

Project

**De La Salle Strategic Housing Development,
Ballyfermot Road, Ballyfermot, Dublin 10**

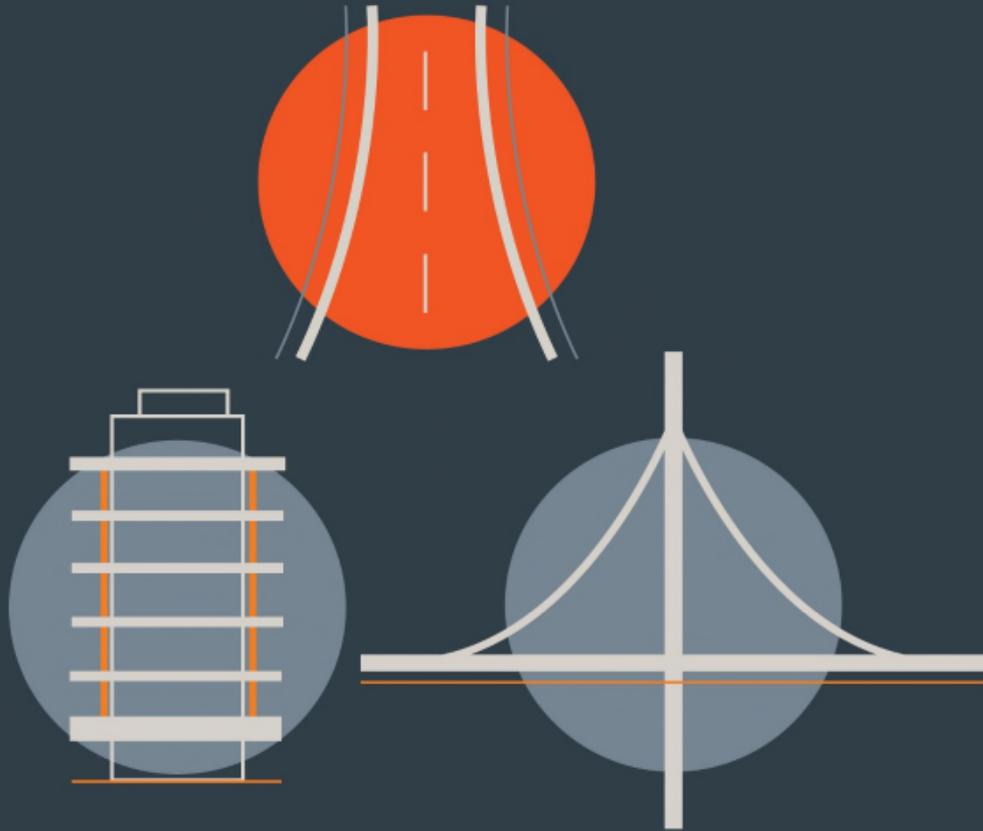
Report Title

DMURS Compliance Statement

Client

Dwyer Nolan Developments Ltd.

TRANSPORTATION



DBFL CONSULTING ENGINEERS

April 2022

Document Control

Job Title: De La Salle Development, Ballyfermot, Dublin 10

Job Number: p180189

Report Ref: 180189-DBFL-TR-XX-RP-C-0003

Author: Sarah Heung / Ilyaas Adams

Reviewed by: Thomas Jennings

Date: April 2022

Distribution: Client
Design Team
DBFL Consulting Engineers
An Bord Pleanála

Revision	Issue Date	Description	Prepared	Reviewed	Approved
Draft	21/09/2021	Design Team Review	SH	TJ	TJ
Final	01/04/2022	For Planning	IA	TJ	TJ

DBFL Consulting Engineers

Dublin Office
Ormond House
Upper Ormond Quay
Dublin 7

Tel 01 4004000
Email info@dbfl.ie
Web www.dbfl.ie

Waterford Office
Suite 8b The Atrium,
Maritana Gate,
Canada Street, Waterford.

Tel 051 309500
Email info@dbfl.ie
Web www.dbfl.ie

Cork Office
14 South Mall
Cork

Tel 021 2024538
Email info@dbfl.ie
Web www.dbfl.ie

This document has been prepared for the exclusive use of our Client and unless otherwise agreed in writing with DBFL Consulting Engineers, no other party may use, make use of, or rely on the contents of this document. The document has been compiled using the resources agreed with the Client, and in accordance with the agreed scope of work. DBFL Consulting Engineers accepts no responsibility or liability for any use that is made of this document other than for the purposes for which it was originally commissioned and prepared, including by any third party, or use by others, of opinions or data contained in this document. DBFL Consulting Engineers accepts no liability for any documents or information supplied by others contained or referenced in this document. It is expressly stated that no independent verification of any documents or information supplied by others for this document has been made. DBFL Consulting Engineers has used reasonable skill, care, and diligence in compiling this document. It should be noted that no changes of whatsoever nature are to be made to any wording, information or details set out or contained in any DBFL document unless the express consent has been obtained in advance, in writing, from DBFL.

