

BMCE

Proposed Residential
Development at Howth Road,
Dublin 3

Stage 1 Road Safety Audit

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Rev	Prepared By	Reviewed By	Approved By	Issue Date	Reason for Revision
3.0	AOR	MAH	AOR	31 st March 2021	Final
2.0	AOR	TAG	AOR	8 th March 2021	Site visit
1.0	AOR	TAG	AOR	2 nd March 2021	Draft Report

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1 Introduction

1.1 General

This report results from a Stage 1 Road Safety Audit on the proposed Residential Development on Howth Road, Dublin 3 carried out at the request of Mr Darragh O'Rourke of BMCE.

The members of the Road Safety Audit Team are independent of the design team, and include:

Mr. Alan O'Reilly

(BA BAI MSc CEng MIEI RSACert)
Road Safety Audit Team Leader

Mr. Mazen Al Hosni

(BEng, MIEI)
Road Safety Audit Team Member

The Road Safety Audit took place during February and March 2021 and comprised an examination of the documents provided by the designers (see Appendix B). In addition to examining the documents supplied the Road Safety Audit Team visited the site of the proposed measures on the 2nd and 8th March 2021. Weather conditions during the site visit were dry, but foggy, and the road surface was dry. Traffic volumes during the site visit were considered to be low, pedestrian and cyclist volumes were considered to be low and traffic speeds were considered to be generally within the posted speed limit.

Where problems are relevant to specific locations these are shown on drawing extracts within the main body of the report and their locations are shown in Appendix D. Where problems are general to the proposals sample drawing extracts are within the main body of the report where considered necessary.

This Stage 1 Road Safety Audit has been carried out in accordance with the requirements of GE-STY-01024 - Road Safety Audit (December 2017), contained on the Transport Infrastructure Ireland (TII) Publications website.

The scheme has been examined and this report compiled in respect of the consideration of those matters that have an adverse effect on road safety and considers the perspective of all road users. It has not been examined or verified for compliance with any other standards or criteria. The problems identified in this report are considered to require action in order to improve the safety of the scheme and minimise collision occurrence.

If any of the recommendations within this road safety audit report are not accepted, a written response is required, stating reasons for non-acceptance. Comments made within the report under the heading of Observations are intended to be for information only. Written responses to Observations are not required.

2 Project Description

2.1 General



FIGURE 2.1: SITE LOCATION PLAN (SOURCE: WWW.OPENSTREETMAP.ORG)

It is proposed to construct a residential development on the southern side of the R105 (Howth Road) to the east of its junction with the access road to Howth Castle and the Deer Park Golf Club. The proposed development will include three apartment blocks and a basement carpark. The development will be accessed from Howth Road at the western boundary of the site approximately 110m from the T-Junction with the Golf Club Access Road. A pedestrian access will also be provided from the existing footpath on the southern side of Howth Road.

The development access road will form a stop-controlled T-Junction with Howth Road, and will lead to the basement carpark access ramp. An area of hardstanding, and a grass paved surface, is proposed adjacent the top of the ramp to permit emergency access to the apartment blocks and will also include a turning circle for vans such as ESB vans and deliveries.

The gradient of the access ramp will be 1:20 while the adjacent area of hard standing will have a gradient of 1:40. The development will include leisure areas, planting and seating for residents. Parking for residents will be provided in the basement carpark which will include 6 No mobility parking spaces.

In the vicinity of the proposed development Howth Road is a two-way single carriageway road with one traffic lane in each direction and is in a residential area with direct access to residential properties provided from Howth Road. Footpaths are provided on both sides of the carriageway and cycle lanes in each direction are also provided. The posted speed limit along this section of Howth Road is 60kph, which reduces to 50kph further east at the entrance to Howth Town Centre.

2.2 Collision History

The Road Safety Authority website (www.rsa.ie) was consulted to identify historical collisions in the vicinity of the proposed scheme. The website includes summary information on recorded collision occurrence for the period 2005 to 2016 (see Figure 2.2). Five Minor Injury collisions and one Serious Injury collision were recorded on the R105 (Howth Road) in the vicinity of the proposed development.

Table 2.1 below summarises the details recorded in relation to these collisions.

