

Donore Project

Donore Avenue
Stage 1 Road Safety Audit

The Land Development
Agency

Project number: 60648061

November 2022

Quality information

Prepared by



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Revision History

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A	16.11.2022	Draft Issue	RL	Rowan Lyons	Principal Engineer

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1. Introduction

1.1 Overview

AECOM has been commissioned by the Land Development Agency (LDA) to undertake a Stage 1 Road Safety Audit (RSA) on behalf of Dublin City Council of a proposed residential development at this site located on the former St. Teresa's Gardens, Donore Avenue, Dublin 8.

This Stage 1 RSA will assess the safety implications for all road users.

The Safety Audit Report indicates each of the problems identified, provides outline recommendations for solving the problems, presents the Audit Team Statement, and describes a schedule of documents reviewed. The members of the Audit Team were:

Audit Team Leader:

Rowan Lyons BEng CEng MIEI MCIHT MSoRSA (Certificate of Competency)

Principal Engineer, AECOM

Audit Team Member:

Brian McMahon, BE MSc CEng MIEI (Certificate of Competency)

Associate Director, AECOM

The audit comprises of an examination of the proposed scheme drawings and an onsite inspection. The site visit took place on Thursday the 27th of October 2022. On the day of the site visit, there was dry weather during the site visit however there were periods of heavy rain prior resulting in a wet road surface. The site visit was undertaken between the hours of 11:15 and 12:15 in daylight.

1.2 Scheme Description

The scheme will consist of the construction of a residential scheme of 543 no. apartments on an overall site of 3.26 ha.

The development (GFA of c. 53,227sqm) will be set out in 4 blocks and contains the following:

- 225 No. 1 bedroom apartments (36 no. 1-person & 189 no. 2-person);
- 274 No. 2 bedroom apartments (including 52 No. 2 bed 3 person apartments);
- 222 No. 2 bed (4 person apartments);
- 44 No. 3 bedroom 5-person apartments;
- A community, artist workspace, arts and cultural space, including a creche set out in 4 no. blocks. creche (952 sqm);
- A retail/café unit (168 sqm); and
- A mobility hub (52 sqm).

The proposed development will also provide for public open space of 3,408 sqm, communal amenity space of 4,417 sqm and an outdoor play space associated with the creche. Provision of private open space in the form of balconies or terraces is provided to all individual apartments.

The proposed development is shown in Figure 1.1.

1.3 Road Safety Audit

This Safety Audit represents the response of an independent Audit Team to various aspects of the scheme. The recommendations contained therein are the opinions of the Audit Team and are intended as a guide to the designers on how the scheme as proposed can be improved to address issues of road safety.

The following documents were reviewed by the audit team:

- STG-AEC-S1b-00-00-DR-C-0000101_ Rev0 Visibility Splay Rev0
- STG-AEC-S1b-00-00-DR-C-0000104_ Rev0 Fire Tender SPA
- STG-AEC-S1b-00-00-DR-C-0000105_ Rev0 Refuse Vehicle SPA
- STG-AEC-S1b-00-00-DR-C-0000602_ Rev0 Road Levels & Finish Floors
- STG-MW-S1b-00-XX-DR-A-1100000-Site Location Plan_Existing-S4-P1
- STG-MW-S1b-00-XX-DR-A-1100001-Site Layout Plan_Existing-S4-P1
- STG-MW-S1b-00-XX-DR-A-1100002-Site Layout Plan_Proposed-S4-P1

The terms of reference of the Audit are as described in TII guidelines GE-STY-01024. The team has examined and reported only on the road safety implications of the scheme as presented and they have not examined or verified the compliance of the design to any other criteria.

The Safety Audit guidelines do not provide a facility for the Audit Team to classify individual problems according to their severity, and hence the level of priority to be attached to each. It is instead the task of the design team and/or their representative to take a view on the validity of each of the recommendations and decide on an appropriate course of action.

The response of the Design Team to the Safety Audit should be prepared in the form of a Safety Audit Feedback Form, accepting the changes proposed by the Audit Team or providing an alternative solution to the problem. The Feedback Form is then returned to the Audit Team for review and verification. A template for a Safety Audit Feedback Form is included as Appendix C.

