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Road Infrastructure Design Report

Strategic Housing Development

Clonattin, Gorey, Co. Wexford

Client: AXIS Construction

Job No. A091

November 2020

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ROAD INFRASTRUCTURE DESIGN REPORT

STRATEGIC HOUSING DEVELOPMENT, CLONATTIN, GOREY, CO. WEXFORD

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1.0 INTRODUCTION

Cronin & Sutton Consulting Engineers (CS Consulting) have been commissioned by AXIS Construction to prepare a Road Infrastructure Design Report for a proposed 363-unit Strategic Housing Development at Clonattin, Gorey, Co. Wexford.

In preparing this report, CS Consulting has made reference to the following:

- Wexford County Development Plan 2013-2019
- Gorey Local Area Plan 2017–2023
- National Cycle Manual 2011
- Design Manual for Urban Roads and Streets

The Road Infrastructure Design Report is to be read in conjunction with the engineering drawings and documents submitted by CS Consulting and with the various additional information submitted by the other members of the design team, which forms part of the planning submission.

2.0 SITE LOCATION AND PROPOSED DEVELOPMENT

2.1 Site Location

The site of the proposed development lies between Clonattin Road and Courtown Road (R742) in the townlands of Clonattin Upper and Goreybridge, Gorey, Co. Wexford. The application site has a total area of 15.5ha and is located within the administrative jurisdiction of Wexford County Council.

Figure 1 – Location of proposed development site
(*map data & imagery: EPA, OSM Contributors, Google*)

The location of the proposed development site is shown in Figure 1; the indicative extents of the development site, as well as relevant elements of the surrounding street network and transport infrastructure, are shown in more detail in Figure 2.

Figure 2 – Site extents and surrounding transport infrastructure
(*map data & imagery: NTA, OSM Contributors, Google*)

The main body of the development site is bounded to the north generally by the existing Clonattin Village access road, to the north-west by the existing Hillcrest residential development, and on all other sides by undeveloped agricultural lands. The application boundary also includes the alignment corridor of a new link road that shall connect Courtown Road (R742) to Clonattin Village and Clonattin Road. The provision of such a link is given as a roads objective in the Gorey Local Area Plan 2017–2023.

The internal road network of the proposed development shall tie in to the existing Clonattin Village access road at 6no. locations along the site's northern boundary. Access to the wider road network from these points shall be via the existing Clonattin Village access junction on Clonattin Road. To the south, the proposed new link road traversing the development site shall

tie in to the existing junction on Courtown Road that gives access to the existing Movies@Gorey cinema site.

2.2 Existing Land Use

The subject site is predominantly greenfield and currently generates no vehicular traffic. There are 2 no. existing derelict buildings (a dwelling and a shed) within the western part of the site, and an existing pond is located inside the site's southern boundary.

2.3 Description of Proposed Development

The proposed strategic housing development at this site in Clonattin, Gorey will include the demolition of the existing buildings and will provide 363no. residential units, a crèche, public open space, a new access road connecting to Courtown Road. All associated site development works and services provisions including parking, bin storage, substations, landscaping and all services required to facilitate the proposed development. A full description is provided in the statutory notices and in Chapter 3 of the EIAR.

3.0 ROAD INFRASTRUCTURE DESIGN

The objectives of the evolving site layout design are:

- to ensure ease of access for emergency services and for refuse collection and servicing operations;
- to encourage walking and cycling;
- to create short walking routes to shops, public transport, etc.;
- to create a safe, secure, and pleasant environment for people, particularly vulnerable road users (VRUs) such as children.

Design measures have been implemented to support the above objectives in accordance with the core principles of the *Design Manual for Urban Roads and Streets* (DMURS).

The design of the road infrastructure within the subject development is primarily informed by principles contained within the DMURS manual. However, reference has also been made to the following documents:

- Wexford County Development Plan 2013-2019
- Gorey Local Area Plan 2017–2023
- National Cycle Manual 2011
- Traffic Signs Manual 2019
- DN-GEO-03060: Geometric Design of Junctions
- Sustainable Urban Housing: Design Standards for New Apartments (Guidelines for Planning Authorities)
- National Cycle Manual 2011
- Greater Dublin Area Cycle Network Plan
- Design Manual for Urban Roads and Streets

3.1 Road Classification

The existing Clonattin Village and Clonattin Road are local access and tertiary roads respectively with a speed limit of 50km/h.

