



CHILDCARE CENTRE – 34-36 ST MICHAEL TERRACE, MOUNT PLEASANT NEW DEVELOPMENT

Road Safety Audit Stage 2 - Preliminary Design

Audit Ref: 2511014-RSA-001

Prepared for:

SLR Consulting

By:

Shawmac Traffic & Safety

Report Issue Date: **17/11/2025**



Safety Audit Document Control Sheet

Project Location:	Childcare Centre – 34-36 St Michael Terrace, Mount Pleasant
Project Proposal:	New Development
Audit Stage:	Preliminary Design Audit
Prepared for:	SLR Consulting
Prepared by 1:	Anthony Anastas
Prepared by 2:	Shawmac Traffic & Safety
Audit Team Leader:	Anthony Anastas
Audit Team Leader Organisation:	Shawmac Traffic & Safety
Audit Reference:	2511014-RSA-001
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The Safety Audit Document Control Sheet Above Should be Completed Prior to Editing Any Other Part of the Report Template



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1. INTRODUCTION

1.1 Scope of Audit

A Road Safety Audit is a formal, systematic, assessment of the potential road safety risks associated with a new road project or road improvement project conducted by an independent qualified audit team. The assessment considers all road users and suggests measures to eliminate or mitigate any risks identified by the audit team.

This Road Safety Audit has been conducted following the general principles detailed in *Austrroads Guide to Road Safety Part 6: Road Safety Audit* and in accordance with the requirements contained in the Main Roads Western Australia Policy and Guidelines for Road Safety Audit.

This report results from a Preliminary Design Audit carried out on the proposed Childcare Centre located at 34-36 St Michael Terrace in Mount Pleasant.

The background and objective of the project is to construct a crossover along St Michael Street to allow for proposed property access.

The Audit was undertaken by Richard Jois and Anthony Anastas of Shawmac Traffic & Safety with reference to the details provided in the Audit Brief.

The audit comprised an examination of the site and other information supplied as listed in Appendix D.

All the findings described in Section 2 of this report are considered by the audit team to require action in order to improve the safety of the proposed project and to minimise the risk of crash occurrence and reduce potential crash severity.

The audit team has examined and reported only on the road safety implications of the project as presented and has not examined or verified the compliance of the design to any other criteria.

1.2 The Audit Team

Auditor No.	Name	Role	Organisation
0942 (S)	Anthony Anastas	Audit Team Leader	Shawmac Traffic & Safety
0143 (S)	Richard Jois	Audit Team Member	Shawmac Traffic & Safety

The audit team visited the site on 12/11/2025 at 05:30pm. At the time of the site visit the weather was fine and the existing road surface was dry.

A night audit was undertaken at 07:30pm.

1.3 Specialist Advisors

There were no Specialist Advisors.

1.4 Risk Assessment

1.4.1 Safe System Findings

The aim of Safe System Findings is to focus the Road Safety Audit process on considering safe speeds and by providing forgiving roads and roadsides. This is to be delivered through the Road Safety Audit process by accepting that people will always make mistakes and by considering the known limits to crash forces the human body can tolerate. This is to be achieved by focusing the Road Safety Audit on particular crash types that are known to result in higher severity outcomes at relatively lower speed environments to reduce the risk of Fatal and Serious Injury (FSI) crashes.

The additional annotation “**FSI CRASH RISK**” displayed using red text shall be used to provide emphasis to any road safety audit finding that has the potential to result in Fatal or Serious Injury (FSI) or findings that are likely to result in the following crash types above the related speed environment: head-on (>70 km/h), right angle (>50 km/h), run off road impact object (>40 km/h), and crashes involving vulnerable road users (>30 km/h), as these crash types are known to result in higher severity outcomes at relatively lower speed environments.

The exposure and likelihood of crash occurrence shall then be considered for all findings deemed to pose “**FSI CRASH RISK**” and be evaluated based on an auditors professional judgement. Auditors should consider factors such as, traffic volumes and movements, speed environment, crash history and the road environment, and apply road safety engineering and crash investigation experience to determine the likelihood of crash occurrence. The likelihood of crash occurrence shall be considered either “**VERY HIGH**”, “**HIGH**”, “**MODERATE**” or “**LOW**” and this annotation shall be displayed using red text following the “**FSI CRASH RISK**” annotation on applicable findings.

1.4.2 All Other Findings

All other findings shall have the annotation “**CRASH RISK**” displayed using black text.