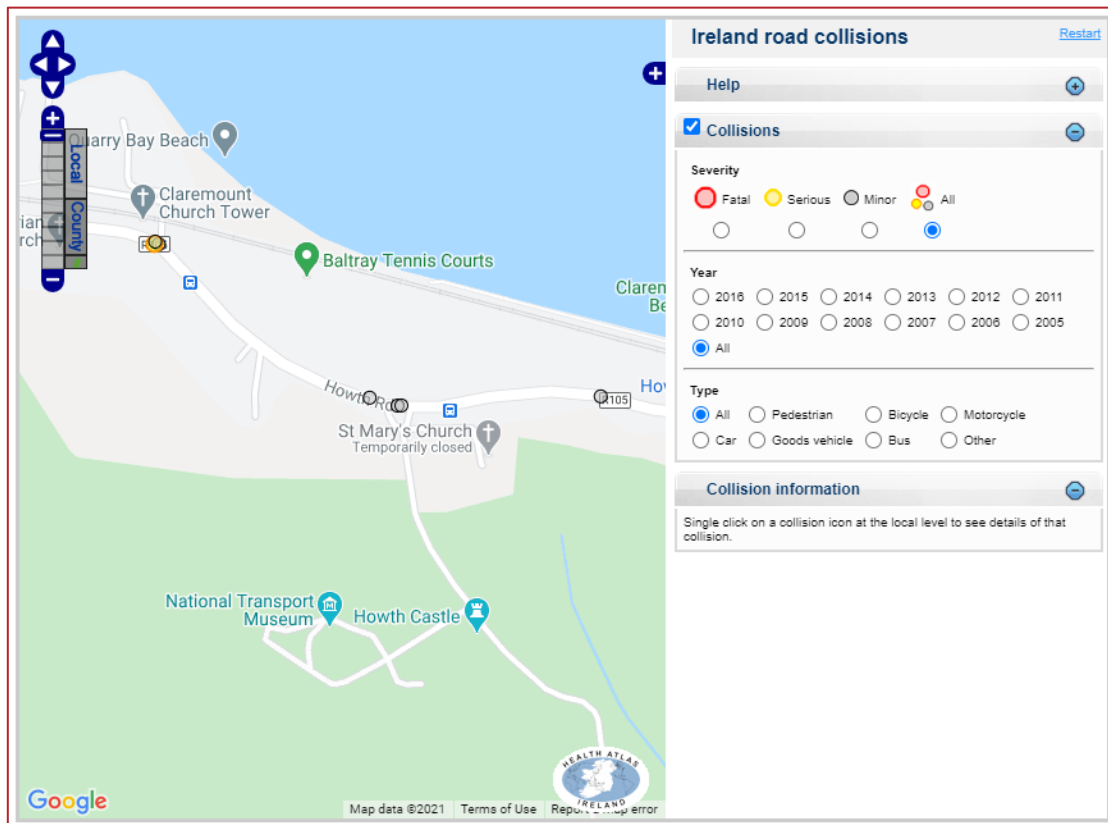


FIGURE 2.2: HISTORICAL COLLISIONS IN THE VICINITY OF THE PROPOSED DEVELOPMENT (SOURCE WWW.RSA.IE)

TABLE 2.1: SUMMARY OF HISTORICAL COLLISIONS IN THE VICINITY OF THE PROPOSED DEVELOPMENT (SOURCE WWW.RSA.IE)

Severity	Year	Vehicle	Collision Type	Casualties	Day of week	Time	Speed limit	Location
Serious	2005	Car	Pedestrian	1	Saturday	7pm-11pm	30kph	R105 at Claremount Church Tower
Minor	2011	Motorcycle	SVO	1	Thursday	4pm - 7pm	60kph	R105 at side road junction
Minor	2013	Goods Vehicle	Rear-end	1	Tuesday	4pm -7pm	60kph	R105 at side road junction
Minor	2014	Car	SVO	1	Saturday	11pm-3am	50kph	R105 at side road junction
Minor	2015	Car	Unknown	1	Saturday	7am-10am	50kph	R105 at Claremount Church Tower
Minor	2015	Goods Vehicle	Rear-end	2	Friday	4pm - 7pm	50kph	R105 east of junction

3 Main Report

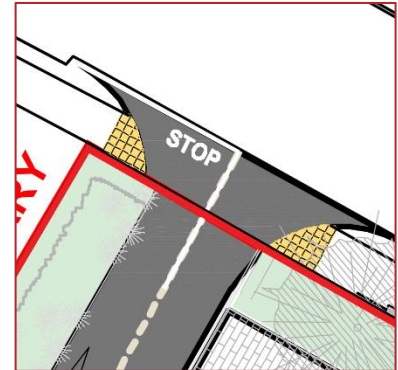
3.1 Problem

Location: Drawing HOW-BMD-00-ZZ-DR-C1000 (Rev. P4)

Summary: The tactile paving indicated at the uncontrolled crossing of the development access is not of the required depth across the full width of the crossing.

Tactile paving has been indicated on both sides of the access to the proposed development. The depth of the tactile paving, however, is not sufficient across the full width of the crossing for an inline crossing.