DMURS uses a hierarchy system to classify the movement function of a street. This system classifies streets into the following categories:

- Arterial Streets
- Link Streets
- Local Streets

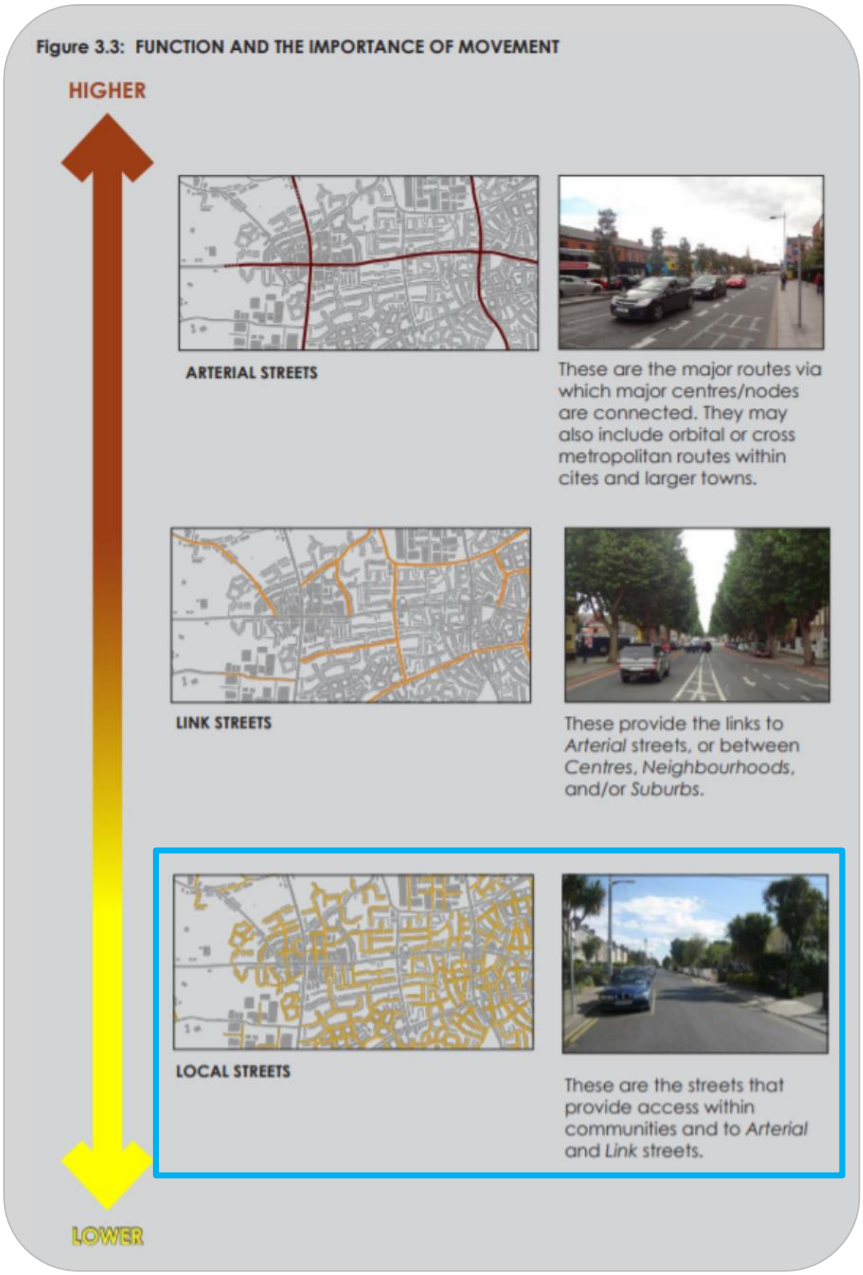

Figure 3 – DMURS Street Classification
(source: Design Manual for Urban Roads and Streets)

Based on the above, there is 1no. link street proposed within the subject development application running from the eastern boundary of the development site to Courtown Road.

All other internal roads within the development are classed as local streets and primarily serve a local access function.

Figure 4 – Road Hierarchy

Table 3.1 of DMURS outlines how road hierarchy terminology used in DMURS relates to other relevant publications.

DMURS Description	Roads Act/ DN-GEO-03031	Traffic Management Guidelines	National Cycle Manual
Arterial	National	Primary Distributor Roads	Distributor
Link	Regional (see note 1)	District Distributor Local Collector (see Notes 1 and 2)	Local Collector
Local	Local	Access	Access

Notes

Note 1: Larger Regional/District Distributors may fall into the category of *Arterial* where they are the main links between major centres (i.e. towns) or have an orbital function.