The exposure and likelihood of crash occurrence shall then be considered for all other findings and be evaluated based on an auditors professional judgement. Auditors should consider factors such as, traffic volumes and movements, speed environment, crash history and the road environment, and apply road safety engineering and crash investigation experience to determine the likelihood of crash occurrence. The likelihood of crash occurrence shall be considered either “**VERY HIGH**”, “**HIGH**”, “**MODERATE**” or “**LOW**” and this annotation shall be displayed using black text following the “**CRASH RISK**” annotation on applicable findings.

1.5 Previous Safety Audits

There have been no previous Road Safety Audits undertaken that the auditors are aware of.



1.6 Background Data

1.6.1 Crash History

A study of the recent crash history has been conducted on St Michael Terrace in the vicinity of the site inclusive of Queens Road intersection for the five-year period to the end of December 2024. This showed that there were no recorded crashes.

1.6.2 Traffic and Speed Data

There were no traffic data available for St Michael Terrace and Queens Road on MRWA Trafficmap database.

A summary of recent speed data is provided below:

Location	Posted Speed [km/h]
St Michael Terrace	50
Queens Road	50

1.6.3 Appendices

Appendix A – Audit Findings Location Plan

Appendix B – Audit Photographs

Appendix C – Crash Reports

Appendix D – List of Documents Provided for the Audit

Appendix E – Corrective Action Report (CAR)

2. ITEMS RAISED IN THIS AUDIT

2.1 Finding - Non-frangible hazards in the clear zone

It was noted that there were non-frangible trees adjacent to St Michael Terrace and Queens Road within the clear zone.

Justification of the finding

Unprotected hazards located in the clear zone are likely to pose a risk to vehicle occupants in the event that an errant vehicle leaves the road, this would result in serious injury to the occupants of errant vehicles.

Austrroads Guide to Road Design Part 6: Roadside Design, Safety and Barriers indicates that the removal of roadside hazards is rated very high as an effective treatment to prevent an off-path incident.

In accordance with the *MRWA supplement to Austrroads Guide to Road Design Part 6 (GRD 6)* the required clear zone width for a road with the design speed of $\leq 60\text{km/h}$ varies between 3.0m to 5.0m depending on the traffic volume. The clear zone should be kept free of non-frangible objects.

Recommendation:

Ensure that the required clear zone is provided as per the MRWA supplement to Austrroads GRD 6, or that vehicles are protected by a suitable safety barrier.

[FSI CRASH RISK | LOW]

2.2 Finding – Tripping Hazards

It was noted that there were some damaged sections of the path creating tripping hazards, with no further detail on the drawings if the tripping hazards will be repaired. (DA03_A)

Justification of the finding:

Damaged surfaces within the footpath creates a tripping hazard for pedestrians that could increase the risk of pedestrian injury. Additionally, cyclists travelling along these paths could cause wheels to collide with the damaged pavement resulting in off-path crash.

Austrroads Guide to Road Design Part 6: Paths for Walking and Cycling indicates that path networks should:

- provide surfaces that provide good surface grip, are free of tripping hazards, smooth, clear of obstructions and are well maintained (e.g. no broken paving);

- have well design landscaping that does not encroach sight lines or operating space;
- minimise conflicts between path users taking into consideration path widths or the provision of separated paths;
- have information signs reminding users of appropriate behaviours in using the path;
- have continuous routes and travel paths as short as possible;
- provide crossings that are appropriate for the traffic volume and traffic speed environment; and
- provide good access to key destinations.

Recommendation

Ensure existing footpaths used to be free from tripping hazards.

[CRASH RISK| LOW]

2.3 Finding – Potential Queuing at St Michael Terrace due to Primary School Traffic

Whilst it was noted that queuing is not expected due to the proposed childcare centre traffic, it is uncertain if there will be queuing for vehicles exiting onto Queens Road due to the primary school traffic.

Justification of the finding

Should there be insufficient gap for childcare traffic to enter Queens Road from St Michael Terrace, this increases the risk of road users trying to access the road during unsafe gaps and resulting in a right angle or sideswipe crash.

Austrroads Guide to Traffic Management Part 2: Traffic Theory indicates that in many traffic situations, particularly at intersections, conflicts between different traffic streams and/or fluctuations in flow can result in the formation of queues of vehicles. Queuing theory provides a way of analysing queue behaviour and predicting its consequences, including queue lengths and queuing delays.

