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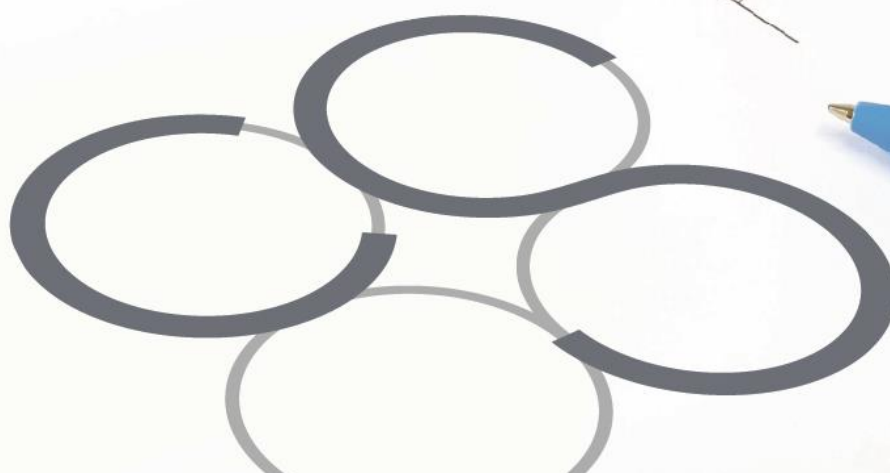
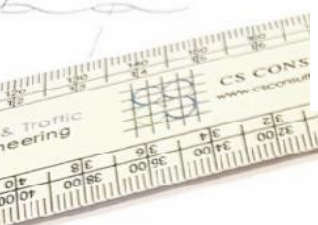
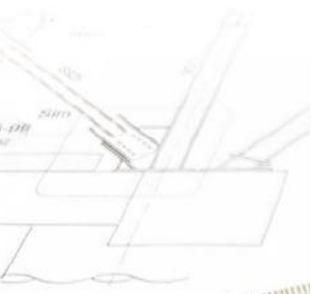
LIMERICK  
LONDON  
DUBLIN

**Quality Audit Response Document**  
**Proposed Residential Development**  
**31 & 31A Raven's Rock Road,**  
**Sandyford Business Park, Dublin 18**

Client: Ravensbrook Limited

Job No. Q004

March 2022





## QUALITY AUDIT RESPONSE DOCUMENT

### PROPOSED RESIDENTIAL DEVELOPMENT, 31 & 31A RAVEN'S ROCK ROAD, SANDYFORD BUSINESS PARK, DUBLIN 18

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#### **Appendix A: Quality Audit**

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File Location: j:\q\_jobs\job-q004\b\_documents\5.0\_civils\reports\transport\rr-csc-zz-xx-rp-c-0008\_qard quality audit response document.docx

**BS 1192 FIELD**      **RR-CSC-ZZ-XX-RP-C-0008\_QARD Quality Audit Response Document**

Job Ref.	Author	Reviewed By	Authorised By	Issue Date	Rev. No.
Q004	LJ	FB	NB	01.03.2022	-



## **1.0 INTRODUCTION**

This document addresses item raised in the Quality Audit (incl. Road Safety Audit, Walking Audit and Cycling Audit).

The following responses are made to clarify that the recommendations of the Quality Audit carried out by PMCE on the proposed residential development have been implemented within the proposed scheme.



## 2.0 RESPONSES TO QUALITY AUDIT

The Quality Audit undertaken by PMCE includes an access, cycling, walking and road safety audit. The following sections outline responses to all items raised within the Quality Audit. Refer to the Quality Audit document within **Appendix A**.

### 2.1 Road Safety Audit

#### 2.1.1 Item 3.4.1

*It is unclear if emergency, or larger, vehicles will be able to access the development's carpark and if they will be able to safely turn around within the carpark extents.*

*Columns have been indicated within the development's carpark which suggest that it is covered, or at least partially covered. It is unclear what clearance will be provided to the soffit and if drivers, particularly those in high sided vehicles (e.g. vans, ambulances etc.), will be warned of the height restriction on approach. If sufficient warning is not provided there is a risk of strikes and material damage.*

*Additionally, information regarding swept path analysis within the carpark has not been provided and it is therefore unclear if a van or ambulance will be able to safely turn within the carpark.*

#### 2.1.2 Recommendation:

*Measures advising drivers of the height restriction should be provided at the entrance to the carpark where it will be sufficiently visible to approaching drivers. Also, ensure the height restriction does not restrict entry for emergency vehicles, such as ambulances, and that these vehicles can safely enter, turn, and exit the development without striking the building structure, roadside furniture, or parked vehicles.*

### 2.1.3 Response to Item 3.4.1

Signage shall be erected at the entrance to the car park, warning drivers of height restrictions. Sufficient space has been provided within the development car parking area to accommodate the turning manoeuvres of ambulances and other servicing vehicles. Please refer to CS Consulting drawing no. **RR-CSC-XX-XX-DR-C-0007** and **RR-CSC-XX-XX-DR-C-0017** for details of swept path within the development car park.

### 2.1.4 Item 3.4.2

*A 'Stop' sign has not been indicated at the exit from the proposed development's carpark.*

*A 'Stop' sign has not been indicated at the exit from the development's carpark. While 'Stop' text and lining has been indicated on the carriageway there is a risk that this may fade overtime or become obscured during adverse weather.*

*This could lead to drivers being insufficiently aware of the location of the junction and the need to stop resulting in them failing to come to a stop before entering Ravensrock Road and overshoot type incidents and side-on collisions with vehicles on Ravens Rock Road.*

### 2.1.5 Recommendation:

*Provide a 'Stop' sign at the carpark exit. Ensure an approaching driver's visibility towards the sign is not restricted by the building boundary or trees.*

### 2.1.6 Response to Item 3.4.2

A 'Stop' sign has been provided at the car park exit as shown on CS Consulting drawing no. **RR-CSC-XX-XX-DR-C-0017**.



#### 2.1.7 Item 3.4.3

*Trees indicated on the northern side of the development access may restrict a driver's visibility when exiting the development onto Ravens Rock Road.*

*Trees have been indicated on the northern side of the development access within the visibility splay of drivers exiting the carpark. The clearance to the tree canopy is unclear and, if too low, there is a risk that it may restrict visibility to the north for drivers exiting the carpark. This could lead to drivers exiting the carpark when it is unsafe to do so, increasing the risk of side-on collisions with vehicles on Ravens Rock Road.*

#### 2.1.8 Recommendations:

*Ensure the proposed trees do not restrict an exiting driver's visibility to the north when exiting the proposed development.*

#### 2.1.9 Response to Item 3.4.3

Proposed trees shall have a narrow trunk and shall not restrict visibility from the development car park exit. Refer to CS Consulting drawing no. **RR-CSC-XX-XX-DR-C-0006** and **RR-CSC-XX-XX-DR-C-0017**.