Note 2: Local Distributors may fall into the category of *Local* street where they are relatively short in length and simply link a neighbourhood to the broader street network.

Figure 5 - Terminology used within DMURS compared with other key publications
(*source: Design Manual for Urban Roads and Streets*)

3.2 Road Design Speeds

Clonattin Village and Clonattin Road are existing local roads with a posted speed of 50km/h. No alteration to the current posted speed on these sections of road is proposed within the subject development.

All internal roads within the development have been designed for a vehicular traffic speed of 30km/h in order to prioritise movement of vulnerable road users. In accordance with DMURS, kerb radii at internal junctions have been restricted to a maximum of 6.0m, in order to discourage high vehicle speeds.

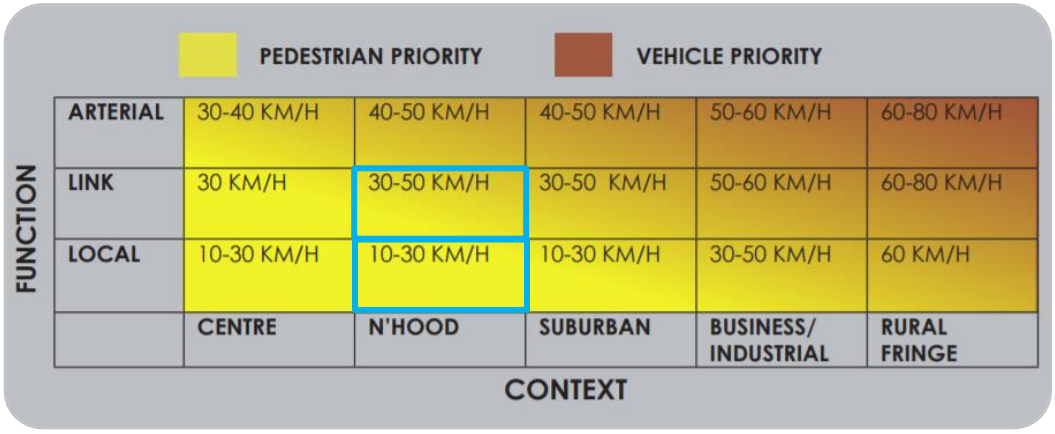

Figure 6 – Design Speed Selection Matrix
(*source: Design Manual for Urban Roads and Streets*)

3.3 Road Cross-Section

The road carriageway widths have been determined in accordance with DMURS. Local roads within the subject development shall have a carriageway width of 5.5m, comprising one traffic lane in either direction, and shall be flanked to either side by a 2.0m-wide pedestrian footpath. A lane width of between 2.75m was chosen in accordance with Figure 4.55 of DMURS.

The link road (connecting to Courtown Road) proposed within the development shall have a carriageway width of 6.0m, comprising one traffic lane in either direction, and shall be flanked to either side by a 2.0m-wide segregated cycle lane and a 1.50-m wide pedestrian footpath.