This could lead to a visually impaired pedestrian stepping over the tactile paving, where it is of insufficient depth, and inadvertently entering the carriageway without due care and attention where they are at an increased risk of being struck by a vehicle.



Recommendation

Ensure the tactile paving is a minimum of 1.2m deep across the full width of the crossing.

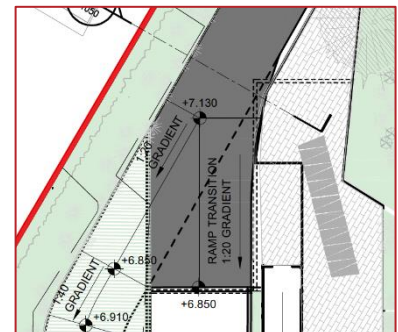
3.2 Problem

Location: Drawing HOW-BMD-00-ZZ-DR-C1001 (Rev. P4)

Summary: Sudden change in the horizontal alignment of the access and the narrowing of the carriageway at the top of the ramp may lead to poor lane discipline and kerb strikes.

The access road within the proposed development leading to the access ramp to the basement carpark includes sudden changes of direction in the horizontal alignment and appears to widen at the top of the ramp, which coincides with the location of these changes in direction.

A combination of the narrowing cross section and sudden changes in direction may lead to drivers being unable to sufficiently discern the edge of carriageway and thus the narrowing, particularly during the hours of darkness resulting in the potential for kerb strikes and material damage collisions.



Recommendation

Ensure the wider carriageway gradually tapers at the narrowing and that the edge of carriageway is sufficiently visible on the approach to, and departure from, the basement carpark access ramp.

Also, as the design progresses, ensure the access road is sufficiently lit.

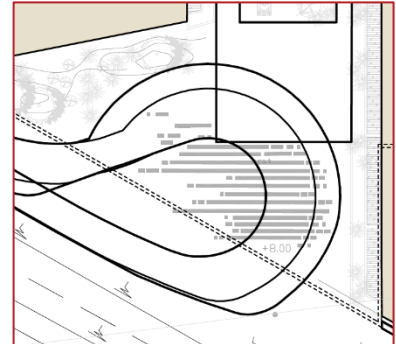
3.3 Problem

Location: Drawing HOW-BMD-00-ZZ-DR-C1042 (Rev. P4)

Summary: Fire tenders may experience difficulty when travelling in the grassed verge and may reduce the structural integrity of the paved areas within the development.

The swept path for a fire tender within the proposed development is indicated as using the grass verge and pedestrian area when travelling through, and turning within, the development.

It is unclear if the paved vulnerable road user areas will have sufficient structural properties to withstand a fire tender as it undertakes a U-turn manoeuvre. If the pavement is not strong enough to support such loads there is a risk of cracking and structural failure resulting in trip hazards for VRUs.



Recommendation

The 'Grass Pave' area adjacent the top of the basement carpark access ramp should be extended to the rear of the apartment blocks throughout the length of the emergency access route.

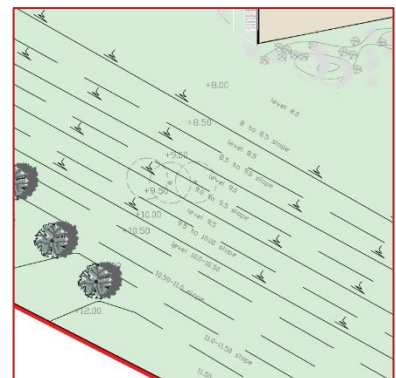
Also, ensure the paved VRU areas can sufficiently support the load of a turning fire tender.

3.4 Problem

Location: Drawing HOW-BMD-00-ZZ-DR-C1000 (Rev. P4)

Summary: Pedestrians, particularly young children, may climb the embankment to the rear of the development where there is a risk of falls from a height and serious injuries.

An embankment is indicated to the rear of the apartment blocks within the proposed development which is indicated as rising in increments of 0.5m, with level surfaces between each rise, with a total rise of 4m. The Audit Team are concerned that pedestrians, particularly young children, may climb on the embankment where there is a subsequent risk of falls from height and the potential for serious injury.



Recommendation

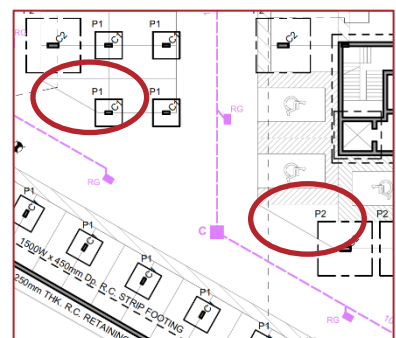
Measures (i.e. vegetation, landscaping, fencing etc) should be provided at the base of the embankment to deter climbing.

