

RPS Consulting Engineers

Residential Development at
Shangan Road, Co. Dublin

Combined Stage 1 & 2
Road Safety Audit

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1.0	TAG	AOR	TAG	28 th July 2021	Draft Report

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1 Introduction

1.1 General

This report results from a Combined Stage 1 & 2 Road Safety Audit on the proposed Residential Development at Shangan Road, Co. Dublin, carried out at the request of Mr Padraic Mac Giolla Bhríde of RPS Consulting Engineers.

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

Mr. Aly Gleeson

(MBA, MEng, BSc, RSACert, CEng, FIEI)
Road Safety Audit Team Leader

Mr. Alan O'Reilly

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

The Road Safety Audit took place during July 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 15th July 2021. 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.

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 Combined Stage 1 & 2 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) Publication's 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.

1.2 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: -

- Personal Injury Collision data
- Vehicle swept paths
- Drainage
- Public Lighting
- Visibility splays

2 Project Description

2.1 General

A new residential development is proposed on Shangan Road in Co. Dublin (see Figure 2-1). Shangan Road is a two-way single carriageway road that extends in a south-eastern direction from its junction with the R108. It includes public footways on both sides of the carriageway, traffic calming measures (road humps), public lighting and a 50kph speed limit.

Shangan Road includes bus stops along its length, three of which are located near, or at, the site of the new development.