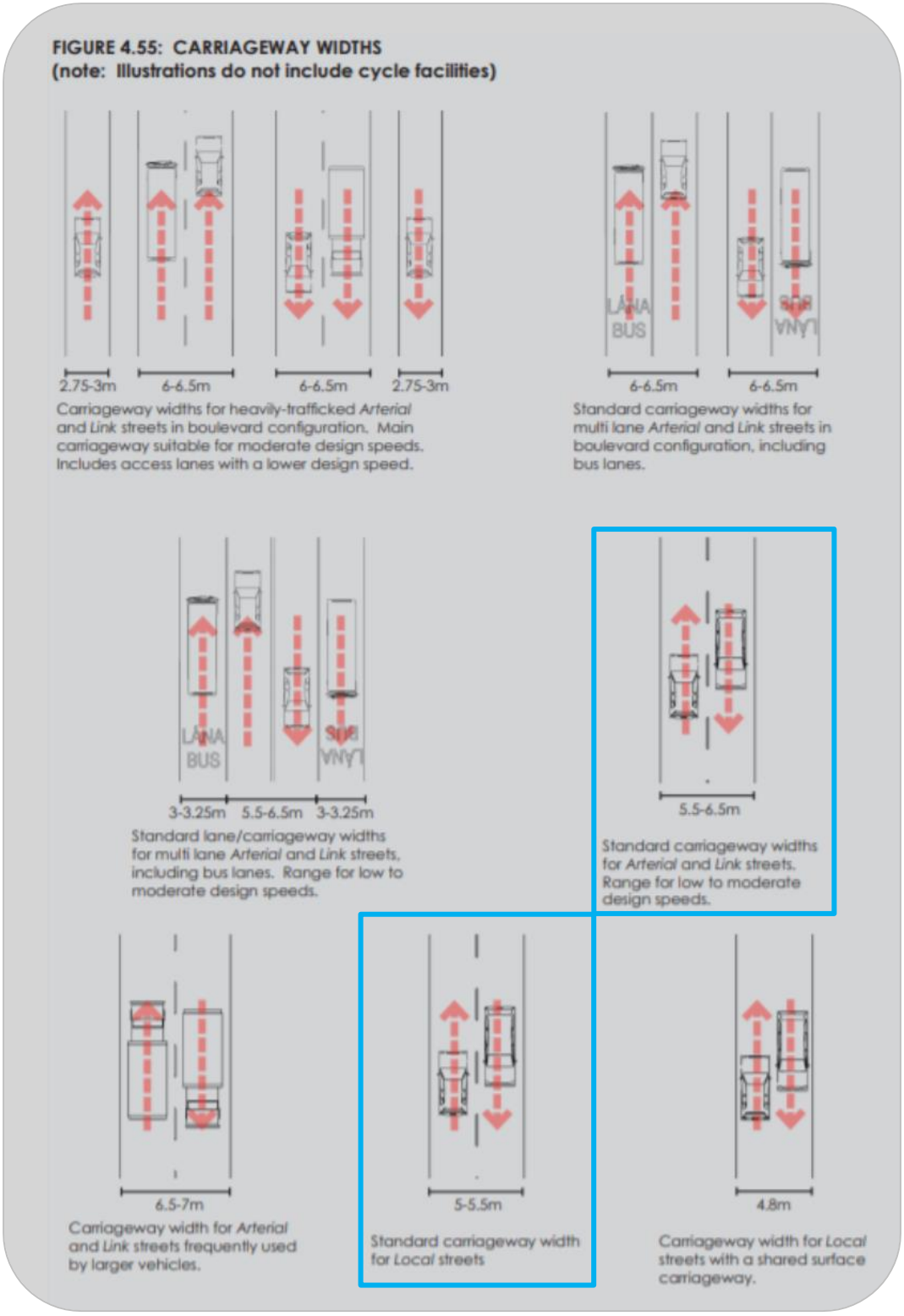

Figure 7 – Carriageway Widths
(*source: Design Manual for Urban Roads and Streets*)

3.4 Footpaths

Footpath widths within the proposed development have been designed in accordance with DMURS. It is proposed to provide a footpath width of 2.0m along all internal roads within the proposed development to allow desirable space for two people to pass comfortably.

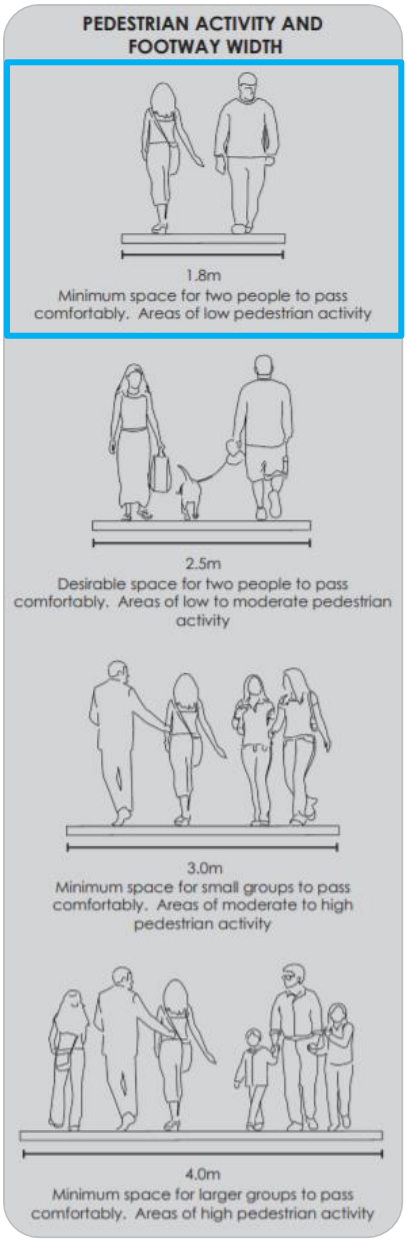

Figure 8 – Pedestrian activity and footpath width
(*source: Design Manual for Urban Roads and Streets*)

3.5 Road Junctions

The primary principle of the development's road junction design is to provide safe and consistent junction layouts for drivers and other road users. Road junction geometry has been designed in accordance with DMURS. Junctions within the development have been designed with sufficient capacity to accommodate design year peak traffic flows.

