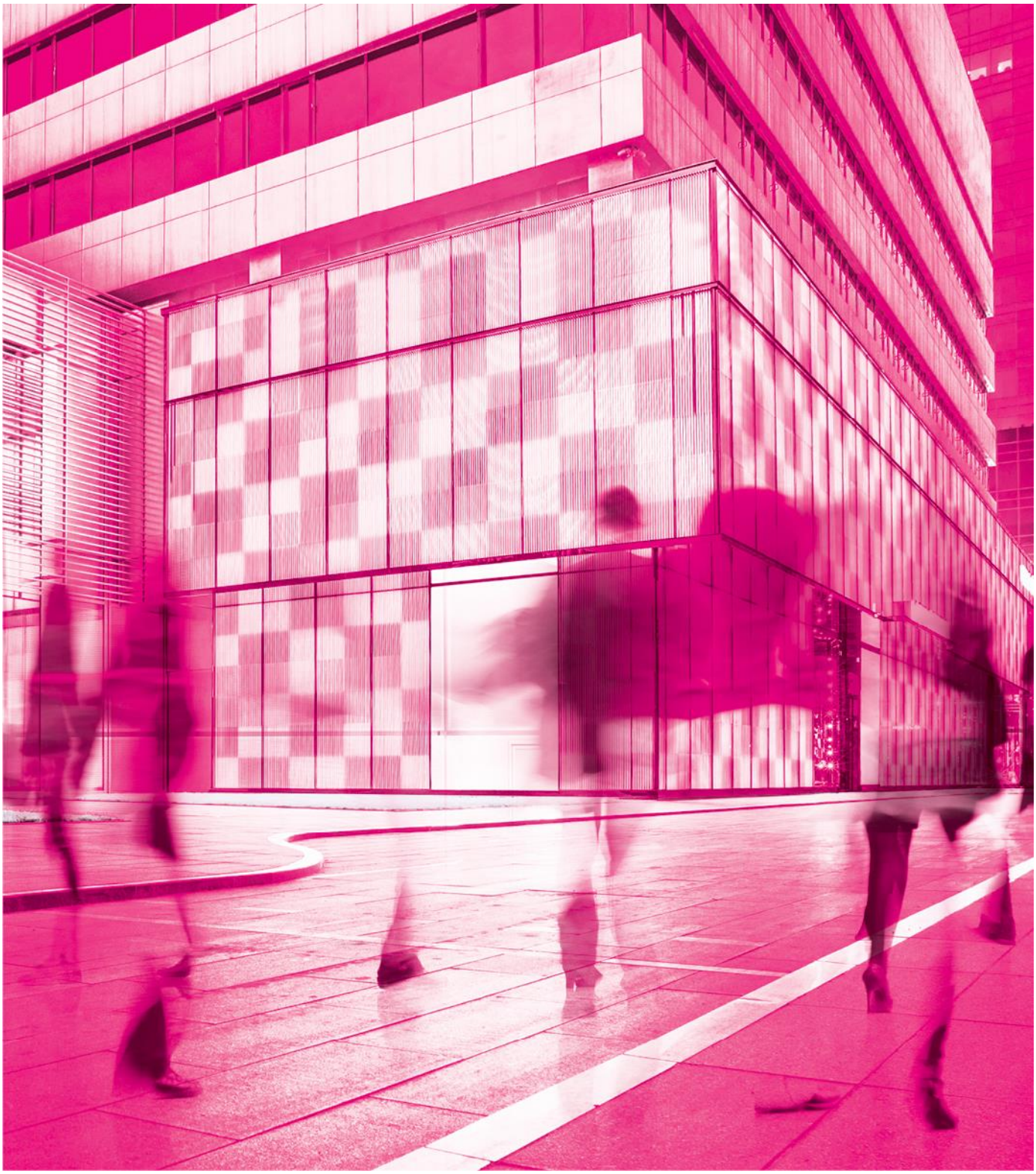

Traffic Impact Assessment;

52 Scott Street, Liverpool Civic Place Phase B BtR - State Significant Development Application

For BtR Residential Use

24 May 2024

parking;
traffic;
civil design;
wayfinding;

ptc.

Document Control

52 Scott Street, Liverpool Civic Place Phase B BtR - State Significant Development Application, Traffic Impact Assessment

Issue	Date	Issue Details	Author	Reviewed	For the attention of
1	24/11/23	Draft	PS/PB		Mireille Gasking
2	04/12/23	Draft	PS/PB		Mireille Gasking
3	15/12/23	Draft	PS/PB		Mireille Gasking
4	08/02/24	Draft	PB		Mireille Gasking
5	25/03/24	Final	PB	AM	Daniel Brabant
6	03/04/24	Final (Minor comments)	PB	AM	Daniel Brabant
7	24/05/24	Final (SSDA comments)	PB	AM	Daniel Brabant

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Contents

1. Introduction

1.1 Project Summary

This Traffic Impact Assessment (TIA) is submitted to the Department of Planning, Housing and Infrastructure (DPHI) on behalf of Built Development Group (Built) in support of a State Significant Development Application (SSDA) for a build-to-rent residential development within Phase B of the Liverpool Civic Place development located at 52 Scott Street, Liverpool. It follows the lodgement of a concurrent Amending DA (DA-72/2024) that seeks to allow for residential flat buildings and shop top housing uses to be permitted in the Phase B envelope through amending the approved Concept DA (DA-585/2019) which establishes the land uses, building envelopes, public domain and a multi-level common basement across the site.

The full Liverpool Civic Place site subject to the Concept DA is shown in Figure 1, however the scope of this SSDA is limited to Phase B, which is illustrated in Figure 1.

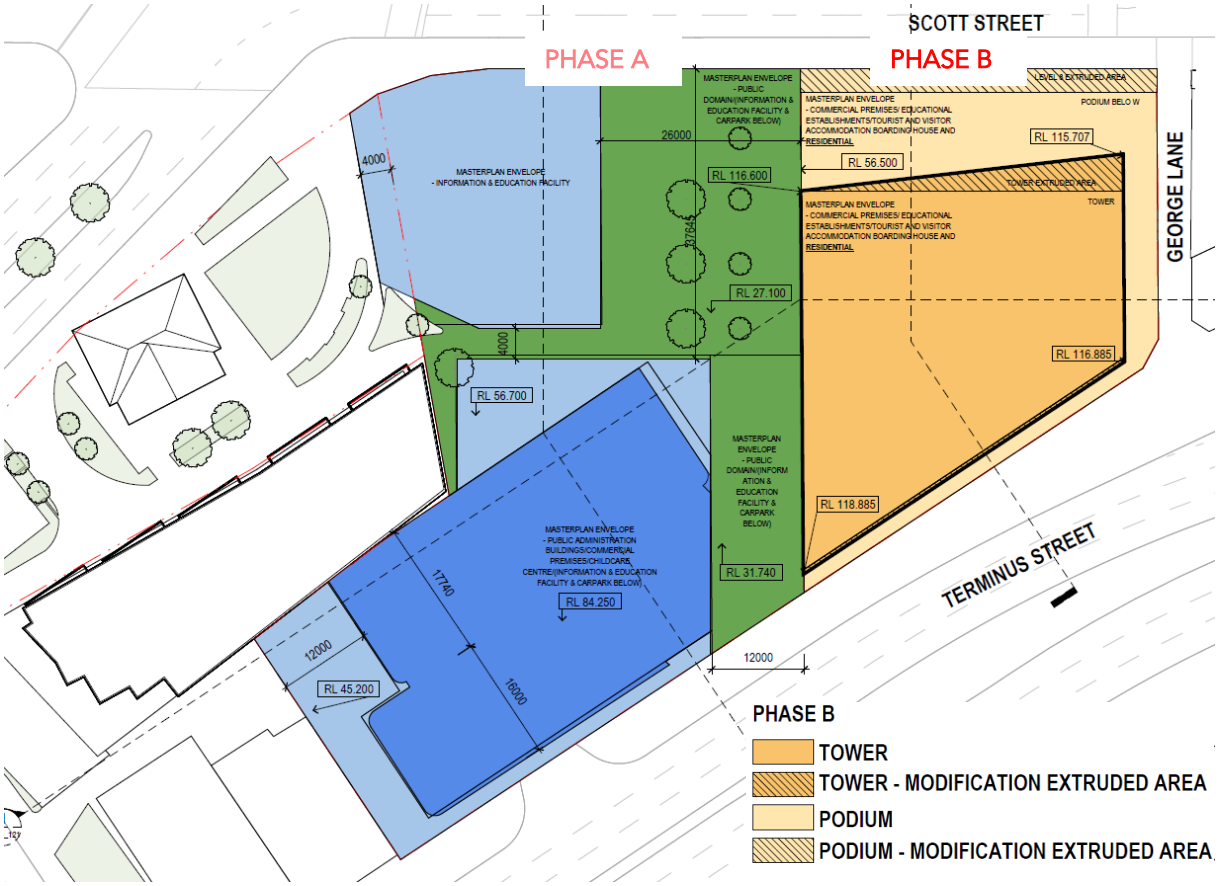

Figure 1 - Liverpool Civic Place Master Plan (as proposed to be amended by DA-72/2024)

This SSDA seeks approval for:

- Construction and use of a 28 storey build-to-rent residential development, comprising:
  - 320 dwellings;
  - ground floor lobby and retail tenancies;
  - internal amenity spaces throughout the building to service the build-to-rent residential use; and
  - Upper ground, level 9 podium rooftop and tower rooftop communal open spaces.
- Construction and use of three basement levels;
- Landscaping and public domain works; and
- Extension and augmentation of services and infrastructure as required.

This DA reflects the staged planning approval pathway for the Liverpool Civic Place redevelopment which has included four previously approved DAs and one DA currently under assessment, as outlined below:

1.1.1 Concept DA (DA-585/2019)

The planning approval pathway for the Liverpool Civic Place development commenced in 2019, with the submission of a Concept DA for the Liverpool Civic Place master plan. On 31 August 2020, the Concept DA (DA-585/2019) was approved by the Sydney Western City Planning Panel. The Concept DA consent sets out the future development concept of the site, including the approved land uses, building envelopes, an expanse of public domain and a common basement. The Concept Proposal / Stage 1 DA did not approve any physical works.

1.1.2 Amending DA (DA-72/2024)

An Amending DA has recently been submitted to Council and is currently under assessment. This Amending DA seeks consent to allow for residential flat buildings and shop top housing uses to be permitted in the Phase B envelope, as well as to slightly extend the Phase B envelope to allow for residential development to be accommodated in the envelope. The aforementioned proposed development will result in corresponding modifications to the abovementioned Concept DA Consent (DA-585/2019). The DA was submitted as the approved uses under DA-1080/2020 detailed under the relevant subheading below were determined to be unviable due to changed market conditions.

1.1.3 Early Works DA (DA-906/2019)

DA-906/2019 was approved by the Sydney Western City Planning Panel on 29 June 2020. The development consent relates to demolition of all structures, select tree removal and bulk earthworks including shoring through the use of piles. This involves approval to undertake earthworks and excavation of land at 52 Scott Street to a maximum depth of RL 10.35 to accommodate the required basement levels. The approved early works have been completed for Phase A of Liverpool Civic Place and are yet to commence for Phase B.

1.1.4 Phase A Detailed DA (DA-836/2020)

Development consent DA-836/2020 was granted by the Sydney Western City Planning Panel on 28 August 2021 for a detailed DA for the 'Phase A' part of the overall site. The proposed development relates to Phase A of the Liverpool Civic Place redevelopment for the construction and use of a public library, as well as a

mixed use building containing commercial office floor space, and public administration floor space to be occupied by Council. The proposal also comprises significant public domain works, including a public plaza and part of the site's five level common basement. All the abovementioned works have been completed for this development and the buildings received an Occupation Certificate in October 2023.

1.1.5 Phase B/C Detailed DA (DA-1080/2020)

Development consent (DA-1080/2020) was granted on 5 May 2022 for a detailed development on the Phase B site, including the construction and use of a 27 storey commercial office building, and a 9 storey co-living building, comprising ground level retail floor space, a four level basement, and landscaping and public domain works. This consent has not been activated as none of the aforementioned works have been undertaken. Further, the approved uses under this development consent have been determined to be unviable due to changed market conditions.

2. Site Context

2.1 Site Location

The site is located at 52 Scott Street in the southern side of the Liverpool CBD, as illustrated in Figure 2. The site is located approximately 300m southwest of Liverpool Railway Station and is also in the vicinity of a number of regionally significant land uses and features including Liverpool Hospital, Westfield Liverpool, Western Sydney University Liverpool Campus, the Georges River and Biggie Park public open space.

