Proposed Seniors Living Residential Development

2 Greenwich Road, Greenwich

TRAFFIC AND PARKING ASSESSMENT REPORT

30 April 2020

Ref 19657

VARGA TRAFFIC PLANNING Pty Ltd

Transport, Traffic and Parking Consultants

Suite 6, 20 Young Street, Neutral Bay NSW 2089 - PO Box 1868, Neutral Bay NSW 2089, Ph: 9904 3224

TABLE OF CONTENTS

1. INTRODUCTION 1

2. PROPOSED DEVELOPMENT 5

3. TRAFFIC ASSESSMENT 18

4. CONSTRUCTION TRAFFIC MANAGEMENT PLAN 26

5. PARKING ASSESSMENT 28

LIST OF ILLUSTRATIONS

Figure 1 Location
Figure 2 Site
Figure 3 Road Hierarchy
Figure 4 Existing Traffic Controls
Figure 5 Public Transport
Figure 6 Existing Parking Restrictions

1. INTRODUCTION

This report has been prepared to accompany a development application to Council for a seniors living residential development proposal to be located at 2 Greenwich Road, Greenwich (Figures 1 and 2).

In late 2019, a planning proposal received Gateway determination which sought to amend the planning controls Council's *LEP 2009* in relation to the site to introduce "shop-top housing" as an additional permitted use, *and*, to increase the maximum building height control from 25m to 33m (PP_2018_LANEC_001_00).

Two concept designs accompanied the planning proposal that both facilitated an 11-storey building, comprising ground floor retail/commercial space and 10 storeys of residential apartments above.

The planning proposal envisaged off-street parking being provided in a new basement parking area beneath the new building, with vehicular access to be retained via the existing driveway located off Greenwich Road which is also shared (by way of an easement) with the adjoining commercial property to the north – No.154 Pacific Highway.

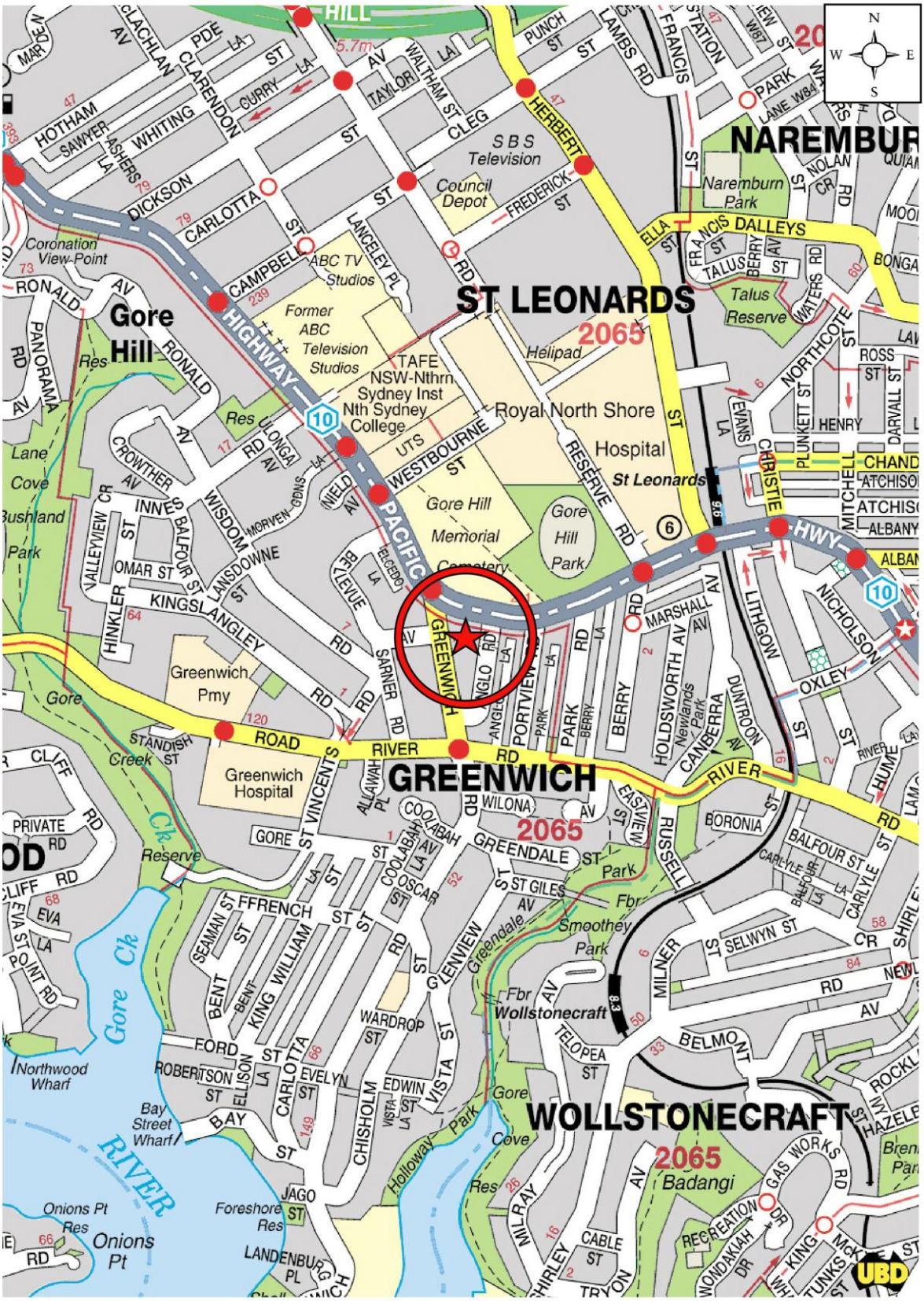
This development application scheme involves the demolition of the former private hospital building on the site to facilitate the construction of a new seniors living residential apartment building with private facilities as well as a ground floor commercial component.

Off-street parking is to be provided in a new basement car parking area in accordance with Council and *State Environmental Planning Policy (Housing for Senior or People with a Disability) 2004* requirements. Vehicular access to the site is to be provided via the existing shared driveway located off Greenwich Road.

The purpose of this report is to assess the traffic and parking implications of the development proposal and to that end this report:

- describes the site and provides details of the development proposal

- reviews the road network in the vicinity of the site
- reviews the existing and proposed public transport services available in the vicinity of the site
- estimates the traffic generation potential of the development proposal
- assesses the traffic implications of the development proposal in terms of road network capacity
- reviews the geometric design features of the proposed car parking and loading facilities for compliance with the relevant codes and standards
- assesses the adequacy and suitability of the quantum of off-street car parking and loading provided on the site.



VARGA TRAFFIC PLANNING Pty Ltd
Traffic and Parking Consultants

LOCATION
FIGURE 1

SITE
FIGURE 2

2. PROPOSED DEVELOPMENT

Site

The subject site is located on the eastern side of Greenwich Road, directly opposite Bellevue Avenue. The site has a street frontage approximately 36m in length to Greenwich Road and occupies an area of approximately 2,140m^2.

The subject site is currently occupied by a three-storey commercial building, which was previously the *Northside Clinic Private Hospital*, a 92-bed mental health care hospital. The facility closed in 2018 and has since been relocated to a new facility located at 2 Frederick Street, St Leonards. An aerial image of the site and its surroundings is reproduced below.

Off-street parking is currently provided in a two-level basement parking area beneath the building. Vehicular access to the site is provided via an existing driveway located at the northern end of the site Greenwich Road site frontage which is also shared (by way of an easement) with the adjoining commercial property to the north – No.154 Pacific Highway. A *Streetview* image of the shared driveway is reproduced on the following page.

Planning Proposal

In late 2019, a planning proposal received Gateway determination which sought to amend the planning controls Council's *LEP 2009* in relation to the site to introduce "shop-top housing" as an additional permitted use, *and*, to increase the maximum building height control from 25m to 33m.

Two concept designs accompanied the planning proposal that both facilitated an 11-storey building, comprising ground floor retail/commercial space and 10 storeys of residential apartments above.

The ground floor retail/commercial component had a floor area of 915m^2 along with 60-70 residential apartments on the upper levels.

The planning proposal envisaged off-street parking being provided in a new basement parking area beneath the new building that would ultimately be designed at DA stage to satisfy the relevant numerical requirements as well as Australian Standards design requirements.

Proposed Development

The proposed development involves the demolition of the former private hospital building on the site to facilitate the construction of a new seniors living residential apartment building with ground floor private facilities. A total of 40 apartments are proposed in the new building as follows:

1 bedroom apartments:	4
2 bedroom apartments:	14
3 bedroom apartments:	23
TOTAL APARTMENTS:	**40**

A range of private facilities are also proposed for residents only, including a cinema room and terrace area.

The proposed ground floor level of the new building also includes a café and gallery/library which front Greenwich Road as well as a wellness centre and commercial suite situated at the rear of the building. Floor areas for the commercial component are as follows:

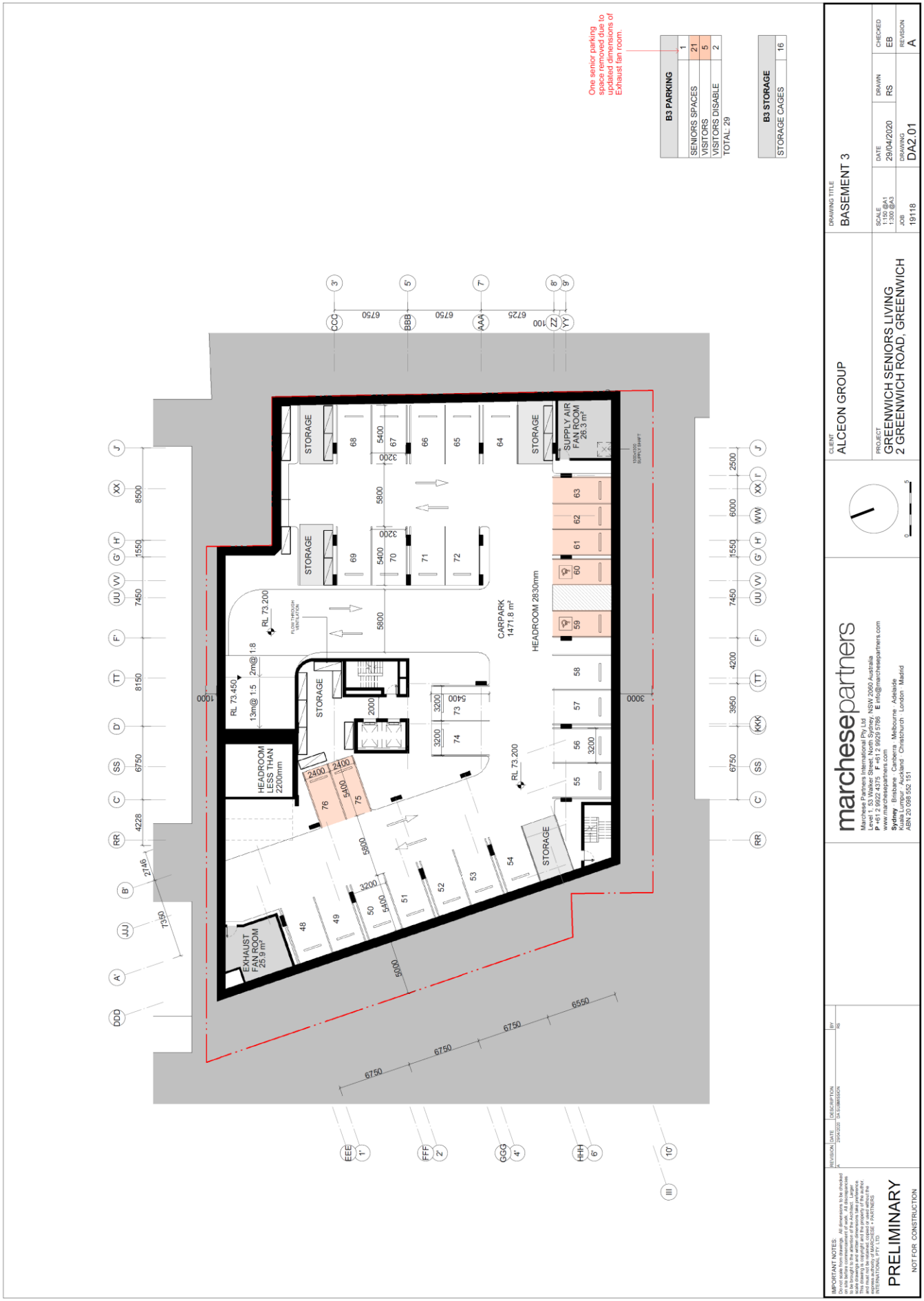
Café:	63m^2
Gallery/library:	108m^2
Commercial suite:	147m^2
Wellness centre:	140m^2
TOTAL FLOOR AREA:	**458m^2**

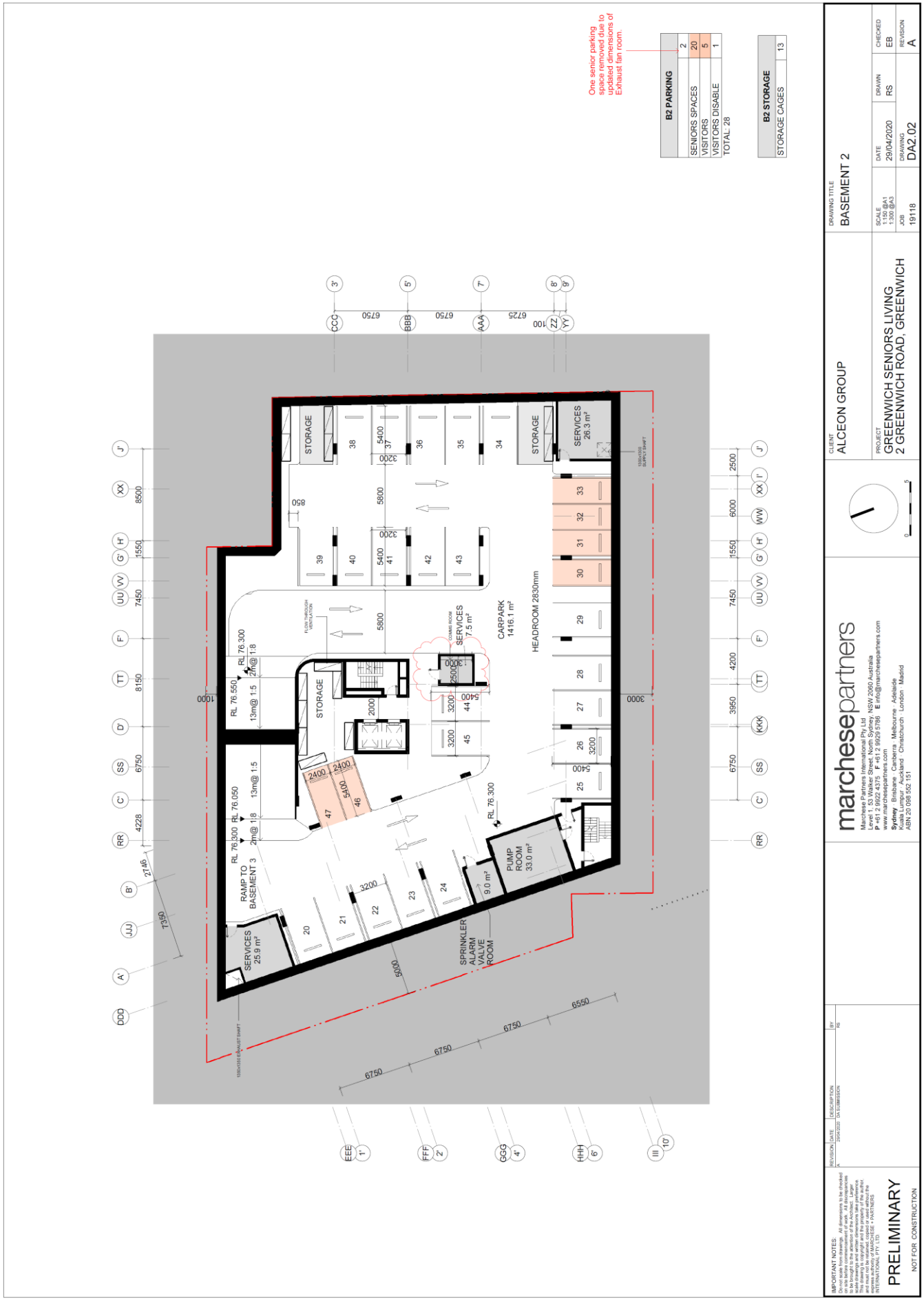
It is envisaged that the library and wellness centre are only to be open by invitation of residents.

