PUNCH
consulting engineers

Great Connell SHD, Newbridge

DMURS Compliance Statement
192229-PUNCH-XX-XX-RP-C-0005

April 2022

Document Control

Document Number: 192229-PUNCH-XX-XX-RP-C-0005

Status	Revision	Description	Date	Prepared	Checked	Approved
AO	C01	SHD Stage 1	09/09/2021	K. Mullins	S. O'Coileir	J. Tiernan
A0	C02	SHD Stage 3	07/04/2022	S. O'Coileir	J. Tiernan	L. Brennan

Table of Contents

Document Control i
Table of Contents 2
1 Introduction 3
2 DMURS Review 4
3 Conclusion 14
Appendix A Architectural Site Layout Plan ..... A

1 Introduction

The scheme proposals are the outcome of an integrated design approach that seeks to implement a sustainable community connected to well-designed infrastructure which delivers safe, convenient, and attractive streets, that support vulnerable road users e.g. pedestrians and cyclists in line with the core principles of DMURS, in addition to promoting a real and viable alternative to single user car-based journeys.

The Design Team considers that the proposed development is consistent with both the principles and guidance outlined within the Design Manual for Urban Roads and Streets (DMURS) 2019.

DMURS sets out design guidance and standards for constructing new and reconfigured existing urban roads and streets. It also sets out practical design measures to encourage more sustainable travel patterns in urban areas.

The primary objectives of DMURS are as follows:

i. Prioritise vulnerable road users i.e. pedestrians and cyclists in urban settings without unduly compromising vehicular movement.
ii. Provide good pedestrian permeability and connectivity in urban environments in order to encourage walking.
iii. Implement speed reduction measures to provide safe interaction between pedestrians, cyclists and motorists.
iv. Create attractive streetscapes through the design of roads and footpaths with careful consideration given to landscaping and selection of surface finishes.

The public areas fronting and within the proposed development have been designed by the multidisciplinary design team to accommodate vulnerable road users i.e. pedestrians and cyclists in accordance with the appropriate principles and guidelines set out in DMURS.

While DMURS is the lead design guidance document governing the development of the roads and street layout within the scheme the following additional documents complement the DMURS design guidance adopted on this scheme:

- Traffic Management Guidelines (2011)
- Smarter Travel (2011)
- NTA National Cycle Manual (2011)
- Planning Guidelines: Local Area Plans (2013)
- DTTS Traffic Signs Manual (2010) and Amendments (2013)
- DTTS Traffic Signs Advice Note: Slow Zones Document Ref - TSAN 2016-02
- TII The Geometric Layout of Signal-Controlled Junctions and Signalised Roundabouts (DN-GEO-03044)
- Stage 1 Road Safety Audit by Bruton Consulting Engineers

