

Ashbourne SHD, Ashbourne, Co. Meath

Preliminary Design Stage Quality Audit

200059-DBFL-TR-XX-RP-C-0001

TRANSPORTATION



August 2022



DBFL CONSULTING ENGINEERS



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1	18/08/22	First Issue	Jane Hennaghan	Thomas Jennings	Thomas Jennings
2	31/08/22	Final	Jane Hennaghan	Thomas Jennings	Thomas Jennings

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Contents

1	INTRODUCTION	1
1.1	BACKGROUND.....	1
1.2	SCOPE OF QUALITY AUDIT.....	1
1.3	QUALITY AUDIT PROCEDURE	2
1.4	REPORT STRUCTURE.....	3
2	CHARACTERISTICS OF PROPOSALS	4
2.1	OVERVIEW	4
2.2	SITE ACCESS.....	4
3	QUALITY AUDIT CONTEXT	6
3.1	INTRODUCTION	6
3.2	COLLISION HISTROY.....	7
4	ITEMS RAISED DURING THIS PRELIMINARY DESIGN STAGE QA	8
4.1	GENERAL PROBLEMS AT MULTIPLE LOCATIONS.....	9
4.2	PROBLEMS AT SPECIFIC LOCATIONS.....	11
4.3	COMMENTS	18
5	AUDIT TEAM STATEMENT	19
5.1	AUDIT TEAM STATEMENT	19
6	LIST OF INFORMATION RECEIVED	20
Appendix A :	Problem Location Map	21
Appendix B :	RSA Feedback Form	22

1 INTRODUCTION

1.1 BACKGROUND

DBFL Consulting Engineers (DBFL) have been commissioned to prepare a Preliminary Design Stage Quality Audit for a residential development at Cherry Lane in Ashbourne, Co. Meath. The development consists of a total of 188 no. dwellings (68 no. 4bed semi-detached houses, 100 no. 3bed semi – detached houses, 20 no. 4bed detached houses), 1 no. creche, public open space and all associated site development works, including access road to Hickey's Lane and upgrade works to the northern section of Hickey's Lane which intersects with the Dublin Road (R135).

This Preliminary Design Stage Quality Audit forms part of the planning submission for the proposed residential development.

1.2 SCOPE OF QUALITY AUDIT

The geographical scope of this Quality Audit considers the subject development site (extent of proposed new infrastructure works within the site boundary) which includes the internal roads layout and the proposed site access/egress locations. In addition, the immediate pedestrian/cycle/vehicular routes leading to/from the development site have also been included within the Quality Audit.



Figure 1.1: Subject Site



1.3 QUALITY AUDIT PROCEDURE

The definition of a Quality Audit is provided within the Department for Transport (UK) Traffic Advisory Leaflet 5/11 "Quality Audit", and states: -

"QA is a defined process, independent of, but involving, the design team, that through planning, design, construction and management stages of a project, provides a check that high quality places are delivered and maintained by all relevant parties, for the benefit of all end users. QA is a process, applied to highway, traffic management or development schemes, which systematically reviews projects using a series of discrete but linked evaluations and ensures that the broad objectives of a place, functionality, maintenance and safety are achieved."

The Design Manual for Urban Roads and Streets (DMURS) states that;

"the intention of a Quality Audit is not to pass or fail a design rather it is intended as an assessment tool that highlights the strengths and weaknesses of a design and a documented process of how decisions were made."

DMURS Advice Note No. 4 provides designers with guidance in relation to the preparation and content of Quality Audits in Ireland. The Quality Audit report structure has been compiled in reference to DMURS Advice Note No. 4 and international best practice guidance including, amongst others, the Department for Transport (UK) Traffic Advisory Leaflet 5/11 "Quality Audit", and the CIHT document "Manual for Streets 2". Through the adoption of the guidance detailed within the aforementioned documents, DBFL submit that this Quality Audit complies fully with the requirements introduced in DMURS.