Off-street parking is to be provided for a total of 76 cars in a new three-level basement car parking area in accordance with Council and *State Environmental Planning Policy (Housing for Senior or People with a Disability) 2004* requirements. Vehicular access to the site is to be provided via the existing shared driveway located off Greenwich Road which will also continue to provide vehicular access to No.154 Pacific Highway.

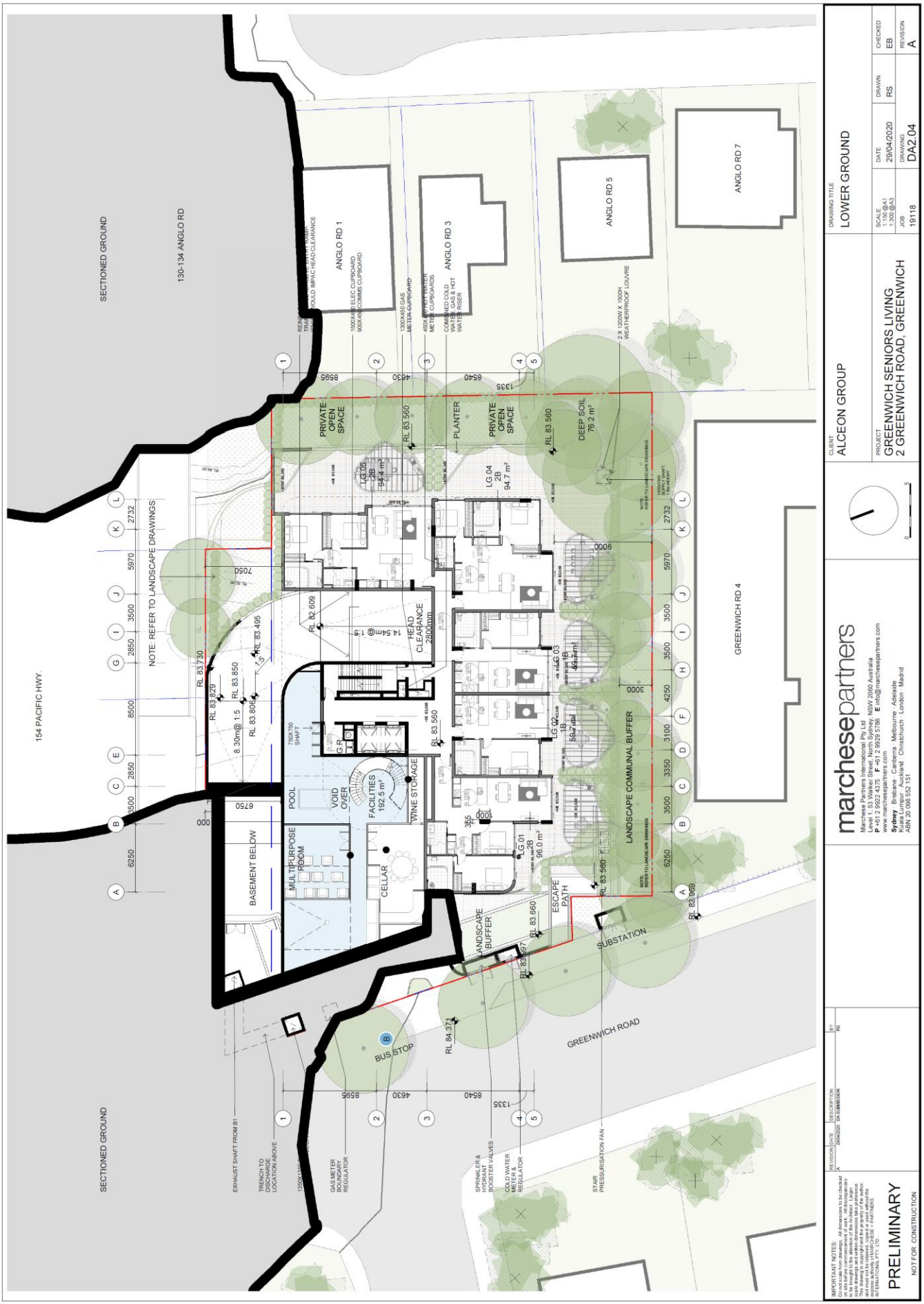
Waste collection is to be undertaken from within the basement car parking area using Council's waste contractor and their mini garbage truck, which is similar in size to a standard SRV truck, albeit with a reduced overhead clearance requirement of 2.6m.

Plans of the proposed development have been prepared by *Marchese Partners International* and are reproduced in the following pages.

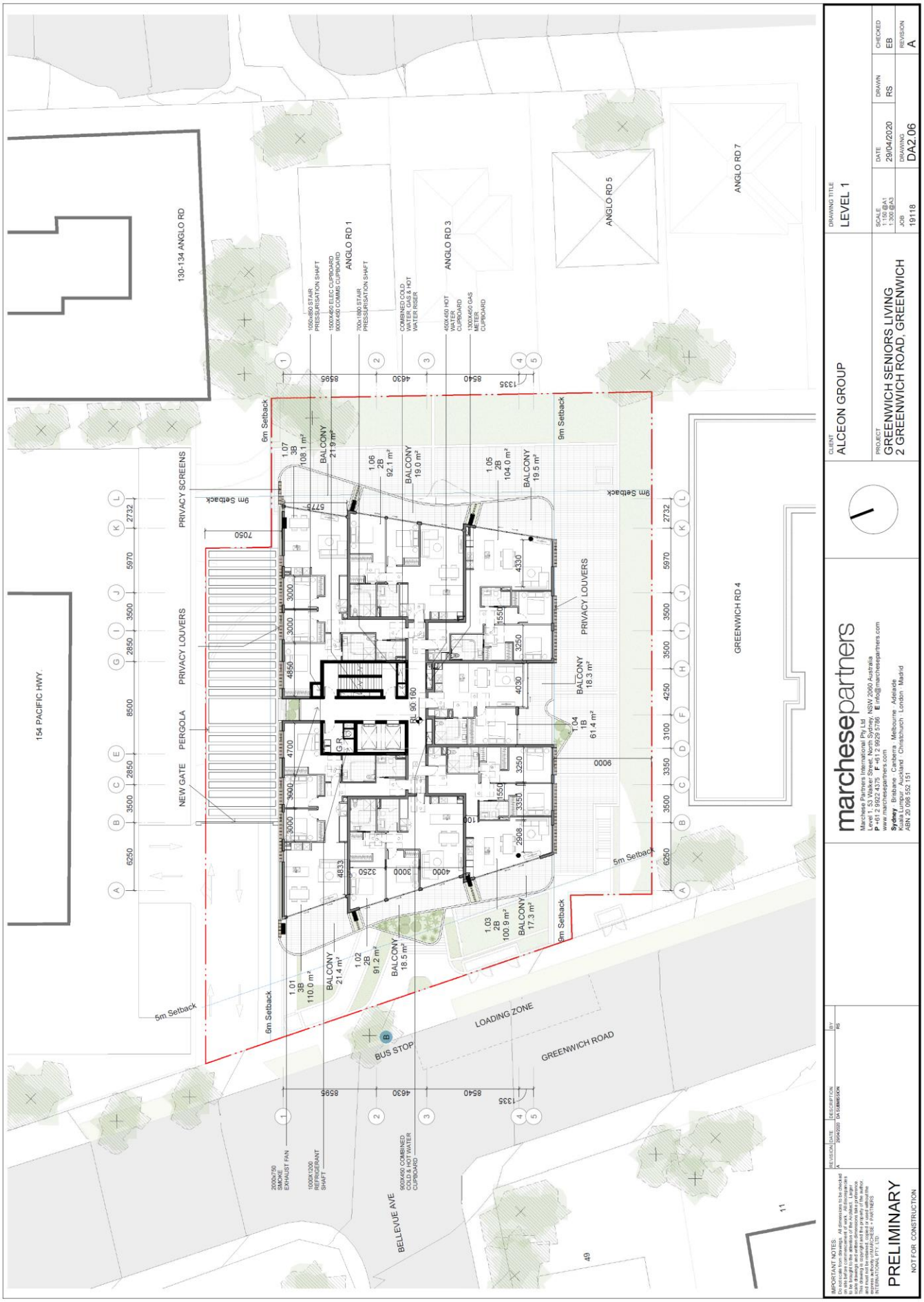

One senior parking space removed due to updated dimensions of Exhaust fan room.
B3 PARKING
SENIORS SPACES 1
VISITORS 21
VISITORS DISABLE 5
TOTAL: 29 2
B3 STORAGE
STORAGE CAGES 16
CARPARK 1471.8 m²
HEADROOM 2830mm
HEADROOM LESS THAN 2200mm
EXHAUST FAN ROOM 25.9 m²
SUPPLY AIR FAN ROOM 26.3 m²
STORAGE
RL 73.200
RL 73.450
13m@ 1:5
2m@ 1:8
FLOW THROUGH VENTILATION
1000x1000 SUPPLY SHAFT
CLIENT
ALCEON GROUP
DRAWING TITLE
BASEMENT 3
PROJECT
GREENWICH SENIORS LIVING
2 GREENWICH ROAD, GREENWICH
SCALE 1:150 @A1 1:300 @A3
DATE 29/04/2020
DRAWN RS
CHECKED EB
JOB 19118
DRAWING DA2.01
REVISION A
marchesepartners
Marchese Partners International Pty Ltd
Level 5, 50 Margaret St Sydney NSW 2060 Australia
P +61 2 9922 4375 F +61 2 9929 5786 E info@marchesepartners.com
www.marchesepartners.com
Sydney Brisbane Canberra Melbourne Adelaide
Kuala Lumpur Auckland Christchurch London Madrid
ABN 20 088 582 151
REVISION DATE DESCRIPTION BY
A 29/04/2020 DA SUBMISSION RS
IMPORTANT NOTES
Do not scale drawings. All dimensions to be checked on site before commencement of work. All discrepancies to be brought to the attention of Marchese + Partners. The copyright in this drawing and in all other drawings, specifications and models is the property of Marchese + Partners and must not be retained, copied or used without the express written consent of MARCHESE + PARTNERS INTERNATIONAL (PTY) LTD.
PRELIMINARY
NOT FOR CONSTRUCTION

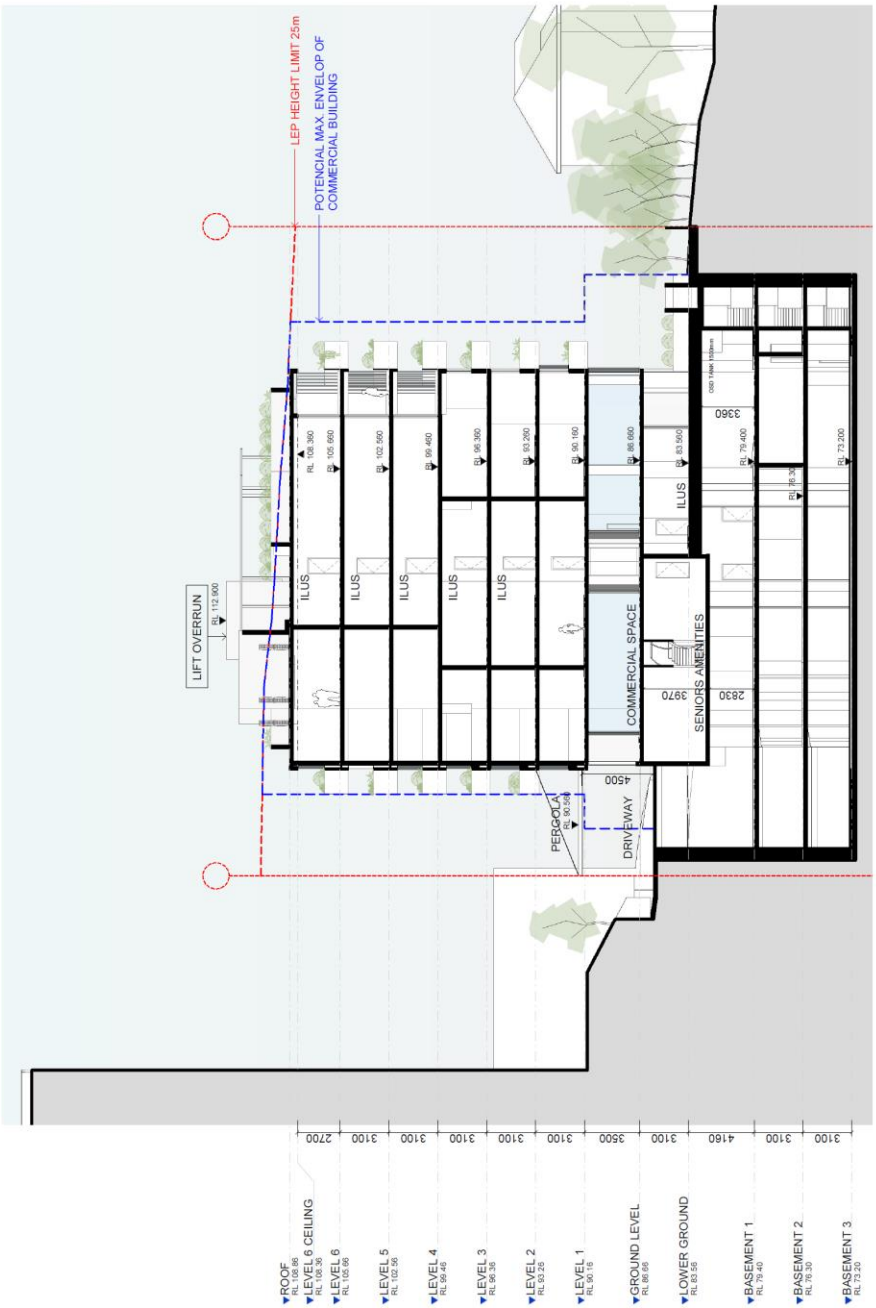

One senior parking space removed due to updated dimensions of Exhaust fan room.
B2 PARKING
SENIORS SPACES 20
VISITORS 5
VISITORS DISABLE 1
TOTAL: 28
B2 STORAGE
STORAGE CAGES 13
CARPARK 1416.1 m²
HEADROOM 2830mm
RAMP TO BASEMENT 3
SERVICES 25.9 m²
SERVICES 26.3 m²
SERVICES 7.5 m²
PUMP ROOM 33.0 m²
SPRINKLER ALARM VALVE ROOM
STORAGE
CLIENT
ALCEON GROUP
PROJECT
GREENWICH SENIORS LIVING
2 GREENWICH ROAD, GREENWICH
DRAWING TITLE
BASEMENT 2
SCALE 1:150 @A1 1:300 @A3
DATE 29/04/2020
DRAWN RS
CHECKED EB
JOB 19118
DRAWING DA2.02
REVISION A
marchesepartners
Marchese Partners International Pty Ltd
Level 1, 53 Walker Street, North Sydney, NSW 2060 Australia
P +61 2 9922 4375 F +61 2 9929 5786 E info@marchesepartners.com
www.marchesepartners.com
Sydney Brisbane Canberra Melbourne Adelaide
Kuala Lumpur Auckland Christchurch London Madrid
ABN 20 098 552 151
IMPORTANT NOTES
Do not scale from drawings. All dimensions to be checked on site before commencement of work. Any discrepancies to be brought to the attention of the architect. Larger scale drawings take precedence over smaller scale drawings. This drawing is copyright and the property of the author and must not be copied or used for any purpose other than the express authority of MARCHESE + PARTNERS INTERNATIONAL PTY. LTD.
PRELIMINARY
NOT FOR CONSTRUCTION
REVISION DATE DESCRIPTION BY
A 29/04/2020 DA SUBMISSION RS