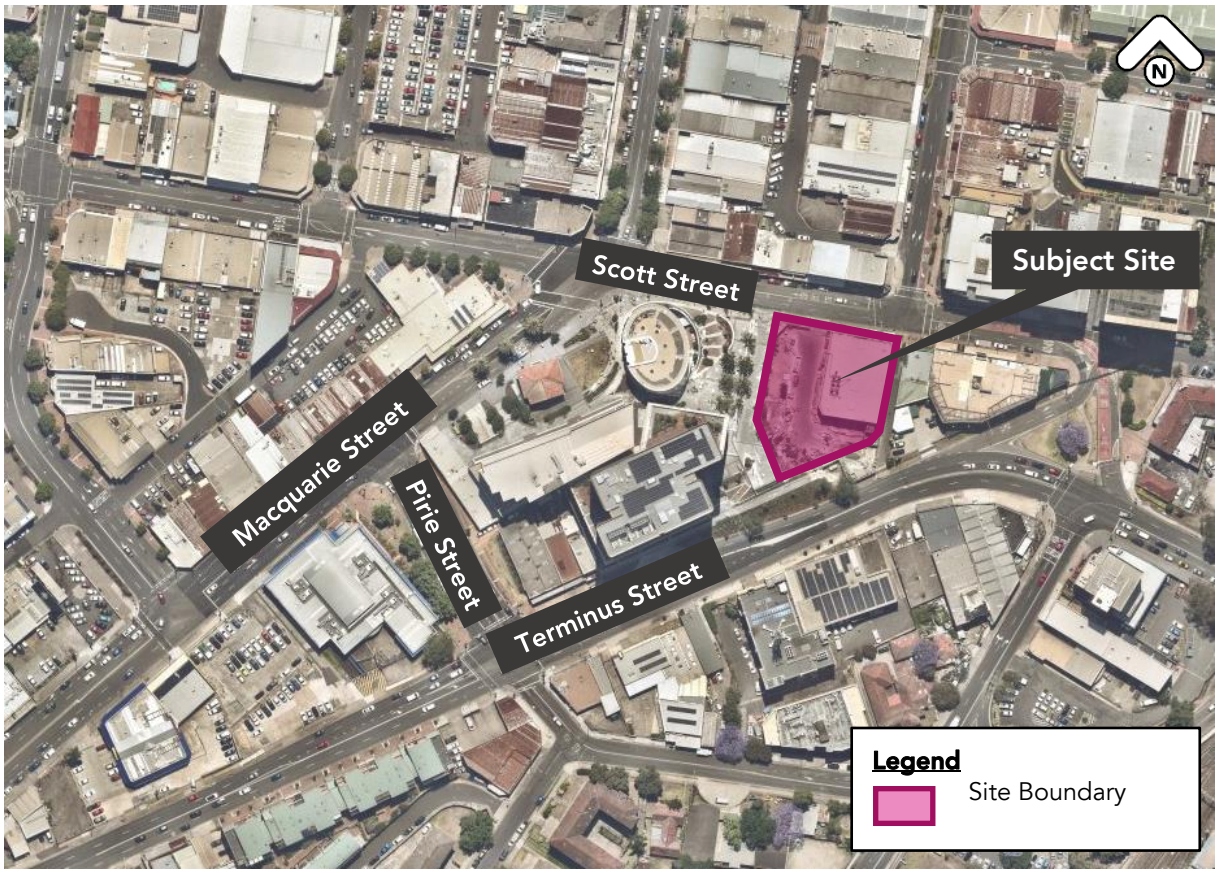

Figure 2 – Aerial view of the Subject Site (Source: Nearmap)

2.2 Site Description

The site is currently occupied by a two-storey commercial building with a large frontage to Scott Street, while the Phase A site (which shares access with the Phase B site) is occupied by the newly completed commercial and library buildings.

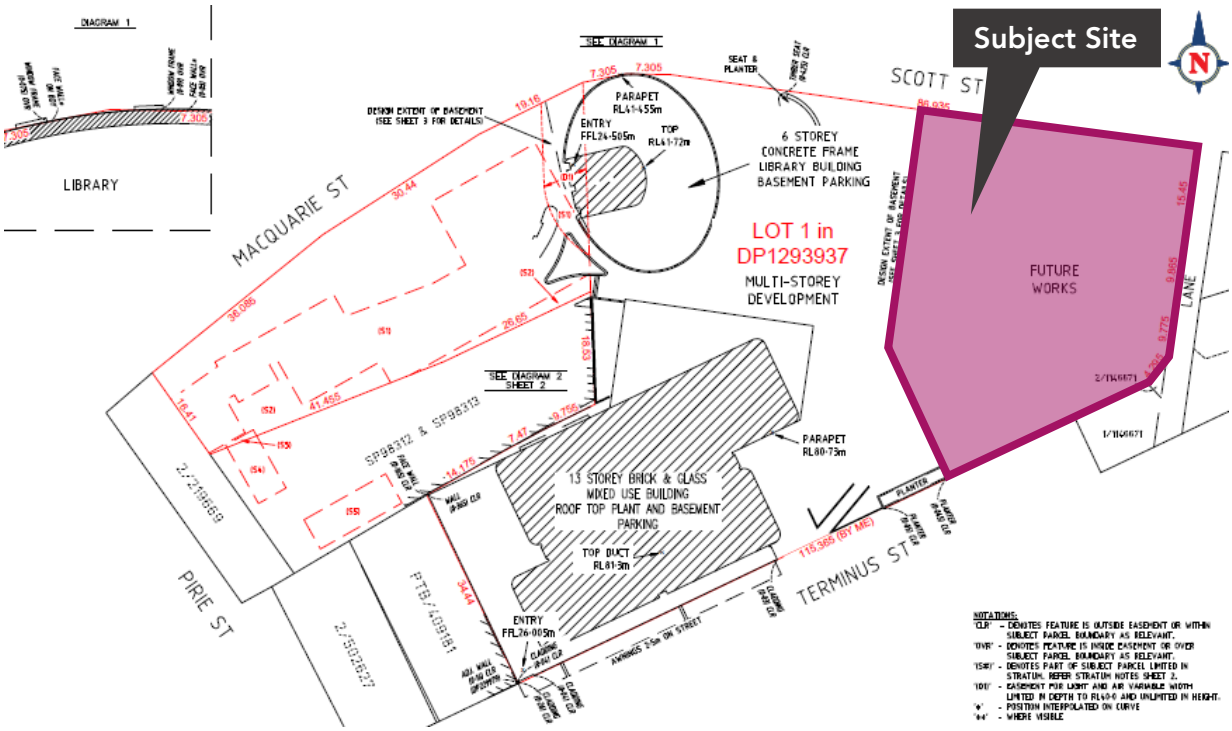

Figure 3 - Site and Lot Boundaries

2.3 Proposed Development

The SSDA is being submitted to enable build-to-rent residential development within Phase B of the Liverpool Civic Place. The proposed development includes an area of 267m^2 for retail activity and 320 apartments, comprising a yield of:

66 - studio apartments,

140 - one-bedroom apartments,

105 - two-bedroom apartments,

9 - three-bedroom apartments.

A basement accommodating 3 levels of car parking for 117 car spaces and 2 loading bays.

3. Existing Transport Facilities

3.1 Road Hierarchy

The subject site is located within Liverpool City Centre and is primarily serviced by Terminus Street (State Road) and local roads managed by Liverpool City Council.

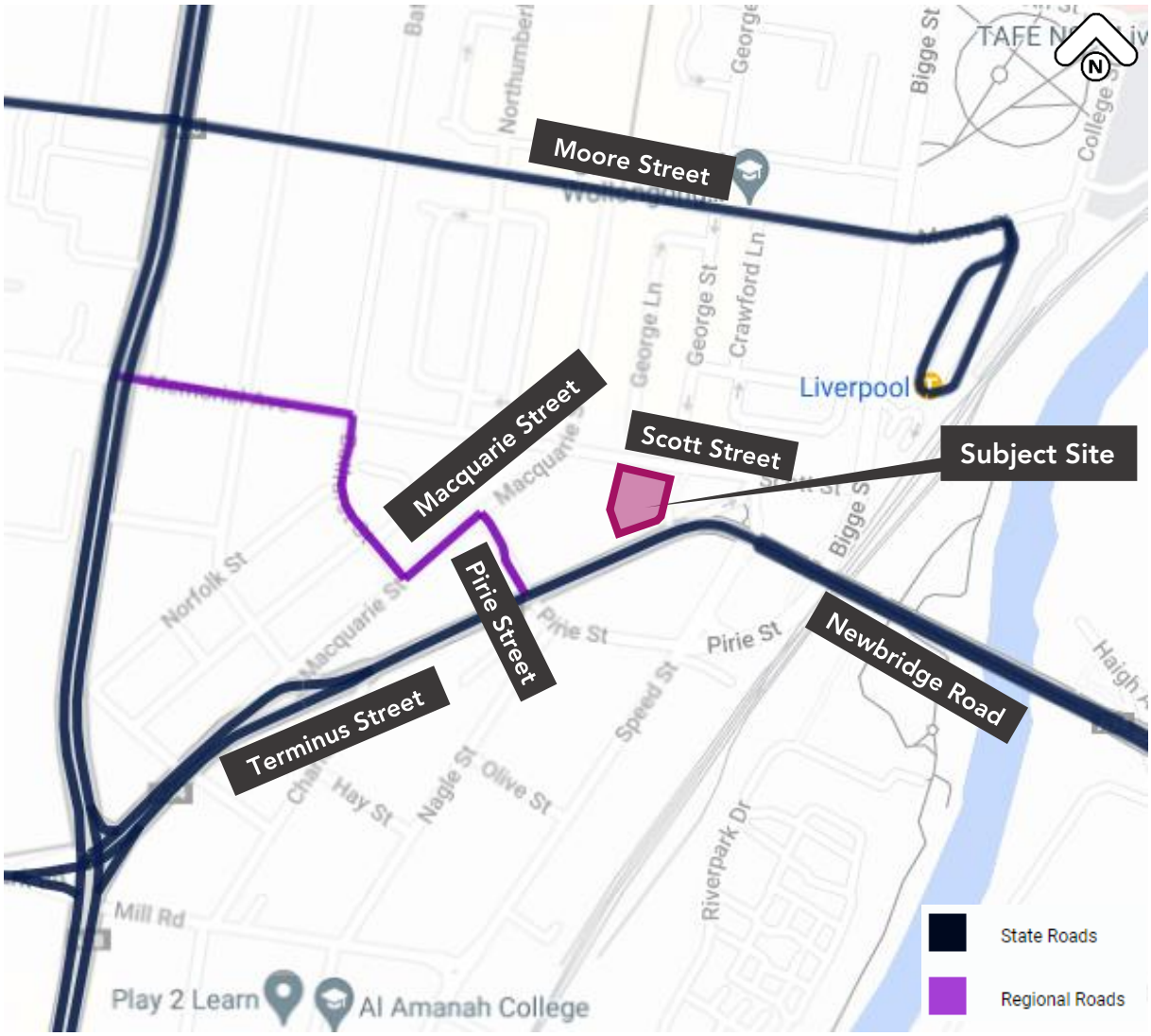

Figure 4 - Surrounding Road Network (Source: TfNSW)

The NSW administrative road hierarchy comprises the following road classifications, which align with the generic road hierarchy as follows:

State Roads	- Freeways and Primary Arterials (TfNSW Managed)
Regional Roads	- Secondary or sub arterials (Council Managed, partly funded by the State)
Local Roads	- Collector and local access roads (Council Managed)

Table 1 - Existing Road Network - Terminus Street

Terminus Street	
Road Classification	State Road
Alignment	East-West
Number of Lanes	Generally, 2 lanes in each direction
Carriageway Type	Undivided
Carriageway Width	15m
Speed Limit	60 km/h
School Zone	No
Parking Controls	No Stopping & Clearway 6am-10am & 3pm-7pm (Mon-Fri) eastbound, No Parking & Clearway 6am-10am & 3pm-7pm (Mon-Fri) westbound
Forms Site Frontage	Yes

Figure 5 - Terminus Street (Eastbound towards Newbridge Road)

Table 2 - Existing Road Network - Pirie Street

Pirie Street	
Road Classification	Regional Road
Alignment	North-South
Number of Lanes	Generally, 2 lanes in each direction
Carriageway Type	Undivided
Carriageway Width	18m
Speed Limit	50 km/h
School Zone	No
Parking Controls	No Stopping both sides
Forms Site Frontage	No

Figure 6 - Pirie Street (Southbound towards Terminus Street)

Table 3 - Existing Road Network - Macquarie Street

Macquarie Street	
Road Classification	Local / Regional Road
Alignment	North-South
Number of Lanes	Generally, 2 lanes in each direction
Carriageway Type	Varies, divided / undivided
Carriageway Width	17m
Speed Limit	50 km/h
School Zone	No
Parking Controls	No Stopping & 1P parking northbound, No Stopping southbound
Forms Site Frontage	No

Figure 7 - Macquarie Street (Northbound towards Scott Street)

Table 4 - Existing Road Network - Scott Street

Scott Street	
Road Classification	Local Road
Alignment	East-West
Number of Lanes	Generally, 2 lanes westbound, 1 lane eastbound
Carriageway Type	Divided
Carriageway Width	12m
Speed Limit	50 km/h
School Zone	No
Parking Controls	1P Ticket 9am-6pm (Mon-Fri) & 1P 9am-12:30pm Sat eastbound & No Stopping westbound
Forms Site Frontage	Yes

Figure 8 - Scott Street (Westbound towards Macquarie Street)

3.2 Public Transport

The locality has been assessed in the context of available forms of public transport that may be utilised to access the proposed Liverpool Civic Place. When defining accessibility, the NSW Guidelines to Walking & Cycling (2004) suggests that a walking catchment of 400-800 metres is a comfortable walking distance to the public transport.

The existing pedestrian walking infrastructure in the locality includes sidewalks on both sides of most roads, with a walking distance of around 350 meters to reach the Liverpool train station. Additionally, there are nearby bus stops in close proximity to the proposed development.

The 400 and 800m catchments are shown in Figure 9.