The Quality Audit is an integral element of the development team approach through which all relevant disciplines contribute to the planning process. The Quality Audit seeks to identify a set of clear, agreed outcomes and recommendations that are fed back into the design process through discussion and agreement with the relevant parties of the design team (e.g. architects, planners, engineers etc.). The Quality Audit process can be summarised as follows (Figure 1.2):

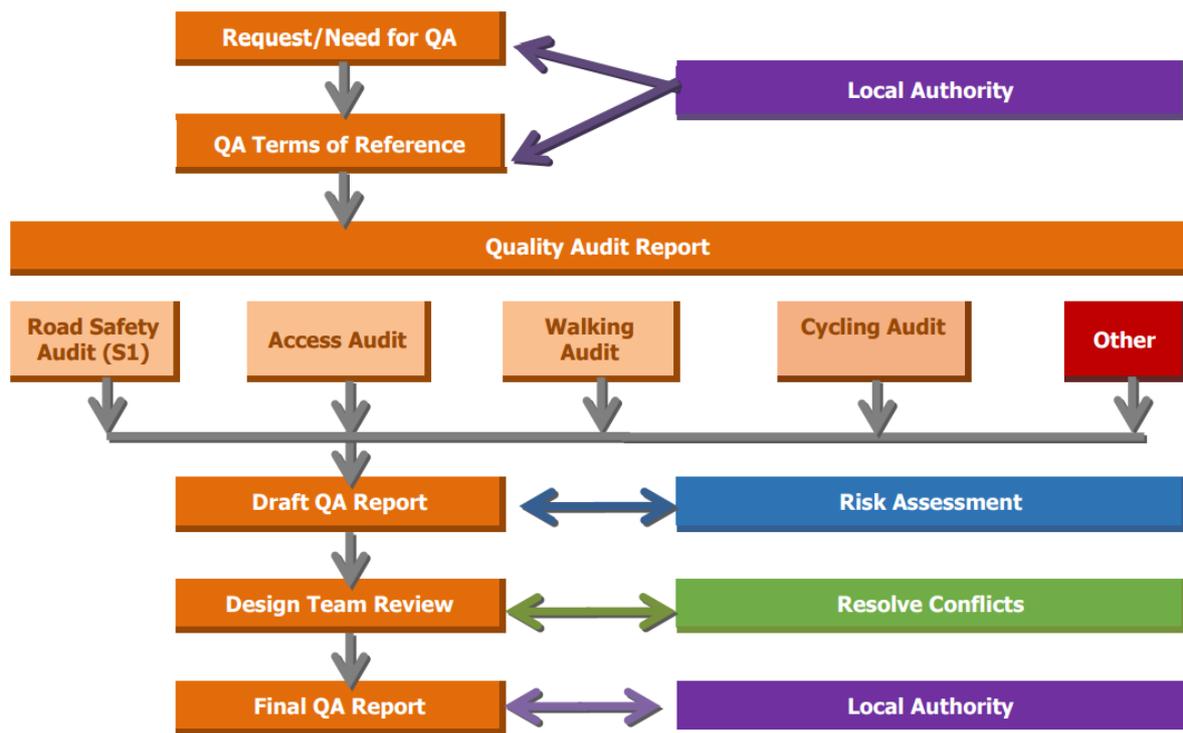


Figure 1.2 Quality Audit Process

1.4 REPORT STRUCTURE

Section 2 introduces the principal characteristics of the development of the scheme. The purpose and context of the Quality Audit process are detailed in in Section 3.

A summary of the Quality Audit findings and associated recommendations are outlined in section 4, whilst Section 5 details the Audit Team Statement.

Section 6 summarises the list of information provided to the audit team for the purposes of the audit.

2 CHARACTERISTICS OF PROPOSALS

2.1 OVERVIEW

The development consists of a total of 188 no. dwellings (68 no. 4bed semi-detached houses, 100 no. 3bed semi - detached houses, 20 no. 4bed detached houses) , 1 no. creche, public open space and all associated site development works, including access road to Hickey's Lane and upgrade works to the northern section of Hickey's Lane which intersects with the Dublin Road (R135).

Figure 2.1 illustrates the proposed site layout plan.



Figure 2.1: Proposed Site Layout Plan

2.2 SITE ACCESS

The proposed development will benefit from 2 no. vehicular access points located off the R135 Dublin Road. The southern vehicular access is proposed through Hickey's Lane with the junction at the R135 remaining as a priority-controlled junction. The northern vehicular access is proposed through Cherry Lane with the junction at the R135 proposed to be upgraded from an existing priority junction to a cycle protected signal-controlled junction.