The primary objectives of the development junction design are as follows:

- To ensure capacity for the design year;
- To provide safe crossing facilities for pedestrians and cyclists;
- To ensure adequate visibility and consistency for road safety;
- To function as traffic calming measures.

Traffic modelling software has been used to assess the operation of road junctions within the road network surrounding the subject development. Refer to the Traffic Impact Assessment submitted under separate cover within this planning application for further details of road junction operations.

4.0 DEVELOPMENT LAYOUT, PEDESTRIANS AND CYCLISTS

4.1 Development Access

Figure 9 – Vehicular access points to subject development
(*map data & imagery: OSi, OSM Contributors, Microsoft*)

The subject development's internal road network shall tie into the existing surrounding road network at 7no. locations to give vehicular access to the development (see Figure 9).

The 2no. primary vehicular access points are:

(A) a new priority junction on Clonattin Village road at the northern boundary of the subject development; and

(B) the northward continuation of Cinema Road, which originates at Courtown Road approx. 640m to the south-east.

A further 5no. vehicular access point shall be located Clonattin Village road at the northern boundary of the main development site.

Provision is also made for future connectivity between the subject development and adjacent development of the lands to the south at 2no. locations within the subject development in accordance with the *Gorey Local Area Plan 2017–2023.*

All connections between the development's internal road network and the existing external road network have been designed in accordance with the requirements of the *Design Manual for Urban Roads and Streets*.

For further detail of the development's proposed internal road network and provisions for vehicular access to/from the surrounding road network, refer to CS Consulting drawing CLO-CSC-ZZ-XX-DR-C-003, CLO-CSC-ZZ-XX-DR-C-004, CLO-CSC-ZZ-XX-DR-C-005, CLO-CSC-ZZ-XX-DR-C-006, CLO-CSC-ZZ-XX-DR-C-007 and CLO-CSC-ZZ-XX-DR-C-0035.

4.2 Internal Site Layout and Road Hierarchy

The internal road network of the proposed development comprises a network of local roads and the provision of a new link road linking the subject development to Courtown Road, allowing circulation into and through the development site.

Figure 10 – Road hierarchy

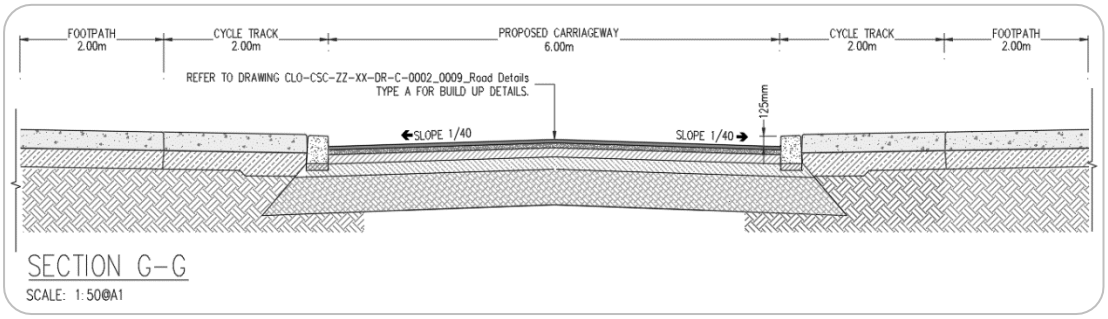

Figure 11 – Typical link road cross section

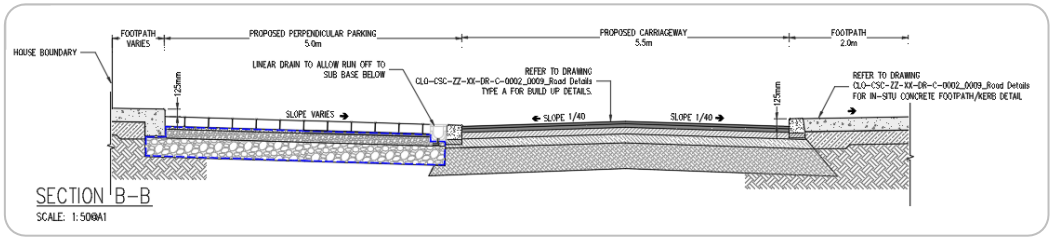

Figure 12 – Typical link street cross section (local road)