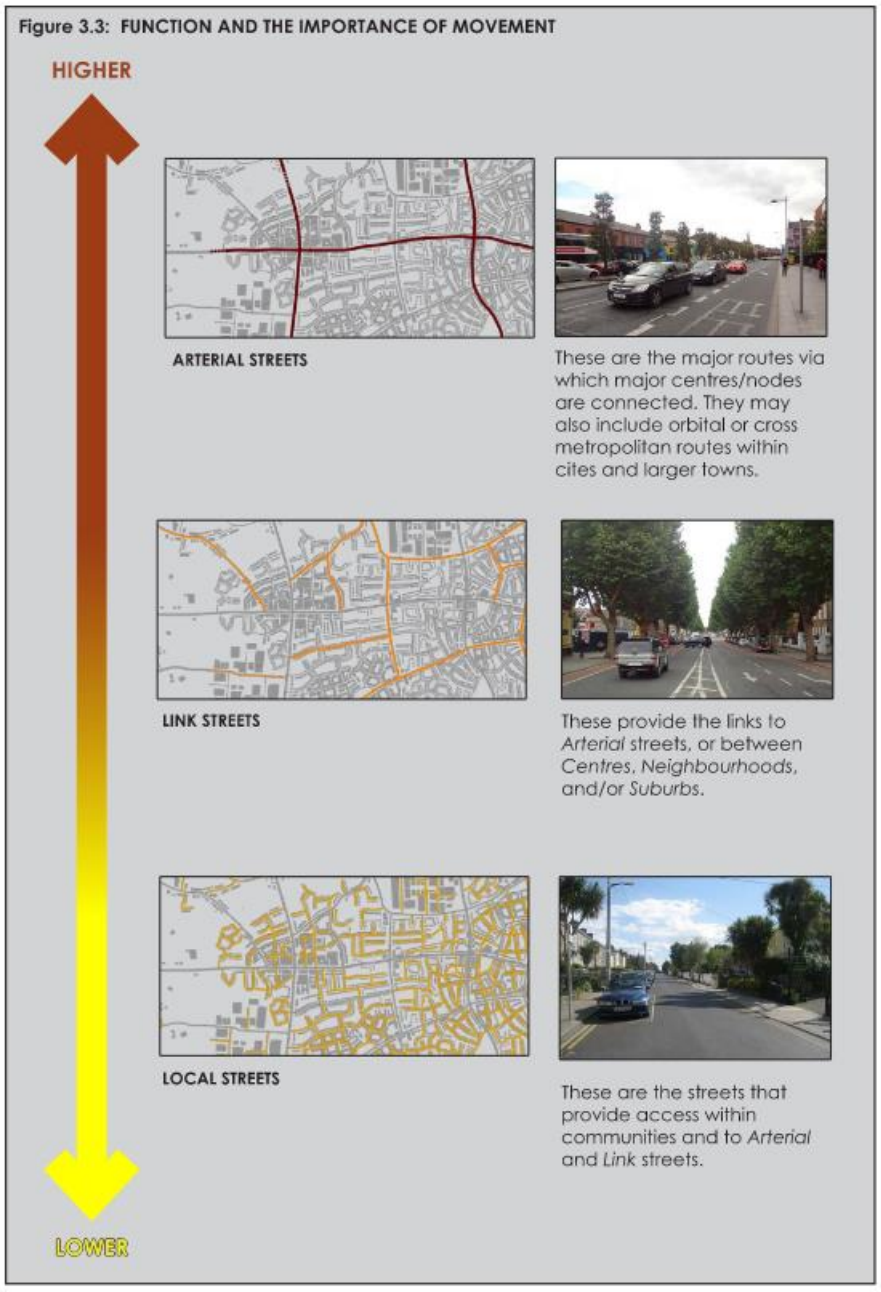
2 DMURS Review

DMURS Chapter 3 – Street Networks and Chapter 4 – Street Design have been adopted in the preparation of the road layout and design proposals for the scheme.

The following table reviews the various design elements set out in DMURS and describes how these design features have been incorporated within the proposed residential scheme in full compliance with the relevant Chapters of DMURS.

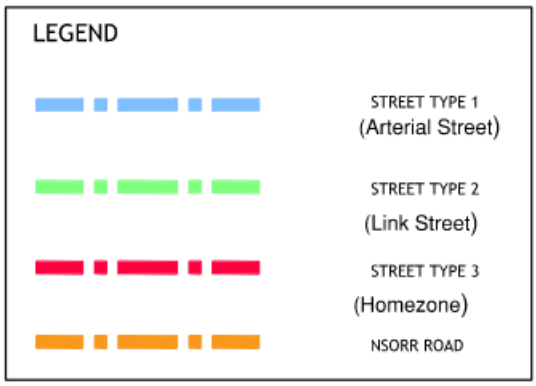
Design Element	DMURS Review
Movement and Place Function	DMURS Chapter 3 Road Networks describes how "the design of residential streets strikes the right balance between the different functions of the street, and a sense of place". Additionally, the development should incorporate "measures to ensure satisfactory standards of personal safety and traffic safety". The movement function of a street is generally described using a classification system, such as a street hierarchy. DMURS refers to street hierarchy as: • Arterial Streets • Link Streets • Local Streets and is illustrated in Figure 3.3 below extracted from DMURS