One commercial parking space removed due to updated dimensions of Supply air fan room.
B1 PARKING
COMMERCIAL / RETAIL 8
COMMERCIAL / RETAIL DISABLE 1
SENIORS SPACES 7
VISITORS DISABLE 3
TOTAL: 19
B1 STORAGE 9
FIRE STORAGE TANK 47.1 m²
BULKY ROOM 25.9 m²
RESI WASTE 35.8 m²
RETAIL WASTE ROOM 13.2 m²
RAMP TO BASEMENT 2
STORAGE
SERVICES 15.8 m²
COLD WATER TANK
HEADROOM 2716mm
ENTRY/EXIT
HEADROOM 3360mm
SERVICES 13.0 m²
SERVICES 15.0 m²
GARBAGE LOADING AREA
CARPARK 1181.4 m²
GARBAGE TRUCK BAY
RL 79.400
RL 79.150
RL 79.700
CLIENT
ALCEON GROUP
PROJECT
GREENWICH SENIORS LIVING
2 GREENWICH ROAD, GREENWICH
DRAWING TITLE
BASEMENT 1
SCALE 1:150 @A1 1:300 @A3
DATE 29/04/2020
DRAWN RS
CHECKED EB
JOB 19118
DRAWING DA2.03
REVISION A
marchesepartners
Marchese Partners International Pty Ltd
Level 1, 53 Walker Street, North Sydney NSW 2060 Australia
P +61 2 9929 4233 F +61 2 9929 5799 E info@marchesepartners.com
www.marchesepartners.com
Sydney Brisbane Canberra Melbourne Adelaide
Kuala Lumpur Auckland Christchurch London Madrid
ABN 20 098 552 151
IMPORTANT NOTES
REVISION DATE DESCRIPTION BY
A 29/04/20 DA SUBMISSION
PRELIMINARY
NOT FOR CONSTRUCTION


SECTIONED GROUND
130-134 ANGLO RD
154 PACIFIC HWY
NOTE: REFER TO LANDSCAPE DRAWINGS
ANGLO RD 1
ANGLO RD 3
ANGLO RD 5
ANGLO RD 7
GREENWICH RD 4
PRIVATE OPEN SPACE
PLANTER
DEEP SOIL 76.2 m²
LG 05 2B 94.4 m²
LG 04 2B 94.7 m²
LG 03 1B 49.3 m²
LG 02 1B 50.7 m²
LG 01 2B 96.0 m²
HEAD CLEARANCE 2200mm
14.54m@ 1:5
8.30m@ 1:5
POOL
VOID OVER
FACILITIES 192.5 m²
WINE STORAGE
MULTIPURPOSE ROOM
CELLAR
BASEMENT BELOW
LANDSCAPE COMMUNAL BUFFER
LANDSCAPE BUFFER
ESCAPE PATH
SUBSTATION
BUS STOP
GREENWICH ROAD
EXHAUST SHAFT FROM B1
TRENCH TO DISCHARGE LOCATION ABOVE
GAS METER BOUNDARY REGULATOR
SPRINKLER & HYDRANT BOOSTER VALVES
COLD WATER METER & REGULATOR
STAIR PRESSURIZATION FAN
2 X 1200W X 1500H WEATHERPROOF LOUVRE
CLIENT
ALCEON GROUP
PROJECT
GREENWICH SENIORS LIVING
2 GREENWICH ROAD, GREENWICH
DRAWING TITLE
LOWER GROUND
SCALE 1:100 @A1 1:200 @A3
DATE 29/04/2020
DRAWN RS
CHECKED EB
JOB 19118
DRAWING DA2.04
REVISION A
marchesepartners
Marchese Partners International Pty Ltd
Level 1, 53 Walker Street, North Sydney, NSW 2060 Australia
P +61 2 9922 4375 F +61 2 9929 5786 E info@marchesepartners.com
www.marchesepartners.com
Sydney Brisbane Canberra Melbourne Adelaide
Auckland Wellington Christchurch London Madrid
ABN 20 098 552 151
REVISION DATE DESCRIPTION BY
A 29/04/2020 DA SUBMISSION RS
IMPORTANT NOTES
Do not scale from drawings. All dimensions to be checked on site prior to commencement of work. Any discrepancies to be brought to the attention of the Architect. Larger scale drawings and written dimensions take preference. These drawings are the property of the Architect, copyright and must not be retained, copied or used without the written consent of MARCHESE PARTNERS INTERNATIONAL PTY. LTD.
PRELIMINARY
NOT FOR CONSTRUCTION


154 PACIFIC HWY.
130-134 ANGLO RD
ANGLO RD 1
ANGLO RD 3
ANGLO RD 5
ANGLO RD 7
GREENWICH RD 4
GREENWICH ROAD
BELLEVUE AVE
EXISTING ABANDONED ENTRY DRIVEWAY
NEW RAMP
8.30m@ 1.15
3m@ 1.10
NEW GATE
PERGOLA ABOVE
EXISTING RAMP
IN
OUT
5m Setback
6m Setback
9m Setback
LEVEL 1 ABOVE
COMMERCIAL 146.7 m²
DDA TOILET 5.9 m²
RESIDENTS TERRACE 88.1 m²
WELLNESS CENTRE 140.0 m²
LOBBY 159.4 m²
GALLERY / LIBRARY 107.8 m²
CAFE 62.1 m²
VOID
PLAZA
PRIVACY LOUVERS
BUS STOP
LOADING ZONE
RL 86.207
RL 85.810
RL 85.880
RL 85.613
RL 83.829
RL 83.498
RL 83.850
RL 86.660
RL 85.810
RL 85.800
RL 85.600
RL 84.918
RL 84.649
RL 84.127
RL 83.560
CLIENT
ALCEON GROUP
PROJECT
GREENWICH SENIORS LIVING
2 GREENWICH ROAD, GREENWICH
DRAWING TITLE
GROUND LEVEL
SCALE
1:150 @A1
1:300 @A3
DATE
29/04/2020
DRAWN
RS
CHECKED
EB
JOB
19118
DRAWING
DA2.05
REVISION
A
marchesepartners
Marchese Partners International Pty Ltd
Level 15, 126 Phillip Street, Sydney, NSW 2060 Australia
P +61 2 9922 4375 F +61 2 9929 5786 E info@marchesepartners.com
www.marchesepartners.com
Sydney Brisbane Canberra Melbourne Adelaide
Shanghai Beijing Auckland Christchurch London Madrid
ABN 20 088 552 151
REVISION DATE DESCRIPTION BY
A 29/04/20 DA SUBMISSION RS
IMPORTANT NOTES
Do not scale from drawings. All dimensions to be checked on site before commencement of work. All discrepancies to be reported to the architect. Figured dimensions on scale drawings and written dimensions take preference. This drawing is the property of the architect and must not be retained, copied or used without the express written permission of MARCHESE + PARTNERS INTERNATIONAL PTY. LTD.
PRELIMINARY
NOT FOR CONSTRUCTION


130-134 ANGLO RD
154 PACIFIC HWY.
ANGLO RD 1
ANGLO RD 3
ANGLO RD 5
ANGLO RD 7
GREENWICH RD 4
GREENWICH ROAD
BELLEVUE AVE
LOADING ZONE
BUS STOP
PRIVACY SCREENS
PRIVACY LOUVERS
PERGOLA
NEW GATE
6m Setback
9m Setback
5m Setback
1.01 3B 110.0 m²
1.02 2B 91.2 m²
1.03 2B 100.9 m²
1.04 1B 61.4 m²
1.05 2B 104.0 m²
1.06 2B 92.1 m²
1.07 3B 108.1 m²
BALCONY 21.4 m²
BALCONY 18.5 m²
BALCONY 17.3 m²
BALCONY 18.3 m²
BALCONY 19.5 m²
BALCONY 19.0 m²
BALCONY 21.9 m²
G.R.
RL 90.160
2000x750 SMOKE EXHAUST FAN
1500X1200 REFRIGERANT SHAFT
900X450 COMBINED COLD & HOT WATER CUPBOARD
1500x800 STAIR PRESSURISATION SHAFT
1500X450 ELEC CUPBOARD
800X450 COMMS CUPBOARD
700x1800 STAIR PRESSURISATION SHAFT
COMBINED COLD WATER, GAS & HOT WATER RISER
400X450 HOT WATER SERVICE CUPBOARD
1300X450 GAS METER CUPBOARD
8595
4630
8540
1335
6250
3500
2850
8500
2850
3500
5970
2732
7050
5775
9000
5000
4700
4850
3000
4330
4030
3250
1550
3350
2908
4833
3250
4000
3000
11
49
MARCHESE PARTNERS
Marchese Partners International Pty Ltd
Level 1, 53 Walker Street, North Sydney, NSW 2060 Australia
P +61 2 9929 4433 F +61 2 9929 4175 M +61 2 9929 5186 E info@marchesepartners.com
www.marchesepartners.com
Sydney Brisbane Canberra Melbourne Adelaide
Kuala Lumpur Auckland Christchurch London Madrid
ABN 20 098 552 151
CLIENT
ALCEON GROUP
PROJECT
GREENWICH SENIORS LIVING
2 GREENWICH ROAD, GREENWICH
DRAWING TITLE
LEVEL 1
SCALE
1:150 @A1
1:300 @A3
DATE
29/04/2020
DRAWN
RS
CHECKED
EB
JOB
19118
DRAWING
DA2.06
REVISION
A
IMPORTANT NOTES
PRELIMINARY
NOT FOR CONSTRUCTION
REVISION
DATE
DESCRIPTION
BY
A
29/04/2020
DA SUBMISSION
RS



CLIENT
ALCEON GROUP

PROJECT
GREENWICH SENIORS LIVING
2 GREENWICH ROAD, GREENWICH

DRAWING TITLE
SECTION 1

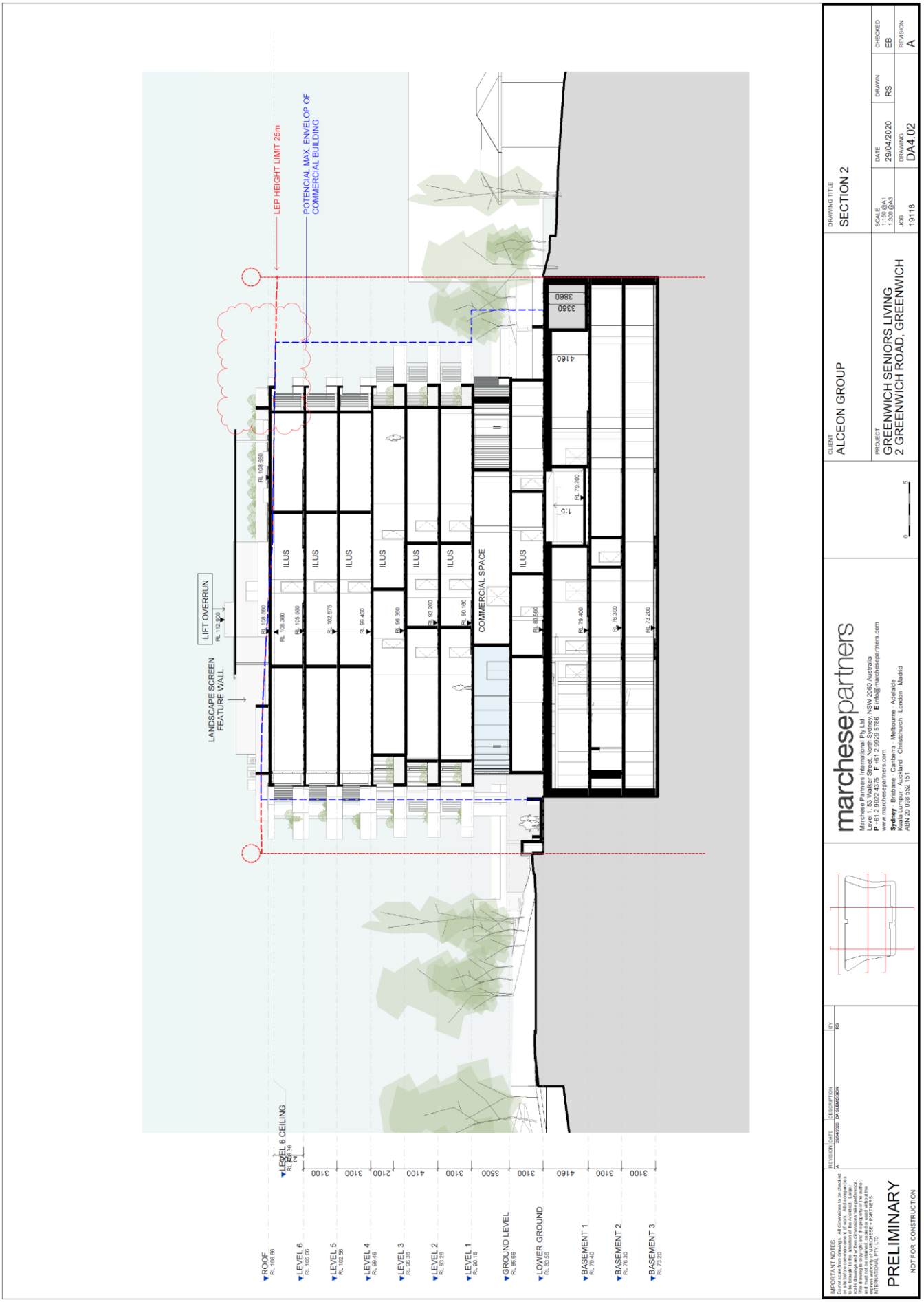
SCALE 1:150@A1 1:300@A3
DATE 29/04/2020
DRAWN RS
CHECKED EB
JOB 19118
DRAWING DA4.01
REVISION A

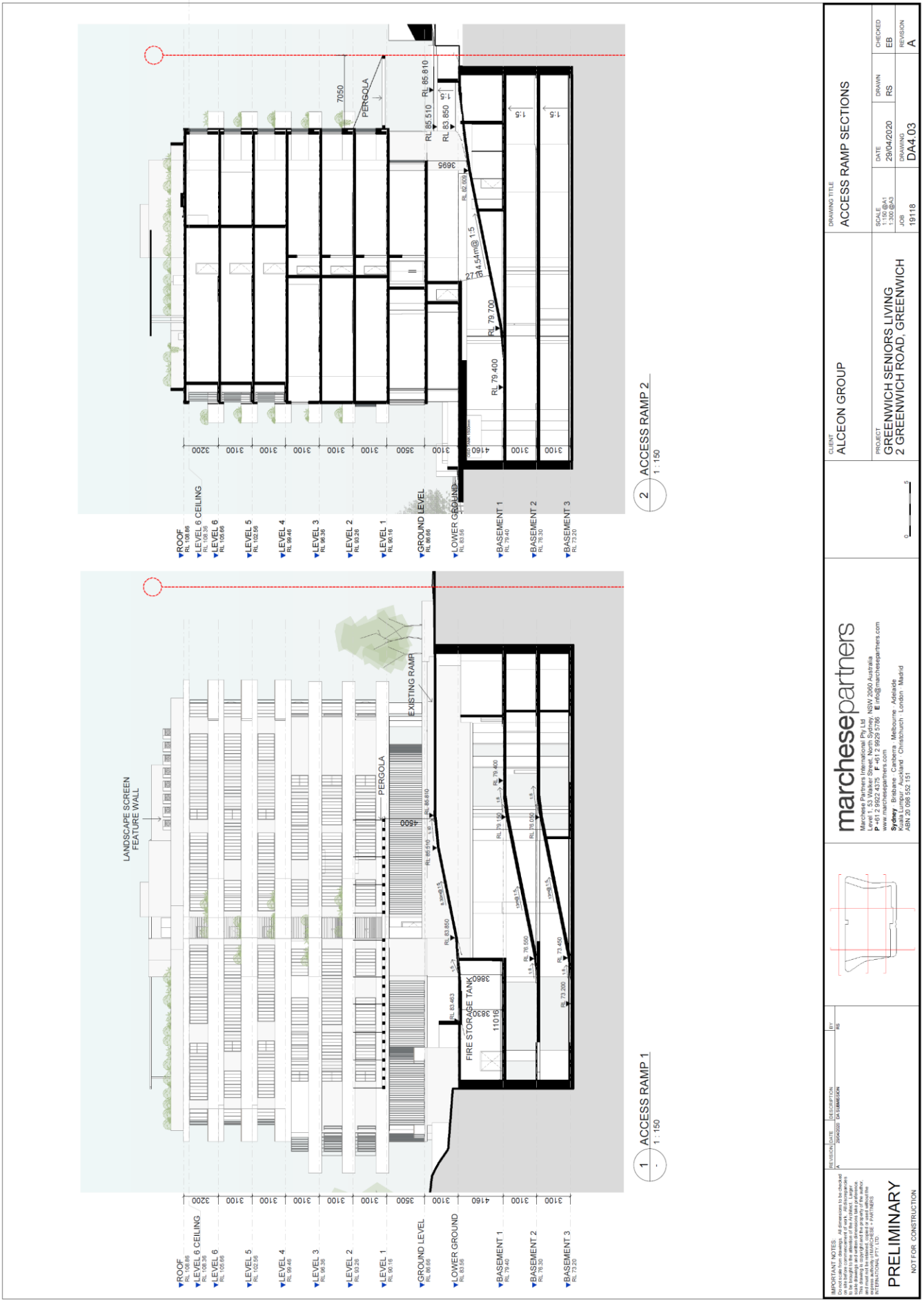
marchesepartners
Marchese Partners International Pty Ltd
Level 3, 55 Miller Street, North Sydney, NSW 2060 Australia
P +61 2 9922 4375 F +61 2 9929 5786 E info@marchesepartners.com
www.marchesepartners.com
Sydney Brisbane Canberra Melbourne Adelaide
Kuala Lumpur Auckland Christchurch London Madrid
ABN 23 095 252 151

IMPORTANT NOTES
Do not scale from drawings. All dimensions to be checked on site before commencement of work. All discrepancies to be brought to the attention of the architect before proceeding. The drawings and specifications are the property of the architect and must not be retained, copied or used without the consent of MARCHESE + PARTNERS INTERNATIONAL PTY. LTD.