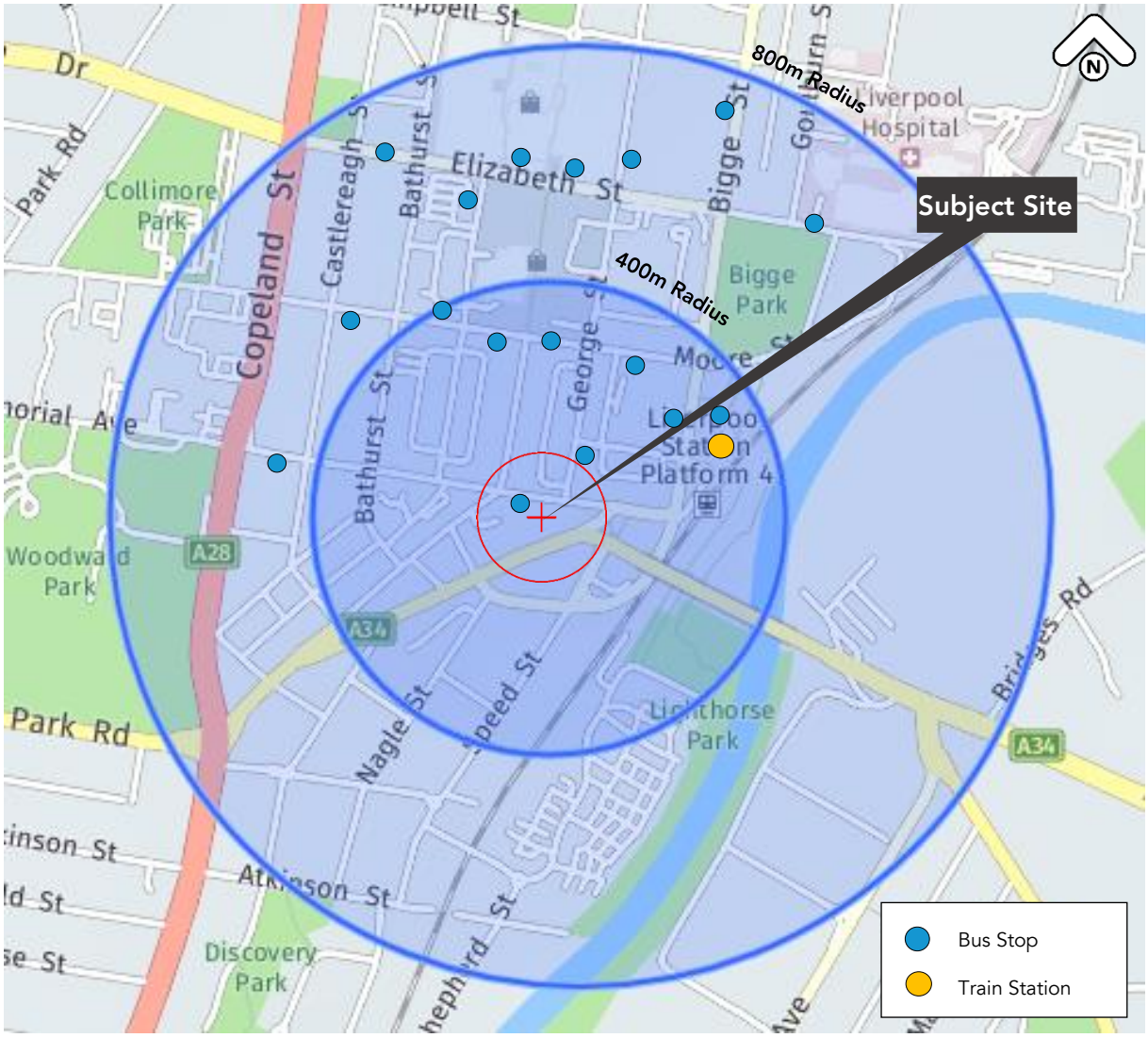

Figure 9 – 400 and 800m Catchments

3.2.1 Bus Services

The closest bus stops to the proposed LCP is located on Scott Street and George Street, as shown in Figure 10 below.

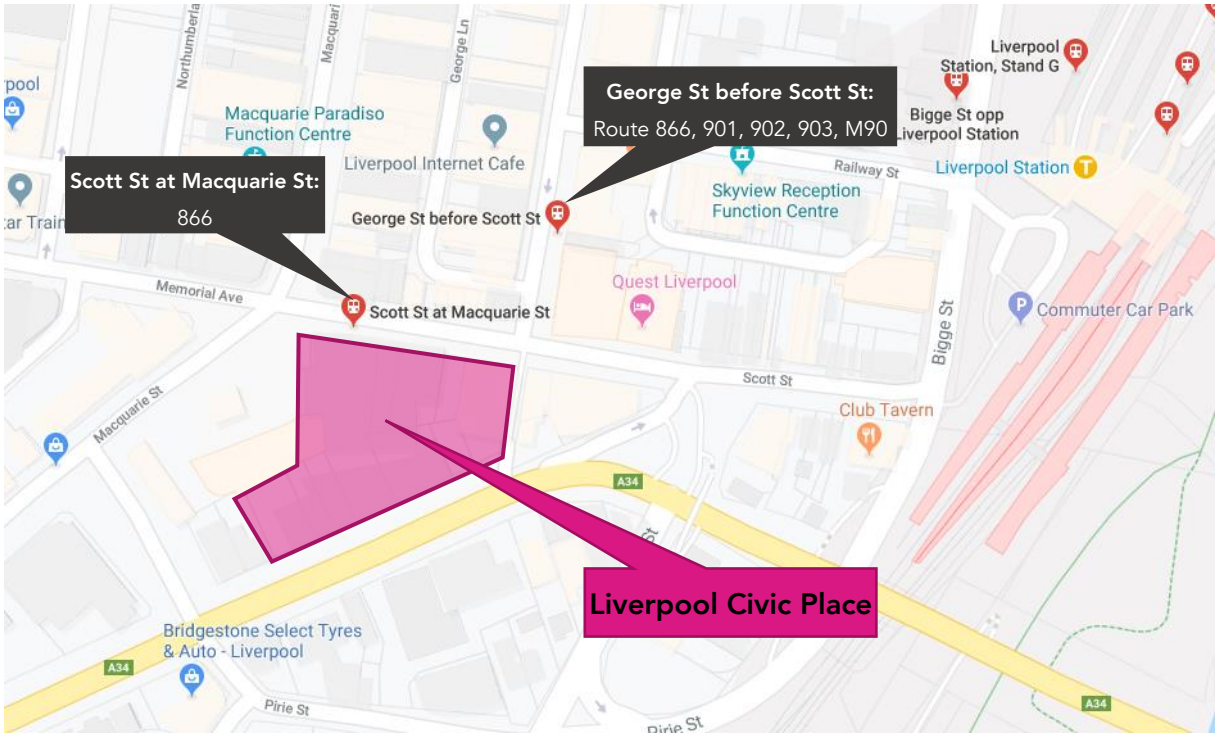

Figure 10 - Nearby Bus Stop Locations & Respective Bus Numbers

Table 5 - Bus Services Summary

Route No.	Coverage	Frequency (approximate)	Stop Location
866	Casula to Liverpool	Approximately every 30 minutes (Mon-Fri) Approximately every 1 hour (Sat, Sun & Public Holidays)	Scott St at Macquarie St
901	Holsworthy to Liverpool via Wattle Grove	Approximately every 30 minutes (Mon-Fri) Approximately every 1 hour (Sat, Sun & Public Holidays)	George St before Scott St
902	Holsworthy to Liverpool via Moorebank	Approximately every 30 minutes (Mon-Fri) Approximately every 1 hour (Sat, Sun & Public Holidays)	George St before Scott St
903	Liverpool to Chipping Norton (Loop Service)	Approximately every 30-40 minutes (Mon-Fri) Approximately every 1 hour (Sat) Approximately every 2 hours (Sun & Public Holidays)	George St before Scott St
M90	Burwood to Liverpool	Approximately every 10-15 minutes (Mon-Fri) Approximately every 20 minutes (Sat, Sun & Public Holidays)	George St before Scott St

3.2.2 Train Services

Liverpool Railway Station is located within comfortable walking distance to the proposed LCP, located on the T2 Inner West & Leppington Line, T3 Bankstown Line and T5 Cumberland Line, operated by Sydney Trains.

Table 6 - Train Services Summary

Train Line	From	To	Frequency (approx..)	Services operate approx. (Weekdays)	Services operate approx. (Weekends)
Inner West & Leppington	Leppington	City	Every 10-20 minutes More frequent during the peak hours	5:21am to 12:35am	3:57am to 12:27am
Inner West & Leppington	City	Leppington	Every 20-30 minutes More frequent during the peak hours	4:58am to 2:32am	5:24am to 2:17am
Bankstown	Liverpool	City	Every 10-15 minutes in the peak hours	3:54am to 12:24am	4:06am to 11:36pm
Bankstown	City	Liverpool	Every 15-20 minutes in the peak hours	6:02am to 2:32am	5:47am to 2:17am
Cumberland	Leppington	Richmond	Every 30 minutes	6:21 am to 12:18am	4:23am to 11:53pm
Cumberland	Richmond	Leppington	Every 30 minutes	7:19am to 12:28am	5:24am to 12:54am

The train services provide high frequency access between Liverpool, the City and neighbouring town centres, particularly during the commuter peak periods. The high frequency services make it a viable alternative mode of transport for prospective residents, visitors and staff.

3.3 Active Travel

In addition to public transport, the locality has been assessed for its active transport potential. It is noted that the subject site is adjacent to the Liverpool City Centre which will likely lead to higher rates of walking and cycling trips.

In terms of public infrastructure, the local road network offers a high level of amenity and safety for pedestrians, providing footpaths on either side of most roadways, signalised crossing, supporting signage and appropriate lighting throughout the locality.

In accordance with the TfNSW Cycleway Finder, the subject site is located within a bicycle network comprising of Shared paths as well as on-General Roads (see Figure 11). It is noted however, that there are no dedicated cycleways along the immediate frontage of the site, and the cycling network within the vicinity of the site is disconnected between Liverpool Hospital and the western side of the Liverpool City Centre. Notwithstanding this, the existing cycling infrastructure provides connection to Warwick Farm to the north, and the cycle route along the railway line, towards the south, provides linkage to Casula and Glenfield.

This will encourage and promote cycling as an alternative mode of transport for prospective occupants which is a healthy, low cost and environmentally friendly method of travel.

Figure 11 - Cycleways in the Locality of the Site (Source; NSW Cycleway Finder)

4. Future Road Network

Council currently has a proposal to relocate and realign the existing slip lane off Terminus Street into Scott Street, opposite to Speed Street as shown in Figure 12. The proposed road realignment has been incorporated into the traffic impact assessment and SIDRA modelling.

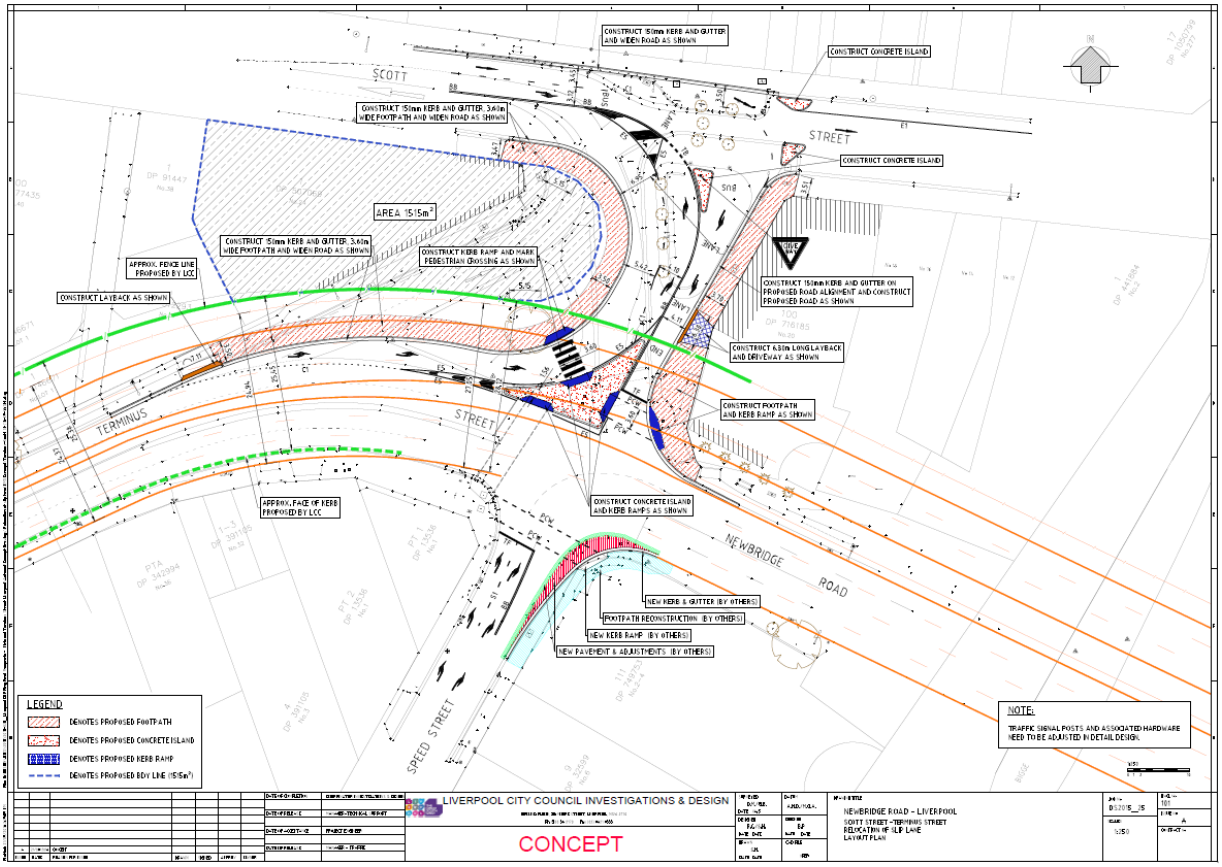

Figure 12 - Proposed Slip Lane Relocation

TfNSW has plans for a future 6-lane widening along Terminus Street as shown in Figure 13. It is noted that the proposal is currently at high level stages. However, the proposed road widening has been included within the traffic impact assessment and SIDRA modelling.

The Terminus Street access has also been designed to anticipate the proposed widening to ensure that the scheme operates under the current and future arrangements.

The proposed road widening of Terminus Street will be included in the detailed design stages once more information is provided regarding the proposed works.