TABLE OF CONTENTS

1.0	INTRODUCTION	4
1.1	OVERVIEW	4
1.2	PROPOSED DEVELOPMENT	5
1.3	STRUCTURE OF REPORT	6
2.0	DMURS OBJECTIVES	7
2.1	OVERVIEW	7
2.2	PLACEMAKING.....	7
2.3	THE DMURS USER HIERARCHY	9
2.4	DMURS DESIGN PRINCIPLES.....	9
3.0	DMURS DESIGN ATTRIBUTES	11
4.0	CONCLUSION	17

1.0 INTRODUCTION

1.1 OVERVIEW

1.1.1 DBFL Consulting Engineers (DBFL) have been commissioned by the Dwyer Nolan Developments Ltd. to form part of a multidisciplinary design team who together have been appointed to investigate, analyse, and prepare the preliminary design (and associated planning documentation) for a proposed strategic housing development on a site located the grounds of the former De La Salle National School at Ballyfermot, Dublin 10.

1.1.2 The principal members of the design team include;

- **Delphi Design Architects & Planning Consultants** (Architects & Planning Consultant).
- **Mitchells & Associates** (Landscape Architects).
- **DBFL Consulting Engineers** (Consulting Civil, Structural and Transportation Engineers).

1.1.3 The scheme proposals now being presented to the ABP are the outcome of an integrated design approach that seeks to deliver a sustainable residential community connected by well-designed streets with assimilated open spaces which together deliver safe, secure, convenient, and attractive networks in addition to promoting a real and viable alternative to car-based journeys.

1.1.4 In response to the De La Salle site's characteristics and associated accessibility characteristics it is the design teams view that the design presented for the proposed Strategic Housing Development has maximised every opportunity to ensure consistency with both the principles and design guidance outlined within the Design Manual for Urban Roads and Streets (DMURS) (Version 1.1, 2019).

1.1.5 This DMURS Compliance Report seeks to outline the specific design features that have been incorporated within the proposed SHD scheme with the objective of delivering an integrated design that complies with the guidance outlined within DMURS.

1.1.6 This DMURS compliance report should be reviewed in conjunction with the architectural, landscape and engineering site layout drawings in addition to the following key planning documents all of which form part of the submitted planning application documentation;

- Delphi Design '*Architects Design Statement*'
- Delphi Design '*Planning Report*'

- DBFL Consulting Engineers `Traffic and Transport Assessment' Report

1.2 PROPOSED DEVELOPMENT

- 1.2.1 The subject development lands currently accommodates two structures (i) the former De La Salle School and (ii) the Mount La Salle building which is a Protected Structure (Roman Catholic Church – RPS Ref No. 1348). The immediate areas of the subject site are predominantly residential in nature with some offices and retail while light industrial activity occurs at the north of the site.
- 1.2.2 Within the Dublin City Development Plan (2016-2022), the De La Salle site is zoned as objective Zone Z15 which aims to *"protect and provide for institutional and community uses"*.
- 1.2.3 This DMURS Compliance Statement has been compiled in support of the planning application for the development at the De La Salle lands, Ballyfermot, Dublin 10. The proposal includes for the demolition of existing buildings on site, save for the retention of a Protected Structure on the site i.e. the De La Salle National School central classroom block (RPS Ref No. 8784). The development includes for the renovation and change of use of the 2 storey Protected Structure from previous educational use to (a) proposed childcare use on the ground & first floor and (b) community use on the ground floor; and seeks permission for the relocation of the principal paired entrance gate piers on Ballyfermot Road inwards (northwards) to the site. The development consists of the construction of 927 no. apartments & duplex / triplex units comprised of 325 no. one bed, 538 no. two bed, & 64 no. three bed dwellings, 1 no. commercial unit and 1 no. retail / café unit in 8 no. blocks (Blocks A-H) ranging in height from 2 to 13 storeys, and caters for communal open spaces, including roof gardens, undercroft, basement & surface car parking.
- 1.2.4 Access to the subject site will be from Ballyfermot Road to the south and Lynch's Lane to the west, which are detailed in section 4.2 of the Traffic and Transport Assessment report.
- 1.2.5 The subject site will be highly accessible to pedestrians and cyclists. Pedestrians and cyclists will be given priority within the internal site layout to ensure travel desire lines within the site are accommodated providing a good level of service and ensures the risk of vehicle/pedestrian conflict is minimised.

- 1.2.6 Dedicated pedestrian / cycle paths are proposed throughout the site layout providing a traffic free route between the different sections of the development site.