REVISION	DATE	DESCRIPTION	BY
A	29/04/2020	DA SUBMISSION	RS

PRELIMINARY
NOT FOR CONSTRUCTION


LEP HEIGHT LIMIT 25m
POTENCIAL MAX. ENVELOP OF COMMERCIAL BUILDING
LIFT OVERRUN
LANDSCAPE SCREEN FEATURE WALL
ILUS
COMMERCIAL SPACE
LEVEL 6 CEILING
ROOF
LEVEL 6
LEVEL 5
LEVEL 4
LEVEL 3
LEVEL 2
LEVEL 1
GROUND LEVEL
LOWER GROUND
BASEMENT 1
BASEMENT 2
BASEMENT 3
marchesepartners
ALCEON GROUP
GREENWICH SENIORS LIVING
2 GREENWICH ROAD, GREENWICH
SECTION 2
PRELIMINARY
NOT FOR CONSTRUCTION


ROOF RL 108.86
LEVEL 6 CEILING RL 106.35
LEVEL 6 RL 105.68
LEVEL 5 RL 102.56
LEVEL 4 RL 99.46
LEVEL 3 RL 96.36
LEVEL 2 RL 93.26
LEVEL 1 RL 90.16
GROUND LEVEL RL 86.66
LOWER GROUND RL 83.56
BASEMENT 1 RL 79.40
BASEMENT 2 RL 76.30
BASEMENT 3 RL 73.20
3200
3100
3500
4160
LANDSCAPE SCREEN FEATURE WALL
PERGOLA
EXISTING RAMP
FIRE STORAGE TANK
4500
3860
3830
11016
RL 86.540
RL 83.860
RL 83.463
RL 79.400
RL 76.620
RL 73.450
RL 73.200
1 ACCESS RAMP 1
1 : 150
7050
3695
RL 85.810
RL 85.510
RL 83.850
RL 82.609
27.14m @ 1:5
RL 79.700
RL 79.400
1:5
2 ACCESS RAMP 2
1 : 150
CLIENT
ALCEON GROUP
PROJECT
GREENWICH SENIORS LIVING
2 GREENWICH ROAD, GREENWICH
DRAWING TITLE
ACCESS RAMP SECTIONS
SCALE
1:150 @A1
1:300 @A3
DATE
29/04/2020
DRAWN
RS
CHECKED
EB
JOB
19118
DRAWING
DA4.03
REVISION
A
marchesepartners
Marchese Partners International Pty Ltd
Level 1, 53 Walker Street, North Sydney, NSW 2060 Australia
P +61 2 9922 4375 F +61 2 9929 5786 E info@marchesepartners.com
www.marchesepartners.com
Sydney Brisbane Canberra Melbourne Adelaide
Kuala Lumpur Auckland Christchurch London Madrid
ABN 20 098 552 151
IMPORTANT NOTES
Do not scale from drawings. All dimensions to be checked on site before commencement of work. All discrepancies to be reported to the Architect. Large scale drawings and written dimensions take preference. This drawing and design remain the property of the Architect and must not be retained, copied or used without the express written permission of MARCHESE PARTNERS INTERNATIONAL PTY. LTD.
PRELIMINARY
NOT FOR CONSTRUCTION
REVISION
DATE
DESCRIPTION
BY
A
29/04/2020
DA SUBMISSION
RS

3. TRAFFIC ASSESSMENT

Road Hierarchy

The road hierarchy allocated to the road network in the vicinity of the site by the Roads and Maritime Services is illustrated on Figure 3.

The Pacific Highway is classified by the RMS as a *State Road* and provides the key north-south road link in the area, linking North Sydney to Hornsby and beyond. It typically carries two to three lanes in each direction, with turning lanes provided at key intersections. Clearway restrictions apply during commuter peak periods.

River Road is classified by the RMS as a *Regional Road* and provides an east-west road link through the local area. It typically carries one to two lanes in each direction in the vicinity of the site, with kerbside parking permitted at selected locations, *outside* of commuter peak periods.

Greenwich Road, in between the Pacific Highway and River Road, is also classified as a *Regional Road.* It typically carries one traffic lane in each direction, with kerbside parking generally permitted on both sides of the road.

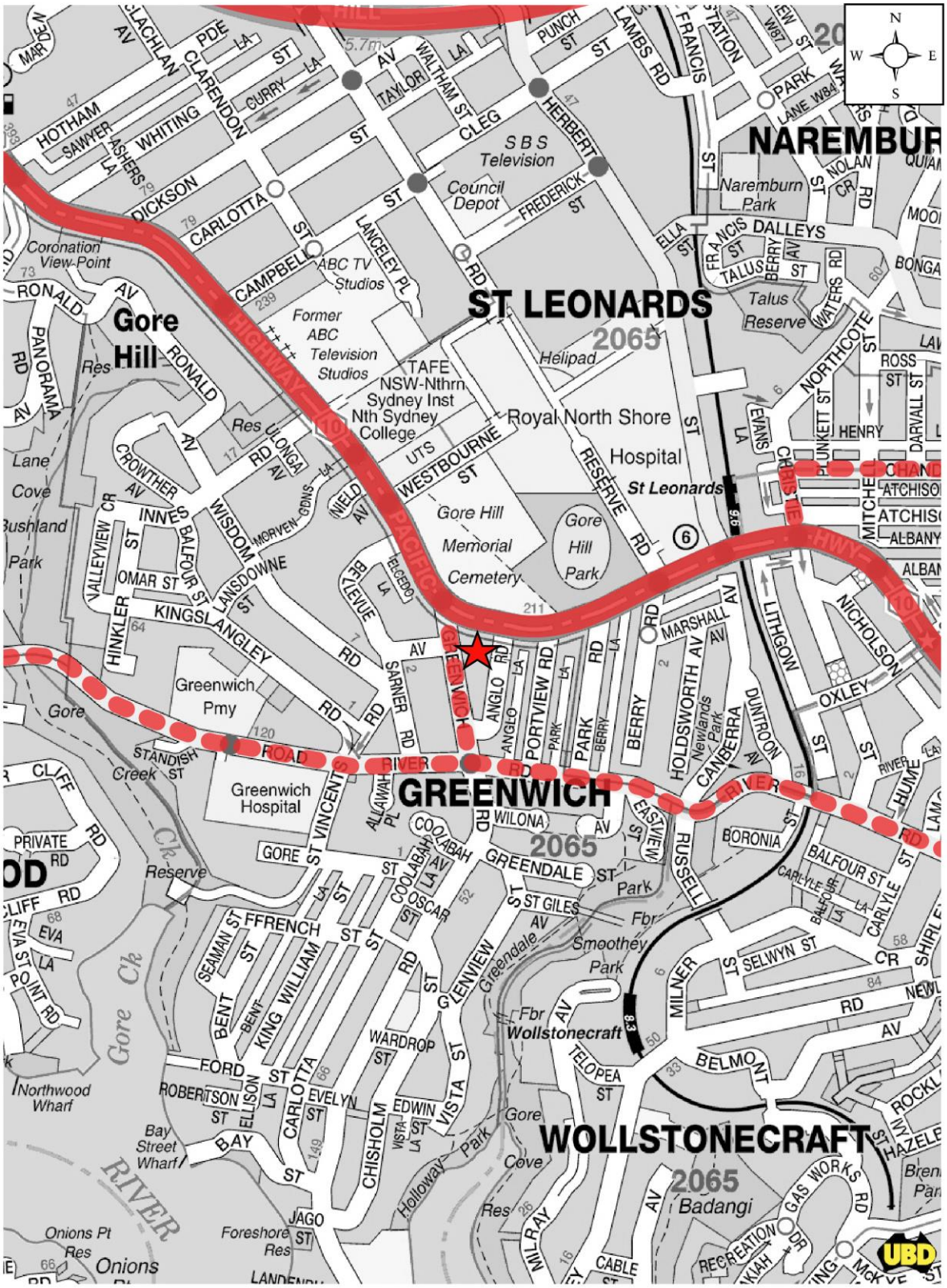
Greenwich Road, south of River Road, is a local, unclassified road which is primarily used to provide vehicular and pedestrian access to frontage properties. Kerbside parking is generally permitted on both sides of the road.

Existing Traffic Controls

The existing traffic controls which apply to the road network in the vicinity of the site are illustrated on Figure 4. Key features of those traffic controls are:

- a 60 km/h SPEED LIMIT which applies to the Pacific Highway

- a 50 km/h SPEED LIMIT which applies to Greenwich Road, River Road and all other local roads in the area



Key: State Road

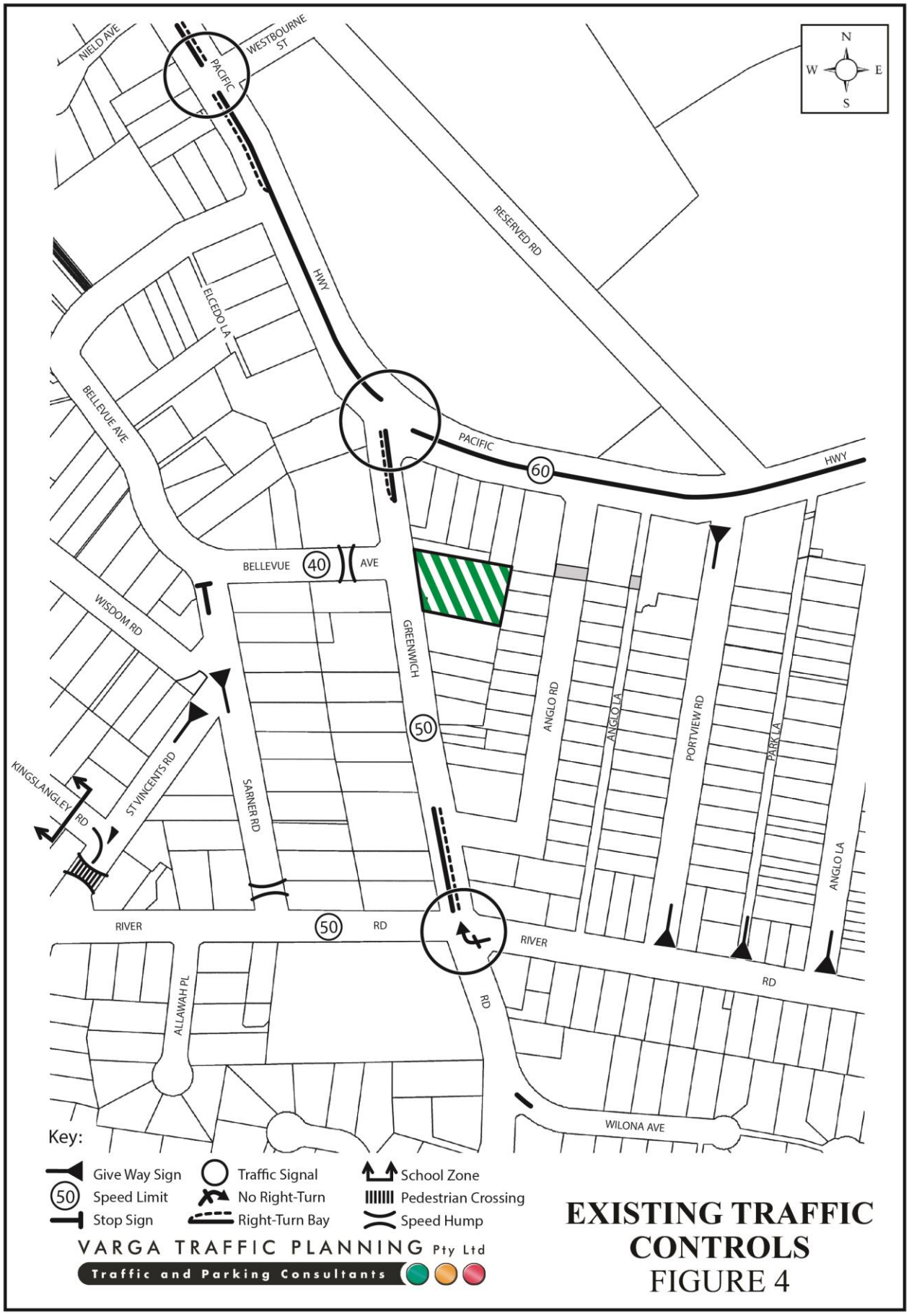
Regional Road

VARGA TRAFFIC PLANNING Pty Ltd

Traffic and Parking Consultants

ROAD HIERARCHY

FIGURE 3



EXISTING TRAFFIC CONTROLS
FIGURE 4

- a 40 km/h SCHOOL ZONE SPEED LIMIT within the vicinity of Greenwich Public School

- TRAFFIC SIGNALS in Greenwich Road where it intersects with the Pacific Highway and River Road

- a RIGHT TURN HOLDING BAY for southbound traffic on the Pacific Highway turning onto Greenwich Road

- a NO RIGHT TURN restriction on River Road for westbound traffic turning onto Greenwich Road.

Existing Public Transport Services

The existing public transport services available in the vicinity of the site are illustrated on Figure 5.

St Leonards Railway Station is located approximately 750m walking distance to/from the site, along the Pacific Highway. St Leonards Railway Station is situated on the T1 Northern, North Shore and Western Line, with services every 5-10 minutes during peak periods and every 10-15 minutes during off-peak periods. In addition, the site is located approximately 1.2km from the future Crows Nest Metro Station.

In addition, a bus stop is located directly outside the site along Greenwich Road which is serviced by the 265 bus. The next nearest bus stop is located approximately 200m walking north-west of the site along the Pacific Highway which accommodates a further 9 bus service services.

In summary, there are more than 580 bus services per day travelling near the site on weekdays, decreasing to approximately 390 bus services per day on Saturdays and approximately 330 bus services per day on Sundays, as set out in the table on the following page.

VARGA TRAFFIC PLANNING Pty Ltd
Traffic and Parking Consultants

PUBLIC TRANSPORT
FIGURE 5

Bus Routes and Frequencies							
Route No.	**Route**	**Weekday**		**Saturday**		**Sunday**	
		In	**Out**	**In**	**Out**	**In**	**Out**
143	Manly to Chatswood via Balgowlah & St Leonards	25	20	-	-	-	-
144	Manly to Chatswood via Royal North Shore Hospital	67	74	69	65	69	65
252	Gladesville to City King Street Wharf via North Sydney	36	38	34	34	28	28
254	Riverview to McMahons Point	26	25	17	17	15	15
265	Lane Cove to North Sydney via Greenwich	20	19	10	10	-	-
286	Denistone East to Milsons Point via St Leonards and North Sydney	5	7	-	-	-	-
287	Ryde to Milsons Point via St Leonards and North Sydney	6	4	-	-	-	-
290	Epping to City Erskine Street via Macquarie University & North Sydney	8	8	7	7	4	4
291	Epping to McMahons Point	30	28	17	17	15	15
320	Mascot to Gore Hill	71	67	41	48	37	44
	TOTAL	**294**	**290**	**195**	**198**	**168**	**171**

The abovementioned bus services also connect with train services at numerous suburban railway stations including St Leonards, Wollstonecraft, Waverton, North Sydney, Chatswood, Milsons Point, Wynyard, Epping, Macquarie University, Town Hall and Central.