There are also pedestrian and cycle links from the development out to the R135 Dublin Road with one of the links consisting of a 4m shared pedestrian/cycle path which provides a segregated route through the development and a link to the R135.

It is noted that there is a potential access on the western boundary of the proposed development. The main spine road through the development will provide access for these future development lands.



3 QUALITY AUDIT CONTEXT

3.1 INTRODUCTION

This section describes the general context of the Quality Audit which encompasses a Stage 1 Road Safety Audit, Access Audit, Walking Audit and Cycling Audit. The scope of the audit considers the subject development site and the immediate pedestrian/cycle/vehicular routes leading to/from the development site.

The Audit Team membership was as follows:

Team Leader: Thomas Jennings
BEng, MSc, MIEI, MIHT, CMILT, MILT

DBFL Consulting Engineers

TII Approval Number: TJ 135381

Team Member: Jane Hennaghan
BEng Tech BEng (Hons) CEng MIEI

DBFL Consulting Engineers

TII Approval Number: JH 1343493

The Audit comprised a review of the drawings/documents detailed in Section 6 of this report in addition to an examination of the existing conditions on site. The site was visited by the audit team on Friday 5th August 2022 between 10:30 and 11:30 with the objective of quantifying: -

- Existing traffic (pedestrian, cyclist and vehicular);
- Existing residential accesses to be maintained along the two vehicular access roads;
- The provision of dedicated facilities available for NMU's and their functionality;
- The likely travel desire lines/links to/from the subject site; and
- Any issues that might impact the comfort and safety of NMU's.

This Audit has been carried out in accordance with the DMRB (UK) Section 5 Part 2 HD45/02 Non-Motorised User Audits, the relevant sections of Transport Infrastructure Ireland guidance GE-STY-01024 December 2017 for Road Safety Audits, in addition to respecting the DMURS requirements of the Access Audit, Cycling Audit and Walking Audit.



The problems identified and described in this report are considered by the Audit Team to require action in order to improve accessibility, enhance comfort and safety levels of the scheme and minimise accident occurrence.

3.2 COLLISION HISTROY

The Road Safety Authority (RSA) website is usually reviewed in order to ascertain the safety record in the vicinity of the subject scheme. The RSA database is currently under review and therefore, for this audit, details on previous collisions within the area were not available.



4 ITEMS RAISED DURING THIS PRELIMINARY DESIGN STAGE QA

The items raised as per below detailed within Table 4.1. Each problem identified has been categorised into the relevant Quality Audit criteria, Road Safety, Pedestrian, Cycle and Accessibility.

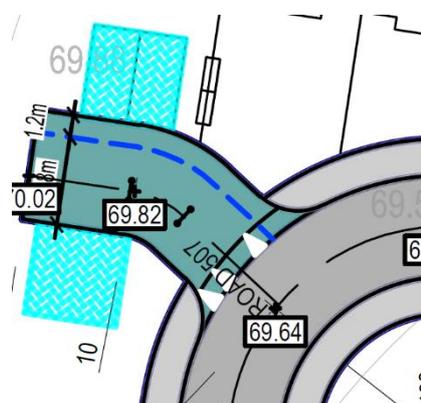
Problem No.	Road Safety	Pedestrian	Cycle	Accessibility
G1		X		X
G2	X			
G3		X	X	
G4	X	X	X	
G5	X	X		X
G6	X		X	
S1	X			X
S2			X	
S3		X	X	X
S4			X	
S5		X	X	X
S6	X			
S7	X			X
S8	X			
S9		X		X
S10	X	X		
S11		X		X

S12	X			X
S13	X	X	X	X
S14	X			X
S15				X

4.1 GENERAL PROBLEMS AT MULTIPLE LOCATIONS

Problem G1 – Ramped access to home zones

A number of locations within the development provide a ramp into the “Home Zone” residential areas. In some locations, the ramp appears to be situated in the direct line of travel for the footpath and crossing for pedestrians, as shown in the example image. Therefore, there is a level difference and crossfall at where pedestrians will want to cross the road. This may lead to trips and falls by pedestrians, in particular, visually impaired pedestrians.



Recommendation:

It is recommended that the footpath be diverted slightly away from the ramp and tactile paving provided so as to indicate to pedestrians, in particular, vulnerable road users, where to cross.

