TRAFFIC AND PARKING IMPACT ASSESSMENT FOR THE PLANNING PROPOSAL FOR MIXED-USE DEVELOPMENT AT 544-550 BOX ROAD, JANNALI

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Transport Planning, Traffic Impact Assessments, Road Safety Audits, Expert Witness

210249.01FB - 10 January 2024

Development Type: **Planning Proposal for Mixed-Use Development**

Site Address: **544-550 Box Road, Jannali**

Prepared for: **TCQ Construction**

Document reference: **210249.01FB**

Status	Issue	Prepared By	Checked By	Date
Draft	A	SI / ME	TS	15 April 2021
Final	A	SI / ME	TS	3 July 2023
Final	B	TS		10 January 2024

TABLE OF CONTENTS

1 INTRODUCTION

M^CLaren Traffic Engineering was commissioned by *TCQ Construction* to provide a traffic and parking impact assessment to accompany a planning proposal for the mixed-use development at 544-550 Box Road, Jannali.

1.1 Description and Scale of Planning Proposal

The subject planning proposal aims to alter the following aspects of the *Sutherland Shire Local Environmental Plan 2015*:

- Increase allowable building height from 20m to 30m;
- Increase to allowable floor space ratio (FSR) from 2:1 to 3.8:1.
    - This increases the allowable gross floor area from 2,368m^2 to 4491m^2 based on a site area of 1,184m^2.

It is noted that no change to the existing zoning of *B2 – Local Centre* is required as part of the subject planning proposal.

Concept plans, as shown in **Annexure A**, detail the potential scale of development upon the subject site if the planning proposal were successful and has the following characteristics relevant to traffic and parking:

- 568m^2 Retail / Commercial (Gross Floor Area);
- Residential component consisting of 44 units over seven (7) storeys:
    - 18 x one-bedroom units;
    - 18 x two-bedroom units;
    - 8 x three-bedroom units.

Access to the site is proposed via a two-way driveway from Leopold Lane providing access to 75 car parking spaces over four (4) levels.

The existing uses of the subject site, as shown in **Annexure B**, have the following scale relevant to traffic and parking:

- 544-546 Box Road:
    - Two-storey building containing six (6) retail tenancies of 584.8m^2 gross lettable area (GLA);
    - Parking provided within an at-grade bitumen hardstand car parking area to the rear of the site via Leopold Lane.
- 548-550 Box Road:
    - One-storey building containing two (2) retail tenancies of 169.9m^2 GLA;
    - Parking provided within an informal at-grade car parking area to the rear of the site via Leopold Lane.

1.2 State Environmental Planning Policy (Infrastructure) 2007

The proposed development would not qualify as a traffic generating development with relevant size and/or capacity under *Clause 2.122* of the *SEPP (Transport and Infrastructure) 2021*. Formal referral to Transport for NSW (TfNSW) would be not necessary and *Sutherland Shire Council* officers can determine this proposal accordingly.

1.3 Site Description

The site is currently zoned *B2 – Local Centre* under the *Sutherland Shire Local Environmental Plan 2015*. The subject site is currently occupied by a two (2) storey retail development, containing various retail and restaurant premises. The site is immediately surrounded by retail and commercial developments within the Jannali Local Centre to the north and west and low to medium residential dwellings to east and south. The Jannali Train Station is located 200m west of the site.

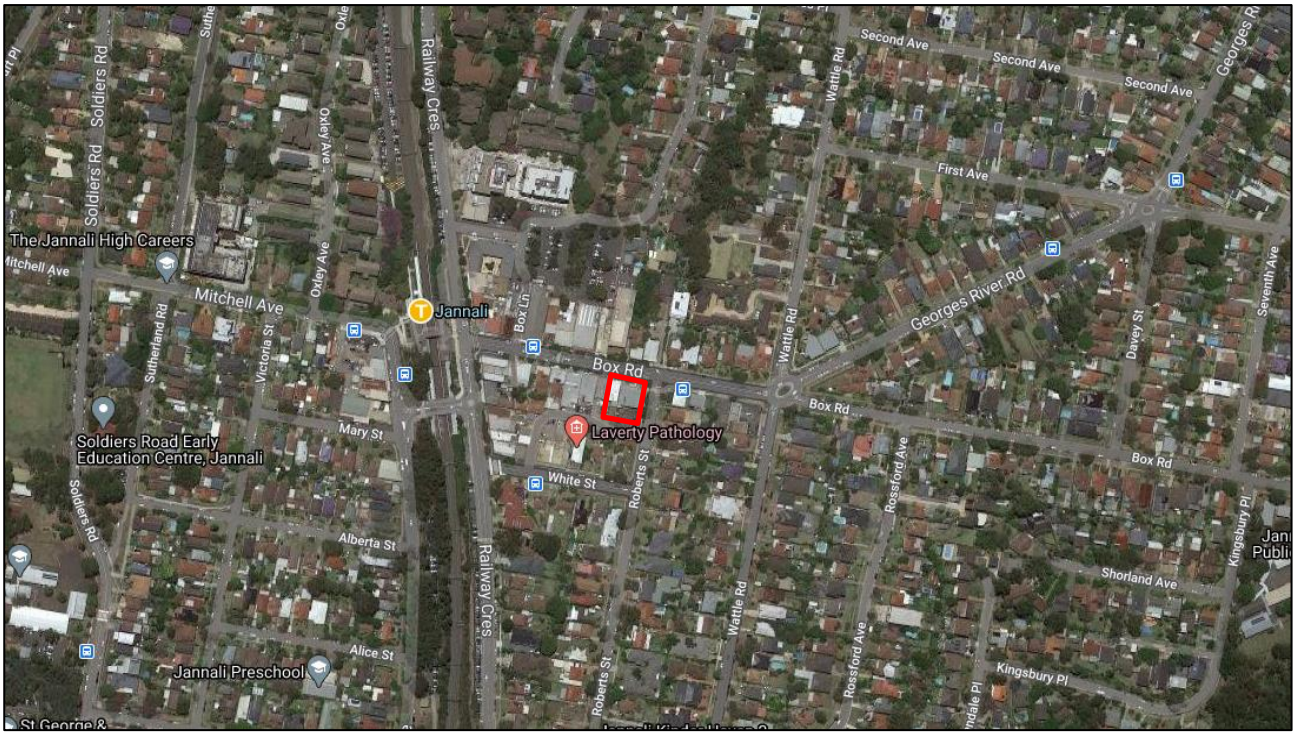
The site has road frontages to Box Road to the north, Leopold Lane to the south and Roberts Street to the east.

1.4 Site Context

The location of the site based is shown on an aerial photo and a street map in **Figure 1** and **Figure 2** respectively.

Site Location

FIGURE 1: SITE CONTEXT – AERIAL PHOTO



Site Location

FIGURE 2: SITE CONTEXT – STREET MAP

2 EXISTING TRAFFIC AND PARKING CONDITIONS

2.1 Road Hierarchy

The road network servicing the site has characteristics as described in the following sub-sections.

2.1.1 Box Road

- Unclassified LOCAL Road;
- Approximately 12m wide carriageway facilitating one traffic flow lane in each direction and kerbside parking on both sides of the road;
- Signposted 50km/h speed limit;
- Signposted parking restrictions as follows:
    - 1-P restricted kerbside parking (8:30AM-6PM, Monday to Friday & 8:30AM-12:30PM, Saturday) along both sides of the road within close proximity of the site;
    - Areas of "*No Parking*" and "*No Stopping*" along both sides of the road;
    - Unrestricted kerbside parking available further east of the site.