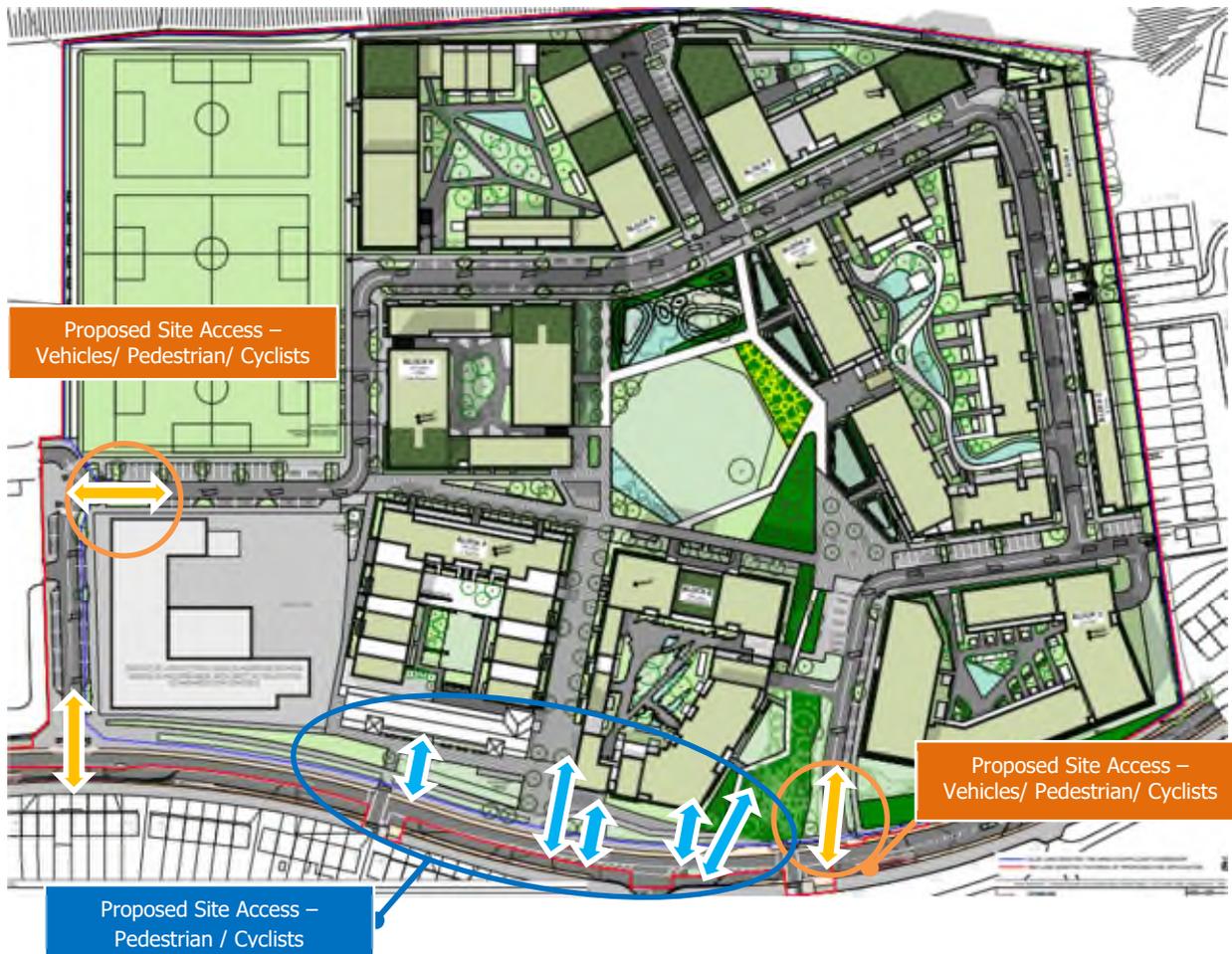


Figure 1.1: Proposed Site Layout & Access Points

1.3 STRUCTURE OF REPORT

- 1.3.1 The key design principles and overriding objectives of DMURS are introduced in **Chapter 2**. A summary of DMURS principal design features and how they have shaped the design of the proposed development are presented in **Chapter 3** subsequently demonstrating the level of compliance between the scheme proposals and DMURS guidance.

2.0 DMURS OBJECTIVES

2.1 OVERVIEW

DMURS seeks to balance the needs of all users, creating well-designed streets at the heart of sustainable communities. It states that:

"Well designed streets can create connected physical, social and transport networks that promote real alternatives to car journeys, namely walking, cycling or public transport"

2.1.1 DMURS also seeks to create streets which are attractive places and encourage designs appropriate to context, character and location that can be used safely and enjoyably by the public. The recommended approach includes the adoption of a more integrated model of street design, where barriers (physical and perceived) are removed to promote more equitable interaction between users in a safe and traffic calmed urban environment