Problem G2 – Lack of priority allocated at internal junctions

At a number of locations within the development, there is a lack of priority assigned at the internal junctions. This could lead to confusion between drivers as to who has the right of way which may lead to collisions.

Recommendation:

Appropriate priority should be allocated to all internal junctions with STOP signage and road markings provided where appropriate.



Problem G3 - Street lighting

The drawings provided for the purpose of this audit do not detail the provision of street lighting along the internal roads and pedestrian routes within the subject site. In the absence of appropriate street lighting, safety issues such as trip hazards could arise for pedestrians whilst personal security issues could prove a significant concern for pedestrians and cyclists.

Recommendation:

During the detailed design stage, appropriate levels of internal (and external along any new pedestrian / cycle connections if necessary) lighting should be provided across all pedestrian, cycle and vehicle routes. The location of the street lighting columns should also be carefully considered to ensure that they do not impact access levels or present a hazard.

Problem G4 – Surface Drainage

From the scheme information provided for this audit it has not been possible to ascertain the specific details of the surface drainage strategy. Surface water can prove a trip hazard in both warm and cold weather conditions in addition to adversely impacting the skid resistance of bicycles and motorized vehicles.

Recommendation:

During the detail design stage ensure adequate measures are taken to ensure that the ramp has sufficient drainage and that localised ponding does not arise during wet weather conditions. All access routes leading to/from the subject site should have adequate surface water drainage.

Problem G5 – Servicing Arrangement

The auditors are unclear about the servicing arrangements (refuge collections) for the proposed development. Inappropriate practices in regard to; (i) temporary wheelie bin storage at surface level (e.g. temporary transfer area) which could block pedestrian and vehicle routes and (ii) refuge vehicles access requirements and the potential for reversing in areas were conflicts with other vehicles, cyclists and pedestrians may arise.

Recommendation:

The designers should confirm the arrangements being considered for refuse collections for the subject site, associated bin storage (permanent/temporary on day of collection) and refuse vehicle access/egress arrangements to all bin storage areas. A swept path analysis along the proposed servicing route should be undertaken.

Problem G6 – Main Spine Road Landscaping Proposals

It is noted that tree planting within the verge provides a benefit in terms of traffic calming, however, this needs to be safeguarded in terms of visibility splays at internal junctions and head height for cyclists along parallel cycle tracks.

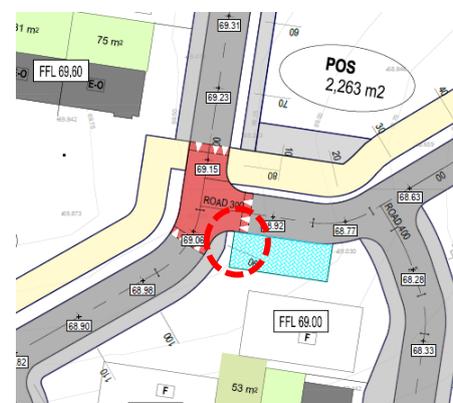
Recommendation:

Ensure that trees planted within the development maintain visibility for drivers. Also ensure that trees branches do not impede into the cycle tracks and block accessibility for cyclists.

4.2 PROBLEMS AT SPECIFIC LOCATIONS

Problem S1 –Raised Table blocking parking space

The ramp of the raised table is currently blocking the perpendicular parking space adjacent to it, leading to level differences when accessing the space. This could result in unsafe vehicle manoeuvres when accessing/egressing the parking space and could lead to vehicles colliding with other parked vehicles.



Recommendation:

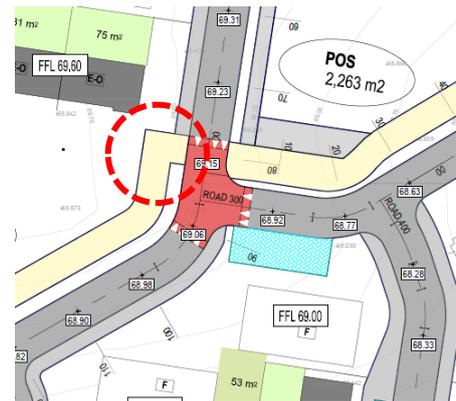
It is recommended that the parking spaces are moved so that they are not blocked by the ramp within the raised table.