2. Site Description

2.1 Overview

The scheme site is bound by Donore Avenue to the north-east, Margaret Kennedy Road to the north-west, The Coombe Women and Infants University Hospital to the west, the former Bailey Gibson factory buildings to the south-west, and the former Player Wills factory to the south-east.

The scheme extents are illustrated in Figure 2.1.



Figure 2.1 – Site Location (Source: Google Earth)

Table 2.1 provides a summary of the scheme location and context.

Table 2.1 – Summary of Scheme Location

Location:	Margaret Kennedy Road
Classification:	Local Road
Speed Limit:	50 km/hr
Local Authority Area:	Dublin City Council
Type of Roads:	Single Carriageway Roads, Urban Environment

2.2 Site Observations

The site visit was undertaken during the daytime on Thursday the 27th of October 2022. A number of observations were noted. Traffic flows were light during the site inspection. These observations are discussed below under a number of key headings:

Road Geometry

- In vicinity of the scheme, Margaret Kennedy Road is a single lane road cul-de-sac in a traffic calming area with direct access to Dounore Avenue. There are a number of speed control humps along its' length. It is bounded on its southern side by a footpath and fencing, while there is on-street parking for residential units on the northern side. There is a T-junction connection to Cameron Street which also serves a residential area.

Vehicular Traffic

- Within the scheme extents the speed limit is 50 km/hr.

Pedestrians and Cyclists

- Footpaths are provided along both sides of Margaret Kennedy Road and across junction accesses. Road kerbs are dropped across the junction with Cameron Street with associated tactile paving provided.

- There is no dedicated cycle infrastructure along Margaret Kennedy Road, Cameron Street or Donore Avenue in the vicinity of the project.

Street Lighting

- Street lighting is primarily located along the southern side of the carriageway along Margaret Kennedy Road.
- Street lighting is located along both sides of the carriageway on Donore Avenue.
- The site visit was carried out during daylight hours; lighting levels at the site during darkness hours were therefore not observed.

Collisions

- The audit team have not been informed of any collisions within the vicinity of the scheme.

3. Departures from Standards

3.1 General

No departures from standards have been notified to the audit team.

4. Items resulting from this Stage 1 Road Safety Audit

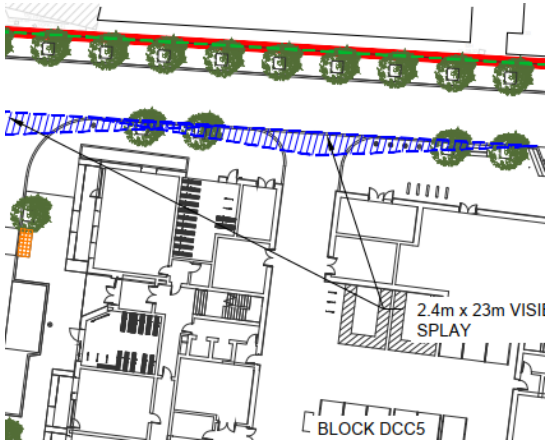
4.1 Overview


This Safety Audit has reported on issues relating to the proposed residential development site located to the east of the Coombe Hospital accessed off Donore Avenue. This is classified as a Stage 1 Road Safety Audit, as defined within the TII Road Safety Audit Guidelines.

The following information was not provided for Audit so therefore could not be commented upon:

- Signage;
- Drainage and Services;
- Lighting; and
- Landscaping

4.2 Road Geometry

4.2.1 Problem	
Location:	Internal road junctions
Drawing:	STG-AEC-S1b-00-00-DR-C-0000101
Summary:	Landscaping obstructing junction visibility
Description:	
 <p>Figure 4.1 – Junction Visibility</p>	
<p>Landscaping is proposed adjacent to the carriageway throughout the site. At some junctions these trees are shown to be within the vehicle visibility splays. Obstruction to visibility splays at junctions can lead to emerging vehicles not being fully aware of other vehicles on the main carriageway. This can result in vehicles pulling out of a junction when it is unsafe to do so and can lead to vehicle/vehicle collisions</p>	
Recommendation:	
<p>Ensure sight lines are kept clear of all vegetation and obstructions which could obscure visibility.</p>	