Recommendation

Traffic volumes to be analysed during peak hours to ensure sufficient gap for traffic to access Queens Road.

[FSI CRASH RISK | LOW]

2.4 Finding – Footpath Crossing Adjacent to the Building

It was noted that the pedestrian crossing adjacent to the building might have insufficient sight distance due to the building walls. (DA03_A)

Justification of the finding:

Should vehicles exiting the parking not notice pedestrians crossing the access, this would result in hit pedestrian crash.

Austrroads Guide to Road Design Part 6: Paths for Walking and Cycling indicates that path networks should:

- provide surfaces that provide good surface grip, are free of tripping hazards, smooth, clear of obstructions and are well maintained (e.g. no broken paving);
- have well design landscaping that does not encroach sight lines or operating space;
- minimise conflicts between path users taking into consideration path widths or the provision of separated paths;
- have information signs reminding users of appropriate behaviours in using the path;
- have continuous routes and travel paths as short as possible;
- provide crossings that are appropriate for the traffic volume and traffic speed environment; and
- provide good access to key destinations.

Recommendation

Sight distance at that crossing to be assessed and if found insufficient, crossing to be reviewed to provide adequate sight distance.

[FSI CRASH RISK | LOW]

2.5 Finding – Sight Distance

It was noted that there is a large tree adjacent to the proposed access that might affect line of sight for exiting vehicles.

Additionally, it was noted that the sight distance at the Queens Road intersection appears be obstructed for vehicles entering Queens Road from St Michael Terrace due to the trees and vegetation.

Justification of the finding:

If the sight distance is reduced a vehicle may enter the through road into the path of an oncoming vehicle resulting in the right-angled crash with serious injury to vehicle occupants.

Austrroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections indicates that Safe Intersection Sight Distance (SISD) is the minimum distance which should be provided on the major road at any intersection. Additionally, that Crossing Sight Distance is necessary to ensure that the pedestrian can see approaching traffic in sufficient time to judge a safe gap and cross the roadway.

Recommendation

Ensure that sufficient line of sight is provided at the crossover in both directions.

Additionally, sight distance to be assessed at the intersection of St Michael Terrace and Queens Road, with any sight distance obstructions to be removed accordingly.

[FSI CRASH RISK | LOW]

2.6 Finding – Pedestrian Crossing Facilities

It was noted that kerb ramps and Tactile Ground Surface Indicators (TGSIs) were not proposed at both access crossings.

Justification of the finding:

People with limited or no vision have difficulty identifying where to cross without TGSIs. This increases the risk of conflict with vehicles and could result in hit pedestrian crash.

Additionally, should the crossing not include kerb ramps this results in a change in level at the crossing and creates a tripping hazard for pedestrians. Should pedestrians not notice the change in level this results in injury to the path users.

Kerb ramps should be designed in accordance with MRWA standard drawing 9831-5649 for Type A kerb ramps and standard drawing 9831-5649 for type B ramps.

Tactile Ground Surface Indicators (TGSIs) are essential in assisting people with vision impairment to safely crossroads. It is a DDA requirement for all pedestrian kerb ramps to be provided with TGSIs installed in accordance with the Department of Transport's Planning and Designing for Pedestrians: Guidelines, MRWA Standard Drawings 9831-5649 and 200931-0089, and Australian Standard AS 1428.4.

Recommendation

Ensure that kerb ramps and TGSIs are installed at the crossings in accordance with MRWA design drawings and AS1428.1.

[CRASH RISK | LOW]

2.7 Finding – Service Cover

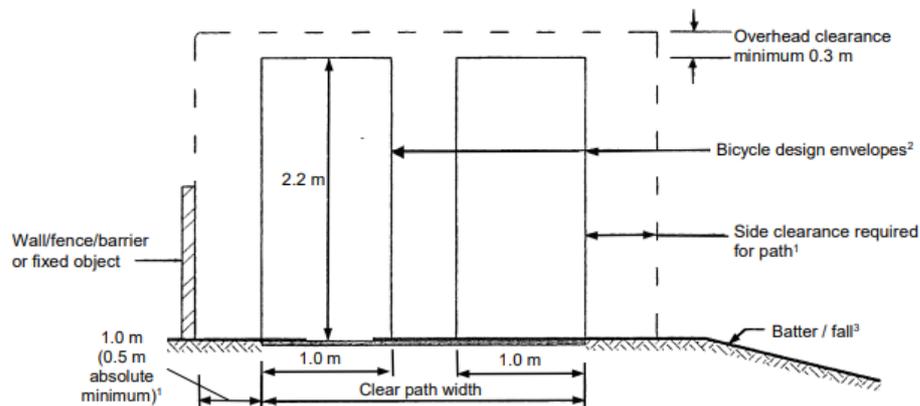
It was noted that there is a service cover protruding above ground and onto the footpath, with no detail on the drawings if the service cover will be relocated.

