial Pavement Test Lab (PPTL) Conceptual Development Proposal. The following summary provides the conclusion and key recommendations of this report.

Existing Traffic – Although all study intersections currently operate acceptably, the westbound right-turn queues along Buitengracht Street at the Somerset Road intersection currently exceed the available storage capacity, especially during the a.m. peak periods. Hence, the following upgrades are recommended as part of the existing traffic conditions:

Buitengracht Street/Somerset Road intersection

- Westbound - Convert the through lane to a shared through and right-turn lane (road markings only since there are two receiving lanes).
- Westbound - Extend the right-turn storage lane from 70m to 120m.
- Southbound - Convert the through lane to a shared through and right-turn lane (road markings only since there are two receiving lanes).
- North- and southbound - Provide protected/permitted right-turn phases.

Background Traffic – No upgrades are recommended as part of this traffic scenario.

Access - Vehicular access is proposed from Prestwich Street only, about 25m north of Buitengracht Street. This access complies with minimum access spacing requirements, as outlined in the Road Access Guidelines.

Development Trips – The proposed development is expected to generate 93 and 179 trips during the weekday a.m. and p.m. peak hour respectively, based on COTO (TMH17). However, based on the HHO methodology, this development is expected to generate 48 pedestrians, 2 busses, 2 taxis and 69 private vehicle trips during the peak hours.

Total Traffic – The following upgrades are recommended as part of this traffic scenario:

Somerset Road/Chiappini Street intersection:

- Northbound - Remove the right-turn lane to provide a wider median island.
- Northbound - Convert the through lane to a shared through and right-turn lane.
- Southern quadrants - Adjust bell-mouth radii of both Chiappini Street corners.
- Westbound - Remove the slip lane's receiving lane and change to a yield control.

- Southeastern corner - Widen the island to allow for pedestrian storage before and after crossing the slip lane.

Public Transport - No additional public transport services or facilities are proposed as part of this development since the existing public transport services are expected to be adequate.

NMT - It is recommended to improve the safety of pedestrians crossing Somerset Road at the Somerset Road/Chiappini Street intersection. These upgrades include reduced pedestrian crossing distances and increased pedestrian refuge areas (on median islands). Refer to Figure D1 in Appendix D of the Traffic Engineering Report for a conceptual drawing of these proposed upgrades.

Parking - The development is located within a PT2 zone. According to the City of Cape Town's Municipal Planning By-Law, no parking is required for developments within this zone. However, 15 on-site parking bays will be provided.

Due to the public transport orientation of this development, it is proposed to change two of the existing on-street parking bays along Chiappini Street to E-hailing or ride-sharing drop-off and pick-up points.

One loading bay is planned along Prestwich Street and another is planned along Chiappini Street. These loading bays will mainly service the retail facility, but they could also be used by other trucks such as furniture trucks and/or refuse collection vehicles.

Cost Estimates - A high-level cost estimate of the road upgrades recommended in this report is summarised in Table E1 Appendix E of the Traffic Engineering Report. Based on this summary, these proposed road upgrades are estimated to amount to R1,52 million (Excl. VAT).

Based on this investigation, it is evident that the transport impacts expected as part of this development could be sufficiently mitigated. Hence, it is recommended that this PPTL Conceptual Development Proposal be considered for approval from a transport point of view, provided that the upgrades discussed in this report are put in place.

2.5 Civil Engineering Infrastructure Report

The civil engineering report prepared by Nadeson Consulting Services and attached to this report as Appendix E, details the status quo with regards to potable water, sewerage, stormwater and geotechnical component of the subject sites. The report also presents the civil engineering demands / requirements for the proposed development and proposals

(including the related cost estimates) required to accommodate the proposed development on the subject sites, are made. The key civil engineering requirements and proposals are summarised below, to be read in conjunction with Figure 2.8.

The potable water and foul sewer requirements for the proposed development can be accommodated / supplied by the City of Cape Town.

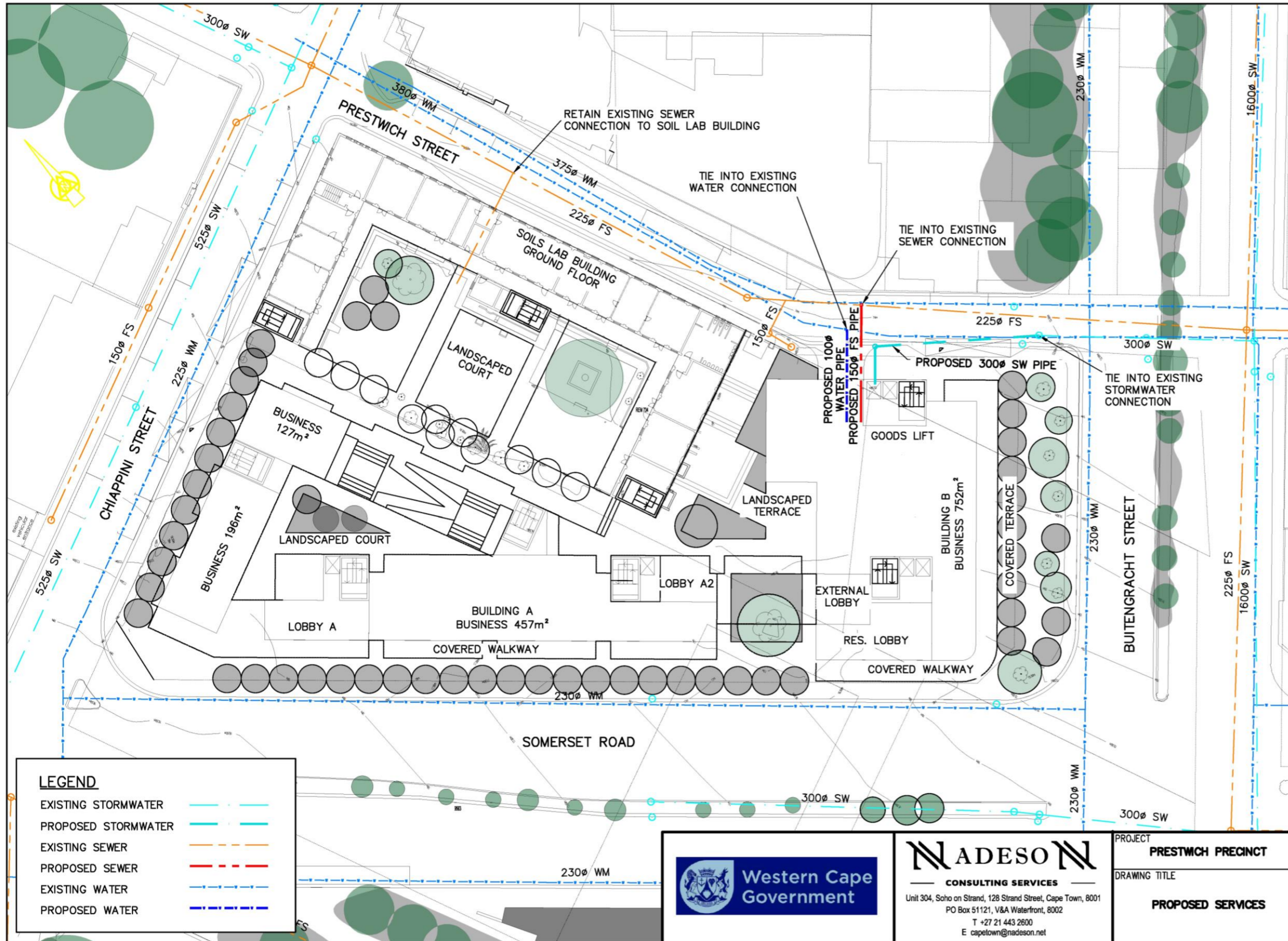


Figure 2.8: Proposed civil engineering services plan (Source: Nadeson, 2023)

Potable water:

- Daily water demand for the proposed development is estimated to be 113 kℓ/d with peak instantaneous flow at 5.22 ℓ/s. A 67mm diameter pipe is deemed sufficient to supply domestic flow.
- It is proposed that a new 100mm diameter connection be made to the proposed development (for domestic use and fire requirements) from the existing 380mm main in Prestwich Street, at the location of the proposed development's mini basement entrance.
- Alternatively, the existing 100mm diameter connection, also in Prestwich Street, feeding the Soils Lab building can be utilised.

Sewer:

- Daily sewer discharge is estimated to be 107 kℓ/d with peak instantaneous flow at 3.56 ℓ/s.
- It is proposed that a 150mm diameter connection (for flow and cleaning purposes) be made directly to into the existing 225mm diameter main in Prestwich Street, at the location of the proposed development's mini basement entrance.

Stormwater:

- Due to the existing hard-standing and topographical nature of the subject sites, stormwater runoff is unlikely to increase or be affected in quality.
- It is proposed that stormwater runoff discharges in similar positions from the existing Soils Lab building. A new stormwater connection would be required from Prestwich Street at the new road access position in order to accommodate runoff from the access way and other surface flow.
- It is also proposed that open areas be landscaped, assisted by permeable paving or open swales, in order to both slow down and filter runoff, where possible.

Geotechnical:

- Excavations for the proposed development would be relatively shallow and it is not anticipated that significant areas of hard rock will be encountered.
- Excavation of at least the top 3m into soft rock should be manageable and can be done with an excavator fitted with a rock bucket where required. Depending on the depth of the excavation, blasting of the rock would be required.
- Allowance for rock excavation should be made for deep excavations but also anticipated in shallower excavations, although in limited amounts.

- The excavated material in at least the top 1m will not be suitable for structural fill and should be carted off site.
- Founding can be made directly on competent rock, but this is likely to be intercepted at about 5m deep. Shallow augered piling should be allowed for at the very least.
- Subsurface drainage and a sump would be required below the basement area.
- Some lateral support would be necessary during construction as a permanent retaining wall due to excavation levels for the basement and on the Somerset Road edge.

Order of Magnitude Costs:

- Costs for civil engineering services, including the required road improvements, are estimated in the order of R6 211 480.00 (excluding VAT).

2.6 Electrical Engineering Services Report

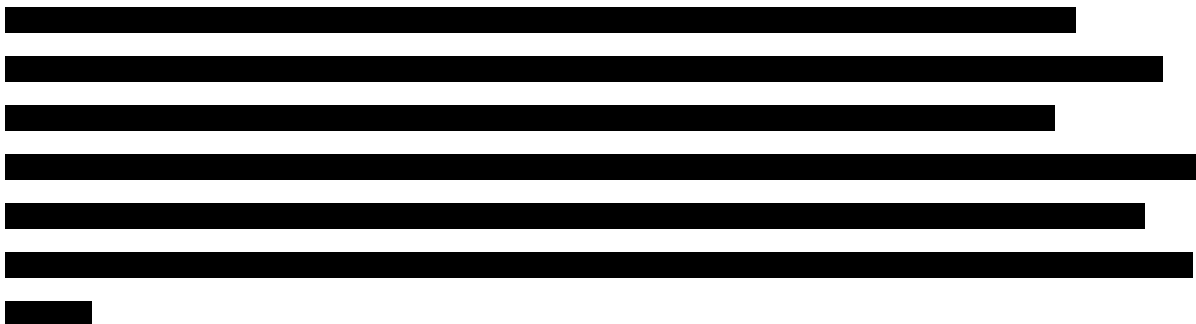
The Electrical Engineering Services Report prepared by E2C, presents the electrical demand and supply proposals for the Conceptual Development Proposal (refer to Appendix F). This report is summarised as follows:

- The electrical demand for the proposed development is estimated to be 900kVA.
- The City of Cape Town has sufficient Electrical Network Capacity to supply the proposed development via a new dedicated Medium Voltage (MV) substation to be located in the mini basement.
- The maximum demand (ADMD) for the proposed development shall remain below the 1MVA threshold for a Low Voltage (LV) supply, however, this shall be determined by the retail / commercial component.
- Should the ADMD demand exceed 1MVA, the CoCT shall request a MV connection which is deemed more costly and comes with additional technical and space requirements challenges.
- The CoCT shall allow one Low Voltage (LV) bulk electricity metering point for the entire proposed development for which the developer / owner is responsible.
- Sub-metering for domestic and retail / commercial tenants shall be via a nominated private electricity vending institution.

- Requirements for the new substation room and Main Distribution Board (MDB) room are provided in the full Electrical Engineering Services Report.
- It is recommended that the existing Chiappini Street Telkom / Fibre access point be retained.
- Bulk electrical services costs are estimated to be in the order of R1 992 000.00 excluding VAT, development contributions and other exclusions allowed for by the Quantity Surveyor in the Financial Feasibility Report's capital costs. Refer to Item A in Annexure G.
- It is too early in this conceptual design phase to include recommendations on alternative sources of energy supply for implementation and costing purposes, however, some recommendations for emergency / backup power generation and solar photovoltaic systems are made.

2.7 Financial Feasibility Report

The PPTL Residual Land Valuation (RLV) Financial Modelling Report prepared by Talani Quantity Surveyors and attached to this report as Appendix G describes the method, informants, assumptions and calculations made to arrive at a RLV for the subject properties. The purpose of the report is to determine the potential value of the land based on the Conceptual Development Plan proposals (Preferred Option 3) depicted in Section 2.2, Chapter 2 of this report, by considering this development option as being effected on the property, and thereby determining the eventual value after the development has been completed. By deducting the cost of such a development, the remaining amount (or residual amount) is the approximation of the amount that a third-party would be willing to pay for the proposed consolidated subject properties, in order to realise the predetermined first year development profit.



3. CONCLUSION AND RECOMMENDATIONS

This overarching report presented the first set of deliverables, that is, the specialists' assessments reports that are provided in the attached appendices. The report provides summaries of key proposals and recommendations in respect of these reports based on the Conceptual Development Layout Plan Proposals depicted in Section 2.2, Figures 2.1 to 2.5.

It is recommended that on approval of this report and the forthcoming Heritage Impact Assessment Specialists' Reports, the HIA and associated stakeholder engagement processes commence in earnest. Furthermore, it is recommended that based on the Conceptual Development Layout Plan Proposals in Chapter 2, the land use applications in Phase 3 commence in parallel to the HIA process.

References

Legislation:

City of Cape Town (2015, as amended). *City of Cape Town Municipal Planning By-Law*. Cape Town. City of Cape Town.

Reports:

City of Cape Town (November 2021). *Foreshore Gateway Urban Design Vision & Framework: Urban Design Framework Report*. Prepared for the Urban Catalytic Investment Department by Meyer & Associates et.al (Final – Revision 1).

- Appendix 1 (Rev 1): Blocks Report
- Appendix 2: Property and Planning Status Quo Report
- Appendix 3: Heritage and Archaeological Research
- Appendix 4: Transport Status Quo and Macro Transport Impact Assessment
- Appendix 5.1: Bulk Services Status Quo and Assessment
- Appendix 5.2: Electricity Status Quo and Assessment
- Appendix 6: Buitengracht Street Proposals
- Appendix 7: (Rev 1) Land Use

Demacon (June 2023). *Cape Town CBD Mixed Use Development: Market Assessment Report*. Prepared for Talani Quantity Surveyors.

Western Cape Government: Department of Infrastructure (June 2023). *PPTL Contextual Analysis Report*. Prepared by NM & Associates Planners and Designers (Final – Approved).

Western Cape Government: Department of Infrastructure (September 2023). *PPTL: Phase 1 – Conceptual Development Options and Guidelines Report*. Prepared by NM & Associates Planners and Designers (Final – Approved).

Western Cape Government: Department of Transport and Public Works (August 2022). *Provision of Professional Services for Site Enablement: Erven 734 and RE/738 Cape Town, Prestwich Precinct (Currently Functioning as the DTPW Soils Lab) and a Portion of Buitengracht Riebeek and Somerset Street Road Reserve (Erven 735, 739, 9564, And 9565)*. General Goods & Services Bid Document Term Short Contract – Part D: Scope of Good Services (Bid No L108/22).

COTO (2013). *South African Trip Data Manual, TMH17, Version 1.1*, September 2013.

Appendix A:

Environmental Impact Assessment Report (Checklist)





**Western Cape
Government**

Environmental Affairs and
Development Planning

FORM NO. AC10/2019

CHECKLIST FOR THE DETERMINATION OF THE APPLICABILITY OF THE NEMA EIA REGULATIONS, 2014 (AS AMENDED)

**NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107 OF 1998)
ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS.**

November 2023

| (For official use only) | |
|--------------------------------------|--|
| NEMA Applicability Reference Number: | |
| Date received by Department: | |
| Date received by Directorate: | |
| Date received by Case officer: | |

GENERAL PROJECT DESCRIPTION

(This must include an overview of the project including the Farm name/Portion/Erf number)

Provincial Pavement Testing Lab: Proposed Conceptual Development Plan on erven 734-RE, 738-RE, 735, 737, 739, 9564 and 9565, Cape Town

IMPORTANT INFORMATION TO BE READ PRIOR TO COMPLETING THIS APPLICABILITY CHECKLIST:

1. Purpose

The purpose of this checklist is to provide baseline information for the determination of the applicability of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA"), Environmental Impact Assessment ("EIA") Regulations, 2014 (as amended) to the development proposal.

2. General

- 2.1 The EIA Regulations is defined in terms of Chapter 5 of NEMA EIA Regulations.
- 2.2 The required information must be typed within the spaces provided in the form. The sizes of the spaces provided are not necessarily indicative of the amount of information to be provided. The tables may be expanded where necessary.
- 2.3 Unless protected by law all information contained in, and attached to this checklist, will become public information on receipt by the Department.
- 2.4 This checklist is current as of **November 2019**. It is the responsibility of the Proponent/Environmental Assessment Practitioner (EAP) to ascertain whether subsequent versions of the form have been released by the Department. Visit the Department's website at <http://westerncape.gov.za/eadp> to check for the latest version of this applicability checklist.
- 2.5 This checklist must be **duly dated and originally signed** by the Proponent/EAP and must be submitted to the Department at the details provided below.
- 2.6 **No faxed or e-mailed checklists will be accepted.**
- 2.7 The Competent Authority will respond in writing and provide the determination of the applicability of the NEMA EIA Regulations. The Competent Authority's response will be based on the information provided by you. As such, the quality, correctness and detail of information submitted by you is extremely important and it remains your responsibility to interrogate the specifics of your proposed development in order to report on the potential listed activities in this checklist.
- 2.8 This **checklist is a guide** to the information that must be submitted. Any additional information, pictorial evidence or explanations prompted by the checklist must be submitted along with this checklist in order to ensure that the Competent Authority does not need to request additional information from you. Incomplete checklists will result in a request for additional information.
- 2.9 It is an offence in terms of Section 24F of the NEMA to provide incorrect or misleading information to the Competent Authority.
- 2.10 Section 28(1) of the NEMA must always be taken into account. Section 28 deals with the Duty of Care and the remediation of environmental damage.
- 2.11 Any proposed development must always be designed in a water wise and conscious manner.

3. Administrative requirements

This checklist must be used to request the Competent Authority to determine the applicability of the NEMA EIA Regulations.

4. Circulars, Guidelines and Tools

- 4.1 The Department's latest Circulars pertaining to the "One Environmental Management System" and the EIA Regulations, and guidelines must be taken into account when completing this applicability checklist.
- 4.2 The Screening Tool developed by the National Department of Environmental Affairs must be used to generate a screening report. Please use the Screening Tool link <https://screening.environment.go.za/screeningtool> to generate the Screening Report. The Screening Report must be attached to this checklist as Appendix A.

5. Other Legislative requirements

- 5.1 If this checklist relates to waste management activities, which will be the primary activity, then this checklist must be submitted for the attention of the Director: Waste Management (tel: 021 483 2756 and fax: 021 483 4425) at the same postal address as the Cape Town Office to determine the applicability of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008).

DEPARTMENTAL DETAILS

| CAPE TOWN OFFICE: REGION 1 AND REGION 2 (City of Cape Town, West Coast District, Cape Winelands District & Overberg District) | GEORGE OFFICE: REGION 3 (Central Karoo District & Garden Route District) |
|--|--|
| <p>Applicability checklists must be sent to the following details:</p> <p>Western Cape Government Department of Environmental Affairs and Development Planning</p> <p>Attention: Directorate: Development Management (Region 1) Private Bag X 9086 Cape Town, 8000</p> <p>Registry Office 1st Floor Utilitas Building 1 Dorp Street, Cape Town</p> <p>Queries should be directed to the Directorate: Development Management (Region 1) at: Tel: (021) 483-5829 Fax (021) 483-4372</p> | <p>Applicability checklists must be sent to the following details:</p> <p>Western Cape Government Department of Environmental Affairs and Development Planning</p> <p>Attention: Directorate: Development Management (Region 3) Private Bag X 6509 George, 6530</p> <p>Registry Office 4th Floor, York Park Building 93 York Street George</p> <p>Queries should be directed to the Directorate: Development Management (Region 3) at: Tel: (044) 805-8600 Fax (044) 805 8650</p> |

GENERAL REQUIREMENTS

1. Locality Map

A locality map must be attached to this applicability checklist, as Appendix D. The scale of the locality map must be at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map. The map must include the following:

- an accurate indication of the project site position as well as the positions of the alternative sites, if any;
- road names or numbers of all the major roads as well as the roads that provide access to the site(s)
- a north arrow;
- a legend;
- the prevailing wind direction; and
- GPS co-ordinates (Indicate the position of the proposed activity with the latitude and longitude at the centre point for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should be to at least three decimal places. The projection that must be used in all cases is the WGS-84 spheroid in a national or local projection)

ATTACHMENTS

NOTE: The appendices must be attached to the applicability checklist as per the list below. Please use a ✓ (tick) or a x (cross) to indicate whether the Appendix is attached to the applicability checklist.

The following appendices must be attached to this applicability checklist:


| APPENDIX | | ✓ (tick) x (cross) |
|--------------------|------------------------------|-----------------------|
| Appendix A: | Screening Tool Report | N/A |
| Appendix B: | Existing approval(s) | x |
| Appendix C: | Zoning map | ✓ |
| Appendix D: | Locality map | ✓ |

| | | |
|----------------------|---|----------|
| Appendix E: | Adoption of <i>ad hoc</i> setback lines (where applicable) | x |
| Appendix F: | Directives under Section 28 of the NEMA (where applicable) | x |
| Appendix G: | Directives under Section 30A (where applicable) | x |
| Appendix H: | Directives under Section 24G of the NEMA (where applicable) | x |
| Appendix | Any other attachments must be included as subsequent appendices. | x |

SECTION A: ADMINISTRATIVE DETAILS

| Highlight the relevant Departmental Region in which the proposed development falls | CAPE TOWN OFFICE | | GEORGE OFFICE |
|--|--|---|--|
| | REGION 1 (City of Cape Town, West Coast District) | REGION 2 (Cape Winelands District & Overberg District) | REGION 3 (Central Karoo District & Garden Route District) |
| 1. | Duplicate this section where there is more than one Proponent. | Western Cape Government: Department of Infrastructure | |
| | Name of proponent: | | |
| | RSA Identity/ Passport Number: | | |
| | Name of contact person for proponent (if other): | Elizabeth Coles | |
| | RSA Identity/ Passport Number: | Not Applicable | |
| | Company/ Trading name/State Department/Organ of State : | Western Cape Government: Department of Infrastructure | |
| | Company Registration Number: | Not Applicable | |
| | Postal address: | 4 th floor, Dorp Street | |
| | | Cape Town | Postal code: 8000 |
| | Telephone: | 021 483 2100 | Cell: |
| E-mail: | Elizabeth.Coles@westerncape.gov.za | Fax: () | |
| 2. | Company of EAP: | Infinity Environmental (Pty) Ltd | |
| | EAP name: | Tarryn Solomon | |
| | Postal address: | Suite 17 Private bag X11 | |
| | | Mowbray | Postal code: 7705 |
| | Telephone: | (021) 834 1602 | Cell: 076 223 4533 |
| | E-mail: | tarryn@infinityenv.co.za | Fax: () |
| | Qualifications: EAPASA registration no: | B.Sc Environmental and Water Sciences 2019/1671 | |
| 3. | Name of Person in control of the land: | See above, proponent details. | |
| | Name of contact person for person in control of the land (if other): | | |
| | Postal address: | | |
| | | | Postal code: |
| | Telephone: | () | Cell: |
| E-mail: | | Fax: () | |
| 4. | Duplicate this section where there is more than one Municipal Jurisdiction | City of Cape Town | |
| | Municipality in whose area of jurisdiction the activity will fall: | | |
| | Contact person: | Maurietta Stewart | |
| | Postal address: | 44 Wale Street, 8 th floor | |
| | | Cape Town | Postal code: 8000 |
| | Telephone | 0214872117 | Cell: |
| | E-mail: | Maurietta.Stewart@capetown.gov.za | Fax: |

SECTION B: DETAILS OF CURRENT ACTIVITIES/EXISTING DEVELOPMENT

| | | | |
|--|--|-----|-----------|
| 1. | Is the development part of a bigger lawfully approved and commenced with development? If yes, provide details of all approvals and attach a copy/ies as Appendix B. | YES | NO |
| The proposed development does not form part of a bigger lawfully approved and commenced with development. The site currently accommodates Western Cape Government Provincial Pavement Testing Laboratory (PPTL) building which will be incorporated into the design of the proposed development of the site. | | | |
| 2. | Have any activities physically commenced on the site/s? | YES | NO |
| 3. | List the date of commencement of these activities (dd/mm/yy). | | |
| 4. | Clearly describe the commencement of these activities. | | |
| Activities related to the operation of the PPTL building had commenced but the activities of the proposed mixed development have not commenced. | | | |
| 5. | Clearly describe the current state of the site/s/route (This must be supported by recent colour photographs). | | |
| The properties which form the site are largely transformed and accommodate existing buildings and infrastructure on Erven 738 and 734/RE, while portions of erven 735, 737, 739, 9564 and 956 are vacant road reserves located in Buitengracht, Riebeek and Somerset Street Road. The undeveloped portions (open spaces) of the sites are partially covered in patches of grass and trees are found on site. | | | |
|  | | | |



6. Describe the existing vegetation/ground cover.

The undeveloped portions of the site are covered by grass while the transformed areas are surfaced for driveways and walkways. The site would have historically supported Peninsula Shale Renostreveld vegetation type, however, due to urban development none of this vegetation occurs on site.

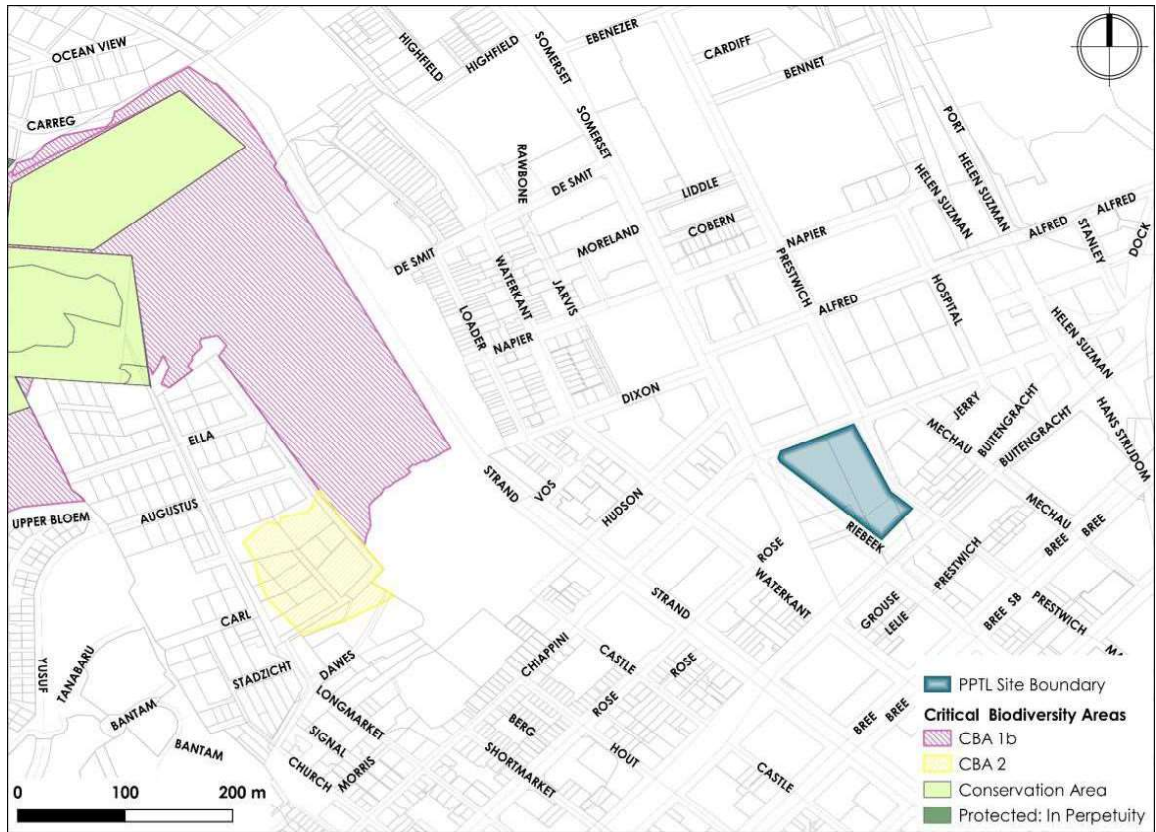


Figure 1: Critical Biodiversity Areas

7. Describe the ground slope, drainage and any on-site watercourses/wetlands.

The site is relatively flat with a slope degree of 1.78. The site itself does not contain watercourses, the nearest watercourse (canalised permanently inundated coastal plain) is found approximately 420m from the site.

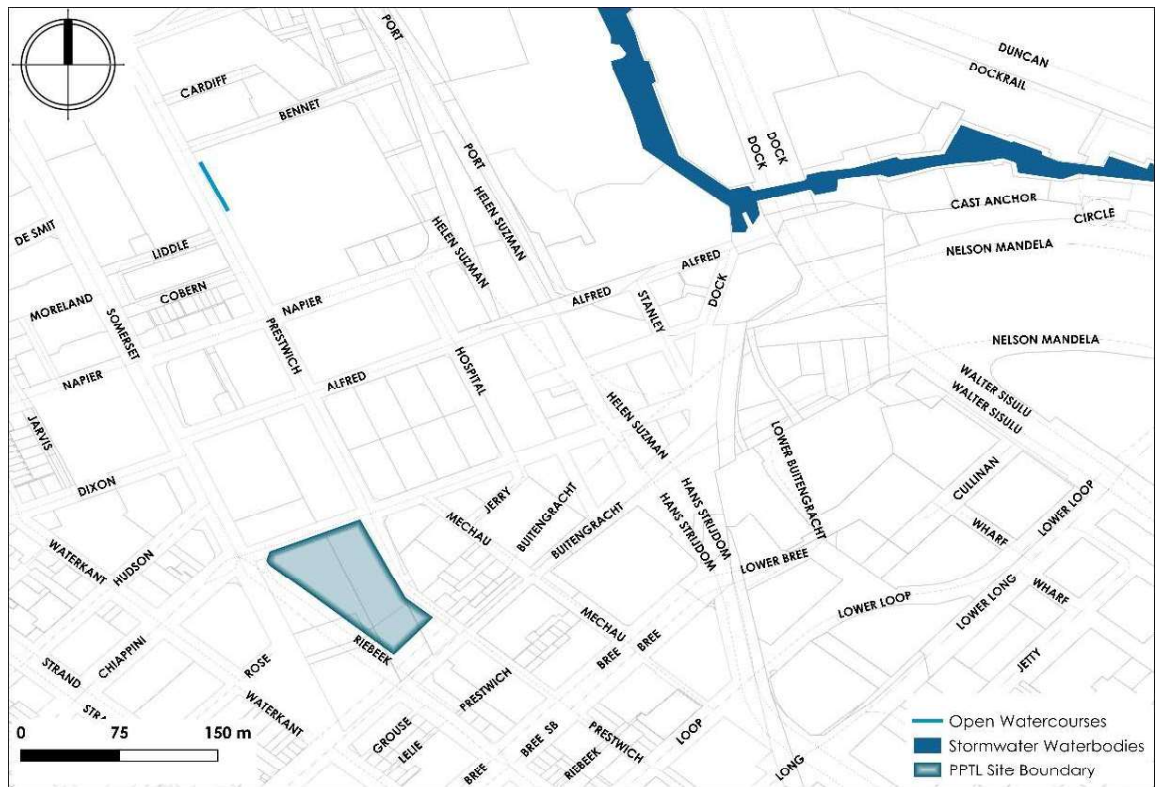


Figure 2: Watercourses in proximity to the site.

| | | | |
|--|---|-----|----------------|
| 8. | Describe the proximity to the high-water mark of the sea or any watercourses. | | |
| The site is located approximately 1.9 km from the sea. | | | |
| 9. | Have any <i>ad hoc</i> setback lines in terms of the NEMA EIA Regulations, been adopted by the Competent Authority for the subject site/s/route? (If yes, copies must be attached as Appendix E). | YES | NO |
| No ad hoc setback line has been adopted by the competent authority for the sites. | | | |
| 10. | Have any Directives under Section 28 of the NEMA (as amended) been issued by the Competent Authority for the subject site/s/route? (If yes, copies Must be attached as Appendix F). | YES | NO |
| No directives under section 28 have been issued for the sites | | | |
| 11. | Have any Directives under Section 30A of the NEMA (as amended) been issued by the Competent Authority for the subject site/s/route? (If yes, copies must be attached as Appendix G). | YES | NO |
| No directives under section 30A have been issued for the site. | | | |
| 12. | Have any Directives under Section 24G of the NEMA (as amended) been issued by the Competent Authority for the subject site/s/route? (If yes, copies must be attached as Appendix H). | | |
| Explain: | | | |
| No directive under section 24G have been issued for the site as no unlawful activities have commenced. | | | |
| 13. | Describe the current land use of the proposed site(s) for the proposed development. | | |
| Erven 738 and 734/RE are used for laboratory services while erven 735, 737, 739, 9564 and 956 is set aside road reserve. | | | |
| 14. | Describe all the surrounding and abutting land uses . | | |
| The site is located in the central business district and is surrounded by Prestwich Memorial to the south, buildings occupied by Salesian Institute Youth Project to the west and multiple story mixed use buildings to the north and east. The site is bounded by Somerset Road, Chiappini Street, Prestwich Street and Buitengracht Street. | | | |
| 15. | Is the current land use lawful? | YES | NO UNCERTAIN |
| 16. | Explain: | | |
| The current land use is lawful as the properties making up the site are zoned for mixed use, general business and transport use. Mixed use and general business properties are currently used for pavement testing and soils laboratory purposes while the transport zoned properties are road reserves. To permit the proposed development, rezoning, consolidation and subdivision will be required. | | | |

SECTION C: PROPOSED DEVELOPMENT

1. Provide a detailed description of the proposed development and its associated infrastructure. A clear, accurate and comprehensive description will obviate any requests for additional information by the Competent Authority.

The subject sites are being proposed for a residentially led mixed-use development with business-related uses (retail and co-working type offices). The following preferred proposed conceptual development plan includes the following:

- A total maximum building height of 40 m, with 12 storeys on Buitengracht Street including roof service level and mini-basement, and 4-7 storeys along Somerset Road / Chiappini Street.
- The Soils Lab Building ground floor will be used for retail and the existing basement for co-working environment / offices.
- Total Gross Floor Area (new & existing incl. basements, parking and service levels) is approximately $\pm 23\,373\text{m}^2$ GFA.
- The Gross Floor Area: Parking and vehicular circulation is approximately 982m^2
- The total split for the residential component proposed is 39% for affordable housing and 61% for open market housing.
- Parking will be limited in the mini basement with a total of 15 bays on the site, and one to two loading bays on-street.
- All services (associated infrastructure requirements) will be accommodated accordingly.



Figure 3: Proposed Conceptual Development Plan

| | | | |
|-----|--|---|-----------|
| 2 | Is the proposed development: | | |
| 2.1 | a linear activity? | YES | NO |
| 2.2 | an activity directly related to prospecting or exploration of a mineral and petroleum resource or extraction and primary processing of a mineral resource? | YES | NO |
| 2.3 | Is this a strategic infrastructure project (SIP) as contemplated in the Infrastructure Development Act, 2014 (Act No. 23 of 2014)? | YES | NO |
| 3. | Property location of all proposed sites: | Cape Town Central Business District. | |
| 4. | Farm/Erf name(s) & number(s) (including portion) of all proposed sites: | Erven 738, 734/RE, 735, 737, 739, 9564 AND 9565 | |
| 5. | Property size(s) (m ²) of all proposed sites: | Approximately 13 153.5 m ² | |
| 6. | What is the existing lawfully development footprint size in m ² ? | Approximately 1 879.02 m ² | |
| 7. | Development footprint size(s) in m ² (i.e. the total area of land to | Approximately 6 690 m ² | |

| | | | |
|-----|--|---|------------------------------------|
| | be physically cleared for the proposed development (including associated infrastructure). Provide clear details of the required footprint). | | |
| 8. | SG 21 Digit code(s) of all proposed sites: | C 0 1 6 0 0 0 7 0 0 0 0 0 7 3 8 0 0 0 0 0 | |
| | | C 0 1 6 0 0 0 7 0 0 0 0 0 7 3 4 0 0 0 0 0 | |
| | | C 0 1 6 0 0 0 7 0 0 0 0 0 7 3 5 0 0 0 0 0 | |
| | | C 0 1 6 0 0 0 7 0 0 0 0 0 7 3 7 0 0 0 0 0 | |
| | | C 0 1 6 0 0 0 7 0 0 0 0 0 7 3 9 0 0 0 0 0 | |
| | | C 0 1 6 0 0 0 7 0 0 0 0 9 5 6 4 0 0 0 0 0 | |
| | | C 0 1 6 0 0 0 7 0 0 0 0 9 5 6 5 0 0 0 0 0 | |
| 9. | Coordinates of all proposed sites: Latitude (S) Longitude (E) | 33 ° 18 ° | 55 ' 25 ' 2.04 '' 11.3 '' |
| 9. | Does the proposed development entail the expansion or changes to an existing lawful facility or the development of a new facility? Explain. | | |
| | The proposed development will largely entail the development of a new facility (residential mixed use building) on the vacant portions of the sites. | | |
| | The Soils Lab Building ground floor will be used for retail and the existing basement for co-working environment / offices. | | |
| 10. | Does the proposed development entail the expansion of an existing lawful development footprint or the "like for like replacement" of anything existing? Explain. | | |
| | The proposed development does not entail the expansion of an existing lawful development footprint or the 'like for like' replacement of anything existing. | | |
| 11. | Specifically list any dangerous goods that are listed in terms of the South African National Standard No. 10234 supplement 2008 1.00 and volumes thereof that will be stored on the site during development or operational activities. | | |
| | Materials to be used on the site will include typical materials used in construction including paint and cement. | | |
| | The volumes of the dangerous goods stored on the site will not exceed the cumulative threshold of 80 m ³ defined in Listing Notice 1 of the EIA Regulations of 2014, as amended. | | |
| 12. | Does the site/s/route form part of a Critical Biodiversity Area or critically endangered or endangered ecosystem or contain any indigenous vegetation? Explain. | | |
| | The proposed development is not anticipated to impact areas of biodiversity. | | |
| 13 | Will the proposed development entail the infilling of a watercourse/wetland? | YES | NO |
| | If yes, explain. | | |
| | Not applicable as no wetlands occur on site | | |
| 14 | Will the proposed development be located within 32m of a watercourse/wetland? | YES | NO |
| | If yes, explain. | | |
| | Not Applicable. | | |
| 15 | Will the proposed development be located within 100m of the highwater-mark of the sea? | YES | NO |
| | If yes, explain. | | |
| | Not applicable as the development will not be located within 100m of the high water mark | | |

SECTION D: LIST THE POTENTIAL LISTED ACTIVITIES THAT YOU MAY REGARD TO BE APPLICABLE TO THE PROPOSED DEVELOPMENT

All activities listed in terms of the NEMA EIA Regulations that may be associated with the proposed project must be provided below.

| | | |
|--|--|---|
| Activity No(s): | Provide the relevant Basic Assessment Activity(ies) as set out in Listing Notice 1 | Describe the portion of the proposed project to which the applicable listed activity relates. |
| No listed activities have been identified as applicable for the proposed development. | | |
| Activity No(s): | Provide the relevant Basic Assessment Activity(ies) as set out in Listing Notice 3 | Describe the portion of the proposed project to which the applicable listed activity relates. |
| No listed activities have been identified as applicable for the proposed development. | | |
| Activity No(s): | Provide the relevant Scoping and EIA Activity(ies) as set out in Listing Notice 2 | Describe the portion of the proposed project to which the applicable listed activity relates. |
| No listed activities have been identified as applicable for the proposed development. | | |
| Note: | | |
| <ul style="list-style-type: none"> The Minister responsible for mineral resources is the Competent Authority to deal with all applications where the listed or specified activity is directly related to- <ul style="list-style-type: none"> (a) prospecting or exploration of a mineral or petroleum resource; or (b) extraction and primary processing of a mineral or petroleum resource. Where the National Minister for the Environmental Affairs is the Competent Authority in terms of Section 24C of NEMA, your request for the determination of the applicability of the NEMA EIA Regulations must be submitted to the National Department of Environmental Affairs. | | |

SECTION E: OTHER LEGISLATION/APPROVALS

1. Applicability of Specific Environmental Management Acts ("SEMA's")

| | | | |
|---|---|------------|-----------|
| 1. | Does the proposed project require an application for a waste management license in terms of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)? | YES | NO |
| If yes, explain: | | | |
| Waste that will be produced during construction phase will not exceed the threshold regulated for waste management license. | | | |
| 2. | Does the proposed project require an application for a Water Use License in terms of the National Water Act, 1998 (Act No. 36 of 1998)? | YES | NO |
| If yes, explain: | | | |
| Note: where a WULA is required, the WULA/EIA Synchronisation process must be followed. | | | |
| Not Applicable. | | | |
| 3. | Does the proposed project require an application for an Atmospheric Emissions License in terms of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004)? | YES | NO |
| If yes, explain: | | | |
| Not applicable | | | |
| 4. | Does the proposed project require a Heritage permit in terms of Section 38 of the National Heritage Resources Act, 1999 (Act No. 25 of 1999)? | YES | NO |
| If yes, explain: | | | |
| The proposed development requires the submission of a Notice of Intent to Develop to Heritage Western Cape due to the applicability of Section 38(1)(c) and (d). The applicable heritage process will be undertaken by the appointed heritage practitioner. | | | |
| 5. | Does the proposed project require an application for a Coastal Waters Discharge Permit in terms of the National Environmental Management: Integrated Coastal Management Act, 2008 (Act No. 24 of 2008)? | YES | NO |
| If yes, explain: | | | |
| Not applicable | | | |

2. Existing approvals

| | |
|--|--|
| 2.1. | Explain if there are any existing approval(s) linked to the property? If so, indicate which approvals were granted (attach approvals as Appendix B). |
| No known existing environmental approvals were granted for the property. | |
| 2.2. | Explain whether the above approval(s) will be in conflict with the proposed development. |
| No existing approvals were granted for the site. No conflicts are anticipated. | |

SECTION F: PLANNING CONTEXT

Note: In instances where more than one zoning is applicable, attach a list or map of the properties that indicates their respective zoning as Appendix C.

| | | | |
|--|---|-----|----|
| 1. | What is the current zoning of the property? | | |
| Erf 734-RE is zoned Mixed Use 3 (MU3) and Erf 735 is zoned Transport 2: Public Road and Public Parking (TR2). Erf 738-RE is split zoned MU3 and General Business 7 (GB7). Erf 739 is split zoned MU3, TR2 and Open Space 2: Public Open Space (OS2). Erf 9564 is zoned OS2 and TR2 and Erf 9565 is zoned TR2. | | | |
| 2. | Is a rezoning application required? | YES | NO |
| 3. | Is any other land use approval(s) (e.g. consent) required? | YES | NO |
| If yes, provide details: | | | |
| <ul style="list-style-type: none"> • Subdivision of Erven 735, 737, 739, 9564 & 9565 into 2 portions (a road reserve portion and a PPTL site portion) • Consolidation of Erven 738 & 734-RE and the development portions of Erven 735, 737, 739, 9564 & 9565. • Rezoning of TR2 zoned portions to GB7 or MU3 • Restrictive conditions of title in respect of Erf 739 | | | |
| 4. | Will the proposed development be located in an urban area? | YES | NO |
| 5. | Is the activity permitted in terms of the property's existing land use rights? | YES | NO |
| Please explain: | | | |
| The existing zoning of Erven 734-RE and 738-RE permit the proposed development as of right. However, Erven 735, 739, 9564 and 9565 require rezoning to permit the proposed development. | | | |
| 6. | Are there any building restrictions in terms of the applicable Municipal By-laws? | YES | NO |
| Please explain: | | | |
| The site falls within the CBD Local Area Overlay Zone with the following parameters: <ul style="list-style-type: none"> • Floor Factor is 6.8; • Coverage is 100%; • Maximum height permitted is 60m; • Buildings are permitted on street and common boundaries; • From 38m above ground level, the building is required to set back at a gradient of ½H-38 from any street boundary; • Buildings are permitted on the common boundary for the full height. | | | |
| 7. | Will the activity be aligned with the following: | | |
| 7.1. | The Provincial Spatial Development Framework (PSDF)? | YES | NO |
| Please explain: | | | |
| The Western Cape PSDF aims to protect and enhance sense of place, improve accessibility to opportunities and services at all scales, promote appropriate land use mix and density in settlements and support inclusive and sustainable housing delivery. The proposed development is therefore aligned with the objectives of the PSDF. | | | |
| 7.2. | The Spatial Development Framework of the Local Municipality? | YES | NO |
| Please explain: | | | |
| The MSDF locates the site within the Urban Inner Core, the Cape Town CBD Metropolitan Node and along a Development Corridor. The proposed development responds to all of these urban conditions. | | | |
| 7.3. | The urban edge as delineated in the Municipality's Spatial Development Framework | YES | NO |
| Please explain: | | | |
| The site is located within the Urban Inner Core and the Cape Town CBD Metropolitan Node which fall within the urban edge. | | | |
| 7.4. | An Environmental Management Framework (EMF)? | YES | NO |
| Please explain: | | | |
| The Table Bay District Integrated Spatial Development Framework and Environmental Management Framework promotes the transformation of the apartheid city utilising publicly owned land. The site is located along a higher order Development Route, at the nexus of Somerset Road and Buitengracht Street. Various sites along Buitengracht Street, including the subject site, are identified as New Development Areas (NDAs). NDAs include underdeveloped (vacant) or partially developed land earmarked for new infill and brownfield development of various types and densities (mixed use intensification). The site is specifically designated for Mixed Use Intensification and for Potential High Density Residential Development. | | | |

| | | | |
|---|---|-----|----|
| 7.5. | Any other Policies, Plans, Guidelines, Spatial Tools, Development Planning Frameworks and instruments applicable to the development. | YES | NO |
| Please explain: | | | |
| <ul style="list-style-type: none"> • City of Cape Town Densification Policy (2012) • City of Cape Town Urban Design Policy (2013) and Urban Design Guidelines (2017) • City of Cape Town Tall Building Policy and Urban Design Guidelines for Tall Building (2013) • City of Cape Town Municipal Stormwater Management By-law (2005) and City's Management of Urban Stormwater Impacts Policy (2009) • Western Cape Inclusionary Housing Policy Framework (2022) | | | |
| 7.6. | Are any Amendments of the above-mentioned required? | YES | NO |
| Please explain: | | | |
| Not applicable | | | |
| 8. | Will the proposed development lie within coastal public property, the coastal protection zone, or coastal access land as defined in terms of the NEW: ICMA, 2008? | YES | NO |
| Please explain: | | | |
| Not applicable | | | |

SECTION G: GENERAL INFORMATION

1. Solid waste management

| | | | | |
|---|---|-----|----|-----------|
| (i) | Will the activity produce any solid waste (including rubble/sewage) during the development or operational phases? | YES | NO | UNCERTAIN |
| (ii) | If YES or UNCERTAIN, explain. | | | |
| The proposed development will produce typical construction-related waste during the development phase. While the type and quantity of the waste cannot be reported on at present, these are not expected to exceed thresholds for licensing. Domestic waste is anticipated during the operational phase and it likely that waste from the site will be removed to a licensed landfill site. | | | | |
| (iii) | If YES, will it feed into a municipal waste stream? | YES | NO | UNCERTAIN |
| (iv) | If NO to (iii) above, describe how each type of waste will be treated / disposed of. | | | |
| Waste during the construction phase will be removed by a licensed contractor and disposed of at a suitable, licensed landfill site. During the construction phase, waste will likely be collected by the municipality to be disposed of at the relevant landfill site. | | | | |

2. Hazardous Waste Management

| | | | | |
|--|---|-----|----|-----------|
| (i) | Will the activity produce any hazardous waste? | YES | NO | UNCERTAIN |
| If YES or UNCERTAIN, explain. | | | | |
| The activity will not produce hazardous waste. | | | | |
| (ii) | Indicate whether or not the hazardous waste will be treated and/or disposed of into a municipal system? Not Applicable. | YES | NO | UNCERTAIN |
| (iii) | If NO, describe how it will be treated and/or disposed of: | | | |
| Not Applicable. | | | | |

3. Effluent Waste Management

| | | | | |
|-----------------|---|-----|----|-----------|
| (i) | Will the activity produce any effluent? | YES | NO | UNCERTAIN |
| (ii) | If YES or UNCERTAIN, explain. The development will produce general effluent which will be treated into the municipal system. | | | |
| (iii) | Indicate whether or not the effluent will be treated and/or disposed of into a municipal system? | YES | NO | UNCERTAIN |
| (iv) | If NO, describe how it will be treated and/or disposed of: | | | |
| Not Applicable. | | | | |

4. Emissions into the atmosphere

| | | | | |
|------|--|-----|----|-----------|
| (i) | Will the activity produce emissions that will be vented into the atmosphere? | YES | NO | UNCERTAIN |
| (ii) | If YES or UNCERTAIN, explain. Describe the emissions in terms of type and concentration and how it will be treated/mitigated prior to venting: | | | |

Not Applicable.

