

Coakley Consulting Engineers

Proposed Student
Accommodation, Ballybeg Drive,
Co. Waterford

Quality Audit

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Quality Audit

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1 Quality Audit Report

1.1 Introduction

This report was prepared in response to a request from Mr Brian Coakley of Coakley Consulting Engineers to provide a Quality Audit of the proposed student accommodation at Ballybeg Drive, Co. Waterford.

The Quality Audit considers the following elements:

- Access Audit (Appendix I)
- Walking Audit (Appendix II)
- Non-Motorised User Audit (Appendix III)
- Cycle Audit (Appendix IV)
- Road Safety Audit (Appendix V)

The Quality Audit followed a site visit on the 9th August 2023. At the time of the site visit the weather was dry, the ground surface was dry and traffic volumes in the vicinity of the site were low.

The different audits included in the appendices to this report address the implications for the different types of non-motorised road users of the proposed development.

The Access (Accessibility) & Walking Audits assess potential usability/accessibility for pedestrians and, in particular, people with sensory or intellectual disabilities. The Cycle Audit predominantly focusses on cycle use, whilst the Road Safety Audit identifies potential safety implications of the scheme.

1.2 Project Objectives

The Project Objective is the provision of a new student accommodation building on Ballybeg Drive, Co. Waterford.

1.3 Description of Proposed Development

It is proposed to construct a new student accommodation building in an urban area on Ballybeg Drive, Co. Waterford. The site is bound to the west by Ballybeg Drive, to the north by Cork Road and to the south and east by Lacken Road. Minimal development (student) trips by private car are expected due to the nature of the development (i.e. student accommodation) and the site's proximity to the university campus across the Cork Road.

The proposed works include the following:

- The construction of two 5-storey blocks, one 4-storey block and one 6-storey block
- Provision of a public realm plaza to the north and widening of Cork Road
- Provision of a secondary substation, boundary, and internal courtyard landscaping.
- Provision of a vehicular access point from Ballybeg Drive via a left-in left-out junction.
- 62 car parking spaces at ground level, including three mobility impaired parking spaces.
- A set-down area which would be used by refuse vehicles when collecting rubbish. The set-down area would be located adjacent to the bin store.
- Seven two-level bicycle storage shelters located in the internal courtyard.
- Internal green link connecting Ballybeg Drive and Lacken Road.
- Upgrades to Lacken Road to provide cycle lanes on both sides and relocating the transition between the two-way and one-way sections of carriageway and the access to the Kilbarry Civic Amenity Site.

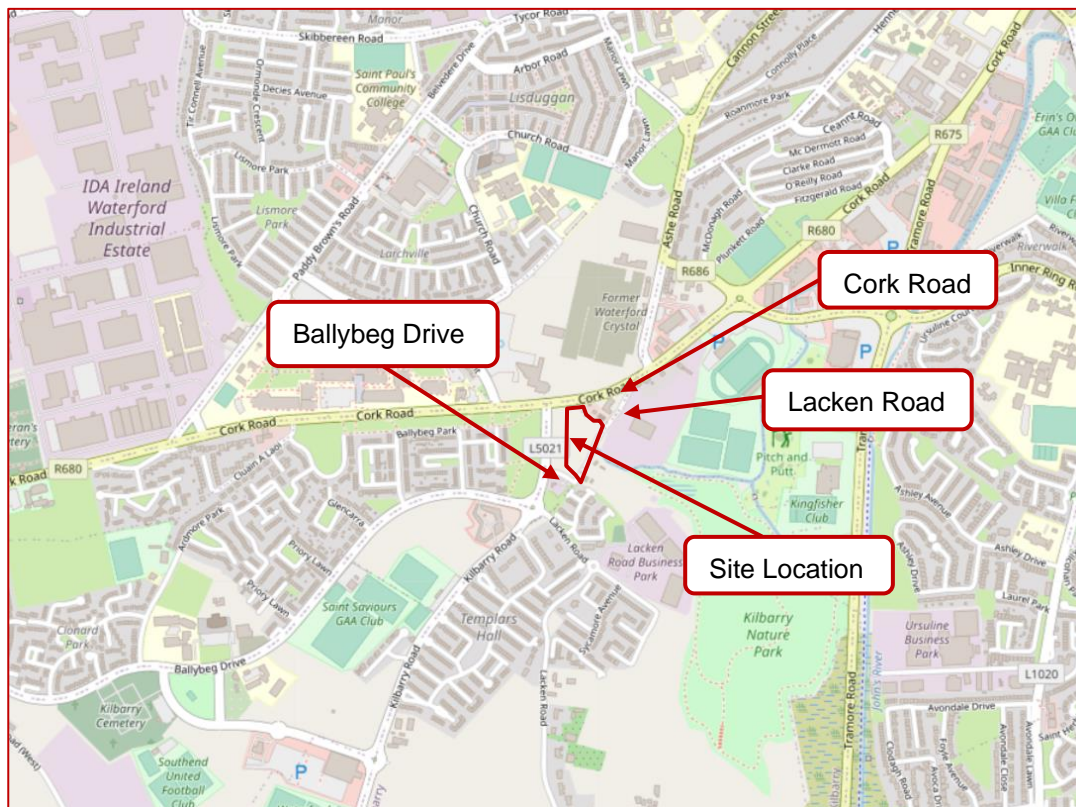


FIGURE 1.1: SITE LOCATION (SOURCE: WWW.OPENSTREETMAP.ORG)

A secured courtyard would be located in the centre of the accommodation blocks and this would be accessible by residents of the proposed student accommodation development only, and their guests. The courtyard would be accessed by pedestrians and cyclists through the primary access located in Block A, where a reception/security desk would be located. This would be accessed from the internal footpath network within the development's carpark and would then exit to the secure courtyard, to the rear of Block A, onto the 4m wide shared path surrounding the courtyard.

A fire tender access gate is located adjacent to the primary access to Block A however this would only be used during times of an emergency, or for access for maintenance vehicles to the ESB substation, and would remain locked at all other times.

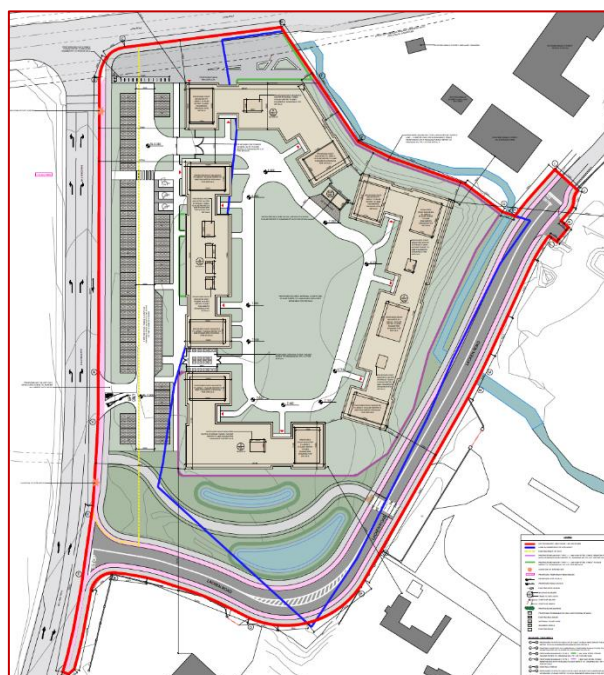


FIGURE 1.2: PROPOSED DEVELOPMENT

When collecting refuse from the proposed development a refuse truck will enter the development via the left-in left-out access junction, enter the set-down area adjacent to the bin store and then perform a turning manoeuvre within the turning head at the access adjacent to the locked fire tender access gate, and leave the development via the left-in left-out access junction.

Similarly, during times of an emergency, a fire tender will enter the development via the left-in left-out access junction, enter the private courtyard via the fire tender access gate and traverse the 4m wide path around the courtyard before exiting via the left-in left-out access junction.

1.3.1 Existing Road Network

R680 (Cork Road)

The R680 Regional Road (Cork Road), is a two-way single carriageway road with footpaths on both sides. It runs in an east to west direction to the north of the proposed development. There are existing advisory cycle lanes provided on both sides of Cork Road. It is approximately 8.6m wide and provides access to Waterford City Centre, Waterford Business Park, and the IDA Ireland Industrial Estate. It has a junction with the Waterford Outer Ring Road (R710) at its western extents.

L5021 (Ballybeg Drive)

The L5021 Local Road (Ballybeg Drive) extends in a predominantly north to south direction and connects with Cork Road at a signalised junction to the northwest of the proposed student accommodation development. In the vicinity of the proposed development it consists of a three-lane carriageway approximately 10m wide with a posted speed limit of 50 kph. It has footpaths and public lighting on both sides.

Lacken Road

Lacken Road is located to the east and south of the development, and is accessed from Cork Road at its northern extent and Ballybeg Drive at its southwestern extent. It is a one-way single carriageway road for approximately 200m in a north-to-south direction from its junction with Cork road to the access to the Kilbarry Civic Amenity Site. To the south of this access, Lacken Road transitions to a two-way single carriageway as far as its junction with Ballybeg Drive. A footpath is provided on the northern side of Lacken Road within the two-way section for approximately 70m before terminating at the existing horizontal curve

1.3.2 Existing Pedestrian & Cyclist Facilities

At present there are footpaths on both sides of Cork Road, Ballybeg Drive, and Lacken Road. Cycle lanes also exist on Cork Road, but these do not extend onto surrounding roads.

1.4 Public Transport

There are existing bus stops on Cork Road and Ballybeg Drive, providing direct access to the local bus network, and Cork and Dublin Airport. The Ballybeg Park Stop is located immediately adjacent to, and southeast of, the proposed development (see Figure 1.3) and can be accessed within a 1-minute walk from the site entrance of the development access on Ballybeg Drive.

The nearest bus stops to the proposed development are listed on Table 1.1 including the bus routes which serve these bus stops, and Figure 1.3 indicates the location of these bus stops in relation to the proposed development.

TABLE 1.1: BUS ROUTES NEAR PROPOSED DEVELOPMENT

Bus Stop (Name)	Bus Stop (number)	Route No.	Proximity to the development	Travelling between
Ballybeg Park	352181 or 352101	W1	40m or 300m	The Clock Tower to Merchants Quay via SETU
		354		Portlaw to Dunmore East via Waterford
Old Crystal Factory	7640	W1	250m	The Clock Tower to Merchants Quay via SETU
		W2		The Clock Tower to Meaghers Quay via SETU
		354		Portlaw to Dunmore East via Waterford
SETU	352111 or 352501	40	500m	From Tralee to Rosslare via Cork and Waterford
		354		Portlaw to Dunmore East via Waterford
		360A		Waterford Bus Station to Tramore Bus Station
		362		Waterford Bus Station to Davitts Quay, Dungarvan
		367a		Davitts Quay, Dungarvan to Waterford Hospital
		600		Dublin, Arlington Hotel to Cork, Anderson's Quay
		736		Dublin Airport to Tramore Bus Station
		W1		The Clock Tower to Merchants Quay via SETU
		W2		The Clock Tower to Meaghers Quay via wit
		IT Waterford		



FIGURE 1.3: NEARBY BUS STOPS AND LUAS STOP (SOURCE: WWW.TRANSPORTFORIRELAND.IE)

In addition, the Waterford Train Station (Plunkett) is located to the northeast of the proposed development and can be accessed within a 15-minute cycle or approximately 25-min bus, which provides two routes (see Figure1.4) with direct train services to Dublin, Cork, Limerick.