Justification of the finding:

Service covers protruding above the ground and within the footpath creates a tripping hazard and is within the required clearance from the path. This would also create a hazard for cyclist causing a run-off crash resulting in serious injury.

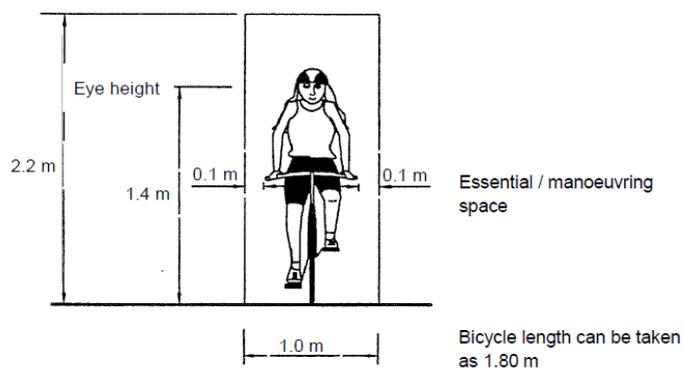
Austrroads Guide to Road Design Part 6: Paths for Walking and Cycling indicates that the clearances (Figure 5.7) may be used to construct the appropriate width of the facility required for paths that cyclists use. The envelope based on Figure 3.5, is assumed to be consistent over the range of operating conditions and allowance for higher speeds is provided through larger clearances to other cyclists and fixed objects beside the path.

Figure 5.7: Clearances between cyclist envelope and potential path hazards



- 1 This may be reduced to 0.3 m where a fence or obstacle has smooth features.
- 2 Refer to Section 3.2.2 for guidance on bicycle design envelopes.
- 3 Refer to Section 5.5.3 for guidance on batters and need for a fence.

Figure 3.5: Cyclist design envelope





Recommendation

Relocate the service cover outside of the required clearance from the edge of path.

[CRASH RISK | MODERATE]

3. AUDIT TEAM STATEMENT

I hereby certify that the audit team have examined the documents listed in Appendix D and have inspected the site in undertaking this Road Safety Audit. I also confirm that this audit has been carried out independently of the design team following the general principles detailed in *Austrroads Guide to Road Safety Part 6: Road Safety Audit* and in accordance with Main Roads Policy and Guidelines for Road Safety Audit.

The audit has been carried out for the sole purpose of identifying any features of the design which could be altered or removed to improve the safety of the proposal. The identified issues have been noted in this report. The accompanying findings and recommendations are put forward for consideration by the Client for implementation.

Audit Team Leader

Anthony Anastas
Shawmac Traffic & Safety

	Signature
17/11/2025	Date

Disclaimer

This report contains findings and recommendations based on examination of the site and/or relevant documentation. The report is based on the conditions viewed on the day of inspection and is relevant at the time of production of the report. Information and data contained within this report is prepared with due care by the Road Safety Audit Team. While the Road Safety Audit Team seeks to ensure accuracy of the data, it cannot guarantee its accuracy.

Readers should not solely rely on the contents of this report or draw inferences to other sites. Users must seek appropriate expert advice in relation to their own particular circumstances.