#### 2.1.10 Item 3.4.4

*The location of the doors to the buildings within the carpark adjacent the development's access will result in pedestrians exiting directly into the carpark carriageway and possibly into the path of a vehicle entering the development.*

*Two buildings/rooms are indicated within the proposed development's carpark adjacent the access. The doors are indicated such that pedestrians will exit these rooms/buildings directly into the carriageway.*



*Drivers entering the development may have insufficient visibility towards this location and may therefore not anticipate a pedestrian exiting these rooms into their path, resulting in an increased risk of vehicle-pedestrian collisions.*

2.1.11 Recommendation:

*The doors should open into a pedestrian area, away from motorized traffic. Alternatively, the doors should open from a different location within the building/room.*

2.1.12 Response to Item 3.4.4

Doors within the two rooms adjacent to the car park access have been revised to open from a different location within the room and shall now open onto pedestrian only areas. Refer to CS Consulting drawing no. **RR-CSC-XX-XX-DR-C-0017** for details.

2.1.13 Item 3.4.5

*Low hanging tree canopies may obstruct vulnerable road users (VRUs) along pedestrian/cycle routes.*

*Trees have been indicated within the landscaped area adjacent to the development's northern boundary. It is however unclear at what height the tree canopy will be mounted relative to the footpath at this location. If there is insufficient clearance beneath the tree canopy, there is a risk that tree branches may present a hazard to VRUs resulting in personal injuries if struck.*

*Also, during Autumn months, fallen leaves may accumulate within the pedestrian/cycle routes increasing the risk of skidding for cyclists, or slips and falls for pedestrians.*



#### 2.1.14 Recommendation:

*Ensure sufficient vertical clearance for cyclists and pedestrians is provided beneath tree canopies within the development.*

*Also, a maintenance strategy should be developed ensuring VRU routes within the development are kept clear of obstacles and debris.*

#### 2.1.15 Response to Item 3.4.5

Existing tree canopies provide sufficient vertical clearance for cyclists and pedestrians. Additionally, the management company shall be responsible for the upkeep of areas within the site, including removal of fallen leaves to keep paths clear for VRU's. Refer to CS Consulting drawing no. **RR-CSC-XX-XX-DR-C-0017** for details.

#### 2.1.16 Item 3.4.6

*Tactile paving at the proposed uncontrolled pedestrian crossing of the development access is not of the required depth.*

*An uncontrolled pedestrian crossing has been indicated across the access to the proposed development. The tactile paving on both sides of the crossing is indicated as only two rows of tactile paving deep which is not the required depth for an inline crossing.*

*This may lead to visually impaired pedestrians stepping over the tactile paving and inadvertently entering the carriageway where there is an increased risk of being struck by a vehicle.*

#### 2.1.17 Recommendation:

*The tactile paving at inline pedestrian crossings should be a minimum of 1.2m (three rows of tactile) deep.*

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2.1.18 Response to Item 3.4.6

3no. rows of tactile paving have been provided at the pedestrian crossing of the development access junction. Please refer to CS Consulting drawing no. **RR-CSC-XX-XX-DR-C-0005**, **RR-CSC-XX-XX-DR-C-0006**, and **RR-CSC-XX-XX-DR-C-0017** for details.

2.1.19 Item 3.4.7

*The existing footpath on the southern side of the development access does not align sufficiently with the footpath further south on the opposite side of the adjacent access, and it is unclear from the drawing provided if this arrangement would remain following construction of the proposed development.*

*During the site visit, the Audit Team noted that the existing footpath on the southern side of the proposed development access does not align with the footpath further south on the opposite side of the adjacent access. It is unclear from the drawing provided if the proposed amendments at the existing access junction will rectify this problem.*

*If the footpath on the southern side of the adjacent access does not align with the footpath on the southern side of the development access a visually impaired pedestrian may be directed away from the downstream footpath and into a grassed verge, where they may trip on a high kerb, or into a carpark increasing the risk of being struck by a vehicle.*

2.1.20 Recommendation:

*Ensure the footpath on the southern side of the proposed development access aligns with the footpath further south of the adjacent access such that a visually impaired pedestrian is directed to the downstream footpath.*



#### 2.1.21 Response to Item 3.4.7

The development access junction has been designed such that the footpath on the southern side of the proposed development aligns with the footpath further south. Please refer to CS Consulting drawing no. **RR-CSC-XX-XX-DR-C-0017** for details.

#### 2.1.22 Item 3.4.8

*It is unclear if the proposed development will be sufficiently lit during the hours of darkness.*

*Information regarding public lighting columns within the proposed carpark, and landscaped area, has not been provided to the Audit Team and it is therefore unclear if the development will be sufficiently lit during the hours of darkness. There are existing public lighting columns on the Carmanhall Road at the development's northern boundary, however it is also unclear if these will sufficiently illuminate the proposed landscaped area to their rear. If sufficient public lighting is not provided within the development there is a risk of dark spots within the carpark, and footways, which may lead to reduced inter-visibility between road users and an increased risk of collisions between vehicles and VRUs, or other vehicles.*

#### 2.1.23 Recommendation:

*Ensure the proposed carpark, and landscaped area, is sufficiently lit during the hours of darkness.*

#### 2.1.24 Response to Item 3.4.8

A site lighting layout has been prepared by Axiseng Consulting Engineers and submitted within this application. Please refer to drawing no. SRP-AXE-XX-XX-DR-E-60102 for details.

2.1.25 Item 3.4.9

*It is unclear if the proposed development carpark will sufficiently shed surface water.*

*Information regarding the proposed drainage measures within the carpark has not been provided to the Audit Team and it is therefore unclear if the internal carriageways will sufficiently shed surface water. If sufficient drainage measures are not provided there is a risk of ponding within the carriageway which could lead to reduced traction for vehicle wheels and an increased risk of loss of control type incidents or to slips trips and falls for pedestrians during adverse weather.*

2.1.26 Recommendation:

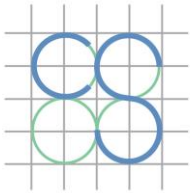
*Ensure the carriageway within the development is sufficiently drained and that ponding does not occur.*

2.1.27 Response to Item 3.4.9

The proposed car parking area has been designed to ensure that ponding will not occur. The car parking area shall drain via the proposed stormwater system into the proposed attenuation tank before outfalling into the public stormwater sewer via a proposed petrol interceptor. Please refer to CS Consulting drawing no. **RR-CSC-XX-XX-DR-C-0003** for details.

2.1.28 Item 3.5.1

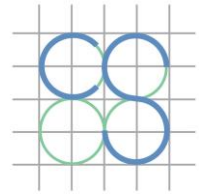
*There is no tactile paving provided at the existing dropped kerbs on both sides of the pedestrian crossing of the Ravens Rock Road at its junction with the Carmanhall Road adjacent to the proposed development. The lack of tactile paving at the crossing may lead to visually impaired pedestrians inadvertently entering the carriageway where they are at an increased risk of being struck by a vehicle. Whilst the Audit Team*



*acknowledge that this is outside the scope of the proposed development, this issue should be brought to the attention of the Local Authority.*

2.1.29 Response to Item 3.4.9

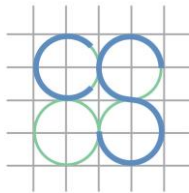
The absence of tactile paving at the existing dropped kerbs on both sides of the pedestrian junction of the Ravens Rock Road at its junction with Carmanhall Road is noted.