Design Element	DMURS Review

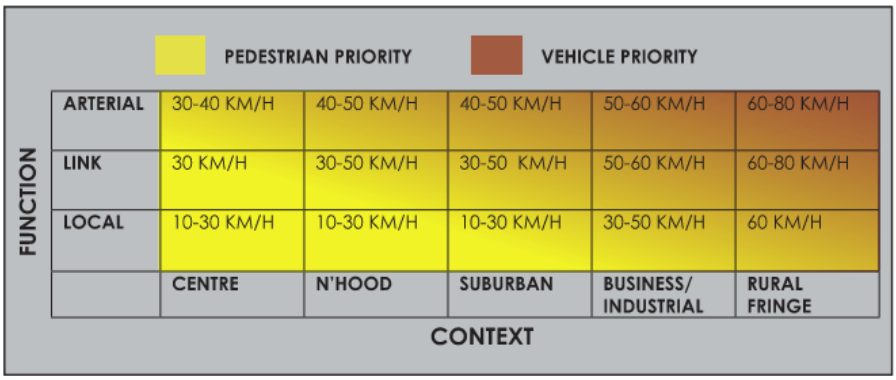


The Great Connell SHD has adopted this DMURS street hierarchy philosophy as indicated below in the extracts from PUNCH Street Hierarchy drawing (PUNCH 192229-PUNCH-XX-XX-DR-C-0553)