2.1.2 Roberts Street

- Unclassified LOCAL Road;
- Approximately 10m wide carriageway facilitating one traffic flow lane in each direction and kerbside parking on both sides of the road;
- No speed limit signposted; default 50km/h applies;
- Signposted parking restrictions as follows:
    - "*No Parking, Aust. Post Vehicles Excepted*" restriction on the northbound lane along the frontage of the site;
    - ¼-P restricted kerbside parking (8:30AM-6PM, Monday to Friday & 8:30AM-12PM, Saturday) restriction on the northbound lane along the frontage of the site;
    - 2P restricted kerbside parking (8:30AM-6PM, Monday to Friday & 8:30AM-12PM, Saturday) along both sides of the road within close proximity of the site.

2.1.3 Leopold Lane

- Unclassified LOCAL Laneway;
- Approximately 6m wide carriageway facilitating two-way traffic flow;
- No speed limit signposted; default 50km/h speed limit applies;
- Signposted "*No-Parking*" restrictions along both sides of the lane.

2.1.4 White Street

- Unclassified LOCAL Road;
- Approximately 12m wide carriageway facilitating one traffic flow lane in each direction and kerbside parking on both sides of the road;
- No speed limit signposted; default 50km/h applies;
- Signposted 1-P restricted kerbside parking (8:30$_{AM}$-6$_{PM}$, Monday to Friday & 8:30$_{AM}$-12:30$_{PM}$, Saturday).

2.2 Existing Traffic Management

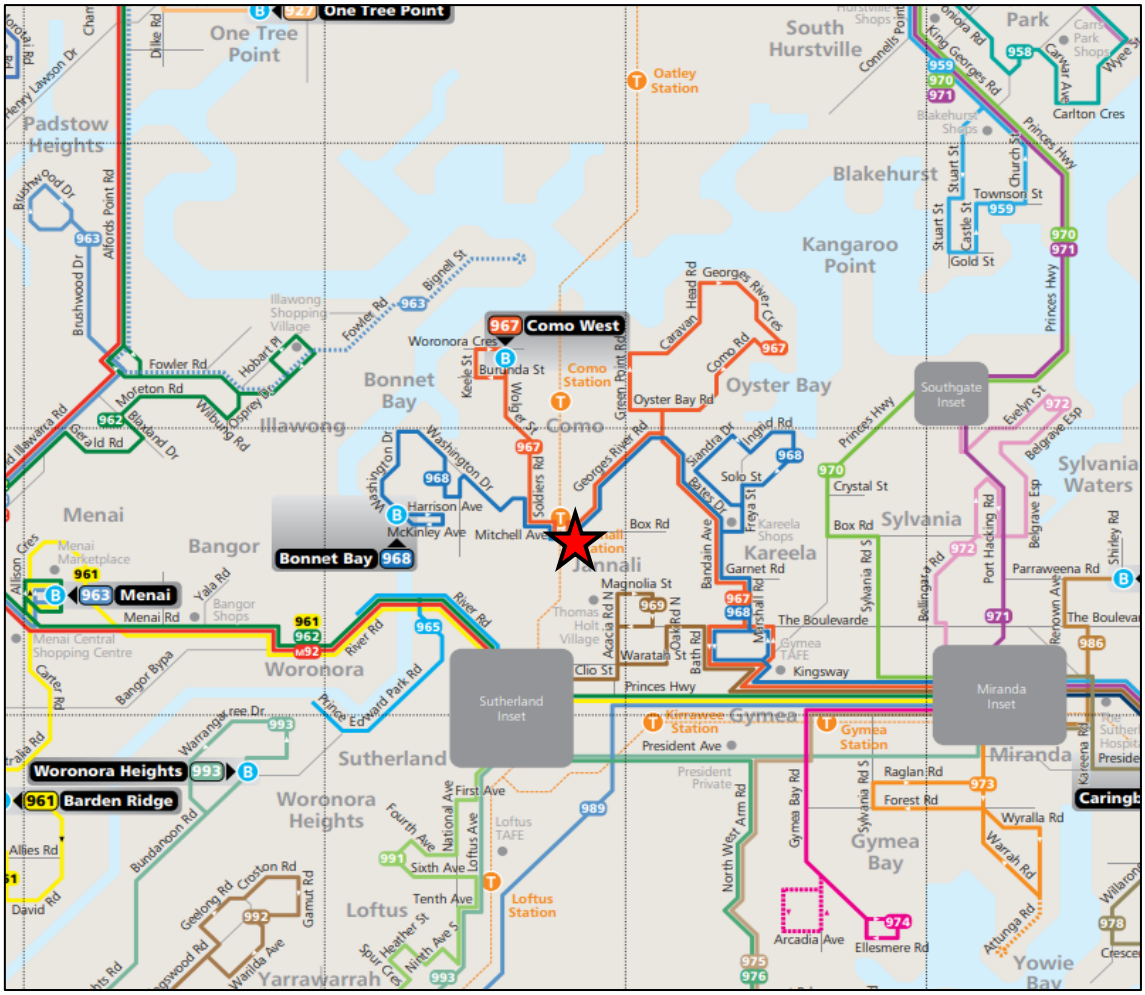
- Signal controlled intersection of Box Road / Railway Crescent;
- Roundabout controlled intersection of Railway Crescent / Jannali Bridge;
- Give-way line-controlled intersection of Box Road / Roberts Street:
    - Wombat pedestrian crossing across White Street (southern leg).
- Priority controlled intersection of Leopold Lane / Roberts Street;
- Priority controlled intersection of Leopold Lane / White Street;
- Give-way sign-controlled intersection of White Street / Roberts Street;
- Priority controlled intersection of White Street / Railway Crescent;
    - Wombat pedestrian crossing across White Street (eastern leg).
- Wombat pedestrian crossing across Box Road approximately 80m to the west of Roberts Street.

2.3 Public Transport and Pedestrian Connectivity

The subject site has access to existing bus stops (ID:222647 & ID:222669) located approximately 40m east and 100m west walking distance from the site on Box Road. The bus stops service existing bus routes 967 (Como West to Miranda via Oyster Bay) and 968 (Bonnet Bay to Miranda via Kareela) provided by Transdev NSW.

Jannali Train Station is located approximately 200m walking distance servicing the T4 – Eastern Suburbs & Illawarra Line. A service is provided every 5-10 minutes in peak hour periods in each direction, providing access to Sutherland, Cronulla, Bondi Junction and the Sydney CBD (Central Station, Town Hall Station and Martin Place Station).

The location of the site subject to the surrounding public transport network is shown in **Figure 3** below.



Site Location

FIGURE 3: PUBLIC TRANSPORT NETWORK MAP

2.4 Future Road and Infrastructure Upgrades

From the Sutherland Shire Council's Development Application tracker and website, it appears that there are no future planned road or public transport changes that will affect traffic conditions within the immediate vicinity of the subject site.

3 PARKING ASSESSMENT

3.1 SSDCP 2015 Car Parking Requirement

Reference is made to *Sutherland Shire DCP 2015* (SSDCP 2015) - *Chapter 16 – B2 Local Centre Jannali* which designates the following parking requirements applicable to the proposed development:

> ***14. Parking***
>
> ***14.2 Controls***
>
> *Multi Dwelling Housing*
>
> *Minimum:* *1 space per 1 bed; plus,*
>
> *1.5 spaces per 2 bed; plus,*
>
> *2 spaces per 3 bed; plus*
>
> *1 visitor space per 4 dwellings*
>
> *Maximum:* *3 spaces per dwelling*
>
> *Residential Flat Building/Shop Top Housing*
>
> *Minimum:* *1 space per unit*
>
> *Maximum:* *3 spaces*
>
> *No visitor parking*
>
> *Business Premises*
>
> *1 space per 30m2 GFA*
>
> *Retail Premises*
>
> *1 space per 30m^2 GFA*
>
> *Clause 14.2.9*
>
> *When the calculations for the number of parking spaces results in a part or fraction of a parking space of 0.5 or greater for the whole development, then the actual number shall be rounded up. For example, 1.5 spaces shall be rounded up. For example 1.5 spaces shall be rounded up to 2 spaces for the whole development.*

The estimated car parking requirements for the site based on the concept plan are summarised in **Table 1** below.