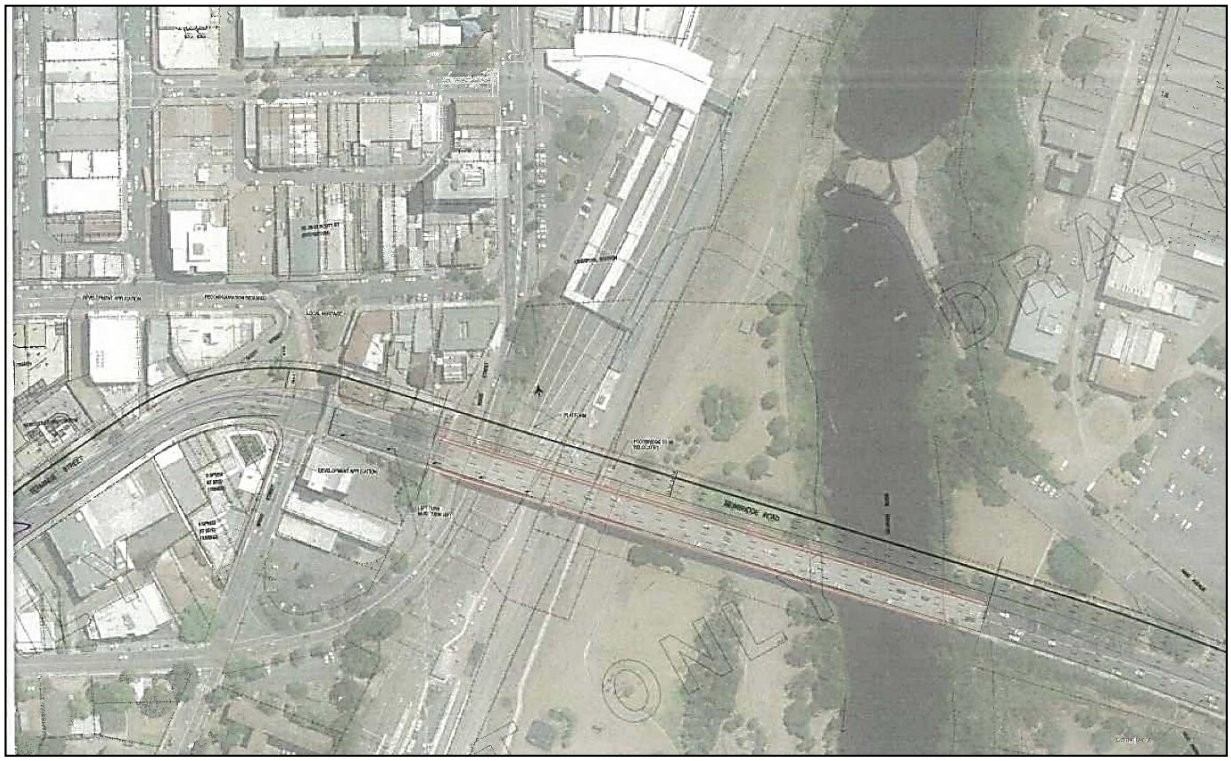

Figure 13 - Proposed Terminus Street Road Widening (Aerial View with TfNSW Proposal Overlay)

5. Traffic Impact Assessment

The SSDA seeks approval to include a BtR residential uses within the approved Phase B envelope of Liverpool Civic Place. The SSDA involves a proposal for a build-to-rent residential development with ground floor retail uses within the concept DA envelope (as proposed to be amended by DA-72/2024 which is currently under assessment).

The projected traffic activity associated with SSDA has been adjusted to align with the yields of Phase B Detailed DA and parking provisions proposed within this Development Application which follows a more detailed development of the architectural plans.

The assessment has included the following:

- Traffic generation potential
- Traffic distribution
- Traffic modelling
- Traffic impact on the nearby intersections and road network

The assessment includes the prohibition of the right turn movements to/from the Terminus Street driveway.

5.1 Development Traffic Generation

This section presents an estimate of the traffic generation of the proposed development with reference to the Concept Approval, which established traffic generation rates based on the *Guide to Traffic Generating Developments v2.2 (2002) and Technical Direction TDT 2013/04*.

5.1.1 Residential Trip Generation Rates

When TfNSW undertook Traffic Generation and Parking Generation Survey study in 2010 to update the Guide to Traffic Generating Development v2.2 (2002), the suggested vehicle trip generation rates were derived from ten sites within both Sydney Urban area and regional areas. The Roads and Maritime *Guide to Traffic Generating Developments* technical direction *TDT2013/04a (2013)* has set out the vehicle trip generation rates for residential, which are as follows:

- Morning peak hour vehicle trips per unit = 0.19 = 320 x 0.19 = 61 trips
- Evening peak hour vehicle trips per unit = 0.15 = 320 x 0.15 = 48 trips

5.1.2 Cafe / Food and Beverage Trip Generation Rates

The RMS Guide v2.2 (2002) specifies the following trip generation rates for the proposed restaurant when applied to the relevant GFAs:

- Evening peak hour vehicle trips = 5 per 100 sqm GFA = 267m^2 x 5 per 100m^2 = 13 trips

For the weekday morning peak hour, half of the evening peak hour vehicle trips has been estimated.

- Morning peak hour vehicle trips = 7 trips

5.2 Development Vehicle Trip Generation Summary

The traffic generation of the proposed development during the morning and evening peak periods is summarised in Table 7.

It is noted that the proposal includes the construction of 29 levels for residential uses.

Table 7 – Development traffic generation

Land Use	Dwellings / Area	Vehicle trip rates		Vehicle trip generation		Access
		AM	PM	AM	PM	
Retail (Cafe / Food and Beverage)	267	Half of the PM trips	5 per 100m^2	7	13	Scott St
Residential	320	0.19	0.15	61	48	Scott St
Total				**68**	**61**	

A comparison of the peak hour traffic activity associated with the Phase B Detailed DA for Commercial and Boarding House and SSDA for Residential Use is presented in the following Table 8.

Table 8 – Comparison of Phase B Detailed DA & Amending Concept DA

Land Use	**Phase B Detailed DA**		**SSDA**		**Difference**	
	AM	PM	AM	PM	AM	PM
Phase B Detailed DA - Commercial & Boarding House	81	70	-	-	-	-
SSDA – Retail & Residential Use	-	-	68	61	-	-
Total	**81**	**70**	**68**	**61**	**-13**	**-9**

The SSDA for BtR Residential Use involves a lesser level of traffic compared with the Phase B approval, being a reduction of 13 and 9 vehicles during the morning and evening peaks, respectively. This similar level of traffic is not considered to have a significant impact on the road network given the daily fluctuations that occur. Hence, Sidra modelling is considered the same as carried out for Phase B Detailed DA for Commercial and Boarding House uses.

5.3 Phase A Post Development Conditions

Table 9 – Phase A SIDRA Results - Post-Development Scenario

Intersection	Period	Level of Service	Degree of Saturation	Average Delay (sec)	95% Queue Length (m)
Scott Street / George Street	AM Peak	B	0.279	26.7	60.8
	PM Peak	B	0.327	24.5	73.8
Macquarie Street / Memorial Avenue / Scott Street	AM Peak	B	0.379	26.4	81.3
	PM Peak	B	0.802	26.6	65.3
Macquarie Street / Pirie Street	AM Peak	B	0.42	24.1	85.8
	PM Peak	C	0.563	28.8	114.2
Terminus Street / Newbridge Road / Speed Street	AM Peak	B	0.827	15.9	298.8
	PM Peak	D	0.934	44.8	460
Terminus Street / Pirie Street	AM Peak	B	0.916	27.8	114.4
	PM Peak	B	0.53	23.5	104.9
Terminus Street / Scott Street	AM Peak	A	0.115	5.6	3.4
	PM Peak	A	0.118	5.6	2.7
Terminus Street Access	AM Peak	A	0.325	6.6	0.5
	PM Peak	A	0.349	6.6	3
Scott Street Access	AM Peak	A	0.149	6.9	0.1
	PM Peak	A	0.301	6.9	4.9

The SIDRA results indicate that the Scott Street and Terminus Street Accesses will operate with acceptable delay and queuing in both AM and PM peaks. The George Street and Scott Street intersection will operate in similar level of delay and queuing as the existing conditions.

It is noted that the average delay and queuing distance for the eastern leg of the Macquarie Street / Memorial Avenue / Scott Street intersection will be approximately 27 seconds and 65m respectively during the PM peak which may on occasion impact the proposed access driveway along Scott Street, however it will operate at an acceptable Level of Service.

6. Parking Provision

6.1 Planning Policy

The proposed development is subject to the parking provision rates stipulated in the following planning documents:

- State Environmental Planning Policy (Housing) 2021
- Liverpool Development Control Plan (DCP) 2008 Part 1 – General Controls for all development
- Liverpool Development Control Plan (DCP) 2008 Part 4 – Development in Liverpool City Centre
- Liverpool Local Environmental Plan (LEP) 2008

6.1.1 State Environmental Planning Policy (Housing) 2021

Housing SEPP stipulates car parking requirement for build to rent housing development. The proposed development complies with the Housing SEPP requirements. As such, reference has been made to this document to calculate the car parking requirement for the residential component of the development.

6.1.2 Liverpool DCP Part 1

The development site is within the city centre as defined in the LEP and therefore LEP 2008 applies.

The Liverpool DCP Part 1 refers to Clause 7.3 of the LEP and Section 4.4.2 of the DCP (Part 4) for the calculation of the minimum off-street parking requirements for developments within the Liverpool City Centre.

The bicycle parking requirements are calculated in accordance with this DCP.

6.1.3 Liverpool DCP Part 4

The Liverpool DCP Part 4 stipulates the parking requirements for accessible, visitors, service vehicles, car wash bay and motorcycle.

6.1.4 Liverpool LEP 2008 Clause 7.3 – Car Parking in Liverpool City Centre

The development site is within the Liverpool City Centre and is zoned B4 Mixed Use. In order to ascertain the parking requirements, reference is made to the relevant planning controls for the different land uses proposed within the development for commercial land use.

However, this document stipulates the parking rates for general car spaces only.

6.2 Car Parking Provision

The development will comprise of 320 apartments. The car parking requirements and provisions for build to rent housing in accordance with Housing SEPP has been presented in the table below.

Table 10 - Car Parking Provision – LEP/ Housing SEPP/DCP Requirement

Component	Area / Units	Level	Planning Control	Parking Rate	Minimum Parking Requirement[1]	Parking Provision
Retail						
Cafe / Food & Beverage	267m^2	Ground Floor Clause 7.3 (2)(a)	LEP	1 space per 200m^2 GFA regardless of use on ground floor levels	1 (1.33)	2
BtR Residential based on Housing SEPP						
Residents Standard parking Accessible parking	288 (90% of 320 units) 32 (10% of 320 units)		Housing SEPP	0.2 spaces for each dwelling	58 32 (1 per adaptable unit)	109
Visitor					6	6
				Total car parking spaces based on Housing SEPP	**97**	**117**
BtR Residential based on DCP Part 4						
Studio	66		DCP	1 space per two studio apartments	33	
1 bedroom	140			1 space per one bedroom or two-bedroom apartments	140	
2 bedrooms	105			1 space per one bedroom or two-bedroom apartments	105	
3 or more bedrooms	9			1.5 space per three or more-bedroom apartments	14	
Visitor	320 units			1 space per 10 apartments	32	
				Total car parking spaces based on DCP	**325**	**117**

[1] The parking requirement have been rounded to the nearest whole number.

The SEPP stipulates BtR car parking rates for residents but does not present visitor parking rates. However, the typical relationship of visitor to resident parking is 10% of the residential parking provision, in this case translating to 6 visitor car parking spaces based on 64 residential spaces.

While car parking rates are defined in the DCP, the Housing SEPP rates apply to this project, and these are non-discretionary development standards. This means that the development is non-refusable based on the proposed car parking provision given that it complies with the SEPP requirements.

6.3 Accessible Car Parking

Part 4 of the DCP stipulates accessible car parking rates for developments within Liverpool City Centre. The requirements and proposed parking provision are summarised in Table 11.

Table 11 - Accessible Parking Provision

Component	Total Parking Provision / No of adaptable units	DCP Parking Rate	DCP Requirement (min)	Proposed Provision
Retail				
Cafe / Food & Beverage	2	2% of the total capacity	1	1
Residential				
Residents	32 (10% of 320 units)	1 per adaptable unit	32	1
Visitor	6	2% of total capacity	1	1
Total	**117**		**34**	**3**

Based on the DCP, the proposed development requires 2 accessible car spaces and a further 32 accessible spaces relating to the adaptable apartments. The 32 spaces are designed to be converted to accessible spaces as required by the use of the adaptable apartments in their accessible state.

Typically, the adaptable parking spaces would be included within the overall parking provision, however, there is sufficient capacity within the basements to convert up to 54 residential spaces to be accessible parking as required in relation to the use of the adaptable apartments.

6.4 Service Vehicle Parking

Part 4 of the DCP stipulates service vehicle car parking rates for developments within Liverpool City Centre. The service vehicles include removalist vans and car washing bays. The requirements and proposed parking provision are summarised in Table 12.

Table 12 – Service Vehicle Parking

Component	Number of apartments	DCP Parking Rate	Minimum DCP Requirement	Proposed Provision
Service Vehicle Parking	320	1 space per 40 apartments up to a maximum of 4 spaces per building	4	5

Based on the DCP, the development requires at least 4 service vehicle spaces. The development proposes to provide five service vehicle spaces which includes 1 MRV and 2 SRV's in lower ground floor level, and 2 delivery van spaces in basement 1.

6.5 Car Wash Bays

Part 4 of the DCP stipulates car washing bays parking rates for developments within Liverpool City Centre. The car washing bays include removalist vans and service vehicles. The requirements and proposed parking provision are summarised in Table 13.