2. Water Requirements

Please indicate the source(s) of water for the proposed development by highlighting the appropriate box(es)

| | Municipal | Water board | Groundwater | River, Stream, Dam or Lake | Other | The activity will not use water |
|---|--|-------------|-------------|-------------------------------|----------------------------------|------------------------------------|
| 2.1. | Please explain your selection above. | | | | | |
| The proposed development will likely require municipal water supply during the operational phase. | | | | | | |
| 2.2. | The volume of water required per month is: | | | | Volume is unknown m ³ | |

3. Power/Electricity Requirements

| | | | | | | |
|---|---|--|--|--|--|--|
| 3.1. | Please indicate the source of power supply eg. Municipality / Eskom / Renewable energy source/ Self | | | | | |
| The proposed development will not require permanent power supply during the construction phase. | | | | | | |
| Power during the operational phase will likely be supplied by City of Cape Town following the necessary discussions and applications by the electrical engineers. | | | | | | |
| 3.2. | Explain clearly how power will be generated/transmitted/distributed? | | | | | |
| The proposed upgrades will not require power generation, transmission, or distribution during the construction phase. | | | | | | |

SECTION H: DECLARATIONS

DECLARATION OF THE PROPONENT

Note: Duplicate this section where there is more than one proponent.

I ELIZABETH COLES ID number....., in my ~~personal capacity or duly~~ authorised thereto hereby declare/affirm that:

- the information provided or to be provided as part of this checklist, is true and correct;
- I am fully aware of my responsibilities in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA"), the Environmental Impact Assessment Regulations, as defined in Chapter 5 of NEMA (as amended) and any relevant Specific Environmental Management Acts and that failure to comply with these requirements may constitute an offence in terms of relevant environmental legislation;
- I am aware that it is an offence in terms of Section 24F of the NEMA should I commence with a listed activity prior to obtaining an Environmental Authorisation;
- I am aware of my general duty of care in terms of Section 28 of the NEMA; and
- I will be responsible for the costs incurred in complying with the NEMA EIA Regulations and other environmental legislation including but not limited to –
 - costs incurred for the appointment of an EAP or any person legitimately contracted by the EAP; and
 - costs in respect of specialists (if any).



29 NOVEMBER 2023

Signature of the Proponent:

Date:

WCG DEPARTMENT OF INFRASTRUCTURE

Name of company (if applicable):

DECLARATION OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER ("EAP")

I Tarryn Solomon EAPASA registration no: 2019/1671, as the appointed EAP hereby declare/affirm that:

- the information provided or to be provided as part of this checklist, is true and correct;
- I have disclosed/will disclose, to the Proponent, the specialist (if any) and the Competent Authority, all material information that have or may have the potential to influence the determination of the applicability of the NEMA EIA Regulations with respect to the proposed development;
- I have ensured/will ensure the inclusion of inputs and recommendations from any specialists in respect of the checklist, where relevant;
- I am aware that it is an offence in terms of Section 24F of the NEMA should the proponent commence with a listed activity prior to obtaining an Environmental Authorisation; and
- I am aware of my general duty of care in terms of Section 28 of the NEMA.



29.11.2023

Signature of the EAP:

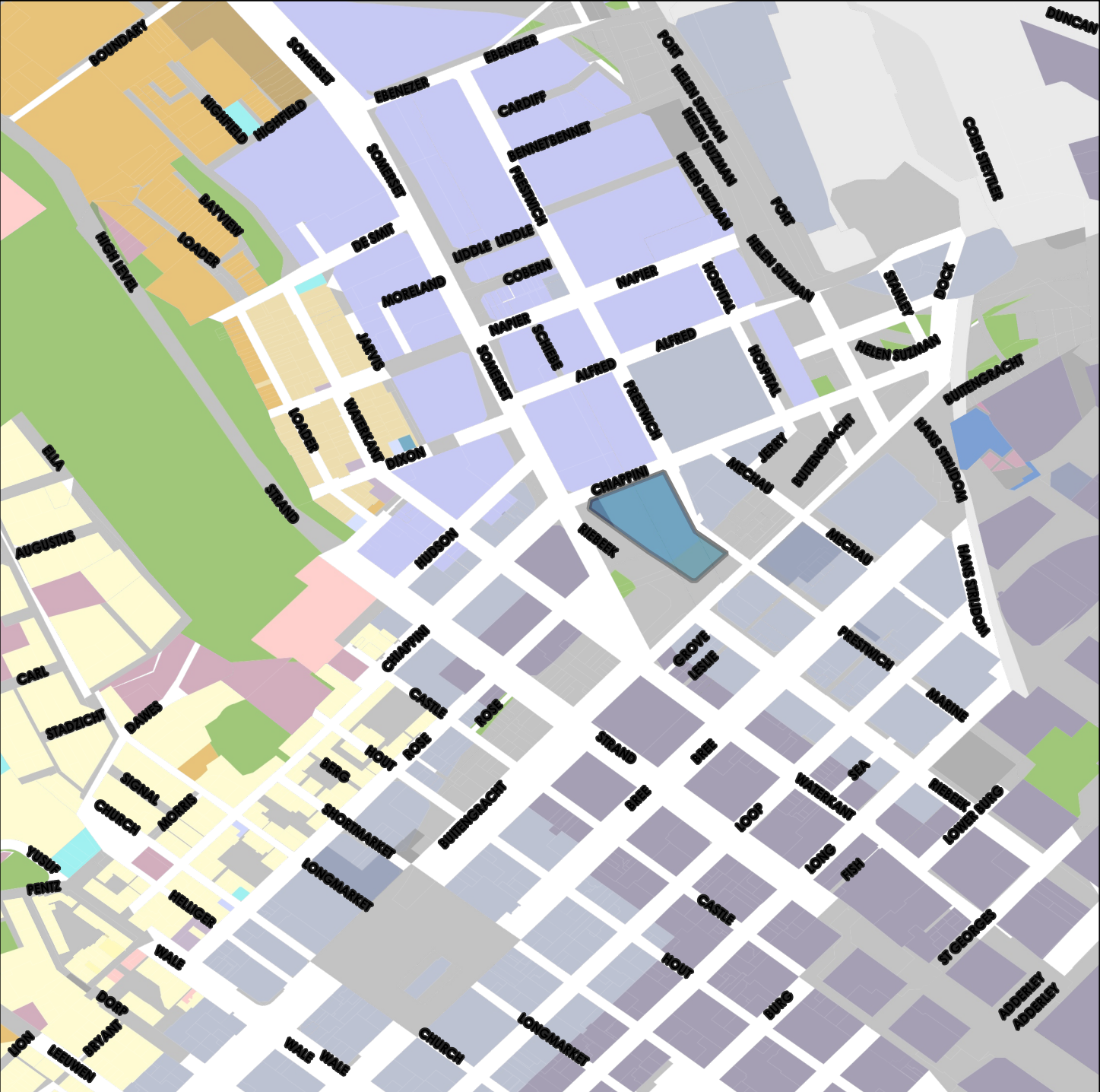
Date:

Infinity Environmental (Pty) Ltd

Name of company (if applicable):

ZONING

Provincial Pavement Testing Laboratory

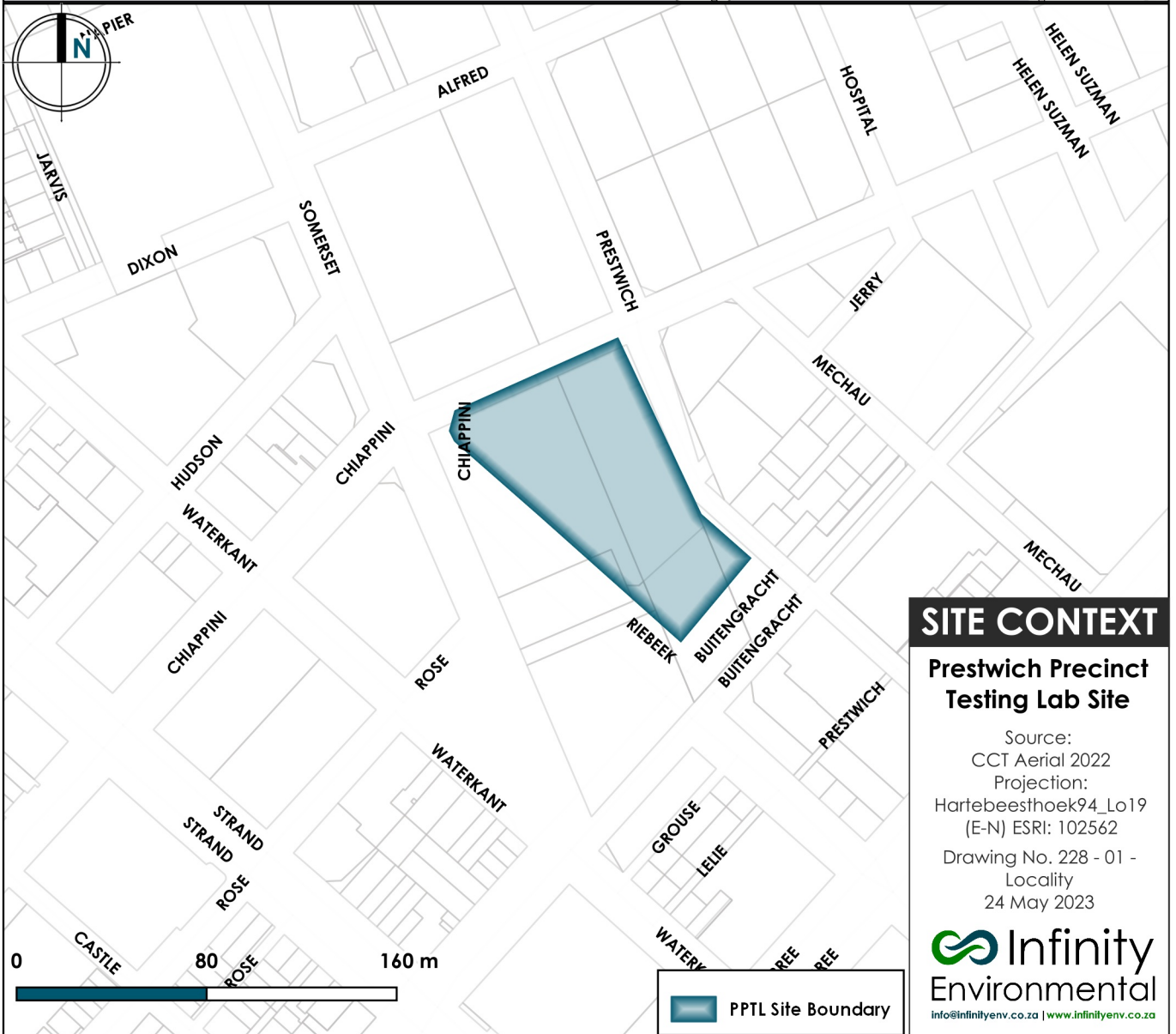


- Site Boundary

- Zoning**
- AG Agriculture
- CO1 Community Zone 1
- CO2 Community Zone 2
- GB1 General Business 1
- GB2 General Business 2
- GB3 General Business 3
- GB4 General Business 4
- GB5 General Business 5
- GB6 General Business 6
- GB7 General Business 7
- GI1 General Industrial 1
- GI2 General Industrial 2
- GR1 General Residential 1
- GR2 General Residential 2
- GR3 General Residential 3
- GR4 General Residential 4
- GR5 General Residential 5
- GR6 General Residential 6
- LU Limited use
- LB2 Local Business 1
- LB1 Local Business 2
- MU1 Mixed use 1
- MU2 Mixed use 2
- MU3 Mixed use 3
- OS1 Open space 1
- OS2 Open space 2
- OS3 Open space 3
- RI Risk industry
- RU Rural zoning
- SR1 Single Residential 1
- SR2 Single Residential 2
- TR1 Transport 1
- TR2 Transport 2
- UT Utility

SOURCE:
 CCT Aerial Imagery 2022
 Projection: Harthebeesthoek94_lo19 (E-N) EPSG:102562





SITE CONTEXT

Prestwich Precinct Testing Lab Site

Source:
CCT Aerial 2022

Projection:
Hartebeesthoek94_Lo19
(E-N) ESRI: 102562

Drawing No. 228 - 01 -
Locality
24 May 2023

Infinity
Environmental

info@infinityenv.co.za | www.infinityenv.co.za

Mandlakazi Mbi

From: DEADP EIA Admin <DEADPEIAadmin@westerncape.gov.za>
Sent: Wednesday, 29 November 2023 11:18
To: Tarryn Solomon
Subject: Re: FW: Provincial Pavement Testing Lab: Proposed Development on erven 734-RE, 738- RE, 735, 737, 739, 9564 and 9565, Cape Town
Attachments: PPTL EnvApplicabilityChecklistNov2023.pdf; Appendix C_ Zoning Map.pdf; Appendix D_ Locality Map.pdf

Dear Sir/Madam

The Directorate confirms receipt of your correspondence.

Kind Regards

DEADP EIA ADMIN
Department of Environmental Affairs and Development Planning
Western Cape Government
Website: www.westerncape.gov.za/eadp



Be 110% Green. Read from the screen.

Should you not be able to contact the numbers above, please call +27 (0)21 483 4091 between 07:30 - 16:00.

From: Tarryn Solomon <tarryn@infinityenv.co.za>
Sent: Wednesday, November 29, 2023 11:14 AM
To: DEADP EIA Admin <DEADPEIAadmin@westerncape.gov.za>
Subject: Provincial Pavement Testing Lab: Proposed Development on erven 734-RE, 738- RE, 735, 737, 739, 9564 and 9565, Cape Town

Good day

Herewith please find the request for determination of the applicability of the EIA Regulations, 2014 for the proposed development on erven 734-RE, 738- RE, 735, 737, 739, 9564 and 9565, Cape Town.

We look forward to your department's response. Should you have any queries please do not hesitate to contact me at the details below.

Regards,

Tarryn Solomon

Environmental Consultant | Reg. E.A.P.



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If you are not the intended recipient you may not copy or deliver this message to anyone."



REFERENCE NUMBER: 16/3/3/6/1/A7/4/3228/23

DATE OF ISSUE: 05 December 2023

The Director
Western Cape Government: Department of Infrastructure
4th Floor, 9 Dorp Street
Cape Town
8000

Attention: Ms. Elizabeth Coles

Tel: (021) 483 2100

E-mail: Elizabeth.Coles@westerncape.gov.za

Dear Madam

ACKNOWLEDGEMENT OF RECEIPT OF THE APPLICABILITY CHECKLIST FOR THE DETERMINATION ON THE APPLICABILITY OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107 OF 1998) ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS, 2014 (AS AMENDED) FOR THE PROPOSED MIXED-USE DEVELOPMENT ON ERVEN 734-RE, 735, 737, 738, 739, 9564 AND 9565, CAPE TOWN

1. The applicability checklist dated and received by this Directorate on 29 November 2023 via electronic mail correspondence, refers.
2. This letter serves as an acknowledgement of receipt of the aforementioned applicability checklist by this Directorate.
3. This Directorate will now review the applicability checklist and notify you of the outcome accordingly.
4. Kindly quote the abovementioned reference number in any future correspondence in respect of this matter.
5. This Directorate reserves the right to revise or withdraw its comments and request further information based on any information received.

Your interest in the future of our environment is greatly appreciated.

Yours faithfully

**Taryn
Dreyer**
Digitally signed
by Taryn Dreyer
Date: 2023.12.05
07:40:49 +02'00'

pp **MR.ZAAHIR TOEFY**
DIRECTOR: DEVELOPMENT MANAGEMENT REGION 1

Copied to: (1) Ms. Maurietta Stewart (City of Cape Town: ERM)
(2) Ms. Tarryn Solomon (Infinity Environmental (Pty) Ltd)

E-mail: Maurietta.Stewart@capetown.gov.za
E-mail: tarryn@infinityenv.co.za

Appendix B:

Architectural Guidelines Report





**Western Cape
Government**

Department of Infrastructure

**PPTL Phase 2: Specialists'
Assessments –
Architectural Guidelines
DOI12/8/1/P2/6**

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This report was compiled by NM & Associates Planners and Designers on behalf of the Western Cape Government: Department of Infrastructure.

1. INTRODUCTION

The purpose of this report is to present the architectural guidelines for the preferred Option 3: PPTL Conceptual Development Plan, as an outcome of a conceptual development plan options report that was completed in September 2023 for the enablement of the proposed consolidated Erven 734-RE and 738-RE, Cape Town and a Portion of Buitengracht, Riebeeck and Somerset Street Road Reserve namely Erven 735, 737 739, 9564 and 9565, Cape Town. Refer to Figure 1.1. The subject sites measure approximately 6690m² in extent, in respect of gross area available for intervention.

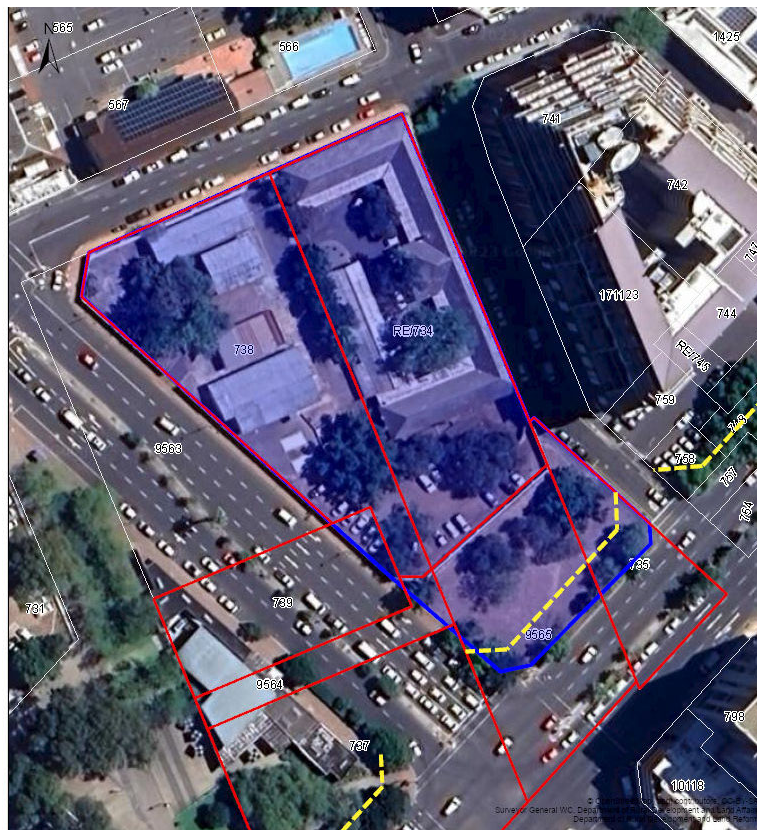


Figure 1.1: Subject sites and locality

It is important to note the background in the main report to which this guidelines report is appended. All options that were considered were taken through a high-level assessment exercise including a range of assessment criteria through which Option 3 came out as the Preferred Option. The Options were also engaged with key stakeholders for their preliminary inputs. Accordingly, **Option 3 was supported by the WCG's Steering Committee on 10 November 2023** after considering all conceptual development options and relevant comments received from key stakeholders. Option 3 will be referred to as the PPTL Conceptual Development Proposal.

2. PPTL CONCEPTUAL DEVELOPMENT PROPOSAL

The PPTL Conceptual Development Proposal retains the historic Soils Lab Building (a single storey building with a mini basement) around a soft landscaped courtyard and proposes a new building of approximately 4 to 12 storeys high (excluding the basement level) on the remainder of the developable area. A mix of land-uses will be provided on the site, including a residentially led land use mix for the proposed new building and repurposing of the historic Soils Lab Building for new uses.

The proposed new building envelope comprises an approximately 40 m high, 12-storey tower (including the roof services level and excluding the mini basement level) along Buitengracht Street, stepping down to 7-storeys along Somerset Road and then stepping down again to 4 storeys at the corner of Somerset Road and Chiappini Street. As a result of the need to set new buildings back from the Soils Lab and the challenging shape of the remaining developable area, the new building is arranged in an L-shape around the perimeter of the site. The new building is fragmented at ground floor to facilitate pedestrian thoroughfares.

The new building will provide approximately 310 residential units at the upper floors with business-related uses and residential support areas at the ground floor level. Refer to Table 2 for a breakdown of the proposed residential unit mix. The proposed residential unit mix comprises 39% affordable / social housing units, located in the Somerset Road/ Chiappini Street block, and 61% open-market units, located in the Buitengracht Street tower. The affordable / social residential units are predominantly 2-bedroom units while the open-market units are predominantly studios. The affordable residential units of the 4-storey building component are arranged around an external landscaped courtyard.

Table 2. Residential unit mix of the Conceptual Development Proposal

| Unit type | Affordable residential units in the Somerset Road / Chiappini Street Block | Open market units in the Buitengracht Street tower |
|-----------------|--|--|
| Studios | 6 | 120 |
| 1-bedroom units | 0 | 20 |
| 2-bedroom units | 114 | 50 |
| Subtotal | 120 (39%) | 190 (61%) |
| Total | 310 units | |

The new building is set back along its street edges to allow for trees within the site boundary, and at ground floor, the business areas are setback along Buitengracht Street and Somerset Road to create covered walkways.

The new building has a limited mini basement level associated with the tower. This basement is accessed off Prestwich Street and accommodates building and site services along with 15 parking bays to support the following:

- High level management staff for office, retail and residential blocks
- Operational bays
- Accessible bays for the physically disabled.
- Emergency bays (for sedan vehicles)

Two loading bays are provided to support the retail components of the proposal. They are proposed to be located along Prestwich Street and Chiappini Street. The proposed loading bay in Prestwich Street will also serve as a bay for a refuse collection truck.

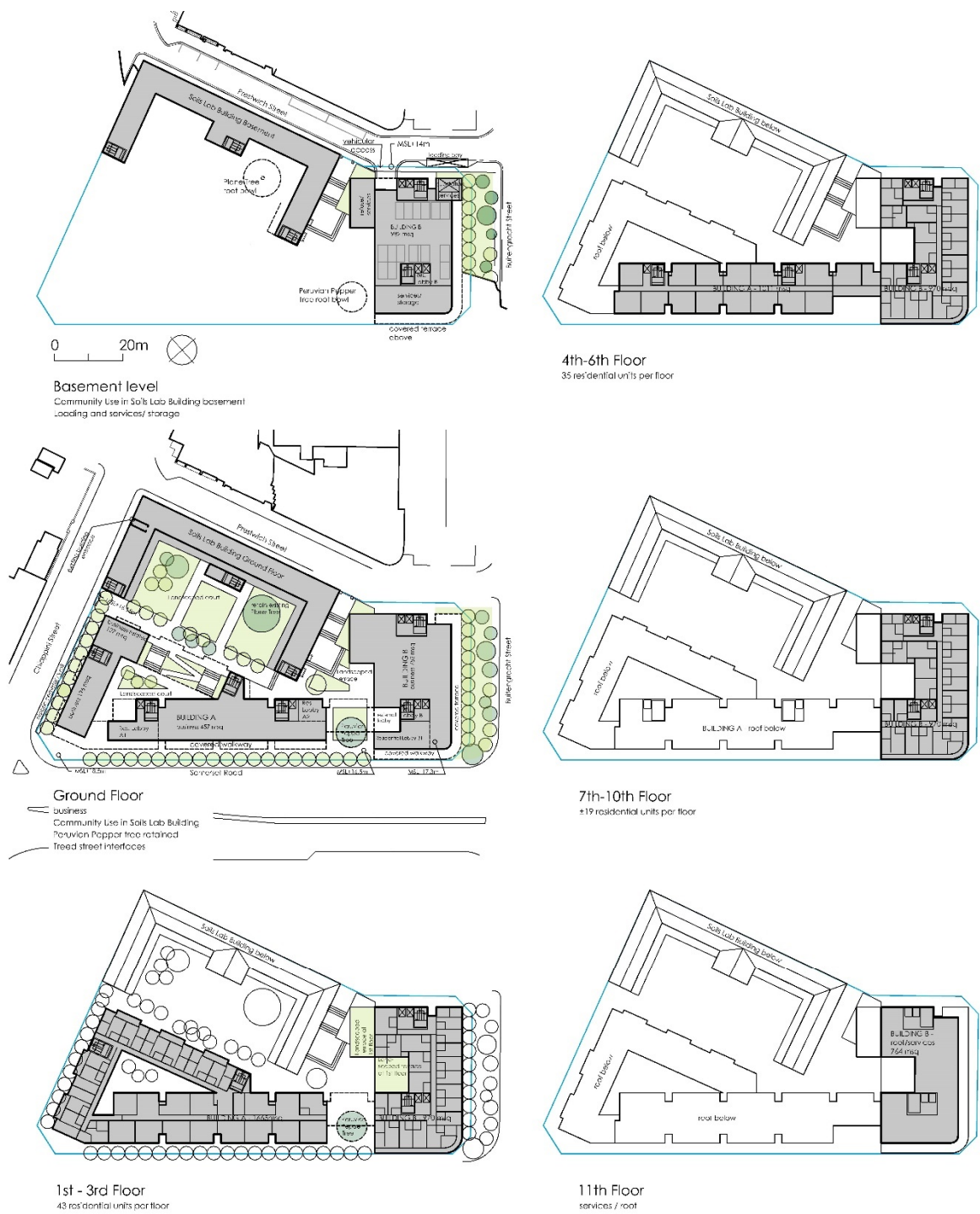
The historically significant Grade IIIA Soils Lab building is proposed to be retained and repurposed for retail uses at ground floor level and a co-working / office environment at the basement level.

Other existing site features that are being retained and incorporated in the proposal include:

- the historical cemetery wall along Chiappini Street,
- the existing gate posts next to the Soils Lab on Prestwich Street,
- several existing trees associated to the Soils Lab, including a very tall Plane Tree in the existing courtyard, and
- an established Peruvian Pepper Tree along Somerset Road.

The space required around and above the Peruvian Pepper Tree creates a break between the Buitengracht Street tower and the building along Somerset Road, allowing views into the internal court of the scheme.

The existing and proposed new buildings have a combined Gross Floor Area (GFA) of ±23 373 m². The business-related component (retail, co-working spaces, and community-type retail/offices for the Soil Lab) is estimated as approximately 3432 m² GFA. The proposed layout plans and building envelope are included as Figures 2.1 to 2.5, below.



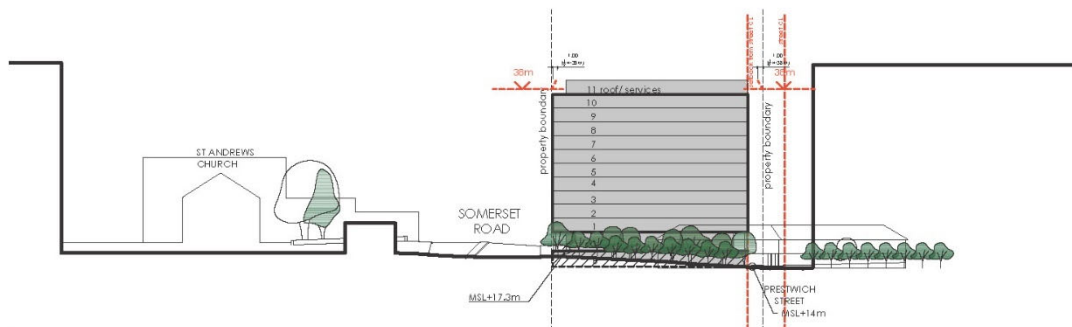
Option 3 Medium Bulk: Schematic floor plans
08 November 2023

Floor areas of new building:
 Basement service area - 982 msq
 Ground floor business - 2 028 msq
 Residential floor area: - 17 728 msq
 Roof services area B - 764 msq
Total new floor area: 21 502 msq

Floor areas of existing building:
 Soils Lab Basement - 842 msq
 Soils Lab Ground Floor - 1 029 msq
Total floor area - Soils Lab: 1871 msq

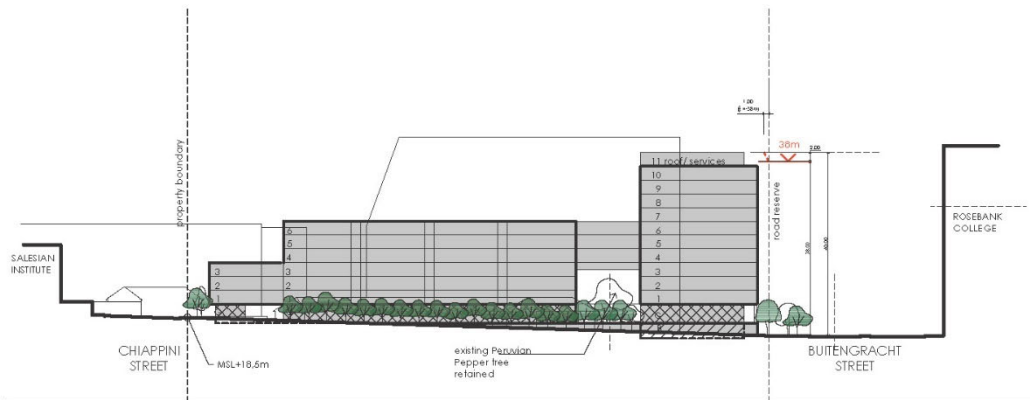
TOTAL FLOOR AREA: 23 373 MSQ
Residential units: 310 no's
Parking bays - Only loading and service-related parking provided

Figure 2.1: PPTL Conceptual Development Proposal Schematic Floor Plans



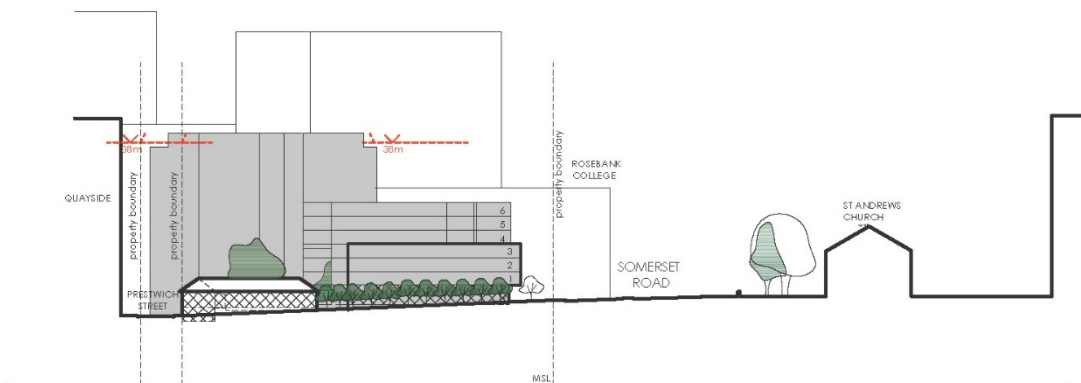
Buitengracht Street Elevation

0 20m



Somerset Road Elevation

0 20m



Chiappini Street Elevation

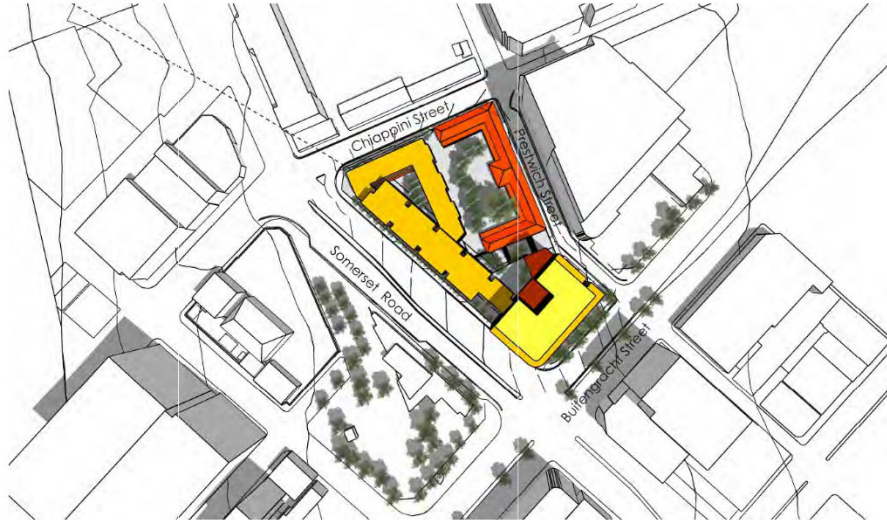
0 20m

Schematic Building envelope
Option 3 Medium Bulk
08 November 2023

Figure 2.2: PPTL Conceptual Development Proposal Schematic Building Envelope

OPTION 3 3-DIMENSIONAL IMAGES

View 1. Plan View



View 2. View at Buitengracht Street and Somerset Road intersection



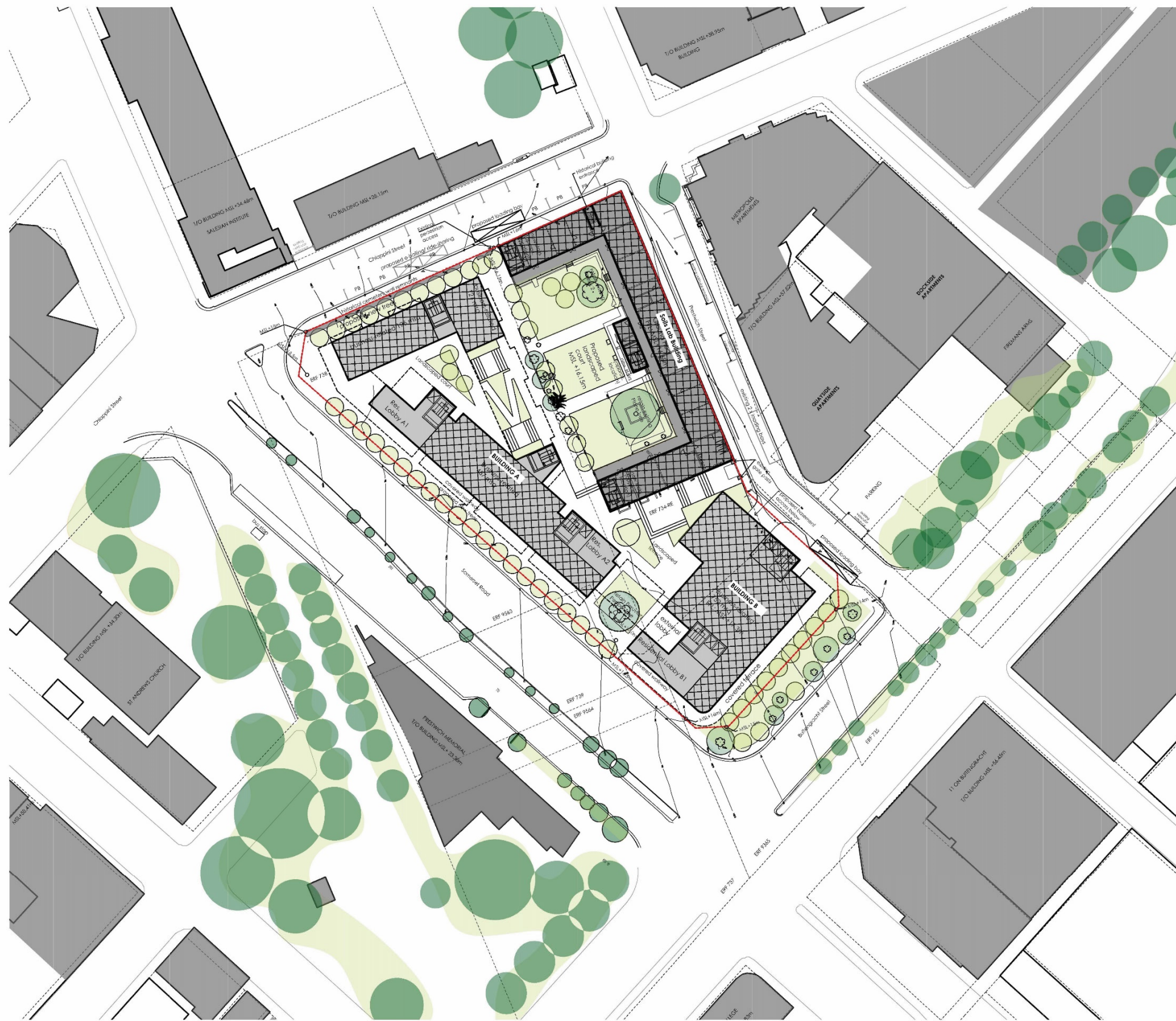
View 3. View at Somerset Road and Chiappini Street intersection



View 4. View at Chiappini Street and Prestwich Street intersection

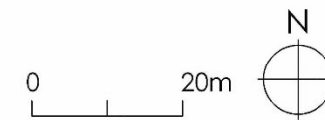


Figure 2.3: PPTL Conceptual Development Proposal 3-dimensional images



KEY:

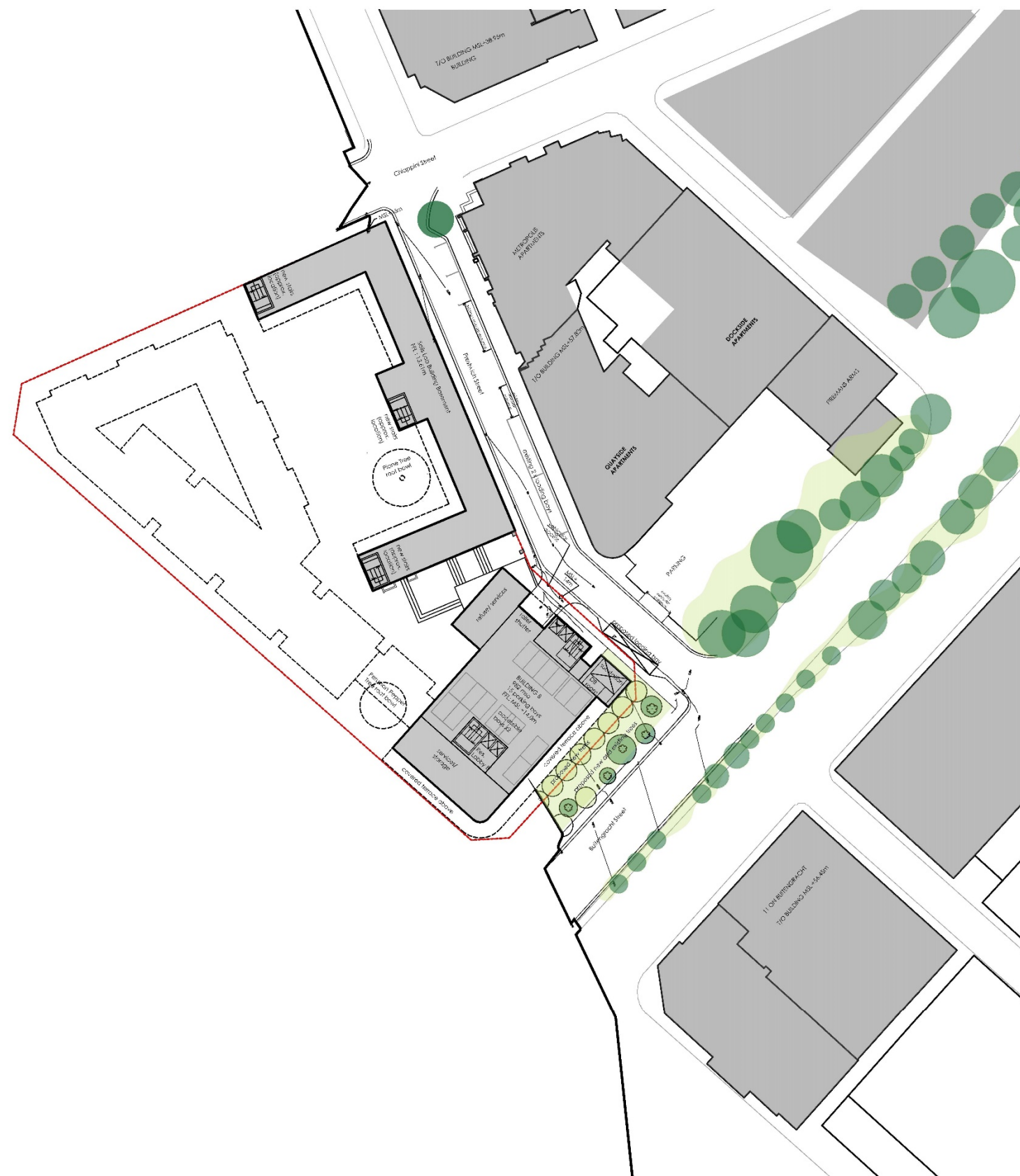
Developable area



Option 3 Medium Bulk:
Site Plan / Ground Floor Plan
08 November 2023

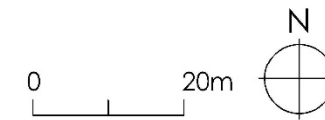
1:1250 @ A3

Figure 2.4: PPTL Conceptual Development Proposal Ground Floor Plan



KEY:

 Developable area



Option 3 Medium Bulk:
Basement level
08 November 2023

1:1250 @ A3

Figure 2.5: PPTL Conceptual Development Proposal Basement Floor Plan

3. ARCHITECTURAL GUIDELINES

The following architectural guidelines build on the guidelines included in the Conceptual Development Plan Options Report (September 2023) and have been refined to support the Conceptual Development Proposal.