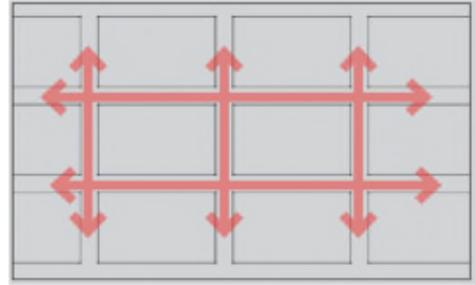
2.1.2 This integrated approach incorporates elements of urban design and landscaping that contribute to positively influence behaviour thereby reducing the necessity for conventional measures (e.g., physical barriers and road geometry) along to manage travel behaviour. The recommended approach creates environments where:

- Street Networks are similar in structure (more eligible) with higher levels of connectivity (more permeability) thus reducing travel distances.
- Higher quality street environments attract pedestrians and cyclists, promoting the use of sustainable modes of transport.
- Self-regulating streets proactively manage vehicle driver behaviour and calm traffic, promoting safer streets.
- Street and junctions are more compact, providing better value for money.

2.2 PLACEMAKING

DMURS recommends that whilst the movement of traffic is still a key issue, there are several others, including the 'sense of place', which are of core significance to the creation of safe and more integrated street designs. DMURS reveals that place can be difficult to define but can be measured and relate to;

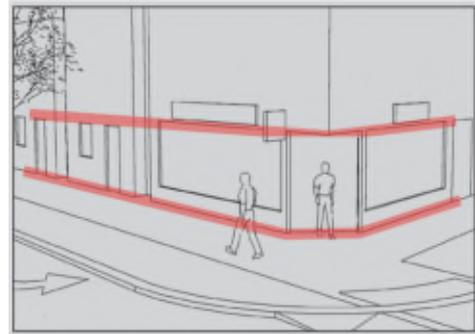
CONNECTIVITY : The creation of a vibrant and active places requires pedestrian activity. This in turn requires walkable street networks that can be easily navigated and are well connected.



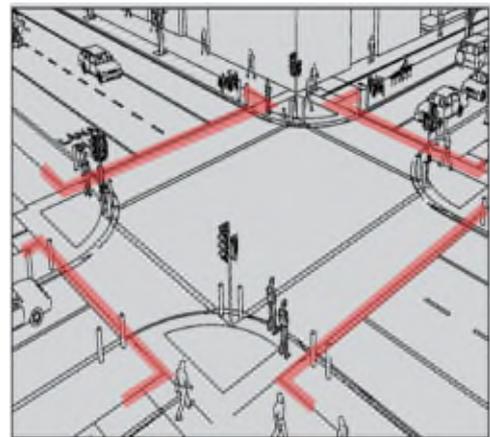
ENCLOSURE : A sense of enclosure spatially defines streets and creates a more intimate and supervised environment. A sense of enclosure is achieved by orientating buildings toward the street and placing them along its edge. The use of street trees can also enhance the feeling of enclosure.



ACTIVE EDGE : An active frontage enlivens the edge of the street creating a more interesting and engaging environment. An active frontage is achieved with frequent entrances and openings that ensure the street is overlooked and generate pedestrian activity as people come and go from buildings.

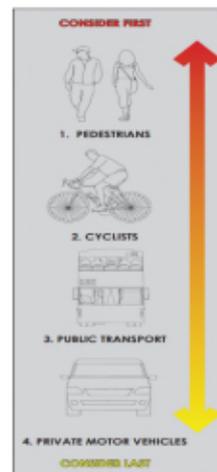


PEDESTRIAN ACTIVITY / FACILITIES: The sense of intimacy, interest and overlooking that is created by a street that is enclosed and lined with active frontages enhances a pedestrian's feeling of security and well-being. Good pedestrian facilities (such as wide footpaths and well-designed crossings) also make walking a more convenient and pleasurable experience that will further encourage pedestrian activity.



2.3 THE DMURS USER HIERARCHY

2.3.1 DMURS set out a clear user hierarchy for scheme designers which prioritises sustainable forms of transport. Walking is the most sustainable form of transport with all journeys beginning / ending on foot. By prioritising design for pedestrians, the number of short journeys taken by car can be reduced, public transport made more accessible and the delivery of walkable communities addresses issues of social equity. DMURS reveals that cyclists must be afforded a high priority as trips by bicycle have the potential to replace motor vehicles as an alternative means of transport for short to medium range trips.



2.3.2 The movement of buses should be prioritised over other motorised vehicles according to DMURS whilst the placement of private motor vehicles at the bottom of the user hierarchy is not anti-car but acknowledges that a balanced solution is required with the needs of the car no longer taking priority over (i) the needs of other users or (ii) the value of place within the proposed residential development and across the local receiving environment.

2.3.3 As outlined in Chapter 3 the design team have adhered closely to this hierarchy, by assigning higher priority to the movement of pedestrians and cyclists within the development and implementing self-regulating streets which actively manage vehicle movements within a low speed, high-quality residential environment.

2.4 DMURS DESIGN PRINCIPLES

2.4.1 At the heart of DMURS is a place-based, integrated approach to road and street design with the following four overarching design principals to be applied to the design of all urban roads and streets.