For further details of the development's internal road network and road hierarchy, refer to CS Consulting drawings CLO-CSC-ZZ-XX-DR-C-0003, CLO-CSC-ZZ-XX-DR-C-0004, CLO-CSC-ZZ-XX-DR-C-0005, CLO-CSC-ZZ-XX-DR-C-0006 and CLO-CSC-ZZ-XX-DR-C-0007.

All road infrastructure within the development shall be designed and constructed to Wexford County Council taking-in-charge standards.

4.3 Road Alignments and Traffic Calming Measures

All internal roads within the development have been designed for a vehicular traffic speed of 30km/h. Kerb radii at internal junctions have been restricted to a maximum of 6.0m, in order to discourage high vehicle speeds, except where larger radii are required to facilitate bus movements At all internal road junctions, it has been ensured that forward visibility splays of at least 24m are achieved, in compliance with the *Design Manual for Urban Roads and Streets* (DMURS) requirements.

The presence of parallel on-street parking bays along significant portions of the internal road network shall have a natural traffic calming effect, as through traffic shall have to be alert to (and accommodate) parking manoeuvres into and out of these spaces. Kerb buildouts, which shall be provided at key points to prevent informal on-street parking, shall likewise perform a traffic calming function by forming a horizontal constraint to the carriageway.

4.4 Pedestrians & Cyclists

The development layout ensures a high degree of pedestrian and cyclist permeability into and through the site. Pedestrian and cyclist access to the development shall be possible along much of the site's northern boundaries, as well as via the proposed link road to/from Courtown Road at the site's eastern boundary. The development layout also allows for

convenient future pedestrian and cyclist access to the lands south of the subject site, should development on these lands occur.

Raised pedestrian footpaths are provided along all internal roads within the development. Segregated cycle facilities are provided along key internal roads and additional cycle infrastructure has been proposed on Clonattin Village Road and the proposed link road to connect the development's cycle facilities to the surrounding road network.

4.5 Link Road

As noted in the Traffic Impact Assessment associated with this planning application, the *Gorey Local Area Plan 2017–2023* indicates two new link road proposals with alignments running through the subject development site, which would connect Clonattin Road to Courtown Road (R742). The subject application boundary includes the alignment corridor of a new link road that it is proposed to provide as part of the development. Additionally, the internal road layout of the subject development has been designed such that it could also facilitate the future provision of a second link road along the other route indicated in the *Gorey Local Area Plan 2017–2023.*

Unobstructed sight-lines of 145m from a 2.4m set back to the nearside road edge have been provided at the cinema site junction in accordance with TII standards. Please refer to CS Consulting drawing no. CLO-CSC-ZZ-XX-DR-C-0026 for further details.

Refer to CS Consulting drawings CLO-CSC-ZZ-XX-DR-C-0006 and CLO-CSC-ZZ-XX-DR-C-0007 for further details of the proposed link road connection.

5.0 RESPONSE TO AN BORD PLEANÁLA OPINION

An Bord Pleanála has in June 2020 issued an opinion enumerating the items of specific information that should be submitted with any application for permission. The following items among these are of relevance to this Road Infrastructure Design Report:

1. *Rationale for the proposed layout with regard to a detailed Traffic and Transport Impact Assessment, to include consideration of the capacity of the junction between Clonattin Village and the Clonattin Road and other relevant junctions in the area;*

A detailed Traffic Impact Assessment has been carried out to provide an impartial assessment of the operation of relevant road junctions in the vicinity of the subject development. The Clonattin Village / Clonattin Road junction currently operates within capacity on all approaches and will continue to do so past the design year 2038 with the proposed development. Refer to the Traffic Impact Assessment submitted under separate cover within this application for further details.

2. *Achievement of satisfactory emergency access to the development site;*

Access to the subject development shall be available from Clonattin Village and from Courtown Road (via a proposed link road) thereby ensuring emergency access is feasible at all times.