Problem S2 – Shared path transitions

The shared path at the raised table crossing appears to have a sharp 90° transition to the crossing. This could lead to difficult negotiating for cyclists to cross, possibly leading to cyclists falling from the bicycle.

Recommendation:

It is recommended that transitions within the shared path are less severe and employ an appropriate radius for cyclists to negotiate easily and with comfort.

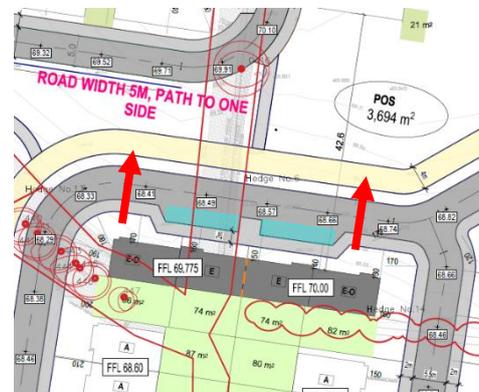


Problem S3 – Shared path buffer

The shared path appears to have a buffer between the path and the road carriageway along its length. It is unclear as to what this buffer entails and whether pedestrians/cyclists will have accessibility through this buffer area. Should the buffer be hard landscaping, this will hinder accessibility to and from the path and key travel desire lines.

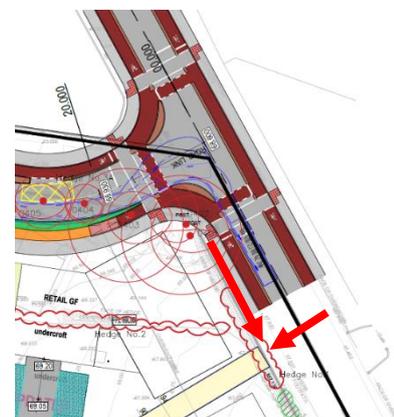
Recommendation:

It is recommended that the buffer be accessible for pedestrians and cyclists to access the shared path. Should landscaping be provided within the buffer, ensure that there are accessibility points on all key desire line locations for pedestrians and cyclists.



Problem S4 – Accessibility for the Shared Path from the R135

It is unclear as to how southbound cyclists travelling along the R135 (and cyclists travelling northbound from the direction of the intended shared path) will access the shared path into the development. There appears to be no formal facility to allow cyclists to travel safely between the signal-controlled junction and this path. This could lead to cyclists undertaking unsafe manoeuvres, possibly on the footpath



which may conflict with pedestrians in this location or crossing the busy R135 with no crossing allocated.

Recommendation:

It is recommended to provide a safe connection link for cyclists travelling southbound from the proposed cycle protected junction to the shared path.

Problem S5 – Access for pedestrians and cyclists on main spine road

In a number of locations, there appears to be no access for cyclists travelling from side road junctions to the main cycle track facility along the main primary road within the development. Grass verges are located between the cycle track and the road carriageway. Similar connection issues are present for pedestrians.

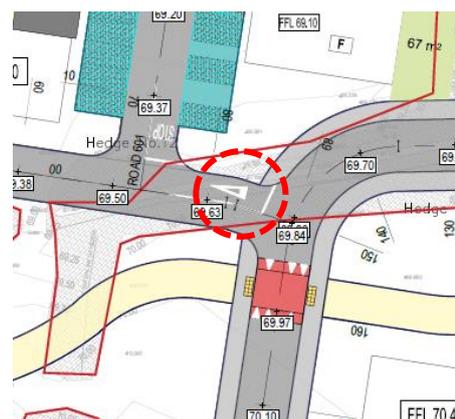


Recommendation:

Gaps within the grass verge should be provided at strategic locations for pedestrians and cyclists to access the footpaths and cycle track facilities located on the opposite side of the main spine road.

Problem S6 – Yield priority at minor junction

The minor arm of the priority junction is allocated with a yield road marking. This may give the impression to a driver that they are not required to stop at the junction before undertaking a turning movement. This could lead to collisions with other vehicles who have priority.