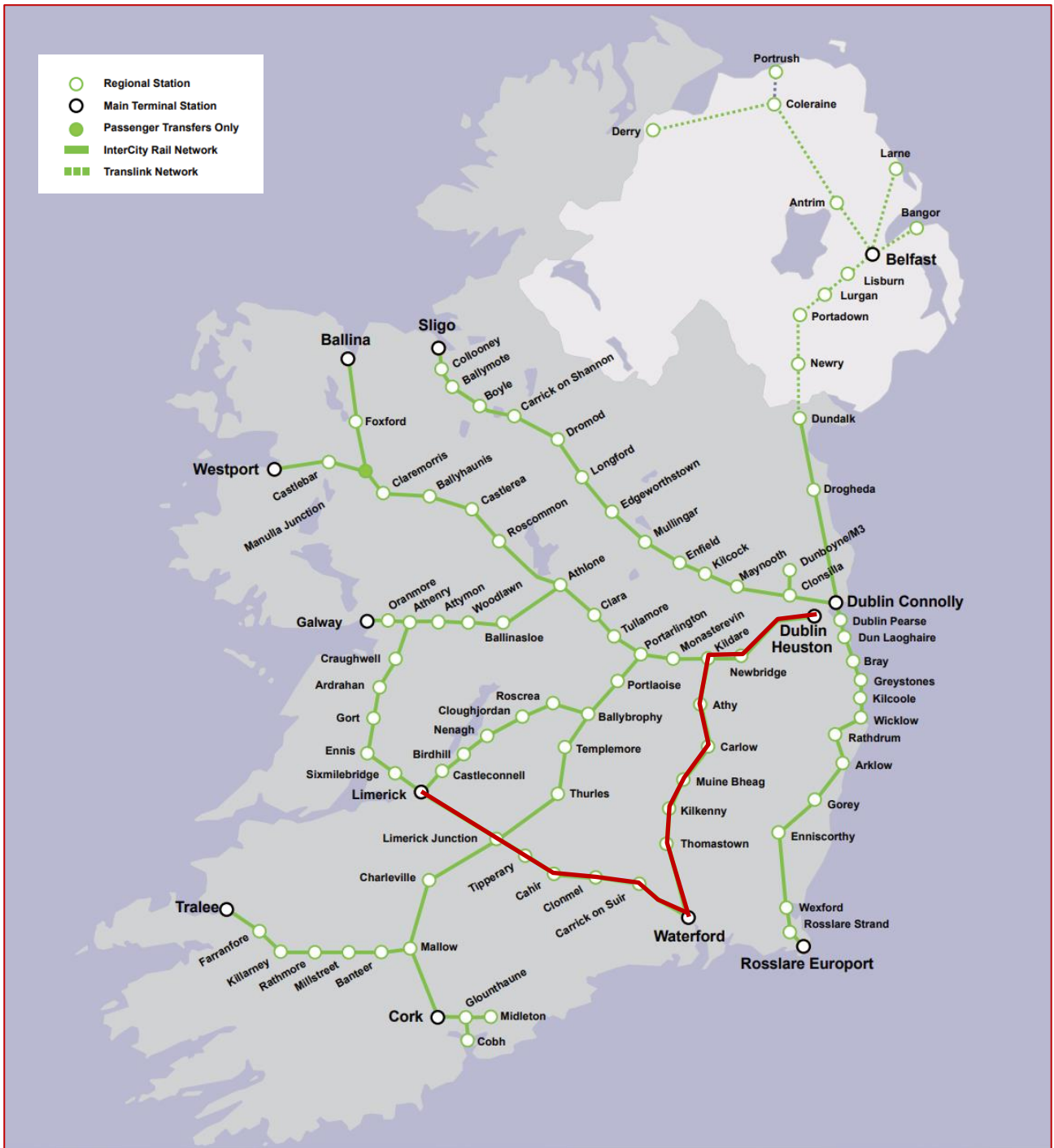


FIGURE 1.4: IRELAND INNER CITY AREA TRAIN SERVICES

1.5 Local Amenities

The proposed development is located in a densely populated residential area within the metropolitan area of Waterford. The area provides a wide range of amenities within walking distance of the proposed development including grocery shops, schools, sports facilities, restaurants, cafés, parks, and more.

1.6 Summary of Individual Audit Findings

The following table summarises the issues identified by the component audits of this Quality Audit, and the Design Team's response to the issues raised.

Item No.	Summary of Issue	Individual Audit References				Design Team Response/Action
		Access Audit	Walking Audit	Cycle Audit	Road Safety Audit	
1	Pedestrian Crossings	I.2.1			4.3, 4.4, 4.9	Accepted
2	Connectivity between the Internal Courtyard and the Development Carpark	I.2.2	II.2.2			Accepted
3	Connectivity to Kilbarry Nature Park	I.2.3	II.2.3			Accepted
4	Pedestrian Desire Lines	I.2.4	II.2.4		4.12, 4.13	Accepted
5	Footpath/Cycle Track Layout	I.2.5			4.2	Accepted
6	Mobility-Impaired Parking Spaces Facilities	I.2.6			5.3	Accepted
7	Mobility-Impaired Parking Spaces Dimensions	I.2.7			5.3	Accepted
8	Tactile Paving Colour	I.2.8			4.7	Accepted
9	Crossing Point Missing	I.2.9			4.7	Accepted
10	Inter-visibility between Road Users	I.2.10				Accepted
11	Overhanging trees/vegetation along the 'green link' path	I.2.11		IV.2.5		Accepted
12	Verge at Set-Down and Parking Spaces Area	I.2.12			4.5	Accepted
13	Lack of Edge Protection	I.2.13			4.14	Accepted
14	Carpark Crossing Details	I.2.14			4.4	Accepted
15	Layout of Pedestrian and Cycle Facilities at the Ballybeg Drive Crossing	I.2.15		IV.2.2		Accepted
16	Seating & Rest Areas		II.2.1			Accepted
17	Crossing Overshoot			IV.2.1		Accepted
18	Tie-in with Existing Facilities			IV.2.3	4.11	Accepted

Item No.	Summary of Issue	Individual Audit References				Design Team Response/Action
		Access Audit	Walking Audit	Cycle Audit	Road Safety Audit	
19	Cyclist Crossing Facilities to/from Bicycle Stand at Public Plaza			IV.2.4	4.1	Accepted
20	Bicycle Parking			IV.2.6		Accepted
21	Bicycle Stand Sizes			IV.2.9		Accepted
22	Bicycle Maintenance Areas			IV.2.10		Accepted
23	Transitions between the Footpath on Ballybeg Drive and Shared Surfaces				4.6	Accepted
24	Swept path analysis for a refuse truck and fire tender have not been provided.				4.8	Accepted
25	The proposed road layout at the transition between the two-way and one-way sections of Lacken Road may not be sufficient to advise northbound drivers of the restrictions at this location				4.10	Accepted
26	At this early stage in the design development, information regarding kerb types, drainage, public lighting and traffic signs have yet to be fully considered. These key design elements should be fully considered as part of the detailed design process, and included throughout the proposed development, as necessary, in the construction drawings.				5.1	Accepted
27	Electric Vehicle (EV) parking spaces have not been indicated within the proposed development and it is therefore unclear if these will be provided.				5.2	Accepted

Appendix I Access Audit

I.1 Introduction

The purpose of this Access Audit is to review the proposed Scheme, and the existing surrounding environment, to assess if it can be accessed, understood, and used to the greatest extent possible by all people regardless of their age, size, or disability. The Audit considers a number of aspects of the proposed Scheme, including wayfinding, lighting, tonal contrast of proposed materials, gradients, the provision of kerbs and/or dropped kerbs as appropriate, etc.

I.2 Access Audit Findings

I.2.1 Pedestrian Crossings

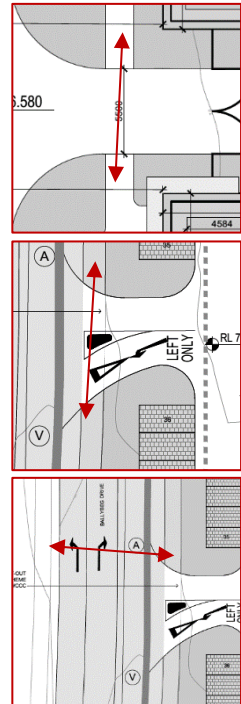
There are a number of locations within the proposed development where pedestrian crossings have not been indicated on likely pedestrian desire lines, these locations include:

1. No pedestrian crossing has been indicated across the fire tender gated access.
2. No pedestrian crossing has been indicated across the development carpark access.
3. No pedestrian crossing has been indicated across Ballybeg Drive at the location of the vehicular access to the development carpark.

An absence of pedestrian crossings on likely pedestrian desire lines may lead to pedestrians crossing the road at locations where drivers may be less attentive to them, and may restrict mobility and visually impaired pedestrians from being able to independently navigate the local road network.

Recommendation

Pedestrian crossings, including dropped kerbs and appropriate tactile paving, which can accommodate the expected volume of pedestrians and cyclists, should be provided on likely pedestrian desire lines and where the footpath terminates at the edge of the carriageway.



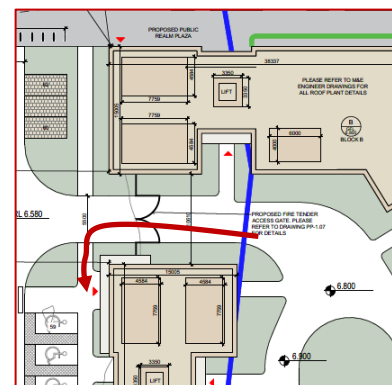
I.2.2 Connectivity between the Internal Courtyard and the Development Carpark

It is unclear from the drawings provided how the pedestrian routes within the internal courtyard will connect to facilities at the location of the primary access.

Should no connectivity be provided, it may lead to pedestrians and cyclists travelling along the carriageway between the development's proposed internal courtyard and the carpark access road or the grass verge adjacent the gated access.

Recommendation

The likely pedestrian desire lines between the proposed development's internal courtyard and the pedestrian facilities at the primary access should be identified, and measures provided to cater for these desire lines safely.