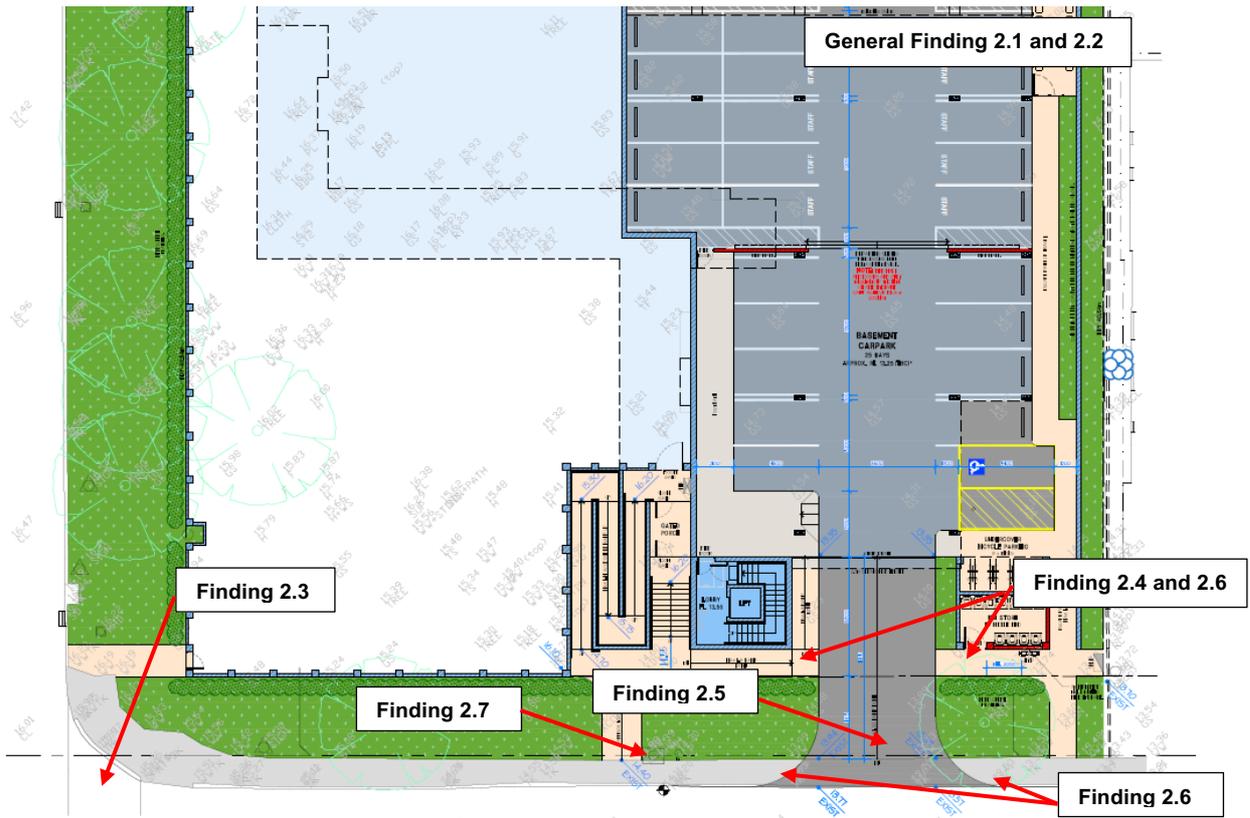
The Road Safety Audit Team does not warrant, guarantee or represent that this report is free from errors or omissions or that the information is exhaustive. Information contained within may become inaccurate without notice and may be wholly or partly incomplete or incorrect. Before relying on the information in this report, users should carefully evaluate the accuracy, completeness and relevance of the data for their purposes.

Subject to any responsibilities implied in law which cannot be excluded, the Road Safety Audit Team is not liable to any party for any losses, expenses, damages, liabilities or claims whatsoever, whether direct, indirect or consequential, arising out of or referable to the use of this report, howsoever caused whether in contract, tort, statute or otherwise.



APPENDIX A

AUDIT FINDINGS LOCATION PLAN



Audit Findings Location Plan



APPENDIX B

AUDIT PHOTOGRAPHS



Finding 2.1



Finding 2.2



Finding 2.1 and 2.7



Finding 2.1



Finding 2.1 and 2.5



Finding 2.1



Finding 2.5



Finding 2.5



APPENDIX C

CRASH REPORTS

Message

The report has no data.