The site is also located in close proximity to a variety of shops and services located in St Leonards and Crows Nest as well as being located a short distance from Royal North Shore Hospital.

The site is therefore considered to be highly accessible to essential services and public transport options.

Projected Traffic Generation

The traffic implications of development proposals primarily concern the effects of the *additional* traffic flows generated as a result of a development and its impact on the operational performance of the adjacent road network, particularly during the weekday morning and afternoon peak periods.

An indication of the traffic generation potential of the development proposal is provided by reference to the Roads and Maritime Services publication *Guide to Traffic Generating Developments, Section 3 - Landuse Traffic Generation (October 2002)* and the updated traffic generation rates in the RMS *Technical Direction* (TDT 2013/04a) document.

The RMS *Guidelines* and *Technical Direction* are based on extensive surveys of a wide range of land uses and nominates the following traffic generation rates which are applicable to the development proposal:

Housing for Seniors
0.4 peak hour vehicle trips per dwelling

Commercial Premises
2.0 peak hour vehicle trips per 100m^2 GFA

The RMS *Guidelines* do not however nominate a traffic generation rate for small, local cafés or gallery/libraries. For the purposes of this assessment therefore, the abovementioned "commercial premises" rate has been adopted in respect of the café and gallery/library components of the development proposal.

Application of the above traffic generation rates to the various components of the development proposal yields a traffic generation potential of approximately 25 vehicle trips per hour (vph) during the weekday peak periods as set out below:

Projected Future Traffic Generation Potential – Development Application

Seniors living residential apartments (40 dwellings):	16.0 peak hour vehicle trips
Café/gallery/library/wellness centre/commercial suite (458m^2):	9.2 peak hour vehicle trips
TOTAL TRAFFIC GENERATION POTENTIAL:	**25.2 peak hour vehicle trips**

By way of comparison, the RMS *Guidelines* nominates the following traffic generation rates which are applicable to the former private hospital building on the site:

Private Hospitals

MVT (morning peak) = -12.41 + 0.57B

EVT (evening peak) = -11.96 + 0.69B

Where B = no. of beds

Application of the above traffic generation rates to the former 92-bed facility on the site yields a traffic generation potential of approximately 40 vph during the morning peak period and 52 vph during the evening peak period.

By way of further comparison, the *Technical Direction* nominates the following traffic generation rates which are applicable to the planning proposal scheme on the site:

High Density Residential Flat Dwellings

AM: 0.19 peak hour vehicle trips per unit

PM: 0.15 peak hour vehicle trips per unit

Application of the above traffic generation rates to the various components of the planning proposal scheme yields a traffic generation potential of approximately 29 vehicle trips per hour (vph) during the weekday peak periods as set out below:

Projected Future Traffic Generation Potential – Planning Proposal

Residential apartments (60-70 dwellings):	11.1 peak hour vehicle trips*
Commercial/retail tenancy (915m^2):	18.3 peak hour vehicle trips
TOTAL TRAFFIC GENERATION POTENTIAL:	**29.4 peak hour vehicle trips**

* assumed 65 dwellings @ 0.17 peak hour vehicle trips per unit

As can be seen, the development application scheme involving the construction of 40 seniors living residential apartments above a commercial area will generate *less* traffic than the former private hospital building on the site and also *less* traffic than the planning proposal scheme.

As such, the proposed development application scheme is not expected to result in any unacceptable traffic implications in terms of road network capacity.

4. CONSTRUCTION TRAFFIC MANAGEMENT PLAN

The construction activities are expected to be undertaken over a duration of approximately 24 months as set out below. Working hours will be as per Council's standard conditions. No work is to be carried out on Sundays or Public Holidays.

CONSTRUCTON PROGRAM – APPROXIMATE DURATIONS		
Stage	**Work**	**Duration**
1	Demolition	3 months
2	Excavation	4 months
3	Construction	17 months

Demolition & Excavation Stage

All demolition and excavated spoil material will be loaded wholly within the site using a variety of truck sizes and types. The trucks will enter and exit the site via the existing driveway located at the northern end of the Greenwich Road site frontage.

Construction Stage

All construction material deliveries will also be unloaded wholly within the site where possible, with the movement of trucks across the foot path area to be supervised by an authorised traffic controller.

Works Zone

As construction of the building progresses it may become difficult for loading/unloading to occur within the site therefore a Works Zone may be required along the Greenwich Road site frontage. The Works Zone restrictions would apply during working hours only and would be provided specifically for the set down and pick-up of materials, not for the parking of private vehicles associated with the site.

Construction Truck Routes

All heavy vehicles involved in the demolition, excavation and construction of the proposed development would approach the site from the Pacific Highway and depart the site back to the Pacific Highway (if loading/unloading within the site) or back to River Road (if loading via a kerbside Works Zone).

Light traffic roads and those subject to load or height limits will be avoided as well as minimising heavy vehicle movements during school peak periods.

Authorised Traffic Controllers

An RMS-accredited traffic controller/s will be required to supervise the movement of all vehicles across the footpath during the demolition and excavation stages. An authorised traffic controller will also be required during the construction stage of the project to facilitate major deliveries to the site, such as concrete pours.

5. PARKING IMPLICATIONS

Existing Kerbside Parking Restrictions

The existing kerbside parking restrictions which apply to the road network in the vicinity of the site are illustrated on Figure 6 and comprise:

- T3 restrictions apply along the northern side of the Pacific Highway during the *morning* commuter peak period

- CLEARWAY restrictions apply along the southern side of the Pacific Highway, east of Greenwich Road

- CLEARWAY restrictions apply along a small section on the southern side of the Pacific Highway during the a*fternoon* commuter peak period

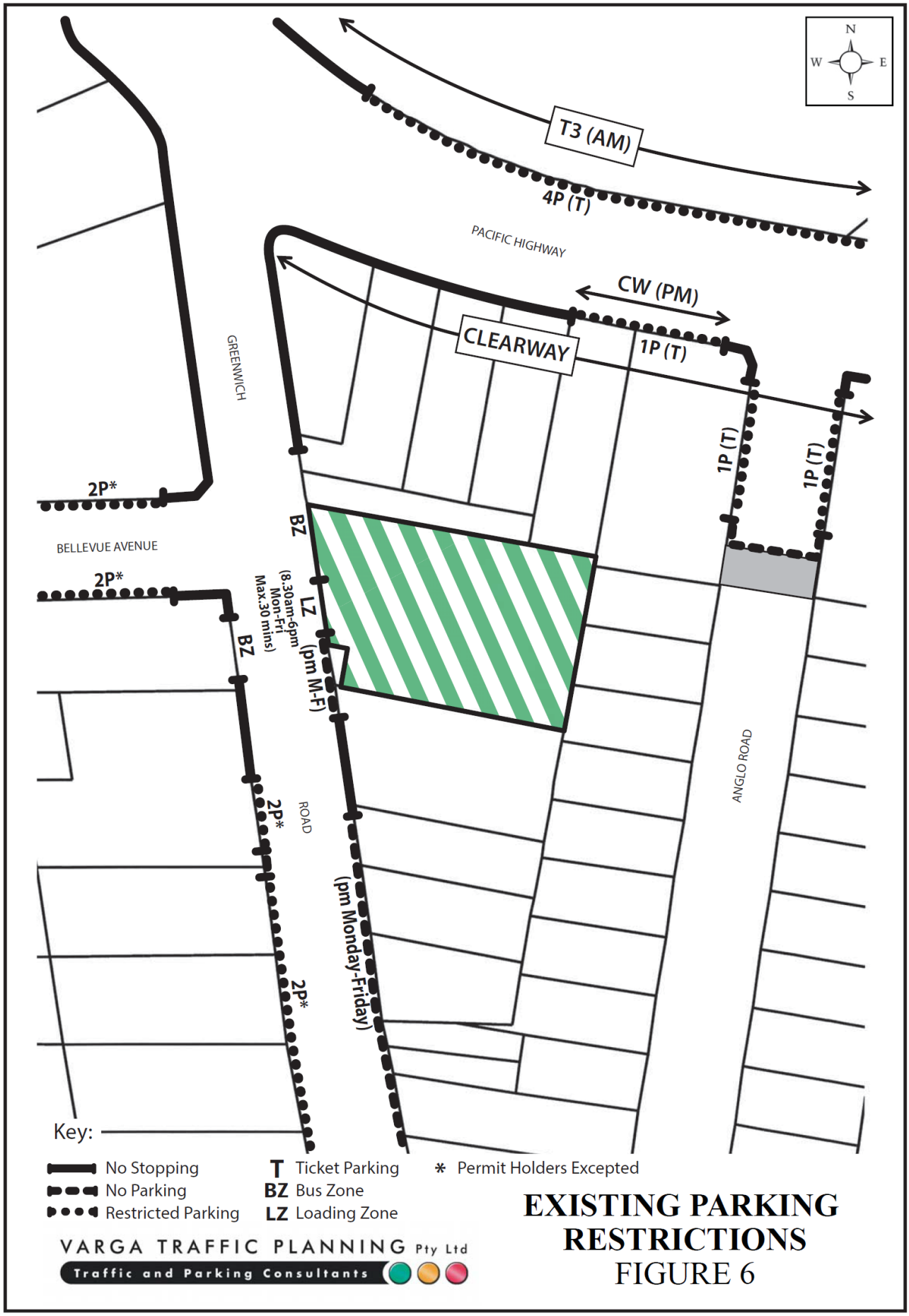
- NO STOPPING restrictions along both sides of Greenwich Road, in between the Pacific Highway and Bellevue Avenue

- a BUS ZONE located directly outside the northern portion of the Greenwich Road site frontage as well as directly opposite the site, just south of Bellevue Avenue

- a LOADING ZONE located directly outside the southern portion of the Greenwich Road site frontage (8.30am-6.00pm Monday to Friday – Maximum 30 minutes)

- 2 HOUR PARKING restrictions along the western side of Greenwich Road, south of Bellevue Avenue, as well as both sides of Bellevue Avenue (Permit Holders Excepted)

- NO PARKING restrictions along the eastern side of Greenwich Road, south of the site, during the weekday afternoon peak period.



EXISTING PARKING RESTRICTIONS
FIGURE 6

Off-Street Parking Provisions

The off-street parking requirements applicable to the seniors living residential component of the development proposal are specified in the *State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004* document, which specifies the following off-street car parking rates:**Division 4 Self-contained dwellings**

50 Standards that cannot be used to refuse development consent for self-contained dwellings

(2) A consent authority must not refuse consent to a development application made pursuant to this Chapter for the carrying out of a development for the purpose of a self-contained dwelling (including in-fill self-care housing and serviced self-care housing) on any of the following grounds:

(h) Parking: if at least the following is provided:

(i) 0.5 car spaces for each bedroom where the development application is made by a person other than a social housing provider, or

(ii) 1 car space for each 5 dwellings where the development application is made by, or is made by a person jointly with, a social housing provider.

It should be noted that the *SEPP* does *not* nominate an off-street parking rate for visitors. For the purposes of this assessment, the off-street parking rate of *1 space per 4 dwellings* nominated in Council's *Development Control Plan 2016, Part R: Traffic, Transport and Parking, Table 1 – Car Parking Rates* document, has been adopted.

The off-street parking requirements applicable to the commercial/retail component of the development proposal is also specified in Council's *DCP 2016, Part R: Traffic, Transport and Parking, Table 1 – Car Parking Rates* document in the following terms:

Office or business premises
1 space per 60m^2 GFA *plus*
1 disabled space per 10 cars (minimum 1 disabled space)

Café/Retail
1 space per 40m^2 GFA *plus*
1 disabled space per 20 cars (minimum 1 disabled space)

Council's *DCP 2016* does not however nominate an off-street parking rate for gallery/libraries/wellness centre. For the purposes of this assessment therefore, the

abovementioned "retail/café" rate has been adopted in respect of the gallery/library component of the development proposal.

Application of the above parking requirements to the various components of the development proposal yields an off-street parking requirement of 70 parking spaces as set out below:

Seniors living residential apartments (40 dwellings):	49.5 spaces
Seniors living residential visitors (40 dwellings):	10.0 spaces
Café (63m^2):	1.6 spaces
Gallery/library (109m^2):	2.7 spaces
Commercial suite (146m^2):	2.5 spaces
Wellness centre (140m^2):	3.5 spaces
TOTAL:	**69.8 spaces**

The proposed development makes provision for a total of 76 off-street parking spaces, including a number of disabled/adaptable spaces, thereby satisfying the *SEPP* and Council's parking requirements.

The geometric design layout of the proposed car parking facilities have been designed to comply with the relevant requirements specified in the Standards Australia publication *Parking Facilities Part 1 - Off-Street Car Parking AS2890.1* and *Parking Facilities Part 6 - Off-Street Parking for People with Disabilities AS2890.6* in respect of parking bay dimensions, aisle widths, ramp gradients and transitions and overhead clearances.

The vehicular access arrangements have been designed to accommodate the swept turning path requirements of the B99 design vehicle and B85 design vehicle passing each other at the ramp junctions, simultaneously and in a staged arrangement without difficulty. Furthermore, a series of swept turning paths of a B85 design vehicle have been prepared which shows the cars accessing a sample of parking spaces also without difficulty, and are reproduced in the following pages.

Waste Collection Arrangements

Waste collection is expected to be undertaken from within the upper level basement car parking area using Council's waste contractor and their mini garbage truck, which is similar

in size to a standard SRV truck, albeit with a reduced overhead clearance requirement of 2.6m and a maximum gradient of 20% on the driveway.

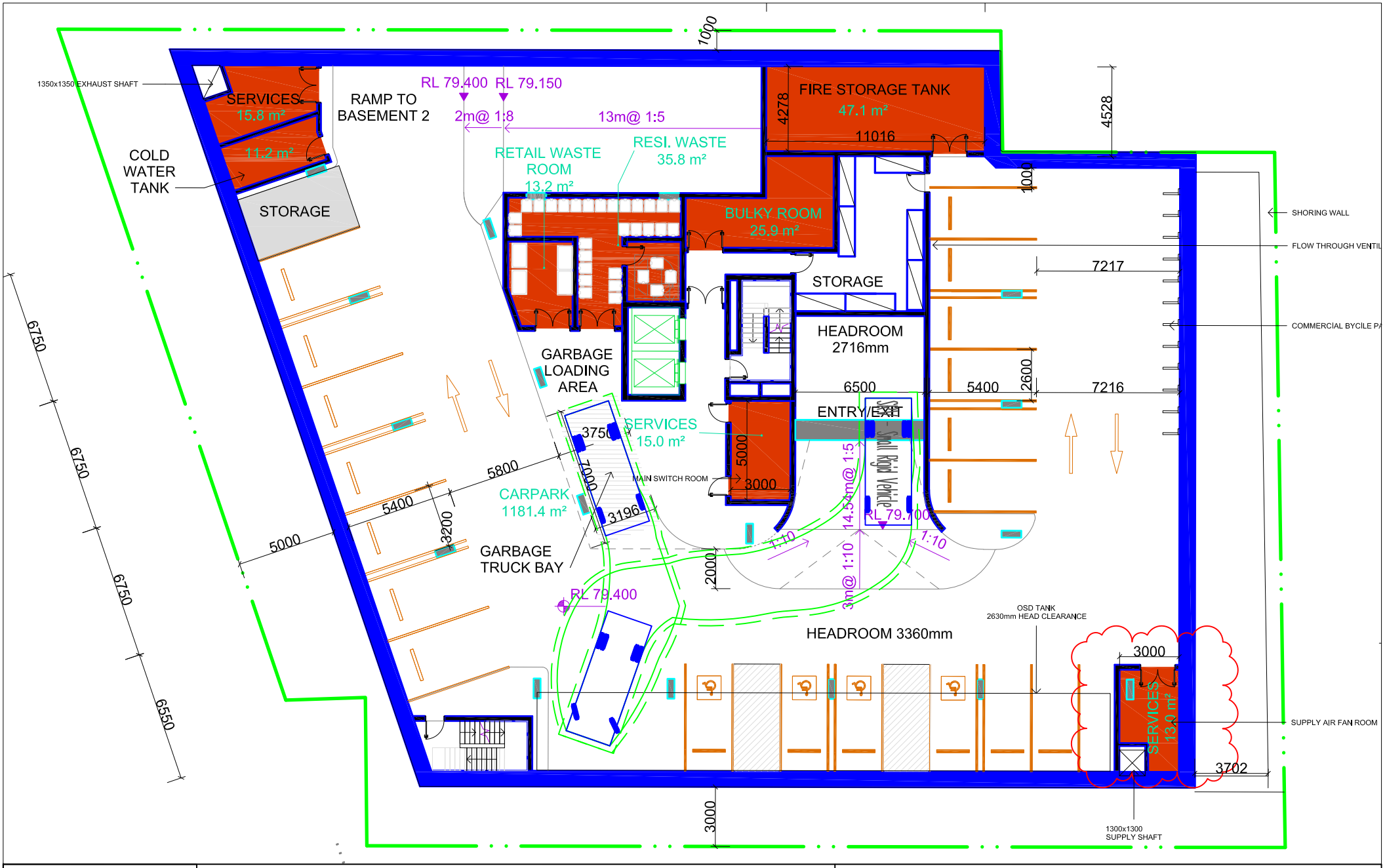
The vehicular access ramp and manoeuvring area have therefore been designed to accommodate the swept turn path requirements of these trucks, allowing them to enter and exit the site in a forward direction at all times as reproduced in the following pages.