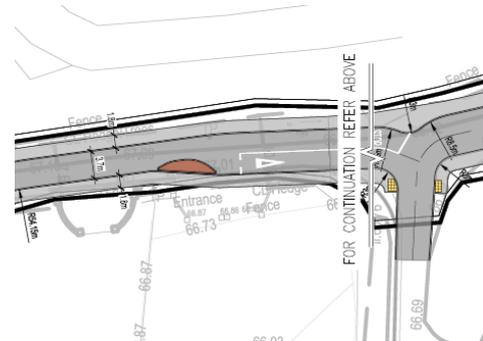


Recommendation:

It is recommended that STOP road marking and appropriate signage be allocated to ensure that vehicles giving way make the appropriate stop before making their turning movement.

Problem S7 – Shuttle system conflict with vehicular accesses

The proposed island and road markings allocated for the shuttle system along Hickey's Lane appear to be blocking access for the residential driveways located here. This could result in accessibility issues for residents located here.

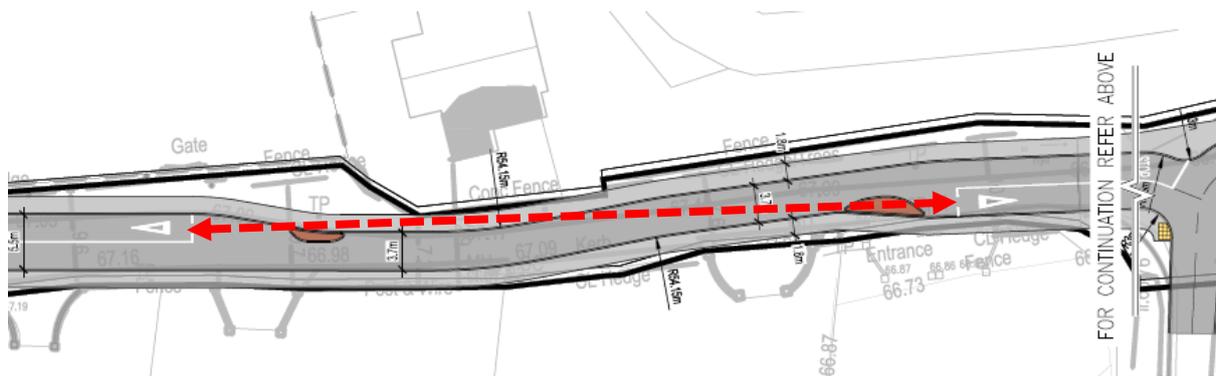


Recommendation:

The shuttle system should be revised so as not to block residential property accesses.

Problem S8 – Shuttle system visibility

The length of the proposed shuttle system appears long at 85m approximately. It is unclear as to the level of visibility between each end of the shuttle system. Reduced visibility could lead to head on collisions between vehicles.



Recommendation:

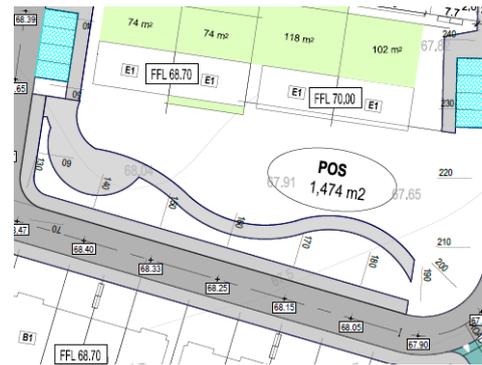
Ensure that adequate sightlines are provided along this section. If sightlines are not achievable, alternative solutions could be explored.

Problem S9 – Termination of footpaths

Some paths within the development appear to terminate abruptly. This could lead to accessibility issues and confusion for pedestrians, in particular, visually impaired pedestrians.

Recommendation:

It is recommended that footpaths do not end abruptly and link together where appropriate so as to improve permeability within the development.

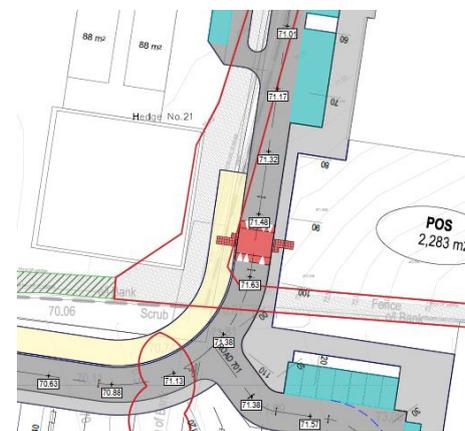


Problem S10 – Clarity on crossing type

The raised crossing located south of the reserved school site appears to be allocated as a signal-controlled crossing, however, there are no road markings to indicate to vehicles to stop at this crossing. This may lead to vehicles failing to stop while pedestrians are crossing which may result in a collision.