1.2.3 Connectivity to Kilbarry Nature Park

The Kilbarry Nature Park to the southeast is likely to be an attractive destination for students in the student accommodation. However, it is not clear if direct pedestrian/cycle links will be provided between the southern and eastern extents of the development and this destination, or if this pedestrian desire line will be catered for in this, or a future development phase.

The absence of this direct route may discourage pedestrians from choosing walking as a regular form of travel, as the indirect route via the Cork Road, Inner Ring Road and Tramore Road may be considered too long.

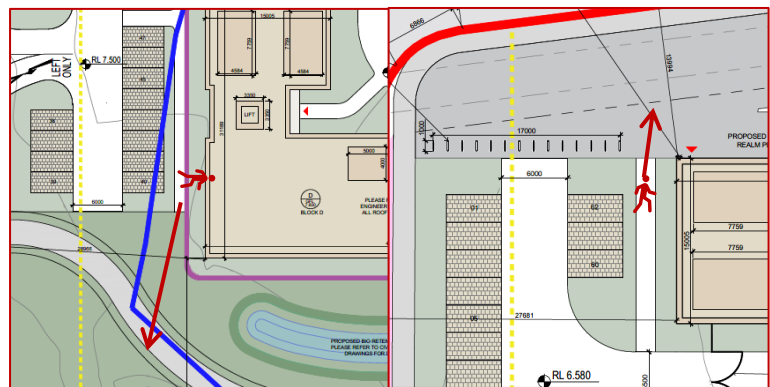


Recommendation

Ensure a more direct route for pedestrians is provided to the Kilbarry Nature Park.

1.2.4 Pedestrian Desire Lines

The 'Green link' path runs along the southern side of the proposed student accommodation connecting the eastern footpath of Ballybeg Drive with the northern footpath of Lacken Road. The proximity of the development carpark to the green link may create a pedestrian desire line between these locations, however, no connection for pedestrians has been provided.



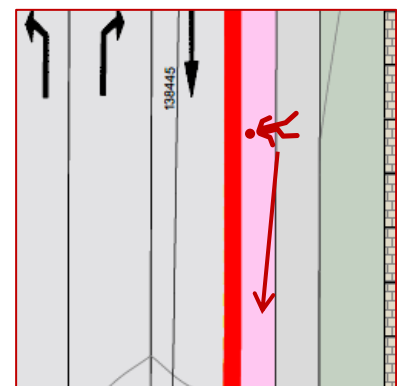
Similarly, a public plaza is indicated to the north of the development, however, no direct pedestrian link is provided between the development carpark and the plaza.

Recommendation

Measures should be provided to facilitate pedestrian movements along pedestrian desire lines.

1.2.5 Footpath/Cycle Track Layout

A cycle track and footpath has been indicated along both sides of Ballybeg Drive continuing to Lacken Road to the development extents. No information, however, has been provided in relation to the cross-section of the footpath/cycle track and it is, therefore, unclear if a level difference would be provided between the footpath and cycle track. The absence of a level difference may lead to visually-impaired pedestrians being insufficiently aware of the cycle track resulting in them inadvertently entering it, where there is an increased risk of being struck by a cyclist.



Recommendation

The footpath and cycle track should be vertically separated or appropriate tactile paving provided to advise visually-impaired pedestrians of the footpath/cycle track layout.

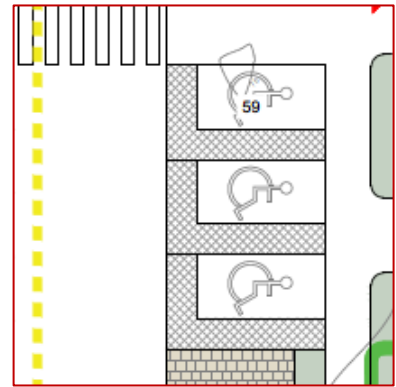
I.2.6 Mobility-Impaired Parking Spaces Facilities

It is unclear if dropped kerbs would be provided adjacent to the mobility-impaired parking spaces indicated within the development carpark.

Should no dropped kerbs, and associated tactile paving, be provided this could lead to mobility-impaired vehicle occupants being unable to access the footpath resulting in them having to travel within the carriageway to a suitable access point.

Recommendation

Dropped kerbs, and associated tactile paving, should be provided adjacent to each mobility-impaired parking spaces.

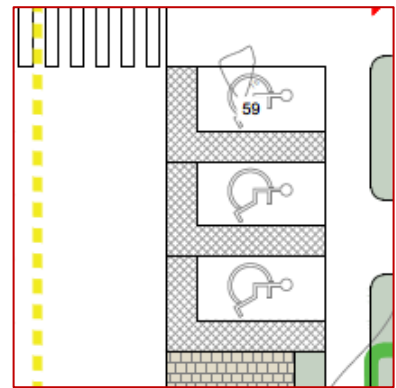


I.2.7 Mobility-Impaired Parking Spaces Dimensions

Parking space dimensions have not been provided at this early stage in the design process, so the width of parking spaces is unknown. However, the mobility parking spaces dimensions may be insufficient to accommodate mobility users getting in and out of their vehicles.

Recommendation

The width of mobility parking spaces should be compliant with the Traffic Signs Manual.

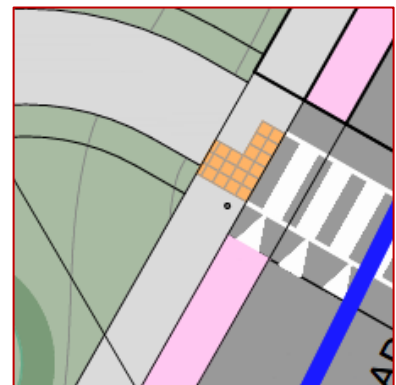


I.2.8 Tactile Paving Colour

A 'Zebra' crossing is proposed across Lacken Road. The tactile paving on the western side of the crossing is not the required colour. This could lead to visually impaired pedestrians being insufficiently aware of the Zebra crossing.

Recommendation

Tactile paving at Zebra crossings (i.e. Controlled crossings) should be red in colour.

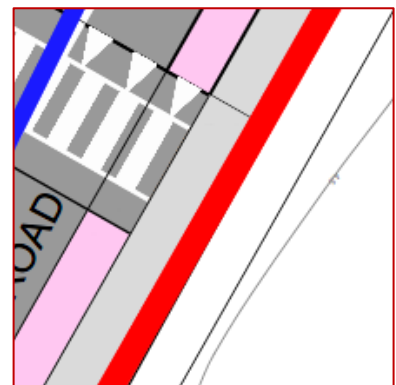


I.2.9 Crossing Point Missing

A crossing has been indicated across Lacken Road. However, dropped kerbs, and associated tactile paving, has not been indicated at the corresponding crossing point on the other side of Lacken Road.

Recommendation

Dropped kerbs, and associated tactile paving should be provided at the eastern side of the Zebra crossing across Lacken Road aligned towards the opposing crossing point.



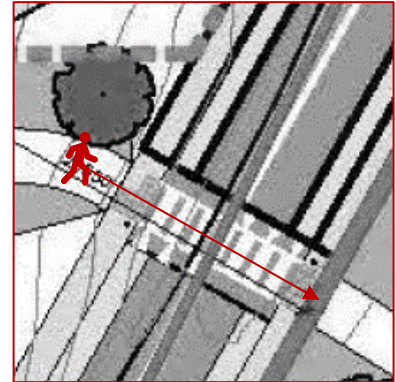
I.2.10 Inter-visibility between Road Users

Inter-visibility between drivers and pedestrians waiting to cross at the Zebra crossing across Lacken Road may be restricted by trees located adjacent to the crossing.

Should inter-visibility between drivers and pedestrians (or cyclists) waiting at, or using, the crossing be restricted, there is a risk of drivers failing to stop.

Recommendation

Sufficient inter-visibility between drivers and VRUs should be provided at crossings within the proposed development.

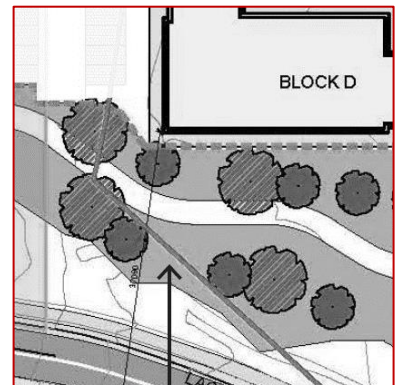


I.2.11 Overhanging trees/vegetation along the 'green link' path

A number of trees have been indicated adjacent to the proposed 'green link' path which may obstruct pedestrian/cyclist movement.

Recommendation

Ensure new tree canopies or other items of roadside furniture do not present obstacles/hazards to pedestrians or cyclists.



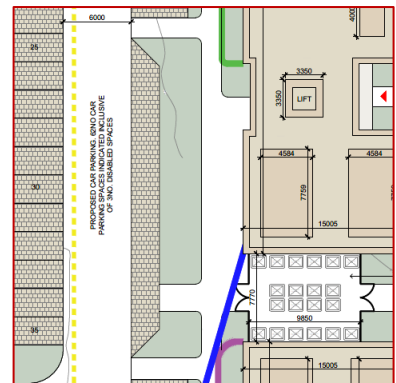
I.2.12 Verge at Set- Down and Parking Spaces Area

A verge has been indicated between the footpath and set-down area opposite block D. It is not clear what this verge would be comprised of (e.g. grass, planting, hardstand, etc). Should it include a grass verge or planting, it may restrict movement of vehicle occupants between the set-down area and the footpath.

Additionally, no footpath has been provided to the rear of most of the parking spaces.

Recommendation

A paved connection between the footpath and set-down area and at the rear of parking spaces should be provided.

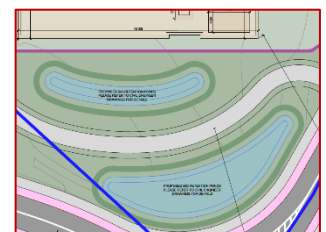
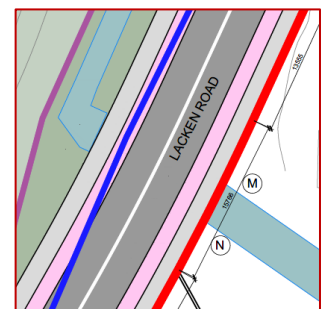


I.2.13 Lack of Edge Protection

A stream is indicated along the northern boundary of the development and then diverts to the south adjacent to the eastern boundary. Additionally, it is proposed to provide two attenuation ponds at either side of the 'green link' path south of the proposed student accommodation. At this early stage in the design, edge protection, or buoyancy aids have not been indicated at the rear of the footpath where the footpath crosses the watercourse. This could lead to inattentive pedestrians descending into the watercourse below.

Recommendation

Ensure sufficient edge protection, and buoyancy aids, are provided at crossings of the stream and near attenuation ponds, ensuring it is clearly visible during the hours of darkness.