Table 13 – Visitor Parking / Car Wash Bays

Component	Number of apartments	DCP Parking Rate	Minimum DCP Requirement	Proposed Provision
Car Wash Bays	320	1 space per 40 apartments up to a maximum of 4 spaces per building	4	4 (included in the visitor parking space)

Based on the DCP, the development requires at least 4 service vehicles spaces which include removalist vans and car washing bays. However, it is recommended to include the car washing bays to the visitor parking.

6.6 Bicycle Parking Provision

The development must also provide bicycle parking spaces in accordance with the minimum requirements stipulated in the DCP Part 4 (May 2020 amendment) which refers to DCP Part 1 for the bicycle parking requirements:

- Retail (>500m2 GFA)

DCP Part 1 provides the bicycle parking provisions only for retail area greater than 5002 GFA as below and hence this is used for our Cafe, Food and Beverage which has the GFA of 251m2.

    - 1 bicycle space per 10 staff or 1 bicycle space per 200m^2 GFA (whichever is greater) for staff
    - 2 plus 1 per 100m^2 GFA for visitors

- Residential Flat Buildings, Multi-Dwelling Housing

    - 1 bicycle space per 2 units, or 1 for every 4 bedrooms (whichever is greater) for residents
    - 1 bicycle space per 10 units for visitors

The requirements and proposed parking provision are summarised in Table 14.

Table 14 - Bicycle Parking Provision

Component	GFA (m2) / No. of apartments	DCP Parking Rate	DCP requirement (min)	Proposed Provision
Retail (>500m2 GFA)				
Staff	267m^2	1 space per 10 staff or 1 space per 200m^2 GFA (whichever is greater)	1 (Calculated based on GFA)	1
Visitors	267m^2	2 plus 1 space per 100m^2 GFA	5	5
Residential				
Residents	320 apartments	1 space per 2 units, or 1 for every 4 bedrooms (whichever is greater)	160	171
Visitors		1 space per 10 units	32	32
Total			**198**	**209**

Based on the DCP, the development requires at least 199 bicycle spaces. There is sufficient capacity in the basements to meet the bicycle parking demand.

6.7 Motorcycle Parking

The development must also provide motorcycle parking spaces in accordance with the minimum requirements stipulated in the DCP Part 4:

- 1 motorcycle space per 20 car spaces

Table 15 - Motorcycle Parking Provision

Component	Total Parking Provision	DCP Parking Rate	DCP requirement (min)	Proposed Provision
Residential	117	1 space per 20 car spaces	6 (5.85)	7

Based on the DCP, the development requires at least 5 motorcycle spaces. The proposed development provides 7 motorcycle spaces in the basements 2 and 3.

6.8 Travel Plan

It is noted that Condition 27 of the Concept Approval requires the provision of a Travel Plan to promote the use of more sustainable modes of travel. This is typically established through the implementation of a Green Travel Plan, which is developed with input from the occupants of the building.

The preparation of the Green Travel Plan at a later stage risks losing the opportunity to include physical measures within the design, therefore it is important to establish facilities required to support sustainable transport within the building design.

In this regard, there are essentially two parts to a Green Travel Plan, comprising an outline plan to inform the building design team, and an implantation plan, which is adopted by the users of the building.

The preparation of the outline Green Travel Plan could be prepared as a Condition of the Detailed DA consent, or during the determination period in order to comply with Condition 27.

It is important that in terms of the building design, the DA scheme includes the bike parking requirements stipulated in the DCP and Green Star rating system, while end-of-trip facilities are also proposed.

The bike parking for the public will be provided within the public domain areas where they will be visible and in proximity to the public entrances. This encourages use, rather than provides spaces hidden in the basement car park.

6.9 Service Vehicle Parking Provision

The service vehicle parking provision requirement has been extracted from the Council DCP which stipulates the following:

"*Sufficient service and delivery vehicle parking adequate to provide for the needs of the development"*

The proposed loading dock is designed to accommodate vehicles up to a Medium Rigid Vehicle (MRV) for general deliveries. The loading dock provides two (1) MRV space and two (2) Small Rigid Vehicle (SRV) spaces and 2 delivery vans in basement 1 which is anticipated to be sufficient to accommodate both components of the proposed development.

7. Access and Car Park Assessment

The following section presents an assessment of the proposed development with reference to the requirements of AS2890.1:2004 (Off-street Car Parking), AS2890.2:2018 (Off-street Commercial Vehicle Facilities), AS2890.3:2015 (Bicycle Parking) and AS2890.6:2009 (Off-street Parking for People with Disabilities). This section is to be read in conjunction with the following architectural plans provided by Scott Carver:

- Lower Ground Floor Plan (Drawing No. AR-DRW-10_099 Revision B, Reference No: 20230059, Dated 12 March 2024)
- Basement 01 (Drawing No. AR-DRW-10_098 Revision B, Reference No: 20230059, Dated 12 March 2024)
- Basement 02 (Drawing No. AR-DRW-10_097 Revision B, Reference No: 20230059, Dated 12 March 2024)
- Basement 03 (Drawing No. AR_DRW-10_096 Revision B, Reference No: 20230059, Dated 12 March 2024)

7.1 Vehicular Access

Access is provided from Scott Street via the Shared Zone established as part of the Phase A. Vehicles entering Phase B of the Liverpool Civic place are to turn either left or right from Scott Street. MRV's and SRV's access the loading dock on the lower ground floor level, while other B99 and B85 vehicles access the three basements. All vehicles shall exit back onto Scott Street by turning left only using the exit lane within the Shared Zone.

The proposed access ramp and internal car park ramps have been assessed in relation to its width and relevant grades.

- AS2890.2 requirements for Medium Rigid Vehicle (MRV):
    - Maximum ramp grades of 1:6.5
    - Maximum transition grades of 1:16 running for at least 7.0m
- AS2890.1 requirements for light vehicles:
    - A 1:20 maximum grade for the first 6m into the site measured from the property boundary.
    - Maximum grades do not exceed 1:5 (20%), up to 20m long;
    - Transition grades do not exceed 1:8 (12.5%) for summit grades; and
    - Transition grades do not exceed 1:6.7 (15%) for sag grade changes.

The maximum grade for the proposed car park ramp is to be 1 in 5 with 1 in 8 transitional grades provided for a minimum 2.0m on both the sag and summit of the proposed ramp. A vertical clearance assessment has been undertaken along the ramps using a typical B99 vehicle which indicates that there are no issues with headroom clearance or underbody scraping. The proposed access ramp is to maintain a minimum 2.2m height clearance.

The proposed internal ramps have been designed to provide 7.2m wide roadway that includes 1200mm central island with 300mm kerb extensions provided on either side. A swept path assessment has been undertaken using a typical two B99 vehicles which indicates that the proposed ramp design has the ability to accommodate two-way traffic flow.

7.2 Car Park Arrangement

7.2.1 Typical Requirements

The car parking arrangements have been assessed against the requirements of AS2890.1:2004, with reference to Class 1A (residential/employees) and spaces for small cars:

Class 1A (residential/employee) facilities:

- Car Spaces: 2.4m x 5.4m
- Aisle Width: 5.8m (double-sided aisles)
- Aisle Width: 6.1m (single-sided aisles)

Small Cars:

- Car Spaces: 2.3m x 5.0m

All parking spaces have been individually assessed and found to be compliant with the minimum requirements of AS2890.1. All spaces are to meet the clearance requirements (door opening, entry flanges, column locations) of the parking space envelope requirements provided in Figure 5.2 of AS2890.1.

7.2.2 Accessible & Adaptable Parking

All accessible parking spaces have been individually assessed against the requirements of AS2890.6. The parking spaces are to be designed based on the following dimensions:

- Accessible Spaces: 2.4m x 5.4m
- Adjacent Shared Bay: 2.4m x 5.4m

All accessible spaces and shared bays have been individually assessed and found to be compliant with the minimum requirements of AS2890.6, with relevant pavement markings and bollards. A minimum height clearance of 2.5m is to be maintained directly above the above-mentioned spaces and 2.2m throughout the path of travel.

7.2.3 Headroom Clearance

Headroom clearances should be provided in accordance with the minimum requirements of AS2890.1 and AS2890.2.

- A minimum height clearance of 2.2m shall be maintained in all vehicular circulation areas (including motorcycle and bicycle access paths) and above all standard Class 1A parking bays and this is proposed.
- Minimum 2.5m above all accessible spaces and adjacent shared bays;
- A height of 4m is proposed within the loading dock which has been designed to facilitate vehicles upto an MRV and a height bar is proposed to limit the height of vehicles in this area.

The proposed car park is to provide the minimum height clearance as per the requirements stipulated in the Australian Standards.

7.2.4 Motorcycle Parking

Approved motorcycle parking spaces shall be provided as per the following requirements of AS2890.1:2004:

- Motorcycle Parking: 2.5m x 1.2m

All motorcycle parking spaces have been individually assessed and found to be compliant with the minimum requirements of AS2890.1.

7.2.5 Bicycle Parking

Approved bicycle parking devices (BPD's) shall be installed as per the following requirements of AS2890.3:2015:

- Horizontal Bicycle Parking: 1.8m x 0.5m
- Vertical Bicycle Parking 1.2m x 0.5m
- Access Aisle: 1.5m

All bicycle parking spaces have been individually assessed and found to be compliant with the minimum requirements of AS2890.3. The bicycle parking arrangement has taken into consideration that a minimum 20% of the total provision is to be horizontal bicycle parking spaces. The parking provision has been assessed and found to meet the minimum requirement stipulated in AS2890.3.

7.2.6 Service Vehicle Parking

The loading dock has been designed to accommodate up to a Medium Rigid Vehicle (MRV) and provisions for up to one (1) MRV and two (2) Small Rigid Vehicles (SRV). The loading dock has been provided with a 7.85m wide access.

It is noted that the swept path assessment indicates that the heavy vehicles are provided with limited room to manoeuvre into its dedicated parking spaces. Therefore, the proposal involves the provision of a turn table to assist heavy vehicles in entering/exiting the parking spaces in a safe and efficient manner. The assessment indicates that the heavy vehicles are able to enter and exit the parking spaces with the assistance of the turn table.

8. Conclusion

ptc. has been engaged by Built to prepare a Traffic Impact Assessment to accompany a Phase B SSDA to Liverpool City Council. The development is located at 52 Scott Street, Liverpool.

The proposal involves the following key components:

- Retail Uses – A building accommodating the lower ground floor of 267m^2 GFA for the purpose of cafe, food and beverage.
- Residential Use – A building accommodating 28 storeys for residential purposes.
- A three-level basement car park to accommodate parking for the BtR component of the residential development.

The following findings have been identified during the course of study:

- The peak hour traffic activity associated with the proposal will be accommodated within the road network having regard for the separation of movements between Scott Street and Terminus Street and the future widening of Terminus Street. The traffic activity associated with SSDA stipulates that there is no larger impact on the traffic than the previous permitted commercial scheme on the site.
- The access from Scott Street will provide access for both the car park serving the administration building of Phase A and the car park serving the residential building of Phase B SSDA stage.
- The access from Scott Street will also provide access to the loading dock serving both residential and retail component of the development. The loading dock has been designed and assessed to accommodate up to an 8.8m long MRV and is to be restricted to allow up to a MRV.

Attachment 1 Architectural Plans

[Status] FOR APPROVAL

[Nom. Architect] NICK BANDOUNAS /8499

[File] 20230059-AB-DA001-R24

[Print Date] 22/03/2024 4:19:58 PM

History

[Rev#]	[Description]	[Date]dd.mm.yy
A	For Coordination	30.01.24
B	ISSUED FOR SSDA	12.03.24

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PRINT IN COLOUR

[Project] LIVERPOOL CIVIC PLACE - PHASE B

[Client] BUILT DEVELOPMENT GROUP

0 2 4 6 8 10 m
Bar Scale 1:200

[Scale] 1 : 200 @ A1

FLOOR PLAN - LOWER GROUND

[Ref] 20230059 [Dwg No] AR-DRW-10_099 [Rev] B

[Status] FOR APPROVAL

[Nom. Architect] NICK BANDOUNAS /8499

[File] 20230059-AB-DA001-R24

[Print Date] 22/03/2024 4:21:14 PM

History

[Rev#]	[Description]	[Date]dd.mm.yy
A	For Coordination	30.01.24
B	ISSUED FOR SSDA	12.03.24

LEGEND

PARKING SPACES TO BE CONVERTED TO ACCESSIBLE PARKING IF REQUIRED

Car Parking Schedule

Level	Type	Count
BASEMENT 3		
BASEMENT 3	Small - 5000 x 2300	2
BASEMENT 3	Standard - 5400 x 2400	44
BASEMENT 2		
BASEMENT 2	Small - 5000 x 2300	1
BASEMENT 2	Standard - 5400 x 2400	41
BASEMENT 1		
BASEMENT 1	Accessible - 5400 x 2400	3
BASEMENT 1	Loading - 5400 x 2600	2
BASEMENT 1	Standard - 5400 x 2400	26
		119

CARPARKS BY TYPE

Type
Accessible - 5400 x 2400
3
Loading - 5400 x 2600
2
Small - 5000 x 2300
3
Standard - 5400 x 2400
111

Total Car Spaces: 119
AREA (INSIDE FACE OF SHORING WALL) : **2045m²**

TOTAL B01 STORAGE AREA = **~114m²**

PERCENTAGE = **6%**

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[Project] LIVERPOOL CIVIC PLACE - PHASE B

[Client] BUILT DEVELOPMENT GROUP

Bar Scale 1:200 (0 2 4 6 8 10 m)

[Scale] 1 : 200 @ A1

FLOOR PLAN - BASEMENT 1

[Ref] 20230059 [Dwg No] AR-DRW-10_098 [Rev] B

[Status] FOR APPROVAL

[Nom. Architect] NICK BANDOUNAS /8499

[File] 20230059-AB-DA001-R24

[Print Date] 22/03/2024 4:23:07 PM

History

[Rev#]	[Description]	[Date]dd.mm.yy
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B	ISSUED FOR SSDA	12.03.24

