


REPORT

DMURS Design Statement

Whitebox Student Campus at Groody Road,
Newcastle, Castletroy, Limerick

January 2025

GARLAND
Concepts Realised

Table of Contents

Description of Change	Originator	Rev	Approval	Date
Initial Release	PC	1st	BL	04/10/2024
Updated Project Details	PC	A	BL	23/01/2025

1. INTRODUCTION

This document provides an overview of the key design principles adopted in the street/road design for a planning application for a student campus development at Groody Road, Newcastle, Castletroy. Limerick. The design principles are consistent with DMURS that aims to put well designed streets at the heart of sustainable communities. The design is influenced by the type of place in which the street is located and balances the needs of all users as outlined in DMURS.

2. DESIGN ATTRIBUTES

2.1. Street Networks

The image below shows the street hierarchy for the proposed development. The existing Dublin Road is described as an arterial road by DMURS, the existing Groody Road is described as a link road by DMURS and the development streets are identified as local streets.

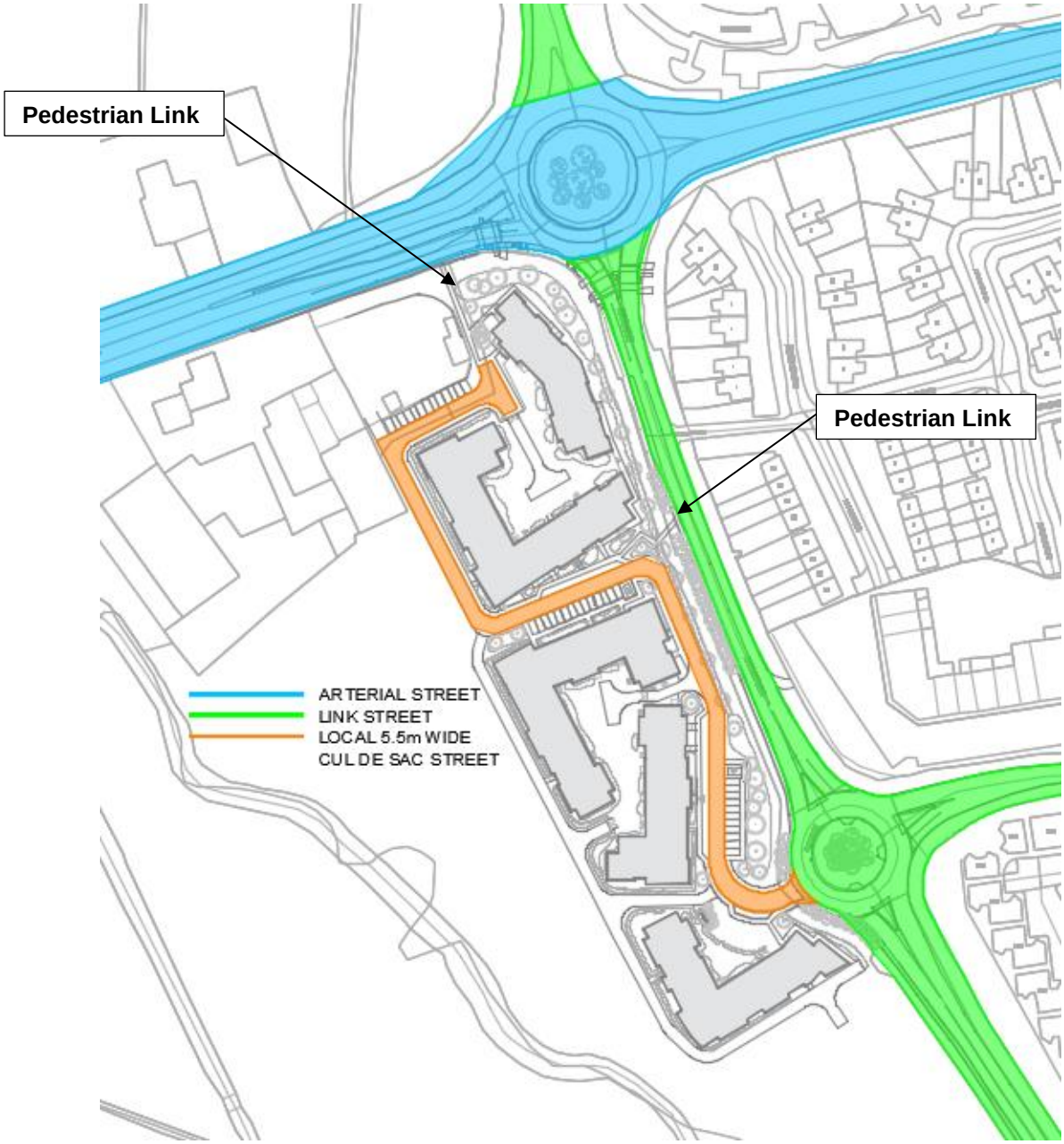


Figure 1 - Street Layout

The street networks are designed to maximise connectivity between destinations to promote higher levels of permeability and legibility for all users, in particular more sustainable forms of transport. This will allow people to move from place to place in a direct manner with greater route choice.