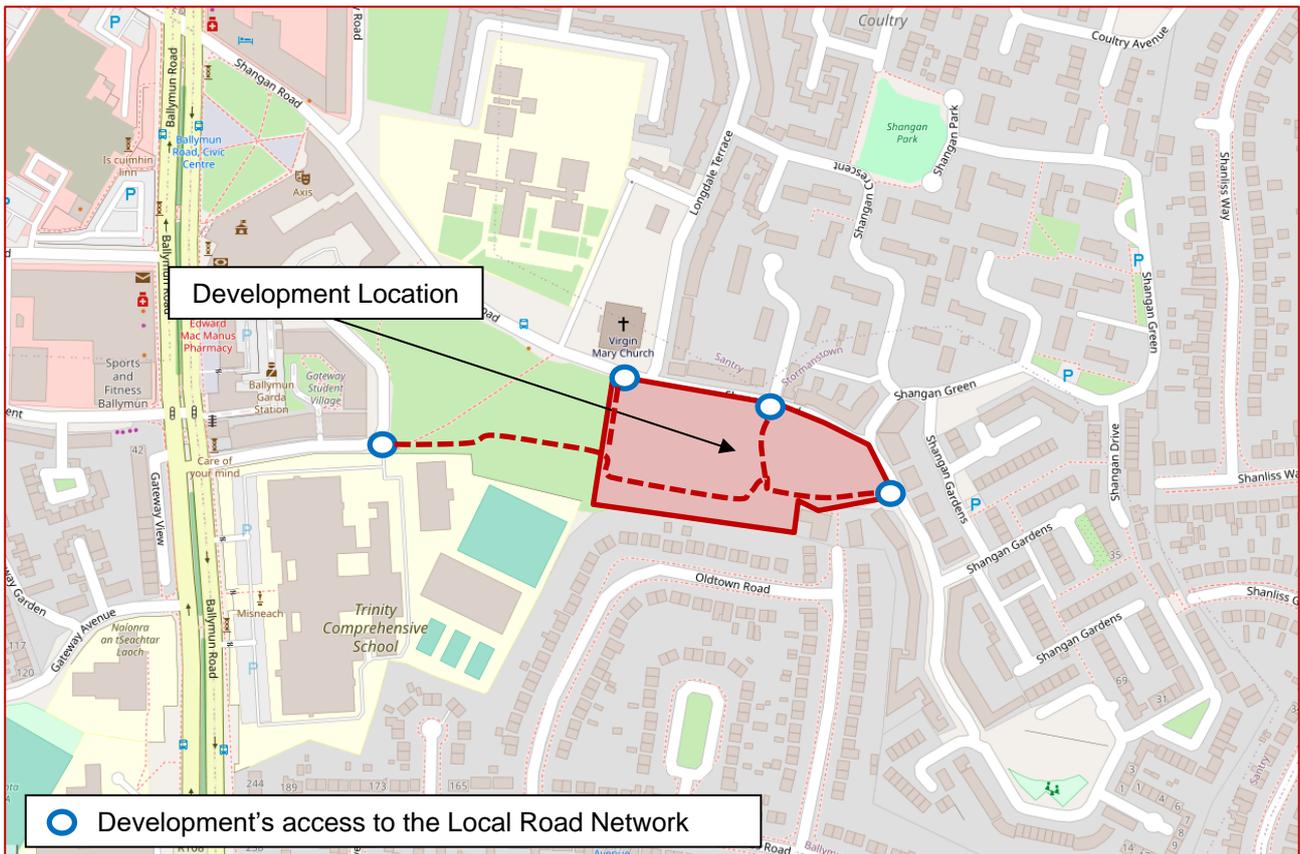


FIGURE 2-1: LOCATION PLAN

The proposed development is located on a brownfield site (currently an area of Public Open Space) and shall include a combination of apartment blocks and houses, with a mix of on-curtilage and on-street parking. The development shall also include approximately 10 No Mobility parking spaces, and a combination of internal and external bicycle parking spaces. The development shall include new local access roads (5.5m wide), with four separate connections to the existing road network, including two to the north of the development, one to the east, and one to the west (see Figure 2-1).

The development shall include the following:

- Apartments
 - 67no. 1 bed apartments
 - 6no. 2 bed apartments
 - Communal facilities – Office, WCs, Mobility Scooter Storage (10 no. spaces), all other communal facilities as per Apartment Design Guide (ADG) 2018 standards.
- Dwellings
 - 10no. 2 bed dwellings
 - 8no. 3 bed dwellings
 - 2no. 4 bed dwellings

2.2 Design Changes Received 25th Feb 2022

The RSA Team received two localised design changes on the 25th February 2022, and were instructed to revise the Stage 1 & 2 RSA (previously issued on the 7th September 2021) to reflect the latest design proposal. The locations of the two design changes are identified in Figure 2-2 below.

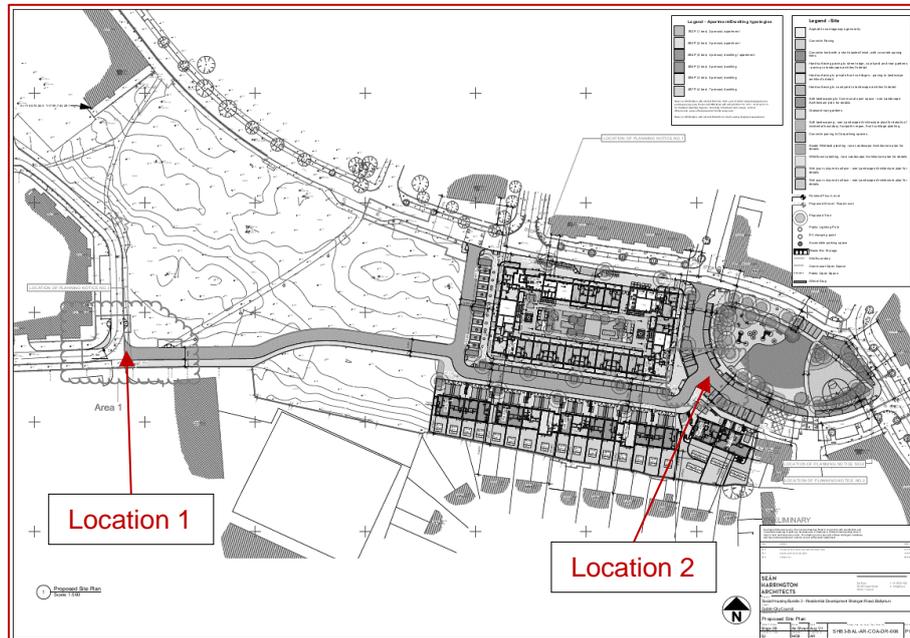
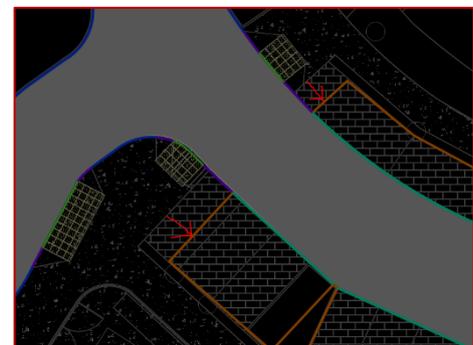
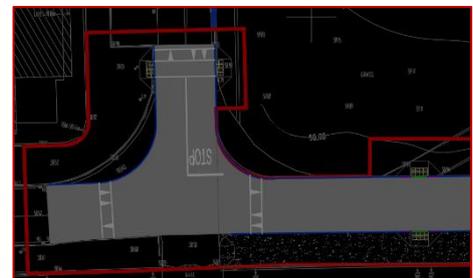