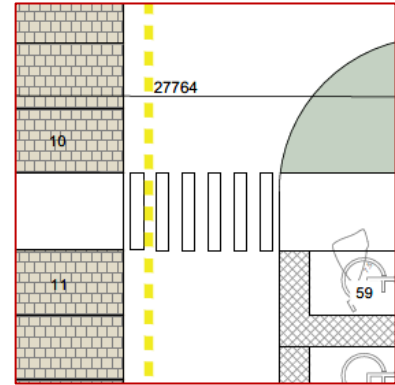


I.2.14 Carpark Crossing Details

It is assumed that the NMU routes within the proposed development are delineated from the adjacent carriageway within the carpark by a physical kerb. A dropped kerb and tactile paving have not been indicated at the pedestrian crossing within the carpark. A failure to provide a dropped kerb at crossings and at the end of NMU routes may lead to mobility impaired pedestrians experiencing difficulties descending/ascending the kerb at this location or being insufficiently aware that they are in an area shared with vehicles.

Recommendation

Dropped kerbs and tactile paving should be provided at the pedestrian crossing in the carpark and at locations where NMU routes exit onto shared surfaces or other areas shared with other road users.

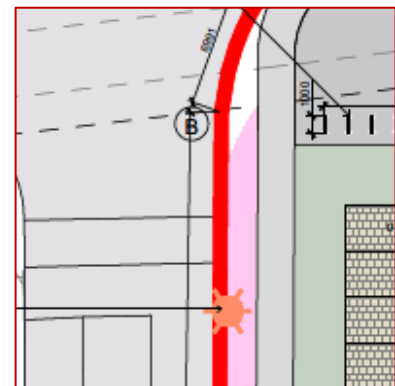


I.2.15 Layout of Pedestrian and Cycle Facilities at the Ballybeg Drive Crossing

An existing controlled crossing is provided at the southern arm of the Ballybeg Drive/ Cork Road junction. Segregated pedestrian and cycle facilities appear to be indicated on the eastern side of the crossing while a footpath only is indicated on its western side. It is therefore unclear how it is intended for cyclists to access these facilities and if pedestrians, or cyclists, would be required to cross the adjacent facility to access the footpath/cycle track.

Recommendation

A shared surface should be provided on both sides of the crossing with the segregated footpath and cycle track on the eastern side commencing to the south of the crossing with a suitable transition provided between the shared and segregated facilities.



Appendix II Walking Audit

II.1 Introduction

The purpose of this Walking Audit is to review the proposed Scheme, and the existing surrounding environment, to assess if it can be readily and comfortably traversed by pedestrians, that the needs of pedestrians have been prioritised over cyclists & vehicles, and that footpaths are continuous and wide enough to cater for the anticipated number of pedestrians.

II.2 Walking Audit Findings

II.2.1 Seating & Rest Areas

No seating is indicated within the scheme. Given the provision of pedestrian routes and available public space, pedestrians may benefit from having rest areas located on pedestrian desire lines, and in public space areas.

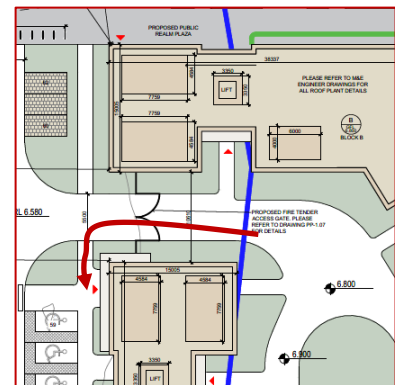
Recommendation

Benching or seating should be located strategically within the development.

II.2.2 Connectivity between the Internal Courtyard and the Development Carpark

It is unclear from the drawings provided how the pedestrian routes within the internal courtyard will connect to facilities at the location of the primary access.

Should no connectivity be provided, it may lead to pedestrians and cyclists travelling along the carriageway between the development's proposed internal courtyard and the carpark access road or the grass verge adjacent the gated access.



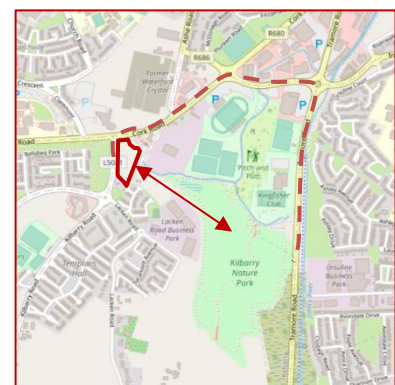
Recommendation

The likely pedestrian desire lines between the proposed development's internal courtyard and the pedestrian facilities at the primary access should be identified, and measures provided to cater for these desire lines safely.

II.2.3 Connectivity to Kilbarry Nature Park

The Kilbarry Nature Park to the southeast is likely to be an attractive destination for students in the student accommodation. However, it is not clear if direct pedestrian/cycle links will be provided between the southern and eastern extents of the development and this destination, or if this pedestrian desire line will be catered for in this, or a future development phase.

The absence of this direct route may discourage pedestrians from choosing walking as a regular form of travel, as the indirect route via the Cork Road, Inner Ring Road and Tramore Road may be considered too long.



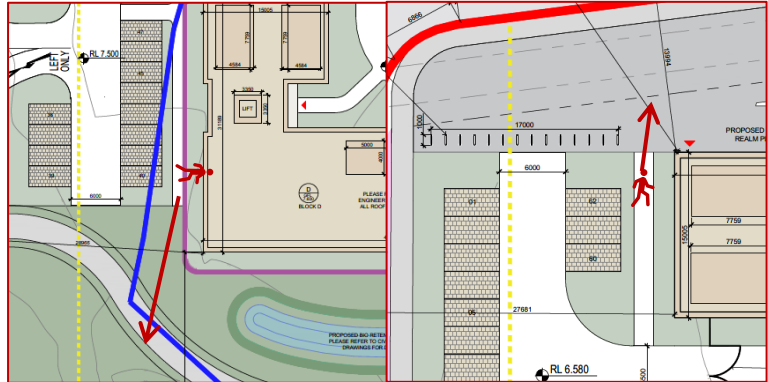
Recommendation

Ensure a more direct route for pedestrians is provided to the Kilbarry Nature Park.

II.2.4 Pedestrian Desire Lines

The 'Green link' path runs along the southern side of the proposed student accommodation connecting the eastern footpath of Ballybeg Drive with the northern footpath of Lacken Road. The proximity of the development carpark to the green link may create a pedestrian desire line between these locations, however, no connection for pedestrians has been provided.

Similarly, a public plaza is indicated to the north of the development, however, no direct pedestrian link is provided between the development carpark and the plaza.



Recommendation

Measures should be provided to facilitate pedestrian movements along pedestrian desire lines.

Appendix III Non-Motorised User Audit

III.1 Introduction

The purpose of a Non-Motorised User (NMU) Audit is to review the proposed Scheme, and the existing surrounding environment, to assess if it will cater comfortably for all non-motorised road users, of all ages and abilities, and that the needs of these vulnerable road users have been prioritised over vehicular traffic.

For the proposed Scheme separate Access, Walking & Cycling Audits have been undertaken (ref Appendix I, Appendix II & Appendix IV), and these should be referred to for findings in relation to NMUs.

Appendix IV Cycle Audit

IV.1 Introduction

The purpose of this Cycle Audit is to review the proposed Scheme, and the existing surrounding environment, to assess if it will cater comfortably for cyclists, of all ages and abilities, and that the needs of cyclists have been prioritised over vehicular traffic.

There are existing advisory cycle lanes provided on the northern side of Cork Road, however there is currently a lack of existing cycle facilities on the southern side of Cork Road, and on either side of Ballybeg Drive and Lacken Road in the vicinity of the proposed development.

Segregated cycle facilities will be provided along the eastern side of Ballybeg Drive commencing at the southern arm of the Ballybeg Drive/Cork Road junction which will continue south before terminating south of its junction with Lacken Road. Segregated cycle facilities will also be provided on both sides of the two-way section of Lacken Road from its junction with Ballybeg Drive until its conversion to one-way traffic.

Cyclists within the development will be required to share the internal road with other vehicles, as the design does not include any segregated cycle facilities within the development. It is presumed that the road layout, which will be developed in compliance with DMURS, will aim to reduce vehicle speeds in the development, thus creating a more cycle friendly environment.

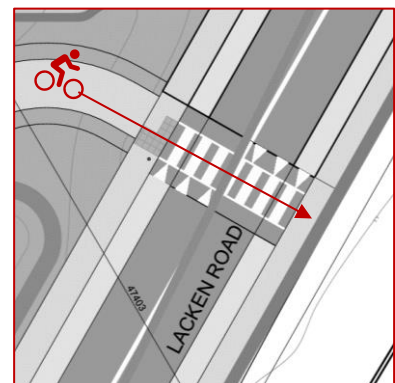
Two-level bicycle parking storage areas are proposed within the secured courtyard at seven locations and bicycle stands are indicated within the public realm plaza north of the proposed development

IV.2 Cycle Audit Findings

IV.2.1 Crossing Overshoot

A 'Zebra crossing' is provided at the southeastern end of the 'green link' path between Ballybeg Drive and Lacken Road, which is likely to be used by cyclists. Cyclists should dismount at the end of the footpath on the northern side of Lacken Road and cross the 'Zebra' crossing on foot. However, user behaviour may see cyclists continuing on their bicycle to cross to the southern side of Lacken Road. This could result in cyclists approaching, and continuing through, the crossing at speed, leading to sudden entry to the carriageway.

This problem may be exacerbated by the increasing use of electric bicycles and E-scooters.



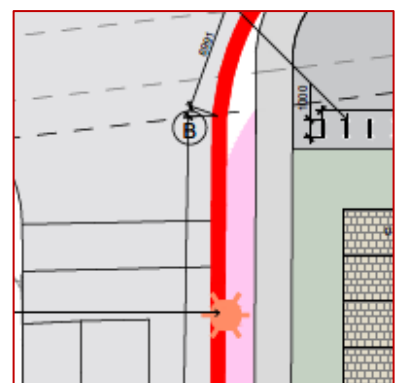
Recommendation

Measures should be provided to encourage cyclists to slow on approach.

IV.2.2 Layout of Pedestrian and Cycle Facilities at the Ballybeg Drive Crossing

An existing controlled crossing is provided at the southern arm of the Ballybeg Drive/ Cork Road junction. Segregated pedestrian and cycle facilities appear to be indicated on the eastern side of the crossing while a footpath only is indicated on its western side.

It is therefore unclear how it is intended for cyclists to access these facilities and if pedestrians, or cyclists, would be required to cross the adjacent facility to access the footpath/cycle track.