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## Appendix A: Quality Audit



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Cronin & Sutton Consulting

Ravens Rock Road Development,  
Sandyford, Dublin 18

Quality Audit

# Cronin & Sutton Consulting

## Ravens Rock Road Development, Sandyford, Dublin 18

### Quality Audit

<b>Document Ref:</b>	<b>P21-148-UQA-GEN-RP-001</b>
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Rev	Prepared By	Reviewed By	Approved By	Issue Date	Reason for Revision
2.0	AOR	AP	AOR	28 <sup>th</sup> Jan. 2022	Final
1.0	AP	AOR/TAG	AOR	10 <sup>th</sup> Nov. 2021	Draft Report

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# 1 Introduction

## 1.1 General

This report was prepared in response to a request from Mr. Fionnán De Burca of Cronin & Sutton Consulting to provide a Quality Audit of a proposed Residential Development on Ravens Rock Road, Sandyford, Dublin 18. The Quality Audit shall consider the following elements:

- Road Safety Audit
- Access Audit
- Walking Audit
- Non-Motorised User Audit
- Cycle Audit

The Quality Audit followed a site visit on the 2<sup>nd</sup> November 2021. The weather conditions during the site visit were dry and the road surface was dry. Traffic volumes during the site visit were moderate, pedestrian and cyclist volumes were low and traffic speeds were considered to be generally within the posted speed limit.

This report contains three primary sections, with each section focussing on different implications to the users of the development. The Road Safety Audit identifies safety implications of the development, whilst the Accessibility & Walking Audit focusses more on accessibility implications for vehicles and pedestrians associated with the development. Finally, the Non-Motorised User and Cycle Audit predominantly focusses on cycle use, as pedestrians have been discussed as part of the accessibility and walking audit, and there are currently no requirements for equestrians as part of this development.

## 2 Background

A new residential development is proposed on a brownfield site in the Sandyford Business Park, Co. Dublin adjacent the existing Ravens Rock Road/Carmanhall Road junction (see Figure 2.1). The development is bounded to the east by Ravens Rock Road, to the north by Carmanhall Road, and to the west and south by existing commercial developments. The following sections describe the local road network surrounding the site of the proposed development.

- **Ravens Rock Road:** Ravens Rock Road is a two-way single carriageway road that runs in a north-south direction. Pedestrian footways are provided on both sides of the road and public lighting is provided on the western side of the road. Ravens Rock Road has on-street Pay & Display parking along the western side of the carriageway.
- **Carmanhall Road:** Carmanhall Road is a two-way single carriageway road that runs in an east-west direction and provides pedestrian footways on both sides and public lighting on the southern side. Pay & Display parking facilities are provided along a section of the road on the northern side of Carmanhall Road via inset parking bays. Cycle parking stands are provided on the northern side of the road approximately 90m to the east of the proposed development. A signalised pedestrian crossing of Carmanhall Road is also provided adjacent the bicycle parking stands.



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

The proposed residential development includes a single apartment block with a covered carpark. The carpark includes a total of ten parking spaces (one of which is for mobility impaired users), two motorcycle parking spaces and a Set Down area. The apartment block will include communal areas, bin stores and internal bicycle storage facilities.

Amendments to the existing footways adjacent the northern and eastern boundary of the development are also proposed with these footways tying into the proposed footway network within the development's boundary. Bicycle parking stands are also proposed within these amended sections of footway.

Vehicular access to the proposed development carpark will be via an existing access on the Ravens Rock Road while pedestrian access will be provided at two locations from the footways at the development's northern and eastern boundaries.

## 3 Road Safety Audit

### 3.1 Introduction

This Road Safety Audit has been carried out in accordance with the requirements of GE-STY-01024 (previously NRA HD19/15) dated December 2017, contained on the Transport Infrastructure Ireland (TII) Publication's website.

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. Antonios Papadakis**  
(MSc, MIEI)  
Road Safety Audit Team Member

The Road Safety Audit took place during November 2021 and comprised an examination of the documents provided by the designers (see section 3.8). A site visit was undertaken on the 2<sup>nd</sup> November 2021. Traffic volumes during the site visit were moderate while pedestrian and cyclist volumes were low. 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. Where problems are general to the proposals sample drawing extracts are within the main body of the report were considered necessary. Road Safety problem locations are also shown in Appendix A.

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.

### 3.2 Items Not Submitted for Auditing

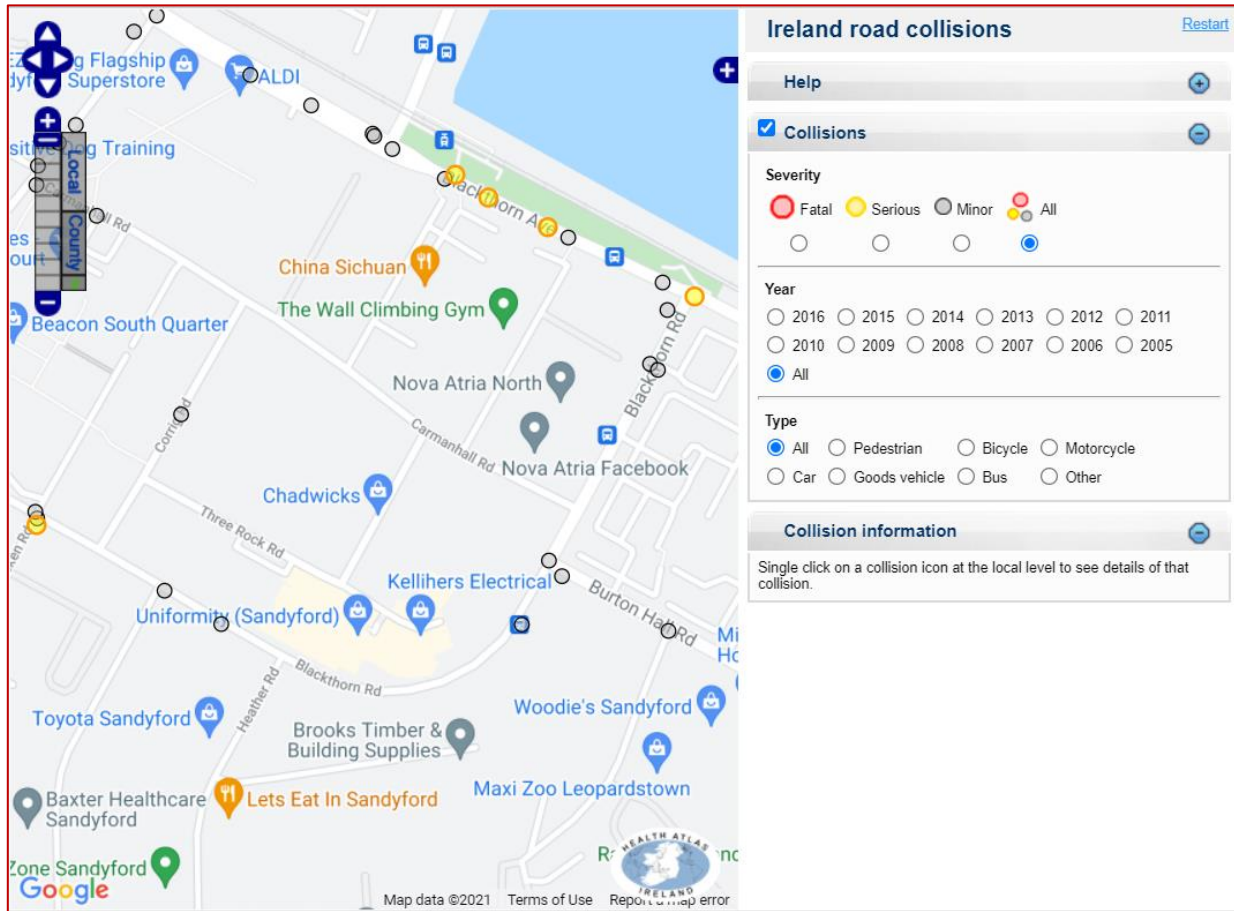
Details of the following items were not submitted for audit; therefore, no specific problems have been identified at this stage relating to these design elements, however where the absence of this information has given rise to a safety concern it has been commented upon in Section 3.4: -

- Vehicle swept paths
- Drainage
- Lighting
- Visibility splays



### 3.3 Collision History

The Road Safety Authority website (www.rsa.ie) was consulted to identify historical collisions in the vicinity of the proposed development. The website includes summary information on collision occurrence for the period 2005 to 2016 (see Figure 3.1).