3.1. Development parameters according to the Cape Town Municipal Planning By-law (MPBL)

The development site falls within the CBD Local Area Overlay Zone, therefore the development rules of GB7 zoning in accordance with Map LAO/4 in the Development Management Scheme apply to the subject sites. Notwithstanding the maximum permitted development rights (assuming that the subject sites are successfully consolidated and rezoned to an appropriate zone to accommodate the proposed land uses), the architectural guidelines support the preferred conceptual development proposal which presents a smaller built envelope than the maximum permitted building envelope. Refer to Table 3, below. Thus, the proposed parameters of the Conceptual Development Proposal will guide the development envelope for the site, going forward.

Table 3. Permitted versus proposed development parameters

| Parameter | Maximum permitted development according to the MPBL (GB7 parameters) | Conceptual development proposal ** |
|---|--|---|
| Floor factor | 6.8 | Approximately 3.5 |
| Coverage | 100% | Approximately 56% |
| Maximum building height | 60m | 40m |
| Setbacks from street and common boundaries. | Buildings are permitted on street and common boundaries. | Buildings extend up to street boundaries. |
| Setback above 38 m high. | From 38m above ground level, the building is required to set back at a gradient of $\frac{1}{2}(H-38)$ from any street boundary. Buildings are permitted on the common boundary for the full height. | To comply with the setback requirement. |

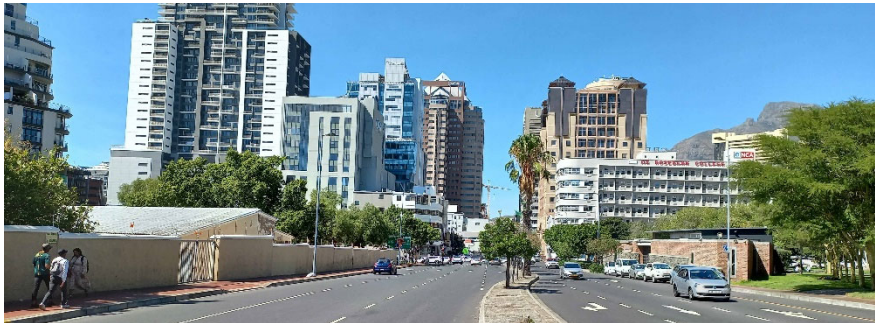
** Based on the proposed consolidated site area of approximately 6690 m²

3.2. Responding to local and site scale context

Development of the site must be guided by the following contextual informants at local scale (its role in the city) and site scale (significant features on and around the site).

3.2.1. Gateway Role of the site

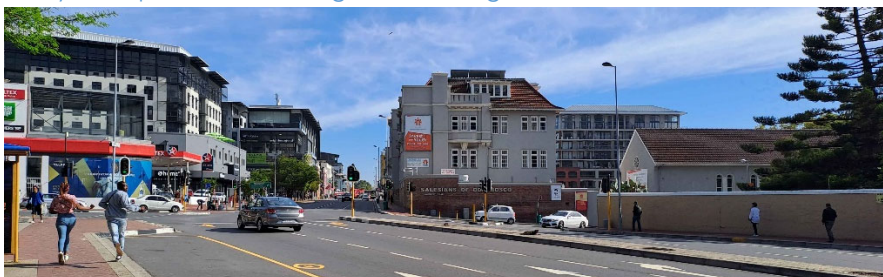
The gateway role of the site requires the new buildings to emphasize the street edges while facilitating the transition from the bulk and height of the Foreshore and CBD to the finer grained fabric of the Bo-Kaap, De Waterkant and Prestwich Precinct on the one hand and the bulk and height of the new development relative to the Prestwich Memorial / St Andrews Church Square and the retained Soils Lab Building, on the other hand - refer Figures 3.1, 3.2. and 3.3.



View of the CBD, along Somerset Road, with the project site on the left and the Prestwich Memorial on the right.



View down Somerset Road towards De Waterkant, with the project site on the right and the Quayside apartment building on the far right.



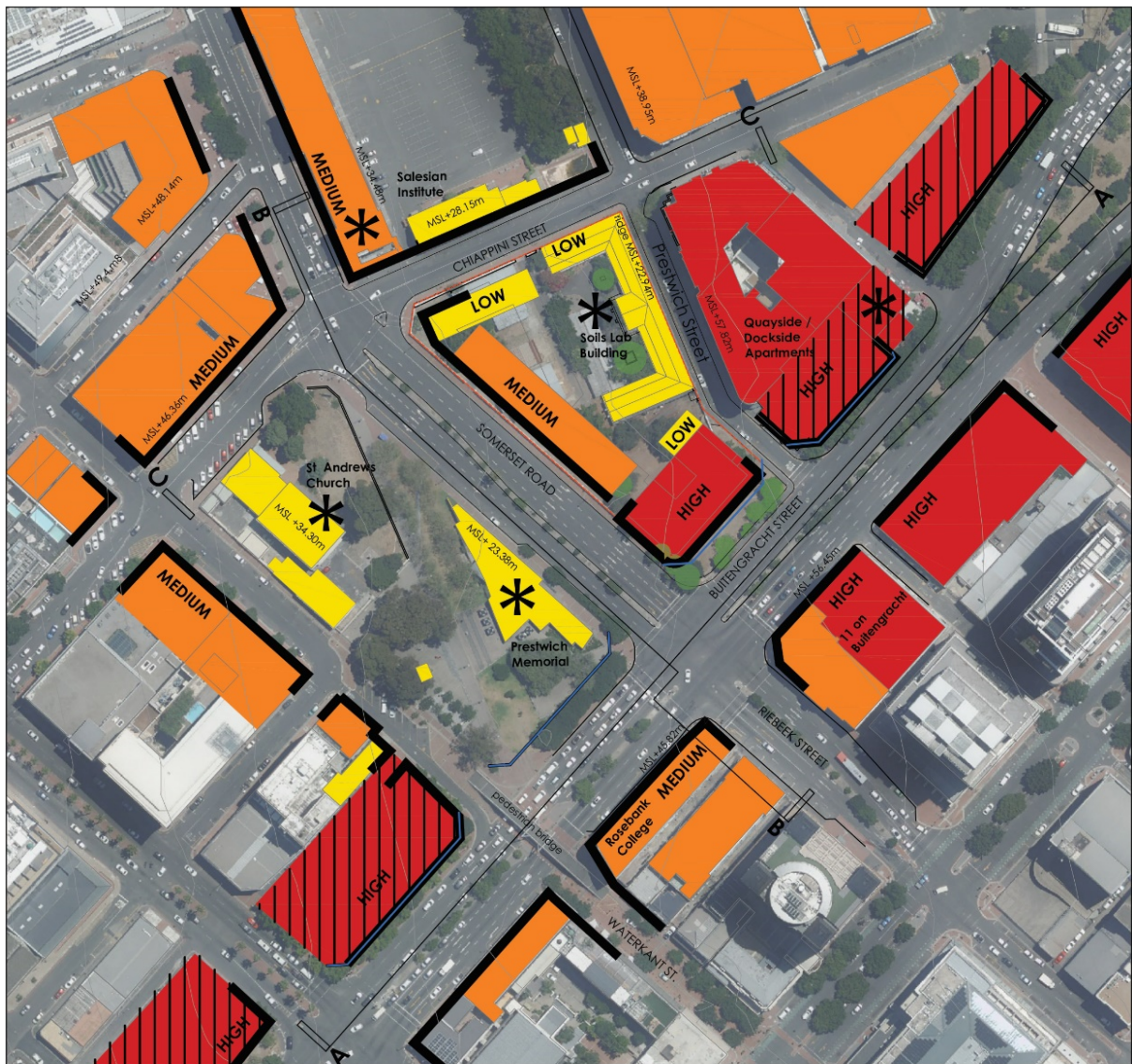
View of the intersection of Somerset Road and Chiappini Street, with the Salesian Institute in the centre and the project site on the right.

Figure 3.1. Photographs of the site context

Accordingly, the following guidelines apply to the proposed development:

- The tallest building component must be located along Buitengracht Street to define the edge of the CBD and to fit with the proposed infill development along Buitengracht Street proposed within the proposed Foreshore Gateway Urban Design Framework (2021)¹. The building heights of the proposed infill development along Buitengracht Street step up towards the Foreshore. Accordingly, the tower component must be lower than the adjacent Quayside building. The lower height also ensures the site is read as part of the gateway defining entry into the Atlantic Seaboard Urban Corridor along Somerset Road. (Refer Figure 3.2. and Figure 3.3: Sections A and B.)
- The following indicative storey heights inform the new building envelope:
 - i. 3.0 m for residential floor levels
 - ii. 4.2 m for ground floor retail areas (this may vary depending on the slope of the site, but should not be less than 3.0 m, minimum)
 - iii. 3.3 m for basement parking/ services level
 - iv. 3.0 m for services at roof level
- From 38m above ground level, the building is required to set back at a gradient of $\frac{1}{2}$ (Height minus 38m) from any street boundary in a GB 7 Zone. Residential accommodation must stop below the 38m height, to avoid staggered setbacks in accommodation above this level. Roof level services (for example the lift or fire escapes) may protrude above the 38m level, setback behind a parapet (refer Figure 3.3: Sections A and B).
- The tower must have an articulated corner at the prominent intersection of Buitengracht Street and Somerset Road to acknowledge the gateway space and Somerset Road as a dominant route in the local access network.
- The building height along Somerset Road must be medium height, and not exceed the height of the Rosebank College (corner of Somerset Road and Buitengracht Street). The total height of this component (including roof level services) must not exceed 25m above existing ground level, measured at the highest point of the slope along Somerset Road (refer Figure 3.3: Section B).
- The building height must step down along Somerset Road towards the Chiappini Street / Somerset Road intersection, to transition between the heights of the new building and the existing Salesian Institute (refer Figure 3.3: Section B).
- The building height must step down along Chiappini Street, to transition between the heights of the new building and the existing Soils Lab Building. The height difference between the new and existing buildings must not exceed two storeys (refer Figure 3.3: Section C).

¹ The Foreshore Gateway Precinct forms part of the draft CBD LSDF Contextual Analysis (August 2023) which is currently going through a stakeholder engagement process.



KEY:

- Low height (1 to 4 storeys)
- Medium height (5 to 8 storeys)
- High (38m and above)
- Proposed infill development footprints (Buitengracht development edge)
- Road reserve
- * Heritage landmarks



Figure 3.2: Height Transitions (to be read in conjunction with Figure 3.3 Sections) (NM & Associates, 2023)

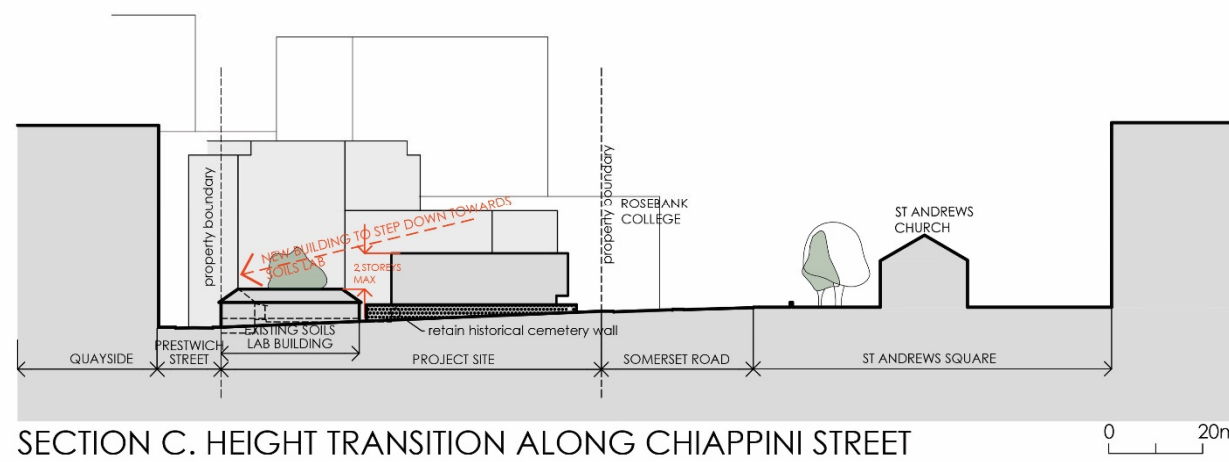
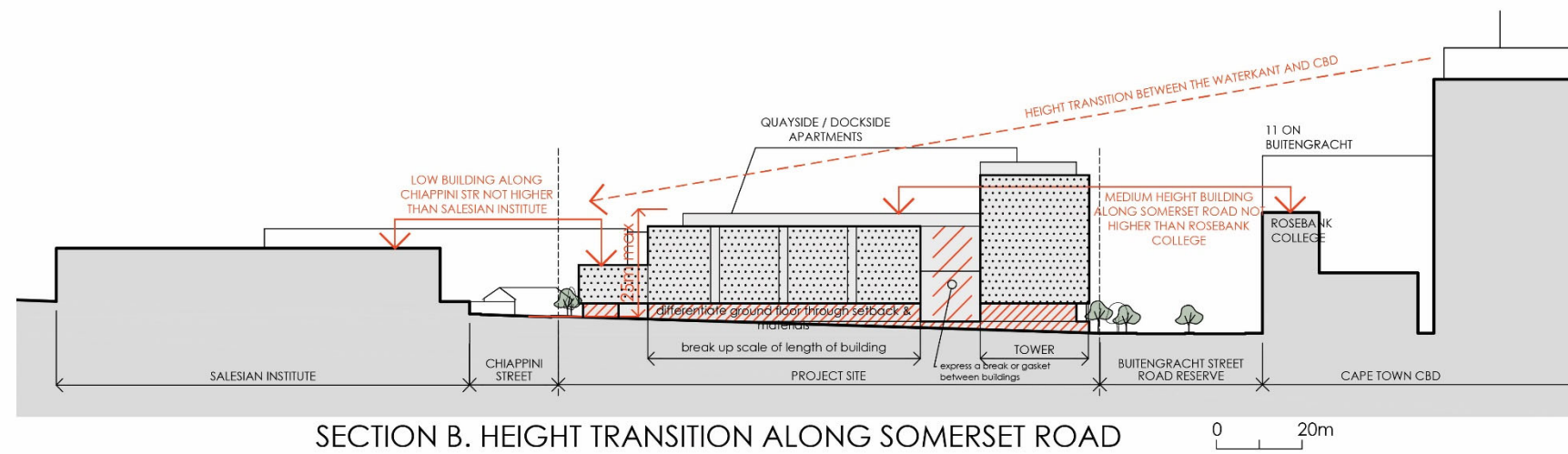
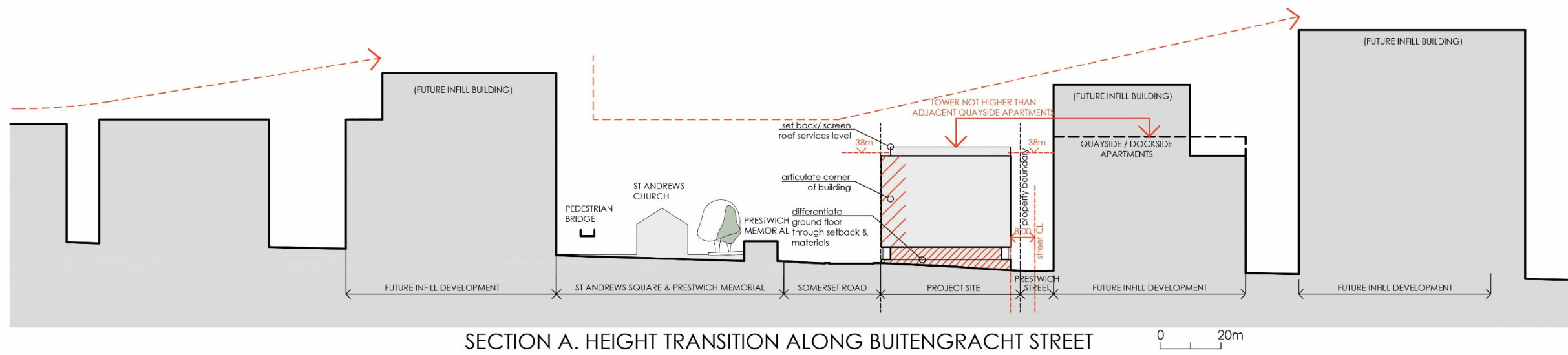


Figure 3.3 Height Transitions – Sections (NM & Associates, 2023)

3.2.2. Street interfaces

The development must define the urban block as per the local urban courtyard typology found in the precinct where the buildings follow the block edge and the central parts of the block are left open to the sky. Buildings along the edge of the urban block should contribute to the definition and activation of the public space network. The form and function of the ground, and the few floor levels above ground level, will have an impact on the performance of the local public environment. The following guidelines will therefore focus on the spatial preconditions and location and type of land uses specific to each street.

- Generous allowance must be made for pedestrian movement around the edges, especially Somerset Road and Chiappini Street where the new building can interact directly with the public sidewalk. (Also refer to Section 3.3.2 below.)
- The tower on **Buitengracht Street** must be set back (minimum 2.5m) from the street boundary (edge of road reserve) to allow for at least one additional line of trees close to the property boundary to reinforce the existing tree planting along Buitengracht Street. The selection of new tree species must consider the appropriate scale, shade density and non-invasive root systems, as per the PPTL Landscape Plan and Guidelines (2023). The road reserve must be retained as a soft landscaped open space, until it is needed for road widening purposes. The ground floor along Buitengracht Street must be set back to allow for a useable external area overlooking the landscaped road reserve edge. See Figure 3.4: Section A.
- The building facing onto **Somerset Road** must be conceptualised as the north-eastern edge of the Prestwich Memorial / St Andrews Square space, which acts as an important threshold and pause space in moving between the city centre and the Prestwich Precinct. Refer Figure 3.5. Allowance must be made for tree planting along the Somerset Road edge to soften the street interface of the development and create a more humanly scaled environment that frames the existing "Park" space. Accordingly, the new building must be set back 3m minimum from the new street boundary to allow for the canopies and rootzones of the new trees. Overhead canopies or basements must not extend into the tree planting zone. Refer Figure 3.4: Section B.
- **Chiappini Street**, north of the Soils Lab building must accommodate planting where possible to create a positive street interface given its current and future role as a route connecting the CBD with the V&A Waterfront. The old graveyard wall should be conceptualised as an integrated component of the pedestrianised edge. Refer Figure 3.4: Section C. The planting/tree types and positioning of trees relative to the wall must not impact the structural integrity of the foundations of the cemetery wall.

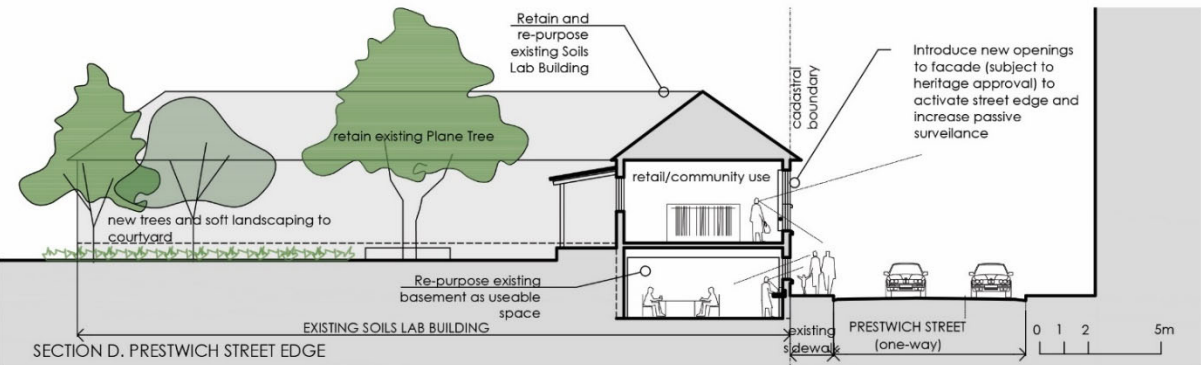
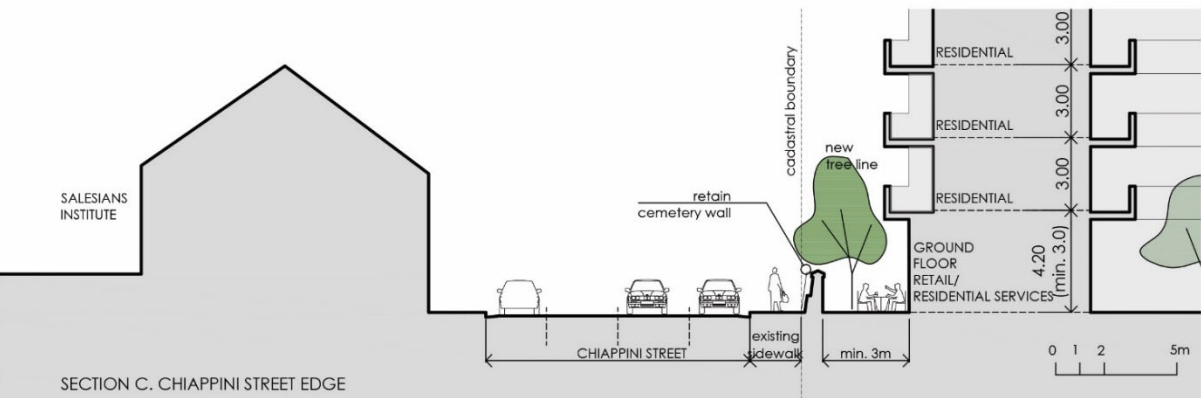
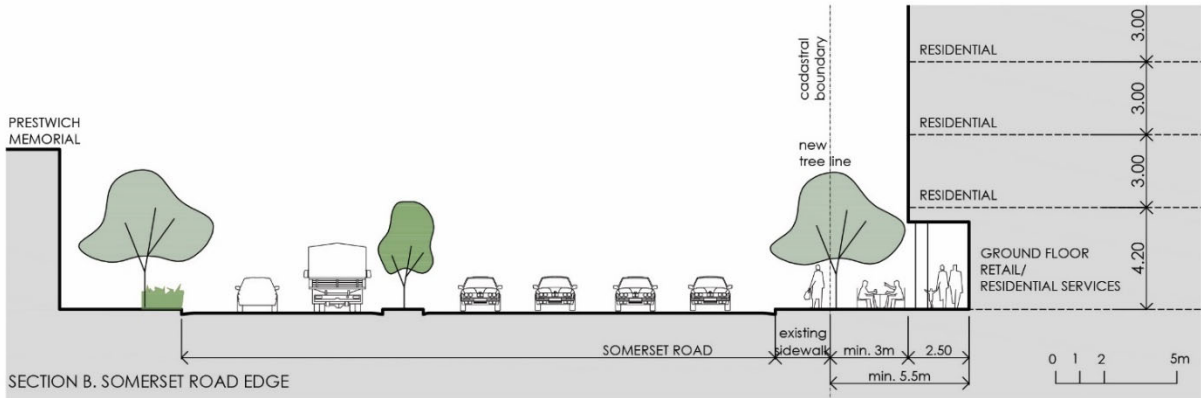
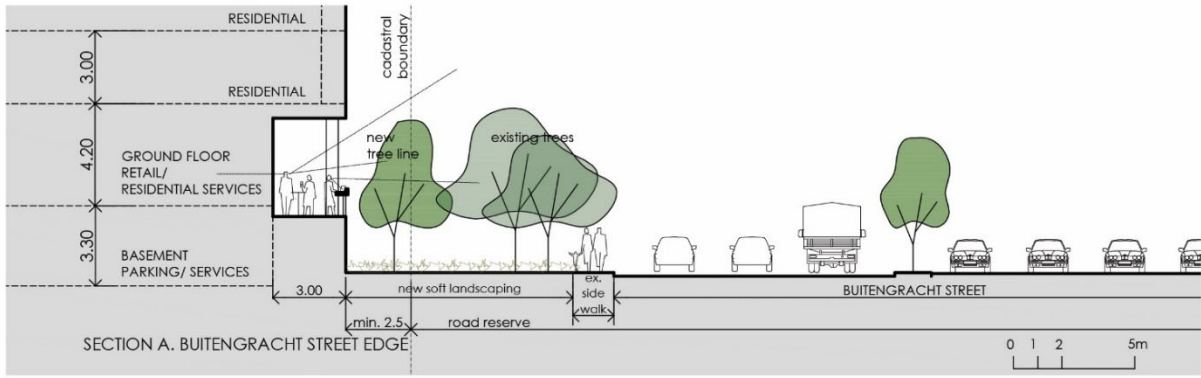
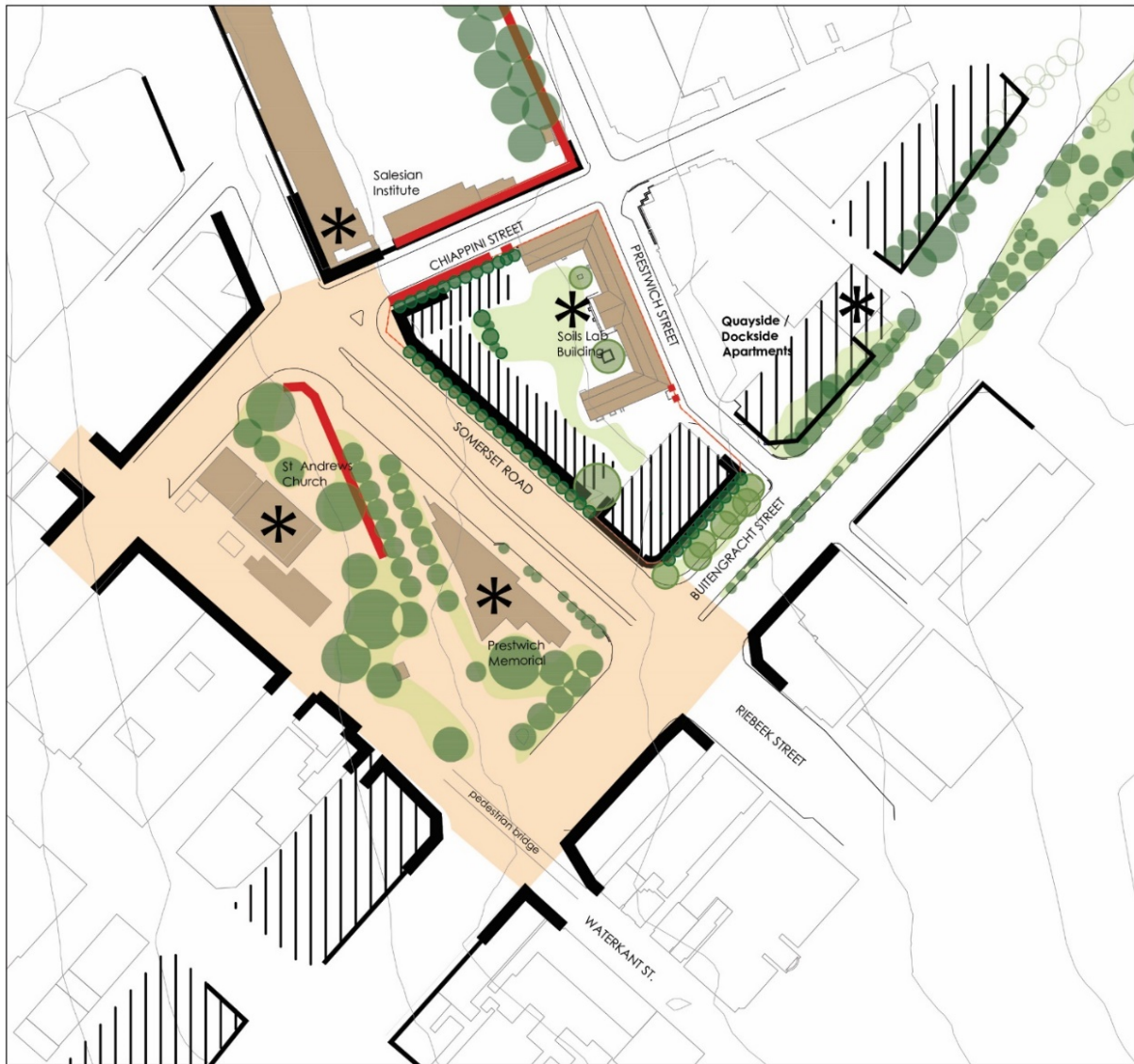


Figure 3.4: Street Interfaces (NM & Associates, 2023)



KEY:








-  edges framing public spaces
-  proposed infill fabric
-  Historic walls
-  Heritage landmarks
-  Soft landscaping
-  Existing trees to be retained
-  New tree lines



Figure 3.5: Frames, Edges and Walls (NM & Associates, 2023)

- Along Somerset Road, visual connections to the Prestwich Memorial / St Andrews Church square must be made. A gap between the tower and the Somerset Road building around the existing Peruvian Pepper Tree presents an opportunity to do this. This aligns with the entrance to the Prestwich Memorial which simultaneously allows the development to acknowledge and reference the Memorial as an important site in the context of the past role of Prestwich precinct as a burial ground.
- The pedestrian crossing of Somerset Road at the Chiappini Street intersection must be designed to prioritise more direct and safer pedestrian movement across Somerset Road in particular. The new development must allow for a generous pedestrian fore-court at this corner, with direct pedestrian links to the internal courts and routes through the new development. (Also refer to Section 3.3.2 below.)
- The Soils Lab building façade along the **Prestwich Street** boundary must be opened to reveal activity within the interior of the building and the basement to create interest and contribute to increased passive surveillance over this street. Refer Figure 3.4: Section D, above.
- The material selection and resolution of the new building's facades must not be over-elaborate or attention-seeking (for example, using large expanses of reflective glazing or elaborate screening) to avoid detracting from the heritage buildings and features on and / or surrounding the project site. Similarly, the most prominent public facades (south-west-facing on Somerset Road and south-east-facing on Buitengracht Street) are shaded, exposed to summer winds, and exposed to noise and fumes from vehicular traffic. Therefore, these elevations are likely to have a more solid and robust façade-design than the sunnier and wind-protected north-facing sides of the new buildings.
- Notwithstanding the above requirement for a recessive, "back-ground building", the facades to Buitengracht Street and Somerset Road should optimise opportunities for the articulation of corners and breaks between buildings to mitigate the scale of the development (Refer Figure 3.3: Section B, above).
- The ground floor level and basement should be articulated to help break down the scale of the building in the vertical dimension. It is proposed that the ground floor and basement are differentiated from the floors above by setting back the ground floor and expressing the ground floor and basement in a different material. Refer Figure 3.3: Sections A and B above, and Figure 3.6. below.



Figure 3.6: Examples of differentiating material of the ground floor and setting back the ground floor plane to break the vertical scale of the building (NM & Associates, 2023)

- Floor levels above ground floor level must have their facades designed to reflect and differentiate the more private versus public type activities. Where shared facilities servicing the residents are located above ground, for example gymnasias, cafes, shared workspaces etc, facades should be opened to offer visibility of these activities which in turn can provide interest for passers-by and contribute to improved levels of passive surveillance.
- Where a new basement is exposed on a public street above ground level, the materiality and scale must be carefully considered.
- The ground floor level must be utilised for land uses that require accessibility and visibility by the public. This will include retail and business type services, community uses and co-working type environments. Conventional offices, public facilities and businesses requiring high degrees of privacy and security must not locate on the ground floor as they will impact negatively on the street level environment.

- The ground floor level must provide a range of different size spaces including smaller rental units to support small scale business operators as suggested in the market demand studies and in keeping with socio-economic principles to support smaller role-players in the market.
- The development must provide for a retail anchor on ground level that is easily accessible and visible. It is optimal that the retail anchor is spatially integrated or located adjacent to a business that can offer extended hours of operation beyond the normal business day. Examples include a takeaway outlet / restaurant or gymnasium.

3.2.3. Incorporating existing heritage fabric and site features

The proposed development must be respectful to the history of the site, the heritage fabric of the Prestwich Memorial / St Andrews Square and the Salesian Institute and the broader heritage context of the historic District One. It must retain and repurpose existing elements with heritage significance, namely the graded (Grade IIIA) Soils Lab building (including some of its associated trees), the remnants of the cemetery wall along Chiappini Street and the gate posts in Prestwich Street. The concept proposal for the site also allows the existing Peruvian Pepper tree along Somerset Road to be retained, even though the tree does not have heritage status. The following guidelines inform the development approach to existing site features and fabric:

Soils Lab building

- The new development must not overwhelm the retained Soils Lab building. The new development must be set back from the Soils Lab by at least 5m, and gradually transition to taller building heights (refer item 3.2.1, above).
- The existing Soils Lab building must be repurposed in a way that retains its principal architectural qualities, namely a robust perimeter building with a verandah-lined courtyard to the site interior, together with the remaining historic built fabric including, but not limited to, timber flooring, fenestration, architraves, doors and other features. Refer to the photographs in Figure 3.7.



Chiappini Street facade



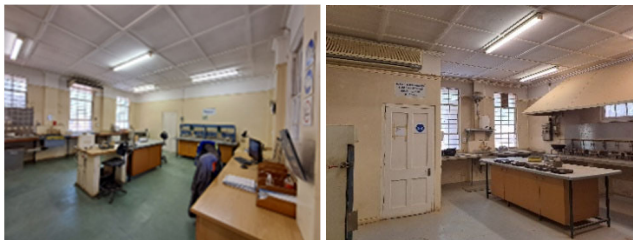
Original Main entrance on Chiappini Street



Prestwich Street facade



South-east façade of the Soils Lab



Typical existing interior spaces of the Soils Lab



Soils Lab Basement, with window openings to Prestwich Street



The verandah and courtyard of the Soils Lab

Figure 3.7: Existing Soils Lab building (NM & Associates, 2023)

- It is noted that the conceptual development proposal did not test the specific needs or spatial implications of the proposed new uses (retail, co-working offices and community uses) or the Soils Lab building's ability to accommodate internal and external changes spatially or structurally. This will need to be explored in greater detail in the design development stages, to follow. Presently it is understood from the heritage studies and building condition assessment of the PPTL Soils Lab building undertaken as part of the Contextual Analysis Report (2023) that the building is robust enough to

manage adaptive re-use. However, there are inherent spatial limitations (for example the shallow depth of the building) and service limitations (few existing wet services cores) that affect the repurposing of the building. It is not appropriate to introduce a service intensive, high wear-and-tear use to this historic building.

- Additional floor levels are not encouraged; however, opening of the façade towards Prestwich Street is permitted to activate this street edge and increase passive surveillance. The arched entranceway on Chiappini Street must be reinstated as a primary entrance to the building. The material qualities of the building must be retained, namely plaster / paint wall finishes with steel windows to the street facades with face brick walls and timber-framed windows and doors to the courtyard side. Additions and infill must be clearly distinguishable as new. The ends of the verandah should be opened again.
- The wet services of the Soils Lab building must be reconsidered with a view to replace deteriorated services and to rationalise the placement of new reticulation. The wet services must be concentrated in new service cores and must avoid being exposed on the street-facing facades.
- The basement of the Soils Lab building can be repurposed as habitable space and must be linked with vertical circulation to the ground floor to integrate it with the ground floor and make it compliant with fire safety regulations. The existing ramped entrance to the basement will become redundant in the process. The windows to the basement must be redesigned in the existing window openings to allow for improved light and ventilation, including re-establishing / improvement of the existing external lightwells around the basement perimeter.
- Activities to be located on the ground floor of the Soils Lab building must contribute to activation of the Soils Lab courtyard spaces, however caution must be exercised when selecting activities such as restaurants or other types of businesses which require high levels of back of house servicing for the ground floor.

Trees

- The existing Plane Tree in the Soils Lab Courtyard must be retained. New tree surrounds, seating and surface finishes around the tree must be considerate of the tree's root zone. There is an opportunity to review the existing paved finish around the tree and make it a green, soft landscaped space.
- The existing Peruvian Pepper tree along Somerset Road has a canopy of approximately 9m diameter, and height of 27m above MSL. The new building configuration makes it possible for the tree to be retained, sufficient space (minimum 2m in either direction) must be retained around the tree's root zone and canopy overhead to allow it space to grow further.



Figure 3.8: Plane tree in the Soils Lab courtyard (left) and Peruvian Pepper tree along Somerset Road (right) (NM & Associates, 2023)

Old graveyard wall and gateways

- Along Chiappini Street, the new building must be set back at least 3,5m from the cemetery wall (shown in Figure 3.9.) to allow for a useable space between the wall and the ground floor (refer Figure 3.4, Section C, above). This zone can be landscaped or used as positive outdoor space to the ground floor retail / residential support spaces. It is proposed that the present plaster / paint finish is removed to uncover the original stone construction of the wall. New openings in the wall are permitted but must be limited in number to retain as much of the original fabric as possible and must be subject to detail design with inputs from the heritage and archaeological specialists.



Figure 3.9. Remnants of the historic cemetery wall along Chiappini Street (NM & Associates, 2023)

- Along Prestwich Street, the existing gatepost to the southeast of the Soils Lab (shown in Figure 3.10) must be incorporated into the landscaping and threshold of the pedestrian thoroughfare from Prestwich Street to Somerset Road.

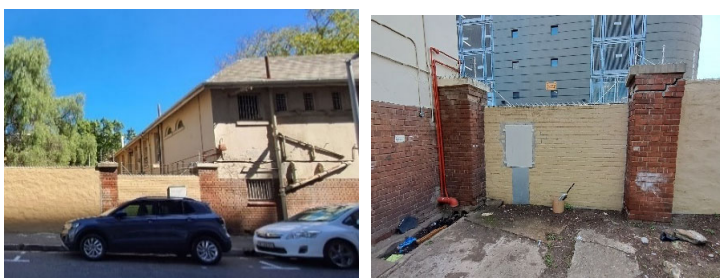


Figure 3.10. Soils Lab building's gateposts in Prestwich Street

Incorporating heritage fabric and site materials

An approach to memorialising the past use of the local area (including the site) as a burial ground and the social history of District One, using local stone from the excavations, could be applied in the design and detailing of the ground plane. In excavations of the site, it is likely that other items of interest may also be unearthed and could be used to provide interest for those passing through the site. Old stone and remnants of headstones, crypts etc. could be integrated into the paving, seating, changes in level, way finding and interpretative signage. This will be expanded on after completion of the Heritage Impact Assessment which will incorporate mitigation measures to lessen the impact on the historical context. See Figure 3.11 for examples of the way stone excavated on the local sites has been used in the shaping of the ground plane and interfaces.



Figure 3.11: Examples of projects in the vicinity of the project site where stone found on site has been incorporated into the design of the buildings and ground plane (NM & Associates, 2023)

3.3. A comfortable place for living

The proposed residential programme requires the new development to promote aspects such as optimal orientation, natural ventilation, views, recreation / outdoor spaces and amenities which will make the development an attractive and comfortable place to live in.

3.3.1. Residential components

- The affordable or social housing component, comprising predominantly 2-bedroom units aimed at families, must be prioritised for areas with the best orientation, for example facing north and northeast (Chiappini Street and Somerset Road wings). Where possible, these units must be provided with balconies.
- Where possible, these units must be arranged around internal courts that will allow natural light and ventilation from two sides of a unit. The corners of buildings should be reserved for larger units.
- The tower footprint lends itself to the narrower, deeper configuration of studio units, suitable as open-market residential units.
- Accordingly, from a management perspective, there is the opportunity to assign the Buitengracht tower as the open-market component and the Somerset Road / Chiappini Street wings as the affordable / social housing component.
- Where units are arranged along internal passages, there should be breaks along the length of the passage or at the end of the passage to provide views to the outside, to provide visual relief, natural light and aid in wayfinding and orientation. The site has access to fantastic views of Table Mountain, Lions Head and the surrounding cityscape, which should be optimised, where possible.

3.3.2. Pedestrian access and circulation

- Somerset Road and Chiappini Street are prioritized for pedestrian access, and pedestrian movement across the site between Somerset Road / Chiappini Street and Prestwich Street, is encouraged.
- The new building footprint must be permeable at ground floor level to accommodate pedestrian thoroughfare from the Somerset Road, Chiappini Street and Prestwich Street edges and allow visual links into the site. This is reinforced by the gap in the building between the Buitengracht Street tower and Somerset Road block and the fragmentation of the ground floor level at the corner of Somerset Road and Chiappini Street.
- The building envelope must be articulated to express the location of these entrances to aid in wayfinding and break up the bulk of the envelope.

- Pedestrian entrances must be located close to the potential safe pedestrian crossing points, namely towards the corners of the site. The Somerset Road - Chiappini Street intersection is a particularly important area for pedestrian movement, therefore there must be a generous pavement area at this corner.
- The ground floor level must be universally accessible; nevertheless, the fall of the site should be used creatively in the landscaping of external spaces.
- There must be a separation between front-of-house functions such as residential lobbies and pedestrian thoroughfares, and back-of-house functions such as retail deliveries, off-loading, refuse-collection etc.
- Entrances at ground level incorporating vertical circulation to the residential component above ground should be visible, accessible, and legible.
- The location of vertical circulation cores coordinates the requirements of vertical movement, universal access, fire escape and the separate management of tenancies, where applicable. While the conceptual development proposal does not fix or try to resolve fully its vertical circulation, it is noted that the stepped building profile requires that the vertical circulation strategy suit the height of the relevant building component, for example a building envelope not exceeding 4 storeys does not require lifts, whereas buildings above 30m high require a firemen's lift. The vertical circulation and fire safety requirements of the conceptual development proposal will need to undergo resolution in future design development stages.
- The conceptual development proposal locates the open-market residential units in the tower on Buitengracht Street and the affordable / social residential units in the building wing on Somerset Road and Chiappini Street. Therefore, the location of vertical support facilities (lobbies, security desks etc.) and vertical circulation cores must consider the potential separation in operational management of these two tenant profiles.

3.3.3. Shared spaces and external courts

- The external spaces between the retained Soils Lab building and new building must be configured as landscaped courtyards that offer a variety of semi-private external spaces for residents and visitors. Fencing of internal areas must be avoided; separate areas must be demarcated through landscaped features (for example planted terraces). The residential support areas must be configured to allow access from these spaces.
- Trees and planting must be incorporated into these external courts to provide shade, noise buffering, and mitigate the transition in scale between the tall perimeter building and the existing Soils Lab building.