Recommendation

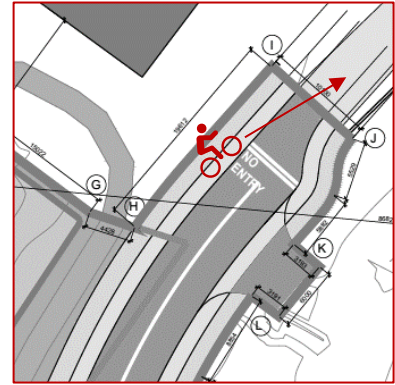
A shared surface should be provided on both sides of the crossing with the segregated footpath and cycle track on the eastern side commencing to the south of the crossing with a suitable transition provided between the shared and segregated facilities.

IV.2.3 Tie- in with Existing Facilities

The absence of safe vertical and horizontal transitions could lead to confusion and abrupt route changes for cyclists transitioning between the new and old cross sections.

Recommendation

Transitions to existing facilities should be introduced at Lacken Road to support expected cyclists routes.



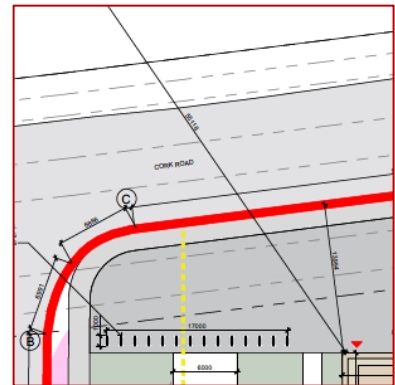
IV.2.4 Cyclist Crossing Facilities to/from Bicycle Stand at Public Plaza

Existing pedestrian crossings and facilities are provided at the junction between Ballybeg Drive and Cork Road. However, no facilities have been indicated for cyclists travelling to/from the bicycle parking area on the public plaza and the existing advisory cycle lane to the north of Cork Road.

This may lead cyclists using the existing pedestrian crossing and mounting/dismounting a full height kerb to cross the carriageway where there is a risk of falls from their bicycle

Recommendation

Facilities for cyclists should be provided to travel to/from the bicycle parking spaces at public plaza and the advisory cycle lane on Cork Road.

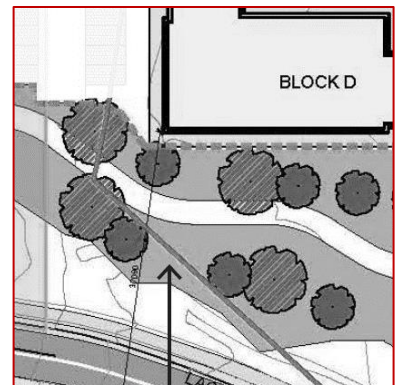


IV.2.5 Overhanging trees/vegetation along the 'green link' path

A number of trees have been indicated adjacent to the proposed 'green link' path which may obstruct pedestrian/cyclist movement.

Recommendation

Ensure new trees canopies or other items of roadside furniture do not present obstacles/hazards to pedestrians or cyclists.



IV.2.6 Bicycle Parking

Two-level bicycle parking storage areas are proposed within the secured courtyard and bicycle stands are indicated within the public realm plaza north of the proposed development. However, the amount of provided bicycle parking spaces has not been provided and therefore it is unclear if provisions will be sufficient to accommodate the volume of residents at the student accommodation.

Recommendation

Sufficient bicycle parking spaces should be provided in accordance with the 'Waterford City and County Development Plan 2022-2028'.

IV.2.7 Bicycle Parking Locations

No issues were identified in relation to the location of the proposed bicycle parking as this parking is located at ground level, in close proximity to the building entrances.

IV.2.8 Gradients

No issues were identified in relation to gradients for cyclists travelling within the site or to/from the proposed bicycle parking locations.

IV.2.9 Bicycle Stand Sizes

The cycle stand dimensions are unclear.

Recommendation

The proposed dimensions of bicycle parking stands should meet the minimum cycle parking requirements.

IV.2.10 Bicycle Maintenance Areas

No areas appear to be provided within, or adjacent to, the bicycle parking areas for residents to undertake bicycle maintenance. It is unlikely that residents would be able to undertake bicycle maintenance within the proposed rooms, resulting in difficulties for cyclists undertaking routine bicycle maintenance.

Recommendation

An area should be provided within the development, including a bicycle stand, where residents can undertake routine bicycle maintenance.

Appendix V Road Safety Audit

Coakley Consulting Engineers

Proposed Student
Accommodation, Ballybeg Road,
Co. Waterford

Stage 1 Road Safety Audit

Coakley Consulting Engineers

Proposed Student Accommodation, Ballybeg Road, Co. Waterford

Stage 1 Road Safety Audit

Document Ref:	P23106-PMCE-XX-XX-RP-SA-RSA-3_ZZ_01
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Rev	Prepared By	Reviewed By	Approved By	Issue Date	Reason for Revision
2.0	AOR	RF	PJM	3 rd Oct. 2023	Final
1.0	AOR	RF	PJM	15 th August 2023	Draft Report

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1 Introduction

1.1 General

This report results from a Stage 1 Road Safety Audit on the proposed Student Accommodation, Ballybeg Road, Co. Waterford carried out at the request of Mr Brian Coakley of Coakley Consulting Engineers.

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

Mr. Alan O'Reilly

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

Ms. Rebecca Farnan

(BA, MAI, MIEI)
Road Safety Audit Team Member

The Road Safety Audit took place during August 2023 and comprised an examination of the documents provided by the designers (see Appendix A). In addition to examining the documents supplied the Road Safety Audit Team visited the site of the proposed measures on the 9th August 2023. Weather conditions during the site visit were dry and the road surface was dry. Traffic volumes during the site visit were low, 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 B. Where problems are general to the proposals sample drawing extracts are within the main body of the report, where considered necessary.

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

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

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

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
- Visibility splays

2 Project Description

It is proposed to construct a new student accommodation building in an urban area on Ballybeg Drive, Co. Waterford. The site is bound to the west by Ballybeg Drive, to the north by Cork Road and to the south and east by Lacken Road. Minimal development (student) trips by private car are expected due to the nature of the development (i.e. student accommodation) and the site's proximity to the university campus across the Cork Road.

The proposed works include the following:

- The construction of two 5-storey blocks, one 4-storey block and one 6-storey block
- Provision of a public realm plaza to the north and widening of Cork Road
- Provision of a secondary substation, boundary treatment, and internal courtyard landscaping.
- Provision of a vehicular access point from Ballybeg Drive via a new left-in left-out junction.
- 62 car parking spaces at ground level, including three mobility-impaired parking spaces.
- A set-down area which would be used by refuse vehicles when collecting rubbish. The set-down area would be located adjacent to the bin store.
- Seven two-level bicycle storage shelters, six of which would be located within the internal courtyard.
- Internal green link connecting Ballybeg Drive and Lacken Road.
- Upgrades to Lacken Road to provide cycle lanes on both sides and relocating the transition between the two-way and one-way sections of carriageway and the access to the Kilbarry Civic Amenity Site.

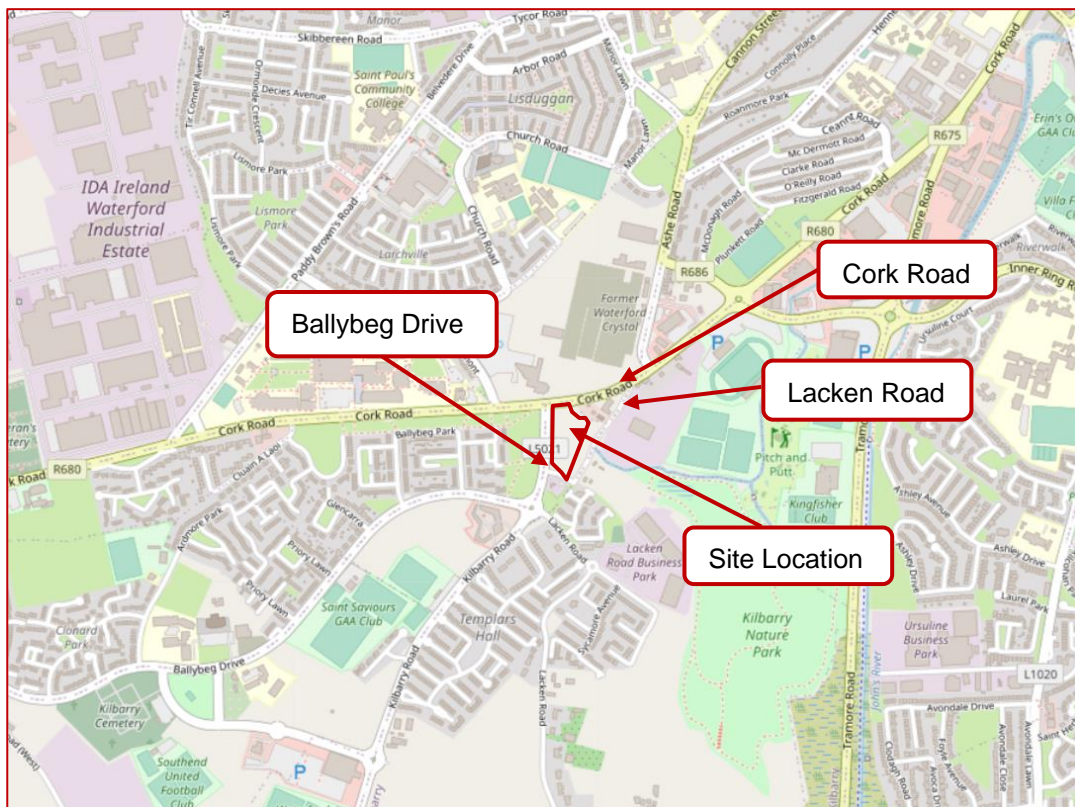


FIGURE 2.1: SITE LOCATION (SOURCE: WWW.OPENSTREETMAP.ORG)

A secured courtyard would be located in the centre of the accommodation blocks and this would be accessible by residents of the proposed student accommodation development, and their guests, only. The courtyard would be accessed by pedestrians and cyclists through the primary access located in Block A, where a reception/security desk would be located. This would be accessed from the internal footpath network within the development's carpark and would then exit to the secure courtyard, to the rear of Block A, onto the 4m wide shared path surrounding the courtyard.

A fire tender access gate is located adjacent to the primary access to Block A however this would only be used during times of an emergency, or for access for maintenance vehicles to the ESB substation, and would remain locked at all other times.