**FIGURE 3.1: COLLISIONS RECORDED ON THE ROAD SAFETY AUTHORITY COLLISION DATABASE IN THE VICINITY OF THE PROPOSED DEVELOPMENT (SOURCE: WWW.RSA.IE)**

No collisions were recorded in the vicinity of the proposed development between 2005 and 2016.

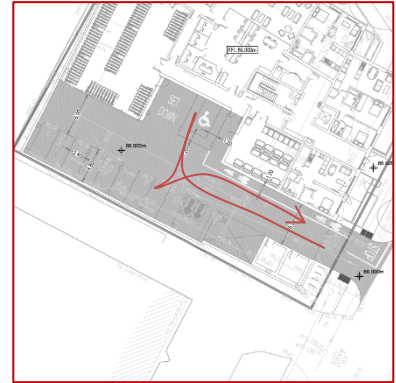
### 3.4 Road Safety Audit

#### 3.4.1 Problem

*Drawing: RAV-CSC-XX-XX-DR-C-005 (Rev. P2)*

*Summary: It is unclear if emergency, or larger, vehicles will be able to access the development's carpark and if they will be able to safely turn around within the carpark extents.*

Columns have been indicated within the development's carpark which suggest that it is covered, or at least partially covered. It is unclear what clearance will be provided to the soffit and if drivers, particularly those in high sided vehicles (e.g. vans, ambulances etc.), will be warned of the height restriction on approach. If sufficient warning is not provided there is a risk of strikes and material damage.



Additionally, information regarding swept path analysis within the carpark has not been provided and it is therefore unclear if a van or ambulance will be able to safely turn within the carpark.

#### Recommendation

Measures advising drivers of the height restriction should be provided at the entrance to the carpark where it will be sufficiently visible to approaching drivers. Also, ensure the height restriction does not restrict entry for emergency vehicles, such as ambulances, and that these vehicles can safely enter, turn, and exit the development without striking the building structure, roadside furniture, or parked vehicles.

#### 3.4.2 Problem

*Drawing: RAV-CSC-XX-XX-DR-C-005 (Rev. P2)*

*Summary: A 'Stop' sign has not been indicated at the exit from the proposed development's carpark.*

A 'Stop' sign has not been indicated at the exit from the development's carpark. While 'Stop' text and lining has been indicated on the carriageway there is a risk that this may fade overtime or become obscured during adverse weather.



This could lead to drivers being insufficiently aware of the location of the junction and the need to stop resulting in them failing to come to a stop before entering Ravensrock Road and overshoot type incidents and side-on collisions with vehicles on Ravens Rock Road.

#### Recommendation

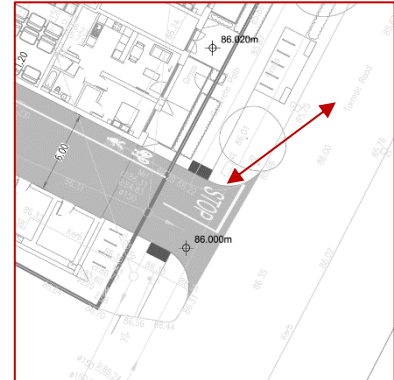
Provide a 'Stop' sign at the carpark exit. Ensure an approaching driver's visibility towards the sign is not restricted by the building boundary or trees.

**3.4.3 Problem**

*Location: RAV-CSC-XX-XX-DR-C-005 (Rev. P2)*

*Summary: Trees indicated on the northern side of the development access may restrict a driver’s visibility when exiting the development onto Ravens Rock Road.*

Trees have been indicated on the northern side of the development access within the visibility splay of drivers exiting the carpark. The clearance to the tree canopy is unclear and, if too low, there is a risk that it may restrict visibility to the north for drivers exiting the carpark. This could lead to drivers exiting the carpark when it is unsafe to do so, increasing the risk of side-on collisions with vehicles on Ravens Rock Road.



**Recommendation**

Ensure the proposed trees do not restrict an exiting driver’s visibility to the north when exiting the proposed development.

**3.4.4 Problem**

*Drawing: RAV-CSC-XX-XX-DR-C-005 (Rev. P2)*

*Summary: The location of the doors to the buildings within the carpark adjacent the development’s access will result in pedestrians exiting directly into the carpark carriageway and possibly into the path of a vehicle entering the development.*

Two buildings/rooms are indicated within the proposed development’s carpark adjacent the access. The doors are indicated such that pedestrians will exit these rooms/buildings directly into the carriageway. Drivers entering the development may have insufficient visibility towards this location and may therefore not anticipate a pedestrian exiting these rooms into their path, resulting in an increased risk of vehicle-pedestrian collisions.



**Recommendation**

The doors should open into a pedestrian area, away from motorised traffic.

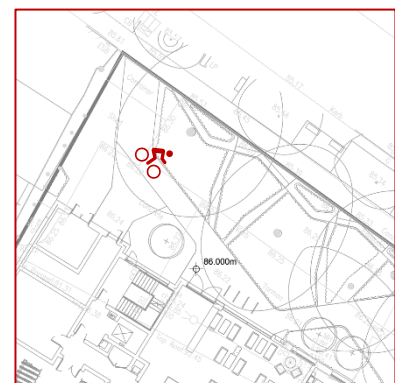
Alternatively, the doors should open from a different location within the building/room.

**3.4.5 Problem**

*Drawing: RAV-CSC-XX-XX-DR-C-005 (Rev. P2)*

*Summary: Low hanging tree canopies may obstruct vulnerable road users (VRUs) along pedestrian/cycle routes.*

Trees have been indicated within the landscaped area adjacent to the development’s northern boundary. It is however unclear at what height the tree canopy will be mounted relative to the footpath at this location. If there is insufficient clearance beneath the tree canopy, there is a risk that tree branches may present a hazard to VRUs resulting in personal injuries if struck.



Also, during Autumn months, fallen leaves may accumulate within the pedestrian/cycle routes increasing the risk of skidding for cyclists, or slips and falls for pedestrians.

### Recommendation

Ensure sufficient vertical clearance for cyclists and pedestrians is provided beneath tree canopies within the development.

Also, a maintenance strategy should be developed ensuring VRU routes within the development are kept clear of obstacles and debris.