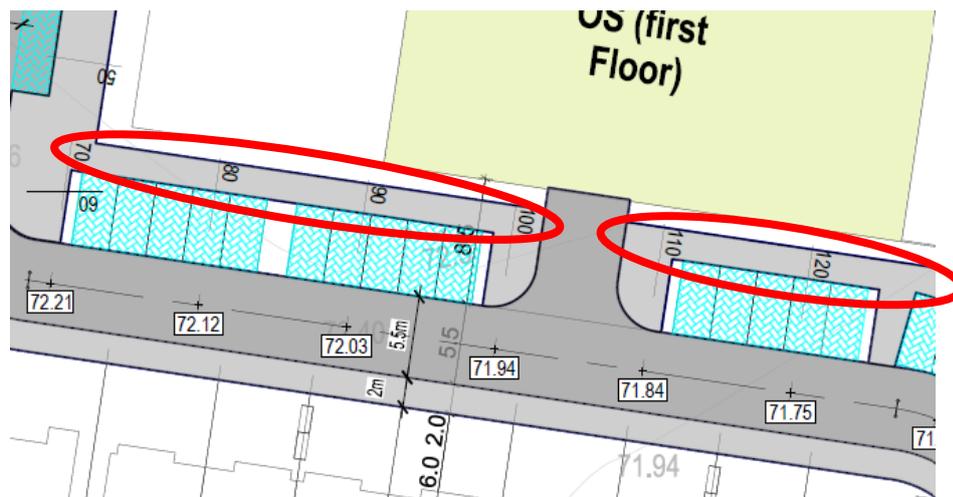
Recommendation:

Road markings should be provided to indicate to drivers that they are approaching a mid-block signal-controlled crossing.



Problem S11 – Narrow footpath at parking bays

Some locations within the development appear to have narrow footpaths in locations of perpendicular parking bays. There is the possibility that vehicles could overhang the parking space into the footpath area, reducing the effective width further in these locations. This could lead to accessibility issues, in particular for wheelchair and pushchair users.



Recommendation:

Ensure that footpaths have adequate width to comfortably accommodate vulnerable road users.
Ensure that vehicles do not overhang the footpath in these locations.

Problem S12 – Parking close to junction

There are some locations within the development where the perpendicular parking spaces are located close to a junction. There may not be sufficient distance for sightlines or reactions for drivers. There is a risk that vehicles accessing or egressing from the parking space will conflict with turning vehicles within the road carriageway, which may lead to a collision.



Recommendation:

Relocate parking bays away from junctions so that there is adequate sighting, reaction and stopping distance between drivers accessing/egressing the parking spaces and drivers turning within the road carriageway.

Problem S13 - Abrupt end of main link road

The main link road of the development ends abruptly. It is assumed that this link road will continue into future development lands adjacent to this site. There is a risk that, should the adjacent lands

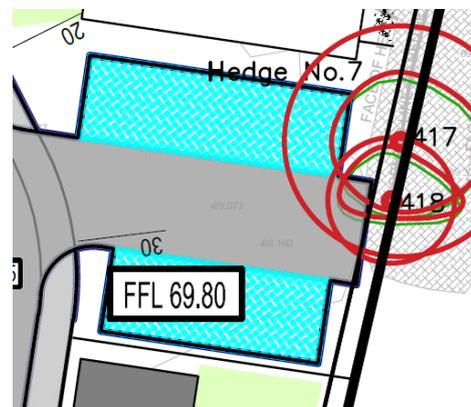
be developed after construction of this development, the main link road will cause confusion for drivers, cyclists and pedestrians as it will end abruptly.

Recommendation:

It is recommended that temporary measures be put in place such as appropriate advanced warning signage and a turnaround facility in order to accommodate drivers who travel along this main link road and wish to turn back around.

Problem S14 – Width of road for perpendicular parking spaces

In some locations, it is unclear whether sufficient width has been allocated within the road carriageway to allow a vehicle accessing / egressing from the perpendicular parking spaces. Failure to provide sufficient widths for parking, could result in vehicles clipping other parked vehicles in these locations.