4.2.2 Problem	
Location:	Site Access / Margaret Kennedy Road
Drawing:	STG-AEC-S1b-00-00-DR-C-0000101
Summary:	No drop kerbs or tactile paving at site entrance
Description:	
 <p>Figure 4.2 – Junction crossing facilities</p>	

<p>There appears to be cycle parking provided on the western footpath at the site entrance. Tactile paving is indicated at pedestrian crossing points throughout the site, but no dropped kerbs or tactile paving is indicated at the site entrance to access to/from this footpath and cycle parking provision. Inadequate provision of dropped kerbs and tactile paving could result in trips and falls by cyclists and pedestrians that cross at these locations and could also lead to collisions with vehicles.</p>
<p>Recommendation:</p>
<p>Ensure that appropriate tactile paving and dropped kerbs is provided throughout the site.</p>

<p>4.2.3 Problem</p>	
<p>Location: Site Access / Margaret Kennedy Road</p>	
<p>Drawing: STG-AEC-S1b-00-00-DR-C-0000101</p>	
<p>Summary: Vehicle exit speed at access and priority at uncontrolled crossings</p>	
<p>Description:</p>	

Figure 4.3 – Junction Priority

Margaret Kennedy Road ends in a cul-de-sac to the west of the proposed site access. There are only approximately 7 no. parking bays along this side. Vehicles exiting the proposed residential site may be aware that there is minimal traffic travelling from the western side of the Margaret Kennedy Road and may not slow down appropriately at the junction. It is also unclear whether pedestrians or cyclists have priority at this location. This could result in instances where a vulnerable road user may assume they have priority which could lead to a pedestrian vehicle collision. Alternatively, vehicles exiting the site may not be paying attention to vehicles reversing from the parking bays opposite which could lead to vehicle/vehicle collisions.

<p>Recommendation:</p>
<p>Priority should be given to pedestrians across the access with a raised facility and a tactile arrangement to suit the form of crossing.</p>

<p>4.2.4 Problem</p>	
<p>Location: Site Access / Margaret Kennedy Road</p>	
<p>Drawing: STG-AEC-S1b-00-00-DR-C-0000101</p>	
<p>Summary: Provision of a turning head</p>	
<p>Description:</p>	

Figure 4.4 – Lack of Turning facility

It is proposed to provide access roads within the development site with an access point onto Margaret Kennedy Road. The access roads adjacent to Block DCC36 and Block DCC6 terminate in a dead end. There are parking bays along one side of these carriageways but is no turning head provided at the end of these carriageways. If the parking spaces are occupied, this could lead to a motorist having to reverse a significant distance back down the carriageway. Should a pedestrian be crossing the pedestrian crossings or be returning to their vehicle and the reversing motorists fails to observe this pedestrian, this could result in a pedestrian-vehicle collision.

Recommendation:


A turning head should be provided at these locations to enable vehicles to return in a forward manoeuvre.


4.3 Signing and Lining

4.3.1 Problem		
Location:	Raised junction table	
Drawing:	STG-AEC-S1b-00-00-DR-C-0000101	
Summary:	The length of the raised table crossing may lead to higher vehicle speeds	
Description:		<p>There are pedestrian crossings located at the end of the raised table at the internal access road T-junction. A raised table is to facilitate slow vehicle speeds across the raised table where pedestrians and vulnerable road users are crossing. The proposed raised table is of such a length that vehicles speeds could be increased along its length. This can lead to vehicles travelling at inappropriate speeds along the raised which may result in pedestrian/vehicle collisions.</p>
Recommendation:		<p>Reduce the length of the raised table and provided additional speed control measures beyond the raised junction.</p>

Figure 4.5 – Raised table junction

4.4 Pedestrians and Cyclists

4.4.1 Problem	
<i>Location:</i>	Pedestrian crossings
<i>Drawing:</i>	STG-AEC-S1b-00-00-DR-C-0000101
<i>Summary:</i>	Landscaping obstructing forward visibility to crossing
Description:	
	