TABLE 1: DCP CAR PARKING REQUIREMENTS

Land Use	Type	Scale	Parking Rate		Parking Required	
			Minimum	Maximum	Minimum	Maximum
Residential Flat Building	One-bedroom	18	1 per unit	3 per unit	18	54
	Two-bedroom	18	1 per unit		18	54
	Three-bedroom	8	1 per unit		8	24
	Visitor	44	1 per 4 units	N/A	11	N/A
Sub-Total	**-**	**-**	**-**	**-**	**44**	**143**
Retail / Commercial	-	568m^2	1 per 30m^2	N/A	19	N/A
Sub-Total	**-**	**-**	**-**	**-**	**19**	**N/A**
Total	**-**	**-**	**-**	**-**	**63**	**162**

As shown above, the scale of development indicated on the concept plan would require the provision of 63-162 car parking spaces. The proposed concept details **75** parking spaces over four car parking levels, a surplus of of 12 spaces compared to the minimum allowable parking quantum under the SSDCP.

The site is within 800m walk of Jannali Train Station and therefore qualifies for use of the minimum car parking rates provide for sub-metropolitan centres set out in the RTA Guide to Traffic Generating Developments 2002, as permitted by the Apartment Design Guide. An assessment of the car parking requirements of the site on this basis is provided in **Section 3.2**.

3.2 RTA Guide Parking Requirements

The RTA Guide to Traffic Generating Developments 2002 sets out the following parking requirements for high density residential flats:

> *Metropolitan Sub-Regional Centres:*
>
> *0.6 spaces per 1 bedroom unit.*
>
> *0.9 spaces per 2 bedroom unit.*
>
> *1.40 spaces per 3 bedroom unit.*
>
> *1 space per 5 units (visitor parking).*

The car parking requirements of the proposal based on the rates provided above are summarised in **Table 2**. The car parking rates for the retail / commercial component of the development are based on the SSDCP 2015.

TABLE 2: RTA GUIDE CAR PARKING REQUIREMENTS

Land Use	Type	Scale	Parking Rate	Parking Required
Residential	One-bedroom	18	0.6 per unit	10.8
	Two-bedroom	18	0.9 per unit	16.2
	Three-bedroom	8	1.4 per unit	11.2
	Visitor	44	1 per 5 units	8.8
Sub-Total	**-**	**-**		**47**
Retail / Commercial	-	568m^2	1 per 30m^2	19
Sub-Total	**-**	**-**		**19**
Total	**-**	**-**		**66**

As shown above, the scale of development indicated on the concept plan would require the provision of at least 66 car parking spaces. The proposed concept details **75** parking spaces over four car parking levels, a surplus of 9 spaces compared to the minimum requirements based on the ADG and SSDCP 2015.

Detailed design of the car parking areas can be refined at the Development Application stage, including compliance with the relevant standards and provision of parking for disabled persons, bicycles and motorcycles.

3.3 Servicing & Loading

Reference is made to *Sutherland Shire Council DCP 2015 - Chapter 16 – B2 Local Centre Jannali* which designates the following servicing and loading requirements applicable to the proposed development:

> ***9. Building and Site Layout***
>
> ***9.2 Controls***
>
> *2. All loading, unloading and manoeuvring of vehicles shall take place within the curtilage of the site, and vehicles are to enter and exit the site from a rear laneway wherever possible, and in a forward direction at all times. Where other arrangements for loading and unloading of vehicles are proposed, they will be assessed on merit and may be accepted where:*
>
> *a. There is a low intensity of commercial use;*

b. The proposed arrangement maintains a safe and convenient pedestrian and traffic environment.

3. Loading areas shall be located so as to avoid on-street loading and be freely available for use at all times.

The concept plan indicates loading facilities located on the ground floor of the site with access from Leopold Lane along at the rear of the site. This arrangement satisfies the relevant loading requirements within the SSDCP 2015. Swept path testing of the largest design vehicle able to access the proposed loading area would be required as part of a development application.

4 TRAFFIC ASSESSMENT

The impact of the expected traffic generation levels associated with the subject proposal is discussed in the following sub-sections.

4.1 Traffic Generation

Reference is made to the *RTA Guide to Traffic Generating Developments 2002* as adopted by Transport for New South Wales (TfNSW) and more recent supplements, including *TDT2013/04a*. The relevant traffic generation rates with respect to land uses of the proposal are as follows:

RTA Guide 2002

3.6 Retail

Evening vehicle trips = 5.6 trips per 100m² GLFA

TDT 2013/04a

High density residential flat dwellings

AM peak hour	*0.19 trips per unit*
	0.09 per bedroom
PM peak hour	*0.15 per unit*
	0.07 per bedroom

The resulting traffic generation of the existing land uses and the proposed land uses is summarised in **Table 3**. It is noted that the evening retail and office/commercial traffic generation rates have been applied in the AM peak hour period for conservative analysis.

TABLE 3: ESTIMATED TRAFFIC GENERATION

Use	Scale	Peak	Generation Rate	Trips (1)
Existing Development				
Retail	754.7m^2 GLA	AM	5.6 per 100m^2	42 (21 in, 21 out)
		PM		42 (21 in, 21 out)
Proposed Development				
Residential	44 units	AM	0.19 per unit	8 (2 in, 7 out)
		PM	0.15 per unit	7 (5 in, 1 out)
Retail / Commercial	568m^2 GFA	AM	5.6 per 100m^2	32 (16 in, 16 out)
		PM		32 (16 in, 16 out)
Sub Total	**-**	**AM**		**40 (18 in, 23 out)**
		PM		**38 (21 in, 17 out)**
NET CHANGE	**-**	**AM**		**-2 (-4 in, 1 out)**
		PM		**-4 (0 in, -4 out)**

Note: (1) Assumes 20% inbound, 80% outbound in the AM peak hour and vice versa in the PM peak for residential uses. Assumes 50% inbound, 50% outbound for commercial and retail uses in both AM and PM peaks.

As shown, development of a scale consistent with the concept plan would be expected to generate **40** vehicle trips (18 in, 23 out) in the AM peak hour period and **38** vehicle trips (21 in, 17 out) in the PM peak hour period. When applying the TfNSW adopted traffic generation rate to the existing scale of the site, the resulting generation is **42** vehicle trips (21 in, 21 out) in both the AM and PM peak hour periods. When subtracting the existing traffic generation from the expect traffic generation of the proposal, the resulting net change in vehicle trips is in the order of **-2** vehicle trips (-4 in, +1 out) and -**4** vehicle trips (+-0 in, -4 out) in the AM and PM peak hour periods, respectively.

It is evident that development of the subject site consistent with the concept plan will act to produce little to no vehicular trips associated with the subject site and therefore, improve the conditions of the surrounding road network. The level of traffic associated with the development is not expected to have any adverse effect on any nearby intersections and can be readily accommodated within the existing road network with minimal impact in terms of traffic flow efficiency and road safety considerations.