Conclusion

The foregoing assessment has found that the projected traffic flows associated with the development proposal are *less* than the former private hospital building on the site and *less* than the planning proposal on the site. The development proposal is therefore *not* expected to result in any appreciable increases in delays, nor will any road upgrades/improvements/widening be required.

Furthermore, the proposed development satisfies the parking and loading requirements of the *SEPP* and *DCP 2016*.

It is therefore reasonable to conclude that the proposed development will not have any unacceptable implications in terms of road network capacity or off-street parking/loading/access requirements.



VARGA TRAFFIC PLANNING Pty Ltd
ABN 88 071 762 537
Suite 6, Level 1
20 Young Street
Neutral Bay, NSW 2089

Phone +61 2 9904 3224
PO Box 1868
Neutral Bay, NSW 2089
www.vargatraffic.com.au
Sydney, Australia

PROJECT
SENIORS LIVING DEVELOPMENT

N

DRAWING TITLE
Basement 1: 6.4m SRV Truck Entry Swept Turning Path

1:250 @ A4

ADDRESS
2 Greenwich Road, Greenwich

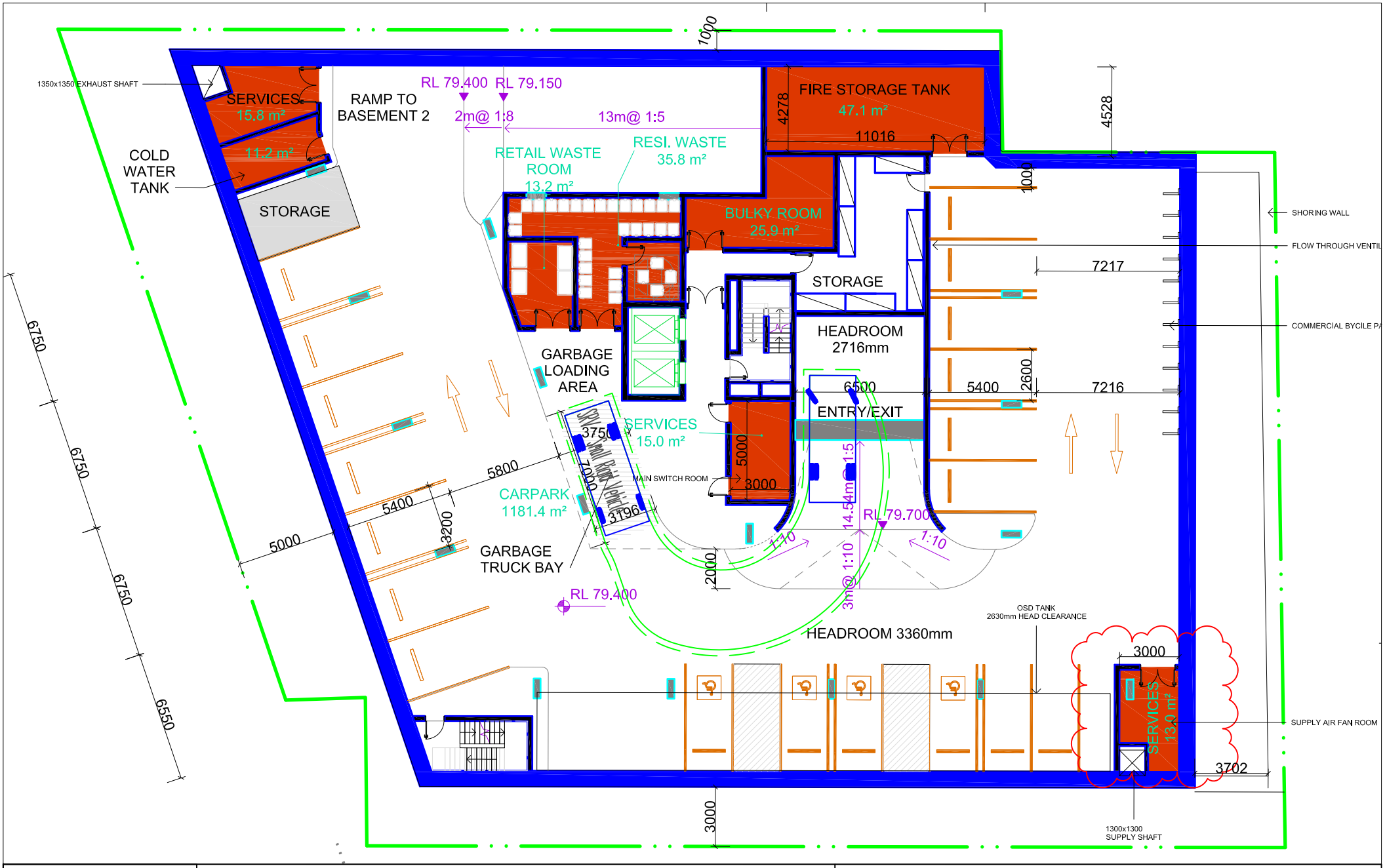
PROJECT NO.
19657

REVIEWED
CP

DATE DRAWN
2020-4-29

PREPARED
TN

VARGA TRAFFIC PLANNING Pty Ltd
Transport, Traffic and Parking Consultants



VARGA TRAFFIC PLANNING Pty Ltd
ABN 88 071 762 537
Suite 6, Level 1
20 Young Street
Neutral Bay, NSW 2089

Phone +61 2 9904 3224
PO Box 1868
Neutral Bay, NSW 2089
www.vargatraffic.com.au
Sydney, Australia

PROJECT
SENIORS LIVING DEVELOPMENT

N

DRAWING TITLE
Basement 1: 6.4m SRV Truck Exit Swept Turning Path

1:250 @ A4

ADDRESS
2 Greenwich Road, Greenwich

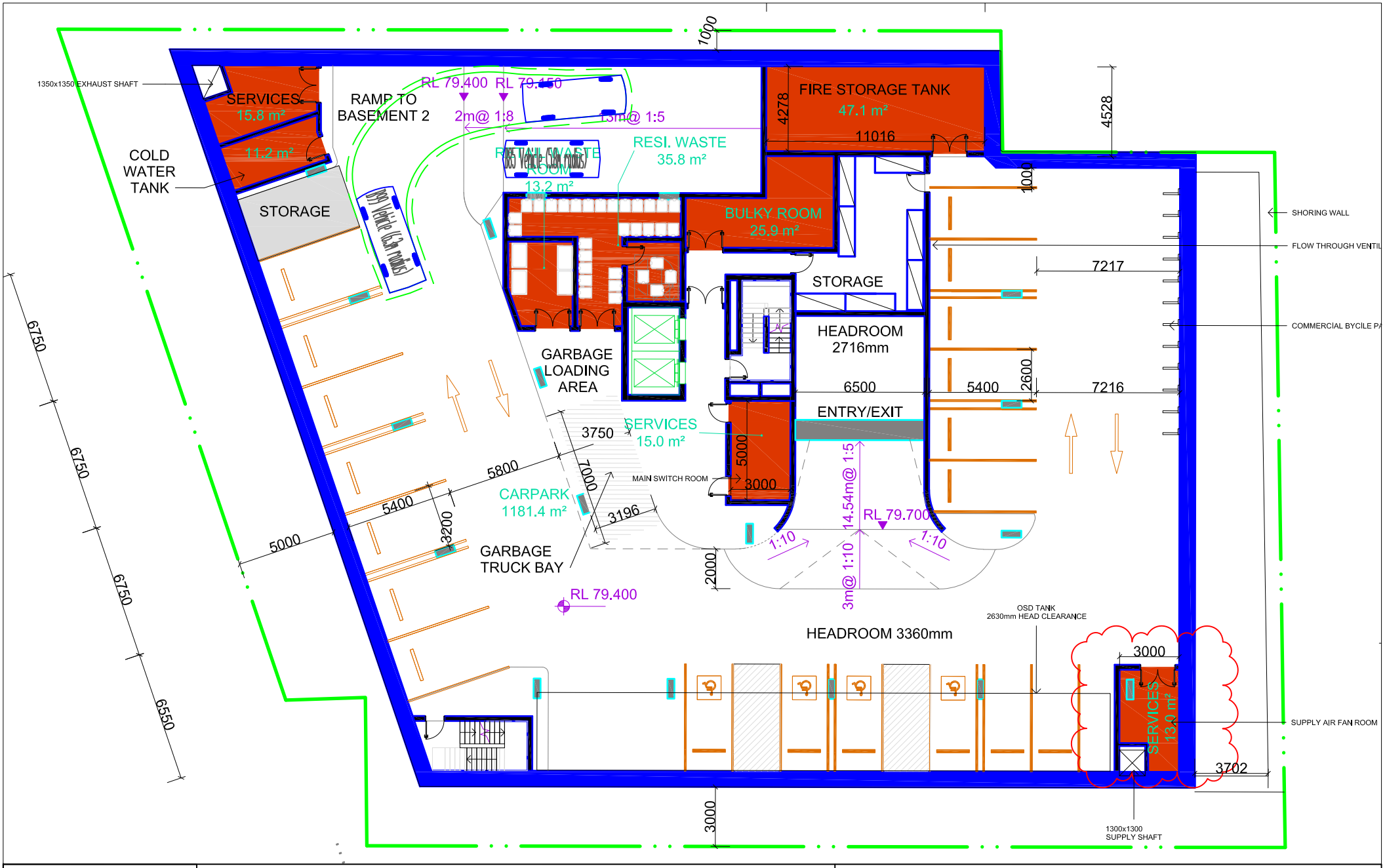
PROJECT NO.
19657

DATE DRAWN
2020-4-29

REVIEWED
CP

PREPARED
TN

VARGA TRAFFIC PLANNING Pty Ltd
Transport, Traffic and Parking Consultants



VARGA TRAFFIC PLANNING Pty Ltd
ABN 88 071 762 537
Suite 6, Level 1
20 Young Street
Neutral Bay, NSW 2089

Phone +61 2 9904 3224
PO Box 1868
Neutral Bay, NSW 2089
www.vargatraffic.com.au
Sydney, Australia

PROJECT
SENIORS LIVING DEVELOPMENT

N

DRAWING TITLE
Basement 1: B99 & B85 Vehicle Swept Turning Paths - Stage 1

1:250 @ A4

ADDRESS
2 Greenwich Road, Greenwich

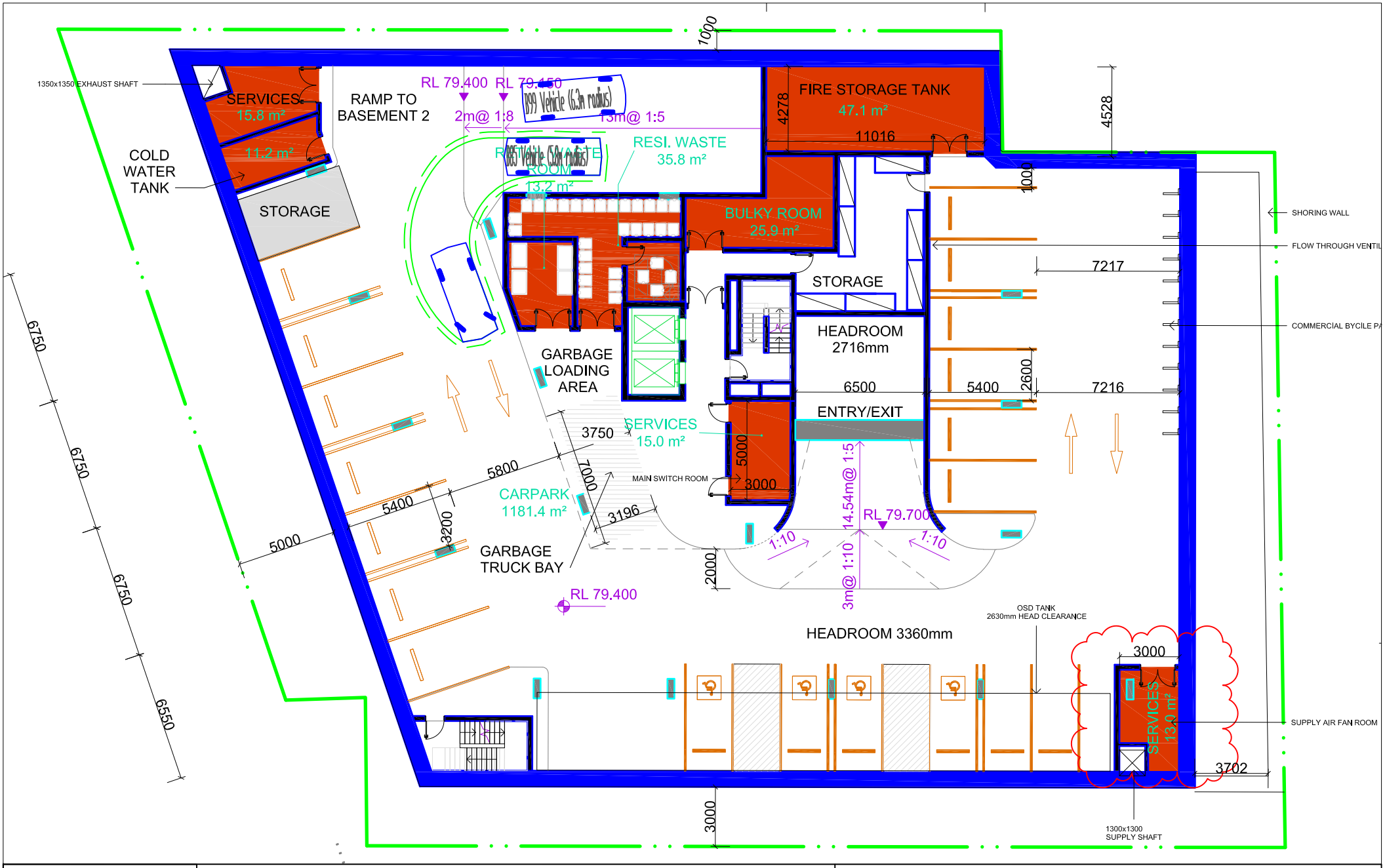
PROJECT NO.
19657

DATE DRAWN
2020-4-29

REVIEWED
CP

PREPARED
TN

VARGA TRAFFIC PLANNING Pty Ltd
Transport, Traffic and Parking Consultants



VARGA TRAFFIC PLANNING Pty Ltd
ABN 88 071 762 537
Suite 6, Level 1
20 Young Street
Neutral Bay, NSW 2089

Phone +61 2 9904 3224
PO Box 1868
Neutral Bay, NSW 2089
www.vargatraffic.com.au
Sydney, Australia