Design Element	DMURS Review



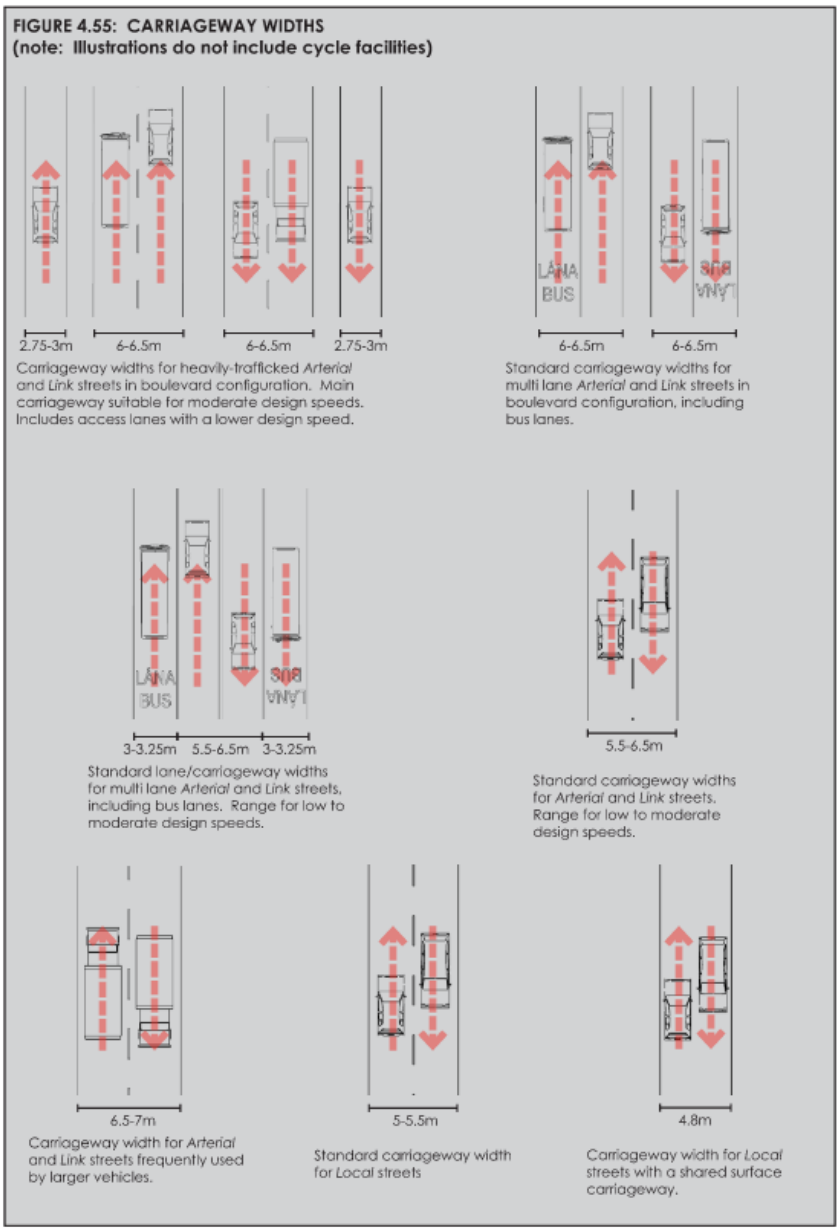
Design Element	DMURS Review
Street Layout	DMURS Chapter 4 – Street Design outlines how a "more integrated approach to street design can create a 'win-win' scenario, where designers can enhance the value of place whilst calming traffic and improving pedestrian and cyclist comfort. To achieve this outcome, designers need to consider the multi-functional role of the street and apply a package of 'self-regulating' design measures" The site proposals incorporate the recommendations of DMURS in this context, including narrow carriageways, different colour pavement materials, footways and cycleways, minimised signage and road markings, compliant visibility splays, tighter corner radii and large hard and soft landscaping areas. The proposals have also been assessed for safety by way of an independent Stage 1 Road Safety Audit by Bruton Consulting Engineers. The Great Connell SHD Street layout is split into 2 distinct elements 1. **350m section of Newbridge Southern Orbital Relief Road (NSORR)** A 350m section of the NSORR running southwest from the existing Great Connell Road (L2032) Roundabout is to be included in the Great Connell SHD scheme. As part of the works the Great Connell Road roundabout will be upgraded to a Signalised Junction improving safety for pedestrians and cyclists i.e. vulnerable road users. Note the NSORR is a strategic objective SRO 5 of the Newbridge Local Area Plan 2013-2019 (Extended). A design study for the full NSORR including the Liffey Bridge Crossing connection to the Kilbelin Development (Planning Ref: ABP-302141-18) has been completed to ensure the technical viability of the road. DMURS discusses Relief Roads in Section 3.4.4. It recommends that speeds on Relief Roads are moderated to 50kph and that the route is integrated into the urban fabric so that a sense of place is maintained and to prevent severance between adjoining areas. This is the approach adopted on Great Connell SHD and a designated design speed of 50kph has been assigned for the 350m section of the NSORR within the development. 2. **Great Connell SHD Internal Streets** The proposed internal streets hierarchy is described on PUNCH Street Hierarchy drawing (PUNCH 192229-PUNCH-XX-XX-DR-C-0553) Street 21 running southeast from the NSORR to the eastern site boundary has been designated an Arterial Street as it will form a potential route linking other residential developments at a later date. It has been assigned a design speed of 30kph in keeping with Table 4.1 of DMURS. All other internal streets have been designated Link Streets or Local Streets. They have also been assigned a design speed of 30kph in keeping with Table 4.1 of DMURS.