3. *Comprehensive response to the concerns of Wexford County Council regarding the roads access from a single junction at Clonattin Road as outlined in the written submission dated 9th March 2020 and at the tripartite consultation meeting on 12th June 2020;*

Vehicular access has been provided from at multiple locations (from Clonattin Village and from Courtown Road via a proposed link road) to address the concerns of Wexford County Council. Some locations of the proposed vehicle access points are given in Figure 13 to Figure 17. Refer to

CS Consulting drawing nos. CLO-CSC-ZZ-XX-DR-C-0035 and CLO-CSC-ZZ-XX-DR-C-0054 for details of Clonattin Village Road and proposed access points.

Figure 13 – Proposed primary access location on Clonattin Village (view to south)
(*source: CS Consulting*)

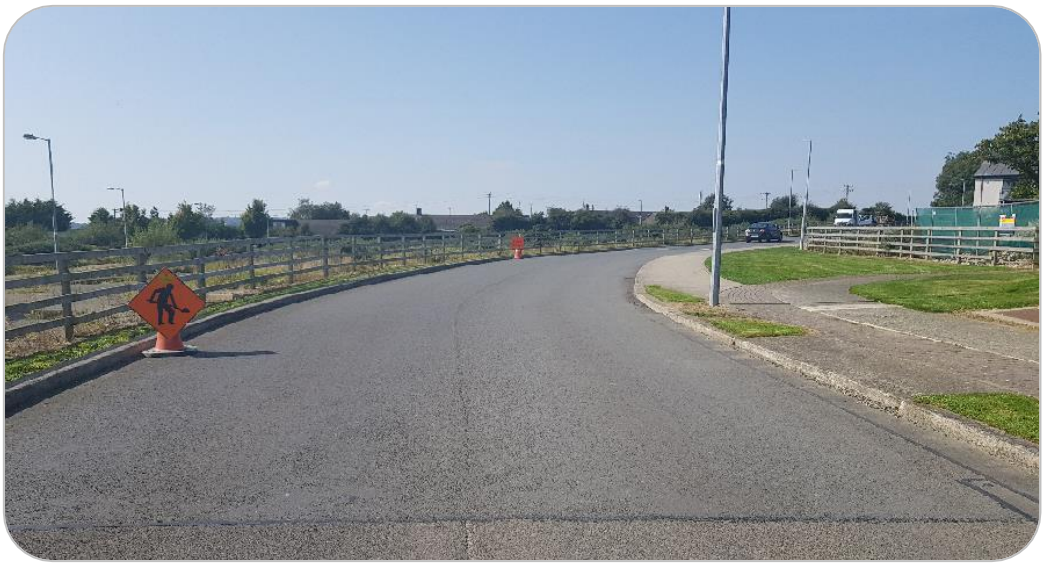

Figure 14 – Proposed access location on Clonattin Village (view to west, access on left)
(*source: CS Consulting*)

Figure 15 – Proposed access location on Clonattin Village (view to south)
(*source: CS Consulting*)

Figure 16 – Proposed access location on Clonattin Village (view to east, access on right)
(*source: CS Consulting*)

Figure 17 – Proposed link road tie-in location (view to north from Cinema Rd)
(*source: CS Consulting*)

4. *Compatibility of the proposed layout with other relevant objectives of the Clonattin Neighbourhood Framework Plan as set out in the Gorey Town and Environs Local Area Plan;*

The *Gorey Local Area Plan 2017–2023* indicates two new link road proposals with alignments running through the subject development site, which would connect Clonattin Road to Courtown Road (R742). The subject application boundary includes the alignment corridor of a new link road that it is proposed to provide as part of the development. Additionally, the internal road layout of the subject development has been designed such that it could also facilitate the future provision of a second link road along other routes identified in the *Gorey Local Area Plan 2017–2023*

5. *Consistency with DMURS;*

A Road Infrastructure Design Report and DMURS statement have been prepared to demonstrate the proposed development's consistency with DMURS.

6. *Rationale for proposed parking provision with regard to development plan parking standards and to the 'Sustainable Urban Housing Design Standards for New Apartments – Guidelines for Planning Authorities' (2018), to include details of car parking management for the apartments;*

The subject development's proposed car parking provision has been assessed with respect to the *Wexford County Development Plan 2013–2019* and the *Design Standards for new Apartments - Guidelines for Planning Authorities*. Refer to the Traffic Impact Assessment submitted under separate cover within this application for further details.

7. *Provision of any necessary upgrade works to the existing Clonattin Village road;*

It is proposed to implement advisory cycle lanes along the existing Clonattin Village road linking the subject development to Clonattin Road. No other upgrade works are proposed on Clonattin Village road. Refer to CS Consulting drawing no. CLO-CSC-ZZ-XX-DR-C-0003 for further details.