- **Design Principle 1:** To support the creation of integrated street networks which promote higher levels of permeability and legibility for all users, and in particular more sustainable forms of transport
- **Design Principle 2:** The promotion of multi-functional, place-based streets that balance the needs of all users within a self-regulating environment
- **Design Principle 3:** The quality of the street is measured by the quality of the pedestrian environment

- **Design Principle 4:** Greater communication and co-operation between design professionals through the promotion of a plan-led, multidisciplinary approach to design

2.4.2 Compliance of the proposed development with the design principles of DMURS is described in the following chapter, with details of how these will be implemented through adherence to recommendations in relation to individual design elements.

3.0 DMURS DESIGN ATTRIBUTES

Design Element	DMURS Guidance	Proposed Development Adopted Design Approach
<p>Movement Function</p>	<p>DMURS encourages designers to consider the movement function of a street / street network and develop a street hierarchy reflective of the levels of connectivity required and volumes of traffic</p>	<p>The proposed development’s street hierarchy is illustrated in Appendix A. With the external Ballyfermot Road corridor exhibiting LINK street functions, the proposed internal network incorporates a structured hierarchy of integrated residential streets responding to their context and function attributes;</p> <ul style="list-style-type: none"> • Type 1 : External Primary LOCAL Street (Lynch’s Lane) – 30kph design speed • Type 2 : Internal Primary LOCAL Street – 20kph design speed • Type 3 : Private Car Park (undercroft / basement) – 10-15kph design speed • Type 4 : Emergency Service Vehicles only • Type 5 : Pedestrian/Cycle connection • Type 6 : Pedestrian footpath (leisure route / connection) <p>The subject site is connected to the external LINK Street (Ballyfermot Road) which runs along the southern boundary of the site. Dedicated cycle lanes and segregated footways are proposed to the north and / or south of this LINK street as part of the Core Bus Corridor initiative which will provide enhancements to the current on-street provision. The proposed development has been designed to accommodate these BusConnects CBC proposals. The narrower 5.5m wide internal Primary LOCAL street (20kph) branching off the aforementioned LINK street have been designed to have relatively short lengths of straight sections with tight corner and junction geometry further contributing to managing vehicle speeds. The main function of these LOCAL streets are to provide access within/across the immediate development quarter.</p>
<p>Place Function</p>	<p>The ‘Place Function’ essentially distinguishes a street from a road, achieved largely by creating a relationship between the street and the buildings and spaces that frame it, ultimately resulting in a richer and more fulfilling environment</p>	<p>The adopted design philosophy has sought to achieve a quality ‘sense of place’ by incorporating several green open space areas to encourage social activity. Furthermore, the type of surface materials, landscaping and street furniture have been chosen with consideration of both their aesthetic qualities and context of the existing surrounding environment. The design has also sought to minimise the impact of highway features by avoiding excessive signing, road markings and street furniture. Significant levels of enclosure along each street type as achieved by the building orientation and tree planting contribute to providing a more intimate and supervised street environment.</p>

Design Element	DMURS Guidance	Proposed Development Adopted Design Approach
Street Layout	DMURS looks to encourage street layouts where <i>“all streets lead to other streets, limiting the number of cul-de-sacs that provide no through access”</i> and maximise the number of walkable / cyclable routes between destinations	The street layout has been influenced by several factors including the Dublin City Development Plan 2016-2022, boundary conditions, future and existing development, watercourses, hedgerows and consultations with local residents. The resulting street pattern is largely a grid pattern with some minor curvilinear sections, creating attractive legible streetscapes. The street layout was derived from several factors which include, the shape of the site, boundary conditions and travel desire lines. This has led to the creation of a looped street network that comprises elements of an orthogonal layout but with through access maintained for walking and cycling throughout, thereby maximising connections within the site and complying with DMURS principles. Only one short parking courtyard cul-de-sac is proposed as part of the scheme with appropriate vehicle turning areas provided to negate the need to reverse.
Block Sizes	DMURS states that block dimensions of 60-80m are optimal for pedestrian movement in Centres, whilst block dimensions of up to 100m enable reasonable levels of pedestrian permeability in Neighbourhoods / Suburbs. Block dimensions should not exceed 120m	The blocks sizes within the proposed development (varying from 60m up to 120m maximum) are optimised in line with density and comply with the requirements of DMURS
Wayfinding	DMURS states that in general <i>“the more the orthogonal street layout the more legible it will be (as well as being the most connected)”</i>	The grid and curvilinear street pattern adopted for the proposed development is recognised by DMURS as being generally legible in terms of wayfinding.
Permeability	Permeability can be categorised into four types: <ul style="list-style-type: none"> • Dendritic Networks • Open Networks • 3 Way Off-Set Networks • Filtered Permeability 	The development strategy adopts an open network model with elements of a filtered permeability network, maximising connectivity between key local destinations through the provision of a high degree of permeability to/from the south and legibility for sustainable active forms of travel.
Approach to Speed (Geometry)	DMURS states that designers should balance speed management, the values of place and reasonable expectations of appropriate speed according to Context and Function. Where vehicle movement priorities are low, such as on Local Streets, lower speeds limits should be applied.	The proposed development has adopted the following approach to vehicle speed, with streets designed to ensure they are self-regulating through a combination of ‘soft’ (landscaping and active edges) and ‘hard’ measures (street geometry, raised tables and build outs). <ul style="list-style-type: none"> • Internal Primary LOCAL Street – 20kph design speed • Parking Cul-De-Sac (undrcroft / basement) – 10-15 kph design speed