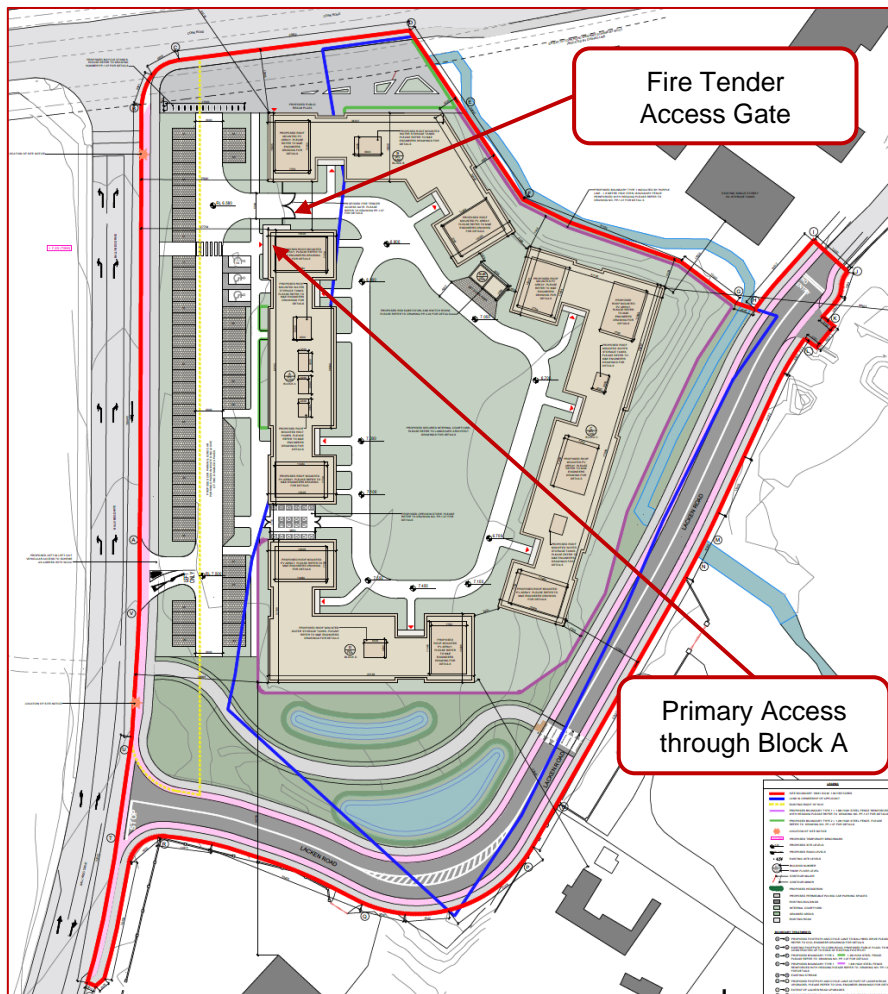


FIGURE 2.2: PROPOSED DEVELOPMENT

When collecting refuse from the proposed development a refuse truck will enter the development via the left-in left-out access junction, enter the set-down area adjacent to the bin store and then perform a turning manoeuvre within the turning head at the access adjacent to the locked fire tender access gate, and leave the development via the left-in left-out access junction.

Similarly, during times of an emergency, a fire tender will enter the development via the left-in left-out access junction, enter the private courtyard via the fire tender access gate and traverse the 4m wide path around the courtyard before exiting via the left-in left-out access junction.

3 Existing Road Network

3.1 R680 (Cork Road)

The R680 Regional Road (Cork Road), is a two-way single carriageway road with footpaths on both sides. It runs in an east-west direction to the north of the proposed development with advisory cycle lanes on both sides.

It is approximately 8.6m wide and provides access to Waterford City Centre, Waterford Business Park and the IDA Ireland Industrial Estate. It has a junction with the Waterford Outer Ring Road (R710) at its western extents.

3.2 L5021 (Ballybeg Drive)

The L5021 Local Road (Ballybeg Drive) extends in a predominantly north-south direction and connects with Cork Road at a signalised junction to the northwest of the proposed student accommodation development. In the vicinity of the proposed development it consists of a three-lane carriageway approximately 10m wide with a posted speed limit of 50 kph and footpaths & public lighting on both sides.

3.3 Lacken Road

Lacken Road is located to the east and south of the development and has junctions with the Cork Road at its northern extent and Ballybeg Drive at its southwestern extent. It is a one-way single carriageway road for approximately 200m in a north-south direction extending from its junction with Cork Road to the access to the Kilbarry Civic Amenity Site. To the south of this access Lacken Road transitions to a two-way single carriageway as far as its junction with Ballybeg Drive. A footpath is provided on the northern side of Lacken Road extending over a length of approximately 70m from its junction with Ballybeg Drive.

3.4 Nearby Watercourse

There is an existing stream which runs along the eastern, northeastern, and northern boundaries of the development site.

4 Items Arising from the Audit

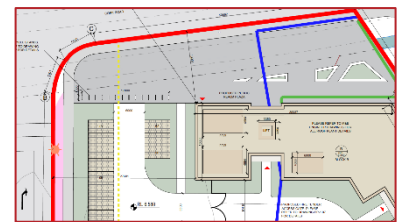
4.1 Cyclist Access to Bicycle Parking within Public Realm Plaza

Location: Drawing 22032 PP-1.01

Summary: It is unclear how cyclists are intended to access the proposed public realm plaza at the northern boundary of the proposed development.

A proposed public realm plaza has been indicated to the north of the proposed student accommodation within the southeastern quadrant of the Ballybeg Drive/Cork Road junction. Bicycle parking stands have been indicated within this plaza adjacent to the development's northern boundary. It is unclear, however, how it is intended for cyclists to access this plaza as dropped kerbs or cycle ramps have not been indicated at the edge of either Cork Road or Ballybeg Drive to allow cyclists within the existing/proposed cycle lanes on these roads to enter the plaza. This could lead to cyclists having to mount/dismount full height kerbs when accessing the plaza resulting in an increased risk of loss of control type incidents and falls from their bicycle.

The Audit Team acknowledge that there are existing pedestrian crossings within the junction which contain dropped kerbs however these are currently not Toucan crossings and may not be wide enough to accommodate both pedestrians and cyclists, leading to an increased risk of conflicts between pedestrians and cyclists should cyclists access the plaza via these dropped kerbs.



In addition, the existing signalised pedestrian crossings within the southeastern quadrant of the junction have not been indicated in the amended road layout and it is, therefore, unclear if the existing crossings would be upgraded to Toucan crossings or retained in their current layout.

Recommendation

A route should be identified to/from the bicycle parking and the nearby carriageways along which cyclists would be permitted to travel. This route would, in effect, be a shared area (shared by pedestrians & cyclists) and should be differentiated from the rest of the plaza by contrasting surfacing materials and bounded by appropriate tactile paving to advise the visually-impaired and partially-sighted of the shared area.

A dropped kerb or ramp should be provided where the shared route meets the Cork Road and/or Ballybeg Drive carriageway(s) to allow cyclists to safely join/leave it. If this dropped kerb or ramp has an upstand less than 25mm, then hazard warning tactile paving should be provided at the interface with the carriageway to advise the visually-impaired and partially-sighted of the carriageway hazard.

If it is intended for the plaza to be shared by pedestrians and cyclists, the existing pedestrian crossings on Ballybeg Drive and the eastern arm of Cork Road should be upgraded to Toucan crossings.

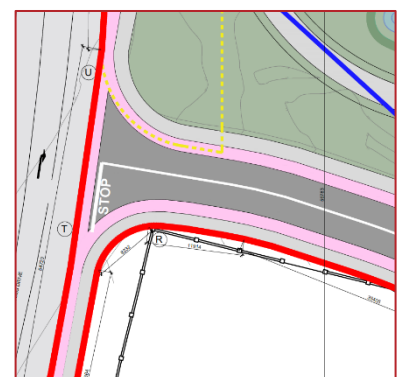
4.2 Cycle Track on Ballybeg Drive and Lacken Road

Location: Drawing 22032 PP-1.01

Summary: It is unclear if the proposed cycle track/lane on Ballybeg Drive and Lacken Road would be segregated from the adjacent footpath and carriageway.

A proposed cycle track/lane has been indicated on the western side of Ballybeg Drive and on both sides of Lacken Road, denoted by a pink hatch on the drawing provided, and presumably would tie-into the existing facilities on Ballybeg Drive.

It is unclear from the information provided if the new cycle track would have vertical separation between it and the footpath & the carriageway.



If the cycle track is provided adjacent to, and at the same level as, the footpath with no vertical separation there is a risk that visually-impaired pedestrians may inadvertently enter the cycle track resulting in pedestrian-cyclist collisions.

Should the cycle track be on the same level as the carriageway, without separation from the traffic lane, there is a risk of drivers straying into the cycle lane and presenting a hazard to cyclists, or of inappropriate parking within the cycle lane requiring cyclist enter the traffic lane in order to pass the parked vehicles where they are at an increased risk of being struck by a vehicle.

Recommendation

The proposed cycle facilities should be segregated, either vertically or by other means, from both the adjacent footpath and the adjacent carriageway.

4.3 Pedestrian Crossing of Development Access

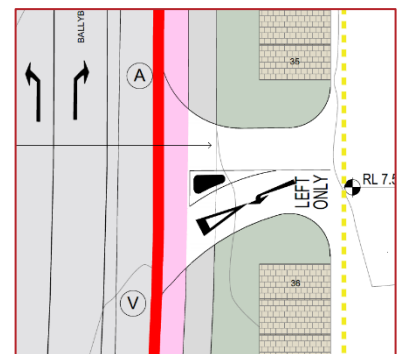
Location: Drawing 22032 PP-1.01

Summary: A pedestrian crossing has not been indicated across the proposed development access and it is unclear if the splitter island between the left-in and left-out lanes will be large enough to accommodate pedestrians who cannot complete a crossing in one movement.

A left-in left-out junction has been indicated at the access to the proposed development on Ballybeg Drive. No pedestrian crossing has been indicated across the access. A failure to provide a crossing with dropped kerbs would lead to pedestrians having to ascend/descend a full height kerb on both sides when crossing the access. This could lead to difficulties for pedestrians, particularly the mobility-impaired, when crossing the access resulting in an increased risk of trips and falls.

In addition, a splitter island has been indicated within the access to delineate the entry and exit lane. It is unclear if this will be a physical island. Whether a physical island, or an area denoted via road markings, it is unclear if it would be large enough to accommodate pedestrians, who cannot complete a crossing of the access in one stage, to take refuge until the downstream lane is free of traffic.

If the island is not able to accommodate pedestrians waiting for a gap in traffic entering/exiting the development, there is a risk that they may encroach into either traffic lane while waiting and be struck by a vehicle.



Recommendation

A continuous footpath should be provided across the access with a dropped kerb arrangement of the minimum 25mm upstand provided to facilitate vehicular access/egress to/from the development.

Where a continuous footpath is not provided then a pedestrian crossing, including dropped kerbs and associated tactile paving, should be provided at the development access and the splitter island should be large enough to safely act as a pedestrian refuge (e.g. safely accommodate waiting pedestrians who cannot complete a crossing in a single stage, including wheelchair users or those pushing a pram).