3.5 Problem

Location: Drawing HOW-BMD-00-ZZ-DR-C1002 (Rev. P4)

Summary: Drivers may park in areas not designated for parking resulting in them encroaching into the traffic lanes.

Triangular areas have been indicated at the end of parking aisles within the basement carpark. The Audit Team is concerned that, should all the spaces in the carpark be occupied, drivers may park their vehicles at these locations where there is insufficient space for a vehicle to park safely outside the carpark carriageway. Should drivers park in these locations, there is a risk of vehicles encroaching into the traffic lane resulting in an increased risk of low speed material damage collisions.



Recommendation

If these areas are for smaller vehicles (i.e. motorcycles), ensure they are sufficiently marked as such. Otherwise, these areas should be hatched

3.6 Problem

Location: Drawing HOW-BMD-00-ZZ-DR-C1002 (Rev. P4)

Summary: Junction control and priority has not been indicated within the basement carpark.

Junction control and priority has not been indicated at locations where the aisles within the carpark intersect. This could result in driver confusion and hesitation leading to collisions should drivers assume that they have priority over vehicles in adjacent carpark aisles, leading to low speed collisions and material damage.

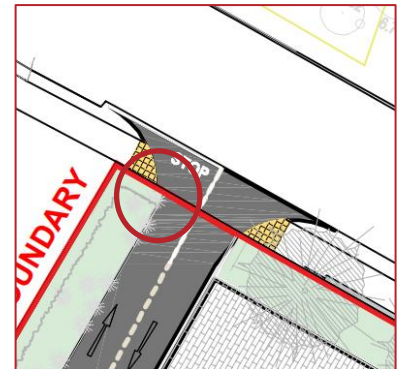


Recommendation

Junction control and priority should be clearly provided via roadmarkings at locations where aisles intersect within the carpark.

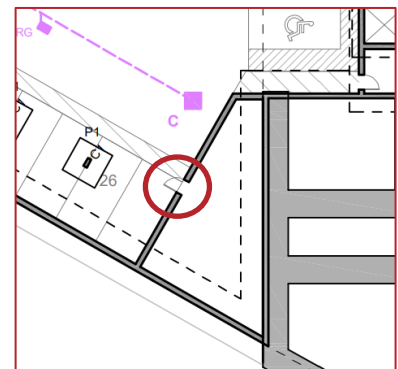
4 Observations

4.1 The junction corner radius on the western side of the development access does not align with the edge of the access road carriageway/verge. While the Audit Team assume that this is a drafting error the drawing should be amended to correctly display the junction radius and verge.

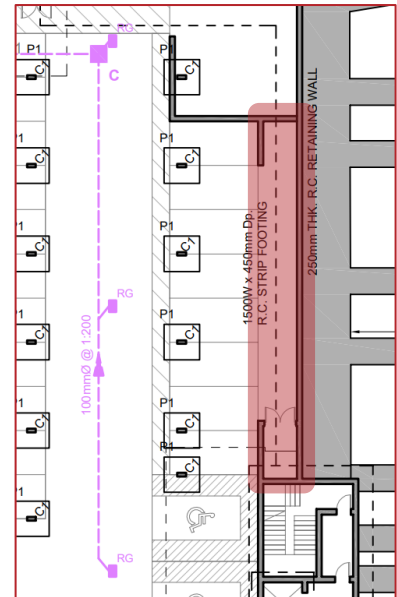


4.2 It is unclear if cycle parking has been provided within the development. No facilities appear to be indicated at ground level. Two large rooms have been indicated within the basement carpark which the Audit Team assume is for this purpose, however, it has not been noted on the drawing as such. A failure to provide formal cycle parking facilities within the development may lead to cyclists parking their bicycles at inappropriate locations which may result in footpaths, or accesses, being blocked.

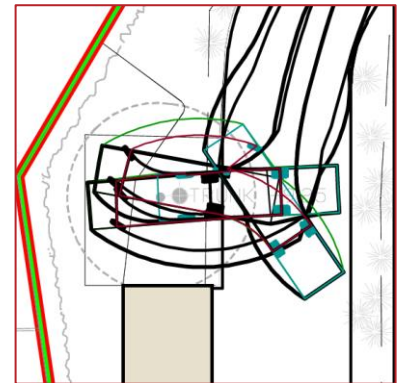
4.3 A room has been indicated in the south-eastern corner of the basement carpark accessed from a door adjacent a parking space. When this space is occupied this door will be blocked restricting access to this room. The door should be relocated, or the parking space removed, to ensure access to this room is possible at all times.