5 CONCLUSIONS

The traffic, road design, road safety and parking impacts of the subject Planning Proposal at 544-550 Box Road, Jannali and the associated concept plan as shown in **Annexure A** to this report, have been assessed. With the following items important to note:

- The concept plan includes the provision of **75** car parking spaces on the ground floor and over a lower ground and three (3) basement car parking levels, satisfying the controls of Council's DCP and demonstrating that the site can accommodate the parking requirements of an increased scale of development.
- Servicing and loading can be catered for at the rear of the site, with access from Leopold Lane. This servicing and loading access arrangement satisfies Council's DCP requirements, nothing that the design can be certified upon detailed design.
- When considering the existing uses of the subject site compared the proposed development, the net change in traffic generated by the site is in the order of **-2** vehicle trips (-4 in, +1 out) and -**4** vehicle trips (+-0 in, -4 out) in the AM and PM peak hour periods, respectively. It is evident that the proposed development will act to REDUCE vehicular trips associated with the subject site and therefore, improve the conditions of the surrounding road network.
- The traffic generated by the development is minimal when considering the existing traffic volumes in the local area and will not adversely affect the performance of nearby critical intersections or the existing road network, particularly in terms of Level of Service, traffic flow efficiency, residential amenity and road safety considerations.

In view of the foregoing, the subject planning proposal is supportable in terms of traffic flow, road safety and parking impacts. It is recognised that this assessment has been informed by a concept masterplan for the site and a more detailed assessment would be required when considering the future buildings.

ANNEXURE A: PROPOSED PLANS

(6 SHEETS)

PLANNING CONTROLS

FSR: 2:1
SITE AREA: 1,184 m^2
ALLOWABLE GFA 2,368 m^2
BHL: 20m

COMMUNAL OPEN SPACE 296m^2

544-550 Box Road, Jannali				
Development Summary - Proposed				
Level - Use	**GFA (m2)**	**No. Apts**	**No. Car**	**FFL to FFL (m)**
Basement 03	-	-	26	3
Basement 02	-	-	22	3
Basement 01	-	-	16	3
Lower Ground Floor	237	-	11	3.3
Ground Floor	694	-	-	4.2
Level 01 - Apartments	545	7	-	3.1
Level 02 - Apartments	545	7	-	3.1
Level 03 - Apartments	545	7	-	3.1
Level 04 - Apartments	545	7	-	3.1
Level 05 - Apartments	545	7	-	3.1
Level 06 - Apartments	545	7	-	3.1
Rooftop Level	290	2	-	3.0
Subtotals	4491	44	75	38.1

Floor Space Ratio Calculations		
Site Area		1184
Total GFA (Measured to NSW Planning Scheme)		4491
Max GFA Available at ratio 2:1		2368
Difference (Actual GFA minus available)		2123
Actual FSR	3.8:1	

Apartment Mix and Care

Level - Use	**1 Bed**	**2 Bed**	**3 Bed**	**Total**
Basement 03	-	-	-	-
Basement 02	-	-	-	-
Basement 01	-	-	-	-
Lower Ground Floor	-	-	-	-
Ground Floor	-	-	-	-
Level 01 - Apartments	3	3	1	7
Level 02 - Apartments	3	3	1	7
Level 03 - Apartments	3	3	1	7
Level 04 - Apartments	3	3	1	7
Level 05 - Apartments	3	3	1	7
Level 06 - Apartments	3	3	1	7
Rooftop Level	0	0	2	2
Subtotals	18	18	8	44
Percentage	41%	41%	18%	100%

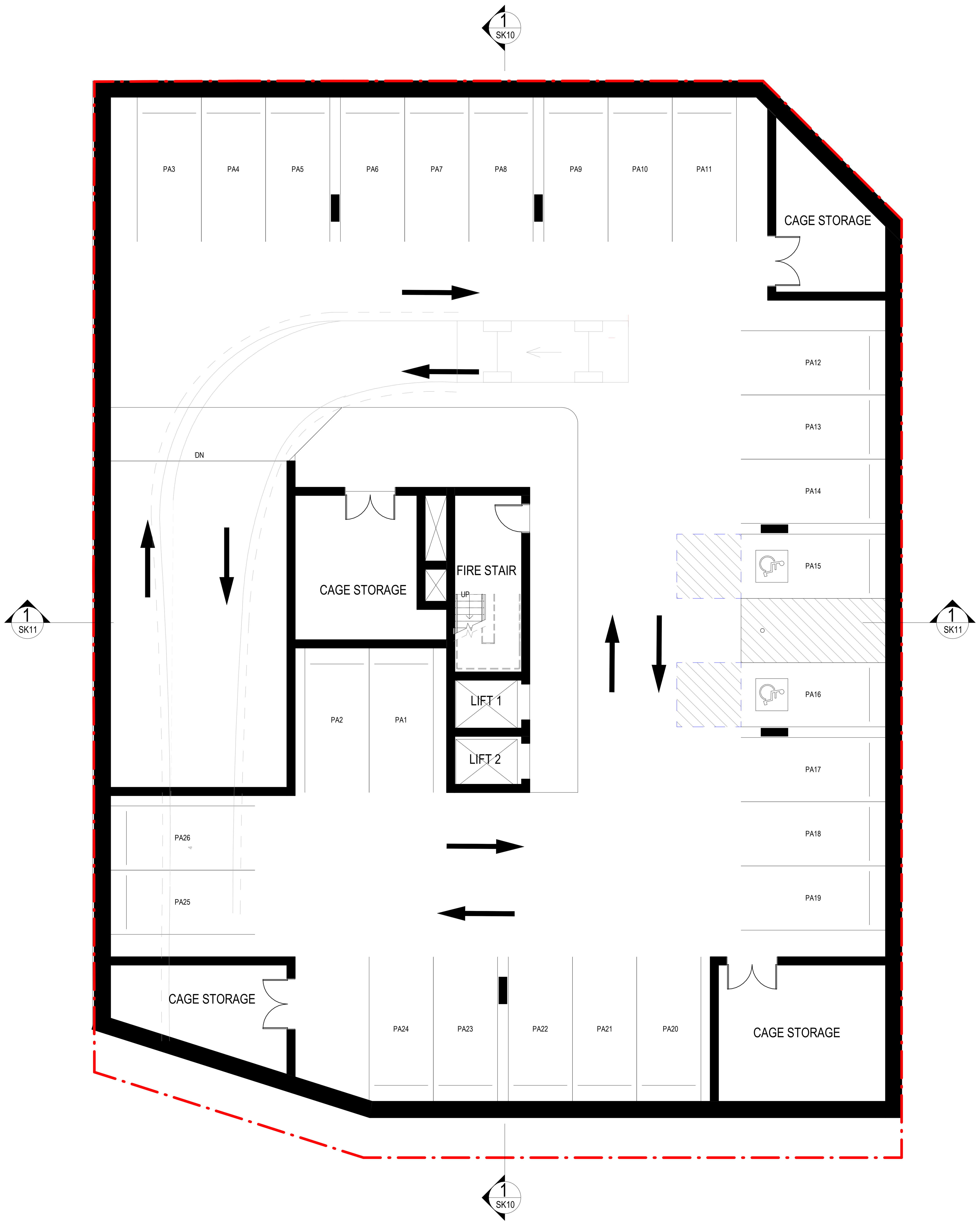
Commercial and Retail (Tenancy area only, excluding amenities, corridor and back of house areas)