- The proposed stepped building envelope means that the lower roofscapes will be highly visible from the surrounding higher levels, therefore roof services should be screened and where possible, flat roofs should be accessible outdoor spaces incorporating planting.

3.3.4. Vehicular access

- Vehicular access onto the project site occurs off Prestwich Street where it least impacts pedestrian movement around and through the site. The vehicular access is required to maintain a minimum 25m setback north of the intersection with Buitengracht Street in terms of road access guidelines (Refer to Appendix D: Transport Engineering Report, 2023).
- Access to the proposed new building services (substation, refuse collection and loading) also occurs off Prestwich Street, as far as possible (see section on Services and Utilities below). An embayment for refuse collection, loading and emergency vehicles (ambulance) is provided on Prestwich Street, with a second loading bay on Chiappini Street. The loading bay on Chiappini Street must not block pedestrian entrances onto the site or the proposed reinstated entrance to the Soils Lab.
- Structured parking at ground level must be avoided, unless it is located within a basement plinth as proposed in the conceptual development proposal. There is a level difference of approximately 4 meters between the highest point of the site (corner of Chiappini Street and Somerset Road) and the lowest corner (the southeast corner of the site), making it possible to accommodate a basement level under the general ground floor level without deep excavation and with limited or no ramping down required from Prestwich Street.
- It is noted that the Soils Lab building basement is too narrow and too low, ruling it out as a car parking level. Similarly, the root bowls of the trees retained in the Soils Lab courtyard rule out basement parking to extend into the existing Soils Lab courtyard.
- Available on-site / basement parking should be prioritised for high level management staff for the office, retail and residential blocks, operational bays, accessible bays for the physically disabled, and emergency bays (for sedan vehicles only).
- On-street parking bays for E-hailing or ride sharing bays may be demarcated near prominent pedestrian entrances onto the site, for example on Chiappini Street.

3.3.5. Services and utilities

- The location of vehicular access, loading bays and vertical circulation cores must anticipate the needs and locations of the business uses on site, particularly for retail anchor tenants. These back-of-house functions must be grouped along Prestwich Street,

between the Soils Lab building and Buitengracht Street. It is proposed that the refuse areas, electrical substation, distribution room and metering rooms are located along Prestwich Street and / or within the basement close to Prestwich Street. It is assumed that the business / retail anchor tenants are likely to occupy the ground floor of the Buitengracht Street tower, as this section offers the largest uninterrupted ground floor area in most of the proposed development options.

- The roof level storey (3.0m high) of the tower is set aside to accommodate building services, vertical circulation (lift headroom and fire escapes).
- The lower building components, along Somerset Road and Chiappini Street may also require services at roof level, to be resolved at a later stage. However, it is encouraged that these service areas are associated with the vertical circulation cores and that they are screened and setback from the buildings' street facades.

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**Western Cape
Government**

Appendix C:

Landscape Plan and Guidelines Report





**Western Cape
Government**

Department of Infrastructure

**PPTL Specialists'
Assessments - Landscape
Plan and Guidelines**

DOI12/8/1/P2/6

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Annexure A: Detailed Existing Tree Assessment

This report was compiled by OvP Associates cc Landscape Architects on behalf of the Western Cape Government: Department of Infrastructure.

1. INTRODUCTION

The purpose of this report is to present the Landscape Plan and Guidelines for the preferred Option 3: PPTL Conceptual Development Plan, as an outcome of a conceptual development plan options report that was completed in September 2023 for the enablement of the proposed consolidated Erven 734-RE and 738-RE, Cape Town and a Portion of Buitengracht, Riebeeck and Somerset Street Road Reserve namely Erven 735, 737 739, 9564 and 9565, Cape Town. Refer to Figure 1. The subject sites measure approximately 6690m² in extent, in respect of gross area available for intervention.

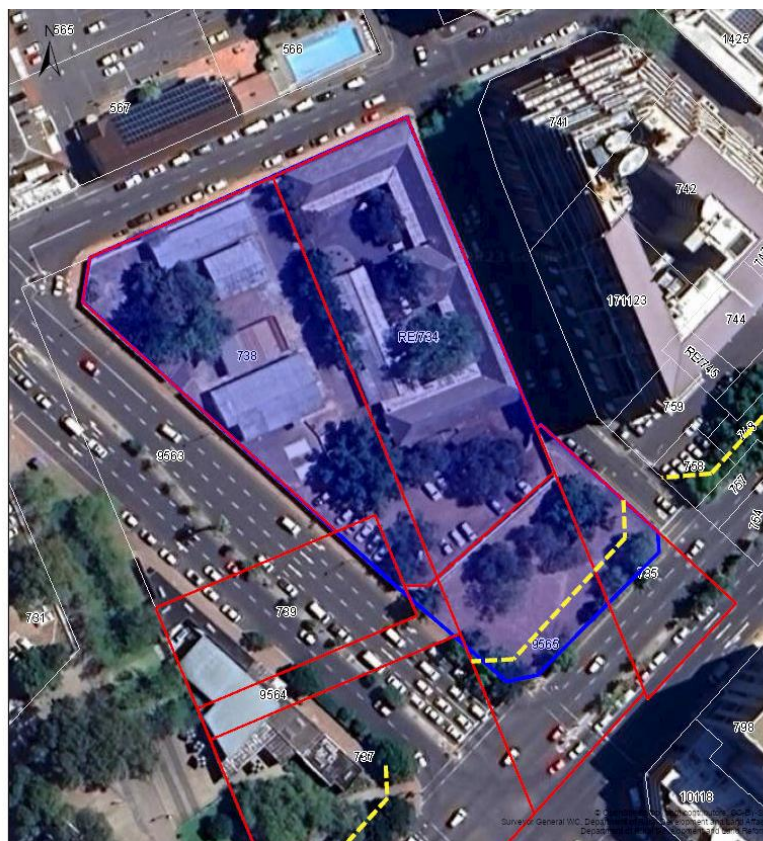


Figure 1: Subject sites and locality

It is important to note the background in the main report to which this guidelines report is appended. All options that were considered were taken through a high-level assessment exercise including a range of assessment criteria through which Option 3 came out as the Preferred Option. The Options were also engaged with key stakeholders for their preliminary inputs. Accordingly, **Option 3 was supported by the WCG's Steering Committee on 10 November 2023** after considering all conceptual development options and relevant comments received from key stakeholders. Option 3 will be henceforth referred to as the PPTL Conceptual Development Proposal.

2. THE SITE OF INTERVENTION

The existing site is highly urbanised (with buildings and hard landscaping) including trees either clumped together or some in isolated areas. There is very little to no presence of natural planting and vegetation. In addition, there has been extensive repeat disturbance of the in-situ site soils (high clay content) and subsequent infill and compaction over the years.

A detailed existing tree assessment was carried out to assist to inform the proposed building footprint and massing parameters. This was provided in Appendix 6 of the Contextual Analysis Report (June 2023). Figure 2 below is an extract from this report which is presented in Annexure A for ease of reference. There are a number of mature trees, the majority of which have been planted within the last 40 years and some of which are older than 60 years.

Discussions were held with CoCT Environment and Heritage Branch on the value of the existing trees to be potentially retained as well as new trees to be included beyond the site boundaries to reinforce visual continuity along the public street edges (Buitengracht Street / Somerset Road / Chiappini Streets).



Figure 2: Tree Assessment (part of Document-OvP, 2023)- Refer Annexure A

3. THE LANDSCAPE PLAN

A Landscape Framework was presented in the previous work in Phase 1. After minor refinement of the preferred option's base plan, a revised Landscape Plan was compiled. See Figure 3 for the updated Landscape Plan.

The Landscape Plan reflects the proposed elements in the external environment. The ideas are informed by the context and site-specific constraints and opportunities including but not limited to the existing terrain (levels and grades), existing and historic landscape elements (trees, courtyards etc.) and the new proposed buildings. Furthermore, it demonstrates a synergy and spatial relationship between the proposed site internally and the adjacent sidewalks and road reserve.

The plan supports the development proposal by creating a series of landscaped outdoor rooms that create positive amenity for residents and visitors alike. The design intentionally seeks to balance the hard to soft spaces to ensure ample areas for gathering and social connection while expanding the green network to obtain the positive social wellness and micro-climate improvements associated with greening of public open spaces.

The retention of the Soils Lab building enables the preservation of the existing courtyard which provides for a positive human scale by the existing single storey veranda on three sides. Due to the urban nature of the surrounding context, this courtyard provides an important opportunity for a gentle green quiet environment and pause spaces for future site inhabitants. The established Plane Tree will form a focal point of the courtyard.

There are some level differences across the site and these present opportunities for terracing and seating to add to the drama and occasion of the series of outdoor spaces created by the development. The design of the open spaces acknowledges the level differences and throughways.

The plan also focusses on providing a traversable environment, facilitating the passage of pedestrians across the site to ensure integration of the proposed development with its context and to create a more liveable environment. The Plan reinforces the historic entrances into the site and new entrances off Somerset Road. The existing mature Peruvian Pepper Tree assists to guide one such opportunity as an important visual and physical opening into the development. In addition, the Plan creates landscaped street edges to

soften and buffer the development from trafficked areas and provides space for ground floor activities to spill out onto the sidewalk edges.

While not shown on the Plan, it is noted here that there are opportunities to improve and promote ease of movement for pedestrians moving around the site especially across Somerset Road and down Chiappini Street between the Bo-Kaap and Battery Park / V&A Waterfront. In this regard, the professional team have proposed that the pedestrian facilities at the Somerset / Chiappini Street intersection are reconsidered to prioritise pedestrian safety. Furthermore, should there be an opportunity in the future, the Chiappini Street vehicular roadway should be reduced, and sidewalks widened to encourage pedestrian usage and safety.

Roof Gardens on the mid height roofs looking over the old Soils Lab building are to be considered as additional recreational and reflective spaces within the development. Shade structures such as pergolas with planting and seating will generate visual relief and create further functional usage. Planting on the lower roofs has been considered as a possibility to address the '4th dimension' of the development. Views for onsite residents onto landscaped roofs will be preferable to views of hard surfaced roofs and functional machinery (for example, air-conditioning) can be hidden within landscaping. As a result, the mid to lower roofs are to be explored for such purposes in future development stages.

The hard landscape will consist of a palette of surface finishes (paving, grass blocks, premix asphalt, kerbing etc) and street furniture such as seating, bins, bollards, signage and lighting.

The soft landscape will comprise a palette of shrubs, groundcovers and trees that are simple, indigenous, endemic, dense, robust and water wise.

Lastly, the Plan presents opportunities to incorporate sculpture, forms of material memorialisation and water features in a manner that highlights special areas and zones in the public open spaces.

These landscape elements should be integrated and co-ordinated into the future Landscape Architect's consultant scope of works.

4. DESIGN PRINCIPLES

The Plan has been informed by the following principles that have emerged out of the analysis undertaken in Phase 1 of the project:

- To honour and pay tribute to the site's historical context including its role as a burial ground, through memorialisation and visual representation of its history.
- To retain and mindfully incorporate existing historical elements including the original cemetery wall along Chiappini Street and the old Peruvian Pepper Tree alongside Somerset Road.
- To reinforce and supplement the existing green network through tree placement in the streetscape and generously green the public realm within the development as well as supplement the roof terraces with planting where feasible.
- To mitigate against the loss of existing trees on the site, new proposed trees are to be incorporated and added where possible to the public realm including the road reserve and sidewalks that belong to the City of Cape Town.
- To enhance and extend the existing pedestrian network and to ensure universal access throughout the site.
- To draw pedestrians into the courtyards using views and creating a positive habitable public environment.
- To remove non-historical portions of the existing boundary wall and to enable permeable site edges in order to provide inviting glimpses of greenery and positive activity through openings in the building façade at ground level.
- To create active edges alongside the streetscape through generous sidewalk treatments and opportunity for spilling out of ground-floor hospitality activities onto sidewalks.

5. GUIDELINES

The guidelines below should be read in conjunction with Figure 3: Landscape Plan and inform future phases of work on the Landscape component of the development.

5.1 Pedestrian Access & Circulation

Pedestrian circulation should be designed according to best practice to ensure maximum accessibility for people with varying levels of physical mobility, including the following:

- Outdoor circulation routes to be non-slip surfaces, easily navigable and well lit.
- Clear wayfinding signage to be provided.
- Tactile aides to be included to assist visually impaired people with safe navigation.
- Appropriate hard landscaping should be developed to ensure the integration of the site with St Andrew's Square from a visual and pedestrian flow perspective. The notional new entrance aligning with the existing Peruvian Tree facilitates integration of the two sites by aligning with the existing Prestwich Memorial entrance facing Somerset Road.
- Working with the City of Cape Town the hard landscape should be encouraged to extend beyond the site boundaries to successfully 'capture' the pavement and pedestrian. This can be achieved by extending the internal hard surfaces through to the street kerb edge. This can be done throughout the site for continuity where it is practically possible.

5.2 Managing surface levels & grading to facilitate inclusive access

The level change across the site will require careful consideration and attention to inclusive design principles to maximise accessibility for people with differing levels of physical mobility. The detailed design phase should explore options to enable universal access through gentle sloping of the paving to create accessible routes through the public open space. Ramps are to be provided where the level change is too severe to be incorporated into the paving falls. Ramps are to be designed with a maximum gradient of 1:12, a maximum length of 6m and a minimum width of 1,1m as per SANS guidelines. The non-slip finish should be equivalent of a sand-blasted finish such as exposed aggregate or similar.

5.3 Managing surface levels to facilitate preservation of existing established trees

Where existing trees are to be retained, it is important not to lower or raise the existing soil levels around the base of these trees. If soil levels are raised this effectively ringbarks the tree, leading to die-back and ultimately, death. When soil levels are dropped, a retaining structure needs to be built around the tree and the roots pruned to fit within the enclosure. This can potentially result in destabilisation of the tree with possible destructive consequences during winter storms. The landscape design should minimise paving, landscape walls and any built elements within the dripline of the tree's canopy.

Excavations for paving subbase or foundations for walls can cause significant damage to the roots of the trees in proximity, so immense care is required. The appointment of an experienced arborist to assist with recommendations and advice is crucial to the trees' survival rate.

5.4 Stormwater & drainage

Due to existing natural clay soils, disturbance and compaction of the subject sites over time, it is not recommended for stormwater soakaways or similar sustainable urban drainage principles to be implemented. A network of piped drainage, subtly well-designed open-air channels or natural landscaped swales would need to be considered to effectively manage the stormwater on site. In this regard, permeable paving may be considered. However, this should be investigated and discussed with the CoCT Roads and Infrastructure Stormwater Department in further phases of work to establish the feasibility thereof given the nature of the local soils.

Given the unpredictability of climate change, the site's location in a water scarce region and the risk of future droughts, it is recommended for rainwater to be captured and re-used to supplement irrigation if possible.

5.5 Hard Landscaping (surface materials, street furniture)

The hardscape palette is to consist of locally produced materials wherever possible to reduce embodied energy from long-distance transport. Some examples include:

- Clay brick paving from factories within the Western Cape.
- Locally produced pre-cast paving using an exposed aggregate finish sourced from local quarries.

- Timber for benches and pergolas to be locally harvested and kiln dried, such as Eucalyptus species including Sugar gum (*Eucalyptus Cladocalyx*) or Karri gum (*Eucalyptus diversicolor*) or a suitable imported wood composite material.

Permeable paving could be explored potentially as an option to assist with surface run off and drainage. However, this would need to be discussed with the City Departments (Roads and infrastructure-Stormwater Drainage).

Where existing trees are to be retained, the surrounding surface is to be made permeable (preferably gravel layer) with minimal excavation and compaction around the base of the trees and their driplines.

The importance of night time lighting will strengthen and link the character of spaces and create safety. Special lighting effects can also be used to highlight selected elements to create a further level of appeal.

5.6 Memorialisation and sculpture

Memorialisation using found materials from on-site work and excavations, that is suitable from a heritage perspective, should be explored. In this way the heritage of the site can be displayed and celebrated in the public parts of the site.

The incorporation of sculpture and art objects into the open spaces as symbols of human aspiration rather than decoration, is also to be encouraged. Sculpture and art can connect users to each other and add to the vibrancy of the surrounds. Sculptures create focal points, and around them the life of a city moves and is made meaningful. By the careful and mindful placement of Sculpture in areas within the courtyards and on the property boundary edges, the public interface is reinforced and encourages interactive experience and usage within the site.

Competition for these sculptures should be encouraged to promote local artists and the profession.

5.7 Soft Landscaping (plants and trees)

The site is highly urbanised and little to no existing natural vegetation is present. The selection of planting and trees is to be mindful of the site context and its microclimate including average precipitation, strong summer winds and sun exposure.

Plants

The Soft Landscape planting must allow for easy maintenance and visibility across the site and in between buildings and site edges. Impact planting should be considered at the main building entrances and public / private focal points.

Plant selection is to be water wise and appropriate to the soil profile and draw on the local vegetation type, using indigenous, local and endemic species that are drought resistant, wherever possible.

Growing medium is one of the most important components in ensuring soft landscape success. There has been extensive repeat disturbance of the in-situ site soils and subsequent infill and compaction. As a result, the in-situ soils have limited viability as a growing medium. Topsoil and compost will need to be imported for planting areas and trees. It is recommended for the microbial life of the soil to be enhanced through addition of activators that promote growth of positive bacteria and fungi. Organic mulch is to be specified over all planting areas to foster soil health and enhance soil moisture retention.

Trees

The number of existing mature trees which have been planted over a period of time have been analysed and are detailed in a tree assessment provided in Annexure A for reference purposes. It is recommended that 2 large trees ('Plane' and 'Peruvian Pepper') as well as the two existing Carob trees in the Soils Lab courtyard are to be retained and protected as far as possible. An arborist should be consulted to determine final treatment of the existing trees and the actions required to protect their health. For instance, the existing Plane Tree is covered with ivy that looks to be suffocating the tree. The ivy should be removed. The micro-climate around each tree will have to be considered by a recognised tree specialist, landscape architect and design architect through the detailed design phase of the future development to protect the trees health as far as possible. However, considering the constrained nature of the site it may be necessary to review the retention of the Peruvian Pepper tree. See section 5.5 above for guidance on setbacks and surface treatment to help protect the identified trees.

In addition, the existing trees in the remaining road reserve along Buitengracht Street are to be retained and supplemented with an additional row of similar tree species (Ficus species) on the site to mitigate against loss of mature trees on site and to reinforce Buitengracht Street as a green corridor and scenic route.

It is important that for new trees the species selected is carefully considered to include appropriate scale, shade density and non-invasive root systems. Trees are to be indigenous where possible and evergreen (not deciduous) to minimize leaf litter. The City of Cape Town has an approved list of trees recommended for use. This tree list also informs the susceptibility and vulnerability of certain trees by the invasive 'Polyphagous Shot Hole Borer, also known as *Euwallacea fornicatus*, which is a troublesome insect species that is able to cause a great deal of damage to the natural environment.

New tree species are also to reflect surrounding successfully planted trees on Somerset Road and St. Andrew's Square. Besides the successful climatic adapting of those species, it reinforces the language and continuity of the existing 3-D streetscape in the public realm.

Measures are to be introduced to ensure that any new proposed trees do not impact on the heritage resources such as the old Dutch Reformed Church graveyard wall along Chiappini Street. The viability of trees along the Chiappini Street building edge will need to be assessed once accurate existing services on the sidewalks have been determined and the position of the new building has been fixed. The tree species and its root system are to be carefully considered along with the use of root barriers to avoid undermining the old wall structure. If new trees along the Chiappini Street building edge are not viable, integration of planting into the new building façade should be considered.

In terms of tree planting practicality, trees are to be firmly staked according to standard horticultural protocols to prevent breakage during the strong south-easterly summer winds and north-westerly winter storms. Where they are close to existing structures, bio barriers are to be placed to prevent root penetration into structure foundations and building related services.

5.8 Irrigation

In the Western Cape winter rainfall region, it is generally not feasible to capture rain water in sufficient quantity to cover summer irrigation requirements. Any harvested rainwater is better suited to supplementing internal plumbing requirements, such as flushing of toilets, and treated water for showers and wash hand basins, which use significant amounts of water in a high-density residential context.

While 'xeriscaping' (the practice of designing landscapes to reduce or eliminate the need for irrigation) remains a catchphrase within the industry, it is important to recognize that initial irrigation is necessary to allow young plants and trees to establish and is critical for their

survival within the first 2 years of growth. In the context of the Western Cape hot, dry summers and the growing pressure on bulk fresh water storage and supply, it is preferable and recommended to use filtered and treated grey and black water rather than potable municipal water. It is however understood that this is not always feasible due to the additional cost and project budgetary constraints.

If a sump is necessary to drain the mini basement, the potential to use any water collected in the sump could be considered for irrigation purposes but requires further investigation due to potential salt-water and vehicle by-product intrusion. It is recommended that the feasibility of alternative irrigation water sources be examined at development stage for reasons identified. An assessment of the groundwater quality is suggested to be done at the initial design development and feasibility stage.

The extraction of groundwater via boreholes for irrigation water is not recommended due to the need to preserve this valuable resource for future generations or 'day zero' (no water) scenarios, should this be necessary.

Due to construction programmes being driven by financial or operational targets, it is not always possible to undertake landscaping during the rainy winter season, so it is necessary to factor in higher-than-anticipated water use if the construction programme calls for landscaping during summer. It is also important to consider that soft landscaping is often installed before the building is operational, so where grey and black water are used for irrigation, a temporary water source (often potable water) would need to be provided as an interim measure until the intended water supply system is commissioned.

Regardless of the water source, automated irrigation should be provided with water usage to comply with potential CoCT water restrictions policies at any given time.

The question of capital expenditure vs operational expenditure for irrigation needs to be considered in consultation with the Client. An automated irrigation system has a higher capex investment, but saves on intensive maintenance requirements such as frequent hand watering from a bowser or turf valves. The time-consuming nature of hand watering has implications for operational expenditure. Given the urban nature of the site with minimal access for water bowsers and high density of occupants, we recommend for planting to be irrigated with an automated irrigation system. The designers appointed for development stage should bear in mind that rodents are common in the area and above-ground drip irrigation is therefore not necessarily the most appropriate solution.

5.9 Micro-climate management

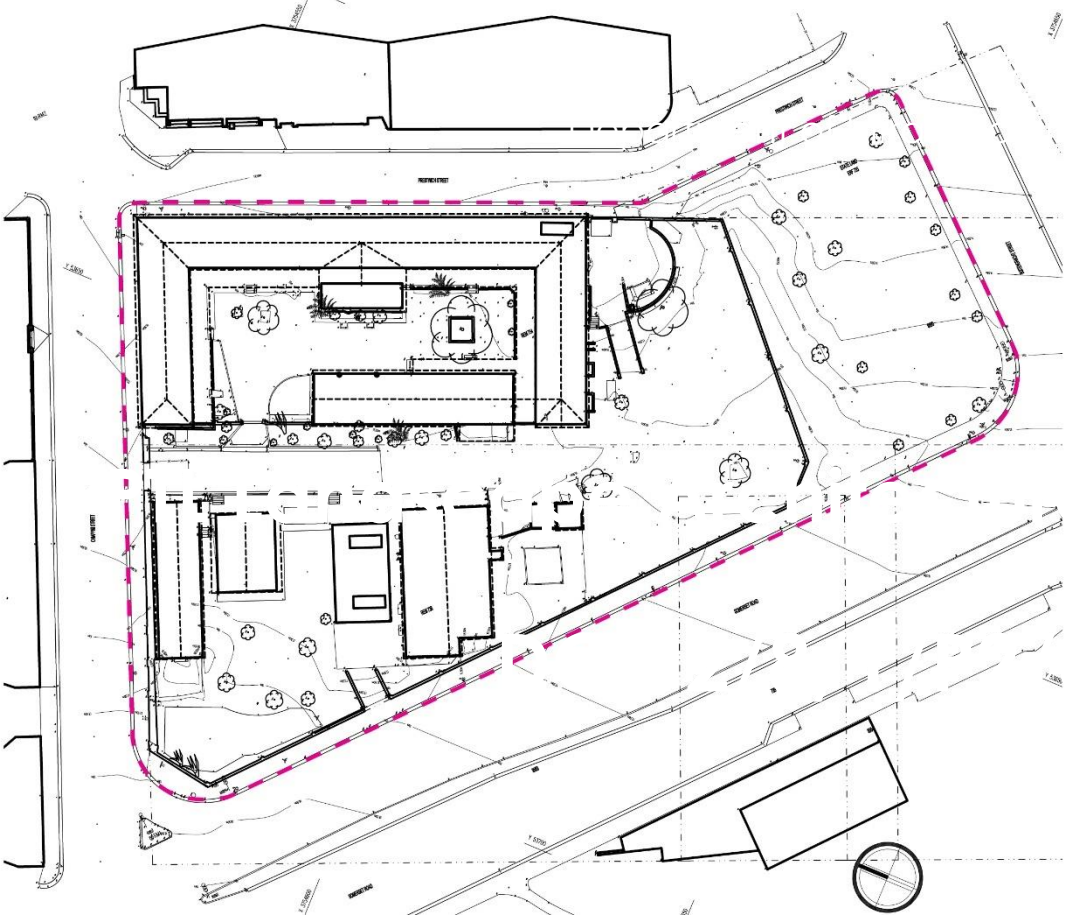
Given the location of the site on the edge of the CBD and its location relative to the adjacent tall buildings, as well as the proximity of the proposed buildings to the existing PPTL building and trees on the site, the new proposed development may have an effect on the microclimate of the site and its surrounds.

Being mindful that newly designed urban environments are complex, the approach to create successful public open spaces, should be further explored in the detailed design phase. Studies to assess how the proposed design affects conditions such as localised prevailing winds and shadows may be necessary to inform the final resolution of the development's design in order to protect the existing landscaping on site. The liveability and useability of the outdoor spaces should also be tested using such analysis to assist in directing the development further.

Annexure A: Detailed Existing Tree Assessment



Detailed Tree Survey



Existing Trees: North-West corner

General Comments:

Site Observations based on site visits on 28 March 2023 and 04 April 2023

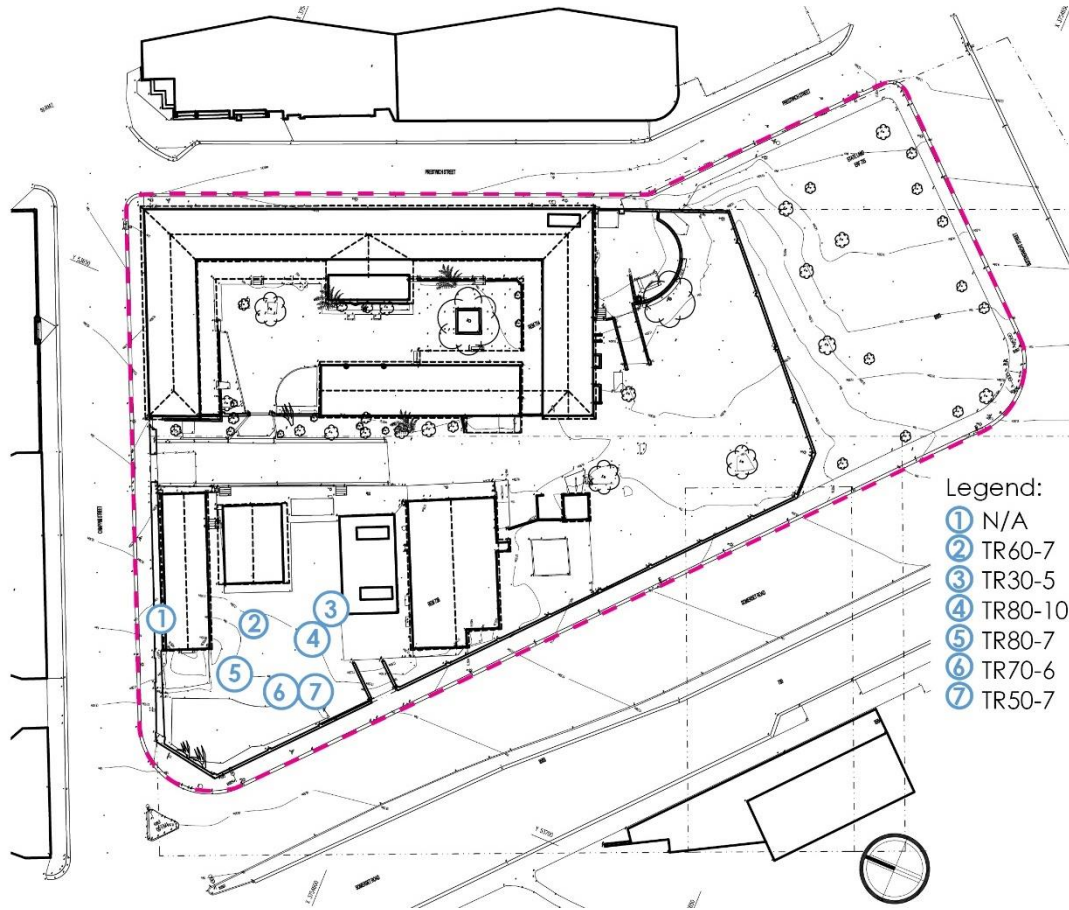





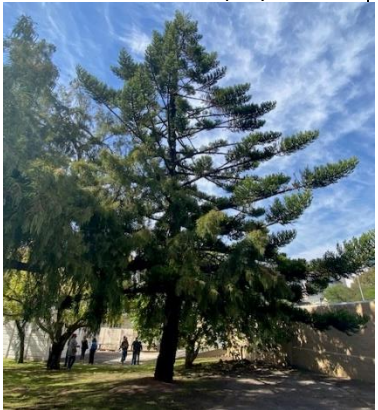



Table 1: North-West corner detailed tree survey

| Survey Ref. | Identification | Common Name | Size | Condition | Significance |
|-------------|--|------------------|-----------|--------------|---|
| N/A | <i>Ricinus communis</i>  | Castor oil plant | Approx 5m | Self-seeded. | Low. Category 2 invasive. Removal recommended |

| Survey Ref. | Identification | Common Name | Size | Condition | Significance |
|-------------|---|-------------|------------|--|---|
| TR60-7 | <i>Harpephyllum caffrum</i>  | Wild Plum | Approx 12m | Average. Showing signs of stress as well as die-back and re-sprouting | Medium. Could be incorporated into a forecourt, or be removed and replaced with an alternate species better suited to the site. |
| TR30-5 | <i>Harpephyllum caffrum</i>  | Wild Plum | Approx 7m | Poor to average. Showing signs of stress. Some die-back and re-sprouting | Low. Poorly formed canopy and skew trunk. Less than 20 years old. Removal recommended. |
| TR80-10 | <i>Acer negunda</i>  | Box elder | Approx 12m | Poor. Extensive die-back evident. Visible borer holes. Investigate for PHSB. | Low. Removal recommended. |

| Survey Ref. | Identification | Common Name | Size | Condition | Significance |
|-------------|---|---------------------|------------|---|---|
| TR80-7 | <i>Taxodium distichum</i>  | Bald Cypress | Approx 16m | Good. Mature, single stem. Some dying branches. | Medium. Good size. Likely older than 40 years. Retain where possible. |
| TR70-6 | <i>Araucaria heterophylla</i>  | Norfolk Island Pine | Approx 20m | Average. Leaning at angle. Excessive sap present on trunk. Bark is peeling. Investigate for PHSB. | Medium. Visible from entrance to De Waterkant. Good size. Likely older than 40 years. Retain where possible. |
| TR50-7 | <i>Ficus carica</i>  | Common Fig | Approx 5m | Good. | Low. Likely self-seeded. Not providing any positive spatial qualities other than screening of boundary wall. Removal recommended. |

Existing Trees: Entrance Road

General comments: Planting within the last +/- 30 years. An attractive row of carobs trees is mixed with other species.

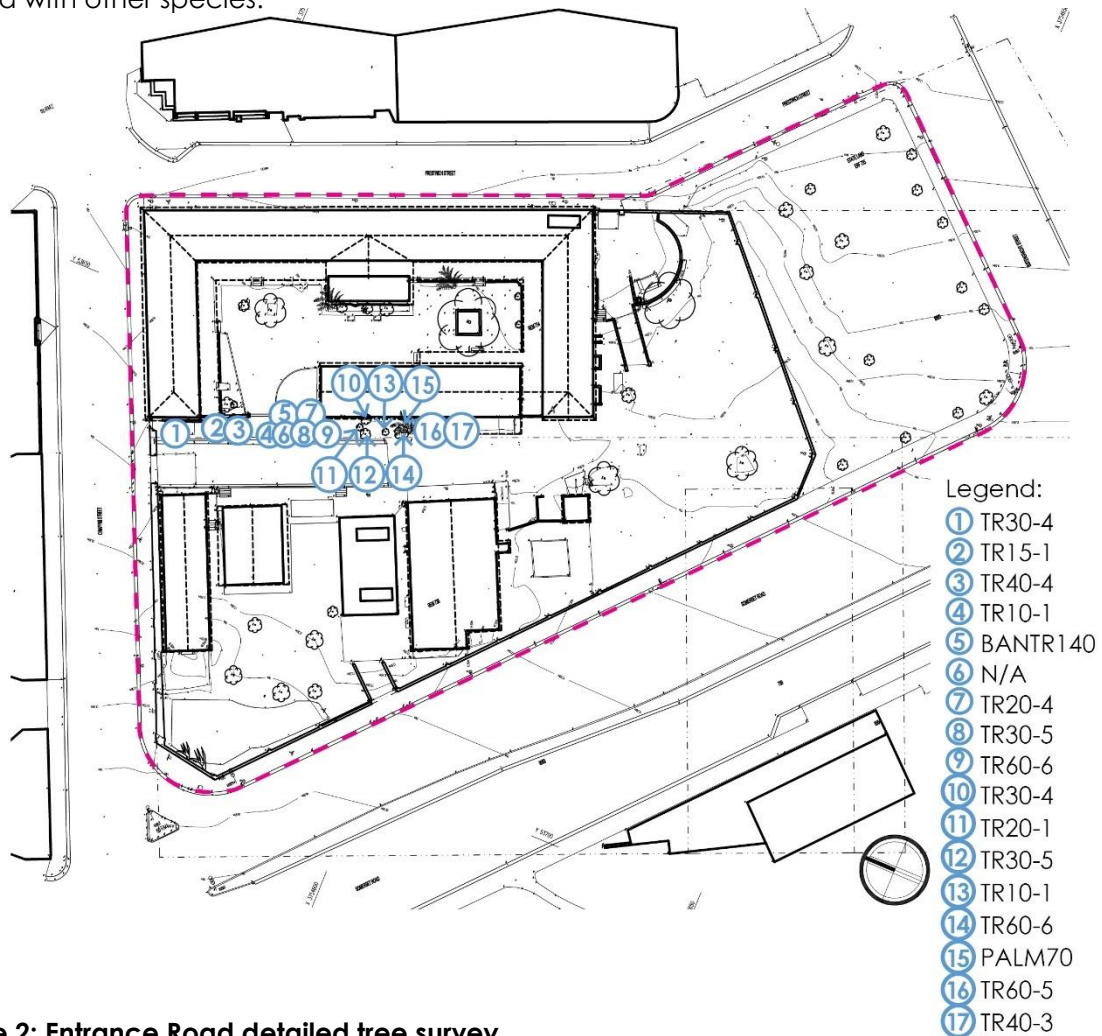







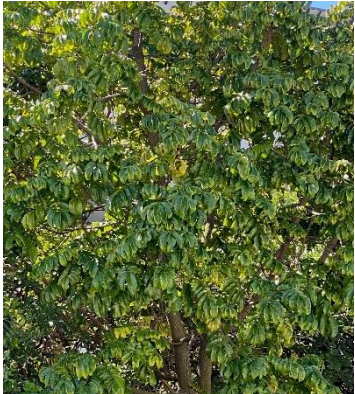
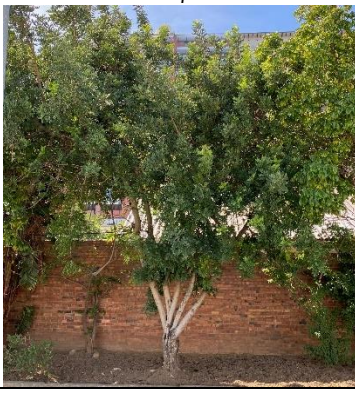






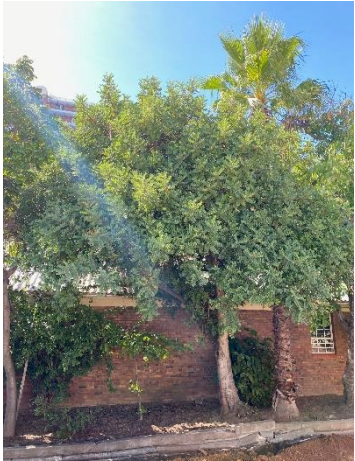
Table 2: Entrance Road detailed tree survey




| Survey Ref. | Identification | Common Name | Size | Condition | Significance |
|-------------|---|-------------|------|-----------|---------------------------|
| TR30-4 | <i>Eriobotrya japonica</i> | Loquat | 5m | Good. | Low. Removal recommended. |
| |  | | | | |

| Survey Ref. | Identification | Common Name | Size | Condition | Significance |
|-------------|--|-----------------|------|--|---|
| TR15-1 | <i>Celtis sinensis</i>  | White stinkwood | 2.5m | Poor. Swamped by bougainvillea. Stunted canopy growth. | Low. Removal recommended. |
| TR40-4 | <i>Bougainvillea spectabilis</i>  | Bougainvillea | 6m | Good. | Low. Remove or retain and prune into shape. |
| TR10-1 | <i>Celtis sinensis</i>  | White stinkwood | 2.5m | Poor. Bent trunk. Stunted canopy growth. | Low. Removal recommended. |

| Survey Ref. | Identification | Common Name | Size | Condition | Significance |
|-------------|---|---------------|------|---|---|
| BANTR 140 | <i>Strelizia nicolai</i>  | Wild banana | 6m | Poor condition. | Low. Not contributing positively to the row of trees. Removal recommended |
| N/A | <i>Morus alba</i>  | Mulberry | 0,5m | Poor. Previously felled tree. Stump is currently resprouting. | Low. Removal recommended |
| TR20-4 | <i>Bougainvillea spectabilis</i>  | Bougainvillea | 1,5m | Poor. | Low. Removal recommended |

| Survey Ref. | Identification | Common Name | Size | Condition | Significance |
|-------------|---|---------------|------|----------------------|--|
| TR30-5 | <i>Species Unknown</i>  | Unknown | 8m | Good. | Medium. Canopy contributes to row of well-formed trees. Retain where possible. |
| TR60-6 | <i>Ceratonia siliqua</i>  | Carob | 6m | Good. Multi-stemmed. | Medium. Canopy contributes to row of well-formed trees. Retain where possible. |
| TR30-4 | <i>Bougainvillea spectabilis</i>  | Bougainvillea | 3m | Good. | Low. Remove or retain and prune into shape. |
| TR20-1 | <i>Species Unknown</i>  | Unknown | 2m | Poor. | Low. Removal recommended. |

| Survey Ref. | Identification | Common Name | Size | Condition | Significance |
|-------------|---|-----------------|------|-----------|--|
| TR30-5 | <i>Species Unknown</i>  | Unknown | 6m | Good. | Medium. Canopy contributes to row of well-formed trees. Retain where possible. |
| TR10-1 | <i>Celtis sinensis</i>  | White stinkwood | 1m | Poor. | Low. Remove |
| TR60-6 | <i>Ceratonia siliqua</i>  | Carob | 6m | Good. | Medium. Canopy contributes to row of well-formed trees. Retain where possible. |

| Survey Ref. | Identification | Common Name | Size | Condition | Significance |
|-------------|---|------------------|------|--|---|
| PALM70 | <i>Washingtonia robusta</i>  | Mexican palm fan | 10m | Good condition. Likely self-seeded. | Low. Removal recommended |
| TR60-5 | <i>Persea americana</i>  | Avocado | 9m | Average. | Low. Can be kept or removed. |
| TR40-3 | <i>Ficus carica</i>  | Common Fig | 3m | Good. Multi-stem. | Low. Likely self-seeded. Removal recommended |

Existing Trees: Courtyard

General comments: The large London Plane tree is a prominent feature and should be protected.

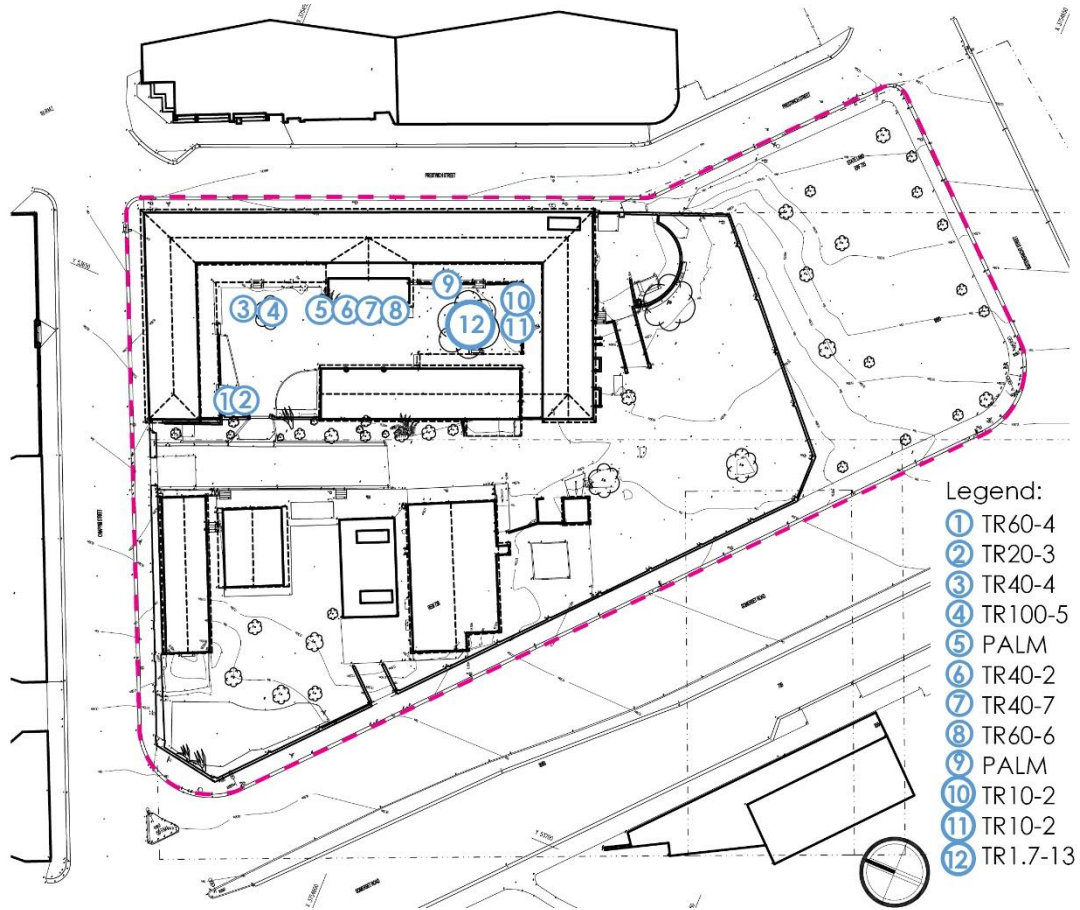













Table 3: Courtyard Detailed Tree Survey

| Survey Ref. | Identification | Common Name | Size | Condition. | Significance |
|-----------------|---|---------------|------|------------|---|
| TR60-4 & TR20-3 | <p><i>Bougainvillea</i></p>  | Bougainvillea | 6m | Average. | Low. Remove or retain and prune into shape. |

| Survey Ref. | Identification | Common Name | Size | Condition. | Significance |
|-------------|--|------------------|------|--------------------------------------|--|
| TR40-4 | <i>Ceratonia siliqua</i>  | Carob | 4m | Poor. Stunted growth & leaning over. | Medium. Balances the canopy of the adjacent tree. Retain where possible. |
| TR100-5 | <i>Ceratonia siliqua</i>  | Carob | 6m | Good. | Medium. Provides positive shade and visual amenity. Retain where possible. |
| PALM | <i>Washingtonia robusta</i>  | Mexican palm fan | 9m | Good. | Low. Removal recommended. |

| Survey Ref. | Identification | Common Name | Size | Condition. | Significance |
|-------------|---|----------------------------|------|--|---|
| TR40-2 | <i>Cupressus sempervirens</i> 'stricta' | Italian Cypress | 8m | Poor. Exhibiting significant die-back. | Low. Will not re-sprout where die-back is present. Removal recommended. |
| |  | | | | |
| TR40-7 | Species Unknown | Unknown | 8m | Good. Healthy canopy. | Medium. Close proximity to existing building. Could be removed or kept. |
| |  | | | | |
| TR60-6 | <i>Metrocideros excelsa</i> | New Zealand Christmas Tree | 10m | Poor. No leaves visible. | Low. Removal recommended. |
| |  | | | | |

| Survey Ref. | Identification | Common Name | Size | Condition. | Significance |
|-------------|---|------------------|------|------------|--|
| PALM | <i>Washingtonia robusta</i>  | Mexican palm fan | 3m | Good. | Low. Likely self-seeded. Removal recommended |
| TR10-2 | <i>Citharexylum spinosum</i>  | Fiddlewood | 4m | Average. | Low. Does not contribute significantly to the space. Could be removed or kept. |
| TR10-2 | <i>Citharexylum spinosum</i>  | Fiddlewood | 5m | Average. | Low. Does not contribute significantly to the space. Could be removed or kept. |

| Survey Ref. | Identification | Common Name | Size | Condition. | Significance |
|-------------|---|--------------|-------|---|---|
| TR1.7-13 | <i>Platanus x acerifolia</i>  | London Plane | >20 m | Good. Swamped by ivy which needs to be removed. | High. Mature tree with positive place-making qualities. Retain tree and retain existing concrete wall to avoid changing soil level at base or disturbing roots. |

Existing Trees: South block 29

General comments: The eldest of these trees (marked 4 below) is visible on the 1928 Aerial survey and survived the re-alignment of Somerset Rd.