LEGEND

PARKING SPACES TO BE CONVERTED TO ACCESSIBLE PARKING IF REQUIRED

Car Parking Schedule

Level	Type	Count
BASEMENT 3		
BASEMENT 3	Small - 5000 x 2300	2
BASEMENT 3	Standard - 5400 x 2400	44
BASEMENT 2		
BASEMENT 2	Small - 5000 x 2300	1
BASEMENT 2	Standard - 5400 x 2400	41
BASEMENT 1		
BASEMENT 1	Accessible - 5400 x 2400	3
BASEMENT 1	Loading - 5400 x 2600	2
BASEMENT 1	Standard - 5400 x 2400	26
		119

CARPARKS BY TYPE

Type
Accessible - 5400 x 2400
3
Loading - 5400 x 2600
2
Small - 5000 x 2300
3
Standard - 5400 x 2400
111

Total Car Spaces: 119

AREA (INSIDE FACE OF SHORING WALL) : **2045m²**

TOTAL B02 STORAGE AREA = **~135m²**

PERCENTAGE = **7%**

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[Project] LIVERPOOL CIVIC PLACE - PHASE B

[Client] BUILT DEVELOPMENT GROUP

Bar Scale 1:200 (0 2 4 6 8 10 m)

[Scale] 1 : 200 @ A1

FLOOR PLAN - BASEMENT 2

[Ref] 20230059 [Dwg No] AR-DRW-10_097 [Rev] B

[Status] FOR APPROVAL

[Nom. Architect] NICK BANDOUNAS /8499

[File] 20230059-AB-DA001-R24

[Print Date] 22/03/2024 4:25:57 PM

History

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B	ISSUED FOR SSDA	12.03.24

LEGEND

PARKING SPACES TO BE CONVERTED TO ACCESSIBLE PARKING IF REQUIRED

Car Parking Schedule

Level	Type	Count
BASEMENT 3		
BASEMENT 3	Small - 5000 x 2300	2
BASEMENT 3	Standard - 5400 x 2400	44
BASEMENT 2		
BASEMENT 2	Small - 5000 x 2300	1
BASEMENT 2	Standard - 5400 x 2400	41
BASEMENT 1		
BASEMENT 1	Accessible - 5400 x 2400	3
BASEMENT 1	Loading - 5400 x 2600	2
BASEMENT 1	Standard - 5400 x 2400	26
		119

CARPARKS BY TYPE

Type
Accessible - 5400 x 2400
3
Loading - 5400 x 2600
2
Small - 5000 x 2300
3
Standard - 5400 x 2400
111

Total Car Spaces: 119

AREA (INSIDE FACE OF SHORING WALL) : **2045m²**

TOTAL B03 STORAGE AREA = **~137m²**

PERCENTAGE = **7%**

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PRINT IN COLOUR

[Project] LIVERPOOL CIVIC PLACE - PHASE B

[Client] BUILT DEVELOPMENT GROUP

Bar Scale 1:200 (0 2 4 6 8 10 m)

[Scale] 1 : 200 @ A1

FLOOR PLAN - BASEMENT 3

[Ref] 20230059 [Dwg No] AR-DRW-10_096 [Rev] B

[Status] FOR APPROVAL

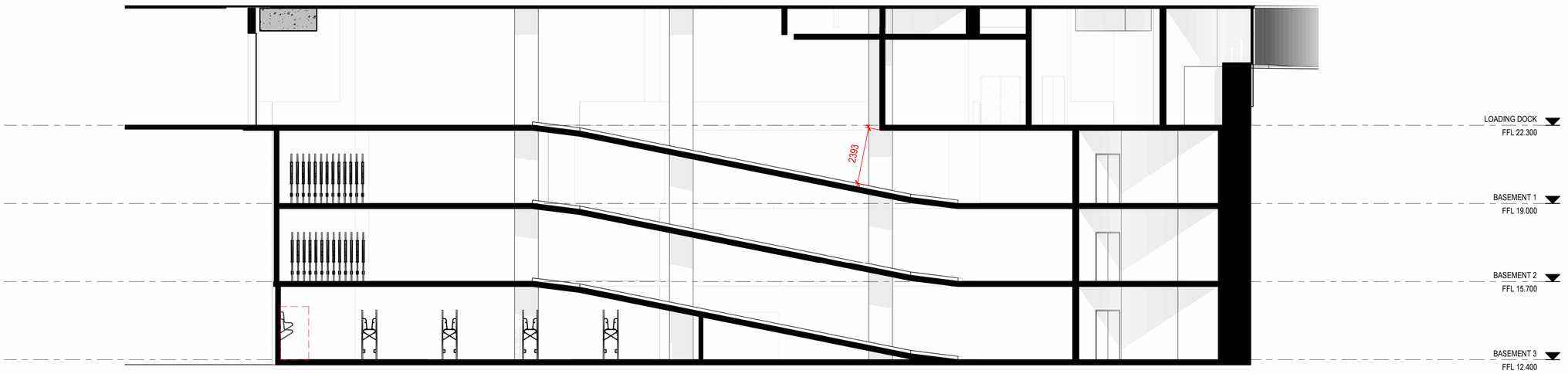
[Nom. Architect] NICK BANDOUNAS /8499

[File] 20230059-AB-DA001-R24

[Print Date] 19/03/2024 3:47:45 PM

History

[Rev#] [Description] [Date]dd.mm.yy



CAR PARK ENTRY RAMP SECTION

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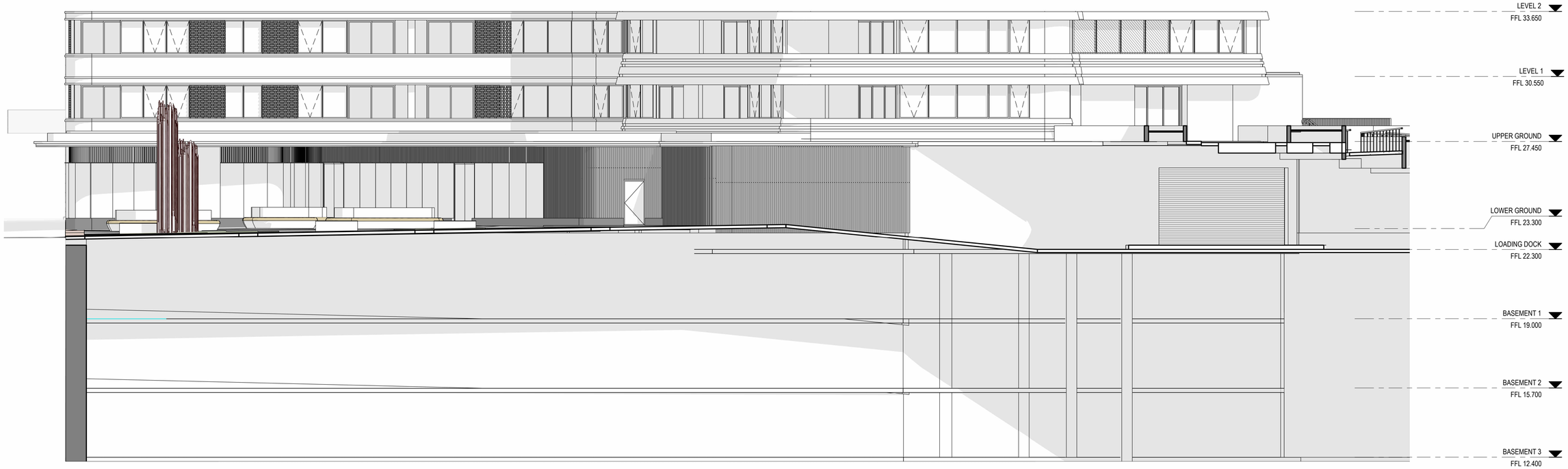

RAMP WEST SECTION

1 : 100

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[Project] LIVERPOOL CIVIC PLACE - PHASE B

[Client] BUILT DEVELOPMENT GROUP

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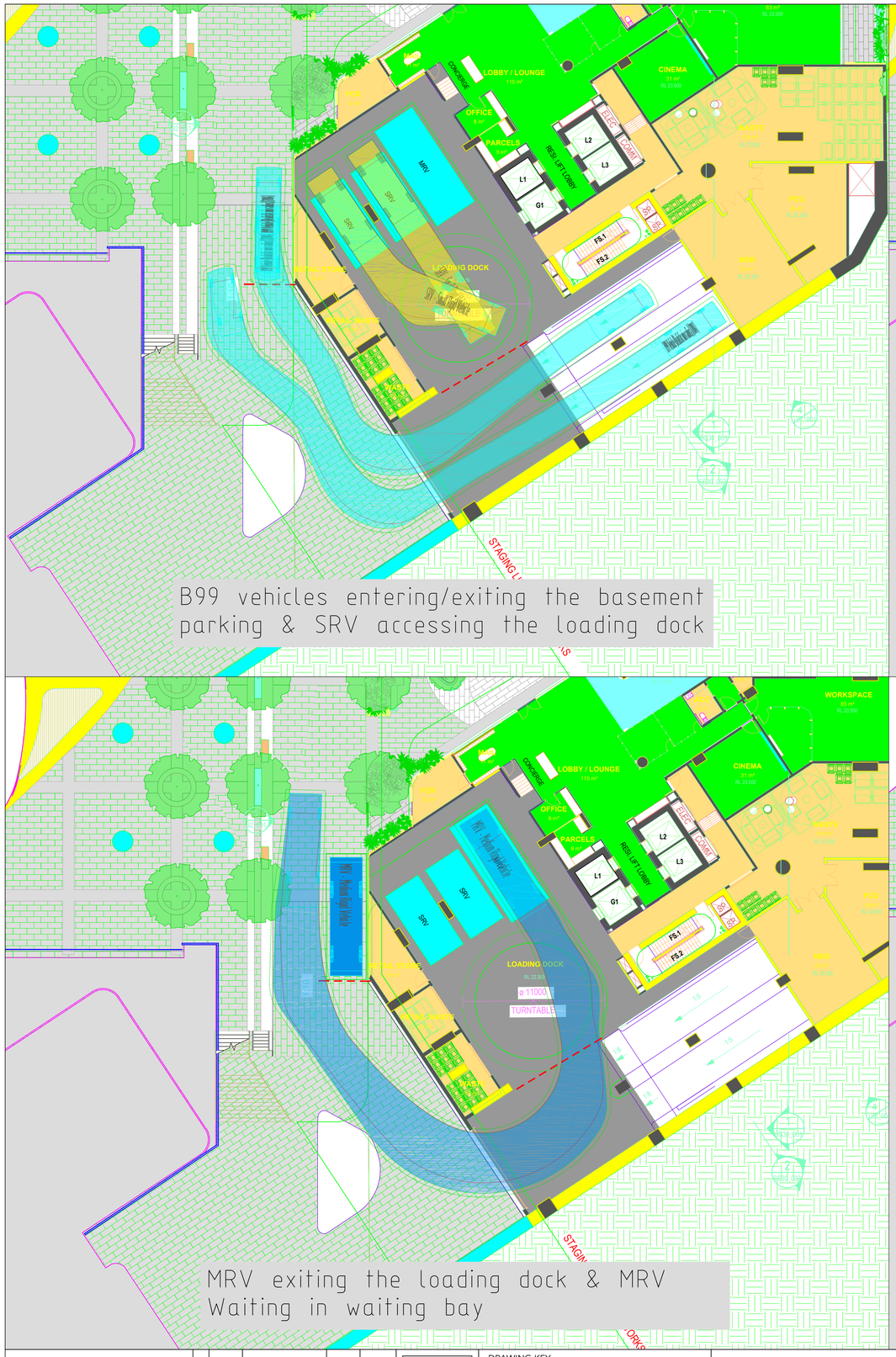
Bar Scale 1:500

[Scale] 1 : 100 @ A1

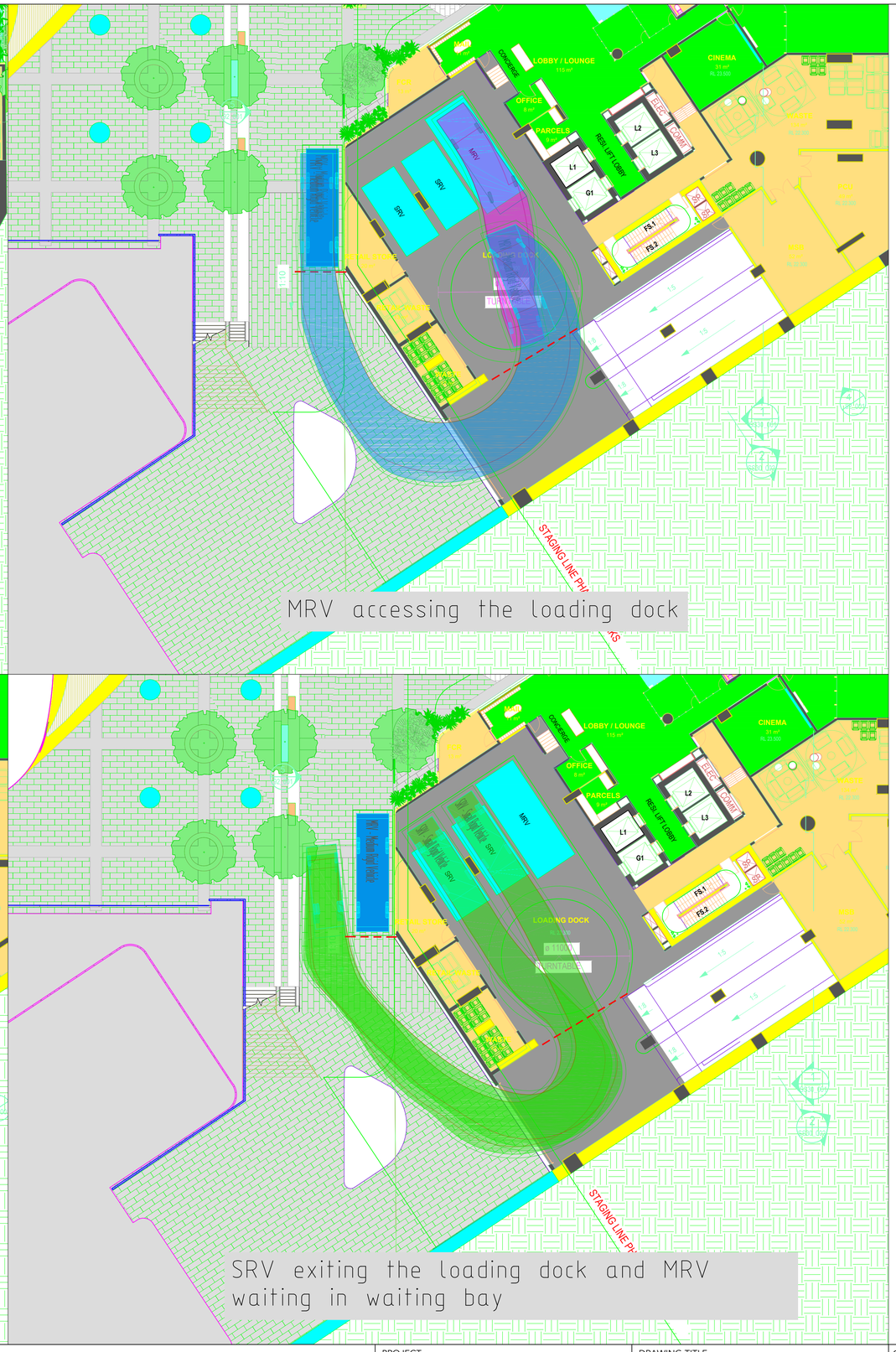
RAMP SECTIONS

[Ref] 20230059 [Dwg No] SK 900 [Rev]