Design Element	DMURS Guidance	Proposed Development Adopted Design Approach
Street Trees, Planting & Street Furniture	DMURS primarily considers street trees in terms of enclosure and suggests that for ratios of building height and street width within this development that supplementary street trees are desirable	A comprehensive landscape masterplan for the proposed development has been prepared by Mitchells & Associates Landscape Architects. The masterplan reinforces a sense of street enclosure through the addition of street trees with appropriate canopy spreads best suited to Local Streets for optimal compliance with DMURS.
Active Street Edges	Designers should aim for active street edges which provide passive surveillance and promote pedestrian activity	On-street activity is promoted within the internal layout of all internal Local Streets and Pedestrian / Cycle Only Urban Streets through the adoption of 'own-door' dwellings and corner plots have been designed with dual aspect units.
Signage & Line Marking	DMURS notes that designers should use discretion with regard to the self-regulating characteristics of streets and the impact of signs / line marking on the value of place	In recognition of the low speed nature and higher place function of Local Streets , the proposed design has sought to specify minimal signage and line markings along the internal local streets with such treatments used sensitively throughout.
Materials & Finishes	DMURS states that designers should use <i>'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'</i>	The range of proposed materials is in line with the requirements of DMURS with Local Streets (e.g. leading to/from the site access nodes with the Link Street) will be formed using standard macadam / asphalt finishes. At each of the at-grade flat top pedestrian crossing / traffic calming table treatments, different surface material treatments are proposed to alert and subsequently influence driver behaviour and vehicle speeds.
Footways	DMURS notes that well designed footpaths are free of obstacles and wide enough to allow pedestrians to pass each other in comfort.	Clear, unobstructed footpaths of no less than 2.0m wide are provided throughout the scheme, with connections and tie-ins to existing external pedestrian networks thereby complying with DMURS requirements. Greenways (shared ped / cycle connections) have been designed to incorporate 3.0m wide facilities as per the guidance outlined in the National Cycle Manual which accompany DMURS
Pedestrian Crossings	DMURS considers crossings to be <i>"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"</i> .	Well-designed pedestrian crossing facilities are provided at frequent intervals along key travel desire lines throughout the scheme in addition to those located at street nodes. All courtesy crossings are provided with either dropped kerbs or a raised flat top treatment thereby allowing pedestrians to informally assert a degree of priority. All informal pedestrian crossing facilities are at least 2.0m wide, whilst all controlled pedestrian crossings are at least 2.4m wide and all toucan crossings are 4.0m wide or more.

Design Element	DMURS Guidance	Proposed Development Adopted Design Approach
Corner Radii	Reducing corner radii improves pedestrian and cyclist safety at junctions by lowering vehicle speeds and increasing inter-visibility between users	<p>With the objective of encouraging low vehicle speeds and maximising pedestrian safety and convenience, corner radii have been provided as per DMURS guidance, at:</p> <ul style="list-style-type: none"> • Link / Local nodes has been specified as 5.0m - 6.0m where required as informed by swept path analysis, and • Local / Local nodes has been specified as 3.0m
Pedestrian & Shared Surfaces	In the context of the proposed development, DMURS recognises the use of shared surfaces as being highly desirable where <i>“movement priorities are low and there is a high place value in promoting more liveable streets (i.e. homezones) such as on local streets within neighbourhood”</i>	A number of Courtyards are proposed within the development and have been designed to incorporate features that ensure drivers recognise that they must proceed with caution within a low speed environment and that they are likely to be sharing the space with non motorised users. This has been achieved by applying differing materials and finishes within the design philosophy of residential Homezones.
Carriageway Width	DMURS states that LINK Streets should lie in the range of 5.5m to 7m, while on Local Streets carriageway widths should be between 5.0m-5.5m and on local streets where a shared surface is provided should not exceed 4.8m	<p>The proposed residential developments internal street network are considered to be compliant with DMURS, incorporating the following carriageway width characteristics:</p> <ul style="list-style-type: none"> • Carriageway Type 1 Primary LOCAL Street – Typically 5.5m wide carriageway • Carriageway Type 2 : Cul-De-Sac Parking Courtyard - Typically 5.5m wide carriageway
Carriageway Surfaces	Where low design speeds are desirable (i.e. 30km/h) DMURS states that changes in colour and/or texture of the carriageway should be used periodically such as at crossings or where shared carriageways are proposed (i.e. 10-20km/h) applied to the full length of the street	Raised traffic calming features (e.g. flat top junction treatments), pedestrian crossings and shared surfaces will be differentiated through the application of differing coloured surfacing on the carriageways.
Junction Design	Junction design has traditionally been determined by traffic volumes however DMURS recommends that designers should now take a more balanced approach to junction design catering for all road users specific requirements	All junctions within the proposed development will be priority controlled which is consistent with the proposed internal traffic flow characteristics with geometry that complies with the requirement of DMURS for junctions between Local Streets and between Local / Link Streets whilst retaining the flexibility for bus / coaches to gain access to Lynch’s Lane (adjacent to the site of potential future school).
Forward Visibility & Visibility Splays	DMURS provides SSD Standards in relation to forward visibility requirements at junctions to ensure drivers have sufficient reaction time	Appropriate clear unobstructed visibility splays on both the horizontal and vertical planes, as per DMURS requirements; are provided / safeguarded at all internal nodes and at the site access junctions to the external road network in response to the adopted design speeds.