FIGURE 2-2 LOCATION OF DESIGN CHANGES RECEIVED 25TH FEBRUARY 2022

The design changes include the following:

- Location 1:** A new access road will tie into Shangan Road near the rear access to Trinity Comprehensive School. The new access road will extend in an east-west direction, and require a revision to the priority of the existing road at this location. A raised table will be provided with an uncontrolled pedestrian crossing on the minor arm of the new T-Junction. The junction shall include a Stop sign and associated road markings.
- Location 2:** A new uncontrolled pedestrian crossing will be provided at the Public Open Space in the north-eastern corner of the development. The uncontrolled pedestrian crossing will provide access for pedestrians, including visually and mobility impaired pedestrians, wishing to access the amenities within the Public Open Space.



The above changes have been reviewed by the RSA Team. Road Safety Problems associated with the above two changes have been recorded in Section 4. The Feedback Form in Appendix C has also been updated to reflect the problems associated with the above changes.

3 Main Report

3.1 General Problem

Location: Drawing No SHB3-BAL-AR-COA-DR-006 (Rev P04)

Summary: Information regarding drainage not provided to the Audit Team.

Information regarding drainage within the proposed development has not been provided to the Audit Team. Should inadequate drainage measures be provided, this could lead to ponding on the footpath or within the carriageway resulting in slips and trips during wet or icy weather.

Recommendation

Ensure the proposed drainage provision removes all surface water from the pedestrian and vehicle catchment areas.

3.2 General Problem

Location: Drawing No SHB3-BAL-AR-COA-DR-006 (Rev P04)

Summary: No lighting has been indicated within the development.

No public lighting columns have been indicated within the development. A lack of public lighting provision within the development may lead to drivers being unable to see vulnerable road users within the footpath or carriageway during the hours of darkness, resulting in an increased risk of collisions between vehicles and vulnerable road users.

Recommendation

Public lighting should be provided within the development.

3.3 General Problem

Location: Drawing No SHB3-BAL-AR-COA-DR-006 (Rev P04)

Summary: No junction control or priority type has been indicated at the development's accesses onto Shangan Road.

The junction control (stop, yield etc.), and subsequently priority, at the proposed development accesses onto Shangan Road have not been indicated. This could increase the risk of overshoot collisions where drivers fail to slow and stop when exiting the development.

Recommendation

Ensure the junction control at the development's accesses onto Shangan Road is clear (via signage/road markings) to drivers exiting the development.



3.4 General Problem

Location: Drawing No SHB3-BAL-AR-COA-DR-006 (Rev P04)

Summary: No tactile paving provision within the development, or on either side of pedestrian crossings across side road accesses.