<p>Figure 4.6 – Pedestrian crossing</p>	
<p>Landscaping is proposed adjacent to the carriageway throughout the site. At some junctions these trees are shown to be located close to pedestrian crossings. Landscaping may obstruct forward visibility to / from pedestrian crossings. This could lead to instances where vehicles approaching the crossing fail to stop in time resulting in a pedestrian/vehicle collision, alternatively a vehicle could stop suddenly resulting in a rear end shunt.</p>	
Recommendation:	
<p>All landscaping should be set-back or removed to ensure that adequate forward visibility to pedestrian crossings is achieved.</p>	

4.4.2 Problem	
<i>Location:</i>	Mobility parking bays
<i>Drawing:</i>	STG-AEC-S1b-00-00-DR-C-0000101
<i>Summary:</i>	A lack of dropped kerbs at mobility parking bays can lead to collisions with vehicles
Description:	
	
<p>Figure 4.7 – Mobility parking bay</p>	
<p>It is unclear to the auditors if there is a dropped kerb facility provided for the mobility parking bays throughout the site. Dropped kerbs allow vulnerable road users to access the footpath from their vehicle parking space. If dropped kerb facilities are not provided for disabled parking bays, this may lead to wheelchair users and other vulnerable road users having to travel along the carriageway to access the footpath which can result in collisions with cars on the access road.</p>	
Recommendation:	
<p>Provide adequate provision and location of dropped kerbs facilities at all mobility parking bays to ensure ease of access for wheelchair and disabled users from the parking bay to the footpath.</p>	

4.4.3 Problem		
Location:	Mobility Hub	
Drawing:	STG-AEC-S1b-00-00-DR-C-0000101	
Summary:	A lack of mobility parking bays can lead to collisions with vehicles	
Description:		<p>Figure 4.8 – Mobility parking</p>
<p>It is unclear to the auditors if there are mobility parking bays being provided for users of the Mobility Hub as no mobility parking bays are indicated on the drawings. Mobility parking bays allow vulnerable road users to safely access their destination without having to share space with moving vehicles. If mobility parking facilities are not provided where required, this may lead to wheelchair users and other vulnerable road users having to travel along the carriageway or car park to access their destination which can result in collisions with vehicles.</p>		
Recommendation:		
<p>Provide adequate provision of mobility parking bays to ensure ease of access for wheelchair and disabled users from the parking bay to their destination.</p>		

4.5 Drainage and Maintenance

No issues noted at this stage.

4.6 Public Lighting

No issues noted at this stage.

4.7 Other

No issues noted at this stage

5. Audit Team Statement

We certify that the site was visited and that this audit has been carried out in accordance with the Transport Infrastructure Ireland Road Safety Audit Guidelines GE-STY-01027-01 and Standard GE-STY-01024-07.

The Road Safety Audit 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.

No one on the audit team has been involved with the scheme design.

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Signed: 

Date: 11.11.2022

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Signed: 

Date: 11.11.2022

Appendix A Document Copies Submitted to the Audit Team

Document No.	Rev.	Description	Date
STG-AEC-S1b-00-00-DR-C-0000101	0	Visibility Splay	NYI
STG-AEC-S1b-00-00-DR-C-0000104	0	Fire Tender SPA	NYI
STG-AEC-S1b-00-00-DR-C-0000105	0	Refuse Vehicle SPA	NYI
STG-AEC-S1b-00-00-DR-C-0000602	0	Road Levels & Finish Floors	NYI
STG-MW-S1b-00-XX-DR-A-1100000	P1	Site Location Plan Existing	xx.09.22
STG-MW-S1b-00-XX-DR-A-1100001	P1	Site Layout Plan Existing	xx.09.22
STG-MW-S1b-00-XX-DR-A-1100002	P1	Site Layout Plan Proposed	xx.09.22