Design Element	DMURS Guidance	Proposed Development Adopted Design Approach
Horizontal & Vertical Deflections	DMURS highlights that traffic calming features should be provided on longer straights where there is more than 70m between junctions	In addition to the tight corner radii adopted and introduction of right-angled bends in the alignment, vertical deflections in the form of raised tables (affording greater priority to pedestrians) have been strategically placed across the internal Local Street network to promote lower design speeds and enable pedestrians to cross the street at-grade. Raised tables / platforms have been located at Local / Link nodes. The maximum height of these raised flat top treatments is designed to be 75mm with a minimum flat top width of 2.0m. Junction layout designs (e.g. change of priority), kerb buildouts and speed reduction bends have also been incorporated into the Local Streets as traffic calming features making the local streets self-regulating.
Kerbs	DMURS provides indicative kerbs heights of 125mm on Link Streets for clear segregation, while lower kerb heights of 60mm are appropriate pedestrian activity is higher & design speeds lower i.e. Local Streets and no kerb should be provided for shared surface	Internally within the development carriageway kerb heights will comply with DMURS requirements having been specified as follows: <ul style="list-style-type: none"> • Primary Local Streets: 60mm
On-Street Parking	Well designed on-street parking can help calm traffic, although a balance needs to be struck as an over provision will conflict with sustainability objectives and be visually dominant.	In accordance with DMURS, parking is to be provided through a mix of <ul style="list-style-type: none"> • On-street : kerbside perpendicular spaces (5m x 2.5m), • On-street : kerbside parallel spaces (6m x 2.5m), • Off-street : private car parking courtyards, and • Off-street : private car parking at basement / undercroft level. The provision of on-street car parking includes both parallel and perpendicular parking bays along either one or both sides of the internal local streets. The potential dominance of both on and off street car park areas are minimised through the provision of landscaped buffers and street trees. Furthermore the number of continuous on-street parking bays is restricted to 3 parallel bays and 6 perpendicular bays as per DMURS recommendations
Multi-disciplinary Design Team	DMURS advocates multi-disciplinary input into the development of a scheme to ensure a holistic design approach is implemented	In accordance with design philosophy of DMURS, the proposed development has been prepared by a multi-disciplinary design team including Delphi Design Architects & Planning Consultants (architects), DBFL Consulting Engineers (civil engineers & transport planning), Mitchells & Associates (landscape architects)).

Design Element	DMURS Guidance	Proposed Development Adopted Design Approach
Road Safety Audit (RSA)	RSAs are required to identify potential hazards and how they could affect road users. They should be undertaken in full cognisance of the principles, approaches and standards contained within DMURS	RSAs will be considered for all stages of the development to ensure adequate and appropriate measures are included guaranteeing satisfactory standards of personal and traffic safety. A Stage 1/2 Road Safety Audit (RSA) has been carried out by an independent Road Safety Auditor (Bruton Consulting Engineers) as part of this application.

4.0 CONCLUSION

4.1.1 The design approach adopted for the proposed Strategic Housing Development has sought to respect best practice examples presented in DMURS. As detailed above, the following DMURS initiatives have been adopted throughout the masterplan with the objective of delivering a legible network with street networks structured to draw people towards focal points, which are also used to achieve a low speed environment, discourage through traffic and offer self-regulating street environments that successfully balance the functional needs of different users, enhance the sense of place and manage speed in a manner that does not rely on extensive regulatory controls and physically intrusive measures for enforcement.