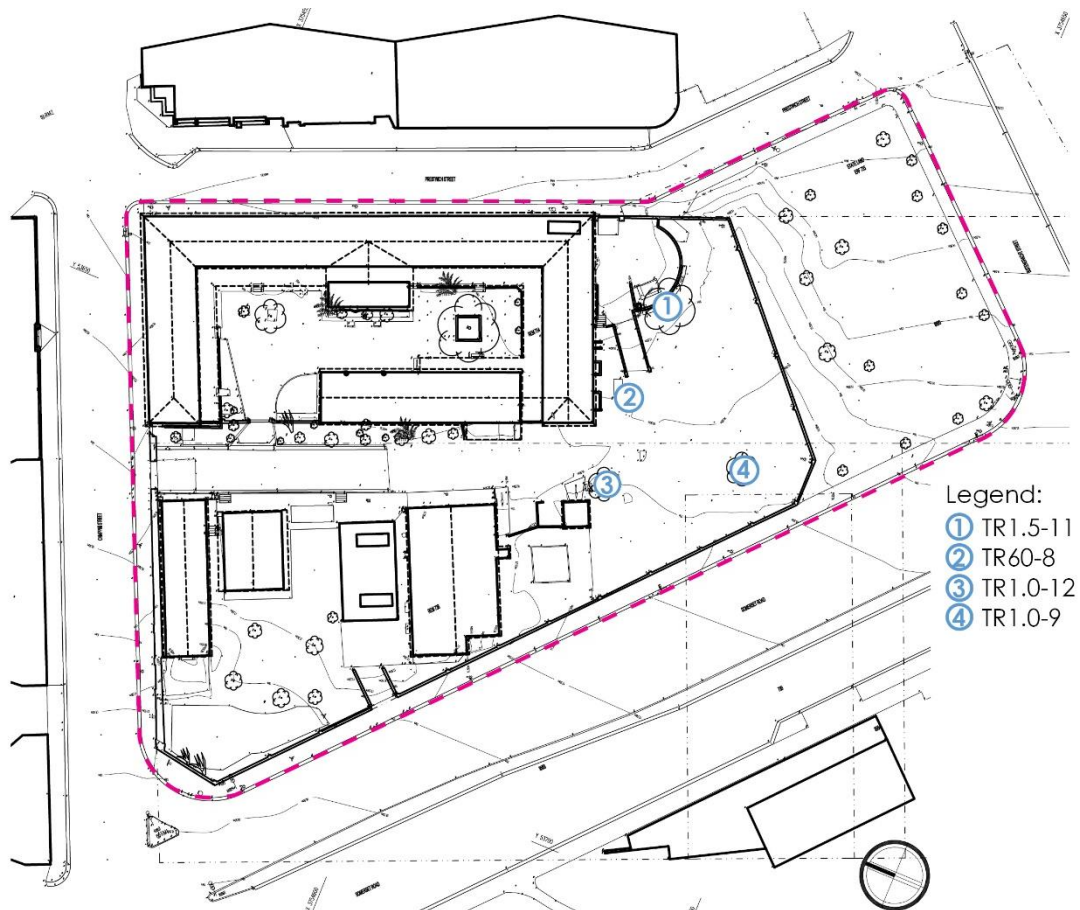




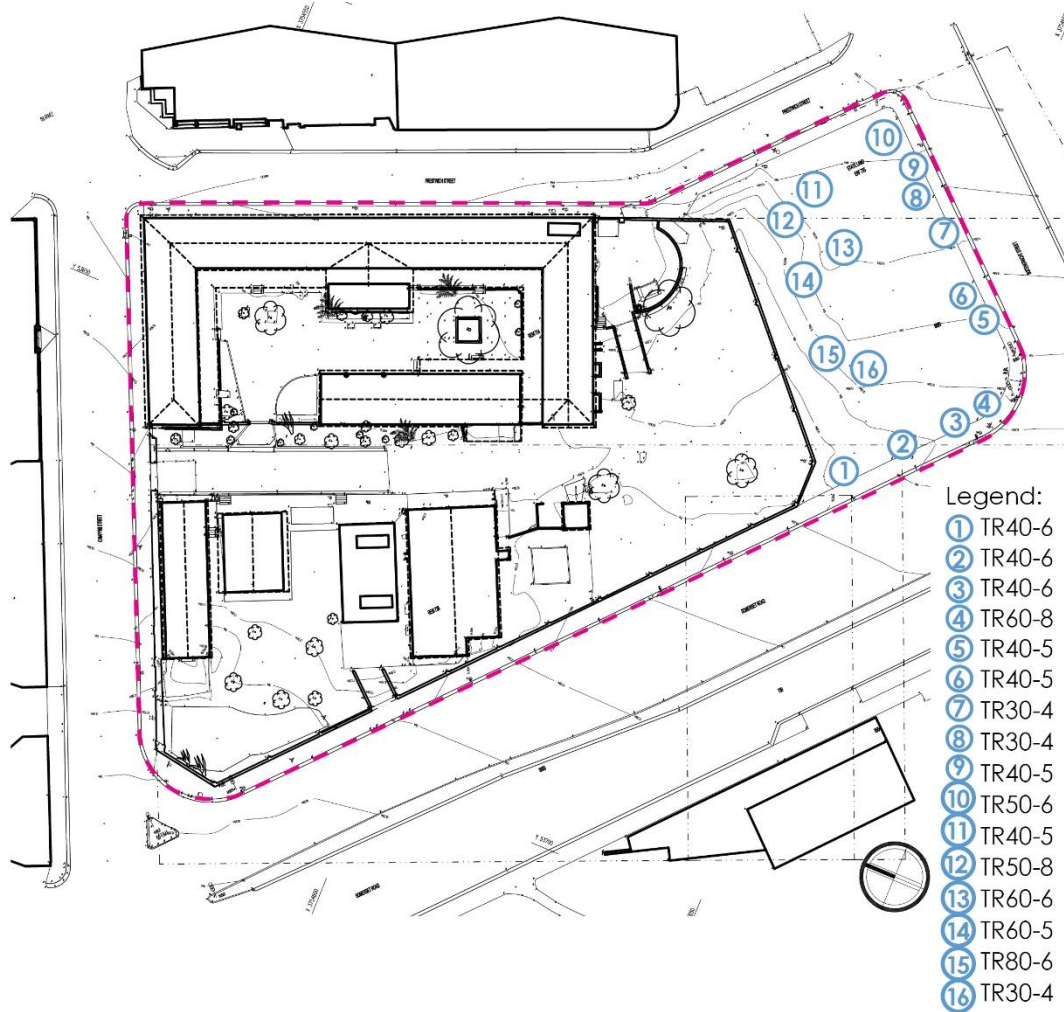



Table 4: South Block 29 detailed tree survey




| Survey Ref. | Identification | Common Name | Size | Condition. | Significance |
|-------------|---|-----------------|------------|--|---|
| TR1.5-11 | <i>Schinus molle</i>  | Peruvian pepper | Approx 15m | Healthy specimen in good condition | Medium. Good specimen. Retain where possible. |
| TR60-8 | <i>Schinus molle</i>  | Peruvian pepper | Approx 7m | Good. Single stemmed. | Medium. Good specimen. Retain where possible. |
| TR1.0-12 | <i>Ficus sp.</i>  | Wild fig | 20m | Good. Mature tree with large canopy. Recent damage to roots caused by road construction. | Medium. Approx 40 years old. Good specimen. Retain where possible. |
| TR1.0-9 | <i>Schinus molle</i>  | Peruvian pepper | Approx 12m | Good. Tree surgery required for some branches. | High. Visible on the 1928 aerial survey. Retain. Worthwhile protecting. |




Existing Trees: Buitengracht Road reserve


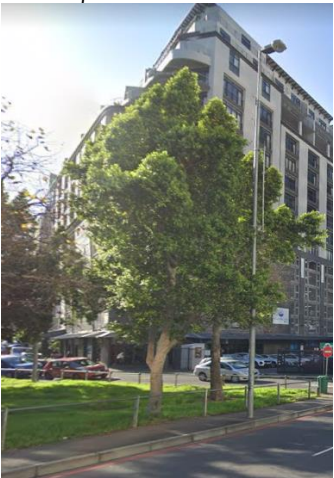

General comments: According to aerial photos, a large number of these trees were planted between 1980 and 1984 during the widening of Buitengracht Street, making the average age approximately 40 years. The extended avenue of trees along Buitengracht Street forms an important green corridor and the first row of trees within the Buitengracht road reserve should be protected.









| Survey Ref. | Identification | Common Name | Size | Condition. | Significance |
|-------------|---|-------------|------|------------|-------------------------------|
| TR40-6 | <p><i>Ficus sp.</i></p>  | Wild fig | 9m | Good | Medium. Retain where possible |

| Survey Ref. | Identification | Common Name | Size | Condition. | Significance |
|-------------|---|-------------|------|------------|-------------------------------|
| TR40-6 | <i>Ficus sp.</i>  | Wild fig | 7m | Good. | Medium. Retain where possible |
| TR40-6 | <i>Ficus sp.</i>  | Wild fig | 11m | Good. | Medium. Retain where possible |
| TR60-8 | <i>Ficus sp.</i>  | Wild fig | 10m | Good. | Medium. Retain where possible |

| Survey Ref. | Identification | Common Name | Size | Condition. | Significance |
|-------------|--|--------------|------|------------|--|
| TR40-5 | <i>Ficus sp.</i>  | Wild fig | 9m | Good. | High. Forms part of green corridor along Buitengracht. Retain where possible or replace with double row of same species trees. |
| TR40-5 | <i>Platanus acerifolia</i>  | London Plane | 8m | Average. | High. Forms part of green corridor along Buitengracht. Retain where possible or replace with double row of same species trees. |
| TR30-4 | <i>Ficus sp.</i>  | Wild fig | 7m | Good. | High. Forms part of green corridor along Buitengracht. Retain where possible or replace with double row of same species trees. |

| Survey Ref. | Identification | Common Name | Size | Condition. | Significance |
|-------------|---|--------------|------|------------|--|
| TR30-4 | <i>Platanus acerifolia</i>  | London Plane | 9m | Average. | High. Forms part of green corridor along Buitengracht. Retain where possible or replace with double row of same species trees. |
| TR40-5 | <i>Ficus sp.</i>  | Wild Fig | 15m | Good. | High. Forms part of green corridor along Buitengracht. Retain where possible or replace with double row of same species trees. |
| TR50-6 | <i>Platanus acerifolia</i>  | London Plane | 10m | Good. | High. Forms part of green corridor along Buitengracht. Retain where possible or replace with double row of same species trees. |

| Survey Ref. | Identification | Common Name | Size | Condition. | Significance |
|-------------|--|-----------------|------|------------------------------|-------------------------------|
| TR40-5 | <i>Ficus sp.</i>  | Wild Fig | 12m | Good. Well-formed canopy. | Medium. Retain where possible |
| TR50-8 | <i>Ficus sp.</i>  | Wild fig | 12m | Good. Well-formed canopy. | Medium. Retain where possible |
| TR60-6 | <i>Schinus molle</i>  | Peruvian pepper | 10m | Good. | Medium. Retain where possible |

| Survey Ref. | Identification | Common Name | Size | Condition. | Significance |
|-------------|---|-----------------|------|------------|-------------------------------|
| TR60-5 | <i>Schinus molle</i>  | Peruvian pepper | 9m | Average. | Low. Remove or retain. |
| TR80-6 | <i>Schinus molle</i>  | Peruvian pepper | 12m | Good. | Medium. Retain where possible |
| TR30-4 | <i>Platanus acerifolia</i>  | London Plane | 15m | Average. | Medium. Retain where possible |

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**Western Cape
Government**

Appendix D:

Traffic Engineering Report





**Western Cape
Government**

Department of Infrastructure

**PPTL: Specialists' Assessments
– Transport Engineering Report
Report No C0877/OD/001**

This report is based on the Preferred Conceptual Development Plan (Option 3) for the PPTL subject sites as described in the introduction of this report. The Transport Impact Assessment was prepared by Innovative Transport Solutions and describes the transport engineering component of the preferred option.

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Annexure A: Conceptual Development Plan

Annexure B: Capacity Analysis

Annexure C: Conceptual Layout

Annexure D: Cost Estimate

Annexure E: Public Transport Calculations

1. PURPOSE OF STUDY

The purpose of this report is to present the expected transport-related impact for the preferred Option 3: Provincial Pavement Test Lab (PPTL) Conceptual Development Plan, as an outcome of a conceptual development plan options report that was completed in September 2023 for the enablement of the proposed consolidated Erven 734-RE and 738-RE, Cape Town and a Portion of Buitengracht, Riebeeck and Somerset Street Road Reserve namely Erven 735, 737 739, 9564 and 9565, Cape Town. The background to the options considered, is contained in the main report prepared by NM & Associates Planners and Designers.

2. LOCALITY

The proposed development is located north of Buitengracht Street, east of Somerset Road, south of Chiappini Street and west of Prestwich Street. Refer to Figure 1 for Locality Plan.



Figure 1: Locality Plan

3. LAND USE

The site currently contains the existing Provincial Pavement Testing Laboratory (PPTL).

The preferred Option 3 will include the following land uses:

- 2 072m² Retail Gross Lettable Area
- 673.6m² Offices Gross Lettable Area
- 120 Affordable / Social Housing units
- 190 Open Market Housing units

Refer to Figure A1 – A3, Appendix A for the Conceptual Development Plan.

4. EXISTING ROADS

The existing roads in the site vicinity include:

- *Buitengracht Street*: A Class 2 major arterial. The cross-section consists of three lanes per direction, a median and sidewalks on both sides of the road.
- *Somerset Road*: A Class 3 minor arterial with a cross-section consisting of two lanes per direction divided by a median island. There are sidewalks on both sides of the road. This is also a MyCiTi Integrated Rapid Transit (IRT) route.
- *Chiappini Street*: A Class 5 local street with a cross-section consisting of one lane per direction. There are sidewalks and parking on both sides of the road.
- *Prestwich Street*: A Class 5 local street. It is a southbound one-directional roadway bordering the site. There are sidewalks and parking on both sides of the road.

5. ANALYSIS HOURS

The traffic analyses were based on weekday a.m. and p.m. peak hours. The following peak hours are representative of the study area:

- Weekday a.m. peak hour: 07:45 to 08:45
- Weekday p.m. peak hour: 17:00 to 18:00

A five-year horizon period is assumed for this development.

6. SCENARIOS ANALYSED

The transport impact of the proposed development was analysed for the following scenarios:

- 2023 Existing traffic conditions (based on existing counted traffic volumes)
- 2028 Background traffic conditions (based on existing traffic volumes plus background traffic growth)
- 2028 Total traffic conditions (based on background traffic volumes plus the trips from the proposed Option 3 development)

The traffic growth assumptions used to analyse future scenarios are discussed in Section 11.

7. STUDY INTERSECTIONS

The scope of the analyses included the intersections summarised in Table 1, below. Refer to Figure B1, Appendix B for the existing lane configuration and intersection controls.

Table 1: Study Intersection

| No. | Name | Existing Control |
|-----|--------------------------------------|-------------------------|
| 1 | Buitengracht Street/Somerset Road | Signalised Intersection |
| 2 | Somerset Road/Chiappini Street | Signalised Intersection |
| 3 | Chiappini Street/Prestwich Street | Priority controlled |
| 4 | Buitengracht Street/Prestwich Street | Priority controlled |

8. EXISTING TRAFFIC

Traffic surveys were conducted at the study intersections on Thursday, 18 May 2023, to determine the peak-hour traffic volumes at these intersections.

All the intersection operations were performed in accordance with the procedures stated in the Highway Capacity Manual (HCM)³. The intersections in the study area were analysed to determine the level of service (LOS), delay per vehicle (in seconds) and volume per capacity (V/C) for each intersection in the peak hour. Traffix software was used for the intersection analyses.

Refer to Figure B2, Appendix B for the weekday a.m. and p.m. peak hour traffic operations for the existing traffic conditions. Based on the existing traffic capacity analysis results, all the study intersections currently operate acceptably. However, the westbound right-turn queues along

Buitengracht Street at the Somerset Road intersection currently exceed the available storage capacity, especially during the a.m. peak periods. Refer to the total traffic conditions of this report, for the recommended upgrade at the Buitengracht Street/Somerset Road intersection.

9. APPROVED DEVELOPMENTS

No specific approved or in-process development trips were added onto the road network, to calculate future year traffic scenarios. Provision was made for the potential traffic impacts from approved or in-process developments by adding a general traffic growth to the study intersections, as discussed in Section 11.

10. BACKGROUND TRAFFIC

The 2028 background traffic volumes were calculated by applying a 1.5% growth rate per annum to the existing counted traffic volumes, over a five-year period. This growth rate accounts for general traffic growth in this area.

Refer to Figure B3, Appendix B for the expected weekday a.m. and p.m. peak hour traffic operations for the background traffic conditions. Based on the capacity analysis results, all the study intersections are expected to continue to operate acceptably. However, the westbound right-turn queues along Buitengracht Street at the Somerset Road intersection are expected to exceed the available storage capacity, especially during the a.m. peak periods. Refer to the total traffic conditions of this report, for the recommended upgrade at the Buitengracht Street/Somerset Road intersection.

11. SITE ACCESS

The site currently gains vehicular access from Chiappini Street only. Possible alternative accesses were investigated from all four roads surrounding the site, as part of the planned development. However, only Chiappini Street and/or Prestwich Street were viable options, from an access management point of view.

As part of the various development Options evaluated, vehicular access is only proposed from Prestwich Street, as part of the planned development. This vehicular access is planned approximately 25m north of Buitengracht Street. This spacing complies with the minimum requirements outlined in the Road Access Guidelines⁴. Hence, the proposed access spacing should be sufficient.

Note that the existing vehicular access along Chiappini Street will be closed as part of this planned development, however, access off Chiappini Street will remain available for pedestrian thoroughfare only

12. TRIP GENERATION

The vehicular trip generation rates and adjustment factors used to determine the expected development trips are in accordance with the South African Trip Data Manual (TMH17)⁴.

The Committee of Transport Officials (COTO) Manual provides guidelines for a reduction in trip generation rates due to various factors. The maximum mixed-use and public transport adjustment factors were applied to the proposed development trips. For this development limited parking is proposed on-site and therefore the very low vehicle ownership adjustment factor was applied to all uses. Refer to Table 2 for the trip generation rates.

Table 2: Trip Generation Rates

| Land Use | Extent | Adjustment Factors ¹ | | | Weekday AM Peak Hour | | | Weekday PM Peak Hour | | |
|-----------------------------|----------------------|---------------------------------|-----|-----|----------------------|-----|-----|----------------------|-----|-----|
| | | MU | CO | PT | Rate | In | Out | Rate | In | Out |
| Retail | 2072 m ² | 10% | 60% | 15% | 3.26 | 65% | 35% | 13.81 | 50% | 50% |
| Office | 673.6 m ² | 20% | 30% | 15% | 2.10 | 85% | 15% | 2.10 | 20% | 80% |
| Affordable / Social Housing | 120 units | 15% | 50% | 15% | 0.65 | 25% | 75% | 0.65 | 70% | 30% |
| Open Market Housing | 190 units | 15% | 50% | 15% | 0.65 | 25% | 75% | 0.65 | 70% | 30% |

¹MU = Mixed Use, CO = Car Ownership, PT = Public Transport

Refer to Table 3 for the estimated development trips for the proposed Option 3. This is taking the adjustment factors mentioned above into account.

Table 3: Estimated Trip Generation

| Land Use | Weekday AM Peak Hour | | | Weekday PM Peak Hour | | |
|-----------------------------|----------------------|-----------|-----------|----------------------|-----------|------------|
| | In | Out | Total | In | Out | Total |
| Retail | 17 | 15 | 32 | 67 | 67 | 134 |
| Office | 4 | 1 | 5 | 1 | 4 | 5 |
| Affordable / Social Housing | 5 | 15 | 20 | 11 | 5 | 16 |
| Open Market Housing | 9 | 27 | 36 | 17 | 7 | 25 |
| GRAND TOTAL | 35 | 58 | 93 | 96 | 83 | 179 |

Based on the above calculations, this development is expected to generate 93 and 179 total vehicular trips during the weekday a.m. and p.m. peak hour respectively. These are new vehicular trips to the network after applying the relevant trip reduction factors.

The Guidelines for the Public Transport component of Transport Impact Assessments⁸ was used to determine whether there is sufficient public transport in the area the subject sites are located within, to accommodate the proposed development and the new public transport passengers it will generate. Using this methodology per land use a total of 192 public transport passengers, 48 pedestrians and 104 private vehicle passengers is estimated to be generated by the proposed development. This information was simplified even further to determine that a total of three (3) taxi trips and two (2) bus trips will be required to serve the development. There are sufficient public transport facilities to accommodate this additional demand. A total of 69 private vehicular trips are estimated to be generated by the development. This is more in line with what is expected by the proposed development and can be accommodated on the road network. Refer to Appendix E for the public transport calculations.

13. TRIP DISTRIBUTION

The expected trip distribution used in the traffic model for trips attracted to the development during the a.m. and p.m. peak hours are as follows:

- 5% eastbound via Chiappini Street,
- 1% southbound via Somerset Road,
- 5% southbound via Prestwich Street,
- 4% westbound via Chiappini Street,
- 50% southbound via Buitengracht Street,
- 15% northbound via Somerset Street,
- 20% northbound via Buitengracht Street.

The expected trip distribution used in the traffic model for trips generated from the development during the a.m. and p.m. peak hours are as follows:

- 100% southbound via Prestwich Street and then northbound on Buitengracht Street.

The only proposed vehicular access to the site is provided on Prestwich Street, which is a one-directional roadway in the southbound direction. Refer to Figure B4, Appendix B for the trip distributions and expected development trips.

14. TOTAL TRAFFIC

The 2028 total traffic volumes were calculated by adding the expected PPTL development trips to the background traffic volumes.

Refer to Figure B5, Appendix B for the expected weekday a.m. and p.m. peak hour traffic operations for the total traffic conditions. Based on the capacity analysis results, all the study intersections are expected to continue to operate acceptably. However, the westbound right-turn queues along Buitengracht Street at the Somerset Road intersection are expected to exceed the available storage capacity, especially during the a.m. peak hour.

The following upgrades are recommended:

Buitengracht Street/Somerset Road intersection

- Westbound - Convert the through lane to a shared through and right-turn lane (road markings only since there are two receiving lanes).
- Westbound - Extend the right-turn storage lane from 70m to 120m.
- Southbound - Convert the through lane to a shared through and right-turn lane (road markings only since there are two receiving lanes).
- North- and southbound - Provide protected/permitted right-turn phases.

The upgrades as discussed above would ensure that the Buitengracht Street/Somerset Road intersection operates at an acceptable LOS B and that the vehicular queues would be accommodated within the available storage lanes.

Upgrades are also recommended at the Somerset Road/Chiappini Street intersection. These upgrades are not proposed from an intersection capacity point of view, but rather from a pedestrian safety point of view. It is expected that most of the pedestrian trips to/from this development would make use of this intersection to access work/recreational activities in the area. Refer to Figure C1, Appendix C for a conceptual drawing of the proposed upgrades at the Somerset Road/Chiappini Street intersection, which includes the following:

Somerset Road/Chiappini Street intersection:

- Northbound - Remove the right-turn lane to provide a wider median island.
- Northbound - Convert the through lane to a shared through and right-turn lane.
- Southern quadrants - Adjust bellmouth radii of both Chiappini Street corners.
- Westbound - Remove the slip lane's receiving lane and change to a yield control.

- Southeastern corner - Widen the island to allow for pedestrian storage before and after crossing the slip lane.

Refer to Figure B6 in Appendix B for an illustration of the upgrades as discussed above and Figure B7 for the expected operations after these upgrades have been implemented.

These upgrades should ensure that the Somerset Road/Chiappini Street intersection operates at an acceptable LOS C with significantly improved pedestrian safety.

15. PUBLIC TRANSPORT

Existing: This area is currently well served with various public transport modes, routes and services, including the MyCiTi Bus Rapid Transit (BRT) service, bus and minibus taxi routes. This is according to the City of Cape Town Existing Public Transport Services Plan⁹, refer to Figure 2 for an extract thereof. There is a MyCiTi bus stop about 100m north of the planned development along Somerset Road. There is also a bus stop along Somerset Road just south of the Chiappini Street intersection.

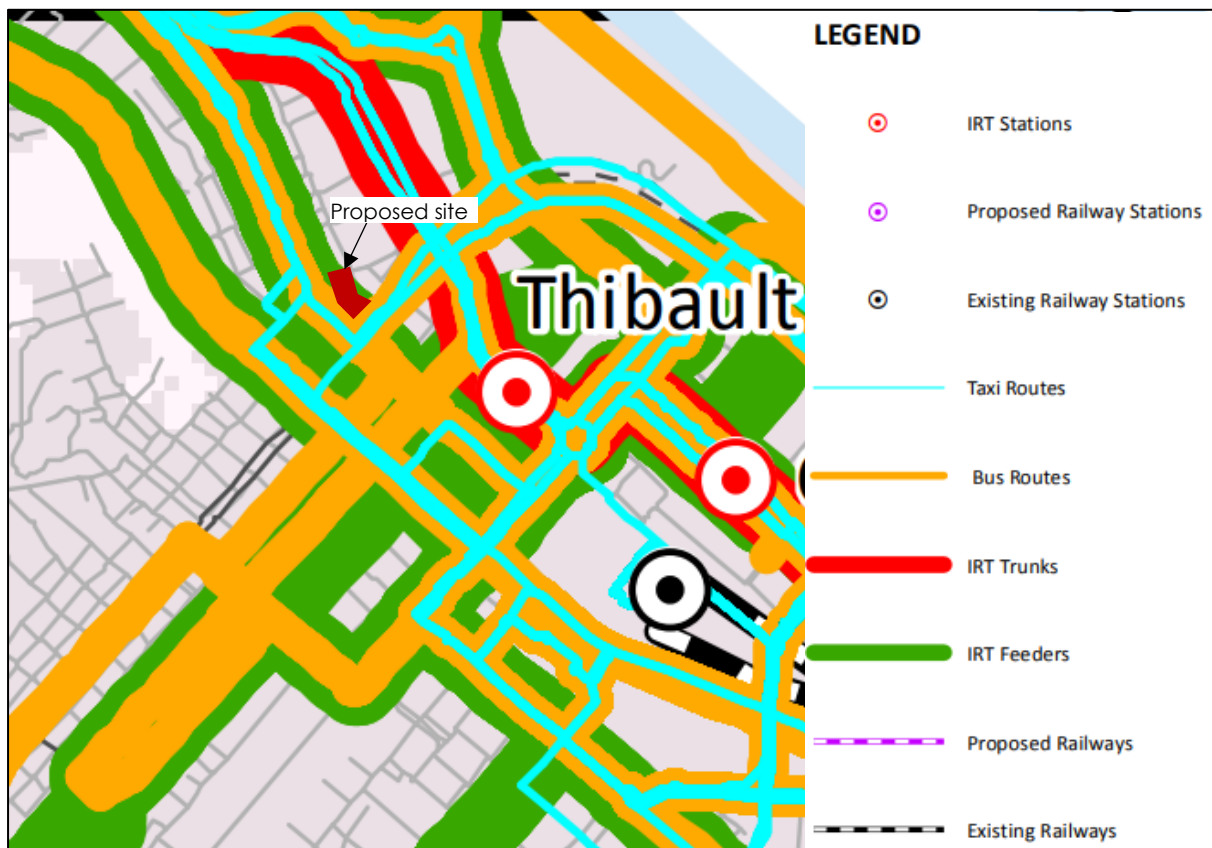


Figure 2: Extract from City of Cape Town Existing Public Transport Services Plan⁹

Proposed: No additional public transport services or facilities are proposed as part of this development since the existing public transport services are expected to be adequate.

16. NON-MOTORISED TRANSPORT

Existing: According to the City of Cape Town's (CCT) NMT Plan⁶ there is an existing Class 1 cycle route along Somerset Road between Buitengracht Street and Chiappini Street. There is a Class 2 route along Somerset Road, north of Chiappini Street. A Class 4 cycle route is proposed along Chiappini Street west of Somerset Road. Refer to Figure 3 for an extract from the City of Cape Town NMT Plan⁶.

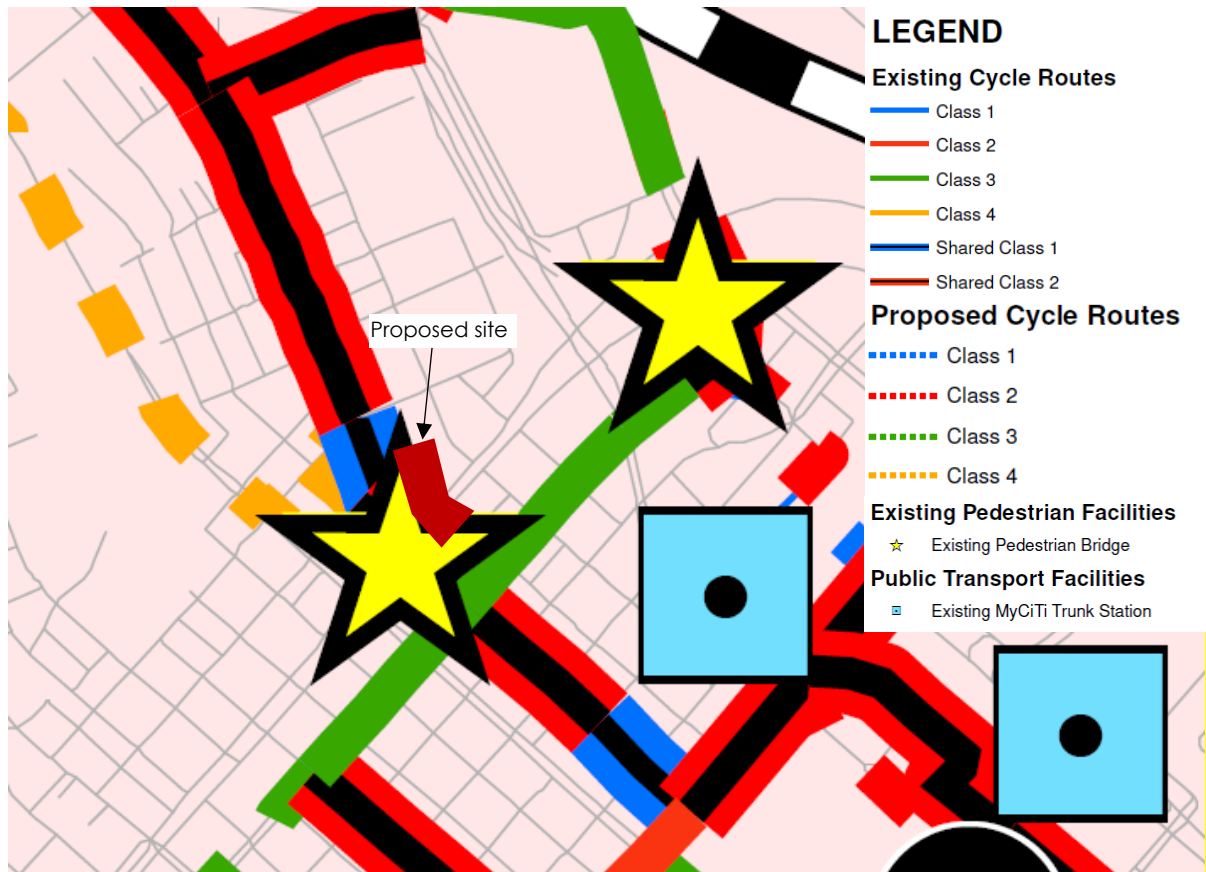


Figure 3: Extract from City of Cape Town NMT Plan⁶

There is currently a pedestrian bridge across Buitengracht Street linking the Waterkant Street woonerf with the pedestrian corridor through the Prestwich Memorial, along Somerset Street. The pedestrian volume along this corridor, which also crosses Chiappini Street, is relatively high, approximately 345 pedestrians.

Proposed: The conceptual development proposal for the subject sites will attract pedestrians to/from this pedestrian corridor and therefore it is recommended to improve the safety of pedestrians crossing Somerset Road at the Somerset Road/Chiappini Street intersection. These changes include reduced pedestrian crossing distances and increased pedestrian refuge areas (on median islands). A conceptual drawing of these proposed geometric upgrades is provided in Figure C1 in Appendix C.

17. PARKING

The number of on-site parking bays that will be provided as part of this development is 15 bays. Access to these on-site parking bays is planned from Prestwich Street, into a mini basement. The internal vehicular circulation and the parking structure for the development are according to minimum City of Cape Town standards. It is expected that these parking bays will mostly be used by the management of the retail facility and offices, as operational bays and emergency or accessible bays for the physically disabled. The development is located within a PT2 zone. According to the City of Cape Town's Municipal Planning By-Law⁷, no parking is required for developments within this zone. Hence, more on-site parking would be provided, compared to the requirements outlined in the By-Law.

There will also be some on-street parking available around the development. However, note that these on-street parking bays are currently already mostly occupied during the day. It is expected that once the development becomes operational, these parking bays will be used by some of the patrons of the planned development. Due to the public transport orientation of this development, it is proposed to change two of the existing on-street parking bays along Chiappini Street to E-hailing or ride-sharing drop-off and pick-up points.

One loading bay is planned along Prestwich Street and another is planned along Chiappini Street. These loading bays will mainly service the retail facility, but they could also be used by other trucks such as furniture trucks and/or refuse collection vehicles.

18. COST ESTIMATES

A high-level cost estimate of the road upgrades recommended in this report is summarised in Table D1 Appendix D. Based on this summary, these proposed road upgrades are estimated to amount to R1,52 million (Excl. VAT). This cost estimate would likely have to be adjusted in the future, as details of these upgrades are refined.

19. CONCLUSION & RECOMMENDATIONS

This report summarises an investigation of the transport-related impacts expected as part of the Provincial Pavement Test Lab (PPTL) conceptual development proposal. The following can be concluded and recommended as part of this investigation.

Existing Traffic – Although all study intersections currently operate acceptably, the westbound right-turn queues along Buitengracht Street at the Somerset Road intersection currently

exceed the available storage capacity, especially during the a.m. peak periods. Hence, the following upgrades are recommended as part of the existing traffic conditions:

Buitengracht Street/Somerset Road intersection

- Westbound - Convert the through lane to a shared through and right-turn lane (road markings only since there are two receiving lanes).
- Westbound - Extend the right-turn storage lane from 70m to 120m.
- Southbound - Convert the through lane to a shared through and right-turn lane (road markings only since there are two receiving lanes).
- North- and southbound - Provide protected/permitted right-turn phases.

Background Traffic – No upgrades are recommended as part of this traffic scenario.

Access - Vehicular access is proposed from Prestwich Street only, about 25m north of Buitengracht Street. This access complies with minimum access spacing requirements, as outlined in the Road Access Guidelines.

Development Trips – The proposed development is expected to generate 93 and 179 trips during the weekday a.m. and p.m. peak hour respectively, based on COTO (TMH17). However, based on the HHO methodology, this development is expected to generate 48 pedestrians, 2 busses, 2 taxis and 69 private vehicle trips during the peak hours.

Total Traffic – The following upgrades are recommended as part of this traffic scenario:

Somerset Road/Chiappini Street intersection:

- Northbound - Remove the right-turn lane to provide a wider median island.
- Northbound - Convert the through lane to a shared through and right-turn lane.
- Southern quadrants - Adjust bell-mouth radii of both Chiappini Street corners.
- Westbound - Remove the slip lane's receiving lane and change to a yield control.
- Southeastern corner - Widen the island to allow for pedestrian storage before and after crossing the slip lane.

Public Transport - No additional public transport services or facilities are proposed as part of this development since the existing public transport services are expected to be adequate.

NMT - It is recommended to improve the safety of pedestrians crossing Somerset Road at the Somerset Road/Chiappini Street intersection. These upgrades include reduced pedestrian

crossing distances and increased pedestrian refuge areas (on median islands). Refer to Figure C1 in Appendix C for a conceptual drawing of these proposed upgrades.

Parking - The development is located within a PT2 zone. According to the City of Cape Town's Municipal Planning By-Law⁷, no parking is required for developments within this zone. However, 15 on-site parking bays will be provided.

Due to the public transport orientation of this development, it is proposed to change two of the existing on-street parking bays along Chiappini Street to E-hailing or ride-sharing drop-off and pick-up points.

One loading bay is planned along Prestwich Street and another is planned along Chiappini Street. These loading bays will mainly service the retail facility, but they could also be used by other trucks such as furniture trucks and/or refuse collection vehicles.

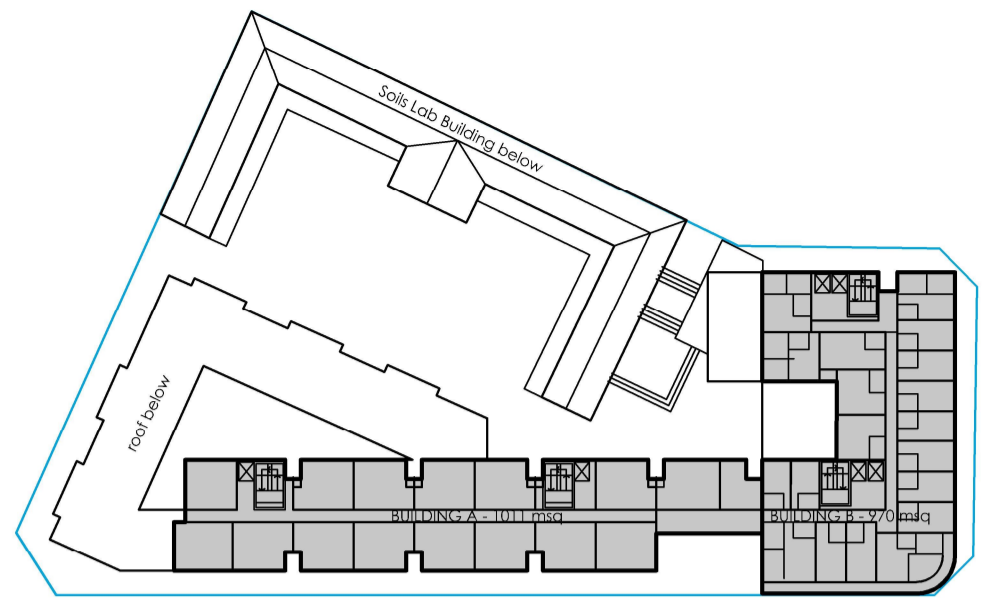
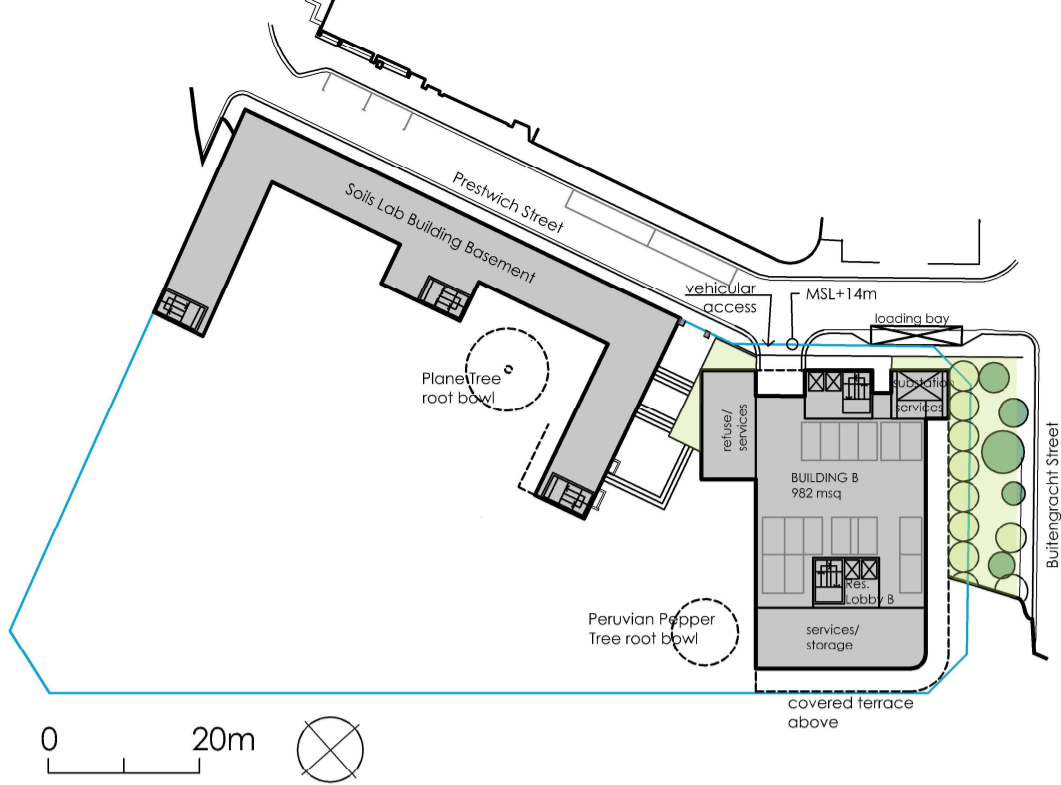
Cost Estimates - A high-level cost estimate of the road upgrades recommended in this report is summarised in Table D1 Appendix D. Based on this summary, these proposed road upgrades are estimated to amount to R1,52 million (Excl. VAT).

Conclusion – Based on this investigation, it is evident that the transport impacts expected as part of this development could be sufficiently mitigated. Hence, it is recommended that this PPTL conceptual development proposal be considered for approval from a transport point of view, provided that the upgrades discussed in this report are put in place.