Appendix B Problem location Map



PROJECT
 DONORE PROJECT, DONORE AVENUE, DUBLIN 8

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- NOTES**
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ARCHITECTURAL AND ENGINEERING DRAWINGS. ANY DISCREPANCIES, ERRORS OR OMISSIONS TO BE BROUGHT TO THE ATTENTION OF THE DESIGNER.
 - ALL DIMENSIONS TO BE CHECKED BY THE CONTRACTOR ON SITE PRIOR TO COMMENCEMENT OF WORKS.
 - AECOM LIMITED TO BE INFORMED BY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO THE COMMENCEMENT OF WORKS ON SITE.
 - DIMENSIONS OF ALL BOUNDARIES AND ADJOINING ROADS TO BE CHECKED ON SITE PRIOR TO COMMENCEMENT OF WORKS.
 - VISIBILITY SPLAY HAS BEEN VERIFIED IN ACCORDANCE WITH THE DESIGN MANUAL FOR URBAN ROADS AND STREETS (DMURS) REQUIREMENTS.
 - THIS DESIGN HAS BEEN DEVELOPED USING THE FOLLOWING TOPOGRAPHICAL SURVEYS: LDA SURVEY (MSL39995 REV1 21.05.2012) AND HINES SURVEY (MSL35430 REV2 24.06.2020)

Forward Visibility Table (Extract of Table 4.2 of the Design Manual for Urban Roads and Streets, DMURS)

Design Speed (km/h)	Stopping Sight Distances (SDD) Standard (m)
10	7
20	14
30	23
40	33
50	45
60	59

LEGEND:
 SITE BOUNDARY.....
 NET DEVELOPABLE AREA BOUNDARY.....



ISSUE/REVISION

NO	DATE	DESCRIPTION
0	NYI	ISSUED FOR PLANNING
1/R	DATE	DESCRIPTION

PROJECT NUMBER
 60648061

SHEET TITLE
 PROPOSED VISIBILITY SPLAY

SHEET NUMBER
 STG-AEC-S1b-00-00-DR-C-0000101

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Appendix C Road Safety Audit Feedback Form

Scheme: Donore Project, Donore Avenue, Dublin 8 Audit Stage: Stage 1 Date Audit Completed: 16.11.2022					
Paragraph No. in Safety Audit Report	To be Completed by Designer				To be completed by Audit Team Leader
	Problem Accepted (Yes / No)	Recommended Measure Accepted (Yes / No)	Describe Alternative Measure(s). Give reasons for not accepting recommended measure	Designer Comments	Alternative Measures or reasons accepted by auditors (Yes / No)
4.2.1	yes	yes	N/A	Landscaping will be taken into account regarding the visibility splay obstruction with trees set back behind the visibility splay.	
4.2.2	yes	yes	N/A	Tactile paving and dropped kerbs will be included in the detailed design stage at the western footpath at the site entrance.	
4.2.3	yes	yes	N/A	A raised table will be inserted at detailed design stage to ensure that vehicle speeds are lowered and to incorporate tactile paving to make pedestrians aware of the vehicle movements. Lining will be included within the detailed design to give indication of priority.	
4.2.4	yes	yes	N/A	A turning head will be provided in the location identified in the RSA to enable vehicles to	

				return in a forward manoeuvre. It will be provided at detailed design stage.	
4.3.1	yes	yes	N/A	The length of the raised table in the junction at the location identified in problem 4.3.1 will be reduced in order to deter vehicles from gathering speed on the elongated raised table currently proposed. The detailed design will also include additional traffic calming measures if considered necessary, potentially including an additional raised table.	
4.4.1	yes	yes	N/A	Landscaping will be set further back from the pedestrian footway in order to ensure adequate forward visibility at pedestrian crossings.	
4.4.2	yes	yes	N/A	Installation of dropped kerb facilities at mobility impaired parking bays will be included in the proposed design to ensure disabled and wheelchair users adequate access to the footway.	
4.4.3	Yes	No	The purpose of the mobility hub is provide residents with an information centre on the surrounding and local area transportation modes available and timetable or availability of such modes. The need for mobility impaired parking bays adjacent to the		Yes

			mobility hub is not necessary as the mobility impaired parking bays distributed throughout the site ensure access for mobility impaired parking bay users to other aspects of the proposed development site.		
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Signed Hilary Herlihy Designer Traffic Consultant Date 16-11-2022

Signed [Signature] Audit Team Leader Rowan Lyons Date 17/11/2022

Signed [Signature] Employer The Land Development Agency Date 29/11/22