Attachment 2 Car Park Review



B99 vehicles entering/exiting the basement parking & SRV accessing the loading dock

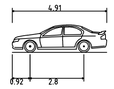


MRV accessing the loading dock

MRV exiting the loading dock & MRV Waiting in waiting bay

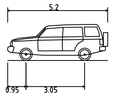
SRV exiting the loading dock and MRV waiting in waiting bay

VEHICLE PROFILE



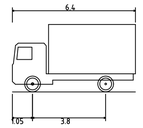
B85 Vehicle (Realistic min radius) (2004)

Overall Length	4.910m
Overall Width	1.870m
Overall Body Height	1.421m
Min Body Ground Clearance	0.159m
Track Width	1.770m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	5.750m



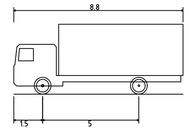
B99 Vehicle (Realistic min radius) (2004)

Overall Length	5.200m
Overall Width	1.940m
Overall Body Height	1.878m
Min Body Ground Clearance	0.272m
Track Width	1.840m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	6.250m



SRV - Small Rigid Vehicle

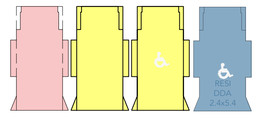
Overall Length	6.400m
Overall Width	2.330m
Overall Body Height	3.500m
Min Body Ground Clearance	0.398m
Track Width	2.330m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	7.100m



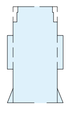
MRV - Medium Rigid Vehicle

Overall Length	8.800m
Overall Width	2.500m
Overall Body Height	3.633m
Min Body Ground Clearance	0.428m
Track Width	2.500m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	10.000m

RESIDENTIAL CAR SPACE



RETAIL CAR SPACE



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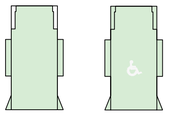


MOTORCYCLE/BICYCLE SPACE

ptc.
Suite 502, 1 James Place
North Sydney NSW 2060
t +61 2 8920 0800
ptcconsultants.co

REV	DATE	DESCRIPTION	DRAWN	REVIEWED
P1	25/03/24	FOR INFORMATION	PB	AM

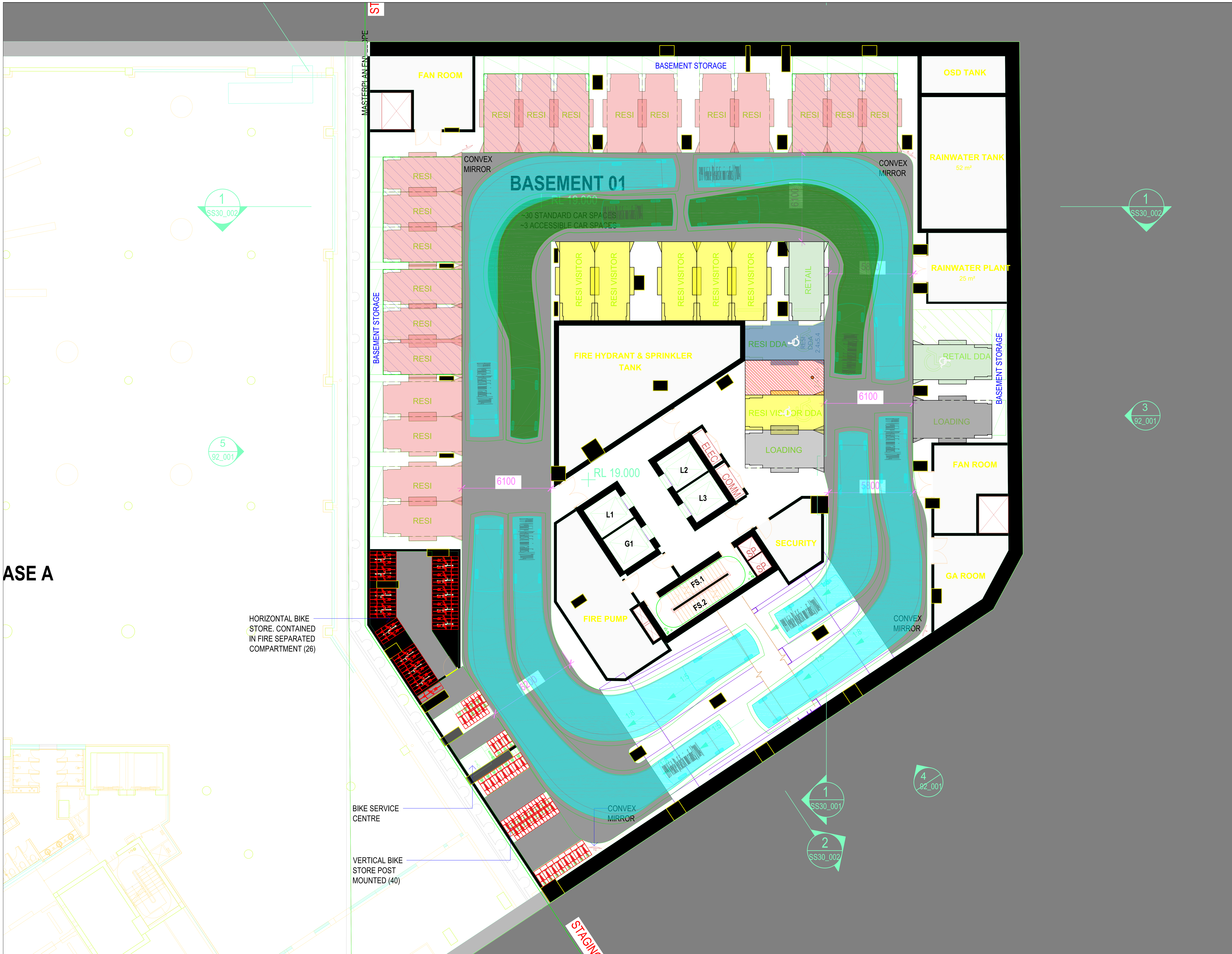
DRAWING KEY

PROJECT
52 SCOTT STREET, LIVERPOOL
CIVIC PLACE - PHASE B

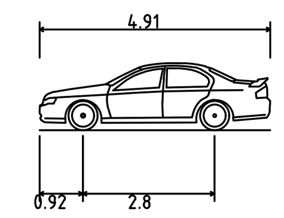
DRAWING TITLE
Loading Dock - Swept Path Assessments

CLIENT	BUILT DEVELOPMENT GROUP FOR CONSTRUCTION
DRAWING #	PTC - 001
PROJECT #	23 - 0767
SCALE	1 : 100 @ A1 1 : 200 @ A3

REV P1

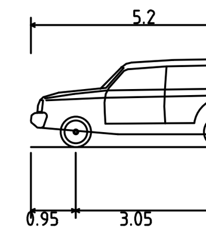


VEHICLE PROFILE



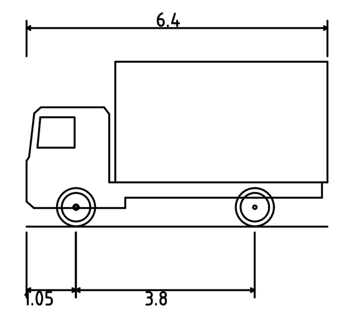
B85 Vehicle (Realistic min radius) (2004)

Overall Length	4.910m
Overall Width	1.870m
Overall Body Height	1.421m
Min Body Ground Clearance	0.159m
Track Width	1.770m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	5.750m



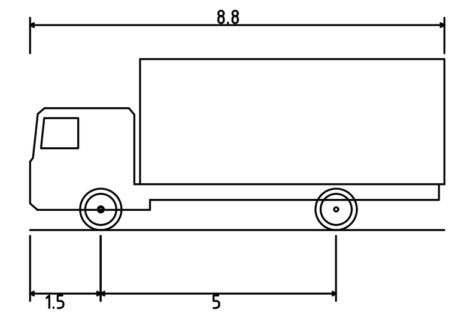
B99 Vehicle (Realistic min radius) (2004)

Overall Length	5.200m
Overall Width	1.940m
Overall Body Height	1.878m
Min Body Ground Clearance	0.272m
Track Width	1.840m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	6.250m



SRV - Small Rigid Vehicle

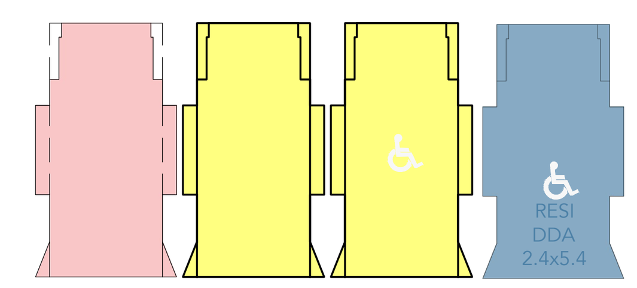
Overall Length	6.400m
Overall Width	2.330m
Overall Body Height	3.500m
Min Body Ground Clearance	0.398m
Track Width	2.330m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	7.100m



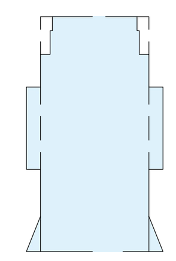
MRV - Medium Rigid Vehicle

Overall Length	8.800m
Overall Width	2.500m
Overall Body Height	3.633m
Min Body Ground Clearance	0.428m
Track Width	2.500m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	10.000m