PROJECT
SENIORS LIVING DEVELOPMENT

N

DRAWING TITLE
Basement 1: B99 & B85 Vehicle Swept Turning Paths - Stage 2

1:250 @ A4

ADDRESS
2 Greenwich Road, Greenwich

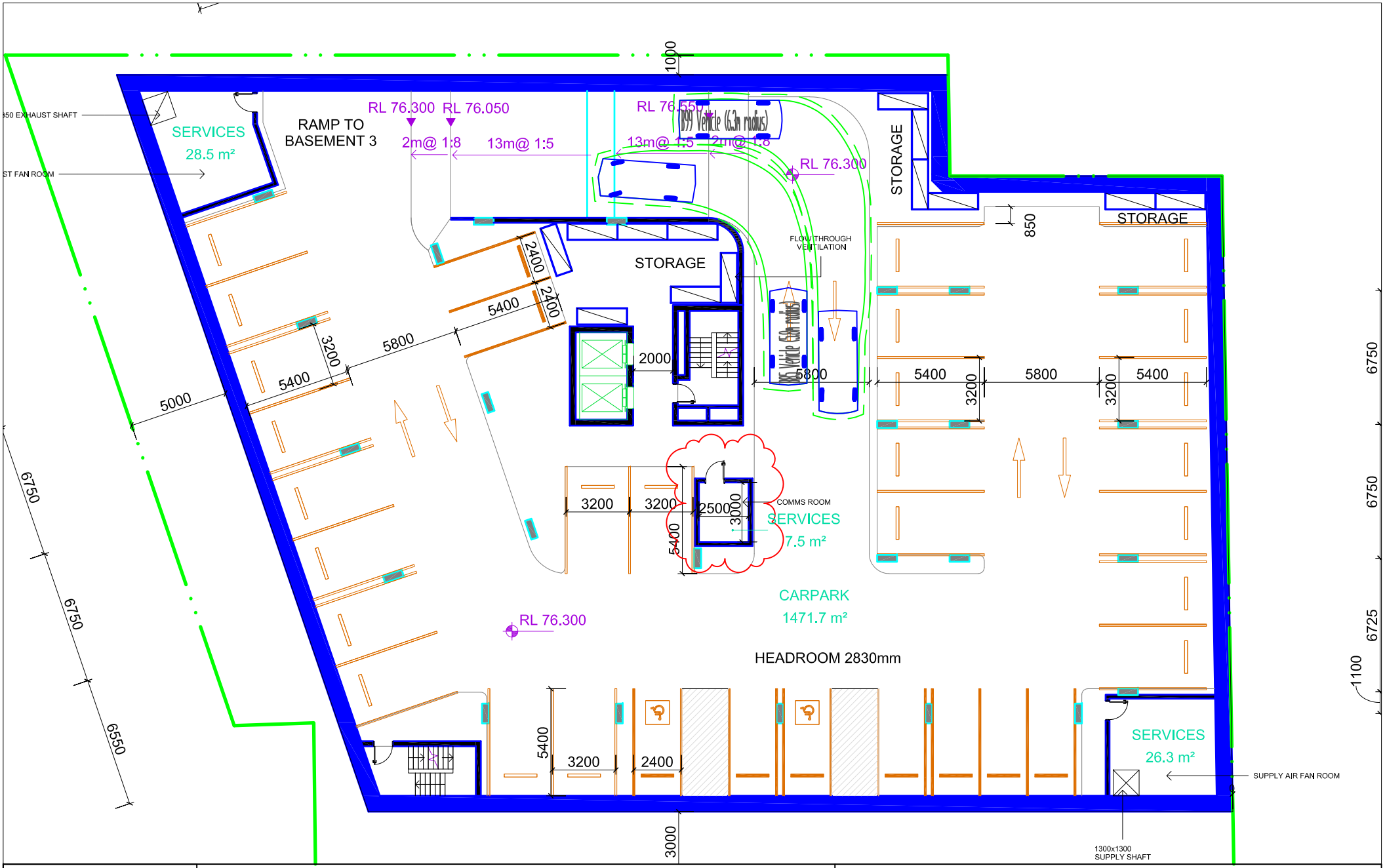
PROJECT NO.
19657

DATE DRAWN
2020-4-29

REVIEWED
CP

PREPARED
TN

VARGA TRAFFIC PLANNING Pty Ltd
Transport, Traffic and Parking Consultants



VARGA TRAFFIC PLANNING Pty Ltd
ABN 88 071 762 537
Suite 6, Level 1
20 Young Street
Neutral Bay, NSW 2089

Phone +61 2 9904 3224
PO Box 1868
Neutral Bay, NSW 2089
www.vargatraffic.com.au
Sydney, Australia

PROJECT
SENIORS LIVING DEVELOPMENT

N

DRAWING TITLE
Basement 2: B99 & B85 Vehicle Swept Turning Paths

1:250 @ A4

ADDRESS
2 Greenwich Road, Greenwich

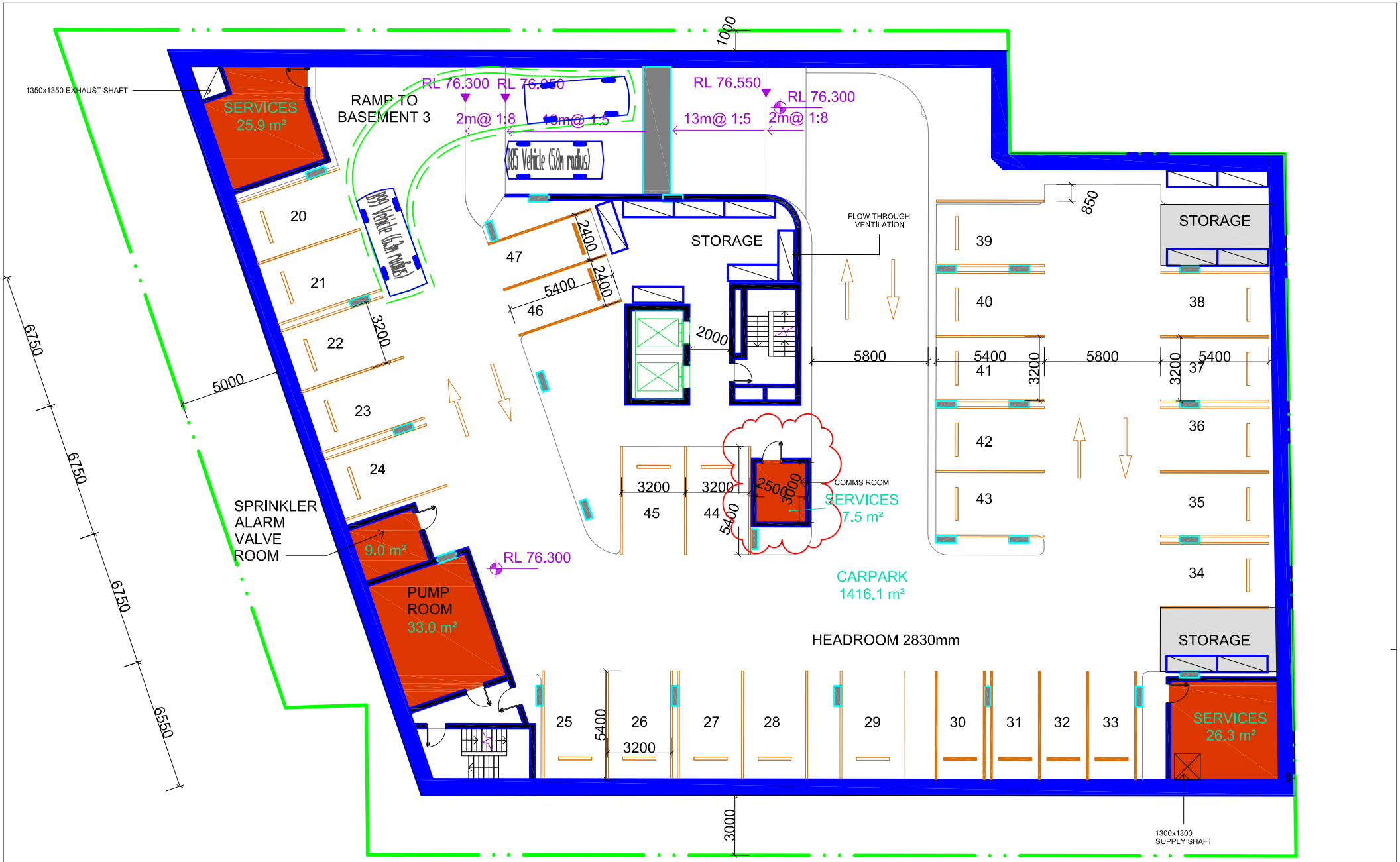
PROJECT NO.
19657

DATE DRAWN
2020-4-16

REVIEWED
CP

PREPARED
TN

VARGA TRAFFIC PLANNING Pty Ltd
Transport, Traffic and Parking Consultants



VARGA TRAFFIC PLANNING Pty Ltd
ABN 88 071 762 537
Suite 6, Level 1
20 Young Street
Neutral Bay, NSW 2089

Phone +61 2 9904 3224
PO Box 1868
Neutral Bay, NSW 2089
www.vargatraffic.com.au
Sydney, Australia

PROJECT
SENIORS LIVING DEVELOPMENT

N

DRAWING TITLE
Basement 2: B99 & B85 Vehicle Swept Turning Paths - Stage 1

1:250 @ A4

ADDRESS
2 Greenwich Road,
Greenwich

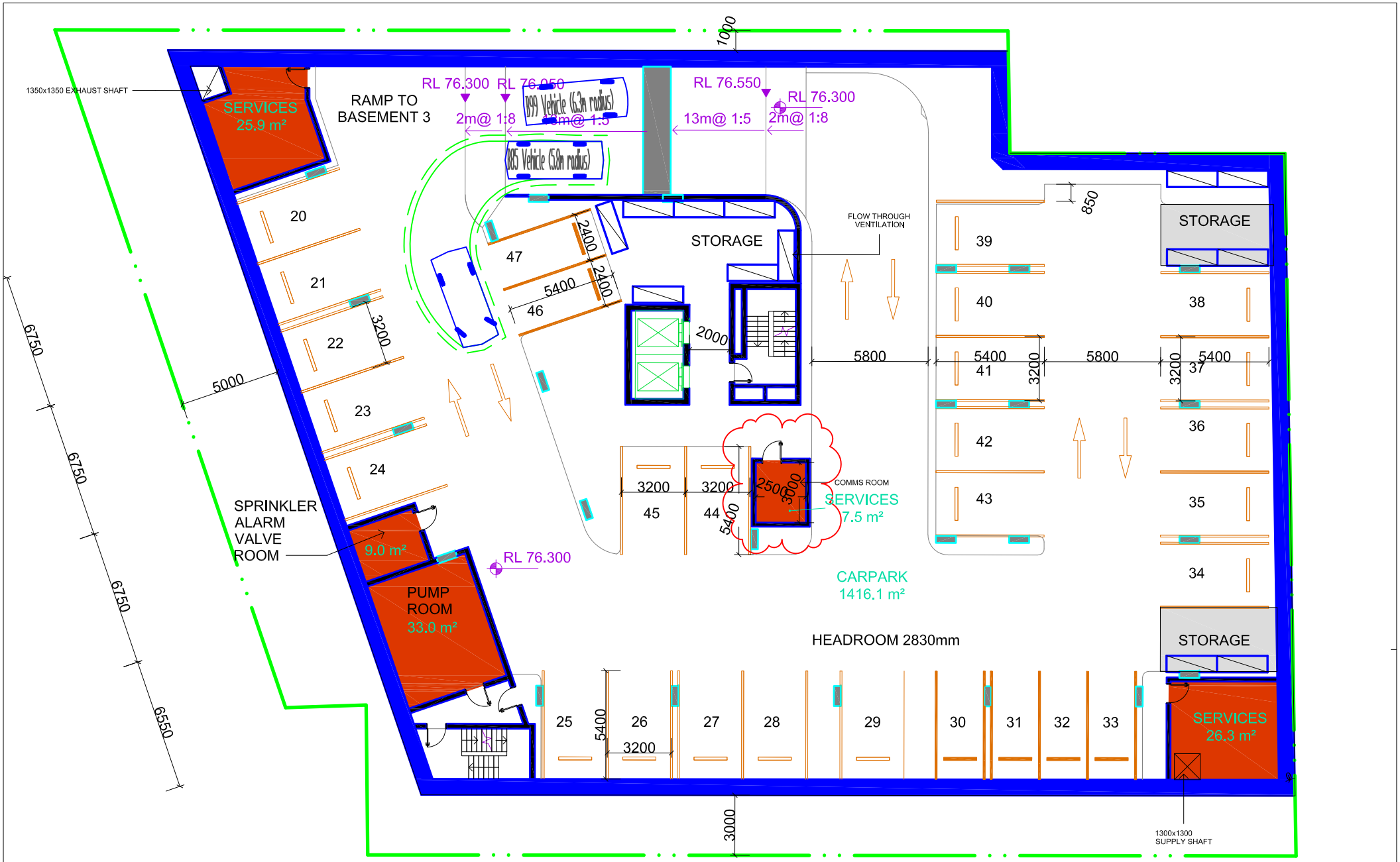
PROJECT NO.
19657

DATE DRAWN
2020-4-29

REVIEWED
CP

PREPARED
TN

VARGA TRAFFIC PLANNING Pty Ltd
Transport, Traffic and Parking Consultants



VARGA TRAFFIC PLANNING Pty Ltd
ABN 88 071 762 537
Suite 6, Level 1
20 Young Street
Neutral Bay, NSW 2089

Phone +61 2 9904 3224
PO Box 1868
Neutral Bay, NSW 2089
www.vargatraffic.com.au
Sydney, Australia

PROJECT
SENIORS LIVING DEVELOPMENT

N

DRAWING TITLE
Basement 2: B99 & B85 Vehicle
Swept Turning Paths - Stage 2

1:250 @ A4

ADDRESS
2 Greenwich Road,
Greenwich

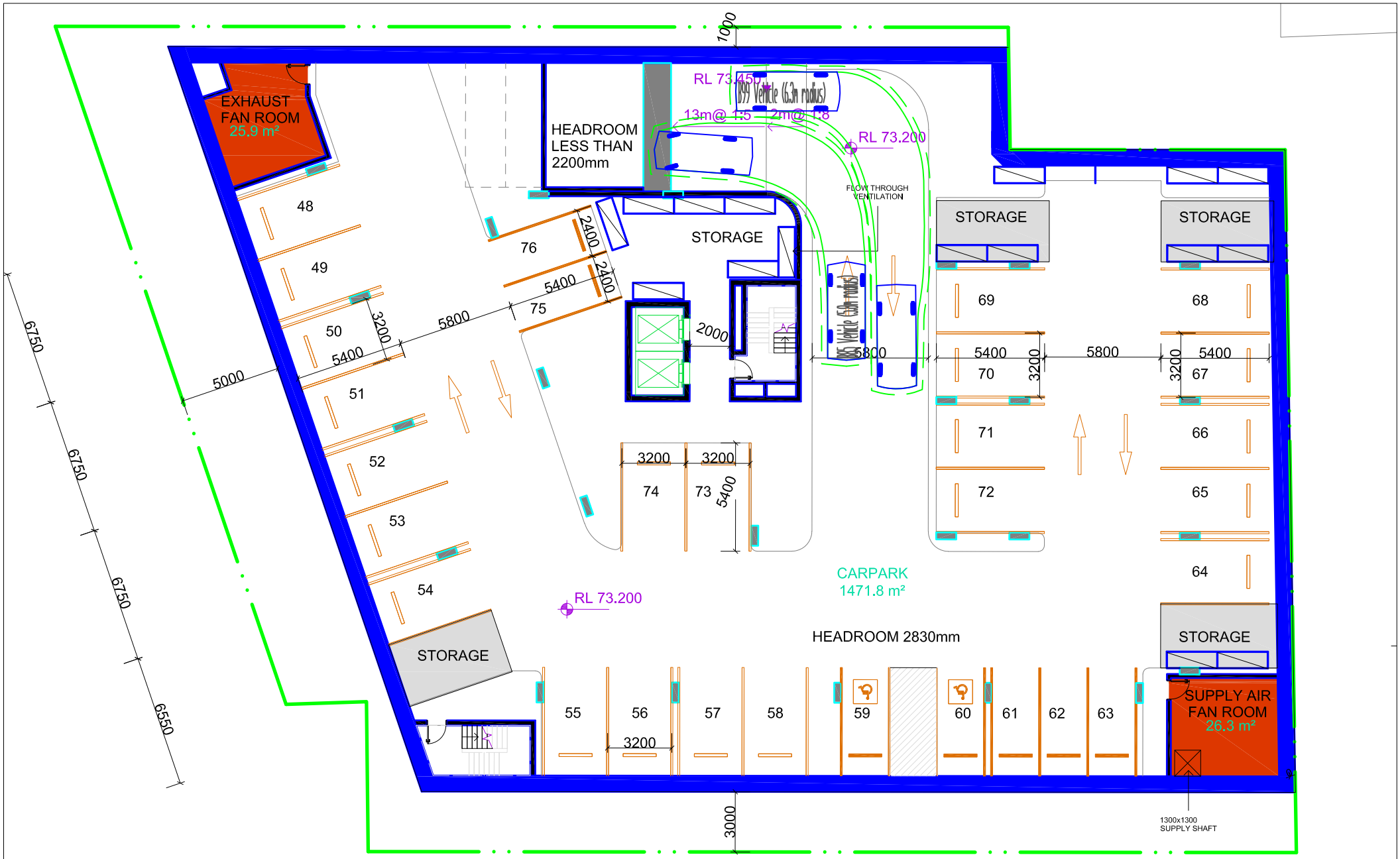
PROJECT NO.
19657

DATE DRAWN
2020-4-29

REVIEWED
CP

PREPARED
TN

VARGA TRAFFIC PLANNING Pty Ltd
Transport, Traffic and Parking Consultants



VARGA TRAFFIC PLANNING Pty Ltd
ABN 88 071 762 537
Suite 6, Level 1
20 Young Street
Neutral Bay, NSW 2089