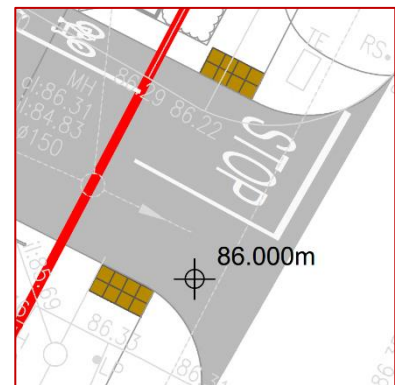
#### 3.4.6 Problem

*Drawing: RAV-CSC-XX-XX-DR-C-005 (Rev. P2)*

*Summary: Tactile paving at the proposed uncontrolled pedestrian crossing of the development access is not of the required depth.*

An uncontrolled pedestrian crossing has been indicated across the access to the proposed development. The tactile paving on both sides of the crossing is indicated as only two rows of tactile paving deep which is not the required depth for an inline crossing.

This may lead to visually impaired pedestrians stepping over the tactile paving and inadvertently entering the carriageway where there is an increased risk of being struck by a vehicle.



### Recommendation

The tactile paving at inline pedestrian crossings should be a minimum of 1.2m (three rows of tactile) deep.

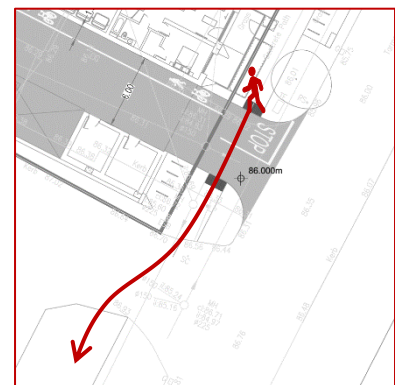
#### 3.4.7 Problem

*Drawing: RAV-CSC-XX-XX-DR-C-005 (Rev. P2)*

*Summary: The existing footpath on the southern side of the development access does not align sufficiently with the footpath further south on the opposite side of the adjacent access, and it is unclear from the drawing provided if this arrangement would remain following construction of the proposed development.*

During the site visit, the Audit Team noted that the existing footpath on the southern side of the proposed development access does not align with the footpath further south on the opposite side of the adjacent access. It is unclear from the drawing provided if the proposed amendments at the existing access junction will rectify this problem.

If the footpath on the southern side of the adjacent access does not align with the footpath on the southern side of the development access a visually impaired pedestrian may be directed away from the downstream footpath and into a grassed verge, where they may trip on a high kerb, or into a carpark increasing the risk of being struck by a vehicle.



### Recommendation

Ensure the footpath on the southern side of the proposed development access aligns with the footpath further south of the adjacent access such that a visually impaired pedestrian is directed to the downstream footpath.



### 3.4.8 Problem

*Drawing: RAV-CSC-XX-XX-DR-C-005 (Rev. P2)*

*Summary: It is unclear if the proposed development will be sufficiently lit during the hours of darkness.*

Information regarding public lighting columns within the proposed carpark, and landscaped area, has not been provided to the Audit Team and it is therefore unclear if the development will be sufficiently lit during the hours of darkness. There are existing public lighting columns on the Carmanhall Road at the development's northern boundary, however it is also unclear if these will sufficiently illuminate the proposed landscaped area to their rear. If sufficient public lighting is not provided within the development there is a risk of dark spots within the carpark, and footways, which may lead to reduced inter-visibility between road users and an increased risk of collisions between vehicles and VRUs, or other vehicles.

#### Recommendation

Ensure the proposed carpark, and landscaped area, is sufficiently lit during the hours of darkness.

### 3.4.9 Problem

*Drawing: RAV-CSC-XX-XX-DR-C-005 (Rev. P2)*

*Summary: It is unclear if the proposed development carpark will sufficiently shed surface water.*

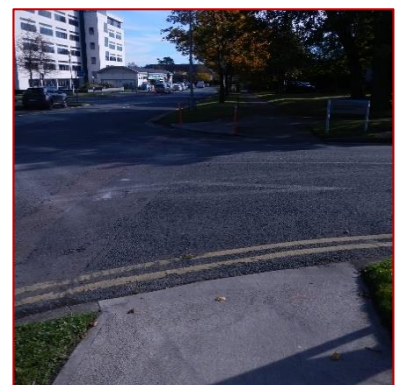
Information regarding the proposed drainage measures within the carpark has not been provided to the Audit Team and it is therefore unclear if the internal carriageways will sufficiently shed surface water. If sufficient drainage measures are not provided there is a risk of ponding within the carriageway which could lead to reduced traction for vehicle wheels and an increased risk of loss of control type incidents or to slips trips and falls for pedestrians during adverse weather.

#### Recommendation

Ensure the carriageway within the development is sufficiently drained and that ponding does not occur.

## 3.5 Observations

- 3.5.1 There is no tactile paving provided at the existing dropped kerbs on both sides of the pedestrian crossing of the Ravens Rock Road at its junction with the Carmanhall Road adjacent to the proposed development. The lack of tactile paving at the crossing may lead to visually impaired pedestrians inadvertently entering the carriageway where they are at an increased risk of being struck by a vehicle. Whilst the Audit Team acknowledge that this is outside the scope of the proposed development, this issue should be brought to the attention of the Local Authority.



### 3.6 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.

The Road Safety Audit Team has not been involved in the design of this scheme.

#### ROAD SAFETY AUDIT TEAM LEADER

Alan O'Reilly

Signed:

  
\_\_\_\_\_

Dated:

28<sup>th</sup> January 2022  
\_\_\_\_\_

#### ROAD SAFETY AUDIT TEAM MEMBER

Antonios Papadakis

Signed:

  
\_\_\_\_\_

Dated:

28<sup>th</sup> January 2022  
\_\_\_\_\_

### 3.7 Road Safety Audit Brief Checklist

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

	<b>Yes</b>	<b>No</b>
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)

	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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### 3.8 Documents Submitted to the Road Safety Audit Team

DOCUMENT/DRAWING TITLE	DOCUMENT/DRAWING NO.	REVISION
Proposed Site Layout	RAV-CSC-XX-XX-DR-C-005	P2



### 3.9 Road Safety Audit Feedback Form

Scheme: Ravens Rock Road Development, Sandyford, Dublin 18

Route No.: Ravens Rock Road, Carmanhall Road

Audit Stage: Stage 1 Road Safety Audit Date Audit Completed: 8<sup>th</sup> November 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)
3.4.1	Yes	Yes		
3.4.2	Yes	Yes		
3.4.3	Yes	Yes		
3.4.4	Yes	Yes		
3.4.5	Yes	Yes		
3.4.6	Yes	Yes		
3.4.7	Yes	Yes		
3.4.8	Yes	Yes		
3.4.9	Yes	Yes		

Signed:  Designer Date 28.01.2022

Signed:  Audit Team Leader Date 28<sup>th</sup> January 2022

Signed:  Employer Date 01/03/22

## 4 Accessibility & Walkability Audit

### 4.1 Introduction

A new residential development is proposed on a brownfield site in the Sandyford Business Park, Co. Dublin adjacent to the Ravens Rock Road and Carmanhall Road junction. The development is bounded to the east by the Ravens Rock Road, to the north by Carmanhall Road, and to the west and south by existing commercial developments. The development is located in an urban area in an existing Business Park with existing footways and public lighting provided throughout the surrounding road network.

Vehicular entry to the proposed development will be via an existing access. An uncontrolled crossing is proposed across this access with dropped kerbs and tactile paving. Amendments to the existing footways on Ravens Rock Road and Carmanhall Road adjacent the development are proposed as part of the development and these amended footways will tie-into the existing footways to the south and west of the development on the Ravens Rock Road and Carmanhall Road, respectively.