4.4 Internal Footpath and Pedestrian Crossing Network

Location: Drawing 22032 PP-1.01

Summary: The internal footpath network within the proposed development terminates at the carriageway at a number of locations with no opposing crossing location, and tactile paving has not been indicated at locations where pedestrian crossings have been indicated.

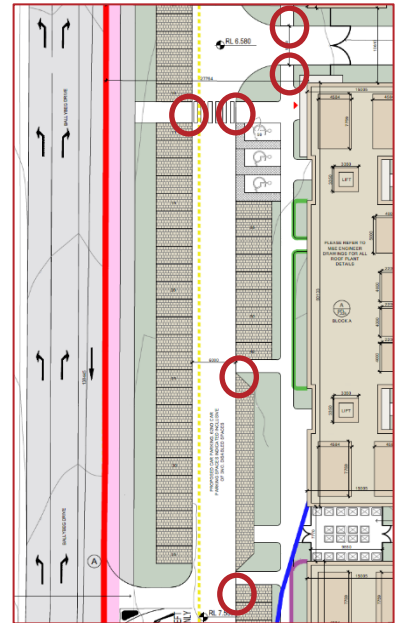
The footpaths within the proposed development are indicated as terminating at the carriageway at a number of locations where no downstream/opposing crossing point has been indicated. It is assumed that these are intended for access for vehicle occupants however, should only dropped kerbs be provided at these locations, there is a risk that a visually-impaired pedestrian may inadvertently continue into the carriageway where there is an increased risk of being struck by a vehicle.

In addition, where footpaths are indicated as terminating at the edge of the carriageway opposite opposing footpaths, which are assumed to be pedestrian crossings, no dropped kerbs and tactile paving have been indicated. A failure to provide tactile paving at pedestrian crossing locations may lead to visually-impaired pedestrians inadvertently entering the carriageway and being struck by a vehicle.

Recommendation

Dropped kerbs, and associated tactile paving, should be provided at footpaths which terminate at the edge of the carriageway, if intended to be used for access by vehicle occupants.

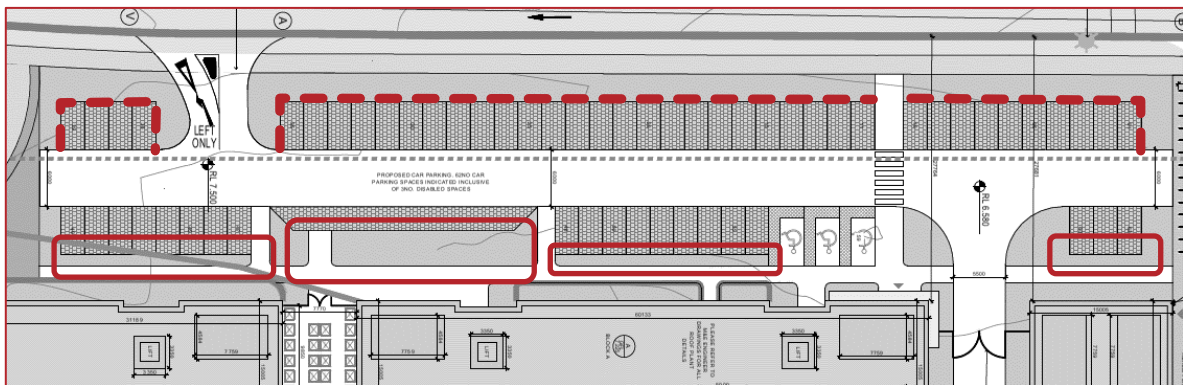
Dropped kerbs, and associated tactile paving, should also be provided on both sides of pedestrian crossings proposed within the development.



4.5 Routes between Parking Spaces/Set-Down Area and Footpaths

Location: Drawing 22032 PP-1.01

Summary: Footpaths have not been indicated directly adjacent to parking spaces and the set-down area within the proposed development which may lead to vehicle occupants travelling within the carriageway, or verge, to reach a footpath.



Footpaths have not been indicated adjacent to parking spaces, and the set-down area, within the proposed development. This would require vehicle occupants to travel between the accommodation building and their vehicle within the carriageway where there is an increased risk of being struck by a vehicle, or within/through the verge to a suitable pedestrian crossing/footpath where there is a risk of slips and falls, particularly during wet or icy weather.

In addition, parking spaces no. 36 – 39 are isolated from the footpath network within the proposed development which would lead to occupants of vehicles parked in these spaces having to travel further distances within the carriageway increasing the likelihood of being struck by a vehicle.

Recommendation

A footpath should be provided directly adjacent to, and throughout the length of, each row of parking spaces to allow pedestrians to access suitable pedestrian crossings.

In addition to providing a footpath at parking spaces no. 36 – 39, a pedestrian crossing should be provided to link these parking spaces to the proposed footpath on the opposite side of the carriageway.

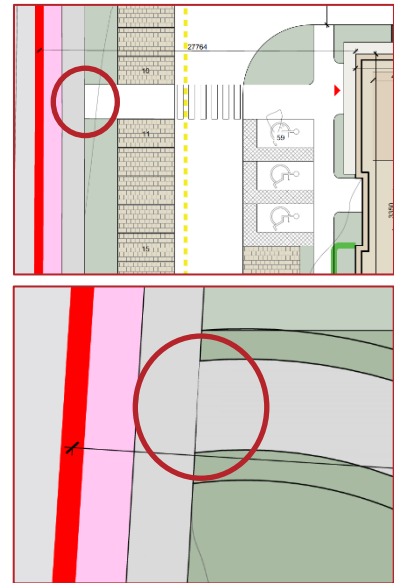
4.6 Transitions between Footpath on Ballybeg Drive and Shared Surfaces

Location: Drawing 22032 PP-1.01

Summary: Warning tactile paving has not been indicated at locations where the pedestrian and cyclist routes within the proposed development transition to the footpath on Ballybeg Drive.

Two pedestrian and cycle paths have been indicated within the proposed development, one adjacent to the pedestrian crossing at the primary building access and one through the green area to the south of the accommodation building, with both paths exiting onto the existing footpath on the western side of Ballybeg Drive.

Due to the width of these paths, it is assumed that they are intended to be shared by both pedestrians and cyclists. The footpath on Ballybeg Drive is, however, not a shared path. Warning tactile paving has not been indicated at the locations where the shared paths transition to the footpath to advise visually-impaired pedestrians that they are entering/exiting an area shared with cyclists. This could lead to visually-impaired pedestrians being insufficiently aware of cyclists sharing the same space as them increasing the risk of pedestrian-cyclist collisions.



Recommendation

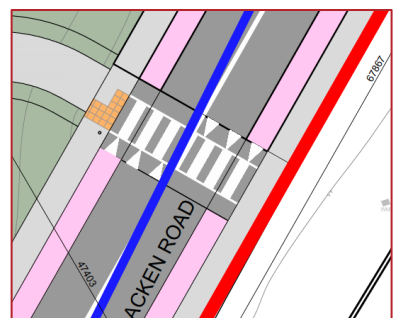
Corduroy hazard warning tactile paving should be provided within the shared paths where they transition to the footpath on Ballybeg Drive. The tactile paving should be comprised of rounded bars running transversely across the direction in which people will be walking (see Figure 16 in “Guidance on the Use of Tactile Paving Surfaces” (2021)).

4.7 Tactile Paving at Zebra Crossing

Location: Drawing 22032 PP-1.01

Summary: The tactile paving indicated on the western side of the proposed Zebra crossing on Lacken Road is the incorrect colour and no tactile paving has been indicated on the eastern side of the crossing.

A Zebra crossing has been indicated on Lacken Road. Tactile paving has been indicated on the western side of the crossing however none has been indicated on the eastern side. This may lead to visually-impaired pedestrians travelling on the footpath on the eastern side of Lacken Road being unable to detect the tactile paving resulting in them being unable to safely and independently navigate the road layout.



In addition, the tactile paving on the western side of the crossing is not the correct colour for this type of crossing. This could lead to confusion for visually-impaired pedestrians resulting in them being insufficiently aware of the type of crossing.

Recommendation

Red 'L-shaped' tactile paving should be provided on both sides of the proposed Zebra crossing.

4.8 Swept Paths

Location: Drawing 22032 PP-1.01

Summary: Swept path analysis for a refuse truck and fire tender have not been provided.

When collecting refuse from the proposed development a refuse truck will enter the development via the left-in left-out access junction, enter the set-down area adjacent to the bin store and then perform a turning manoeuvre within the access adjacent to the locked fire tender access gate, and leave the development via the left-in left-out access junction.

Similarly, during times of an emergency, a fire tender will enter the development via the left-in left-out access junction, enter the private courtyard via the fire tender access gate and traverse the 4m wide path around the courtyard before exiting via the left-in left-out access junction.

A swept path analysis, however, for both of these manoeuvres has not been provided to the Audit Team and it is unclear if a refuse truck and fire tender will be able to enter, traverse and exit the proposed development within the space provided. If these vehicles cannot travel through the development within the extents of the carriageway there is a risk of them mounting the kerb and colliding with items of street furniture or parked vehicles, resulting in material damage.

Recommendation

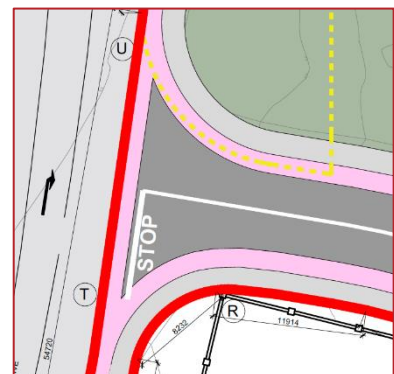
A swept path analysis should be undertaken to confirm that a refuse truck and fire tender can safely enter, traverse, and exit the proposed development without issue.

4.9 Pedestrian Crossing of Lacken Road

Location: Drawing 22032 PP-1.01

Summary: A pedestrian crossing has not been indicated across Lacken Road at its junction with Ballybeg Drive.

It is proposed to amend the layout of the junction of Ballybeg Drive and Lacken Road to provide a cycle track/lane on the western side of Ballybeg Drive and on both sides of Lacken Road. There is an existing uncontrolled pedestrian crossing provided across Lacken Road at this junction however this has not been indicated in the revised junction layout. A failure to provide a pedestrian crossing, with dropped kerbs, would lead to pedestrians having to ascend/descend a full height kerb on both sides when crossing Lacken Road. This could lead to difficulties for pedestrians, particularly the mobility-impaired, when crossing the road resulting in an increased risk of trips and falls.



Recommendation

A pedestrian crossing, including dropped kerbs and associated tactile paving, should be provided across Lacken Road at its junction with Ballybeg Drive.

4.10 Exit from One-way Section of Lacken Road

Location: Drawing 22032 PP-1.01

Summary: The proposed road layout at the transition between the two-way and one-way sections of Lacken Road may not be sufficient to advise northbound drivers of the restrictions at this location.