	GFA (m^2)
Lower Ground Floor	83
Ground Floor	485
Total GFA	568

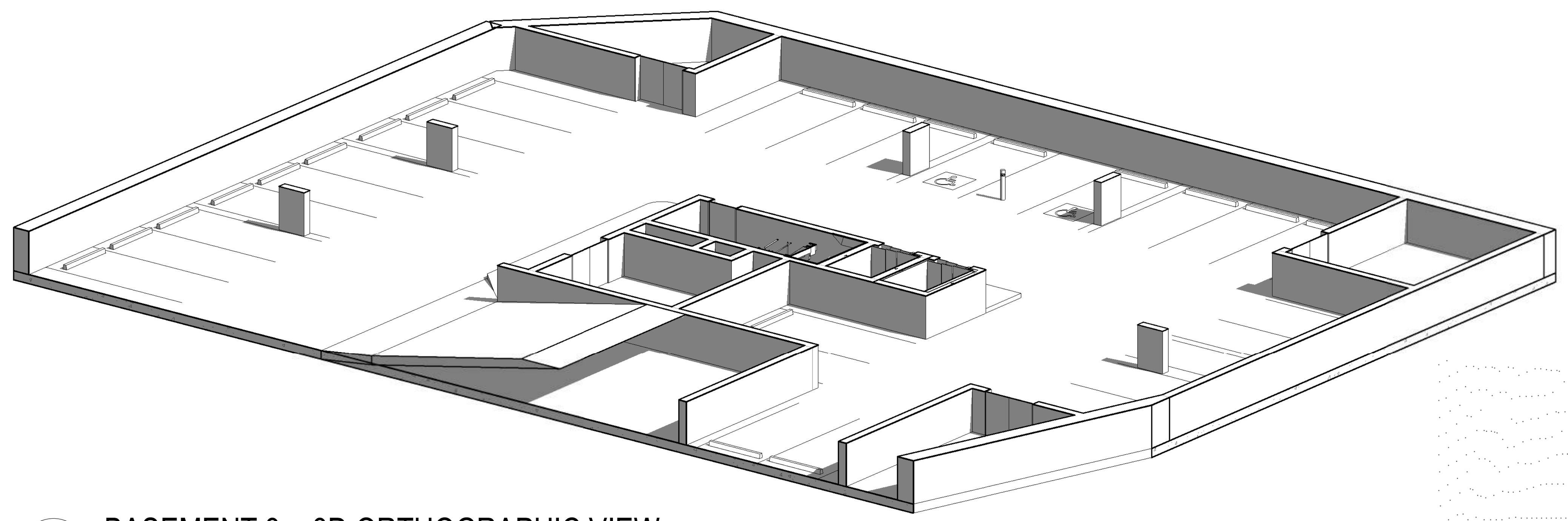
Required Parking (DCP) :

CAR PARKING SHOP TOP HOUSING = 1 SPACE PER UNIT (NO VISITOR)
RETAIL/COMMERCIAL = 1 SPACE PER 30SQM GFA

Car Spaces per Dwelling (Calculation to DCP)	**RESIDENTIAL**	**COMMERCIAL/RETAIL**	**TOTAL**	
Cars	44	19	63	
Adaptable Cars Spaces (1:10 adaptable parking)	5	2	7	