The proposed development layout, of which this application is a part of, is organic. DMURS states that Organic layouts introduce place benefits by introducing variety and intrigue.

Pedestrian links are shown connecting to the link street network along the eastern boundary. This ensures a full connected and permeable overall design.

2.2. Movement, Place and Speed

Pedestrian priority in lieu of car dominance is provided for by the following measures. The road network has been designed to 30km/h. Lower design speed limits have been applied. A design speed of 30km/h has been applied to all the local roads within the scheme in accordance with DMURS.

PEDESTRIAN PRIORITY — VEHICLE PRIORITY

FUNCTION	CENTRE	N'HOOD	SUBURBAN	BUSINESS/ INDUSTRIAL	RURAL FRINGE
ARTERIAL	30-40 KM/H	40-50 KM/H	40-50 KM/H	50-60 KM/H	60-80 KM/H
LINK	30 KM/H	30-50 KM/H	30-50 KM/H	50-60 KM/H	60-80 KM/H
LOCAL	10-30 KM/H	10-30 KM/H	10-30 KM/H	30-50 KM/H	60 KM/H

CONTEXT

Table 4.1: Design speed selection matrix indicating the links between place, movement and speed that need to be taken into account in order to achieve effective and balanced design solutions.

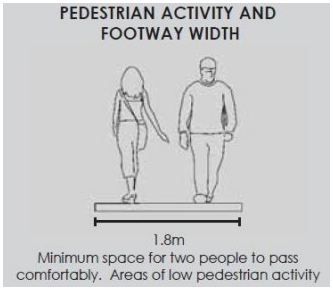
In order to achieve lower design speeds, street widths have been reduced as recommended under DMURS section 4.4.1 Carriageway Widths.

2.3. Signage and Line Marking

The signage and line marking is designed in accordance with Traffic and Signs Manual. Minimal signage and line marking is used due to the low speed nature and the low movement function of the local roads. Signs are only erected where there is a demonstrable safety need.

2.4. Footways

A minimum footway width of 1.8m is required based on the space needed for two wheelchairs to pass each other. A footway width of 1.8m is provided to allow for this. The 1.8m footway width is maintained consistent between junctions through the main local road through the development.



2.5. Pedestrian Crossings

Internally within the development, the design uses uncontrolled pedestrian crossings due to the lightly trafficked, low speed nature of the local streets. Crossings are included at all arms of junctions and at specific crossing points. 1.2m wide minimum crossings with dropped kerbs are provided. Corner radii have been minimised so that crossing points are closer to corners on pedestrian desire lines and also ensures slower vehicle speeds at these points. A controlled crossing has been included outside of the development on Groody Road to provide for the safe movement of pedestrians between the proposed development and developments on the eastern side of Groody Road.

2.6. Corner Radii

Reduced corner radii of 3 to 6m have generally been applied to the development to improve pedestrian and cyclist safety at junctions by lowering the speed at which vehicles turn corners and by increasing inter-visibility between users.

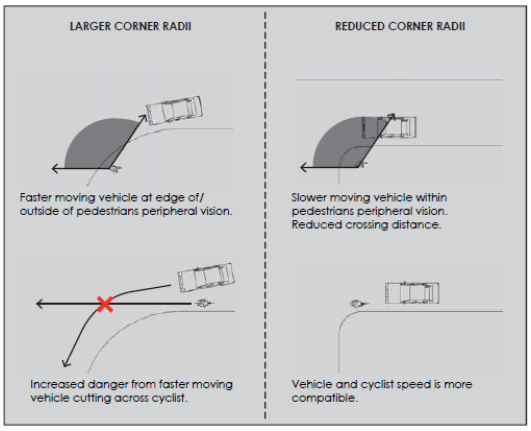
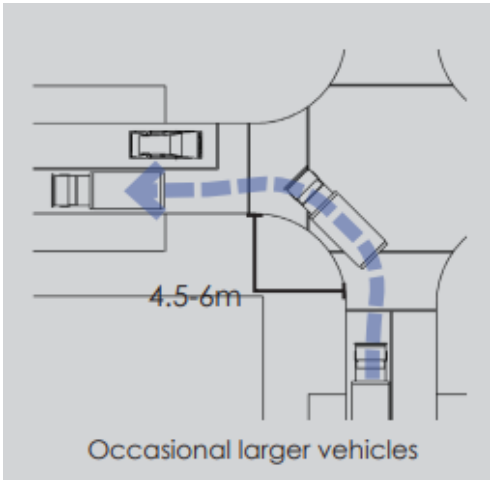


Figure 4.42: Illustration of the benefits of reduced corner radii on pedestrian and cyclist safety (images based on Figures 6.3 and 6.15 of the UK Manual for Streets (2007)).