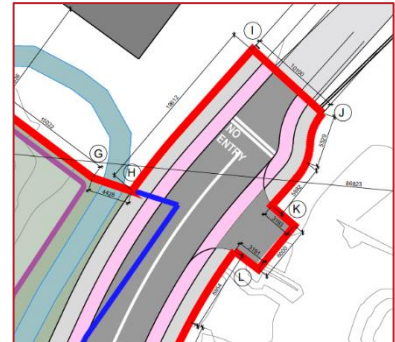
It is proposed to relocate the exit from the one-way section on Lacken Road further north and extend the two-way section to this location, providing a new access to the Kilbarry Civic Amenity Site adjacent to this transition. The centreline on Lacken Road is indicated as extending as far as the 'No Entry' road markings at the exit from the one-way section. Terminating the centreline at this location may lead to drivers misinterpreting the road layout and, should they use the centreline as a guide, continuing into the one-way section where there is a risk of head-on collisions with southbound vehicles.

In addition, there are currently no 'No Entry' signs at the transition between the one-way and two-way sections on Lacken Road, nor are any indicated as part of the upgraded road layout. This may lead northbound drivers being insufficiently aware of the transition to the one-way section resulting in them failing to turn around at this location further increasing the risk of head-on collisions with southbound vehicles.

Recommendation

The centreline on Lacken Road should be curtailed upstream of the relocated access and amended such that drivers are directed into the access and not straight ahead.

In addition, 'No Entry' signs should be provided on both sides of the road facing northbound drivers at the exit from the one-way section to supplement the road markings indicated.

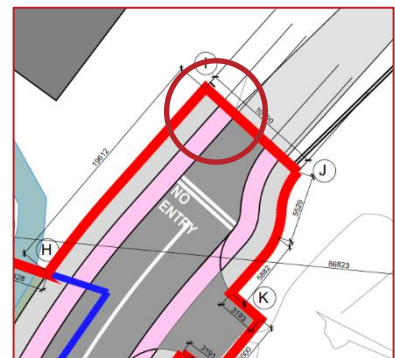


4.11 Northbound Cycle Track/Lane on Lacken Road

Location: Drawing 22032 PP-1.01

Summary: Northbound cyclists are directed into the path of oncoming southbound vehicles at its termination on Lacken Road.

It is proposed to upgrade the existing road layout on Lacken Road which would include the provision of cycle tracks/lanes on both sides of the road. The northbound cycle track/lane is indicated as continuing north of the 'No Entry' road markings at the transition between the one-way and two-way sections before terminating downstream of this location. The Audit Team acknowledge that it is proposed to upgrade the section of Lacken Road to the north of this location as part of a separate scheme however, should this development and these upgrades be implemented prior to the upgrades further north on Lacken Road, this would lead to northbound cyclists being directed to enter the carriageway within the one-way section where traffic travels in a north-to-south direction, increasing the risk of head-on collisions with southbound vehicles.



Recommendation

If the proposed upgrades on Lacken Road are implemented prior to the section further north of the site extents being upgraded, the northbound cycle track/lane should be terminated at the Zebra crossing and the northbound cycle track/lane north of this location be provided as part of the future upgrades.

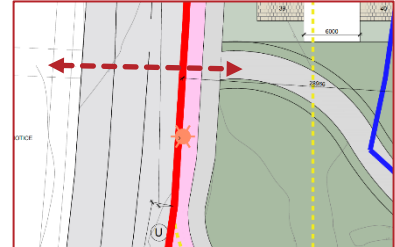
4.12 Pedestrian/Cyclist Desire Line Across Ballybeg Drive

Location: Drawing 22032 PP-1.01

Summary: The pedestrian and cyclist route through the green area to the south of the proposed student accommodation exits onto Ballybeg Drive opposite an existing route to/from Ballybeg Court, where a desire line across Ballybeg Drive is likely to exist, and no measures have been indicated for pedestrians/cyclists to safely cross the carriageway.

A pedestrian and cyclist path has been indicated through the green space to the south of the proposed student accommodation. The shared path exits onto the footpath on the eastern side of Ballybeg Drive opposite an existing path through the grassed area on the western side of the carriageway which leads to the Ballybeg Court residential development. It is likely that a pedestrian/cyclist desire line would exist across Ballybeg Drive between these two paths, however no crossing of Ballybeg Drive has been indicated at this location. This could lead to pedestrians and cyclists crossing Ballybeg Drive at this location where drivers may be insufficiently prepared to react to a pedestrian/cyclist in the carriageway, resulting in an increased risk of vehicle-pedestrian or vehicle-cyclist collisions.

In addition, should pedestrians and cyclists cross Ballybeg Drive at this location, they would have to ascend/descend full height kerbs where there is a risk of trips and falls for pedestrians or loss of control type incidents for cyclists and falls from their bicycle.



Recommendation

A suitable crossing, that can accommodate both pedestrians and cyclists, should be provided on Ballybeg Drive to cater for this likely desire line.

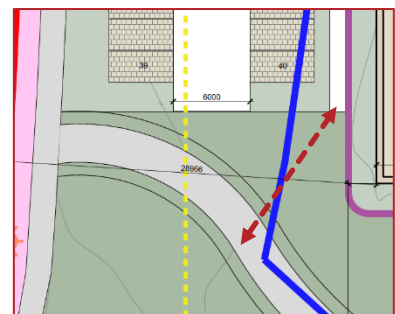
4.13 Pedestrian Desire Line to the South of the Development

Location: Drawing 22032 PP-1.01

Summary: The likely desire line between the green link to the south of the development and the southern boundary of the development carpark has not been catered for.

A pedestrian and cyclist path has been indicated through the green space to the south of the proposed student accommodation. The internal footpath within the proposed development terminates at the carpark's southern boundary and it is likely that a desire line would exist for residents of the student accommodation development between the shared pedestrian and cyclist path and the internal footpath network.

If a footpath is not provided between these locations this could lead to pedestrians and cyclists travelling through the grass area between these points where there is a risk of slips and falls, particularly during wet and icy weather.



Recommendation

A footpath should be provided through the grass area between shared path and the development's internal footpath network.

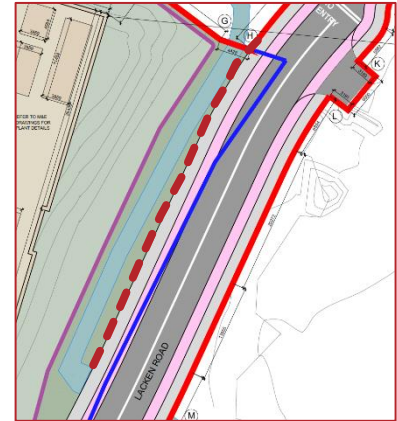
4.14 Stream Adjacent to Lacken Road

Location: Drawing 22032 PP-1.01

Summary: Edge protection has not been indicated on the western side of Lacken Road where the existing stream runs adjacent to the upgraded carriageway.

There is an existing stream which runs adjacent to the eastern boundary of the proposed student accommodation and the western side of Lacken Road. A 1.8m high steel fence, reinforced with hedging, has been indicated throughout the eastern boundary of proposed student accommodation however no edge protection has been indicated at the edge of the Lacken Road carriageway.

The proposed upgrades on Lacken Road will likely lead to the existing stream being more exposed and there is a risk that, should the embankment adjacent to the stream be steep, an inattentive pedestrian, or young child, may fall from the footpath and enter the stream where there is a risk of drowning.



Recommendation

Edge protection should be provided to the rear of the footpath on Lacken Road throughout the section of the road that runs adjacent to the stream.

5 Observations

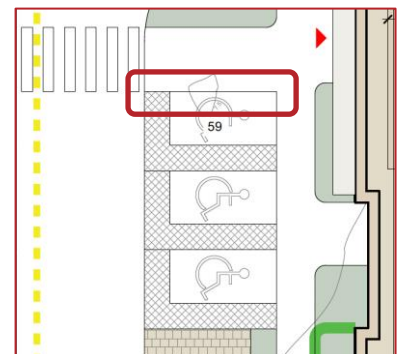
5.1 At this early stage in the design development, information regarding kerb types, drainage, public lighting and traffic signs have yet to be fully considered. These key design elements should be fully considered as part of the detailed design process, and included throughout the proposed development, as necessary, in the construction drawings.

5.2 Electric Vehicle (EV) parking spaces have not been indicated within the proposed development and it is therefore unclear if these will be provided. Most of the proposed parking spaces within the development appear to have similar dimensions, with the exception of mobility-impaired parking spaces, which do not appear to make allowance for the larger dimensions often required for EV parking spaces. There is a risk, therefore, that parking spaces intended to accommodate EV infrastructure will be insufficiently sized.

Sufficient space should be provided at future EV parking spaces in accordance with the Traffic Signs Manual.

5.3 The northernmost mobility parking space within the proposed development's carpark does not include a buffer zone on its northern side. Mobility parking spaces typically require a buffer zone on both sides of the parking space. A failure to provide a buffer zone on the northern side of the northernmost space may lead to mobility-impaired vehicle occupants having insufficient space adjacent to the parking space to enter/exit their vehicles. Buffer zones should be provided on both sides of all mobility parking spaces as indicated in Figure 7.27 in the Traffic Signs Manual.

In addition, the provision of dropped kerbs and associated tactile paving adjacent to mobility-impaired parking spaces should be considered during the detailed design stage.



6 Audit Team Statement

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

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

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

ROAD SAFETY AUDIT TEAM LEADER

Alan O'Reilly

Signed:



Dated:

3rd October 2023

ROAD SAFETY AUDIT TEAM MEMBER

Rebecca Farnan

Signed:



Dated:

3rd October 2023

7 Road Safety Audit Feedback Form

Road Safety Audit Feedback Form

Scheme: Proposed Student Accommodation, Ballybeg Road, Co. Waterford

Route No.: R680, L5021, Lacken Road

Audit Stage: 1 Date Audit Completed: 14th August 2023

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. Only complete if recommended measure is not accepted	Alternative Measures or Reasons Accepted by Auditors (Yes/No)
4.1	Y	Y		
4.2	Y	Y		
4.3	Y	Y		
4.4	Y	Y		
4.5	Y	Y		
4.6	Y	Y		
4.7	Y	Y		
4.8	Y	Y		
4.9	Y	Y		
4.10	Y	Y		
4.11	Y	Y		
4.12	Y	Y		
4.13	Y	Y		
4.14	Y	Y		

Signed: *David O'Neil* Designer Date 3/10/2023

Signed: *Ma O'Neil* Audit Team Leader Date 3/10/2023

Signed: _____ Employer Date _____

Appendix A – Documents Submitted to the Road Safety Audit Team

DOCUMENT/DRAWING TITLE	DOCUMENT/DRAWING NO.	REVISION
Proposed Site Layout	22032 PP-1.01	-
For Information		
Pre-Planning Package	-	-

Appendix B – Problem Locations

