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ADVERTISED PLAN

77-83 Sutton Street, North Melbourne

Road Safety Audit

200032RSA003B-F.docx

11 September 2024

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Signature		**Signature**	

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1 INTRODUCTION

1.1 Auditor and Audit Process Details

This report results from a Functional Design stage Road Safety Audit of the proposed multi-storey residential development at 77-83 Sutton Street, North Melbourne.

The audit has been carried out for Fusion Project Management, and has been prepared in response to Condition 35 of Planning Permit PA2000891, issued by the Minister for Planning, which states:

> *"Prior to the commencement of the development, excluding bulk excavation and site remediation, a formal independent desktop Road Safety Audit of the development must be submitted to and approved by the Responsible Authority, in consultation with Melbourne City Council, at the owner/developer's expense. The Audit must include, but not be limited to, the vehicular/bicycle/pedestrian access arrangements, loading arrangements and internal circulation and layout, as well as any works in the public realm. The findings of the Road Safety Audit must be incorporated into the detailed design, at the owner/developer's expense."*

The Road Safety Audit was undertaken by the following Department of Transport (VicRoads)/ARRB accredited auditors. It should be noted that none of the road safety audit team have had any prior involvement with this project, and have not seen plans of the proposal prior to undertaking this audit (with the exception of the previous audit).

Stuart Valentine (Team Leader)
BE (Civil) – Senior Road Safety Auditor

Julian Stone
BE (Civil) – Senior Road Safety Auditor

A desktop audit was undertaken on the functional design documentation provided.

The audit has been carried out following the procedures set out in Austroads Guide to Road Safety – Part 6: Road Safety Audit. The audit covers physical features of the project which may affect road user safety and it has sought to identify potential safety hazards. However, the auditors point out that no guarantee is made that every deficiency has been identified. Further, if all the recommendations in this report were to be followed, this would not guarantee that the site is 'safe'; rather, adoption of the recommendations should improve the level of safety of the facility.

1.2 Project and Site Details

The project involves development of a multi-storey residential building, featuring in the order of 200 dwellings as well as commercial uses on the lower levels. Parking for approximately 220 cars is provided across two basement levels, and parking for in the order of 220 bicycles is provided across the development. Waste collection is to be undertaken from within the basement level car park.

The subject site is located on the southern side of Sutton Street to the west of Boundary Road as shown in Figure 1. The site is addressed as 77-83 Sutton Street, North Melbourne.

Figure 1 Site Location

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The site has a frontage to Sutton Street, which is a local Council controlled road that facilitates two-way vehicle movements and bears the default 50 km/h speed limit. Kerbside parallel parking is permitted on the south side of the road, while marked angled parking are provided on the north side of the road.

1.3 Supplied Documentation

The following documentation and information were supplied and referenced during the audit process:

- Architectural plans prepared by Point Architects, revision P10 dated 3rd September 2024.

1.4 Risk Ratings

As outlined in Austroads Guide to Road Safety – Part 6: Road Safety Audit, each risk and hazard has been assessed, with consideration given to the following risk parameters:

- Likelihood; and
- Severity.

These parameters have also been utilised to give a 'priority' for risk mitigation.

The risk parameter and risk mitigation priorities, as per Austroads Guide to Road Safety – Part 6: Road Safety Audit are summarised below, noting that any risks with a severity rating of Serious or Fatal are considered to be above the Safe System crash outcome threshold.

Table 1 Likelihood

Likelihood	*Description*
Almost Certain	Occurrence once per quarter
Likely	Occurrence once per quarter to once per year
Possible	Occurrence once per year to once every three years
Unlikely	Occurrence once per every three years to once every seven years
Rare	Occurrence less than once every seven years

Table 2 Severity

Likelihood	*Description*
Insignificant	Property Damage
Minor	Minor First Aid
Moderate	Major first aid and/or presents to hospital (not admitted)
Serious	Admitted to hospital
Fatal	At scene or within 30 days

Table 3 Austroads RSA Risk Matrix

	Insignificant	*Minor*	*Moderate*	*Serious*	*Fatal*
Almost Certain	Medium	High	High	Extreme	Extreme
Likely	Medium	Medium	High	Extreme	Extreme
Possible	Low	Medium	High	High	Extreme
Unlikely	Negligible	Low	Medium	High	Extreme
Rare	Negligible	Negligible	Low	Medium	High