1 SK10 BASEMENT 3
1 : 100



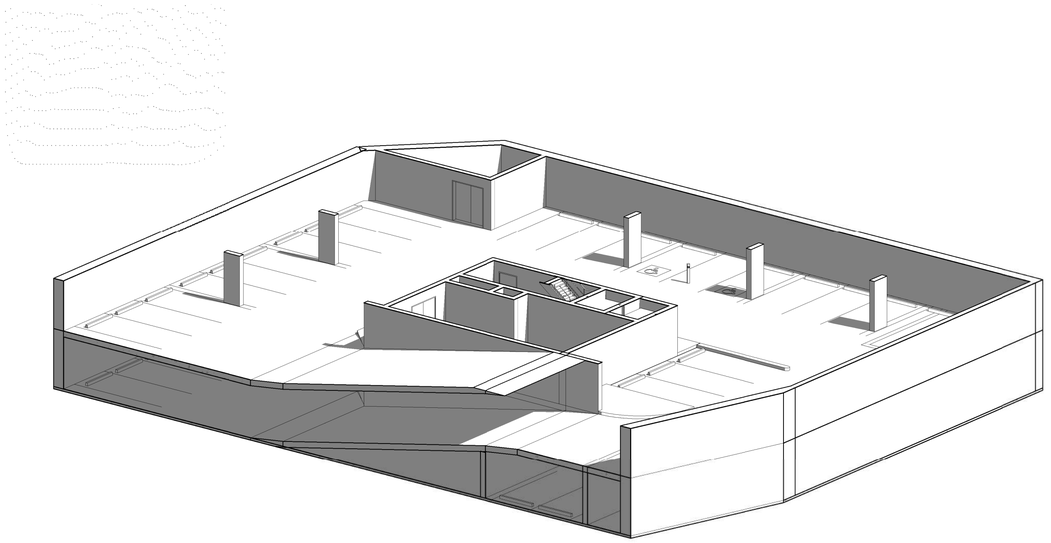
2 BASEMENT 3 - 3D ORTHOGRAPHIC VIEW
NTS

GRAY PUKSAND

544-550 BOX ROAD, JANNALI

BASEMENT 3

DWG #	SK01.1
REV	B
DATE	10.05.2023



1 SK10 BASEMENT 2
1 : 100

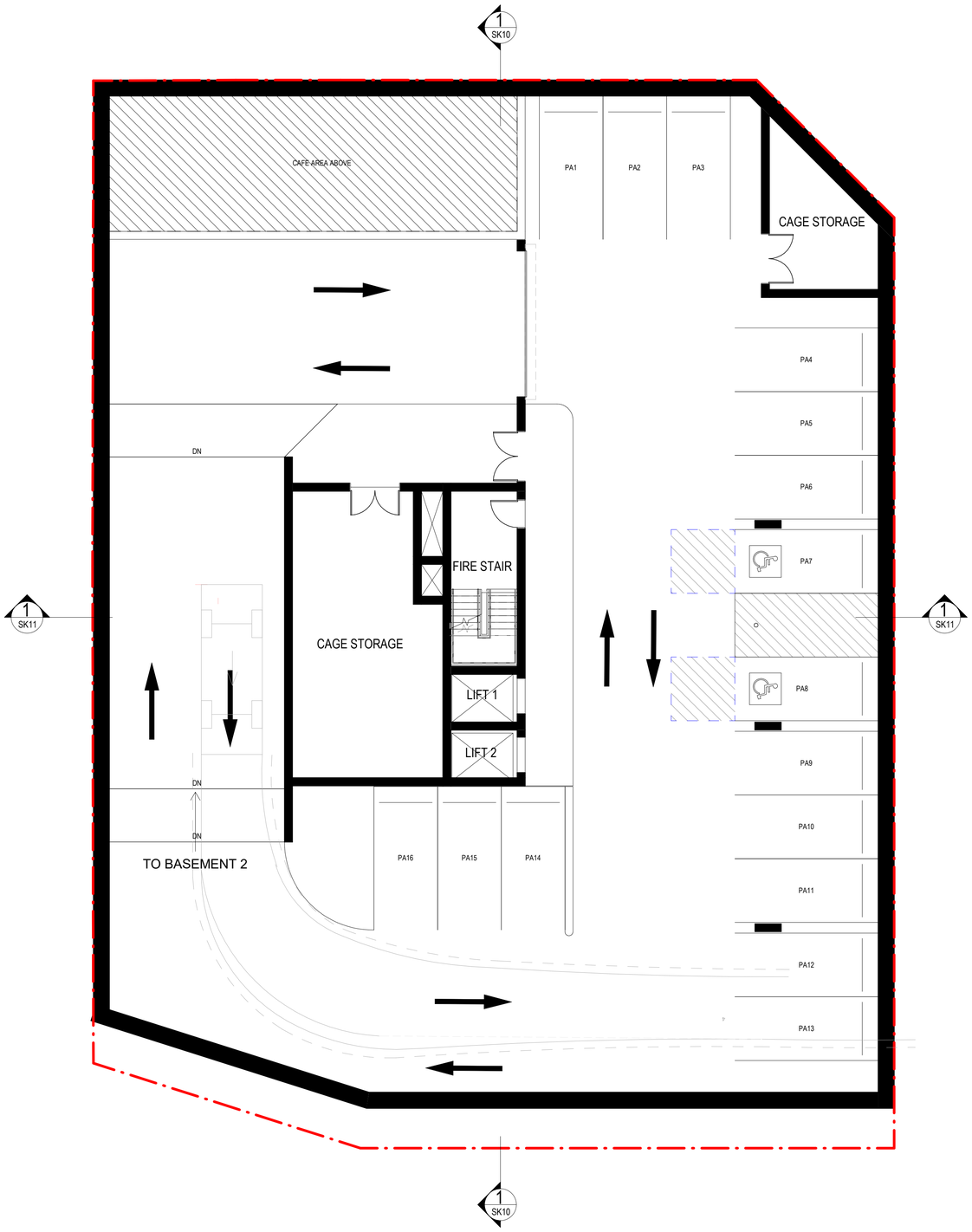
2 BASEMENT 2 - 3D ORTHOGRAPHIC VIEW

GRAY PUKSAND

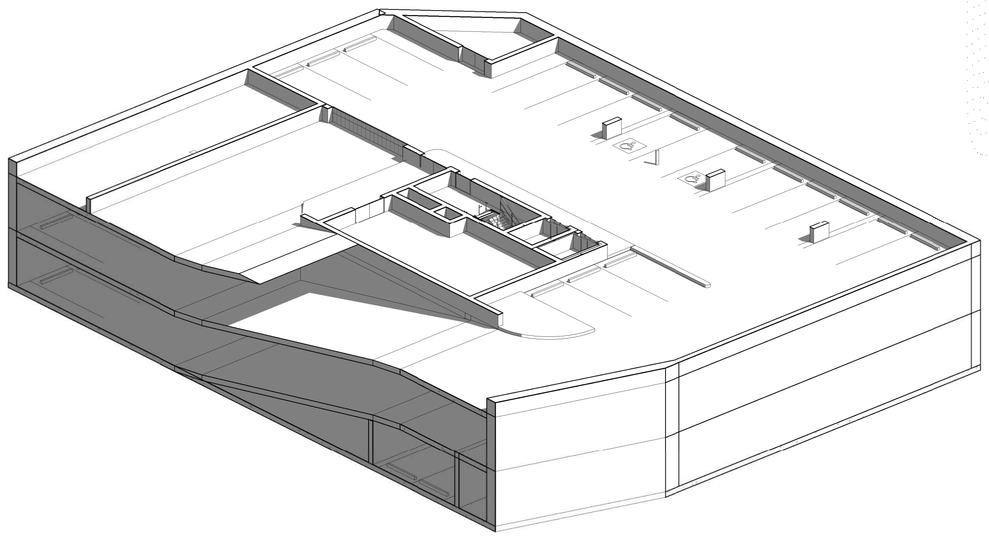
544-550 BOX ROAD, JANNALI

BASEMENT 2

DWG # SK01.2
REV B
DATE 10.05.2023



1 SK10 BASEMENT 1 PARKING - FLOOR PLAN
1 : 100



2 BASEMEN 1 - 3D ORTHOGRAPHIC VIEW

GRAY PUKSAND

544-550 BOX ROAD, JANNALI