Summary Crash History
Road:
St Michael Tce, From: Queens Rd; To: 0.43; All
From Date: 2020/01/01
To Date: 2024/12/31
Crash Type: All
Severity: All
Summarise By Intx: No



APPENDIX D
LIST OF DOCUMENTS PROVIDED FOR THE AUDIT



Document Number:
U24.177.r01a
DA01_A
DA02_A
DA03_A
DA04_A
DA05_A
DA06_A
DA07_A
DA08_A
DA09_A
DA10_A
DA11_A
DA12_A



APPENDIX E
CORRECTIVE ACTION REPORT



**Corrective Action Report – Childcare Centre – 34-36 St Michael Terrace, Mount Pleasant
Preliminary Design Audit**

Findings and Recommendations	Project Manager		
	Agree / Disagree	Reason for Disagreeing	Proposed Action and Comments
<p>2.1 – Finding - Non-frangible hazards in the clear zone</p> <p>It was noted that there were non-frangible trees adjacent to St Michael Terrace and Queens Road within the clear zone.</p>	Choose an item.		
<p>Recommendation</p> <p>Ensure that the required clear zone is provided as per the MRWA supplement to Austroads GRD 6, or that vehicles are protected by a suitable safety barrier.</p> <p>[FSI CRASH RISK LOW]</p>	Choose an item.		
<p>2.2 – Finding - Tripping Hazards</p> <p>It was noted that there were some damaged sections of the path creating tripping hazards, with no further detail on the drawings if the tripping hazards will be repaired. (DA03_A)</p>	Choose an item.		



<p>Recommendation</p> <p>Ensure existing footpaths used to be free from tripping hazards.</p> <p>[CRASH RISK LOW]</p>	<p>Choose an item.</p>		
<p>2.3 – Finding - Potential Queuing at St Michael Terrace due to Primary School Traffic</p> <p>Whilst it was noted that queuing is not expected due to the proposed childcare centre traffic, it is uncertain if there will be queuing for vehicles exiting onto Queens Road due to the primary school traffic.</p>	<p>Choose an item.</p>		
<p>Recommendation</p> <p>Traffic volumes to be analysed during peak hours to ensure sufficient gap for traffic to access Queens Road.</p> <p>[FSI CRASH RISK LOW]</p>	<p>Choose an item.</p>		
<p>2.4 – Finding - Footpath Crossing Adjacent to the Building</p> <p>It was noted that the pedestrian crossing adjacent to the building might have insufficient sight distance due to the building walls. (DA03_A)</p>	<p>Choose an item.</p>		
<p>Recommendation</p>	<p>Choose an item.</p>		



<p>Sight distance at that crossing to be assessed and if found insufficient, crossing to be reviewed to provide adequate sight distance.</p> <p>[FSI CRASH RISK LOW]</p>			
<p>2.5 – Finding - Sight Distance</p> <p>It was noted that there is a large tree adjacent to the proposed access that might affect line of sight for exiting vehicles.</p> <p>Additionally, it was noted that the sight distance at the Queens Road intersection appears be obstructed for vehicles entering Queens Road from St Michael Terrace due to the trees and vegetation.</p>	<p>Choose an item.</p>		
<p>Recommendation</p> <p>Ensure that sufficient line of sight is provided at the crossover in both directions.</p> <p>Additionally, sight distance to be assessed at the intersection of St Michael Terrace and Queens Road, with any sight distance obstructions to be removed accordingly.</p> <p>[FSI CRASH RISK LOW]</p>	<p>Choose an item.</p>		
<p>2.6 – Finding - Pedestrian Crossing Facilities</p>	<p>Choose an item.</p>		



<p>It was noted that kerb ramps and Tactile Ground Surface Indicators (TGSIs) were not proposed at both access crossings.</p>			
<p>Recommendation Ensure that kerb ramps and TGSIs are installed at the crossings in accordance with MRWA design drawings and AS1428.1. [CRASH RISK LOW]</p>	<p>Choose an item.</p>		
<p>2.7 – Finding - Service Cover It was noted that there is a service cover protruding above ground and onto the footpath, with no detail on the drawings if the service cover will be relocated.</p>	<p>Choose an item.</p>		
<p>Recommendation Recommendation Relocate the service cover outside of the required clearance from the edge of path. [CRASH RISK MODERATE]</p>	<p>Choose an item.</p>		



**Corrective Action Report – Childcare Centre – 34-36 St Michael Terrace, Mount Pleasant
Preliminary Design Audit**

NOTE:

- This Corrective Action Report is to be read in conjunction with the full Road Safety Audit Report and its findings and recommendations.
- The asset owners (MRWA and/or LGA) **must** be informed of these findings, recommendations and proposed actions.
- Items not under the responsibility of this project representative must be forwarded to the persons / agencies who are responsible.

These findings and recommendations have been considered, and the actions listed will be taken accordingly.

Responsible Project Representative	Company / Agency / Division	Position	Date

Asset Owner Representative	Company / Agency / Division	Position	Date