Table 4 Treatment Approach

Risk	*Suggested treatment approach*
Extreme	Must be corrected regardless of cost
High	Should be corrected or the risk significantly reduced, even if the treatment cost is high
Medium	Should be corrected or the risk significantly reduced, if the treatment cost is moderate, but not high
Low	Should be corrected or the risk reduced, if the treatment cost is low
Negligible	No action required

1.5 The Safe System

The 'Safe System' is a road safety philosophy that is based on the principles that road users are fallible and will make mistakes, but that no one should be killed or seriously injured when a crash occurs. To prevent injuries and fatalities, the road system must be forgiving so that the forces of collisions do not exceed the limits that a human body can tolerate.

There are four key principles that form the basis of the Safe System philosophy:

1. People make mistakes that can lead to road crashes;
2. The human body has a limited physical ability to tolerate crash forces before harm occurs;
3. A shared responsibility exists amongst those who plan, design, build, manage and use roads and vehicles and provide post-crash care to prevent crashes resulting in serious injury or death; and
4. All parts of the system must be strengthened to multiply their effects; and if one part fails, road users are still protected.

The Safe System is comprised of four 'pillars' shown below which, when combined, significantly reduce the potential harm to all road users.

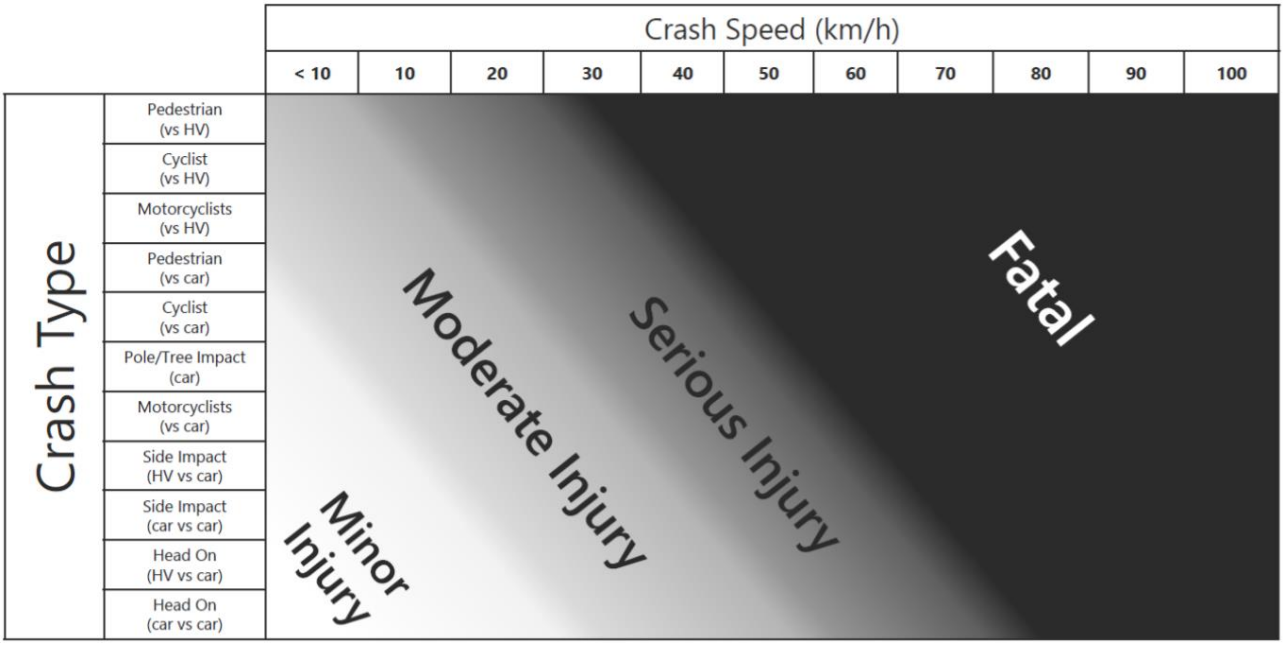
1. Safe Roads and Roadsides
2. Safe Speeds
3. Safe People
4. Safe Vehicles

Post-crash response is another element that is often recognised as the fifth pillar.