A landscaped area with pedestrian and cyclist routes is proposed within the development, with this area also tying into the amended footways on the Ravens Rock and Carmanhall Roads. Pedestrian access to the development will be provided from the footway on Ravens Rock Road, the proposed landscaped area, and the development carpark, where a pedestrian and cyclist route is proposed from the building access through the carpark and tying-into the footpath on the northern side of the development access junction.

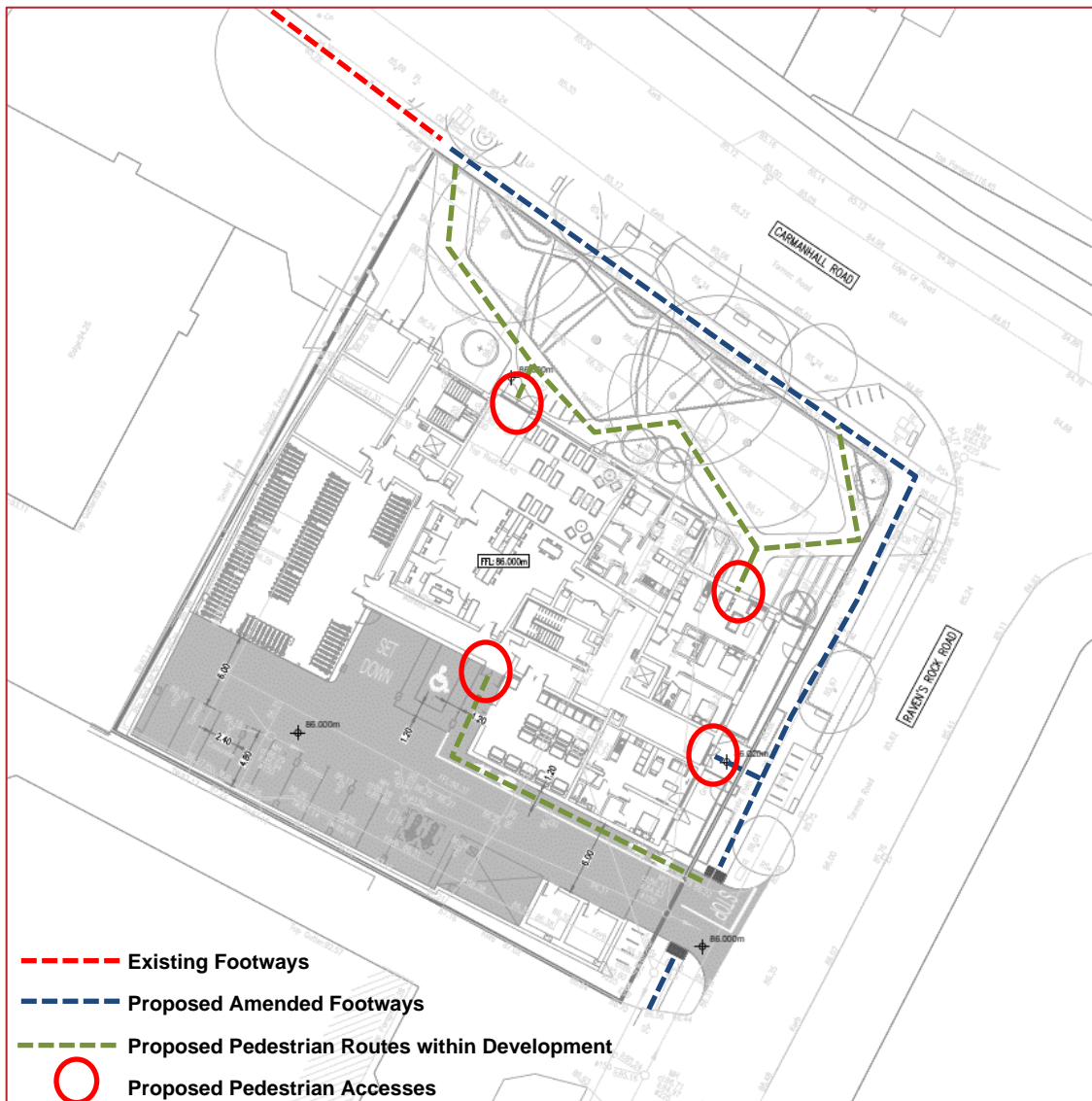


FIGURE 4.1: PEDESTRIAN ACCESSES AND ROUTES WITHIN THE PROPOSED DEVELOPMENT

### 4.1.1 Access to local bus network

There are several bus stops located in the Sandyford Business Park. The closest bus stops to the proposed development, and the bus routes which serve them, are detailed in Table 4-1 below. The distance to these bus stops has been measured using the development access junction as the origin point.

**TABLE 4-1: BUS ROUTES NEAR THE DEVELOPMENT**

Bus Stop (Name)	Bus Stop (Number)	Proximity to the development	Bus Route	Travelling between
Maple Avenue	4848	700m	116	Parnell Square to Whitechurch
			75a	Tallaght to Dun Laoghaire
Bracken Road	449	550m	11	Blackthorn Road to St. Pappin's Road
			75a	Tallaght to Dun Laoghaire
			114	Rockview to Blackrock Station
			116	Parnell Square to Whitechurch
Heather Road	450	600m	114	Rockview to Blackrock Station
			11	Blackthorn Road to St. Pappin's Road
Ravenscourt Park	4457	350m	114	Rockview to Blackrock Station
Carmanhall Road	3181	300m	11	Blackthorn Road to St. Pappin's Road
			47	Belarmine to Poolbeg Street
			114	Rockview to Blackrock Station
			700	Leopardstown to Dublin Airport
Arena Road	448	450m	47	Belarmine to Poolbeg Street
			114	Rockview to Blackrock Station
			700	Leopardstown to Dublin Airport
Sandyford Luas	5142	550m	47	Belarmine to Poolbeg Street
			114	Rockview to Blackrock Station
			143	Blackthorn Avenue to Bray
Blackthorn Drive	451	350m	11	Blackthorn Road to St. Pappin's Road
			47	Belarmine to Poolbeg Street
			116	Parnell Square to Whitechurch
Blackthorn Drive	4847	600m	11	Blackthorn Road to St. Pappin's Road
			75a	Tallaght to Dun Laoghaire
			116	Parnell Square to Whitechurch

Pedestrian footways and pedestrian crossings are provided throughout the Sandyford Business Park between the proposed development and existing bus stops. As such, the development is considered to have good access to local bus routes.

### 4.1.2 Access to the Luas

The proposed development is located close to two Luas stops, 'Stillorgan' and 'Sandyford,' both of which are on the Green Line. The 'Stillorgan' and 'Sandyford' Luas stops are located approximately 350m and 600m from the development respectively. Given its proximity to the Luas Green Line, which connects the development to Dublin City Centre, where railway services are available at Heuston, and Connolly, Train Stations, as well all other locations serviced by the Green Line (see Figure 4.2), the development is considered to have high quality access to Dublin's light rail, and railway, networks.



FIGURE 4.2: DUBLIN RAIL NETWORK

### 4.1.3 Local Amenities

The development's location in the Sandyford Business Park provides good access to a number of different amenities, all of which will benefit residents. A number of key amenities are identified in Table 4-2, including the development's distance to the amenity and the approximate walking/cycling time. Given its location in the Sandyford Business Park, there are also a wide range of commercial facilities and restaurants available in the area surrounding the proposed development.