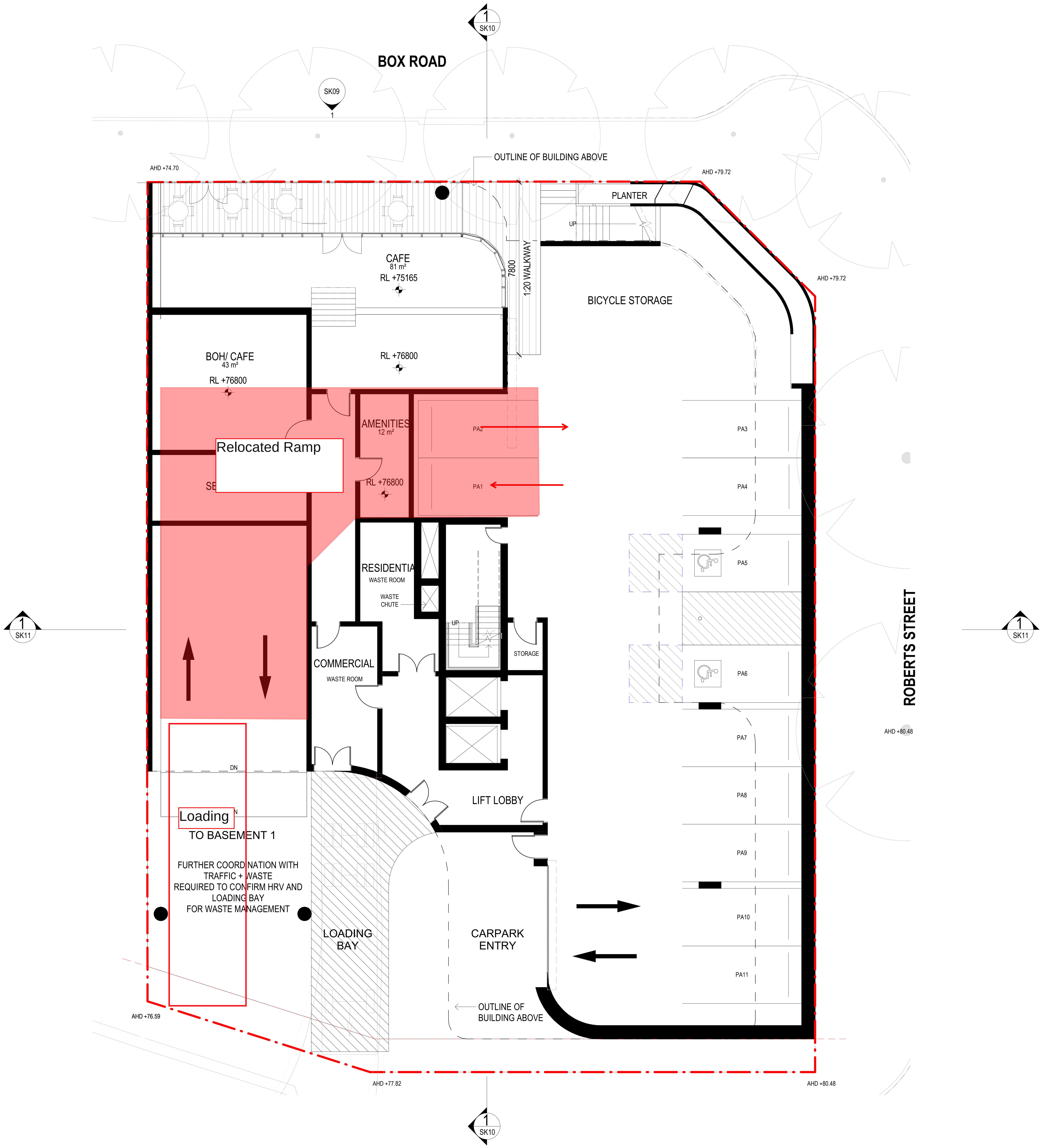
BASEMENT 1

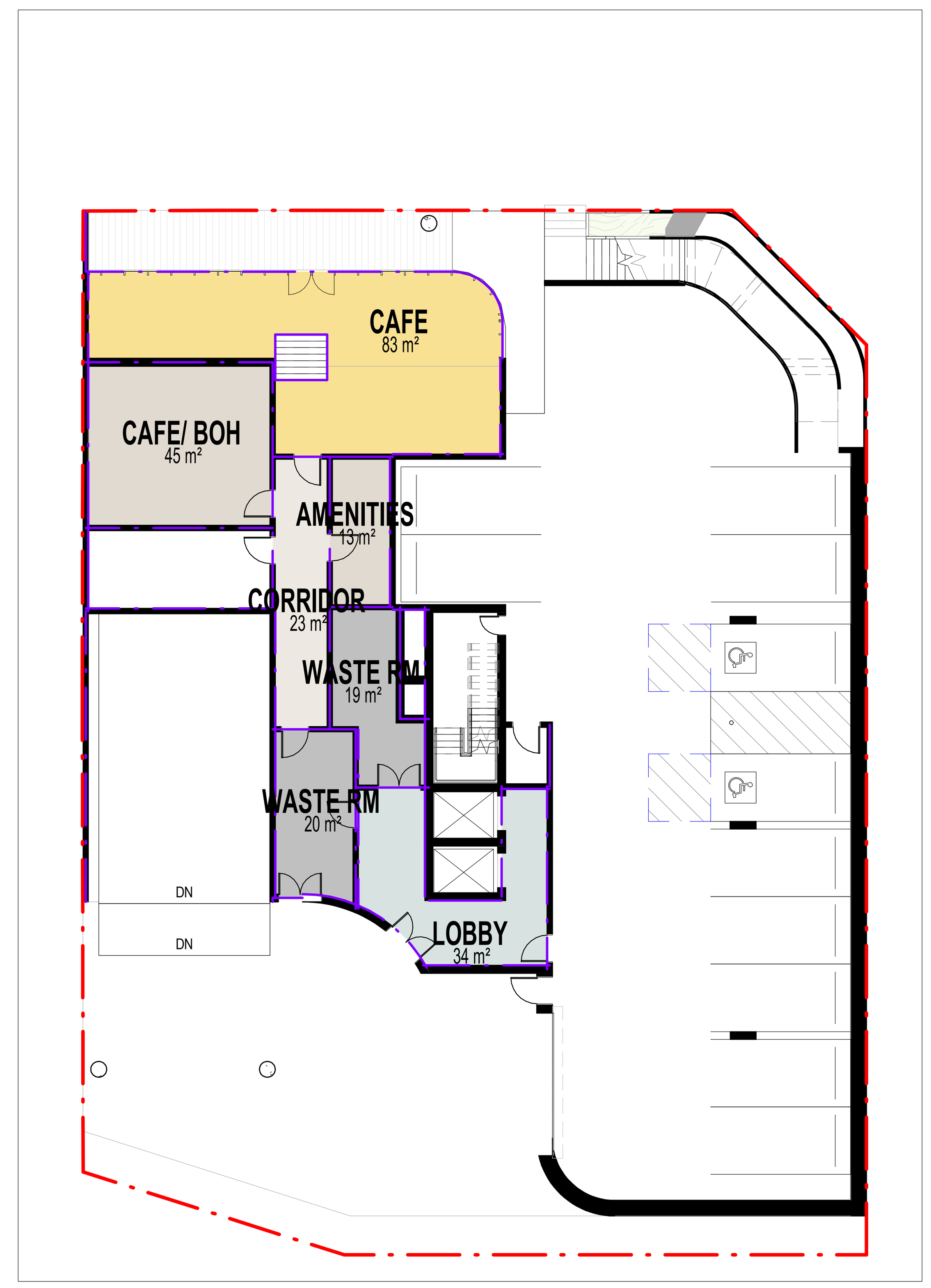
DWG # SK01.3
REV B
DATE 10.05.2023

RSN:I:\xxx-m\-01\x2xxx\ 544-550 BOX ROAD, JANNALI _C20

GFA PER FLOOR - LOWER GROUND LEVEL

NAME	AREA	LEVEL
AMENITIES	13 m²	LOWER GROUND FLOOR
CAFE	83 m²	LOWER GROUND FLOOR
CAFE/ BOH	45 m²	LOWER GROUND FLOOR
CORRIDOR	23 m²	LOWER GROUND FLOOR
LOBBY	34 m²	LOWER GROUND FLOOR
WASTE RM	20 m²	LOWER GROUND FLOOR
WASTE RM	19 m²	LOWER GROUND FLOOR
Grand total: 7	237 m²	





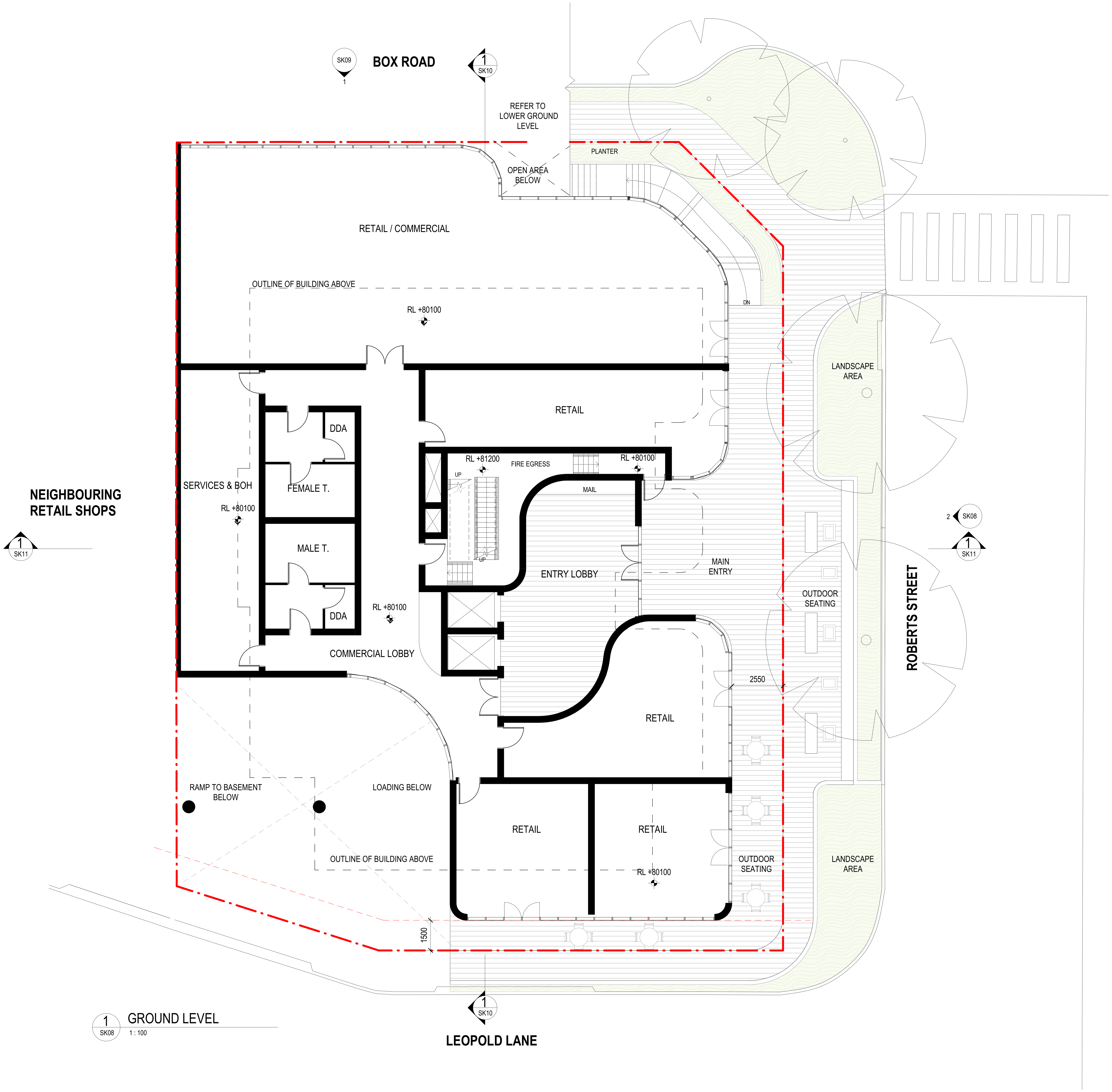
2 SK09 LOWER GROUND FLOOR - GFA CALCULATION
1 : 200