Design Element	DMURS Review
	 *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 Section 4.1.2 'Self-Regulating Streets' of DMURS research has shown how the provision of relatively tight vertical and horizontal curvature, together with the street characteristics of close proximity of buildings, active ground floor use and pedestrian activity will have a self-regulating impact on drivers resulting in lower speeds. DMURS seeks to encourage: "layouts that maximise the number of walkable/cyclable routes between destinations". The proposed development adopts this ethos by the provision of a permeable pedestrian and cyclist linkage to the existing surrounding network, including access and linkages to the Wellesley Manor Development to the North of the Development and the existing Great Connell Road roundabout (which will be signalised as part of the proposed development). Future walkable/cyclable links along the Arterial Street (Street 21) linking the residential zoned lands to the southeast are also allowed for. The Mobility Management Plan (Document Ref: 192229-PUNCH-XX-XX-RP-C-0006) describes these linkages in further detail.
Traffic Congestion	DMURS recommends the use of permeable traffic-calmed networks, as "the most balanced way of addressing traffic congestion". A permeable traffic-calmed strategy has been adopted for the proposed development. Dedicated turning facilities have been provided for visitors/deliveries/drop offs while residents of the Houses will avail in the main of off street parking with Apartment Resident and some Houses using on-street parking. Pedestrians/cyclist movements are prioritised throughout the rest of the development. The existing local road network has been assessed and confirmed to be capable of supporting traffic generated from the entire development.

Design Element	DMURS Review
Approach to Speed	The 350m section of NSORR to be delivered by the Great Connell SHD development is defined as a Relief Road by Kildare County Council. DMURS discusses Relief Roads in Section 3.4.4 and recommends that speeds on the Relief Roads are moderated to 50kph and that the route is integrated into the urban fabric so that a sense of place is maintained and to prevent severance between adjoining areas. In keeping with DMURS the design speed of the 350m section of NSORR to be delivered by the Great Connell SHD development has been designated at 50kph. For the remaining Internal Streets of the Great Connell SHD the design speed is designated at 30km/h. This approach is consistent with DMURS which specifies that "where vehicle movement priorities are low, such as on local streets, lower speed limits should be applied (30km/h)". Vehicle speeds are controlled by the use of short lengths of straight road, tight radii and change of surface materials. DMURS Table 4.1 provides guidance on design speeds for different street functions and context. PEDESTRIAN PRIORITY / VEHICLE PRIORITY FUNCTION: 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 CENTRE | N'HOOD | SUBURBAN | BUSINESS/ INDUSTRIAL | RURAL FRINGE 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.*
Signage and Line Marking	DMURS notes that minimal signage is required on local streets due to their low speed and low movement function. The development has adopted this approach. All signs and roads markings are in accordance with the Department of Transport, Tourism and Sports (DTTS) Traffic Signs Manual and DDTS Traffic Signs Advice Note: Slow Zones (TSAN 2016-02)
Lighting	The street lighting within the development will be provided to achieve the standards required by KCC and to the design of Sabre Lighting Design. LED luminaires will be utilised and positioned to ensure a uniform lighting spread is achieved and ensure dark corners are avoided. This will ensure the development is attractive and safe during hour of darkness.
Materials and Finish	DMURS states that designers should use 'contrasting materials and textures to inform pedestrians of changes to the function of space (i.e. to demarcate verges, footway, strips, cycle paths and driveways) and in particular to guide the visually impaired'. The range of proposed materials for this development is in line with the requirements of DMURS as illustrated on O'Flynn Architects, The Big Space Landscaping Design and PUNCH drawings included in the planning documentation.