- The promotion of low-speed environments and avoidance of long continuous streets;
- The location of buildings close to street edges;
- Continuity of built frontages;
- Active ground floor uses;
- Encouragement and facilitation of high levels of pedestrian and cyclist activity;
- The provision of frequent pedestrian and cyclist crossing points;
- Horizontal and vertical deflections along carriageways to include raised traffic tables;
- Narrow carriageways;
- On-street parking of appropriate design / layout as per DMURS guidance;
- Tighter corner radii;
- Shared surfaces for vehicles, pedestrians and cyclists in appropriate lightly trafficked environments, and
- Frequent tree planting along streets to provide a sense of enclosure.

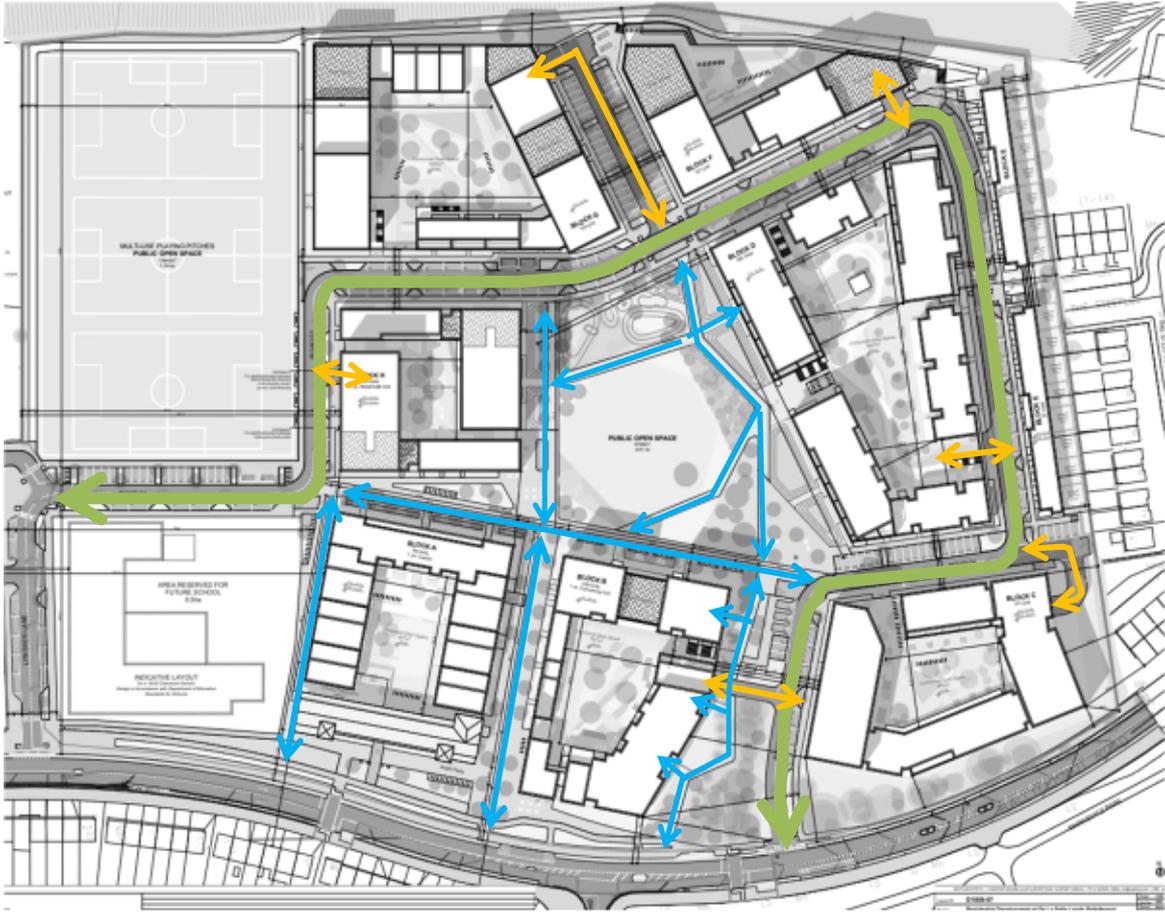
APPENDIX A

Proposed Street / Linkages Hierarchy



- Street Type 1** : External LINK Street (Ballyfermot Road) ██████████
- Street Type 2** : External Primary LOCAL Street (Lynch’s Lane) – 30kph..... ██████████
- Street Type 3** : Internal Primary LOCAL Street – 20kph Design Speed..... ██████████
- Street Type 4** : Private Parking Undercroft / Basement – 10-15kph Design Speed ██████████
- Street Type 5** : Emergency Service Vehicles only ██████████
- Existing Street within the area-wide street hierarchy ↔

Figure A1: Proposed Development Street Hierarchy



- Linkage Type 1 : Footpaths on one or both sides of the street
- Linkage Type 2 : Leisure Pedestrian / Cycle Routes
- Linkage Type 3 : Private Parking Undercroft / Basement

Figure A2: Pedestrian Linkages