The impact speed in a collision is a significant factor that affects the probability of a person being killed or seriously injured in a crash. Safe System impact speeds are speeds below which the chances of survival are high, and the likelihood of serious injury is low.

Figure 2 provides guidance on the severity of crashes in relation to the crash type and crash speed, though it should be noted that the angle of impact of a collision is also a factor that affects the severity of a crash. As far as is practically possible, infrastructure should be designed, and travel speeds managed so that the impact speeds when a crash occurs are below the thresholds shown below for serious injury crashes.

Figure 2 Severity Guidance Sheet



Also, each recommendation has been categorised into one of the Austroads Safe System treatment categories described in Table 5 below.

Table 5 Safe System Treatment Categories

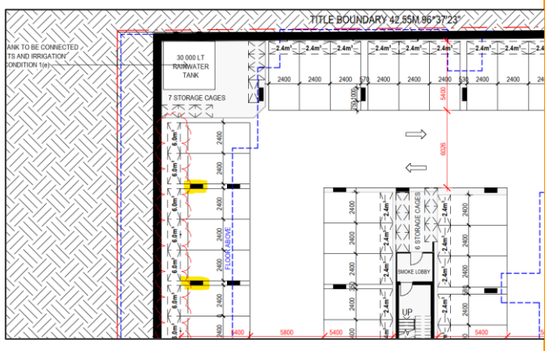
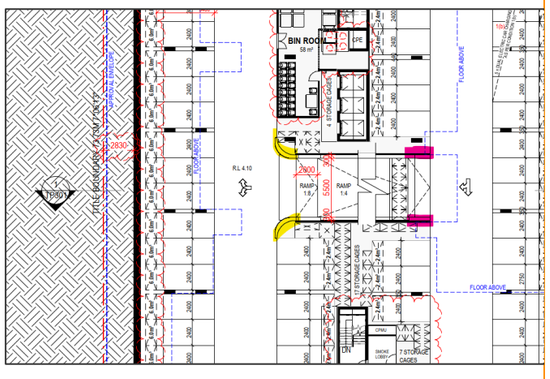
Category	Description
Primary	➢ Road planning, design and management considerations that practically eliminate the potential of fatal and serious injuries occurring in association with the foreseeable crash types.
Supporting (Step Towards)	➢ Road planning, design and management considerations that improve the overall level of safety associated with foreseeable crash types, but not expected to virtually eliminate the potential of fatal and serious injury occurring. ➢ Improves the ability for a Primary Treatment to be implemented in the future.
Supporting	➢ Road planning, design and management considerations that improve the overall level of safety associated with foreseeable crash types, but not expected to virtually eliminate the potential of fatal and serious injury occurring. ➢ Does not change the ability for a Primary Treatment to be implemented in the future.
Non-Safe System Other Elements	➢ Road planning, design and management considerations that are not expected to achieve an overall improvement in the level of safety associated with foreseeable crash types occurring. ➢ Reduces the ability for a primary treatment to be implemented in the future.

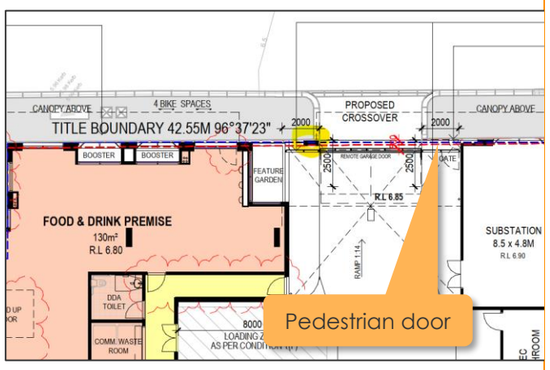
1.6 Responding to the Audit Report

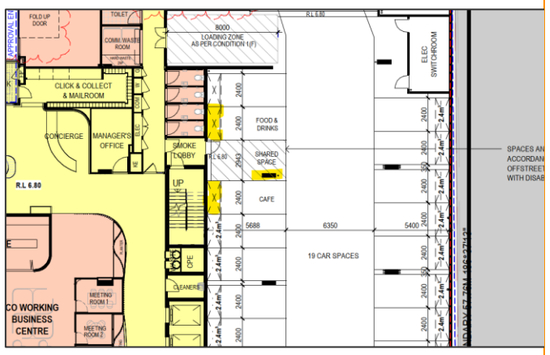
As set out in the road safety audit guidelines, responsibility for the road design always rests with the designer/project manager and not the auditor. A project manager is under no obligation to accept all the audit recommendations. Also, it is not the role of the auditor to agree to or approve of the project manager's response to the audit. Rather, the audit provides the opportunity to highlight potential problems and have them formally considered by the project manager, in conjunction with all other project considerations.