20. REFERENCES

1. Western Cape Government, Department of Infrastructure, PPTL: Phase 1 – Proposed Conceptual Development Options & Guidelines Report, DOI12/8/1/P2/6, September 2023
2. Western Cape Government, Department of Infrastructure, PPTL Contextual Analysis Report, DOI12/8/1/P2/6, June 2023
3. Transportation Research Board, Highway Capacity Manual, 7th Edition, 2022
4. PAWC, Road Access Guidelines, May 2001
5. South African Trip Data Manual, TMH17, Version 1.1, COTO, September 2013
6. City of Cape Town, Non-motorised Transport Network Plan Cycle Routes, September 2017
7. City of Cape Town, Municipal Planning By-Law, 2020
8. HHO, Guidelines for the Public Transport component of Transport Impact Assessments, 2001
9. City of Cape Town, Existing Public Transport Services, August 2013

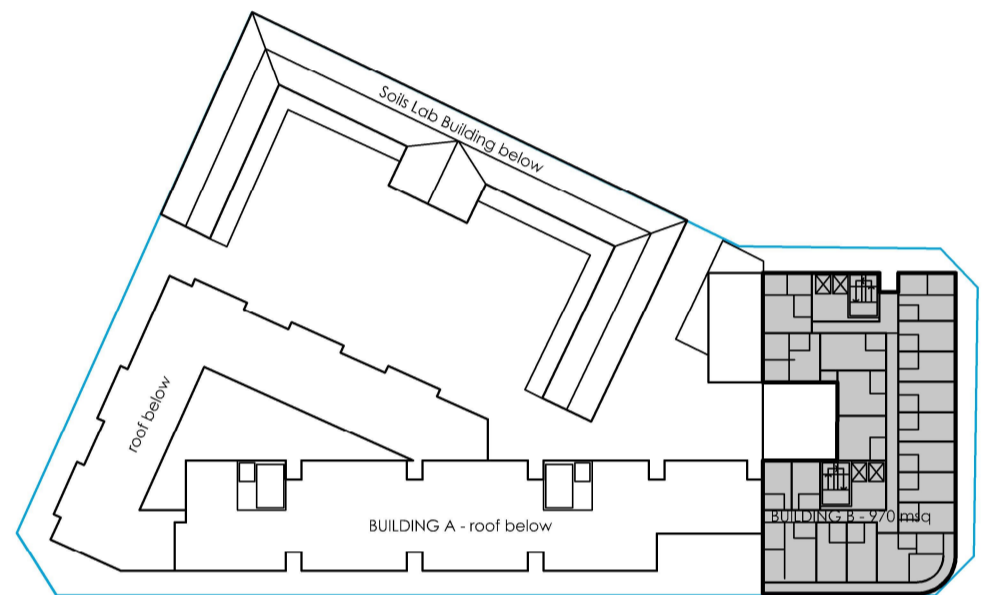
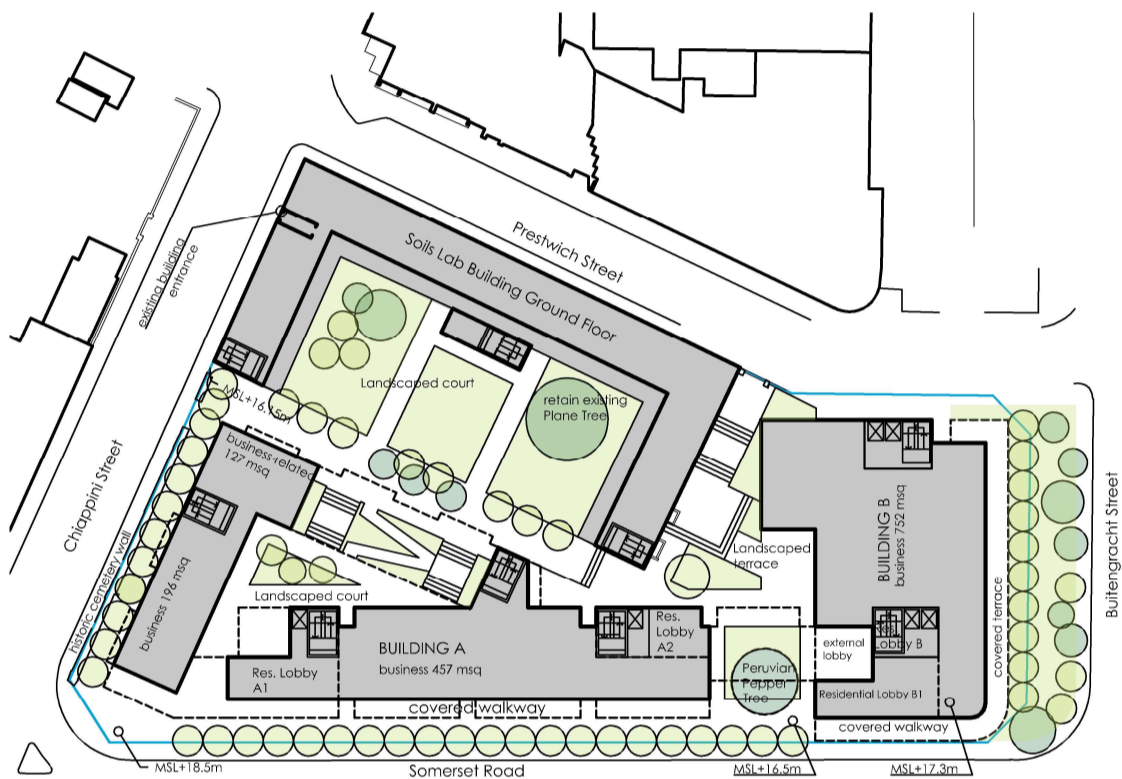
Annexure A: Conceptual Development Plan



4th-6th Floor
35 residential units per floor

Basement level

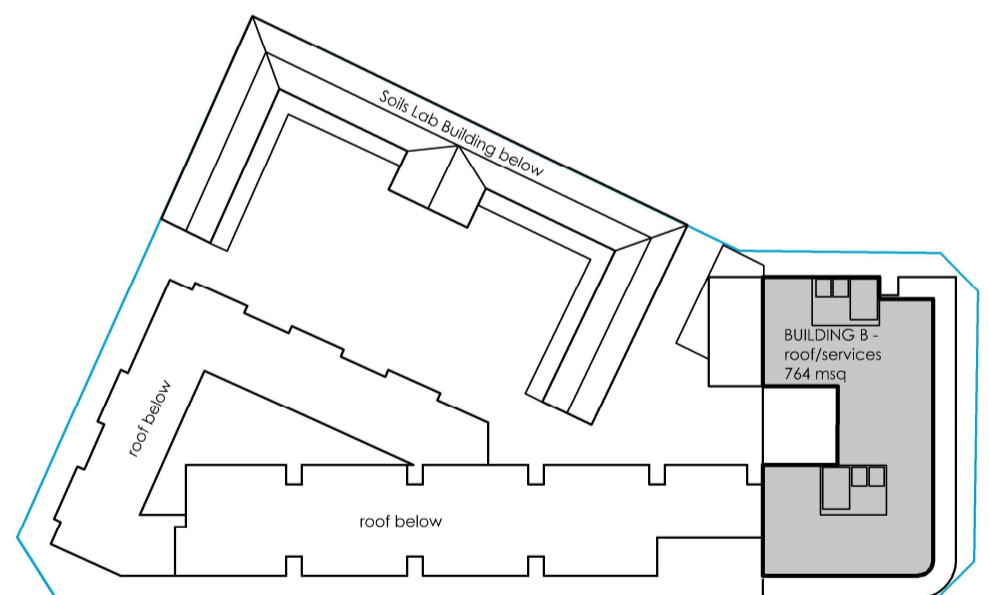
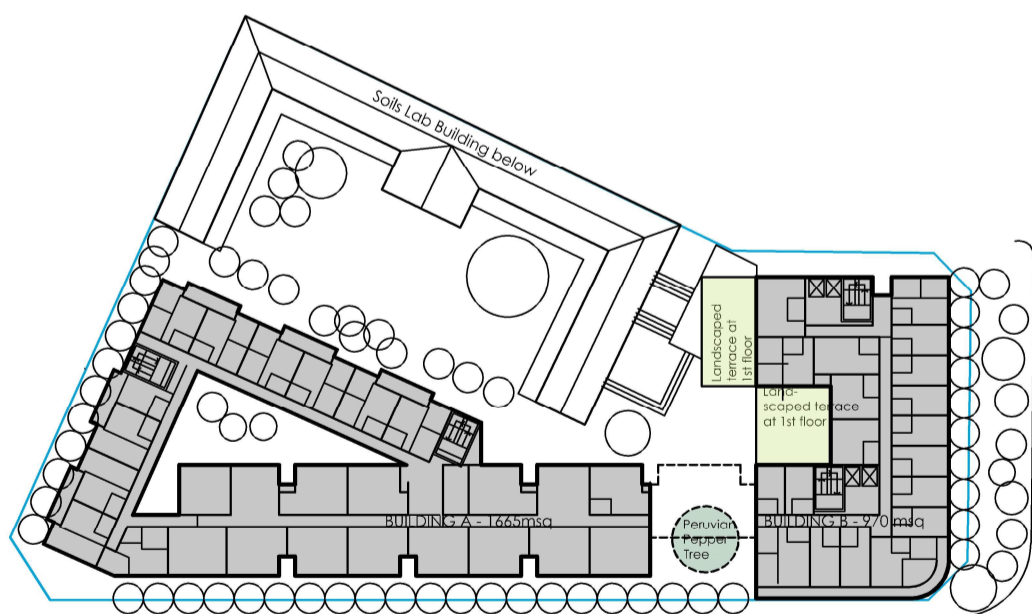
Community Use in Soils Lab Building basement
Loading and services/ storage



7th-10th Floor
±19 residential units per floor

Ground Floor

business
Community Use in Soils Lab Building
Peruvian Pepper tree retained
Treed street interfaces



1st - 3rd Floor
43 residential units per floor

11th Floor
services / roof

Option 3 Medium Bulk: Schematic floor plans
08 November 2023

Floor areas of new building:

Basement service area - 982 msq
Ground floor business - 2 028 msq
Residential floor area: - 17 728 msq
Roof services area B - 764 msq
Total new floor area: 21 502 msq

Floor areas of existing building:

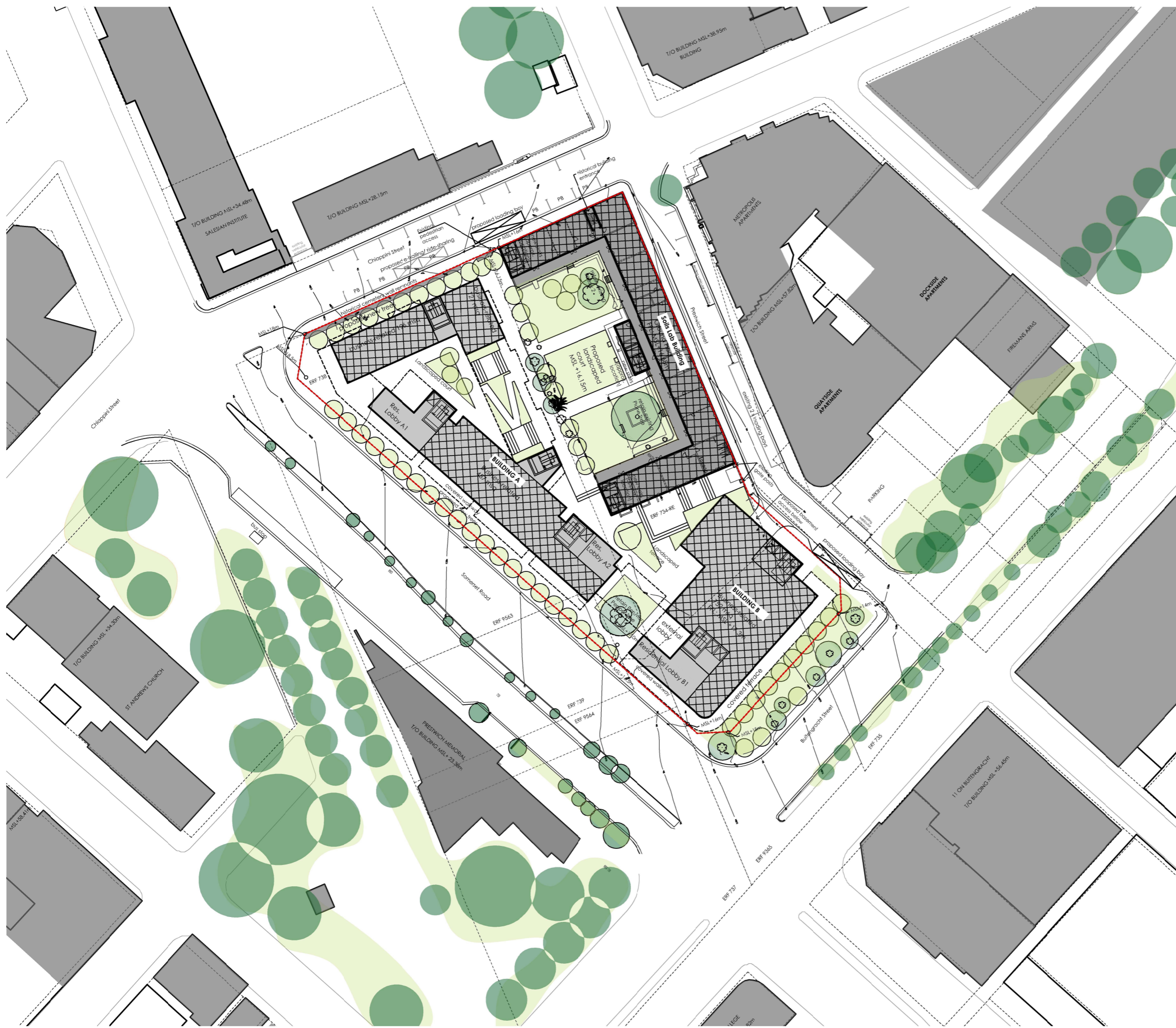
Soils Lab Basement - 842 msq
Soils Lab Ground Floor - 1029 msq
Total floor area - Soils Lab: 1871 msq

TOTAL FLOOR AREA: 23 373 MSQ

Residential units: 310 no's

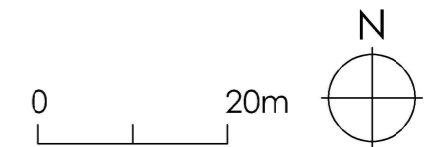
Parking bays - Only loading and service-related parking provided

Figure A1: Site Development Plan



KEY:
 Developable area

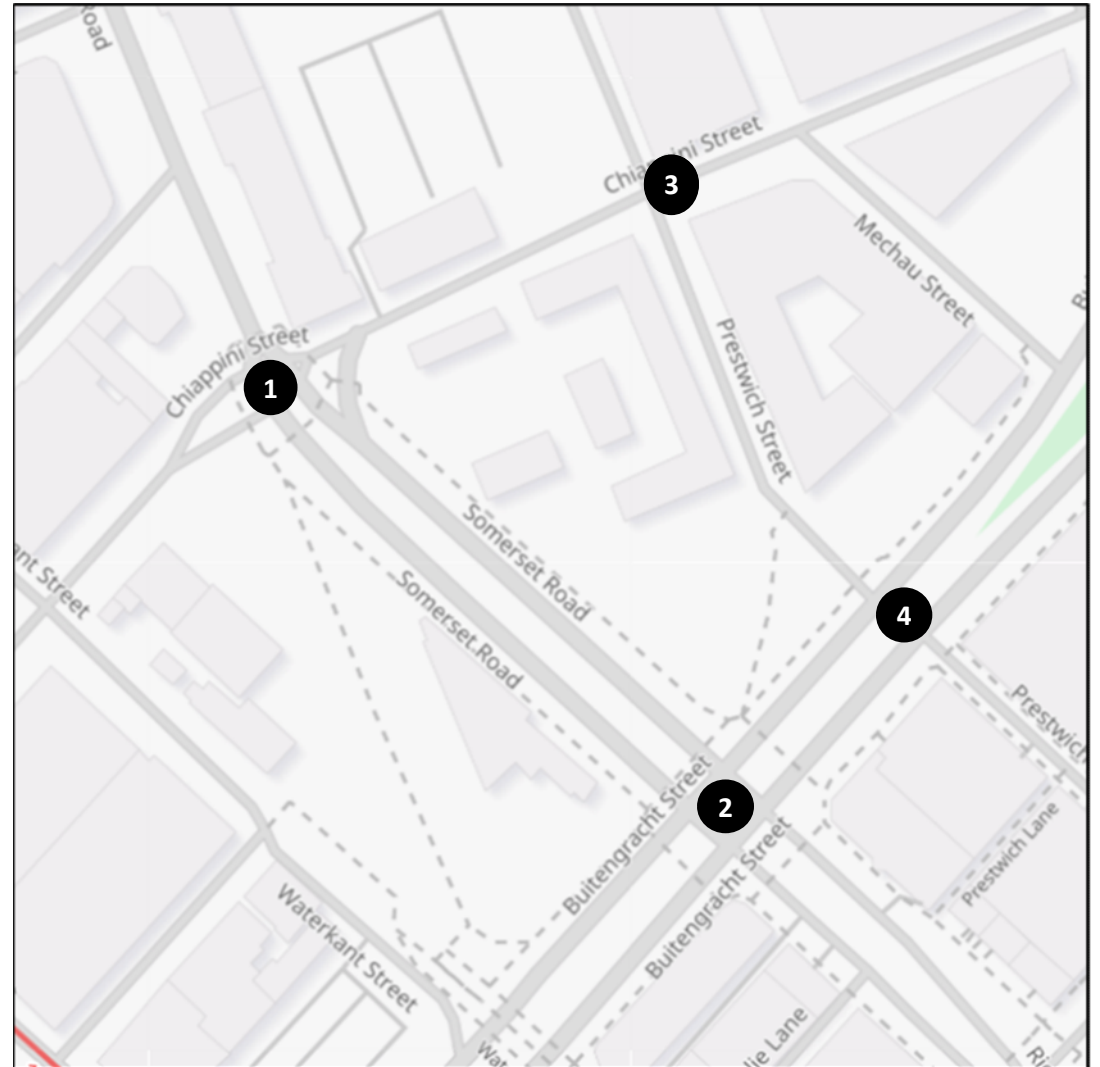
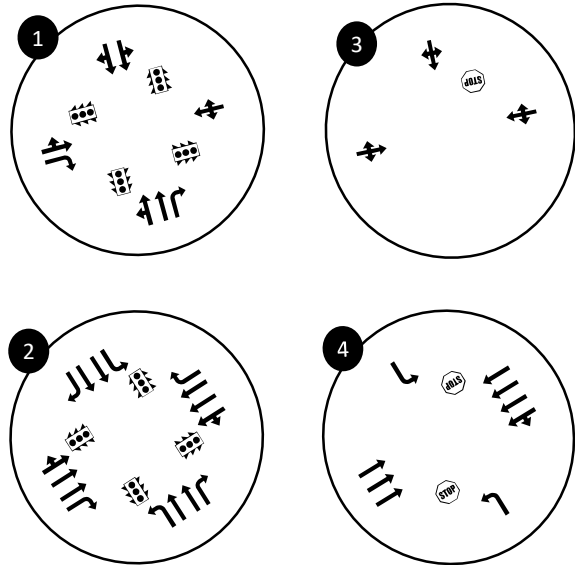
Figure A2:
Site Development
Plan Ground Floor



Option 3 Medium Bulk:
 Site Plan / Ground Floor Plan
 08 November 2023

1:1250 @ A3

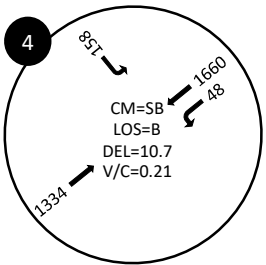
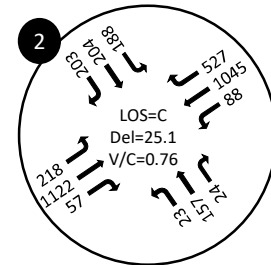
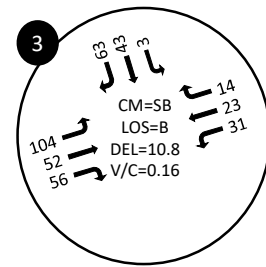
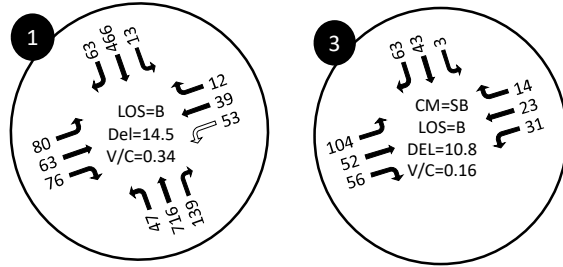
Annexure B: Capacity Analysis



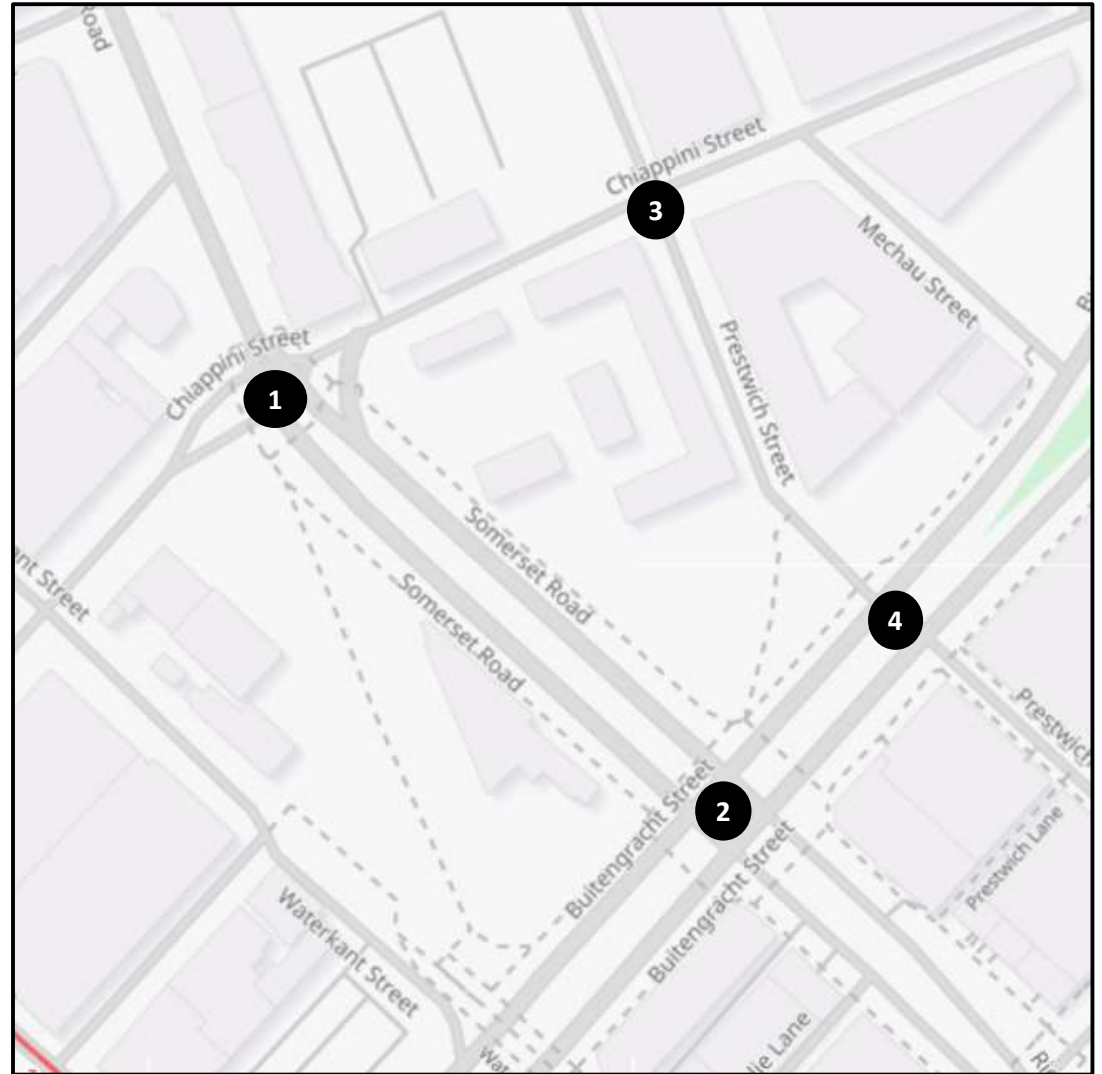
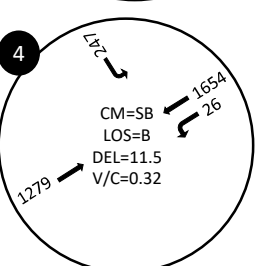
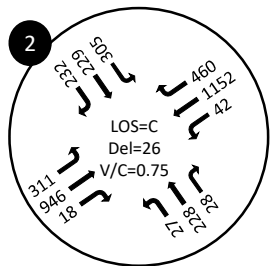
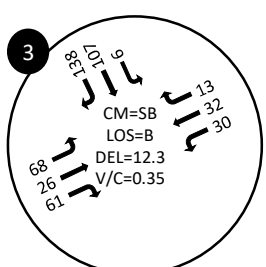
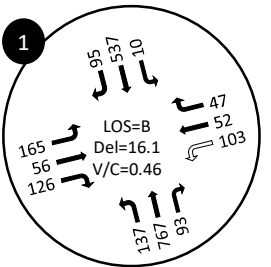
Legend:

- ↳ Turning lanes and turning movements
- Ⓢ Stop Control
- Ⓣ Traffic Signal Control
- Roundabout (Yield Control)

Weekday AM Peak Hour

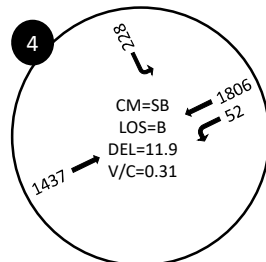
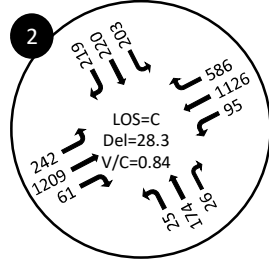
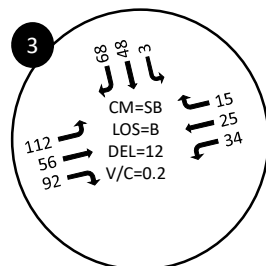
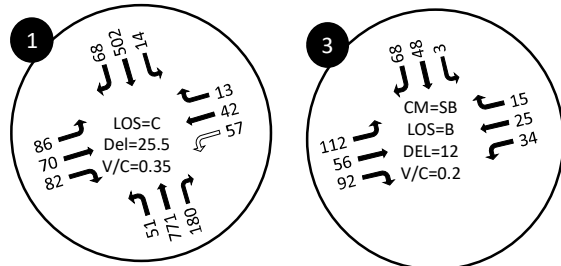


Weekday PM Peak Hour

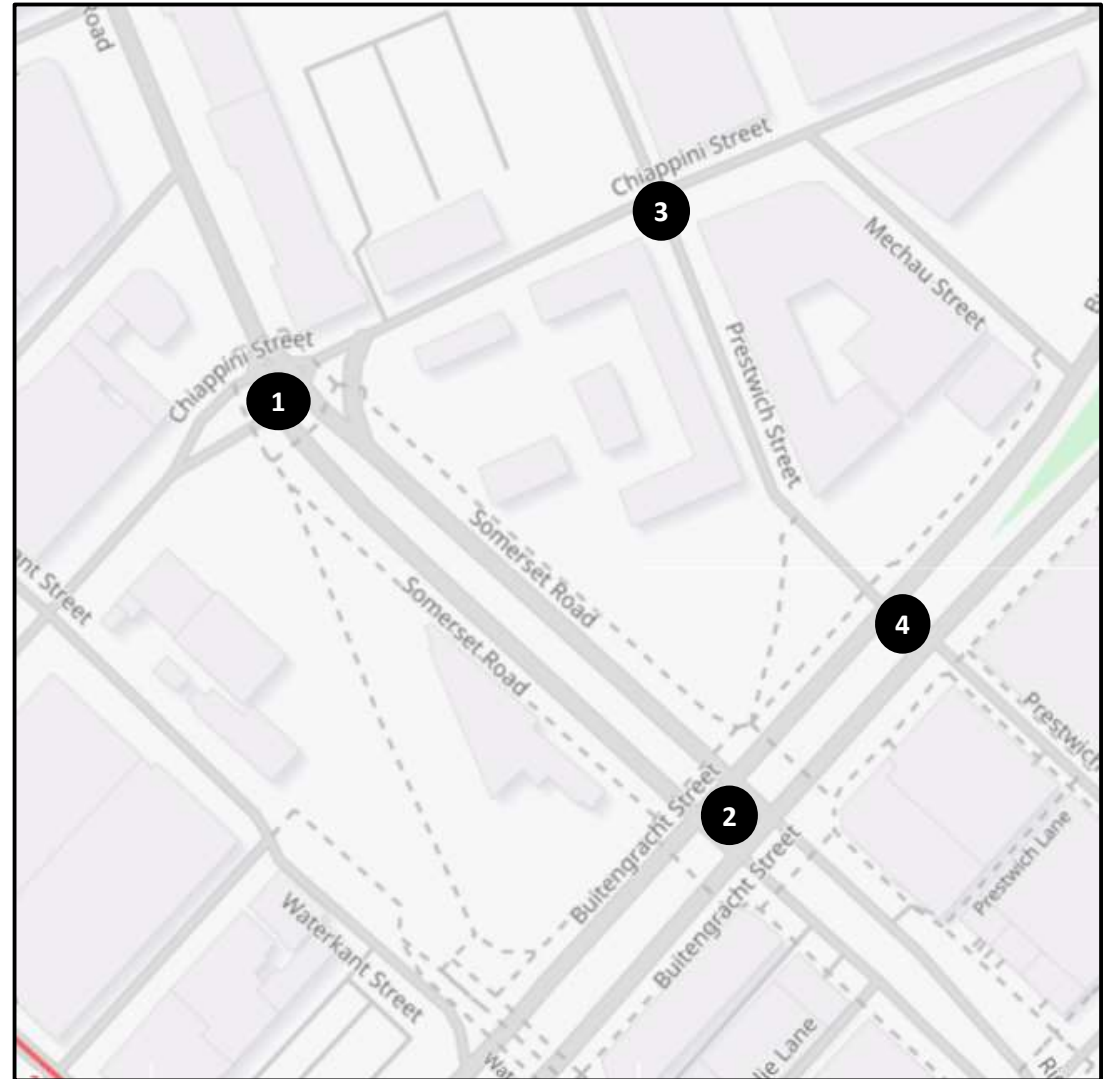
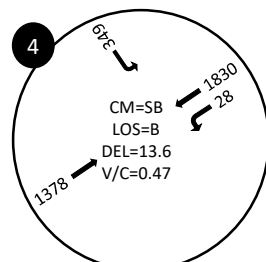
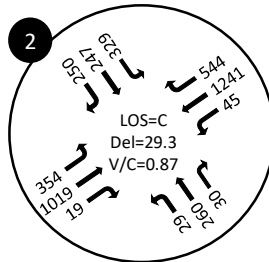
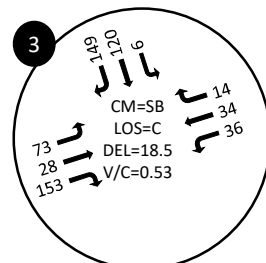
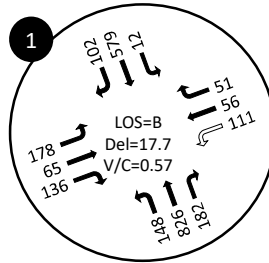


CM : Critical Movement
 LOS: Level of Service of intersection if Signal or 4-way Stop or of Critical movement if unsignalised
 DEL: Avg Delay per vehicle if signalised or for critical movement if unsignalised
 V/C: Critical V/C Ratio
 Turning movement and turning volume over the period
 Free Flow Turning Movement

Weekday AM Peak Hour

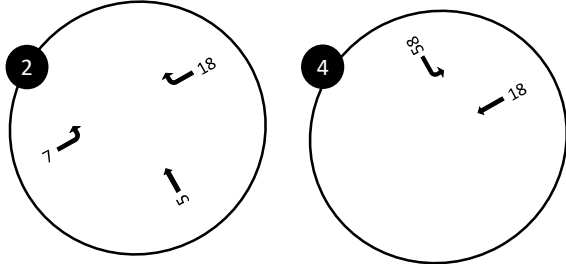
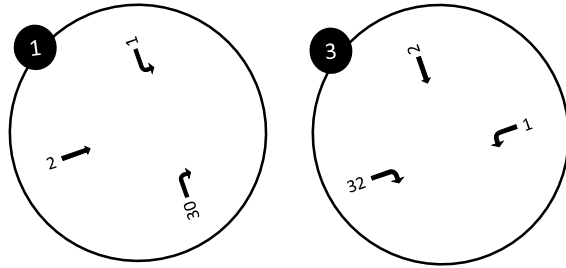


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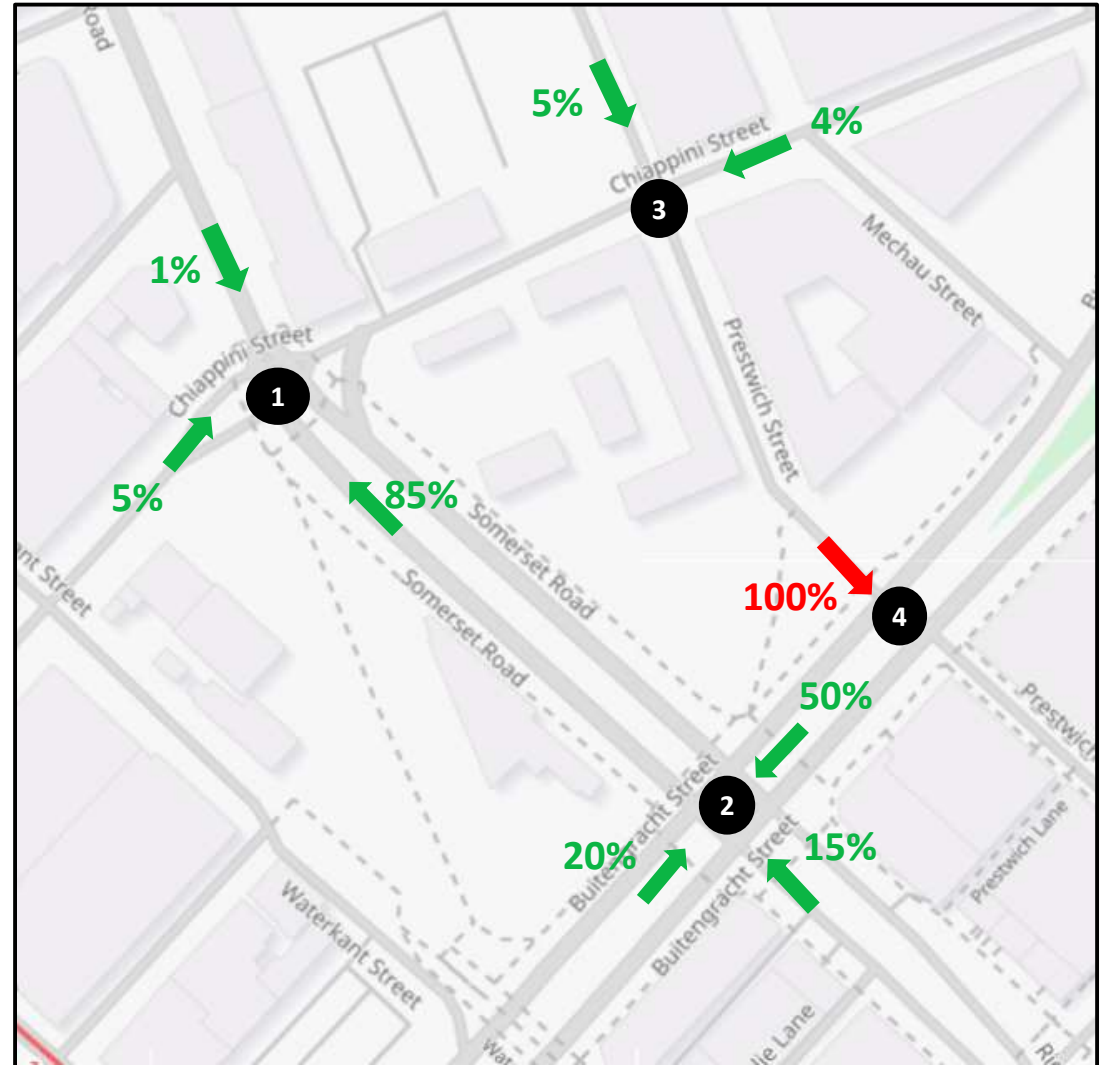
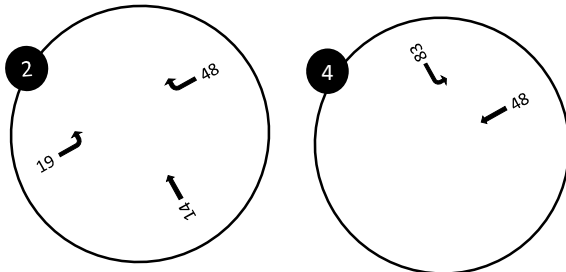
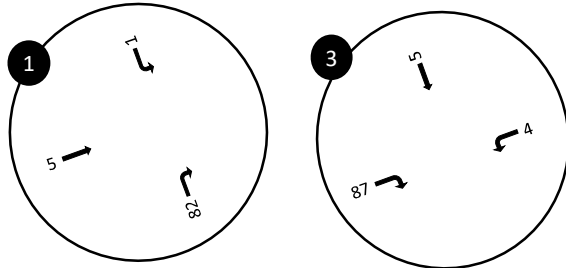


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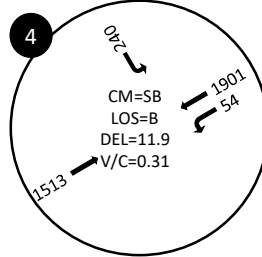
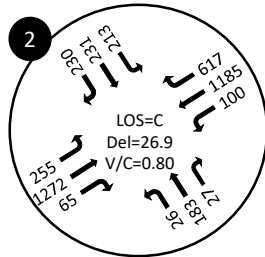
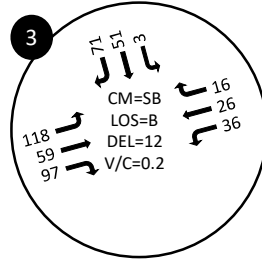
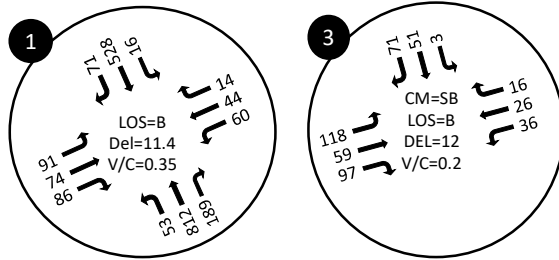
Weekday PM Peak Hour



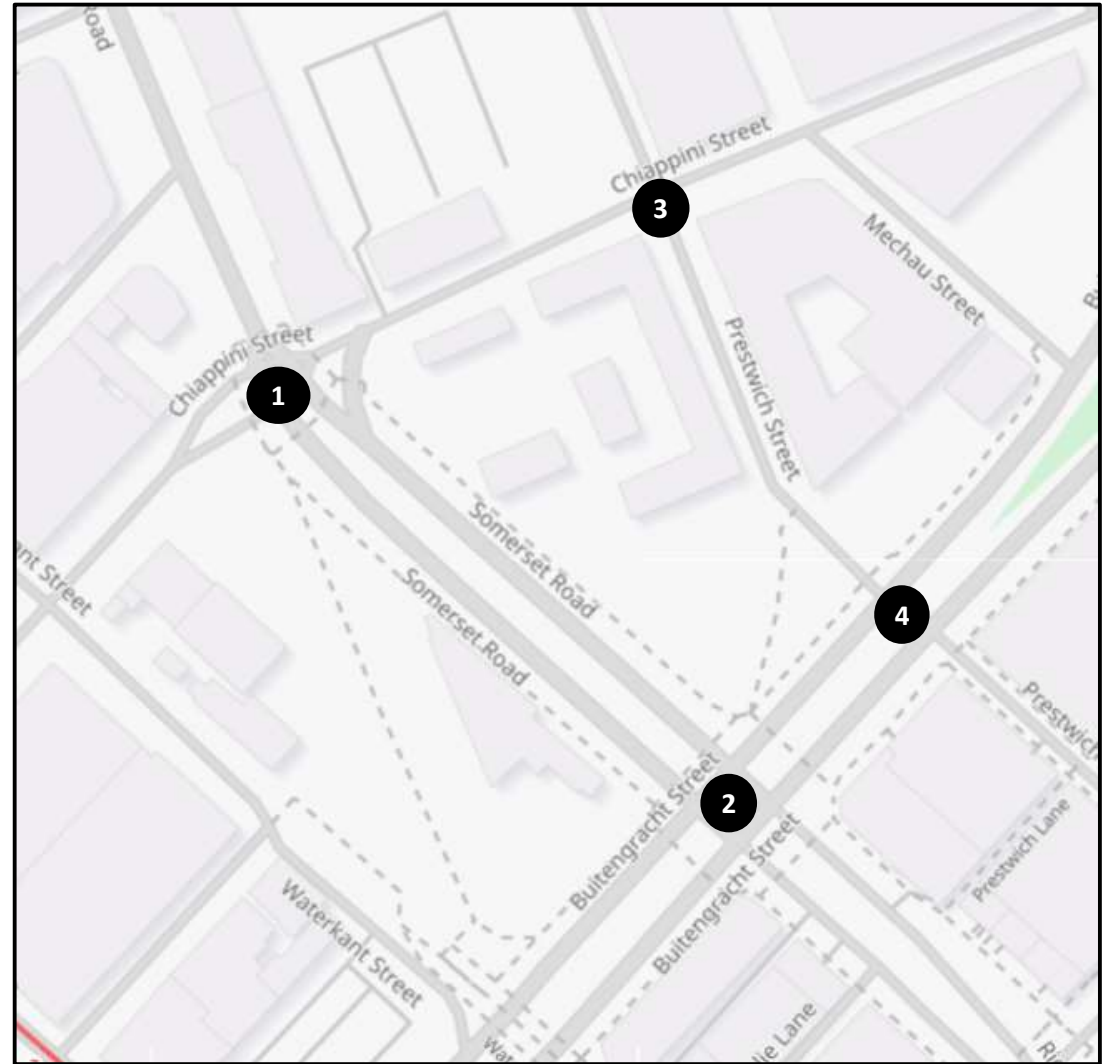
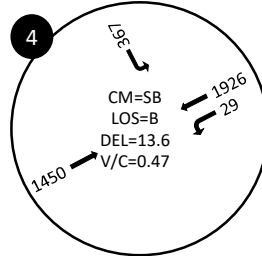
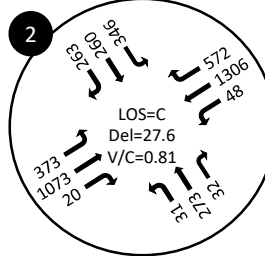
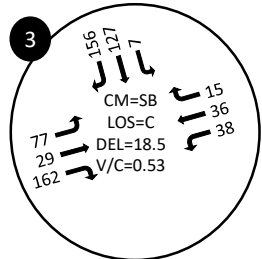
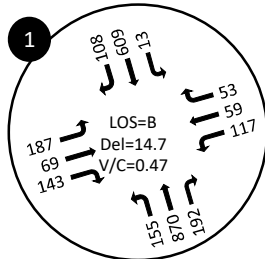
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 V/C: Critical V/C Ratio
 Turning movement and turning volume over the period
 Free Flow Turning Movement

| | Total | In | Out |
|--------------|-------|----|-----|
| AM Peak Hour | 93 | 35 | 58 |
| PM Peak Hour | 179 | 96 | 83 |

Weekday AM Peak Hour

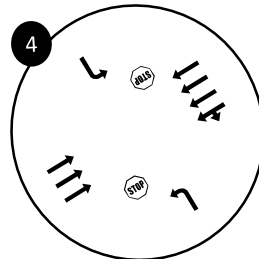
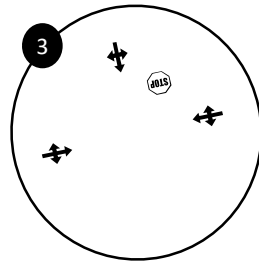
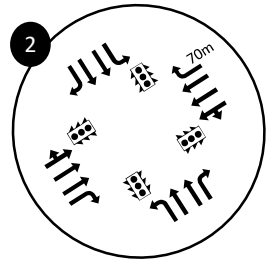
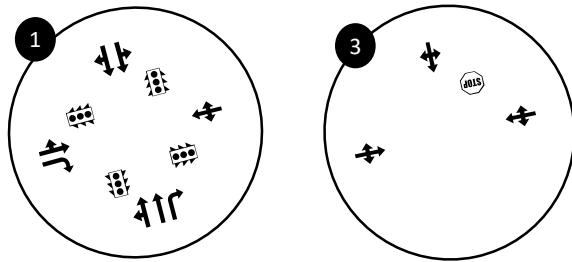