8. *Achievement of satisfactory vehicular, cycle and pedestrian connections to adjoining zoned lands;*

The internal road layout of the subject development has been designed to accommodate vehicular, cycle and pedestrian connections to adjoining zoned lands where required. Refer to CS Consulting drawing nos. CLO-CSC-ZZ-XX-DR-C-0002 to CLO-CSC-ZZ-XX-DR-C-0007 for further details of the proposed development internal road layout.

9. *Road Safety Audit and Quality Audit.*

A Quality Audit (including Road Safety Audit, Access Audit, Cycle Audit and Walking Audit) has been undertaken by Roadplan Consulting Ltd. Design changes have been made in response to the recommendations of the Quality Audit and the measures adopted have been accepted by the

audit team. Refer to CS Consulting drawing nos. CLO-CSC-ZZ-XX-DR-C-0056 to CLO-CSC-ZZ-XX-DR-C-0060 for details.

Appendix A

DMURS Statement

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Job Ref: A091

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Date: 20-Oct-20

RE: Strategic Housing Development, Clonattin, Gorey, Co. Wexford

DMURS Statement of Consistency

Cronin & Sutton Consulting Engineers (CS Consulting) have been commissioned by AXIS Construction, in conjunction with a multi-disciplinary design team, to develop a DMURS Statement to accompany a strategic housing planning application for a proposed 363-unit Housing Development and a Creche at Clonattin, Gorey, Co. Wexford. The proposed development also includes the provision of ancillary public open space; residential car parking spaces; visitor car parking spaces; internal roadways and all associated and ancillary infrastructure, landscaping, boundary treatments and development works.

Traffic & Transportation

The proposed scheme is designed in compliance with the following:

- Design Manual for Urban Roads and Streets (2019)
- Wexford County Development Plan 2013–2019
- Gorey Local Area Plan 2017-2023
- National Cycle Manual (2011)
- Department of Transport, Tourism and Sport Smarter Travel guidelines

Internal Road Layout

The internal road layout of the proposed development is designed in accordance with the guidance provided in the *Design Manual for Urban Roads and Streets* (DMURS). As stated in the introduction to the DMURS:

> *"Better street design in urban areas will facilitate the implementation of policy on sustainable living by achieving a better balance between all modes of transport and road users. It will encourage more people to choose to walk, cycle or use public transport by making the experience safer and more pleasant."*

Given the location, shape and topography of the site, and the scale and type of the residential development proposed, we submit that the proposed site layout is well suited to this site.

The final development layout shall incorporate features that benefit vulnerable road users by encouraging low vehicle speeds (such as reduced road corner radii, kerb buildouts, plantings, etc.), following the principle that roads should serve a community and not dominate it. The provision of good permeability for pedestrians, cyclists & public transport are all key objectives of the proposed site layout.

Dated design elements that reflect poor design standards (such as wide roads, long straights or sweeping curves, unnecessarily large junction corner radii, and large junction visibility splays) have been omitted to the extent possible within the masterplan site layout, to reduce vehicle speeds within the development.

The objectives of the evolving site layout design are:

- to keep vehicle speeds low;
- to minimise the intrusion of vehicle traffic;
- to ensure ease of access for emergency services;
- to encourage walking and cycling;
- to create short walking routes to shops, public transport, etc.;
- to create a safe, secure, and pleasant environment for people, particularly vulnerable road users (VRUs) such as children.

Traffic calming and VRU protection measures to be implemented in the design include:

- smaller corner radii;
- arrangement of on-street parking;
- horizontal alignment constraints to restrict vehicle speeds;

The proposed internal service roads shall vary in width from 5.5m to 6.0m and have been designed to permit safe access for emergency and service vehicles with an internal maximum vehicle speed

of 30km/h, with facility for emergency and service vehicle turning movements with the scheme layout.

Car parking areas are arranged so as to minimise conflicts with pedestrian movements. Raised footpaths through the development, separated from the internal roadway by car parking and planting, shall connect to the existing footpaths on the existing section of the access road to the north of the site.

The internal layout of the proposed development shall incorporate numerous design features such as distinctive surface materials and colours, strong landscaping proposals and modern furniture structures, in order to establish a sense of place within an urban neighbourhood environment.

Gordon Finn
Roads & Traffic Engineer
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for Cronin & Sutton Consulting