GRAY PUKSAND

544-550 BOX ROAD, JANNALI

LOWER GROUND LEVEL

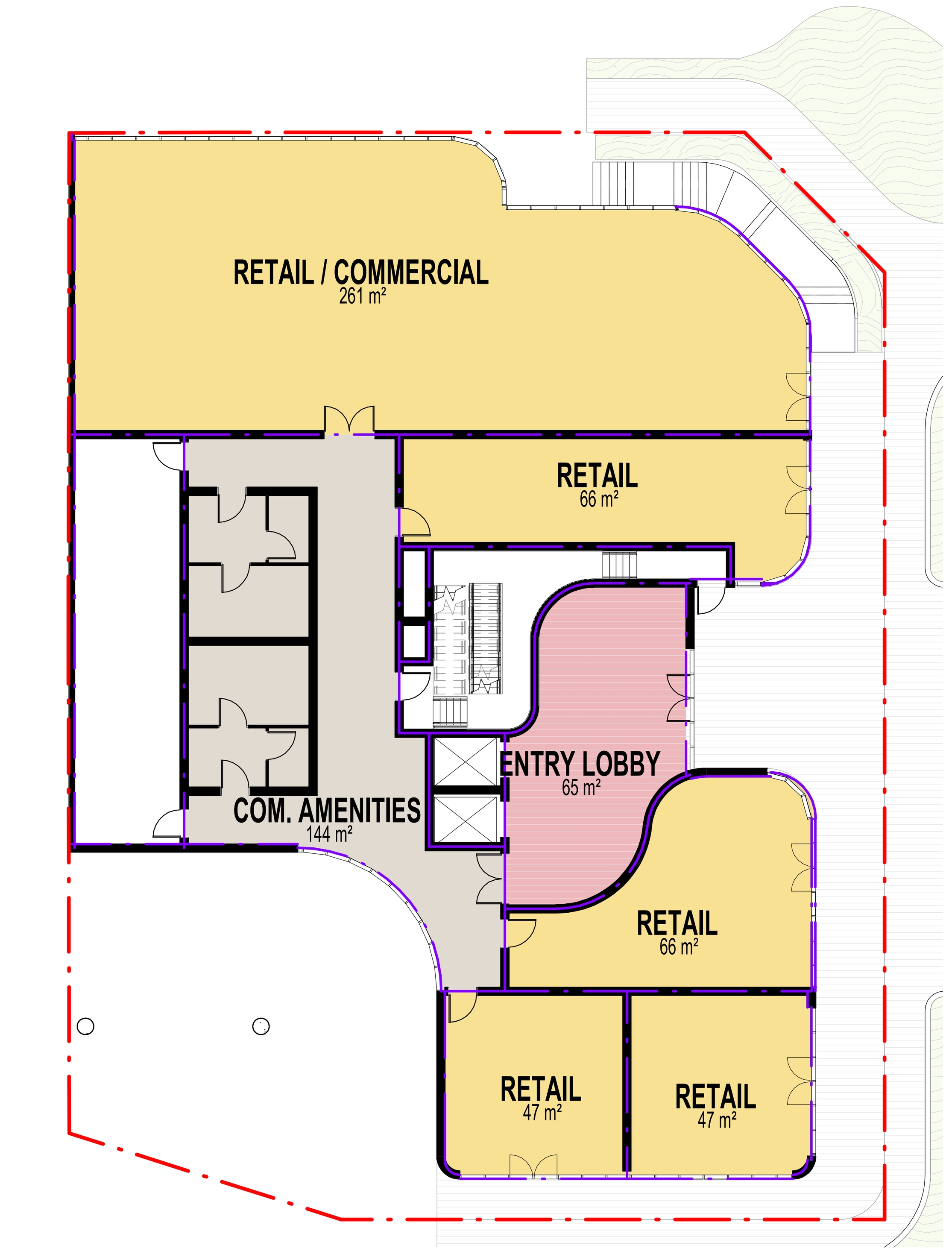
DWG # SK02
REV B
DATE 10.05.2023



1 GROUND LEVEL
SK08 1 : 100

GFA PER FLOOR - GROUND LEVEL

NAME	AREA	LEVEL
COM. AMENITIES	144 m²	GROUND LEVEL
ENTRY LOBBY	65 m²	GROUND LEVEL
RETAIL	66 m²	GROUND LEVEL
RETAIL	47 m²	GROUND LEVEL
RETAIL	47 m²	GROUND LEVEL
RETAIL	66 m²	GROUND LEVEL
RETAIL / COMMERCIAL	261 m²	GROUND LEVEL
Grand total: 7	697 m²	



2 GROUND LEVEL - GFA CALCULATION
SK08 1 : 200

GRAY PUKSAND

544-550 BOX ROAD, JANNALI

GROUND LEVEL

DWG #	SK03
REV	B
DATE	10.05.2023

ANNEXURE B: EXISTING SCALE

(1 SHEET)

NOTES:

1. AREAS HAVE BEEN DETERMINED IN ACCORDANCE WITH, AND UNDER THE INTERPRETATION OF, THE PROPERTY COUNCIL OF AUSTRALIA, METHOD OF MEASURMENT OF LETTABLE AREA MARCH 1997, PART 1, GROSS LETABLE AREA RETAIL (GLAR)

GROUND FLOOR

LOWER GROUND FLOOR

No.	DATE	REVISION DETAILS

TITLE:

PLAN OF GROSS LETTABLE AREA RETAIL (GLAR)

PREPARED FOR:

TCQ CONSTRUCTIONS

ADDRESS:

No's 544-550 BOX ROAD JANNALI
LOT 2 IN DP 209152 &
LOT 2 DP202711

boxall
PO Box 519 Sutherland NSW 1499 | Suite 8/49-51 Eton Street
02 9521 5737 | www.boxallsurveyors.com.au | ACN 114 644 058
Liability limited by a scheme approved under Professional Standards Legislation

SCALE:	1:100	SURVEY DATE:	23-1-2019
CO-ORDS:	-	DATUM:	-
ORIGIN OF LEVELS:	-		
SURVEY:	LC	DRAWN:	EL
CHECKED:	SM	DATE:	29-1-2019
APPROVED:	SM	DATE:	29-1-2019
JOB REF:	10648	SHEET	1 OF 1 SHEETS

SCOTT MURRAY
REGISTERED SURVEYOR

DRAWING No.: 10648-002

REVISION

A3