Design Element	DMURS Review
Footways	Footway widths are typically 2m and meet the minimum 1.8m requirement in compliance with DMURS for the space. High quality and slip resistant materials will be used and gradients are sufficiently shallow to make the development accessible for users of all abilities.
Pedestrian Crossings	DMURS considers pedestrian crossings to be "one of the most important aspects of street design as it is at this location that most interactions between pedestrians, cyclists and motor vehicles occur". A signalised Toucan Pedestrian/Cyclist crossing point is proposed along the NSORR Road as agreed with KCC Road Department at the Section 247 Planning meeting. A Bus Stop on either side of the proposed NSORR section provided with this Planning Application was also agreed with KCC and is indicated on the proposed roads layout drawings. The existing Great Connell Roundabout is being upgraded to a signalised junction with Toucan crossings provided on each arm in order to improve pedestrian and cyclist safety in the area.
Corner Radii	Corner radii of the main access roads off the NSORR are to be 4.5m in compliance with DMURS best practice for "occasional larger vehicle" access. Corner radii of "local streets" within the development are typically shown as 3.0m in compliance with DMURS best practice. The use of tight radii will assist in traffic calming and also enable pedestrians to cross the road both close to their desire line and with as short a travel path as possible.
Cycle Facilities	DMURS promotes cycling as a sustainable form of transport and seeks to rebalance design priorities to promote a safer and more comfortable environment for cyclists. DMURS section 4.3.5 in conjunction with National Cycle Manual (NCM) provides recommendations in terms of the provision of cycling facilities. On Great Connell SHD scheme designated cycle lanes, detailed in accordance with the NCM, are provided on the NSORR and along the Arterial Road (Street 2) linking to zoned lands in the southeast. Designated cycle lanes have been provided since busy/moderate levels of traffic is anticipated on these streets On the other Link/Local Streets within the SHD scheme cycle lanes are not warranted as these are lightly-trafficked/low-speed streets consisting frequently of shared surface areas and short lengths of cul-de-sacs etc. Cycle storage facilities have been provided to meet KCC development plan requirements as well as the standards outlined in the 'Sustainable Urban Housing: Design Standards for New Apartments – Guidelines for Planning Authorities (March 2018)'.
Carriageway Width	DMURS Section 4.4 provides recommendations on carriageway widths for the hierarchy of Arterial, Link and Local streets. The recommended widths vary depending on the - the function and context of the street - the number of large vehicles using the street - access requirements and frequency of accesses - the overall number of lanes - the need for lane width reductions at pinch points

Design Element	DMURS Review
	DMURS Figure 4.55 provides the recommended range of carriageway widths. The Great Connell SHD has adopted 'standard' road width taken from Figure 4.55. The width of the road carriageways in the development are: NSORR Road (350m Section) – Relief Road • 6.5m carriageway with 2 x 2m wide cycleways and 2 x 2m wide footways Arterial Street (Street Type 1) • 6m carriageway with 2 x 2m wide cycleways and 2 x 2m wide footways Link Street (Street Type 2) • 6m carriageway with 2 x 2m wide cycleways and 2 x 2m wide footways Local Street (Homezone) (Street Type 3) • 5.5m on the local roads along with 2 x 2m wide footpaths These road widths will facilitate two-way vehicular traffic and the relevant design vehicle turning manoeuvres (i.e. fire tender and refuse vehicle).

Design Element	DMURS Review
	
Carriageway Surface	Stone Mastic Asphalt, as agreed with Kildare County Council is proposed for the 350m section of the NSORR in this SHD. For Arterial Street (Street Type 1) and Link Streets (Street Type 2) Stone Mastic Asphalt is also proposed. Local Streets (Street Type 3) will be designated Homezones and will be shared surface streets. Shared surface streets and junctions are integrated spaces where pedestrians, cyclists and vehicles share the main carriageway. The provision of surface materials with buff colour will emphasise the priority to pedestrians and encourage and assist in lowering speeds.