Weekday PM Peak Hour

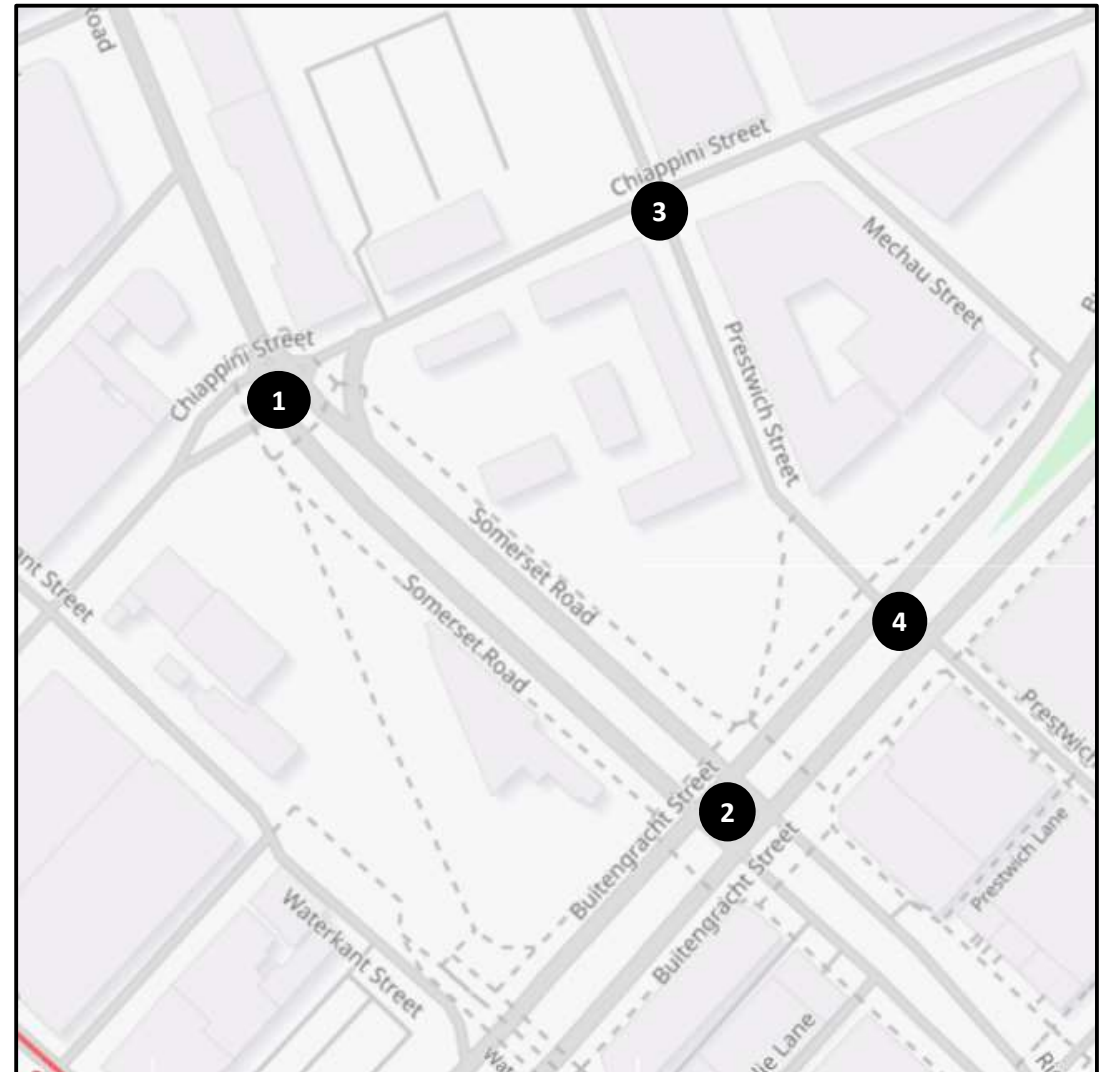
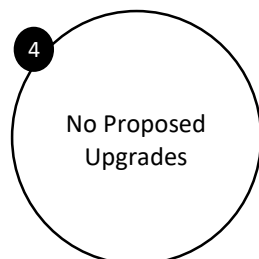
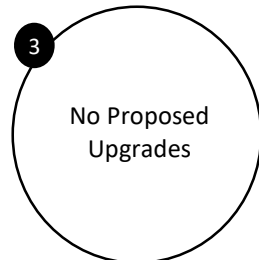
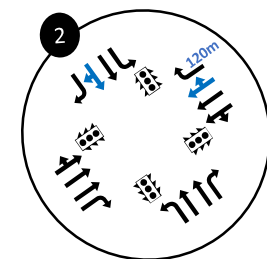
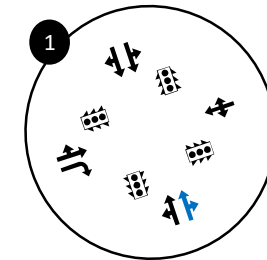


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 V/C: Critical V/C Ratio
 Turning movement and turning volume over the period
 Free Flow Turning Movement

Existing Configurations and Control

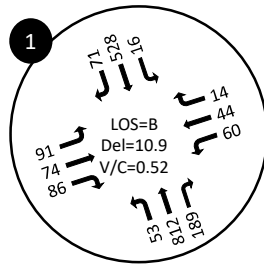


Proposed Configurations and Control

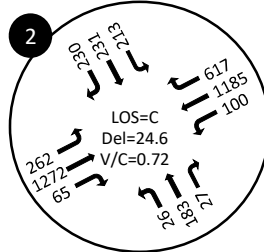


Legend:
 ↱ Turning lanes and turning movements
 ⓞ Stop Control
 🚦 Traffic Signal Control
 ○ Roundabout (Yield Control)

Weekday AM Peak Hour

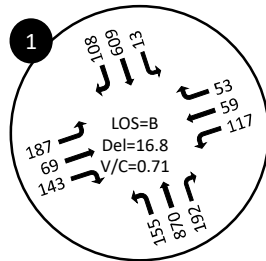


3
No Proposed Upgrades

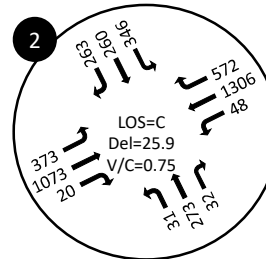


4
No Proposed Upgrades

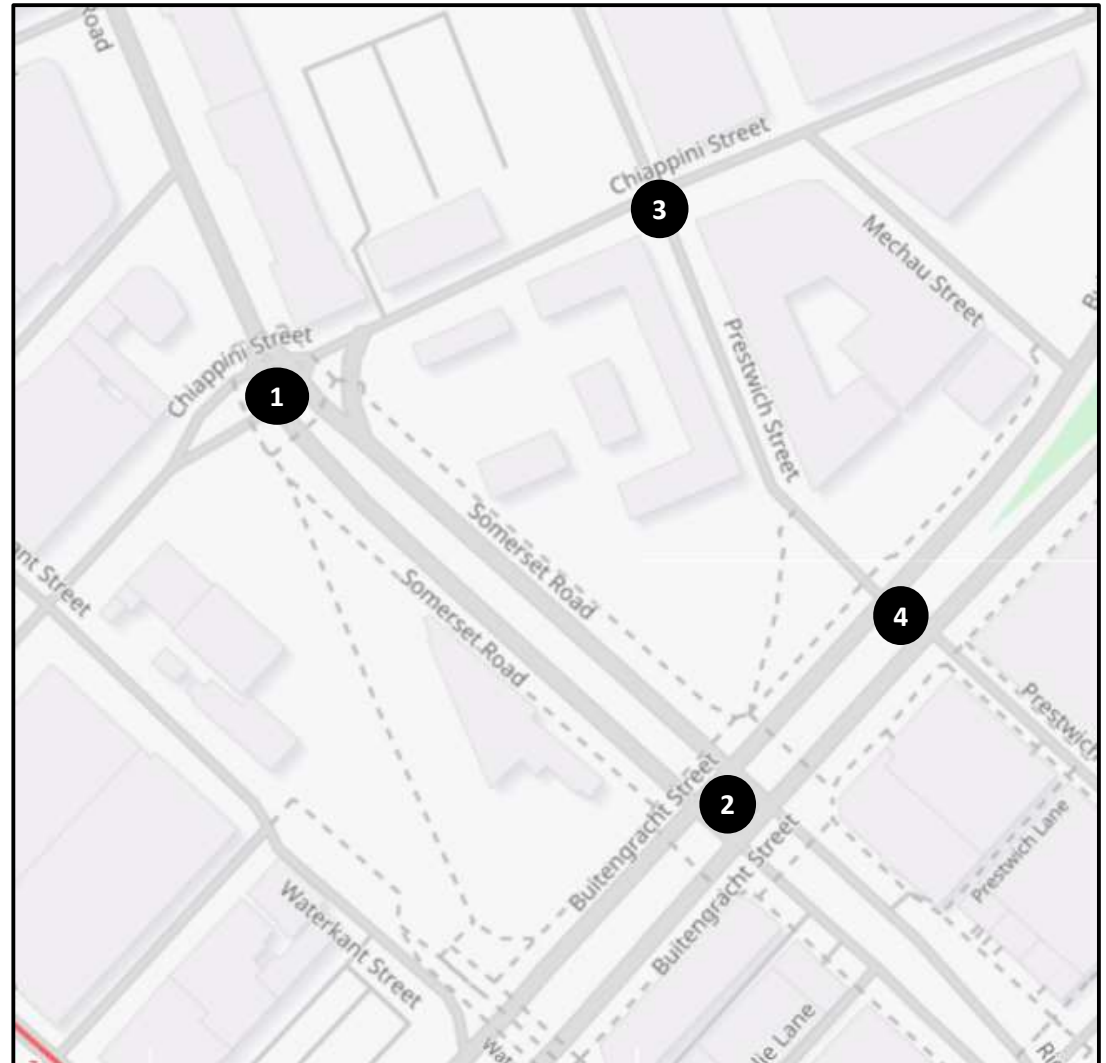
Weekday PM Peak Hour



3
No Proposed Upgrades



4
No Proposed Upgrades



CM : Critical Movement
 LOS: Level of Service of intersection if Signal or 4-way Stop or of Critical movement if unsignalised
 DEL: Avg Delay per vehicle if signalised or for critical movement if unsignalised
 V/C: Critical V/C Ratio
 Turning movement and turning volume over the period
 Free Flow Turning Movement

Annexure C: Conceptual Layout



LEGEND

Proposed upgrades

SCHEMATIC



PROJECT:

Erf 734, PPTL

FIGURE:

Conceptual layout of Somerset Road / Chiappini Street intersection

NUMBER:

Fig C1

Annexure D: Cost Estimate

Table D1: High-Level Cost Estimate

| Road upgrades | Price | Size | Units | Total |
|--|----------|------|----------------|-------------------|
| Buitengracht Street/Somerset Road | | | | |
| <i>Convert the westbound through lane to a shared through and right-turn lane</i> | | | | |
| -- Repaint Arrow Road Markings | R90 | 5 | m ² | R500 |
| <i>Extend the westbound right-turn lane storage from 70m to 120m.</i> | | | | |
| -- Remove existing kerbs | R20 | 50 | m | R1 000 |
| -- Place new kerbs | R300 | 50 | m | R15 000 |
| -- New Asphalt | R2 500 | 150 | m ² | R375 000 |
| <i>Convert the southbound through lane to a shared through and right-turn lane.</i> | | | | |
| -- Repaint Arrow Road Markings | R90 | 5 | m ² | R500 |
| <i>Provided permitted/protected right-turn phases for the northbound and southbound right-turn movements.</i> | | | | |
| -- Additional Signal Heads | R200 000 | | Lump sum | R200 000 |
| Total | | | | R592 000 |
| Somerset Road/Chiappini Street | | | | |
| <i>Convert the northbound through lane to a shared through and right-turn lane.</i> | | | | |
| -- Repaint Arrow Road Markings | R90 | 5 | m ² | R500 |
| <i>Remove the northbound right-turn lane to provide a wider median.</i> | | | | |
| -- Remove existing kerbs | R20 | 60 | m | R1 200 |
| -- Place new kerbs | R300 | 60 | m | R18 000 |
| -- Paint Kerbs | R30 | 25 | m | R800 |
| -- New Median | R600 | 186 | m ² | R111 600 |
| <i>Adjust the bellmouth radius of both southern corners of Chiappini Street</i> | | | | |
| -- Remove existing kerbs | R20 | 50 | m | R1 000 |
| -- Place new kerbs | R300 | 50 | m | R15 000 |
| -- Paint Kerbs | R30 | 50 | m | R1 500 |
| -- Bellmouth | R600 | 75 | m ² | R45 000 |
| <i>Remove the westbound slip lane's receiving lane and provide a yield sign</i> | | | | |
| -- Remove existing kerbs | R20 | 45 | m | R900 |
| -- Place new kerbs | R300 | 45 | m | R13 500 |
| -- Bellmouth | R600 | 80 | m ² | R48 000 |
| -- Pedestrian crossing and Yield sign road markings | R30 | 78 | m | R2 400 |
| <i>Widen the island on the south eastern corner of Chiappini Street to allow for pedestrian storage before and after crossing the slip lane.</i> | | | | |
| -- Remove existing kerbs | R20 | 15 | m | R300 |
| -- Place new kerbs | R300 | 30 | m | R9 000 |
| -- Paint Kerbs | R30 | 30 | m | R900 |
| -- Island | R600 | 30 | m ² | R18 000 |
| -- Additional Signal Heads | R200 000 | | Lump sum | R200 000 |
| Total | | | | R487 600 |
| Sum Total | | | | R1 079 600 |
| P&Gs and Traffic Accommodation | | | | R431 900 |
| Grand Total (excluding VAT) | | | | R1 511 500 |

Annexure E: Public Transport Calculations

PPTL
- PUBLIC TRANSPORT TRIP GENERATION

| PROPOSED DEVELOPMENTS | PPTL | |
|--|----------------------------------|-----------|
| SIZE OF DEVELOPMENTS | | |
| Landuse | Affordable/Social Housing | |
| Number of dwelling units | 120 | |
| PERSON TRIP GENERATION RATES | | |
| Person/worker trip generation rate ber household | 1.6 | |
| DEMAND DURING PEAK HOUR | | |
| Proportion of person trips during the peak period | 70% | |
| Person trips during peak hour | | |
| Residential | 134 | |
| No of person trips during the peak period | | |
| PRIMARY MODAL SPLIT (PUBLIC TRANSPORT, INCLUDING WALKING, VS PRIVATE TRANSPORT) | | |
| Modal split (public transport share, including walking) | 85% | |
| Number of public transport passengers and pedestrians | 114 | |
| Number of private vehicle passengers | 20 | |
| SECONDARY MODAL SPLIT | | |
| Public transport modal split (assumed) | | |
| Rail | 0% | |
| Bus | 30% | |
| Taxi | 50% | |
| Walking (only mode) | 20% | |
| No of people using public transport | | |
| Rail | 0 | |
| Bus | 34 | |
| Taxi | 57 | |
| Walking | 23 | |
| Private Vehicles | 20 | |
| NUMBER OF PUBLIC TRANSPORT VEHICLES | | |
| | AM | PM |
| No of pedestrians | 23 | |
| Taxi trips during the AM peak hour | | |
| Minibus tax capacity (pax) | 15 | |
| % of taxi trips In | 25% | 75% |
| % of taxi trips Out | 75% | 25% |
| No of taxi pax In | 14 | 43 |
| No of taxi pax Out | 43 | 14 |
| Total no of taxi trips In | 1 | 3 |
| Total no of taxi trips Out | 3 | 1 |
| Bus trips during the AM peak hour | | |
| Bus tax capacity (pax) | 50 | |
| % of bus trips In | 25% | 75% |
| % of bus trips Out | 75% | 25% |
| No of bus pax In | 9 | 26 |
| No of bus pax Out | 26 | 9 |
| Total no of bus trips In | 1 | 1 |
| Total no of bus trips Out | 1 | 1 |
| Private Vehicles | 13 | |

* Recommended in the Public Transport TIA Component Guidelines

PPTL
- PUBLIC TRANSPORT TRIP GENERATION

| PROPOSED DEVELOPMENTS | PPTL | |
|--|--------------------------------|-----------|
| SIZE OF DEVELOPMENTS | | |
| Landuse | Open Market Residential | |
| Number of dwelling units | 190 | |
| PERSON TRIP GENERATION RATES | | |
| Person/worker trip generation rate ber household | 1.2 | |
| DEMAND DURING PEAK HOUR | | |
| Proportion of person trips during the peak period | 70% | |
| Person trips during peak hour | | |
| Residential | 160 | |
| No of person trips during the peak period | | |
| PRIMARY MODAL SPLIT (PUBLIC TRANSPORT, INCLUDING WALKING, VS PRIVATE TRANSPORT) | | |
| Modal split (public transport share, including walking) | 60% | |
| Number of public transport passengers and pedestrians | 96 | |
| Number of private vehicle passengers | 64 | |
| SECONDARY MODAL SPLIT | | |
| Public transport modal split (assumed) | | |
| Rail | 0% | |
| Bus | 80% | |
| Taxi | 0% | |
| Walking (only mode) | 20% | |
| No of people using public transport | | |
| Rail | 0 | |
| Bus | 77 | |
| Taxi | 0 | |
| Walking | 19 | |
| Private Vehicles | 64 | |
| NUMBER OF PUBLIC TRANSPORT VEHICLES | | |
| | AM | PM |
| No of pedestrians | 19 | |
| Taxi trips during the AM peak hour | | |
| Minibus tax capacity (pax) | 15 | |
| % of taxi trips In | 25% | 75% |
| % of taxi trips Out | 75% | 25% |
| No of taxi pax In | 0 | 0 |
| No of taxi pax Out | 0 | 0 |
| Total no of taxi trips In | 1 | 1 |
| Total no of taxi trips Out | 1 | 1 |
| Bus trips during the AM peak hour | | |
| Bus tax capacity (pax) | 50 | |
| % of bus trips In | 25% | 75% |
| % of bus trips Out | 75% | 25% |
| No of bus pax In | 19 | 57 |
| No of bus pax Out | 57 | 19 |
| Total no of bus trips In | 1 | 1 |
| Total no of bus trips Out | 1 | 1 |
| Private Vehicles | 43 | |

* Recommended in the Public Transport TIA Component Guidelines

PPTL
- PUBLIC TRANSPORT TRIP GENERATION

| PROPOSED DEVELOPMENTS | PPTL | |
|--|---------------|-----------|
| SIZE OF DEVELOPMENTS | | |
| Landuse | Office | |
| GLA | 674 | |
| EMPLOYEE RATES | | |
| Employee trip generation rate | 30 | |
| DEMAND DURING PEAK HOUR | | |
| Proportion of person trips during the peak period | 60% | |
| Person trips during peak hour | | |
| Office | 13 | |
| No of person trips during the peak period | | |
| PRIMARY MODAL SPLIT (PUBLIC TRANSPORT, INCLUDING WALKING, VS PRIVATE TRANSPORT) | | |
| Modal split (public transport share, including walking) | 60% | |
| Number of public transport passengers and pedestrians | 8 | |
| Number of private vehicle passengers | 5 | |
| SECONDARY MODAL SPLIT | | |
| Public transport modal split (assumed) | | |
| Rail | 0% | |
| Bus | 50% | |
| Taxi | 30% | |
| Walking (only mode) | 20% | |
| No of people using public transport | | |
| Rail | 0 | |
| Bus | 4 | |
| Taxi | 2 | |
| Walking | 2 | |
| Private Vehicles | 5 | |
| NUMBER OF PUBLIC TRANSPORT VEHICLES | | |
| | AM | PM |
| No of pedestrians | 2 | |
| Taxi trips during the AM peak hour | | |
| Minibus tax capacity (pax) | 15 | |
| % of taxi trips In | 75% | 75% |
| % of taxi trips Out | 25% | 25% |
| No of taxi pax In | 2 | 2 |
| No of taxi pax Out | 1 | 1 |
| Total no of taxi trips In | 1 | 1 |
| Total no of taxi trips Out | 1 | 1 |
| Bus trips during the AM peak hour | | |
| Bus tax capacity (pax) | 50 | |
| % of bus trips In | 75% | 75% |
| % of bus trips Out | 25% | 25% |
| No of bus pax In | 3 | 3 |
| No of bus pax Out | 1 | 1 |
| Total no of bus trips In | 1 | 1 |
| Total no of bus trips Out | 1 | 1 |
| Private Vehicles | 4 | |

* Recommended in the Public Transport TIA Component Guidelines

PPTL
- PUBLIC TRANSPORT TRIP GENERATION

| PROPOSED DEVELOPMENTS | PPTL | |
|--|---------------|-----------|
| SIZE OF DEVELOPMENTS | | |
| Landuse | Retail | |
| GLA | 2 072 | |
| EMPLOYEE RATES | | |
| Employee trip generation rate | 35 | |
| DEMAND DURING PEAK HOUR | | |
| Proportion of person trips during the peak period | 60% | |
| Person trips during peak hour | | |
| Retail | 36 | |
| No of person trips during the peak period | | |
| PRIMARY MODAL SPLIT (PUBLIC TRANSPORT, INCLUDING WALKING, VS PRIVATE TRANSPORT) | | |
| Modal split (public transport share, including walking) | 60% | |
| Number of public transport passengers and pedestrians | 21 | |
| Number of private vehicle passengers | 14 | |
| SECONDARY MODAL SPLIT | | |
| Public transport modal split (assumed) | | |
| Rail | 0% | |
| Bus | 50% | |
| Taxi | 30% | |
| Walking (only mode) | 20% | |
| No of people using public transport | | |
| Rail | 0 | |
| Bus | 11 | |
| Taxi | 6 | |
| Walking | 4 | |
| Private Vehicles | 14 | |
| NUMBER OF PUBLIC TRANSPORT VEHICLES | | |
| | AM | PM |
| No of pedestrians | 4 | |
| Taxi trips during the AM peak hour | | |
| Minibus tax capacity (pax) | 15 | |
| % of taxi trips In | 75% | 75% |
| % of taxi trips Out | 25% | 25% |
| No of taxi pax In | 5 | 5 |
| No of taxi pax Out | 2 | 2 |
| Total no of taxi trips In | 1 | 1 |
| Total no of taxi trips Out | 1 | 1 |
| Bus trips during the AM peak hour | | |
| Bus tax capacity (pax) | 50 | |
| % of bus trips In | 75% | 75% |
| % of bus trips Out | 25% | 25% |
| No of bus pax In | 8 | 8 |
| No of bus pax Out | 3 | 3 |
| Total no of bus trips In | 1 | 1 |
| Total no of bus trips Out | 1 | 1 |
| Private Vehicles | 9 | |

* Recommended in the Public Transport TIA Component Guidelines

PPTL
- PUBLIC TRANSPORT TRIP GENERATION

| PROPOSED DEVELOPMENTS | PPTL | |
|--|-----------|-----------|
| SIZE OF DEVELOPMENTS | | |
| Landuse | All | |
| GLA | | |
| EMPLOYEE RATES | | |
| Employee trip generation rate | | |
| DEMAND DURING PEAK HOUR | | |
| Proportion of person trips during the peak period | | |
| Person trips during peak hour | | |
| Retail | 343 | |
| No of person trips during the peak period | | |
| PRIMARY MODAL SPLIT (PUBLIC TRANSPORT, INCLUDING WALKING, VS PRIVATE TRANSPORT) | | |
| Modal split (public transport share, including walking) | | |
| Number of public transport passengers and pedestrians | 239 | |
| Number of private vehicle passengers | 104 | |
| SECONDARY MODAL SPLIT | | |
| Public transport modal split (assumed) | | |
| Rail | | |
| Bus | | |
| Taxi | | |
| Walking (only mode) | | |
| No of people using public transport | | |
| Rail | 0 | |
| Bus | 126 | |
| Taxi | 66 | |
| Walking | 48 | |
| Private Vehicles | 104 | |
| NUMBER OF PUBLIC TRANSPORT VEHICLES | AM | PM |
| No of pedestrians | 48 | |
| Taxi trips during the AM peak hour | | |
| Minibus tax capacity (pax) | 15 | |
| % of taxi trips In | 25% | 75% |
| % of taxi trips Out | 75% | 25% |
| No of taxi pax In | 21 | 49 |
| No of taxi pax Out | 45 | 16 |
| Total no of taxi trips In | 1 | 3 |
| Total no of taxi trips Out | 3 | 1 |
| Bus trips during the AM peak hour | | |
| Bus tax capacity (pax) | 50 | |
| % of bus trips In | 25% | 75% |
| % of bus trips Out | 75% | 25% |
| No of bus pax In | 39 | 94 |
| No of bus pax Out | 87 | 31 |
| Total no of bus trips In | 1 | 2 |
| Total no of bus trips Out | 2 | 1 |
| Private Vehicles | 69 | |

* Recommended in the Public Transport TIA Component Guidelines



**Western Cape
Government**

Appendix E:

Civil Engineering Infrastructure Report





**Western Cape
Government**

Department of Infrastructure

**PPTL Phase 2: Specialists'
Assessments – Civil
Engineering Infrastructure
Report**

Report No C0877/OD/001

This report is based on the Preferred Conceptual Development Plan (Option 3) for the PPTL subject sites as described in the introduction of this report, below.

This civil engineering report was prepared by Nadeson Consulting Services and describes the civil engineering services components of the preferred option.

SUMMARY

PROJECT NAME:

Provincial Pavement Testing Lab (PPTL) – Land enablement of Erven 734 and RE/738 Cape Town, Prestwich Precinct and a Portion of Buitengracht, Riebeeck and Somerset Streets Road Reserve (Erven 735, 739, 9564 and 9565, Cape Town)

DOCUMENT: C0877/OD/001 – CIVIL ENGINEERING INFRASTRUCTURE

| REV NO | DATE | BY | DESCRIPTION |
|--------|------------|----|----------------|
| | | | |
| | | | |
| 00 | 20/11/2023 | BE | Stage 2 Report |

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List of Annexures

Annexure 1 – Services Input from the City of Cape Town

Annexure 2 – Conceptual Services Connections

Annexure 3 – Order of Magnitude Civil Engineering Estimate

1. Introduction

The purpose of this report is to present the civil engineering services for the preferred Option 3: PPTL Conceptual Development Plan, as an outcome of a conceptual development plan options report that was completed in September 2023. The options were evaluated for the enablement of the proposed consolidated Erven 734-RE and 738-RE, Cape Town and a Portion of Buitengracht, Riebeek and Somerset Street Road Reserve namely Erven 735, 737, 739, 9564 and 9565, Cape Town. Refer to Figure 1 below.



Figure 1: Subject sites and locality

The subject sites measure approximately 6690m² in extent, in respect of gross area available for intervention.

A comprehensive evaluation of residentially led conceptual development options was undertaken under the leadership of NM & Associates Planners and Designers. This process led to the acceptance of preferred option 3 as the proposed conceptual development plan for which the civil engineering services are described in this report.

Further details on the various options and agreement of the proposed conceptual development plan are described in the main report by NM & Associates Planners and Designers.

For the purposes of the engineering evaluation the proposed development that influences the civil engineering requirements is summarized as:

- Residential Total: 310 units
 - 126 Studio apartments
 - 20 One-bedroom apartments
 - 164 Two-bedroom apartments
- Retail - 2072m² GLA
- Office – 674m² GLA

2. Existing Civil Engineering Services

2.1 Potable Water

The PPTL site is surrounded by a water ring main connected to a well-established network. A 225mm water main exists in Chiappini Street and a 380mm main in Prestwich Street. The existing 100mm connection to the PPTL site is from the 380mm main in Prestwich Street.

The area is well served by 5 fire hydrants that are part of the water network around the perimeter of the development site.

The whole area is supplied with water from the Molteno Reservoir at a full water level of around 95m MSL. The site elevation varies around 16m MSL indicating suitable static water pressures between 7 and 8 bar. The available water pressures have been confirmed by the City of Cape Town.

2.2 Sewerage

The complete precinct is well served by existing sewerage infrastructure. There is an existing 150mm diameter sewer pipe in Chiappini Street that connects to a 225mm main in Prestwich Street. The existing PPTL site discharges into the Prestwich Street main.

The City of Cape Town have confirmed that there is spare capacity in the pipe network whilst the Green Point Outfall, to where regional sewage discharges, still has additional spare capacity.

2.3 Stormwater

Underground stormwater pipes exist close to the site. A 525mm diameter pipe is situated in Chiappini Street whilst a large 1575mm diameter culvert runs down Buitengracht Street. There is a catchpit connection at the corner of Prestwich and Buitengracht Street towards the lowest corner of the site.

Existing stormwater from the PPTL site drains largely overland and across the sidewalks bordering Chiappini and Prestwich Streets.

The existing roads around the site are all surfaced and have sufficient grade to accommodate overland stormwater runoff.

3. Civil Engineering Services for Proposed Development

3.1 Potable Water

Water demand for the preferred development option was evaluated according to the *Neighbourhood Planning and Design Guide developed by the Department of Human Settlements (version 1.1 2019 Section J: Water Supply)*. Domestic water requirements for the proposed development are estimated below.

Table 3.1: Domestic water requirements estimates

| WATER | | | | | | |
|-------------------------------|----------|--------------|--------------------------------|---------------------|---------------------------------|------------------------------|
| LAND USE | QUANTITY | WATER UNIT | WATER DEMAND PER UNIT (kl/day) | DAILY DEMAND (kl/d) | PEAK INSTANTANEOUS FLOW (l/s) * | MINIMUM PIPE DIAMETER (mm) |
| Affordable & Market 2 bedroom | 164 | kl/unit/day | 0.35 | 57 | 2.66 | Maximum pipe velocity 1,5m/s |
| Affordable & Market 1 bedroom | 20 | kl/unit/day | 0.30 | 6 | 0.28 | |
| Affordable & Market studio | 126 | kl/unit/day | 0.25 | 32 | 1.46 | |
| Retail Total | 2072 | kl/100m2/day | 0.65 | 13.47 | 0.62 | |
| Business | 674 | kl/100m2/day | 0.65 | 4.38 | 0.20 | |
| TOTAL | | | | 113 | 5.22 | |

* Based on a peak factor of 4

The calculation above indicates that a 67mm diameter pipe would be sufficient to supply domestic flow. It is proposed that a new 100mm diameter connection to the development is made off the 380mm existing main in Prestwich Street at the location of the proposed entrance to the development. This connection would provide water for domestic use as well as fire requirements. An alternative to this would be to utilize the existing 100mm diameter connection

feeding the Soils Laboratory building also in Prestwich Street.

The City of Cape Town have confirmed the availability of water around the site for the purposes of the subject sites' development. (See attachments in Annexure 1).

The proposed water connection to the site is indicated on the sketch in Annexure 2.

3.2 Sewer

Sewerage requirements were similarly evaluated according to the *Neighbourhood Planning and Design Guide developed by the Department of Human Settlements (version 1.1 2019 Section K: Sanitation)*. Average Annual Daily Discharge and peak instantaneous pipe flow is estimated as shown in the table below.

Table 3.2: Average Annual Daily Discharge and Peak instantaneous flow estimates

| SEWER | | | | |
|-------------------------------|----------|-------------------------------|--|---------------------------------|
| LAND USE | QUANTITY | WATER DEMAND PER UNIT (l/day) | DAILY SEWER DISCHARGE (kl/d) 95% water | PEAK INSTANTANEOUS FLOW (l/s) * |
| Affordable & Market 2 bedroom | 164 | 0.35 | 55 | 1.81 |
| Affordable & Market 1 bedroom | 20 | 0.30 | 6 | 0.19 |
| Affordable & Market studio | 126 | 0.25 | 30 | 1.00 |
| Retail Total | 2072 | 0.65 | 12.79 | 0.43 |
| Business | 674 | 0.65 | 4.16 | 0.14 |
| TOTAL | | | 107 | 3.56 |

* Based on a Peak Factor of 2.5

Although the sewage flows predicted could be adequately handled with a smaller pipe the sewer connection is proposed as a 150mm diameter connection (for flow and cleaning purposes). The connection would be made directly into the existing 225mm diameter main in Prestwich Street at the location of the new development entrance.

Development in the complete surrounding area as proposed by the Foreshore Gateway Development Project Report (2021) would not impact greatly on the sewer infrastructure. The

surrounding foul sewer network has sufficient capacity to accommodate the estimated flows predicted by the PPTL development.

The availability and network capacity for the handling of sewage has been confirmed by the City of Cape Town (See Annexure 1). The proposed sewer connection to the site is indicated in Annexure 2.

3.3 Stormwater

The ground within the existing Provincial Laboratory site is largely hard-standing promoting stormwater runoff. The City-owned property bordering onto Buitengracht Street is largely landscaped grass and trees but the area is steep. Existing stormwater runoff from this section drains towards the Buitengracht / Prestwich Street corner. There is an existing catchpit at the corner. Existing stormwater runoff from the overall PPTL site drains onto the existing roads at various points through open channels, downpipes and kerb crossings.

Due to the existing hard-standing and topographical nature of the site, stormwater runoff is unlikely to increase or be affected in quality. There are no existing stormwater issues that require attention.

It is proposed that stormwater runoff would discharge in similar positions from the existing Soils Lab building. A new stormwater connection would be required from Prestwich Street at the new road access position. This would accommodate surface water from the access way and other surface flow.

It is also proposed that open areas are landscaped to both slow down runoff and "filter" runoff where possible. This can be assisted through permeable paving or open swales in terms of the City of Cape Town's Sustainable Urban Drainage Systems policy.

Conceptual positions of services connections are shown in Annexure 2.

4. Geotechnical

A desktop study geotechnical evaluation of the subject sites was undertaken for the development proposal. No physical intrusive investigations were done. The following sources of information were consulted:

1. The 1:50 000 scale geological map of Cape Town
2. Report on geotechnical investigation for the Portside Development Cape Town 2007 (proximity 200m in direct line from the development site).
3. Report on geotechnical investigations for the proposed 'Parcel LMN' Development Victoria And Alfred Waterfront Cape Town 2019 (proximity 600m in direct line away).
4. Information on structural founding from Media Quarter Building, de Smidt Street, off Somerset Road. Green Point 2019 (proximity 400m in direct line away).

The image below indicates the location of the various geotechnical information sources (2 to 4 above).

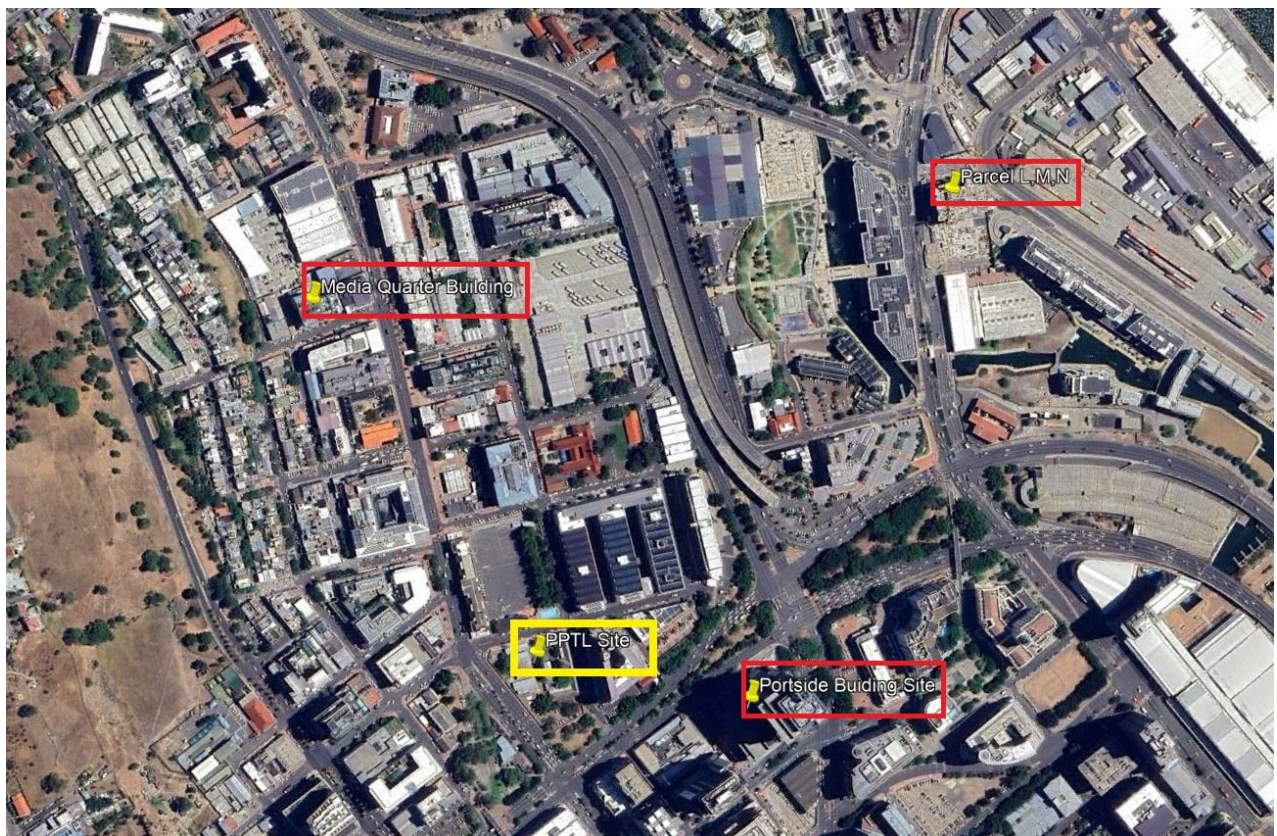


Figure 4.1: Location of geotechnical information sources

The data available describes that the total area is generally underlain by Tygerberg Formation bedrock of the Malmesbury Group. The rocks of this group consist of alternating beds, or layers, of grey phyllitic shale and siltstone and massively bedded medium to fine grained quartzitic greywacke. The beds vary from shallow thickness to greater than 3m.

The surface of the Tygerberg Formation bedrock has generally been completely weathered to clayey silt and silty clay soils. The degree of weathering decreases with depth until un-weathered rock is encountered. The depth of weathering is highly variable and can range from less than a metre to greater than 15m. The weathered clayey silt and silty clay soils are not suitable for structural fill.

A summary of the main factors from the various reports is shown in the table below.

Table 4.1: Geotechnical evaluation of the subject sites

| Geotechnical information | Solid Rock Depth (m) | Water level depth (m) | Bearing Pressure kPa | Foundation | |
|--------------------------|----------------------|-----------------------|----------------------|------------|------------------|
| | | | | Depth (m) | Type |
| Portside | 5 | 4.2 | 10000 | 5.5 | Directly on rock |
| Parcel LMN | 9 | 4.5 | 1000 | 9 | Piles suggested |
| Media Quarter | 7 | Not stated | 500 | 7 | Directly on rock |

All information consulted indicates that excavation of the top 3m into soft rock can be done with an excavator fitted with a rock bucket where required. The rock generally requires blasting but is dependent on the depth of excavation proposed. Excavations for the development would be relatively shallow and it is not anticipated that significant areas of hard rock will be encountered, although should be anticipated.

The water table is such that subsurface drainage and pumping would be required below the basement area.

The following is predicted for the PPTL site based on the geotechnical information available in the sites' proximity.

1. Excavation in the existing material should be manageable to at least 3m deep. Allowance for rock excavation should be made for deep excavations but also anticipated in limited amounts in shallower excavations.

2. The excavated material in at least the top 1m will not be suitable for structural fill and should be carted off site.
3. Founding can be made directly on competent rock but this is likely only to be intercepted at about 5m deep. At least shallow augered piling should be allowed for.
4. Allowance should be made for sub surface drainage and a sump below the limited basement.

The PPTL basement excavation levels would be to approximately 13.0 to 13.5msl. On the Somerset Road edge, the surrounding levels reach up to 17msl; excavations would be close to 4m deep but limited. It is possible that some lateral support would be necessary during construction as a permanent retaining wall.

5. Order of Magnitude Civil Engineering Costs

Order of magnitude construction costs are indicated in Annexure 3 for the main civil engineering elements.

The road improvements required in accordance with the Traffic Impact Assessment are also included as line item.

Annexure 1 – Services Input from the City of Cape Town



Ref: 20231113-Z

13 November 2023

Marweya Latief
Nadeson Consulting Services
Email: mlatief@nadeson.net

WATER & SANITATION COMMENT FOR THE PROPOSED DEVELOPMENT OF ERVEN 734 & REM-738: PRESTWICH PRECINCT

Background

This development will consist of a mix of business, retail and a combination of affordable and market value housing.

The estimated water and sewer requirements was provided By Nadeson.

Table 1.1: Estimated water and sewer demands

| Land-use | Water Demand | | Sewer Demand | |
|---|-------------------|-----------------|-------------------|-------------------------------|
| | Total AADD (kl/d) | Peak Flow (l/s) | Total ADWF (kl/d) | Peak Flow (Dry weather) (l/s) |
| Affordable and 2 bedroom market housing (188 units) | 66 | 3.05 | 63 | 2.08 |
| Affordable and 1 bedroom market housing (60 units) | 18 | 0.83 | 17 | 0.57 |
| Affordable and studio market housing (122 units) | 31 | 1.41 | 29 | 0.96 |
| Retail (2440 m2) | 15.86 | 0.73 | 15.07 | 0.50 |
| Business (1558m2) | 10.13 | 0.47 | 9.62 | 0.32 |
| Total (AADD) | 141 | 6.49 | 133.7 | 4.43 |

The proposed AADD is appears appropriate for the development

Water Reticulation

There are 255 mm mains in Somerset and Chiappini Street with a peak pressure head of about 75m. The mains have sufficient flow and capacity to supply the development.

The developer is required to incorporate water demand measures in the development.

Bulk Water

The bulk water system has sufficient resource, treatment storage and conveyance capacity to supply the development with demand of 141 Kl/d.

Sewer Reticulation

There is a 225mm gravity main in Prestwich Street that has sufficient spare capacity to accommodate the development. The downstream sewer network to the Green Point Sea outfall has sufficient spare capacity.

Wastewater Treatment

The proposed development falls in the catchment of Green Point Sea outfall. The outfall has sufficient capacity to accommodate the 133.7 kl/d of this development.

Conclusion

The water and sewer reticulation infrastructure has sufficient capacity to accommodate the development.

Conditions

The development can proceed subject to the following conditions:

1. That the applicant at his cost provides all internal reticulation services and link services required to the satisfaction of the council prior to occupation.
2. The developer will have to apply for any existing water or sewer connection to be moved and will be done as a cost to the developer.
3. That no structure is constructed over the municipal service.
4. Development contributions is payable as per the DC policy.
5. The developer provides evidence of water saving measures incorporated into the development.
6. The construction of civil infrastructure will be subject to supervision and testing.

Additional Technical Requirements

7. Water and Sanitation municipal service designs to be designed according to Departmental Service Standards and be approved prior to construction.
8. Application must be made for any new water metered connections to the Reticulation Regional Operational Manager
9. The water and sewer capacities allocated according to this document, if not taken up, shall not be reserved beyond 5 years or the approved development.

General/ Disclaimer

Information provided is based on best available data. The flows and pressures provided in this comment are theoretical and not measured.