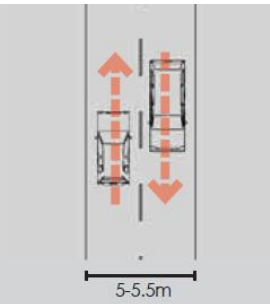


A 9m radii has been provided at the eastern entrance to the development off the Groody Road roundabout. It is also noted as acceptable for the larger vehicles to cross the cross the centre line of the intersecting street as keeping vehicle speeds low is a higher priority elsewhere in the development.

2.7. Cycleway Facilities

The provision of cycle lanes is not required as the roads in the proposed development are all local roads with a design speed of 30 km/h and traffic levels less than 10,000 AADT (Annual Average Daily Traffic). The existing cycle lane at the proposed development junction at the Groody Road roundabout has been designed in line with the current National Cycle Manual.

Covered and securing cycle parking is provided for within the development along with appropriate end of journey facilities.



Standard carriageway width for *Local* streets

2.8. Carriageway Widths

Narrow carriageway widths are one of the most effective design measures to calm traffic. DMURS specifies a standard carriageway width on local streets should be between 5-5.5m (i.e. with lane widths of 2.5-2.75m).

The table below specifies the carriageway, footpath and cycleway widths of the different street types for the development.

Street	Design Speed	Proposed Carriageway Width	Footpaths	Cycle-lanes
Dublin Road Arterial Street	50km/h	3.5m lanes in both directions	1.8m wide at both sides of street	Shared surface
Groody Road Link Street	50km/h	3.5m lanes in both directions with central right hand turning lanes provided where required	2m wide footpath at one side	2m wide cycle path at one side
Local Residential Cul de Sac Street	30km/h	2.75m lanes in both directions	1.8m wide provided on one sides	Shared surface

2.9. Forward Visibility and Visibility Splays

49m visibility splays are applied at the main entrance junction at the Groody Road roundabout to ensure that drivers have sufficient reaction time should a vehicle enter their path. A visibility splay of 49m was determined using Table 4.2 of DMURS and a design speed for link streets of 50km/h.

14m minimum visibility splays are applied at the horizontal curves throughout the development to ensure that drivers have sufficient reaction time should a vehicle enter their path. A visibility splay of 14m was determined using Table 4.2 of DMURS and a design speed at horizontal curves for local streets of 20km/h.

The visibility splay is summarised below:

Street	Design Speed	Set Back Measure measurement	SSD Standard (metres)
Link Streets	Onto 50km/h	2.4m	49m
Local Streets	20km/h at horizontal curves	Centre of carriageway lane	14m

Drawing W0657-040 shows the forward visibility splays at the horizontal curves throughout the development and at the main entrance at Groody Road roundabout. The visibility splay at the

entrance is set back 2.4m from the intersected street edge and clear of any obstructions. The forward visibility splays at the horizontal curves are to the centre of the carriageway lane.

2.10. Alignment and Curvature

There is minimal change to horizontal curvature which allows greater permeability and legibility through the development. This also reduces walking distances between destinations.

An adverse camber of 2.5% has been used for the horizontal curvature design. This was calculated using Table 4.3 of DMURS.

Vertical Curvature is designed with a maximum gradient of 5% and a minimum gradient of 0.5%. Vertical sag curves have been designed using a K Value of 2.3 for 30km/h design speed.

2.11. Kerbs

Footpath kerb heights are 125mm for all road carriageways in accordance with objectives of DMURS for local streets. Dished crossings will be provided at all uncontrolled crossing points.

2.12. Lighting

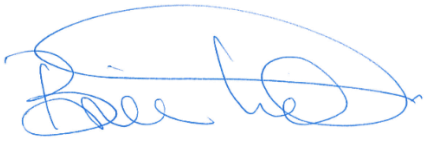
A full lighting design of the entire proposed development has been undertaken to ensure its provision results in a safer environment by ensuring inter-visibility between users.

2.13. Car Parking

Car parking space meeting the requirements of the County Development Plan have been provided within the development. All parking space dimensions are in accordance with DMURS and other best practice guidance. The potential dominance of on-street car parking is actively managed through the provision of landscape buffers. Footpaths have been widened locally by 300mm at perpendicular parking to allow for overhanging vehicles.

3. CONCLUSION

This report demonstrates how the proposed design takes account of the principles contained in DMURS. The street layout has been designed to ensure a simple and safe design in accordance with DMURS. The key aim of the design is to provide a self-regulating traffic environment in the estate through the use of suitable road widths and road curvature, with minimum signage and road markings within the development, other than at junctions. This is in line with the key principles of DMURS.

Signed: 

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Date: 23 January 2025

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