Formal pedestrian crossing points, including dropped kerbs and tactile paving, have not been indicated within the development or across the accesses on Shangan Road. A failure to provide dropped kerbs at crossing points and along pedestrian desire lines could result in mobility impaired pedestrians being unable to safely and independently enter the carriageway to cross to the opposite footpath. This could result in slips, trips or falls as these pedestrians attempt to descend the kerb. Similarly, a failure to provide tactile paving at dropped kerb locations could lead to an increased risk of visually impaired pedestrians unintentionally entering the carriageway where they could be struck by vehicles.



Recommendation

Formal uncontrolled pedestrian crossings, including dropped kerbs and tactile paving, should be provided at pedestrian crossing points/desire lines.

Additionally, tactile paving should be provided at each Mobility Parking space (in combination with the dropped kerbs indicated on the plan) located at the development's western boundary.

3.5 General Problem

Location: Drawing No SHB3-BAL-AR-COA-DR-006 (Rev P04)

Summary: Unclear if proposed trees shall reduce visibility for drivers exiting side road junctions.



It is unclear if the proposed location of trees within the verge shall obstruct visibility for drivers exiting junctions and parking spaces within the proposed development. This could result in drivers exiting side roads and parking spaces when it is unsafe to do so ahead of oncoming vehicles leading to side-on collisions.

Recommendation

Ensure sufficient visibility is available at all junctions and parking spaces within the proposed development. It may be necessary to relocate trees to achieve the required visibility.

3.6 Problem

Location: Drawing No SHB3-BAL-AR-COA-DR-006 (Rev P04)

Summary: Likely pedestrian desire line not accommodated, which could lead to slips, trips and falls as pedestrians, particularly mobility impaired pedestrians, attempt to cross Shangan Road.

Existing amenities to the north of Shangan Road are likely to be an attractive destination for residents of the new development. Residents wishing to access, for example, the Catholic Church of the Virgin Mary, the Ballymun East Community Centre, and the Ballymun Child and Family Resource Centre will need to cross Shangan Road.

The absence of existing uncontrolled pedestrian crossing facilities may increase the risk of slips, trips and falls as pedestrians, particularly mobility impaired pedestrians, attempt to cross the road.



Recommendation

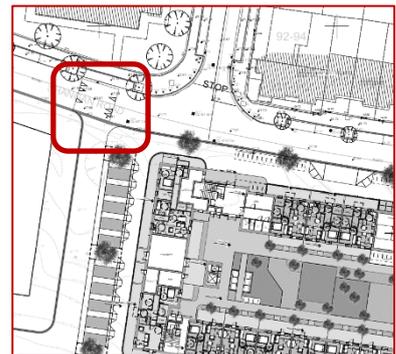
A new pedestrian crossing of Shangan Road should be provided to support safe movement of pedestrians across Shangan Road.

3.7 Problem

Location: Drawing No SHB3-BAL-AR-COA-DR-006 (Rev P04)

Summary: Existing speed table on Shangan Road may interfere with the safe movement of vehicles entering/exiting the development.

The location of a raised speed table directly adjacent one of the development accesses may complicate the safe movement of vehicles entering or exiting the development, leading to driver hesitation. This may increase the risk of rear-end-shunt collisions.



Recommendation

The speed table should be relocated so as not to interfere with entry/exit manoeuvres, or a raised table should be provided at the junction.

4 Design Changes Received 25/02/2022

4.1 Problem

Location: New Junction at the Western Extents of the Scheme

Summary: Visually impaired pedestrians may inadvertently enter the carriageway, where there is an increased risk of being struck by a vehicle.

It is unclear if the raised table will be set flush with the surrounding footway. Should the raised table be level with the surrounding footway, there is a risk that visually impaired pedestrians may be unable to identify the footway edge, and inadvertently continue into the carriageway where there is a risk of vehicle/pedestrian collisions.



Recommendation

The plateau of the raised table should be set lower than the surrounding footway, allowing visually impaired pedestrians to identify the kerb edge.