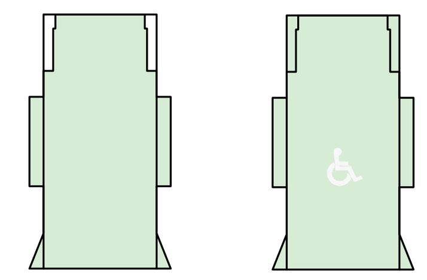
RESIDENTIAL CAR SPACE



RETAIL CAR SPACE



RETAIL CAR SPACE



MOTORCYCLE/BICYCLE SPACE

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ptcconsultants.co

REV	DATE	DESCRIPTION	DRAWN	REVIEWED
P2	25/03/2024	FOR INFORMATION	PB	AM
P1	25/03/24	FOR INFORMATION	PB	AM

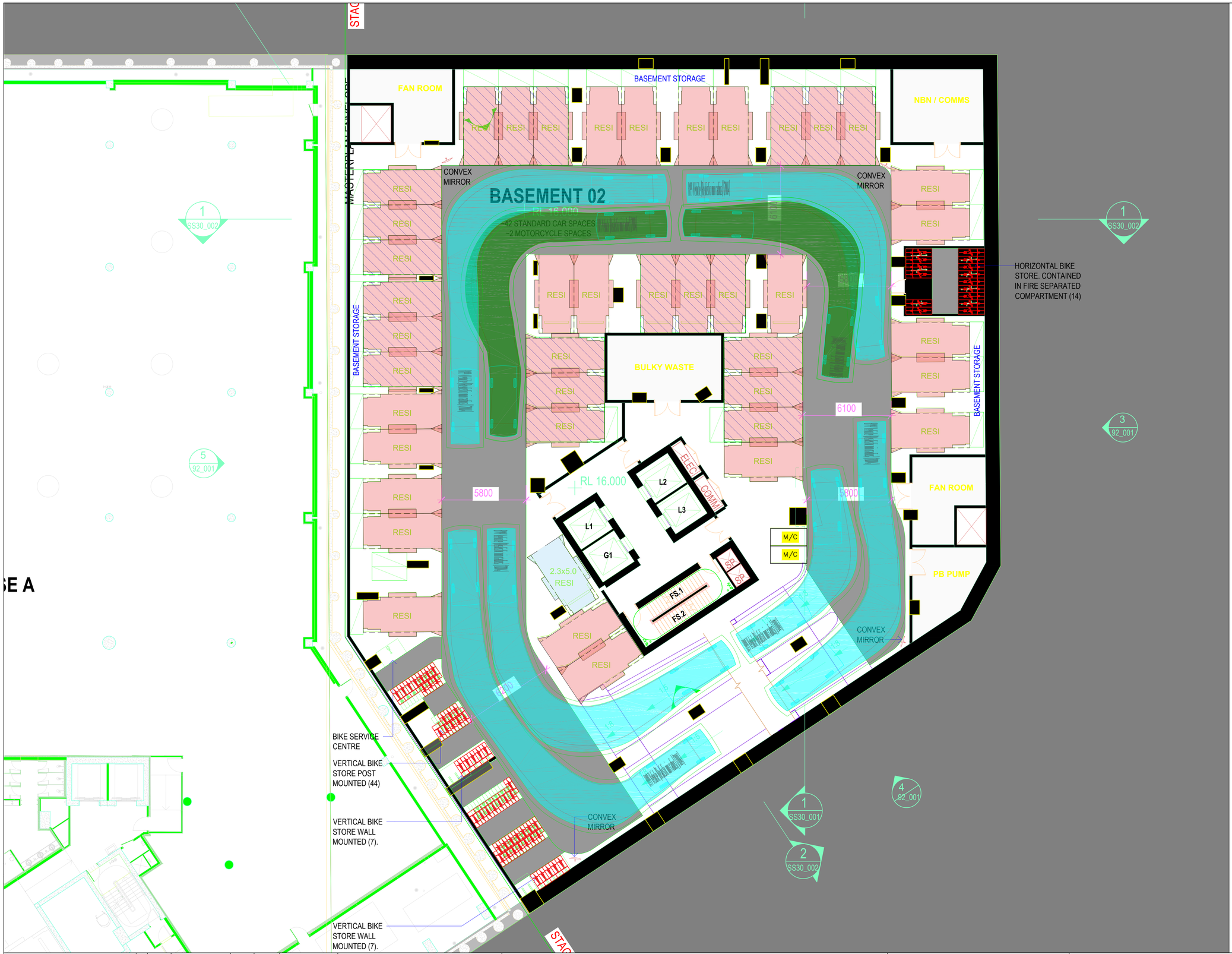
DRAWING KEY

PROJECT
52 SCOTT STREET, LIVERPOOL
CIVIC PLACE - PHASE B

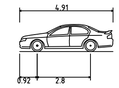
DRAWING TITLE
Basement 1 - Car Park Review and Swept Path Assessments

CLIENT	BUILT DEVELOPMENT GROUP FOR CONSTRUCTION
DRAWING #	PTC - 002
PROJECT #	23 - 0767
SCALE	1 : 100 @ A1 1 : 200 @ A3

REV P2

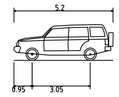


VEHICLE PROFILE



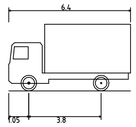
B85 Vehicle (Realistic min radius) (2004)

Overall Length	4.910m
Overall Width	1.870m
Overall Body Height	1.421m
Min Body Ground Clearance	0.159m
Track Width	1.770m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	5.750m



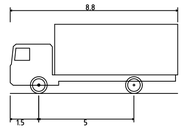
B99 Vehicle (Realistic min radius) (2004)

Overall Length	5.200m
Overall Width	1.940m
Overall Body Height	1.878m
Min Body Ground Clearance	0.272m
Track Width	1.840m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	6.250m



SRV - Small Rigid Vehicle

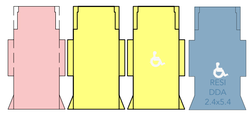
Overall Length	6.400m
Overall Width	2.330m
Overall Body Height	3.500m
Min Body Ground Clearance	0.398m
Track Width	2.330m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	7.100m



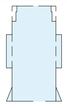
MRV - Medium Rigid Vehicle

Overall Length	8.800m
Overall Width	2.500m
Overall Body Height	3.633m
Min Body Ground Clearance	0.428m
Track Width	2.500m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	10.000m

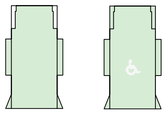
RESIDENTIAL CAR SPACE



RETAIL CAR SPACE



RETAIL CAR SPACE



MOTORCYCLE/BICYCLE SPACE

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ptcconsultants.co

REV	DATE	DESCRIPTION	DRAWN	REVIEWED
P2	25/03/2024	FOR INFORMATION	PB	AM
P1	25/03/24	FOR INFORMATION	PB	AM

DRAWING KEY

PROJECT
52 SCOTT STREET, LIVERPOOL
CIVIC PLACE - PHASE B

DRAWING TITLE
Basement 2 - Car Park Review and Swept Path Assessments

CLIENT	BUILT DEVELOPMENT GROUP FOR CONSTRUCTION
DRAWING #	PTC - 002
PROJECT #	23 - 0767
SCALE	1 : 100 @ A1 1 : 200 @ A3

REV P2

MASTERPLAN ENVELOPE

ST

SE A

FAN ROOM

BASEMENT STORAGE

DAS

CONVEX MIRROR

BASEMENT 03

RL 13.000

~46 STANDARD CAR SPACES
~9 MOTORCYCLE SPACES

RESI

BULKY WASTE

HORIZONTAL BIKE STORE. CONTAINED IN FIRE SEPARATED COMPARTMENT (14)

6100

ELEC

COMM

L1

L2

L3

G1

FS.1

FS.2

SP

M/C

2.3x5.0 RESI

5800

SUBSOIL PUMP

LOW HEAD HEIGHT

VERTICAL BIKE STORE POST MOUNTED (5).

VERTICAL BIKE STORE WALL MOUNTED (7).

BIKE SERVICE CENTRE

1 SS30_002

5 92_001

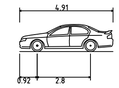
3 92_001

4 92_001

1 SS30_001

2 SS30_002

VEHICLE PROFILE



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Overall Width	1.870m
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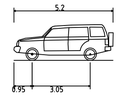
Min Body Ground Clearance	0.159m
Track Width	1.770m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	5.750m



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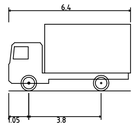
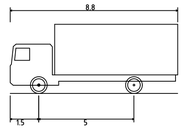
Overall Length	5.200m
Overall Width	1.940m
Overall Body Height	1.878m
Min Body Ground Clearance	0.272m
Track Width	1.840m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	6.250m



SRV - Small Rigid Vehicle

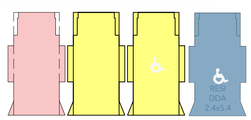
Overall Length	6.400m
Overall Width	2.330m
Overall Body Height	3.500m
Min Body Ground Clearance	0.398m
Track Width	2.330m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	7.100m



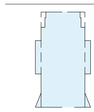
MRV - Medium Rigid Vehicle

Overall Length	8.800m
Overall Width	2.500m
Overall Body Height	3.633m
Min Body Ground Clearance	0.428m
Track Width	2.500m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	10.000m

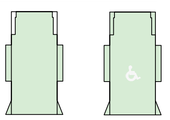
RESIDENTIAL CAR SPACE



RETAIL CAR SPACE



RETAIL CAR SPACE



MOTORCYCLE/BICYCLE SPACE

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ptcconsultants.co

REV	DATE	DESCRIPTION	DRAWN	REVIEWED
P2	25/03/24	FOR INFORMATION	PB	AM
P1	13/02/24	FOR INFORMATION	CP/PB	AM

DRAWING KEY

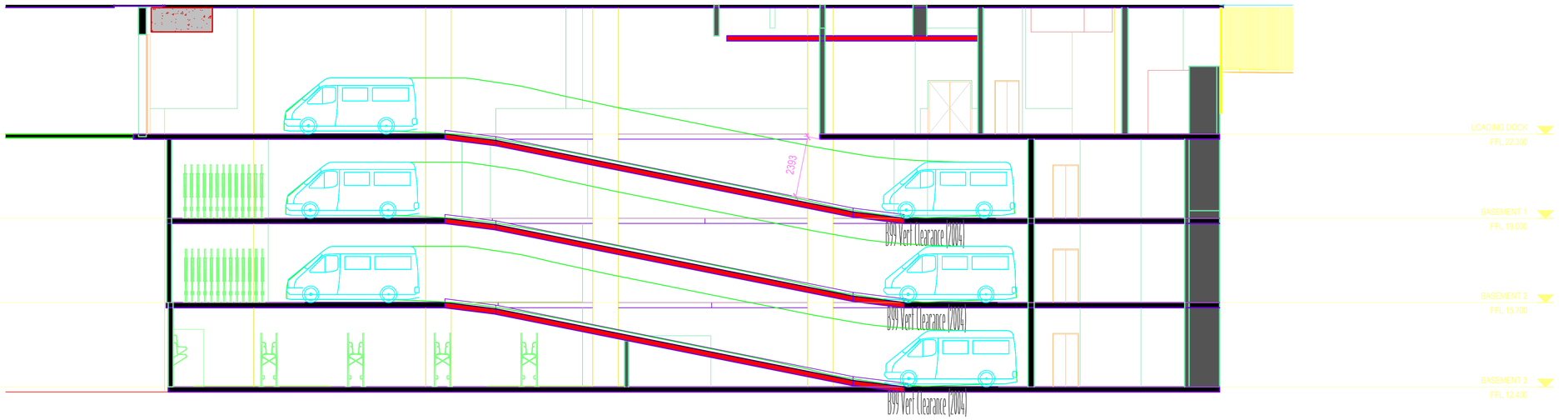
PROJECT
52 SCOTT STREET, LIVERPOOL
CIVIC PLACE - PHASE B

DRAWING TITLE
Basement 3 - Car Park Review and Swept Path Assessments

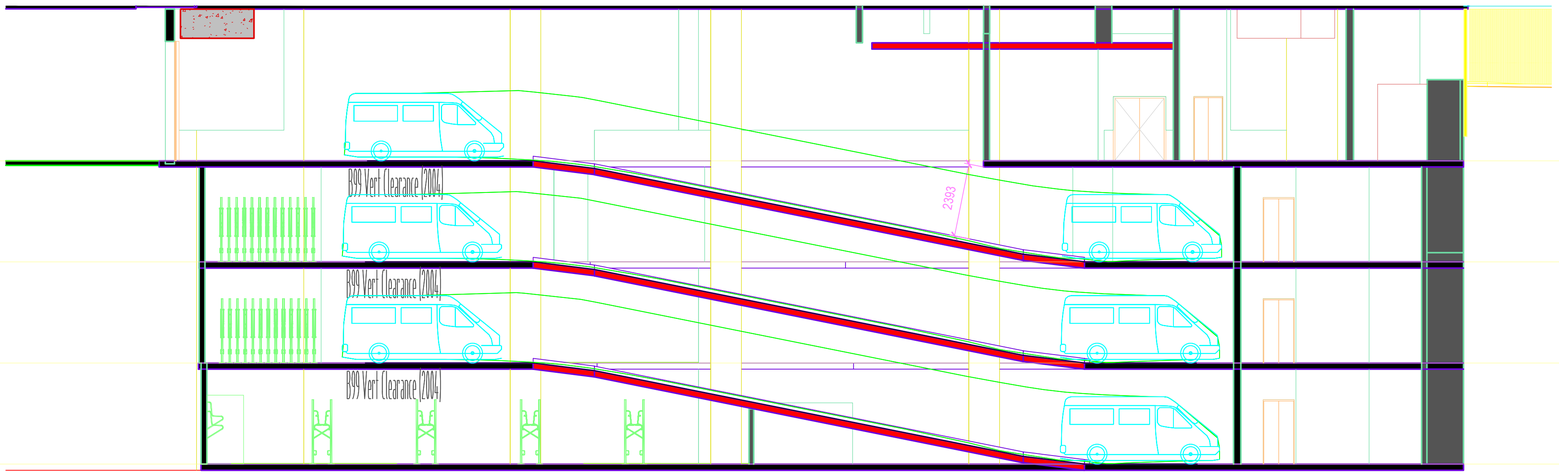
CLIENT	BUILT DEVELOPMENT GROUP
DRAWING #	PTC - 002
PROJECT #	23 - 0767
SCALE	1 : 100 @ A1 1 : 200 @ A3

FOR CONSTRUCTION

REV P2

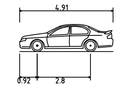


B99 vehice entering the three basements



B99 vehice exiting the three basements

VEHICLE PROFILE



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Track Width	1.770m
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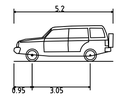
Curb to Curb Turning Radius	5.750m



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Overall Body Height	1.878m
Min Body Ground Clearance	0.272m
Track Width	1.840m
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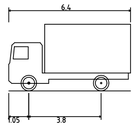

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Min Body Ground Clearance	0.398m
Track Width	2.330m
Lock-to-lock time	4.00s
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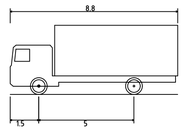

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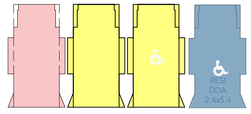
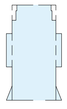
Overall Length	8.800m
Overall Width	2.500m
Overall Body Height	3.633m
Min Body Ground Clearance	0.428m
Track Width	2.500m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	10.000m

RESIDENTIAL CAR SPACE



RETAIL CAR SPACE



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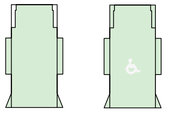

MOTORCYCLE/BICYCLE SPACE

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ptcconsultants.co

REV	DATE	DESCRIPTION	DRAWN	REVIEWED
P1	25/03/24	FOR INFORMATION	PB	AM

DRAWING KEY

PROJECT
52 SCOTT STREET, LIVERPOOL
CIVIC PLACE - PHASE B

DRAWING TITLE
Ramp Sections - B99 Vertical Clearance Assessments

CLIENT	BUILT DEVELOPMENT GROUP FOR CONSTRUCTION
DRAWING #	PTC - 001
PROJECT #	23 - 0767
SCALE	1 : 100 @ A1 1 : 200 @ A3

REV P1