Yours Faithfully

On behalf of

Zolile Basholo

DIRECTOR: TECHNICAL SERVICES, WATER AND SANITATION DIRECTORATE

For Internal use only

| BRANCH | CONTACT PERSON | INPUT PROVIDED |
|-------------------------|----------------|----------------|
| WDM Integrated Planning | | 13/11/2023 |
| Bulk Water | N/A | |
| Reticulation | Jerome Brophy | 13/11/2023 |
| Wastewater Treatment | Sven Sotemann | 13/11/2023 |

erven 734& Rem- 738



CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

THIS MAP WAS GENERATED BY THE

Water and Sanitation Business Viewer

Water and Sanitation Department

LEGEND



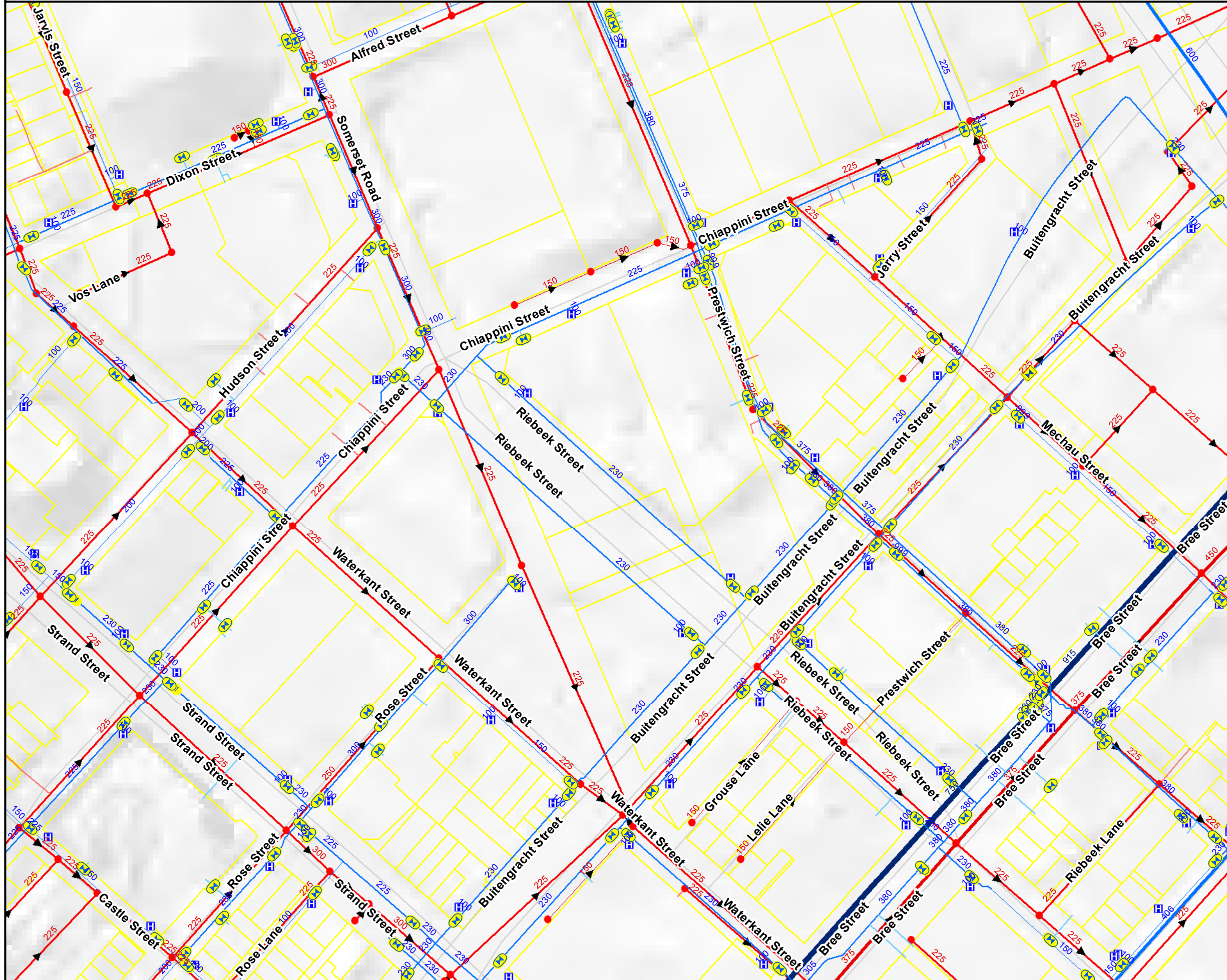
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Date: 13 November 2023

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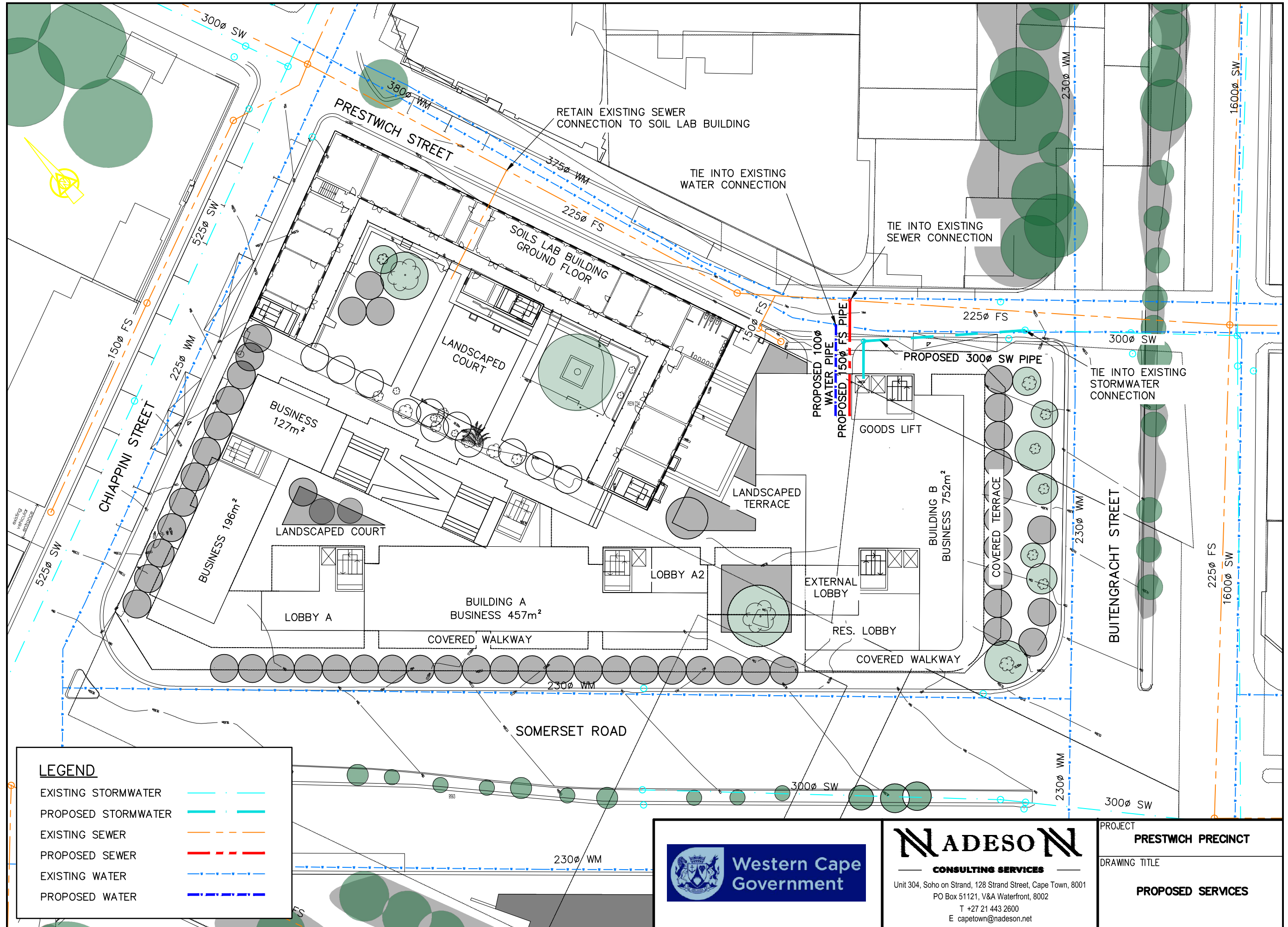
1:1 500

PLEASE NOTE:

- Every effort has been made to ensure the accuracy of information in this map at the time of publication.
- The spatial data portrayed in this map is as current, accurate and complete as provided by the various line departments responsible for the maintenance of these datasets.
- The City of Cape Town accepts no responsibility for, and will not be liable for, any errors or omissions contained herein.



Annexure 2 – Conceptual Services Connections



LEGEND

| | |
|---------------------|--|
| EXISTING STORMWATER | |
| PROPOSED STORMWATER | |
| EXISTING SEWER | |
| PROPOSED SEWER | |
| EXISTING WATER | |
| PROPOSED WATER | |



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| | |
|---------------|--------------------|
| PROJECT | PRESTWICH PRECINCT |
| DRAWING TITLE | PROPOSED SERVICES |

Annexure 3 – Order of Magnitude Civil Engineering Estimate

PPTL DEVELOPMENT OPTIONS ORDER OF MAGNITUDE COSTS FOR CIVIL ENGINEERING COMPONENT

| Description | Unit | Rate | Proposed Development Option | |
|--|------|-------------|-----------------------------|----------------------|
| | | | Quantity | Amount |
| Site Clearance | | | | |
| Demolition of structures and removal from site | m2 | R120.00 | 1000 | R120 000.00 |
| Clear site | m2 | R25.00 | 7000 | R175 000.00 |
| Total | | | | R295 000.00 |
| Bulk Earthworks | | | | |
| Bulk excavation to spoil | m3 | R150.00 | 4500 | R675 000.00 |
| EO for rock | m3 | R750.00 | 675 | R506 250.00 |
| Excavate to fill | m3 | R60.00 | 200 | R12 000.00 |
| Import fill | m3 | R180.00 | 800 | R144 000.00 |
| Basement Layerworks below slab | m2 | R400.00 | 1070 | R428 000.00 |
| Dewatering allowance | Sum | R80 000.00 | 1 | R80 000.00 |
| Total | | | | R1 845 250.00 |
| Water Supply | | | | |
| Council connection & water meter chamber | Sum | R150 000.00 | 1 | R150 000.00 |
| Trenching and 100mm diameter pipeline | m | R1 000.00 | 30 | R30 000.00 |
| Repair roadway / sidewalk | m2 | R3 000.00 | 10 | R30 000.00 |
| Total | | | | R210 000.00 |
| Foul Sewer Connection | | | | |
| Trenching and 150mm diameter pipeline | m | R1 500.00 | 120 | R180 000.00 |
| Manhole construction | No | R20 000.00 | 3 | R60 000.00 |
| Repair roadway | m2 | R3 000.00 | 10 | R30 000.00 |
| Basement sump, pump and rising main | Sum | R150 000.00 | 1 | R150 000.00 |
| Total | | | | R420 000.00 |
| Stormwater | | | | |
| Subsurface drainage in basement | m | R600.00 | 250 | R150 000.00 |
| Pump and sump in basement | Sum | R200 000.00 | 0.8 | R160 000.00 |
| Stormwater pipe connection | m | R1 500.00 | 60 | R90 000.00 |
| Manhole construction | No | R20 000.00 | 3 | R60 000.00 |
| Repair external roadway | m2 | R3 000.00 | 60 | R180 000.00 |
| Total | | | | R640 000.00 |
| External access way and Road Improvements | | | | |
| Construct access way and embayment | m2 | R5 000.00 | 30 | R150 000.00 |
| Traffic accommodation | Sum | R250 000.00 | 1 | R250 000.00 |
| Buitengracht/Somerset Upgrades | Sum | R500 000.00 | 1 | R500 000.00 |
| Somerset/Chiappini Upgrades | Sum | R600 000.00 | 1 | R600 000.00 |
| Total | | | | R1 500 000.00 |
| Total Civil Works | | | | R4 910 250.00 |
| Add for P&G 20% | | | | R736 537.50 |
| TOTAL | | | | R5 646 800.00 |
| Allow 10% contingency | | | | R564 680.00 |
| TOTAL CIVIL ESTIMATE (excl VAT) | | | | R6 211 480.00 |

Appendix F:

Electrical Engineering Services Report





**Western Cape
Government**

Department of Infrastructure

**PPTL Phase 2: Specialists'
Assessments – Electrical
Engineering Services Report**

Ref 0452

This report was prepared by E2C for NM & Associates Planners and Designers acting on behalf of the Western Cape Government: Department of Infrastructure.

Report compiled by A Ogier

29 11 2023

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1 INTRODUCTION

E2C were appointed by Visionplan cc t/a NM & Associates Planners Designers representing the Western Cape Government: Department of Infrastructure as Client, to investigate the availability of Electrical & Telkom / Open Serve Services to Erven 734-RE and 738-RE and a Portion of Erven 735, 737, 739, 9564 and 9565, Cape Town located at Buitengracht Street, Somerset Road, Chiappini and Prestwich Streets, Cape Town.

Locality:

The proposed development is located north of Buitengracht Street, east of Somerset Road, south of Chiappini Street and west of Prestwich Street. Refer to Figure 1 for Locality Plan.

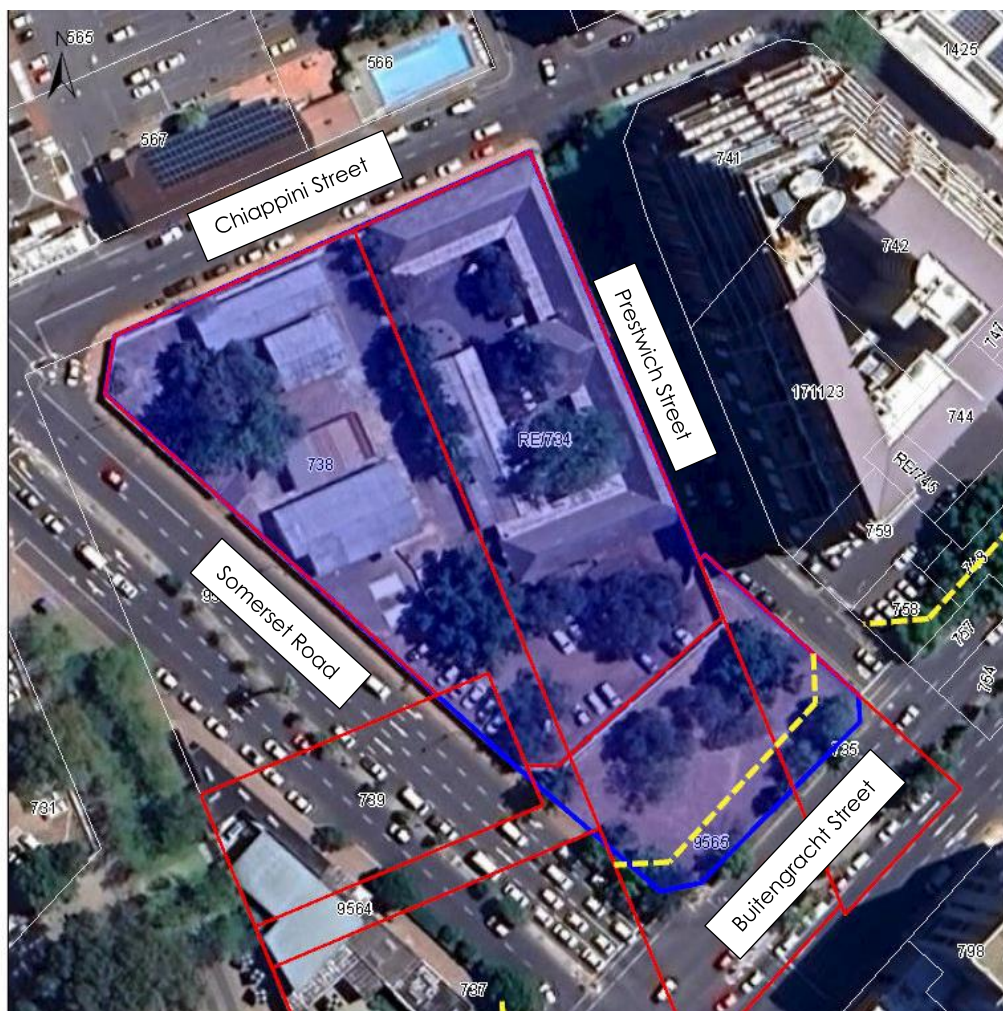


Figure 1: Locality Plan

The proposed development option is still subject to final confirmation but will comprise of mixed use (residentially-led) development with a retail and small office component (refer to Annexure C: Conceptual Development Proposal Layout Plans).

2 EXISTING SERVICES

2.1 Electrical Incoming Supply

- The Existing Electrical supply is off Prestwich Street via an external weatherproof Meterbox built into the site boundary wall.
- This meterbox is fed off a Municipal Pillar box located within the road reserve.
- Both erven are fed off this incoming metered supply (subject to CoCT comment)

2.2 Internal Distribution

- An Electrical distribution Kiosk, fed from boundary meterbox is located midway along the access road.
- The Main Soils Lab building is fed off the CoCT meterbox.
- The Pre-fab buildings are fed off an Electrical distribution Kiosk located midway along the access road.
- The Prefab buildings are fed via an overhead ABC cabling (aerial bundled conductor) via timber poles and drop-down overhead feed to each building.

Standby Generator.

- An existing Standby Generator is located at the back of the main building. No visible signage or nameplate to indicate the generator capacity or if it is in use.
- The Main Emergency DB, located in Main building corridor still appears fairly new, but unsure whether it is in working order as switchgear has been removed.

Electrical Distribution Boards (DB's).

- DB's in Main Building: Basement - 2No wall DB's & Fire Pump Control Panel; Ground Floor: Emergency DB in corridor, Older MDB in ICT office, 2No smaller DB's in rooms.
- Prefab Buildings: Each Prefab Building has its own local sub-DB.
- All Prefab buildings are fed off the Distribution Kiosk via an aerial bundled conductor line looped between galvanised poles.

2.3 Telkom

- The Existing underground connection and kick-pipes are visible at Chiappini Street entrance.
- Existing Telkom DP located opposite entrance door.
- All Telkom services are fed from this Distribution Panel.
- Two timber Telkom poles and overhead lines, extend the internal cabling system to outbuildings.

2.4 Fibre Optic Service

- Existing Fibre services are supplied by Telkom / Open Serve.
- Existing Fibre panel is located above the Telkom DP.

3 PROPOSED DEVELOPMENT OPTION

The purpose of this report is to present the expected electrical demand and supply proposals for the preferred Option 3: Provincial Pavement Testing Laboratory (PPTL) Conceptual Development Plan, which was an outcome of a conceptual development plan options report that was completed in September 2023 for the enablement of the proposed consolidated Erven 734-RE and 738-RE, Cape Town and a Portion of Buitengracht, Riebeek and Somerset Street Road Reserve namely Erven 735, 737 739, 9564 and 9565, Cape Town. The background to the options considered, is contained in the main report prepared by NM & Associates Planners and Designers.

The following Development Option is considered in this report.

3.1 Proposed Development Option

| | |
|-----------------------------|------------------------------------|
| Option 3 | Medium Bulk with limited parking |
| Estimated GFA | Approximately 23 373m ² |
| Estimated Electrical demand | 900kVA |

CoCT has sufficient Electrical Network Capacity to supply this development via a dedicated MV substation located in the basement.

The final electrical demand shall be determined by the retail / commercial component or anchor tenant (domestic consumers already factored into the load estimate) but ideally the maximum demand (ADMD) for this development shall remain below the allowable maximum of 1MVA (1000kVA) for a Low Voltage (LV) supply.

Should the ADMD demand exceed 1MVA, CoCT shall request a MV or Medium Voltage connection, which is not only more costly, but comes with additional technical and space requirement challenges.

CoCT shall allow one LV bulk Electricity metering point for the entire development for which the developer / owner is responsible.

Sub Metering for domestic / retail / commercial tenants shall be via a nominated private Electricity vending institution.

Bulk electrical services costs are estimated to be in the order of **R1 992 000.00** excluding VAT, development contributions and other exclusions allowed for by the Quantity Surveyor in the Financial Feasibility Report's capital costs (refer to Item A in Annexure G).

3.1.1 CoCT Meter Substation Room Requirements:

- 1 MV / LV room requirements (CoCT ownership), as specified in CoCT Electrical Planning guideline.
- Public street access at Street Level
- Size 6 x 4 x 3high – space for cable trench (1m deep)
- Door opening 2500 – Doors to later specifications.
- Plantroom / louvred doors (metal or timber to later spec)
- Doors open outward & door anchors
- Naturally ventilated – min 2 No airbricks or larger
- Misc Sleeves – 110dia & 160dia to site Boundary
- Local MV room DB
- Internal electrical; - 2No vapourlume lights, photocell control, and industrial power sockets,
- Firefighting equipment
- Floor finish screed; paint wall & ceiling 2 coats white
- Cable trench – timber / steel cover or to later spec

3.1.2 MDB Room Requirements:

- Proposed dimensions for LV / MDB Room: 2.5 x 3.0 x 2.4h
- Access from inside building, ideally at Ground Floor level
- 2No Airbrick on opposing walls.

- Single timber framed door – fire rating per specialist
- Small power – lighting & power socket
- Allowance for manhole & sleeve link to Substation room

3.1.3 Telkom / Fibre Optic Services:

We recommend that the Chiappini Street Telkom / Fibre access point be retained as the existing underground road crossings and manholes already exist along this road.

3.2 Alternative Energy Supply

While it is too early in this conceptual design phase to include recommendations on alternative sources of energy supply for implementation and costing purposes, it is prudent to consider an energy mix for example, solar, gas and LED lighting, not only in terms of the provisions of national building regulations but also an energy mix that would be appropriate for the proposed development. This must be considered in the detailed design phase of the development proposal.

3.2.1 Emergency / Backup Power Generation.

Based on plant and capital cost, Emergency and Backup Power Generation during the concept design phase, was considered, however, the inclusion of such plant would be driven by the Retail anchor tenant and/or Commercial tenants. The concept design allows for a cabling distribution and infrastructure network i.e. sleeves, riser ducts and spare Distribution Board space only.

3.2.2 Solar Photovoltaic (PV)(SSEG) system

Based on the Domestic and Commercial tenancy and private metering proposals, suitable Solar PV Installations can be installed on Building A and B with a further option on the existing PPTL building. The proposed Solar PV Installations shall be sufficient to cater for the public spaces and public lighting, basement lighting, security and access control but not recommended for mechanical plant & HVAC systems.

Note: The Solar PV distributed power cannot be shared between different buildings.

Annexure A: Site Photographs



CoCT Electrical supply



Telkom / Open Serve |



CoCT Meterbox



Distribution Kiosk



Outbuilding O/H line



Standby Generator



Telkom Distribution Panel



Fibre Optic Box

Annexure B: Site Diagram



Site



Building



Foot Path



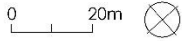
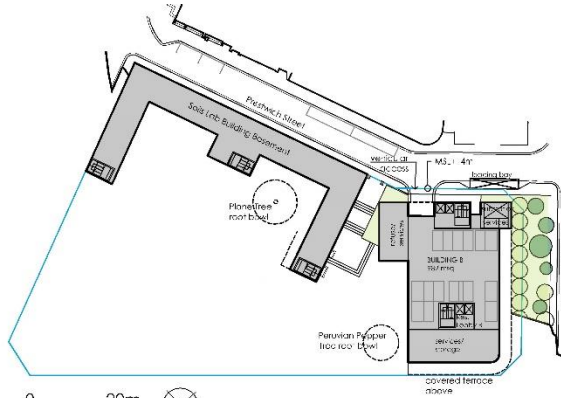
Tree



Tree line

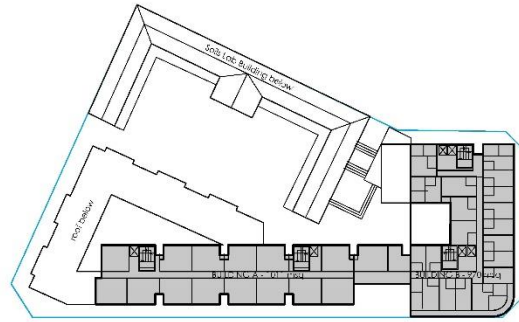


Annexure C: Conceptual Development Proposal Layout Plans



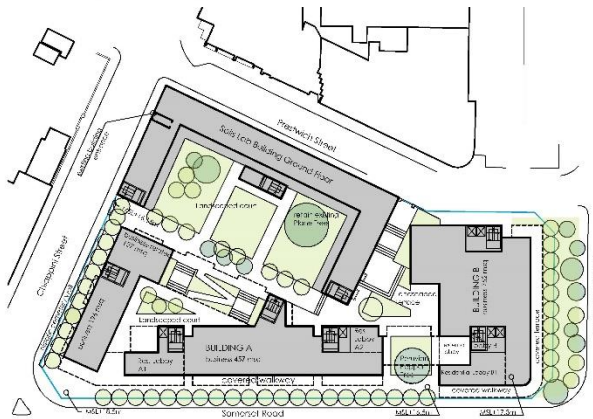
Basement level

Community Use in Soils Lab Building
loading and services/ storage



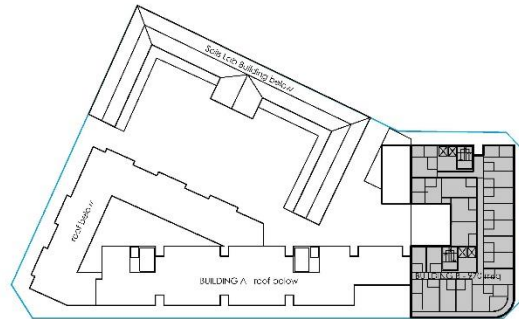
4th-6th Floor

35 residential units per floor



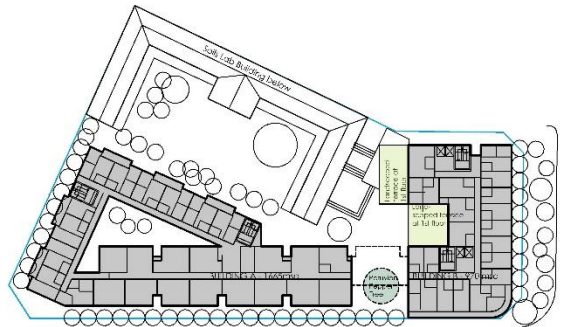
Ground Floor

business
Community Use in Soils Lab Building
"Purvan Poppar" roof terrace
tree street interfaces



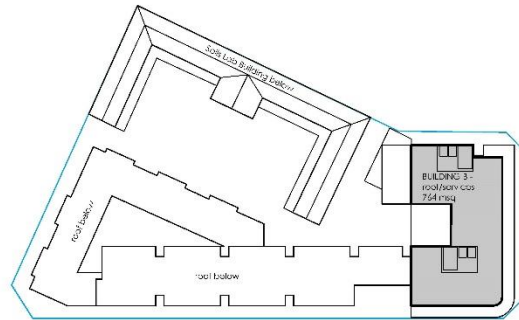
7th-10th Floor

=19 residential units per floor



1st - 3rd Floor

43 residential units per floor



11th Floor

services / roof

Option 3 Medium Bulk: Schematic floor plans
08 November 2023

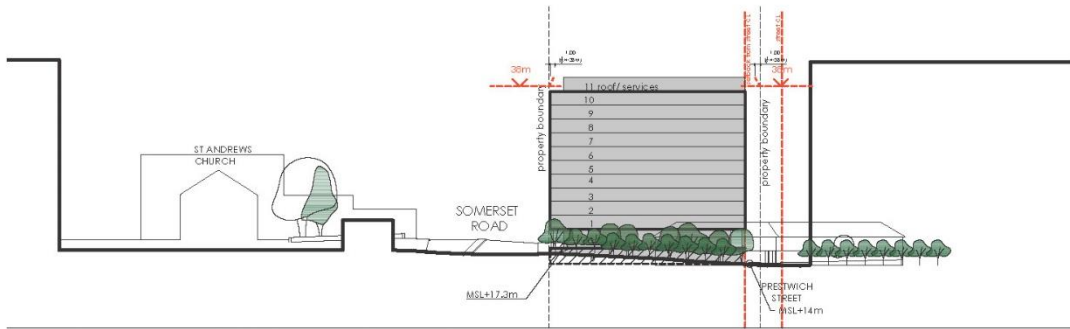
Floor areas of new building:
Basement service area - 982 msq
Ground floor business - 2 028 msq
Residential floor area: - 17 728 msq
Roof services area B - 764 msq
Total new floor area: 21 502 msq

Floor areas of existing building:
Soils Lab Basement - 842 msq
Soils Lab Ground Floor - 1029 msq
Total floor area - Soils Lab: 1871 msq

TOTAL FLOOR AREA: 23 373 MSQ

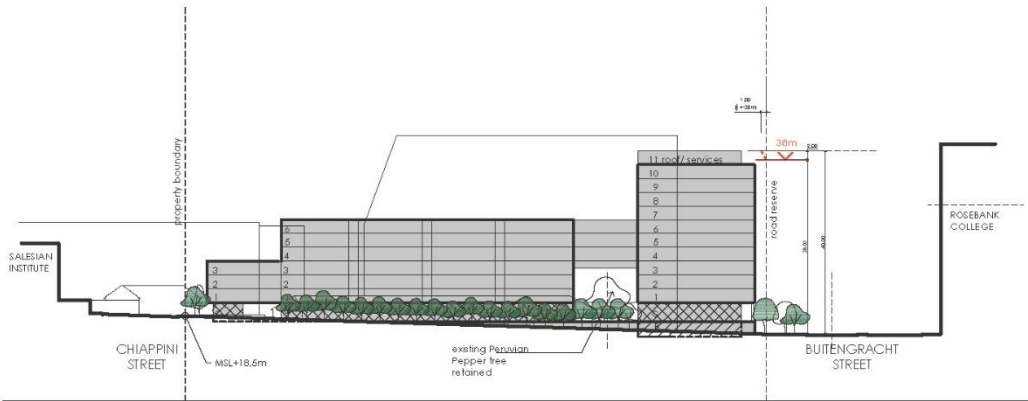
Residential units: 310 no's

Parking bays - Only loading and service-related parking provided



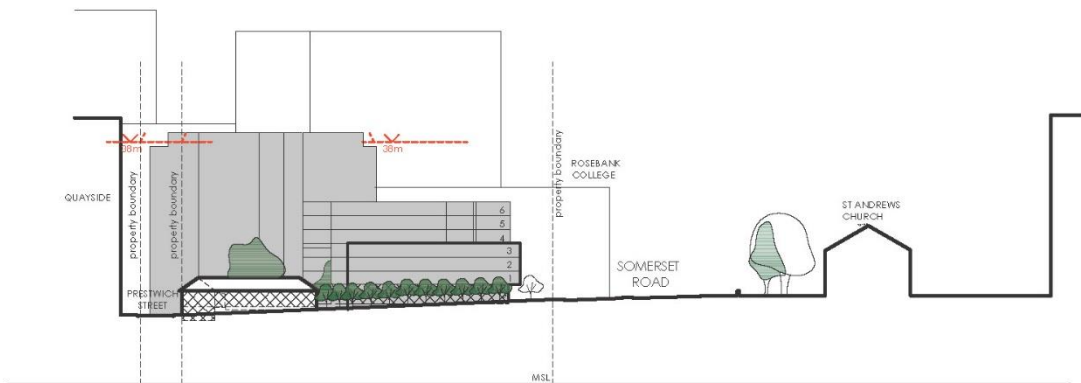
Buitengracht Street Elevation

0 20m



Somerset Road Elevation

0 20m



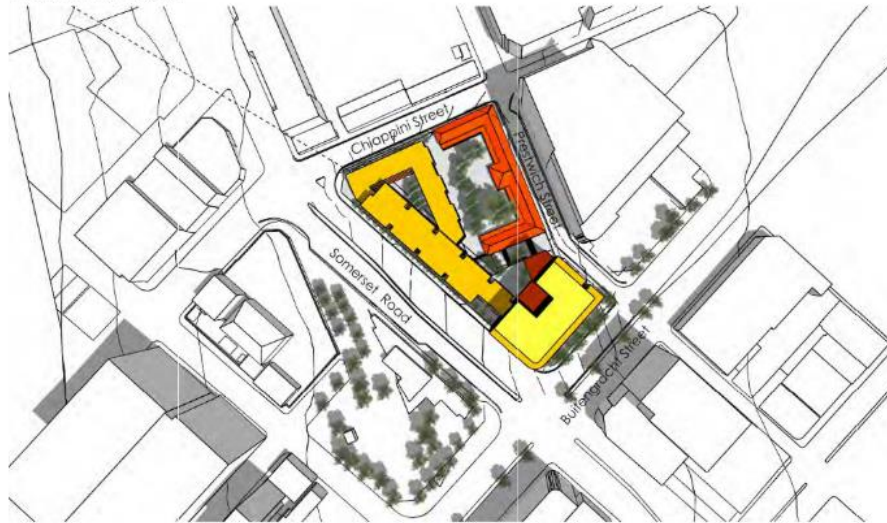
Chiappini Street Elevation

0 20m

**Schematic Building envelope
Option 3 Medium Bulk**
08 November 2023

OPTION 3 3-DIMENSIONAL IMAGES

View 1. Plan View



View 2. View at Buitengracht Street and Somerset Road intersection

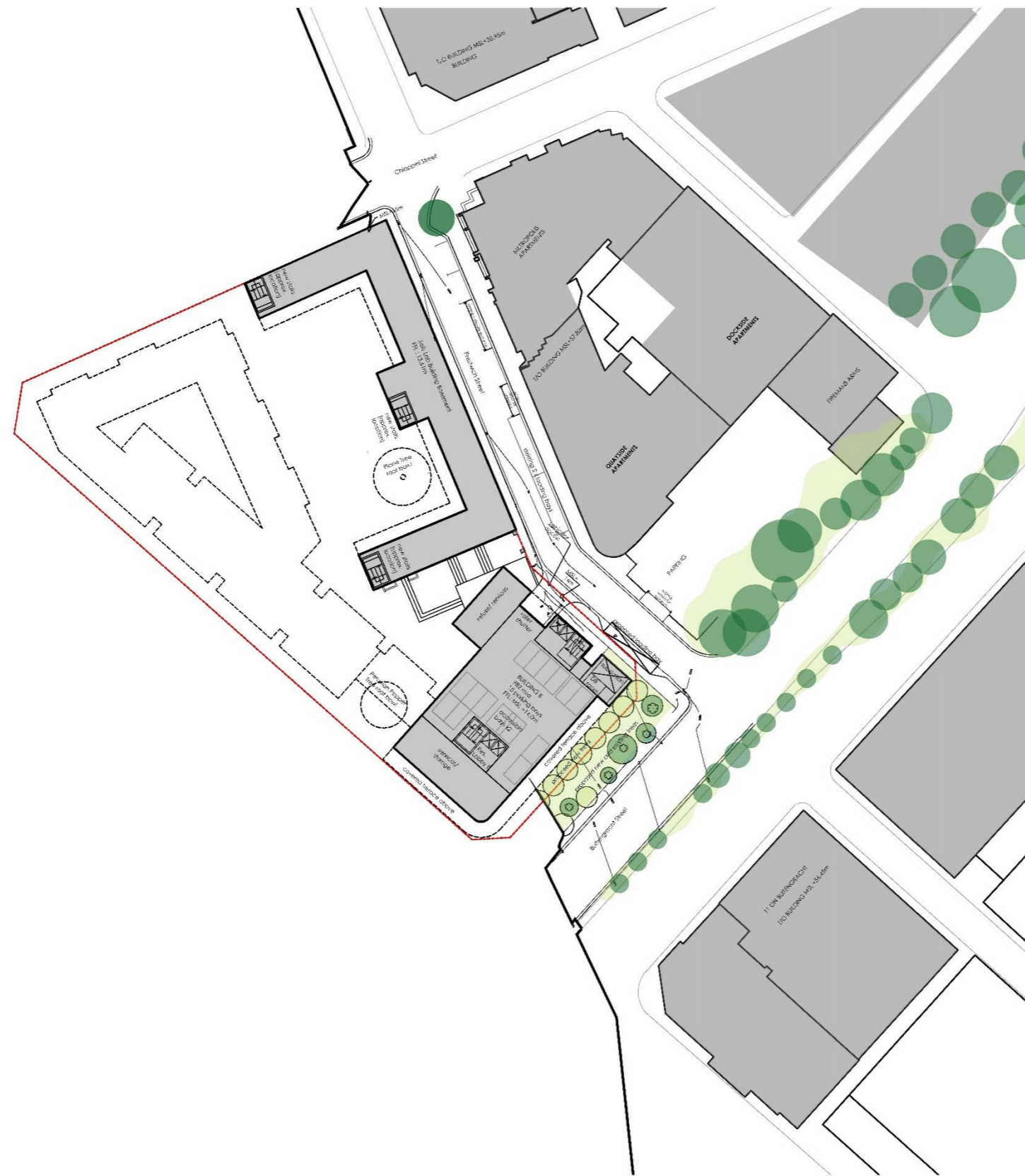


View 3. View at Somerset Road and Chiappini Street intersection

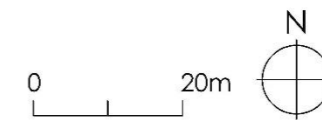


View 4. View at Chiappini Street and Prestwich Street intersection





 Developable area



Option 3 Medium Bulk:
Basement level
08 November 2023

1:1250 @ A3

Annexure D: CoCT Record Drawing

CoCT record drawing ref



CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

ENERGY DIRECTORATE

André van Zyl
Head: Drawing and Records Centre

T: 021 444 8339 F: M: 071 684 3731
E: Andre.VanZyl@capetown.gov.za
Ref: ERF 735, 738 & 739 Somerset Rd CBD

10 May 2023

E2C Ebrahim Engineering Consultants

Attention: Aslam Ogler / Tel: 021 6964599/ Email: aslam@e2c.co.za
PROJECT: ERF 735, 738 & 739 SOMERSET RD CBD

Your email dated 09 May 2023 refers.

REQUEST FOR SERVICES FOR PLANNING & DESIGN PURPOSES

This Department's plans are issued for planning purposes subject to the following conditions: -

THIS DEPARTMENT'S DRAWING: ERF 735, 738 & 739 Somerset Rd - Services

- 1 The abovementioned drawings are issued for Planning Purposes Only and are not to be reissued or forwarded to third parties for excavation purposes or any other purpose.
- 2 The drawings are valid for a period of 60 days only.
- 3 All service details must be interpreted as approximate. Accurate positions can only be determined on site by inspection/careful hand excavation.
- 4 Connection and street lighting cables are not all shown on the drawings. (Further details may be obtained from the local Electricity Depot)
- 5 This Department reserves the right to alter or add any other conditions it may deem necessary and the applicant shall have no claim against this Department should this be done.

Yours faithfully

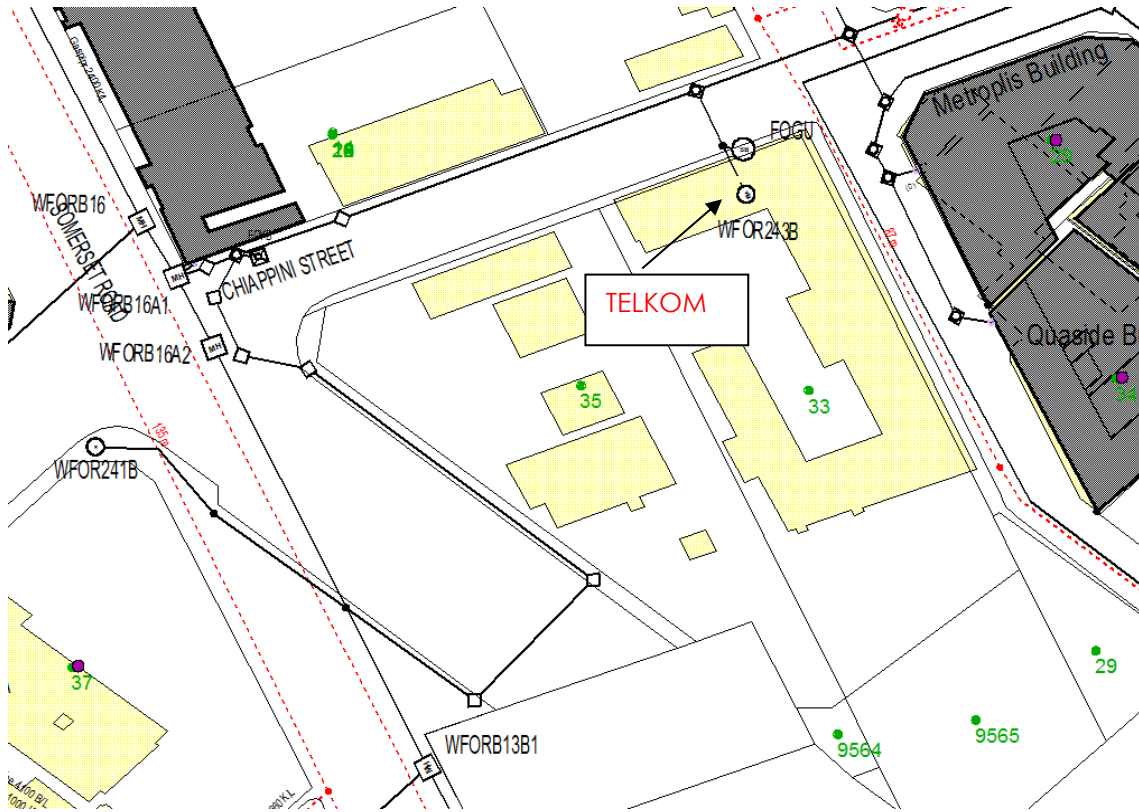
Andre van Zyl

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CoCT Electrical Record Drawing



Annexure E: Telkom Diagram



Annexure F: Diagram of CoCT Plantroom

Annexure G: Bulk Electrical Services Estimates

PPTL Soils Lab
Electrical bulk services & Distribution estimate
Option 3

| | DESCRIPTION | QTY | RATE | COST | TOTAL | Notes |
|---|--|-----|--------------|--------------|---------------|--|
| A Electrical Bulk Services | | | | | | |
| A.1 | 1 MVA Transformer & Accessories | 1 | 1 855 000.00 | 1 855 000.00 | | Cost excludes builders work- Plantroom / slab etc. |
| A.2 | MDB & CoCT Metering Panel | 1 | 94 000.00 | 94 000.00 | | |
| A.3 | LV Cabling & Accessories for Bulk Supply | 1 | 43 000.00 | 43 000.00 | 1 992 000.00 | QS to allow for DC & Connection fee cost |
| B Sub LV Reticulation | | | | | | |
| B.1 | Block A | | | | | |
| | Distribution Cabling | 1 | 215 000.00 | 215 000.00 | | |
| | Roof Plant cabling | 1 | 32 000.00 | 32 000.00 | | |
| B.2 | Block B - Tower | | | | | |
| | Distribution Cabling & sub DB | 1 | 388 000.00 | 388 000.00 | | |
| | Roof Plant cabling | 1 | 68 000.00 | 68 000.00 | | |
| B.3 | Block C - Soils Lab | | | | | |
| | Distribution Cabling & sub DB | 1 | 63 000.00 | 63 000.00 | | |
| B.3 | Block C - Business related | | | | | |
| | Distribution Cabling & sub DB | 1 | 143 000.00 | 143 000.00 | | Distribution Cabling Excludes Emergency Generation plant cabling |
| B.4 | Sub Distribution LV Room | 1 | 75 000.00 | 75 000.00 | R984 000.00 | |
| C Sub Distribution DB's | | | | | | |
| B.1 | Block A | | | | | |
| | Riser DB | 2 | 32 000.00 | 64 000.00 | | |
| | Floor DB's | 12 | 6 800.00 | 81 600.00 | | |
| B.2 | Block B - Tower | | | | | |
| | Riser DB | 3 | 28 000.00 | 84 000.00 | | |
| | Floor DB's | 32 | 7 200.00 | 230 400.00 | | |
| B.3 | Block C - Soils Lab | | | | | |
| | Riser DB / basement | 3 | 17 000.00 | 51 000.00 | | |
| | Floor DB's | 8 | 14 500.00 | 116 000.00 | | |
| B.3 | Block C - Business related | | | | | |
| | Riser DB | 2 | 22 000.00 | 44 000.00 | | |
| | Floor DB's | 7 | 14 500.00 | 101 500.00 | | |
| B.4 | Sub Distribution LV DB | 1 | 92 000.00 | 92 000.00 | | Distribution Boards exclude DB's for Emergency Power Distribution |
| | Lift DB's | 8 | 8 000.00 | 64 000.00 | | |
| | Specialist Pump / Plant etc | 4 | 23 000.00 | 92 000.00 | | |
| | Other DB's Security , Specialist, Equipment etc | 5 | 85 000.00 | 425 000.00 | R1 445 500.00 | |
| C Sub Distribution Cabling & DB's for Retail & related | | | | | | |
| C.1 | Retail Block A | 1 | 189 000.00 | 189 000.00 | | Distribution Boards exclude DB's for Emergency Power Distribution |
| C.2 | Retail Block B | 1 | 280 000.00 | 280 000.00 | | |
| C.3 | Retail Block C | 1 | 170 000.00 | 170 000.00 | R639 000.00 | |
| Summary | | | | | | |
| A | Elec Bulk Services | | | | 1 992 000.00 | |
| B | LV Distribution | | | | 984 000.00 | |
| C | Sub Distribution Boards | | | | 1 445 500.00 | |
| D | Sub Distribution Retail | | | | 639 000.00 | |
| Est Total | | | | | R5 060 500.00 | |

Contact Person

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Tel: +27 21 483 2100

Department of Infrastructure

Directorate: Special Programmes

Director: Lindelwa Mabuntane

www.westerncape.gov.za



**Western Cape
Government**

Appendix G:

Financial Feasibility Report



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Department of Infrastructure

Directorate: Special Programmes

Director: Lindelwa Mabuntane

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