The development is therefore considered to be well located for residents wishing to use these services and amenities.

TABLE 4-2: LOCAL AMENITIES CLOSE TO THE PROPOSED DEVELOPMENT

Amenity	Approx. Distance	Approx. Pedestrian Journey Time (mins)	Approx. Cyclist Journey Time (mins)	Direction from Development
Ben Dunne Gym, Sandyford	500m	7 minutes	2 -minutes	West
F45 Training – Sandyford	500m	6 minutes	2 minutes	Southwest
Pizzacato Restaurant	350m	5 minutes	1 minutes	Southwest
Woodfire & Green Restaurant	350m	4 minutes	1 minute	West

Amenity	Approx. Distance	Approx. Pedestrian Journey Time (mins)	Approx. Cyclist Journey Time (mins)	Direction from Development
Starbucks	600m	8 minutes	2 minutes	West
Imaginosity, Dublin Children's Museum	650m	6 minutes	2 minutes	West
CrossFit Sandyford	1km	13 minutes	3 minutes	East
Londis Supermarket	150m	2 minutes	1 minute	East
Insomnia Cafe	150m	2 minutes	1 minute	East
La Dolce Vita Restaurant	80m	1 minute	1 minute	North
The Wall Climbing Gym	220m	2 minutes	1 minute	North
Aldi Supermarket	550m	7 minutes	2 minutes	Northwest
Ranchero Taqueria Restaurant	600m	8 minutes	2 minutes	Northwest
Musashi Sandyford Noodle & Sushi Bar	650m	9 minutes	2 minutes	Southwest
Bank of Ireland Sandyford	650m	8 minutes	2 minutes	West
Dunnes Stores Supermarket	550m	7 minutes	2 minutes	West
Beacon Hospital	750m	9 minutes	3 minutes	Southwest

## 4.2 Building Accesses

Issues relating to the Building Accesses within the proposed development have been discussed in Section 3.4.4.

## 4.3 Pedestrian Crossing Facilities

Issues relating to Pedestrian Crossing Facilities within the proposed development have been discussed in Sections 3.4.6, 3.4.7 and 3.5.1.

## 4.4 Target Groups (i.e. visually, mobility impaired etc.)

Issues relating to Target Groups within the proposed development have been discussed in Sections 3.4.6, 3.4.7 and 3.5.1.

## **4.5 Subways**

No accessibility issues have been identified relating to Subways within the proposed development.

## **4.6 Junctions**

Issues relating to Junctions within the proposed development have been discussed in Section 3.4.1.

## **4.7 Signage**

Issues relating to the Signage within the proposed development have been discussed in Section 3.4.2.

## **4.8 Public Transport**

No accessibility issues have been identified relating to Public Transport.

## **4.9 Lighting**

Issues relating to the Lighting within the proposed development have been discussed in Section 3.4.8.

## **4.10 Visibility**

Issues relating to the Visibility within the proposed development have been discussed in Section 3.4.3.

## **4.11 Waste Facilities within the Development**

### **4.11.1 Issue**

Bin stores appear to have been indicated within the proposed development. It is unclear how refuse will be collected from the development and whether bins will be collected from the stores or if they will be transported to a designated collection point. If collected from the stores, it is unclear if refuse trucks will be able to access the carpark unrestricted.

Similarly, if collected from a designated point it is likely that operatives will have to transport large bins to this location which may lead to difficulties. The absence of a detailed refuse strategy could lead to refuse trucks having difficulty in accessing the refuse stores or to difficulties in transporting bins from their stores to the collection point.

### **Recommendation**

Ensure a refuse strategy is developed, clearly explaining how refuse is to be transported, collected and how refuse vehicles are to access bins at collection times.

## **4.12 Carriageway Markings for Pedestrians**

No accessibility issues have been identified relating to Carriageway Markings for Pedestrians within the proposed development.

## 4.13 Parking

### 4.13.1 Issue

Electric Vehicle (EV) parking spaces have not been indicated within the development's carpark, however it is likely that a portion of the parking spaces will be required for EVs. These typically require additional width to support a buffer zone to account for potentially different charging port connections on vehicles. The additional width allows space for electric cables, as well as user access to connect/disconnect the charging cables.

All of the parking spaces within the carpark appear to have similar dimensions. There is a risk therefore that, should any of these spaces be designated for EVs as the design progresses, the required space will not be available to accommodate the necessary buffer zone and infrastructure for EV parking spaces.

### Recommendation

A sufficient number of parking spaces within the carpark should be designated as EV parking spaces and sufficient space should be provided at these spaces in accordance with Section 7.6.16 of the Traffic Signs Manual (2019), Chapter 7 'Road Markings.'

## 5 Non-motorised User and Cycle Audit

### 5.1 External Cycle Provision

There are currently no existing cycle facilities on the Ravens Rock Road or Carmanhall Road in the vicinity of the proposed development with cyclists required to share the carriageway with motorised vehicles. Cycle parking stands are however provided on the northern side of the Carmanhall Road approximately 90m to the east of the proposed development.

### 5.2 Internal Cycle Provision

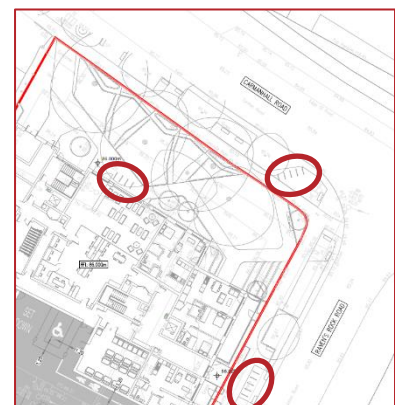
A pedestrian and cyclist route are proposed through the carpark from the development access on Ravens Rock Road to the entrance to the apartment block. Cycle parking stands are proposed within the amended existing footways at two locations to the north and east of the development. An indoor bicycle parking facility is also proposed which will be accessed from the carpark, and also internally from the apartment block. A shared route for pedestrians and cyclists is also proposed at the development's northern boundary. This shared surface will tie into the existing footway on the Carmanhall Road to the west and the existing footway on the Ravens Rock Road to the east. It will provide a route to cycle parking stands as well as an access to the apartment block.

#### 5.2.1 Issue

Cycle parking stands have been indicated adjacent the existing footways on the Carmanhall Road and Ravens Rock Road as well as within the landscaped area along the development's northern boundary. It is unclear if these proposed cycle stands will be located within a grass verge or if they will be located in an area of hard standing. If located within a grass verge, and not in close proximity to the adjacent footway/shared path, cyclists may experience difficulty in accessing them through the grass verge.

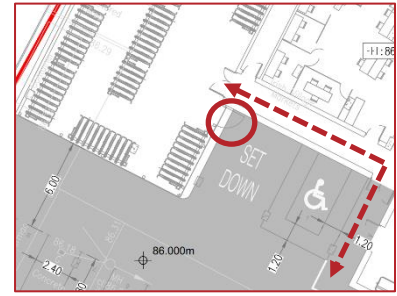
### Recommendation

Ensure the cycle stands are located within an area of hard standing which is accessible from a path/shared surface.