The road safety audit report should be responded to in writing, giving reasons for each rejection of an audit recommendation. Acceptance of a recommendation may require no further comments, but explanation of how or when the action will be taken may be useful.

2 AUDIT FINDINGS AND RECOMMENDATIONS

	Audit Findings	Recommendations (P) Primary (ST) Step Towards (S) Supporting (N) Non Safe-System	Level of Risk	Safe System Energy	Revised / Updated Audit Finding Based on Review of P10 Plans	Designer/Project Manager Response
	Findings from Endorsed RSA (200032RSA003A-F) – Based on revision P6 plans					
1.	The locations of columns with respect to car parking spaces (those along the western side of the car park in particular) as shown on the architectural plans do not accord with the car parking clearance envelope requirements of AS/NZS 2890.1:2004. While not a significant safety concern, this could make the spaces more difficult to access, and could affect door opening. Examples of non-conforming column locations are shown below. Please note that this does not show all non-conforming columns. 	Review the design of the car park and column locations, having regard to Figure 5.2 of AS/NZS 2890.1:2004 (N)	Note	Not Applicable	Columns have been relocated clear of door opening areas. Finding is resolved.	ADVERTISED PLAN
2.	Radii are provided at the bottom of ramps between levels, but not at the top (yellow highlight vs pink highlight below). This could affect the ability to accommodate passing movements at the top of the ramp. Additionally sightlines may be affected by the wall either side of the ramp. 	Confirm by means of a swept path assessment to confirm that circulating vehicle movements can be suitably accommodated. (P) Review sightlines at this location and adjust wall if needed and if possibly to improve sightlines. (P) If the walls cannot be adjusted, supplementary convex mirrors should be provided to assist with sightlines. (S)	Rare Insignificant **Negligible**	Within Tolerable	Radii have not been provided however ramp has been increased from 5.5 m to 6.7 m. Swept paths should be checked to ensure appropriate design vehicle movements can be accommodated. Convex mirrors are not shown at all intersections. Review sightlines and add convex mirrors if necessary.	

	Audit Findings	Recommendations (P) Primary (ST) Step Towards (S) Supporting (N) Non Safe-System	Level of Risk	Safe System Energy	Revised / Updated Audit Finding Based on Review of P10 Plans	Designer/Project Manager Response
3.	Vehicles are unlikely to be able to pass at the corners and intersections within the basement levels, creating opportunities for side swiping.	Install convex mirrors to assist with driver sightlines. (S)	Rare Insignificant **Negligible**	Within Tolerable	Convex mirrors have been added in some locations but not others. Check swept paths and add convex mirrors at all locations where concurrent passing movements are not possible and sightlines to oncoming vehicles may be compromised.	
4.	The pedestrian sight triangle on the western side of the access driveway is compromised by the column within the prescribed area. It is acknowledged that the Planning Scheme requirement is for the prescribed area to be 'at least 50% clear of obstructions', which is technically achieved by the proposed solution, it is considered that the 50% requirement is to allow for treatments such as paling fences which wouldn't completely obscure the view to a pedestrian. It is acknowledged that a convex mirror is provided to assist with sightlines, however that should be considered a supplementary treatment if it is not possible to remove the issue entirely. The convex mirror appears to be installed behind the pedestrian entry door and will therefore need to be installed at a height that doesn't obstruct access. This will likely not be visible to drivers exiting the site.  	Review options to reduce obstructions within the pedestrian sight triangle on the western side of the driveway. This could include a column immediately to the east of the driveway (noting that the Planning Scheme acknowledges that a sight triangle on the entry side of an access is less important. (P) Review the positioning of the convex mirror to ensure that it can function suitably (ST)	Rare Minor **Negligible**	Within Tolerable	Finding still applicable to revised plans.	