Phone +61 2 9904 3224
PO Box 1868
Neutral Bay, NSW 2089
www.vargatraffic.com.au
Sydney, Australia

PROJECT
SENIORS LIVING DEVELOPMENT

N

DRAWING TITLE
Basement 3: B99 & B85 Vehicle Swept Turning Paths

1:250 @ A4

ADDRESS
2 Greenwich Road, Greenwich

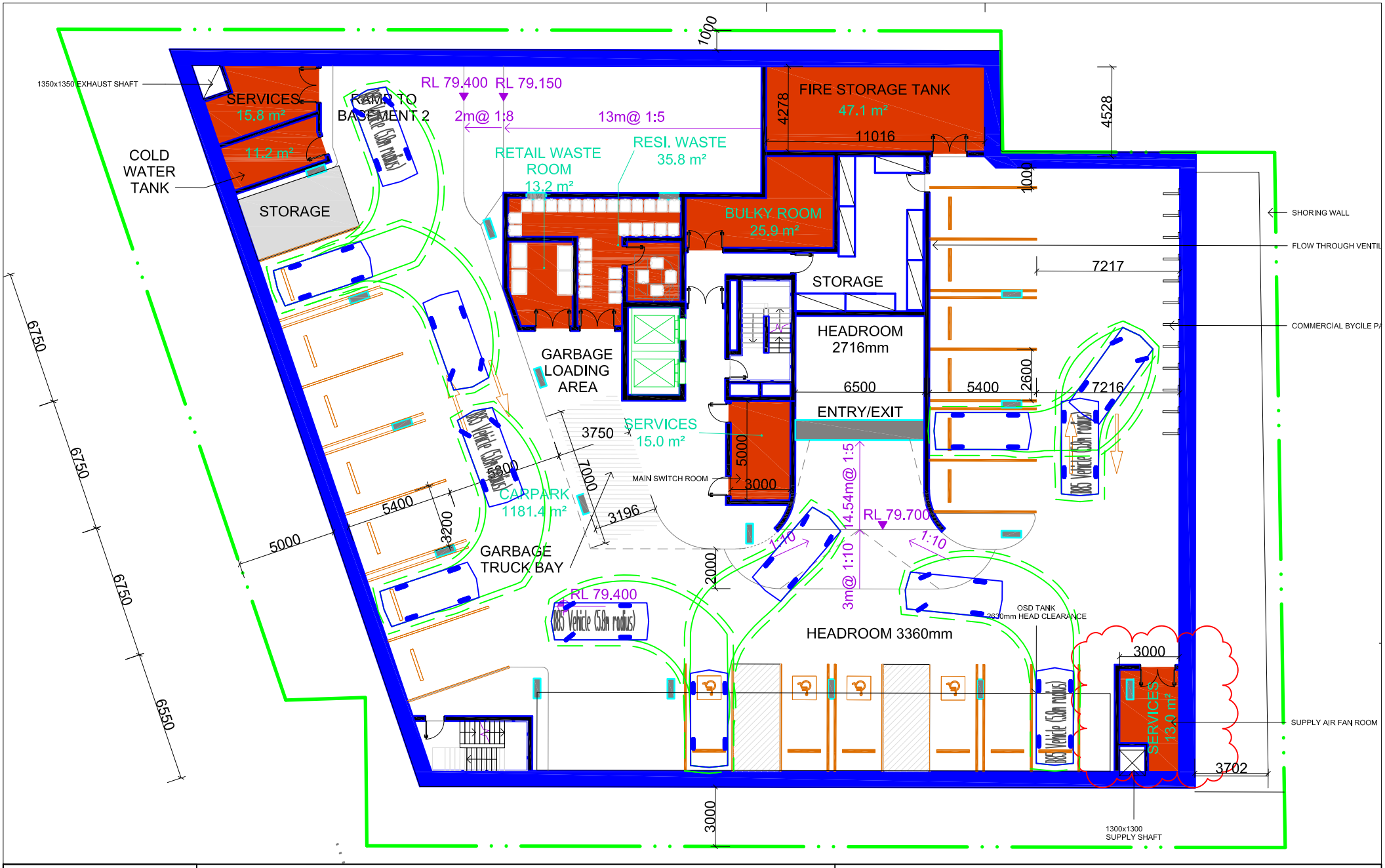
PROJECT NO.
19657

DATE DRAWN
2020-4-29

REVIEWED
CP

PREPARED
TN

VARGA TRAFFIC PLANNING Pty Ltd
Transport, Traffic and Parking Consultants



VARGA TRAFFIC PLANNING Pty Ltd
ABN 88 071 762 537
Suite 6, Level 1
20 Young Street
Neutral Bay, NSW 2089

Phone +61 2 9904 3224
PO Box 1868
Neutral Bay, NSW 2089
www.vargatraffic.com.au
Sydney, Australia

PROJECT
SENIORS LIVING DEVELOPMENT

N

DRAWING TITLE
Basement 1: B85 Vehicle Swept Turning Paths

1:250 @ A4

ADDRESS
2 Greenwich Road, Greenwich

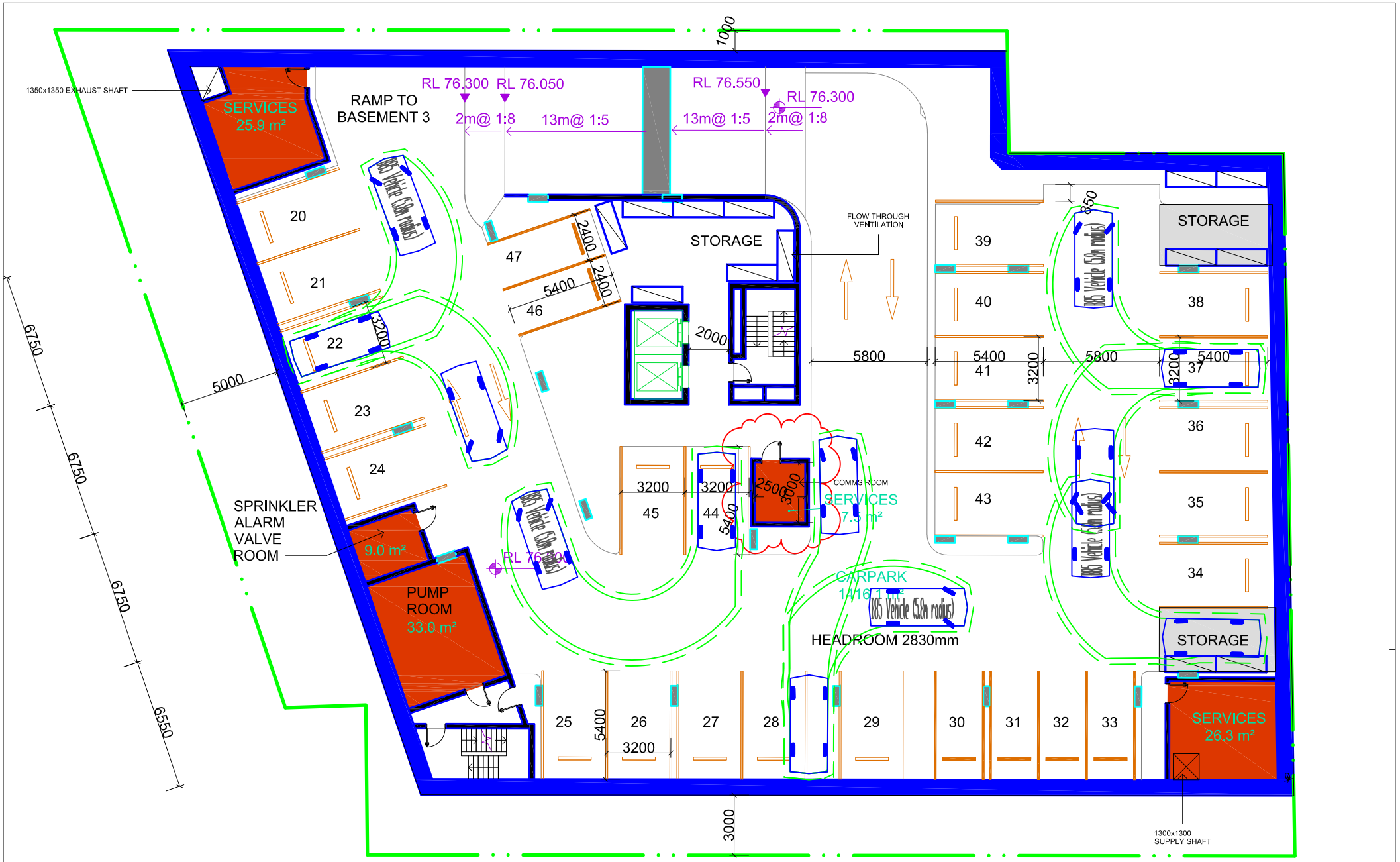
PROJECT NO.
19657

DATE DRAWN
2020-4-29

REVIEWED
CP

PREPARED
TN

VARGA TRAFFIC PLANNING Pty Ltd
Transport, Traffic and Parking Consultants



VARGA TRAFFIC PLANNING Pty Ltd
ABN 88 071 762 537
Suite 6, Level 1
20 Young Street
Neutral Bay, NSW 2089

Phone +61 2 9904 3224
PO Box 1868
Neutral Bay, NSW 2089
www.vargatraffic.com.au
Sydney, Australia

PROJECT
SENIORS LIVING DEVELOPMENT

DRAWING TITLE
Basement 2: B85 Vehicle
Swept Turning Paths

1:250 @ A4

ADDRESS
2 Greenwich Road,
Greenwich

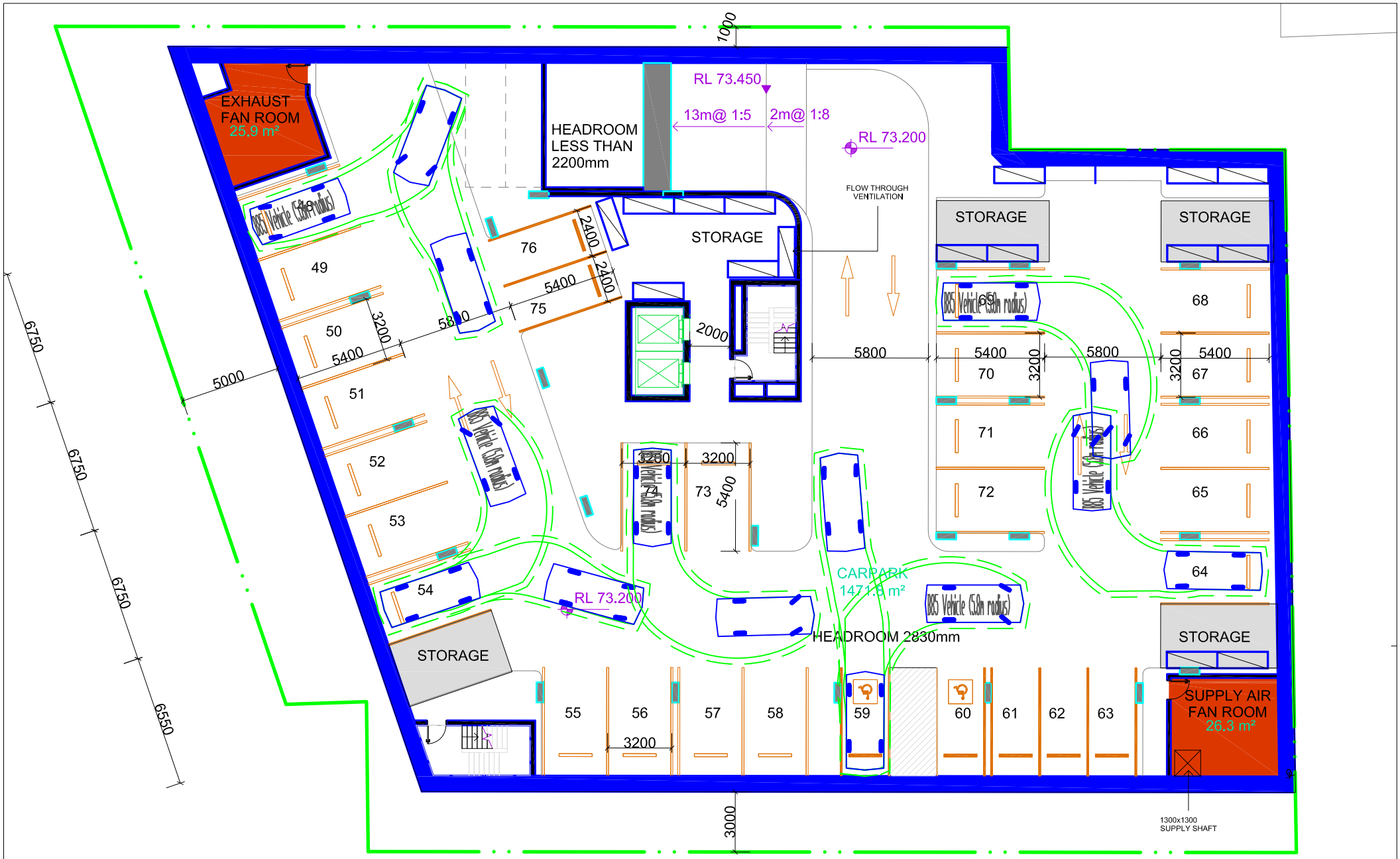
PROJECT NO.
19657

REVIEWED
CP

DATE DRAWN
2020-4-29

PREPARED
TN

VARGA TRAFFIC PLANNING Pty Ltd
Transport, Traffic and Parking Consultants



VARGA TRAFFIC PLANNING Pty Ltd
ABN 88 071 762 537
Suite 6, Level 1
20 Young Street
Neutral Bay, NSW 2089

Phone +61 2 9904 3224
PO Box 1868
Neutral Bay, NSW 2089
www.vargatraffic.com.au
Sydney, Australia

PROJECT
SENIORS LIVING DEVELOPMENT

DRAWING TITLE
Basement 3: B85 Vehicle Swept Turning Paths

1:250 @ A4

ADDRESS
2 Greenwich Road, Greenwich

PROJECT NO.
19657

DATE DRAWN
2020-4-29

REVIEWED
CP

PREPARED
TN

VARGA TRAFFIC PLANNING Pty Ltd
Transport, Traffic and Parking Consultants