Recommendation:

Ensure that sufficient carriageway and parking bay widths are provided for vehicles accessing and egressing perpendicular parking spaces.

Problem S15 – Continuation of Homezone into private lands

It is noted that there is an arrow located at the homezone (on the southern end of the development) which leads into private lands. It is unclear as to the purpose of this arrow. It also appears to be conflicting with an existing residential property in this location.



Recommendation:

Clarification is sought as to the purpose of this arrow and whether the homezone will extend into this private land at this specific location.

4.3 COMMENTS

C1 – Crossings within the internal roads of the development

It is noted that tactile paving is not provided for priority crossings on the internal roads within the development. It is recommended that dropped kerbs be provided at these crossings to ensure sufficient accessibility for all users, in particular, wheelchair users and visually impaired pedestrians.

C2 – Accessibility to existing and future surrounding lands

In order to provide enhanced connectivity and promote sustainable travel, consideration should be given to providing active travel accessibility links to existing and future residential lands surrounding this development.



5 AUDIT TEAM STATEMENT

5.1 AUDIT TEAM STATEMENT

I certify that I have examined the drawings and other information listed in Chapter 5. This Audit has been carried out with the sole purpose of identifying any features of the Design that could be removed or modified to improve the safety of the Scheme. The problems that I have identified have been noted in the report, together with suggestions for improvement which we recommend should be studied for implementation.

Audit Team Leader: Mr. Thomas Jennings *BEng (Hons), MSc, MIEI, MIHT, CMILT*
DBFL Consulting Engineers

Signed:	
Date:	31/08/2022

Audit Team Member: Mrs. Jane Hennaghan *BEng (Hons) CEng MIEI*
DBFL Consulting Engineers

Signed:	
Date:	31/08/2022



6 LIST OF INFORMATION RECEIVED

Items Received		Yes/No	Details
1	Scheme Description	Yes	
2	Project Brief	Yes	
3	Scheme / Project Drawings	Yes	200059-DBFL-RD-SP-DR-C-1200 Overall Roads Layout 200059-DBFL-RD-DR-C-1201 Roads Layout Sheet 1 200059-DBFL-RD-DR-C-1202 Roads Layout Sheet 2 200059-DBFL-RD-DR-C-1203 Roads Layout Sheet 3 200059-DBFL-RD-DR-C-1204 Roads Layout Sheet 4
4	Departures from Standard	No	
5	Traffic Signal Information	No	
6	Road Signs & Road Marking Details	No	
7	Traffic Count Information	No	
8	Speed Survey Data	No	
9	Collision Data	No	
10	Previous Road Safety Audit Reports	No	
11	Relevant Design Standards	No	
12	Public Transport Information	No	
13	Other Information	No	



Appendix A : Problem Location Map





Appendix B : RSA Feedback Form

QUALITY AUDIT FEEDBACK FORM

Scheme: Site at Cherry Lane, Ashbourne, County Meath

Audit Stage: 1

Date Audit Completed: 19th August 2022

To be Completed By Designer				To be Completed by Audit Team Leader
Problem No. in QA Report	Problem accepted (yes/no)	Recommended Measure accepted (yes/no)	Describe alternative measure(s). Give reasons for not accepting recommended measure. Only complete if recommended measure is not accepted.	Alternative measures or reasons accepted by Auditors (yes/no)
G1	Y	Y		-
G2	Y	Y		-
G3	Y	Y		-
G4	Y	Y		-
G5	Y	Y		-
G6	Y	Y		-
S1	Y	Y		-
S2	Y	Y		-
S3	Y	Y		-
S4	Y	Y		-
S5	Y	Y		-
S6	Y	Y		-
S7	Y	Y		-
S8	Y	Y		-
S9	Y	Y		-
S10	Y	Y		-
S11	Y	Y		-
S12	Y	Y		-
S13	Y	Y		-
S14	Y	Y		-
S15	Y	Y		-
S16	Y	Y		-

Signed:

Designer:

Brendan Hanrahan

Date: 23.08.22

200059

Audit Team Leader: Thomas Jennings

Date: 23rd August 2022

Employer: Shane Doherty

Date: 28/8/2022

Employer: Reese Dwyer

Date: 26/8/2022

Please complete and return to safety auditor.



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