4.4 An access route has been indicated to the rear of the easterly most aisle of parking spaces within the basement carpark. It is unclear where this route leads to as a door has been indicated at one end, and a wall at the other. When the adjacent spaces are occupied access to/from this 'corridor' will be restricted which could lead to pedestrians who enter the carpark at this location being unable to leave this 'corridor.' An exit should be provided to allow safe access/egress at all times.



4.5 The swept path for an ESB Van turning within the proposed development is indicated as using the grass verge adjacent the top of the basement carpark access ramp. There is a risk that the wheels of a van may sink within the grass verge when turning which may lead to rutting in the verge and difficulty when exiting. The 'Grass Pave' area adjacent the top of the basement carpark access ramp should be extended to the turning circle used by ESB/delivery vans.



5 Road Safety Audit Team Statement

We certify that we have examined the drawings referred to in this report. The examination has been carried out with the sole purpose of identifying any features of the design that could be removed or modified in order to improve the safety of the scheme.

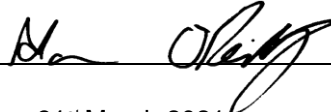
The problems identified have been noted in this report together with associated safety improvement suggestions, which we would recommend should be studied for implementation.

No one on the Road Safety Audit Team has been involved with the design of the scheme.

ROAD SAFETY AUDIT TEAM LEADER

Alan O'Reilly

Signed:



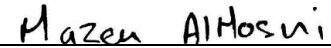
Dated:

31st March 2021

ROAD SAFETY AUDIT TEAM MEMBER

Mazen Al Hosni

Signed:



Dated:

31st March 2021

Appendix A – Road Safety Audit Brief Checklist

Have the following been included in the audit brief?: (if 'No', reasons should be given below)

	Yes	No
1. The Design Brief	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Departures from Standard	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Scheme Drawings	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Scheme Details such as signs schedules, traffic signal staging	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Collision data for existing roads affected by scheme	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Traffic surveys	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Previous Road Safety Audit Reports and Designer's Responses/Feedback Form	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Previous Exception Reports	<input type="checkbox"/>	<input checked="" type="checkbox"/>
9. Start date for construction and expected opening date	<input type="checkbox"/>	<input checked="" type="checkbox"/>
10. Any elements to be excluded from audit	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Any other information?

(if 'Yes', describe below)

Yes No

Appendix B – Documents Submitted to the Road Safety Audit Team

DOCUMENT/DRAWING TITLE	DOCUMENT/DRAWING NO.	REVISION
Site Location Map	HOW-MCA-00-00-DR-A-1100	P1
Proposed Site Layout	HOW-BMD-00-ZZ-DR-C1000	P4
Proposed Road Layout / Sightlines	HOW-BMD-00-ZZ-DR-C1001	P4
Proposed Basement Layout	HOW-BMD-00-ZZ-DR-C1002	P4
Proposed Road Layout Autotrack – Car	HOW-BMD-00-ZZ-DR-C1040	P4
Proposed Road Layout Autotrack – ESB Van	HOW-BMD-00-ZZ-DR-C1041	P4
Proposed Road Layout Autotrack – Fire Access	HOW-BMD-00-ZZ-DR-C1042	P4

Appendix C – Feedback Form

Road Safety Audit Feedback Form

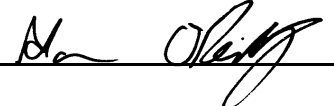
Scheme: Proposed Development at Howth Road, Dublin 3

Route No.: R105

Audit Stage: Stage 1 Road Safety Audit **Date Audit Completed:** 2nd March 2021

To Be Completed By Designer				To Be Completed By Audit Team Leader
Paragraph No. in Safety Audit Report	Problem Accepted (Yes/No)	Recommended Measure(s) Accepted (Yes/No)	Describe Alternative Measure(s). Give reasons for not accepting recommended measure	Alternative Measures or Reasons Accepted by Auditors (Yes/No)
3.1	Yes	Yes		
3.2	Yes	Yes		
3.3	Yes	Yes		
3.4	Yes	No	Slopes are incremented at max 1:4 slopes and is not seen as a H&S risk.	Yes
3.5	Yes	Yes		
3.6	Yes	Yes		

Signed:  Designer **Date** 31.03.21

Signed:  Audit Team Leader **Date** 31st March 2021

Signed:  Employer **Date** 07.04.21

Appendix D – Problem Locations



Problem 3.1

Problem 3.2

Problem 3.3

Problem 3.6

Problem 3.4

Problem 3.5