Design Element	DMURS Review
Junction Design	The guidance of DMURS Section 4.4.3 has been adopted in the development of the junction layouts within this SHD layout. At all junctions a balanced approach has been taken where pedestrians, cyclists as well as motorised vehicles are considered. The junctions provide safe and consistent layouts and present a uniformity of approach to drivers as well as other road users. Each junction is also designed to accommodate design year peak traffic flows thus ensuring the network capacity is optimised Following design reviews with Kildare County Council it has been agreed to upgrade the existing Great Connell Road Roundabout at the junction of the Great Connell Road and the NSORR to a signalised junction. This will ensure safe crossing points for vulnerable road users e.g., pedestrians and cyclists. Junction radii of 10m have been adopted to meet the recommendations of Section 2.19 of TII document DN-GEO-03044-02-Signal Controlled Junctions and Roundabouts for a rural setting and to facilitate turning movements of articulated vehicles. The signalised junction will also act as a speed control/traffic calming measure at the entry point to the SHD on the NSORR. The junction has been assessed and has adequate capacity for the design year peak traffic flows. At each junction in the SHD corner radii of "local streets" within the development are typically shown as 3.0m in compliance with DMURS best practice. The use of tight radii will assist in traffic calming and also enable pedestrians to cross the road both close to their desire line and with as short a travel path as possible. Main junctions where Arterial Streets or Link Roads meet the NSORR are designed with kerb radii of 4.5m to facilitate occasional large vehicles turning.
Forward & Junction Visibility	Forward and junction visibility on internal roads is provided in compliance with the desire of DMURS for a 30kph design speed. Forward and junction visibility on section of the main NSORR Distributor proposed within this planning application is provided in compliance with a designated 50kph design speed. Refer to PUNCH drawings PUNCH 192229-PUNCH-XX-XX-DR-C-0625 to PUNCH 192229-PUNCH-XX-XX-DR-C-0629 respectively for sight visibility assessments
Traffic Calming	Traffic calming is achieved by horizontal deflections and colour changes of the surface materials.
On-Street Parking / Loading	Parking provision has been provided to meet the following standard: • Car parking serving the apartments is provided in accordance with the guidance for *Peripheral and/or Less Accessible Urban Locations* in the Design Standards for New Apartments (2018) section 4.22. • Car parking serving the houses, creche and neighbourhood/commercial centre are provided in accordance with the Kildare County Council Development Plan (2021) 'Table 17.9'

Design Element	DMURS Review
	In providing the required number of parking spaces adjacent to dwellings, the following DMURS guidance has also been adopted • Breaking continuous runs of parking into smaller groups along with planting and crossing areas to break the visual continuity of the parking;
Multi-disciplinary Design Team	In accordance with the requirement in DMURS, the design of the development has been prepared by a multi-disciplinary design team, including but not limited to architects, landscape architects; civil engineers; environmental consultants; hydrology consults; and transport planners.
Road Safety Audit	A Stage 1 road safety audit of the proposed Great Connell SHD site layout has been undertaken by Bruton Consulting Engineers and is submitted as part of the Stage 3 SHD application. The recommendations of the RSA have been incorporated in the current site layout design.

3 Conclusion

The assessment concludes that the proposed Great Connell SHD development is considered to be in compliance with the Design Manual for Urban Roads and Streets (DMURS) 2019.

Appendix A Architectural Site Layout Plan

A0

NOTES:

DO NOT SCALE. USE ONLY FIGURED DIMENSIONS WHICH SHOULD BE CHECKED ON SITE BEFORE WORK COMMENCES.

ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH THE LATEST BUILDING REGULATIONS.

REFER TO STRUCTURAL ENGINEER'S DRAWINGS AND SPECIFICATION FOR ALL STRUCTURAL WORK.

NO.:	REVISIONS:	DATE:	H		DATE:
A			I		
B			J		
C			K		
D			L		
E			M		
F			N		
G			O		

LEGEND:

OFA
O'FLYNN ARCHITECTS,
LOWER EYRE STREET,
NEWBRIDGE,
CO KILDARE.
TEL. 045 433400
EMAIL info@ofynnarchitects.ie
WEB www.ofynnarchitect.ie

RIAI Practice Member 2021

PROJECT:	PROPOSED GREAT CONNELL SHD AT NEWBRIDGE, CO. KILDARE.		
TITLE:	PROPOSED MASTER SITE LAYOUT PLAN.		
CLIENT:	ASTON LTD.	STAGE:	PLANNING
PROJECT NO.:	19070	DRG. NO.:	PA-002
SCALE:	1:1,000	DRAWN:	POF
DATE:	FEBRUARY 2022	CHECKED:	POF