### 5.2.2 Issue

An access to the internal cycle parking facilities from the development's carpark have been indicated to the rear of the proposed Set Down area. Cyclists may be unable to access the cycle parking facilities from this location when the Set Down area is occupied.



### Recommendation

Access to the proposed internal cycle parking facilities is proposed from other routes within the development. If this access is not required, it should be removed.

If direct access is required from the carpark, the access should be relocated where it will not be blocked by vehicles in the Set Down area.

### 5.2.3 Issue

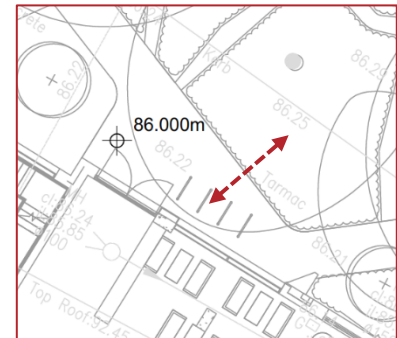
It is unclear if the proposed cycle stands within the development and on the footways on the Ravens Rock Road and Carmanhall Road will be sheltered. Users may be discouraged from using cycle stands if they believe the locations are unsafe, or if their bicycle will be exposed to the weather. This may encourage informal parking on footways or at property accesses, thereby restricting pedestrian access.

### Recommendation

Ensure cycle parking stands are sheltered and, where located in areas away from high pedestrian volumes, ensure cycle stands are secure and the surrounding area sufficiently lit.

### 5.2.4 Issue

Cycle parking stands have been indicated adjacent the access to the apartment block in the landscaped area at the development's northern boundary. When occupied, bicycles may encroach into the adjacent footway reducing its effective width for pedestrians and cyclists and preventing access to the apartment block.



### Recommendation

Relocate these bicycle parking stands to the adjacent grassed verge where an area of hard standing should be provided to house the stands.

Other accessibility issues relating to the internal cycle provision within the proposed development have been discussed in Section 3.4.5.



### 5.3 Quality Audit Action Plan

Issue	Situation	Action/Adjustment	Priority	Cost
4.2	The location of the doors to the buildings within the carpark adjacent the development's access will result in pedestrians exiting directly into the carpark carriageway and possibly into the path of a vehicle entering the development.	The doors should open into a pedestrian area, away from motorised traffic.  Alternatively, the doors should open from a different location within the building/room.	1	A
4.3/4.4	Tactile paving at the proposed uncontrolled pedestrian crossing of the development access is not of the required depth.	The tactile paving at inline pedestrian crossings should be a minimum of 1.2m (three rows of tactile) deep.	1	A
	The existing footpath on the southern side of the development access does not align sufficiently with the footpath further south on the opposite side of the adjacent access, and it is unclear from the drawing provided if this arrangement would remain following construction of the proposed development.	Ensure the footpath on the southern side of the proposed development access aligns with the footpath further south of the adjacent access such that a visually impaired pedestrian is directed to the downstream footpath.	1	B
	There is no tactile paving provided at the existing dropped kerbs on both sides of the pedestrian crossing of the Ravens Rock Road at its junction with the Carmanhall Road adjacent to the proposed development.	Whilst the Audit Team acknowledge that this is outside the scope of the proposed development, this issue should be brought to the attention of the Local Authority.	2	B
4.6	It is unclear if emergency, or larger, vehicles will be able to access the development's carpark and if they will be able to safely turn around within the carpark extents.	Measures advising drivers of the height restriction should be provided at the entrance to the carpark where it will be sufficiently visible to approaching drivers. Also, ensure the height restriction does not restrict entry for emergency vehicles, such as ambulances, and that these vehicles can safely enter, turn, and exit the development	1	A
4.7	A 'Stop' sign has not been indicated at the exit from the proposed development's carpark.	Provide a 'Stop' sign at the carpark exit. Ensure an approaching driver's visibility towards the sign is not restricted by the building boundary or trees.	1	A
4.9	It is unclear if the proposed development will be sufficiently lit during the hours of darkness.	Ensure the proposed carpark, and landscaped area, is sufficiently lit during the hours of darkness.	1	A
4.10	Trees indicated on the northern side of the development access may restrict a driver's visibility when exiting the development onto Ravens Rock Road.	Ensure the proposed trees do not restrict an exiting driver's visibility to the north when exiting the proposed development.	1	A

Issue	Situation	Action/Adjustment	Priority	Cost
4.11.1	Bin stores appear to have been indicated within the proposed development. It is unclear how refuse will be collected from the development and whether bins will be collected from the stores or if they will be transported to a designated collection point.	Ensure a refuse strategy is developed, clearly explaining how refuse is to be transported, collected and how refuse vehicles are to access bins at collection times.	1	A
4.13.1	Electric Vehicle (EV) parking spaces have not been indicated within the development's carpark, however it is likely that a portion of the parking spaces will be required for EVs. All of the parking spaces within the carpark appear to have similar dimensions. There is a risk therefore that, should any of these spaces be designated for EVs as the design progresses, the required space will not be available to accommodate the necessary buffer zone and infrastructure for EV parking spaces.	A sufficient number of parking spaces within the carpark should be designated as EV parking spaces and sufficient space should be provided at these spaces in accordance with Section 7.6.16 of the Traffic Signs Manual (2019), Chapter 7 'Road Markings.'	1	A
5.2.1	It is unclear if these proposed cycle stands will be located within a grass verge or if they will be located in an area of hard standing.	Ensure the cycle stands are located within an area of hard standing which is accessible from a path/shared surface.	1	A
5.2.2	Cyclists may be unable to access the cycle parking facilities from this location when the Set Down area is occupied.	Access to the proposed internal cycle parking facilities is proposed from other routes within the development. If this access is not required, it should be removed.  If direct access is required from the carpark, the access should be relocated where it will not be blocked by vehicles in the Set Down area.	1	A
5.2.3	It is unclear if the proposed cycle stands within the development and on the footways on the Ravens Rock Road and Carmanhall Road will be sheltered.	Ensure cycle parking stands are sheltered and, where located in areas away from high pedestrian volumes, ensure cycle stands are secure and the surrounding area sufficiently lit.	1	A
5.2.4	Cycle parking stands have been indicated adjacent the access to the apartment block in the landscaped area at the development's northern boundary. When occupied, bicycles may encroach into the adjacent footway reducing its effective width for pedestrians and cyclists and preventing access to the apartment block.	Relocate these bicycle parking stands to the adjacent grassed verge where an area of hard standing should be provided to house the stands.	1	A

Issue	Situation	Action/Adjustment	Priority	Cost
5.2	Low hanging tree canopies may obstruct vulnerable road users (VRUs) along pedestrian/cycle routes.	<p>Ensure sufficient vertical clearance for cyclists and pedestrians is provided beneath tree canopies within the development.</p> <p>Also, a maintenance strategy should be developed ensuring VRU routes within the development are kept clear of obstacles and debris.</p>	1	A

**Priority**

- 1 – Immediate works required;
- 2 – Essential works required within 1 year;
- 3 - Desirable works required within 2 years;
- 4 – Long term works;
- 5 - Specific needs (e.g. pedestrian desire line not catered for)

**Cost (Indicative cost only)**

- A – Up to €2,500
- B – From €2,500 up to €10,000
- C - Between €10,000 up to €20,000
- D – Above €20,000

## 6 Appendix A - Road Safety Audit Problem Locations