	Audit Findings	Recommendations (P) Primary (ST) Step Towards (S) Supporting (N) Non Safe-System	Level of Risk	Safe System Energy	Revised / Updated Audit Finding Based on Review of P10 Plans	Designer/Project Manager Response
5.	The spaces for the café and food and drink premises feature a shared area between them, so that they could be used by people with disabilities, should they have the need to. While not necessarily a safety concern, there it is suggested that storage cages over the end of these spaces could make them more difficult to use for people with disabilities. Additionally while Australian Standard 2890.6:2022 does allow for a column to be located within the shared area, the column shown on the plans does not fall within the area permitted under the standard. 	Consider the design of these spaces with regard to the requirements of AS 2890.6:2022. (N)	Note	Not Applicable	Storage cages no longer provided in these spaces. Column is still located within the shared area and should be addressed.	
6.	The roller door opening at the site entrance has a width of 5.5 m. The 5.5 m width should allow for entering and exiting cars to pass one another however there would be minimal clearances to the vehicles. A 6.1 m door width would be preferable.	Undertake a swept path assessment to confirm suitable access to the site and simultaneous entering and exiting vehicles (ST)	Possible Insignificant **Low**	Within Tolerable	Finding remains applicable to revised plans.	
7.	The remote garage door is positioned at the site boundary to Sutton Street and will result in vehicles propping within the crossover and onto the Sutton Street carriageway while the door is opening. It is acknowledged that Sutton Street would be expected to carry low traffic volumes in this area, being a no-through road, and the wide carriageway will ensure that through traffic can still pass. Nonetheless, multiple vehicles waiting to enter the site will project queues into the through traffic on Sutton Street and may present a risk of collisions.	Recess the garage door into the site to ensure that there is adequate space for entering vehicles to queue/prop while the door is opening (P) Review door opening mechanisms to ensure minimal delay for opening (S)	Unlikely Minor **Low**	Within Tolerable	Finding remains applicable to revised plans.	

	Audit Findings	Recommendations (P) Primary (ST) Step Towards (S) Supporting (N) Non Safe-System	Level of Risk	Safe System Energy	Designer/Project Manager Response
	New Findings - Based on revision P10 plans				
8.	While not considered a safety issue, it is noted that the columns between car spaces along the southern side of the building are not quite in accordance with the requirements of Clause 52.06 of the Melbourne Planning Scheme or with the requirements of the Australian Standard for off-street parking (AS/NZS 2890.1:2004), noting that both Planning Scheme and Australian Standard spaces are provided in different sections along the southern boundary. The columns are located closer to the access aisle than is permitted. Additionally, it is noted that one of the 2.6 m wide spaces in the southwest corner of the site is accessed from a 6.2 m wide aisle (which is incorrectly labelled as being 6.3 m wide), whereas a 6.4 m wide aisle is required to satisfy the Planning Scheme requirements. These issues occur on both basement levels.	It is recommended to convert the 2.6 m wide space with the reduced aisle width to a 5.4 m long Australian Standard space, as the resultant 5.8 m wide aisle would comply with the Australian Standard requirements. The space width can remain at 2.6 m, as it is suggested there would be no benefit to reducing it to 2.4 m. The column locations are only considered an issue in practice for the Australian Standard spaces, as although the Planning Scheme spaces are not technically compliant, they do feature a wider access aisle than is needed, so the columns being slightly closer to the access aisle would not adversely affect the ability for drivers to manoeuvre to/from the spaces. The distance between the columns and the opposite side of the access aisle is greater under this scenario than it would be with a compliant design with the minimum access aisle width. The column locations with respect to the Australian Standard spaces, however, should be considered. Relocating the columns would be the preferred solution, however understanding that that may not be possible, then a swept path assessment should be undertaken to demonstrate that the columns do not prevent suitable access to the adjacent spaces. (N)	Note	Not Applicable	

Designer/Project Manager Response by:

Name	Signature	Date

3 CONCLUSIONS

This Road Safety Audit report has been conducted in accordance with the audit process specified within Austroads Guide to Road Safety – Part 6: Road Safety Audit. The site has been inspected and the audit carried out for the purposes of identifying any design features which could be altered or removed to improve the safety of the proposal. The identified issues have been noted in this report and these findings and recommendations are put forward for consideration by Fusion Project Management and any authorities for consideration.