4.2 Problem

Location: New Junction at the Western Extents of the Scheme

Summary: Absence of footway connection may increase the risk of slips, trips, and falls.

It is not clear from the sketch provided if a new footway connection will be provided between the existing Shangan Road footway in the north, and the new access road in the east. Failure to provide a pedestrian footway linking the two footways may lead to informal pedestrian routes through grassed areas, which may become worn and rutted over time, leading to ponding, slips, trips, and falls.



Recommendation

Ensure a pedestrian footway connection is provided between Shangan Road and the new development access road.

Additionally, the uncontrolled pedestrian crossing on the minor arm should be relocated to the south along the east-to-west desire line.

4.3 Problem

Location: New Uncontrolled Pedestrian Crossing at Public Open Space

Summary: Vehicle speeds near uncontrolled pedestrian crossing may increase the risk of vehicle/pedestrian collisions.

The new pedestrian link between the development and the Public Open Space, which will include a playground, basketball court and grassed areas, is likely to be a popular route for residents. The pedestrian route is likely to attract small children and scooter users, who may be less attentive when crossing the road. The RSA Team supports the measures taken to increase inter-visibility between pedestrians and drivers, but are concerned that vehicle speeds in this area may be high. This could lead to vehicle/pedestrian collisions at the crossing.

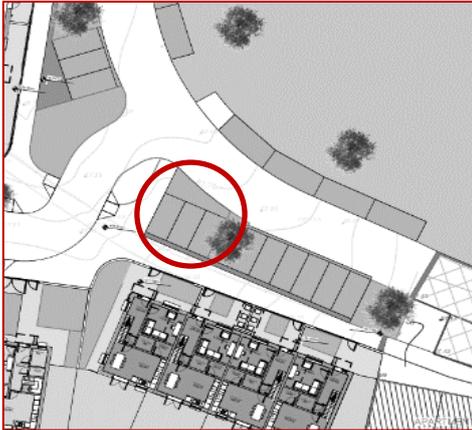


Recommendation

Parking should be relocated further east to maximise inter-visibility between pedestrians and drivers, and a raised junction table should be provided in this location to passively control vehicle speeds.

5 Observations

- 5.1 Relocate parking spaces to the edge of the carriageway.
- 5.2 An existing Bus Stop (No 4686) is located on Shangan Road, opposite Longdale Terrace. The existing bus stop will need to be relocated, as it will conflict with the new development. The plans do not currently indicate where the new bus stop will be relocated. The bus operator will need to be consulted to agree a new bus stop location.



Observation 4.1



Observation 4.2

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.

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

ROAD SAFETY AUDIT TEAM LEADER

Aly Gleeson

Signed:



Dated:

2nd March 2022

ROAD SAFETY AUDIT TEAM MEMBER

Alan O'Reilly

Signed:



Dated:

2nd March 2022

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 checked="" type="checkbox"/>	<input 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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Appendix B – Documents Submitted to the Road Safety Audit Team

DOCUMENT/DRAWING TITLE	DOCUMENT/DRAWING NO.	REVISION
Proposed Site / Level 0 Plan	SHB3-BAL-AR-COA-DR-006	P04
<i>Design Revisions Issued on the 25th February 2022</i>		
Sketches showing Changes	-	25/02/2022

Appendix C – Feedback Form

Road Safety Audit Feedback Form

Scheme: Residential Development at Shangan Road, Co. Dublin

Route No.: Local Roads

Audit Stage: Combined Stage 1 & 2 RSA Date Audit Completed: 1st Mar 2022

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	Yes		
3.5	Yes	Yes		
3.6	Yes	Yes		
3.7	Yes	Yes		
Problems Associated with the Design Changes Received on the 25th February 2022				
4.1	Yes	Yes		
4.2	Yes	Yes		
4.3	Yes	Yes		

Signed:  Designer Date 02/03/2022

Signed:  Audit Team Leader Date 2nd March 2022

Signed: _____ Employer Date _____

Appendix D – Problem Locations

