

Ballymastone Phase 3

DMURS Design Statement

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1 Introduction

1.1 Background

DBFL Consulting Engineers have been commissioned by Glenveagh Living Ltd to prepare a DMURS Design Statement with regards to the proposed Phase 3 Residential Development at Ballymastone, Donabate, Co. Dublin.

The proposed development will consist of the construction of a residential development, which represents Phase 3 of the wider development of the Ballymastone Lands, ranging in height from 2- to 6-storeys, to accommodate 398 no. residential dwellings (including a mix of apartments, duplexes and houses), private amenity space, a crèche (c. 646sq.m), and a community space (c. 100sq.m).

The site will accommodate 316 no. car parking spaces in total (comprised of 288 no. residential spaces, 10 no. spaces for the proposed crèche/community space, 6 no. EV charging spaces including accessible spaces, and 12 no. spaces ducted for future provision), 1,619 total no. bicycle parking spaces, new pedestrian/cycle links, road improvements, storage, services (including water, wastewater, electricity and telecommunications) and plant areas. Landscaping will include communal amenity areas, SuDS features, and significant public open space (c. 15.3% of the net site) including outdoor exercise and play equipment.

The purpose of this report is to identify the specific design features that have been incorporated within the proposed residential scheme with the objective of delivering a design that is consistent with both the principles and guidance outlined within the Design Manual for Urban Roads and Streets (DMURS) (Version 1.1, 2019).

The scheme proposals are the outcome of an integrated design approach that seeks to implement a sustainable community connected by well-designed streets which will deliver safe, convenient, and attractive networks in addition to promoting a real and viable alternative to car-based journeys.

The following documents, which are included as part of this LDR Opinion Request with the Planning submission, were reviewed among others:

- DBFL Consulting Engineers 'Traffic and Transport Assessment'
- Existing Transportation Linkages: Drg. No. 20003-DBF-XXXX-XX-DR-C01-113000
- Proposed Transportation Linkages: Drg. No. 20003-DBF-XXXX-XX-DR-C01-113001
- Overall Roads Layout: Drg. No. 20003-DBF-XXXX-XX-DR-C01-123000

- Roads Layout Sheet 1: Drg. No. 20003-DBF-XXXX-XX-DR-C01-123001
- Roads Layout Sheet 2: Drg. No. 20003-DBF-XXXX-XX-DR-C01-123002
- DDR Junction Layout: Drg. No. 20003-DBF-XXXX-XX-DR-C01-123005
- Proposed Road Hierarchy: Drg. No. 20003-DBF-XXXX-XX-DR-C01-123004
- Parking Allocation Plan: Drg. No. 20003-DBF-XXXX-XX-DR-C01-123010
- Overall Kerb Layout: Drg. No. 20003-DBF-XXXX-XX-DR-C01-123030
- Kerb Layout Sheet 1: Drg. No. 20003-DBF-XXXX-XX-DR-C01-123031
- Kerb Layout Sheet 2: Drg. No. 20003-DBF-XXXX-XX-DR-C01-123032
- Vehicle Tracking Layout Sheet 1: Drg. No. 20003-DBF-XXXX-XX-DR-C01-123001
- Vehicle Tracking Layout Sheet 2: Drg. No. 20003-DBF-XXXX-XX-DR-C01-123002
- Road Construction Details Sheet 1: Drg. No. 20003-DBF-XXXX-XX-DR-C01-523001
- Road Construction Details Sheet 2: Drg. No. 20003-DBF-XXXX-XX-DR-C01-523002
- Road Construction Details Sheet 3: Drg. No. 20003-DBF-XXXX-XX-DR-C01-523003
- Road Construction Details Sheet 4: Drg. No. 20003-DBF-XXXX-XX-DR-C01-523004
- Road Construction Details Sheet 5: Drg. No. 20003-DBF-XXXX-XX-DR-C01-523005

2 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”.

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.

2.2 The DMURS User Hierarchy

DMURS set out a clear a user hierarchy which promotes and prioritises sustainable forms of transport that designers must follow when preparing schemes. The Ballymastone Phase 3 development design team have adhered 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 movement in a low speed, high quality residential environment.

2.3 DMURS DESIGN PRINCIPLES

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

The ways in which the proposed the proposed development complies and adheres to the design principles of DMURS is described in the following sections, with details of how the various design elements will be implemented throughout the scheme.

3 DMURS Design Attributes

Design Element	DMURS Guidance	Proposed Development Adopted Design Approach
Movement Function	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	The proposed development street hierarchy is composed largely of Local Streets, the main function of these being to provide access within/across the development, with a small number of Link Streets which connect development traffic to the wider network. These Local Streets have been further sub-categorised into Primary Local and Secondary Local in respect of the differing levels and mix of motorised/non-motorised traffic accommodated on each. The proposed development has direct access to the Donabate Distributor Road (DDR) to the east of the site. The DDR provides connections to the wider network including Arterial Streets such as the R126 to the west of the site which, in turn provides connections between the proposed development and the local town centre and community infrastructure such as schools, leisure facilities, sports clubs and medical/healthcare facilities. They also provide connections to strategic routes including the M50 to the south which provides strategic network access across the Greater Dublin Area and the M1 which provides links to Drogheda and Dundalk to the north. The overall network design has sought to optimise connectivity to/from public transport, including the Donabate Train Station to the west of the site, and cater for high volumes of pedestrians and cyclists. In parallel, the adopted design philosophy has also sought to consider the context / place status of each street in terms of level of connectivity and permeability provided, quality of the proposed design, level of pedestrian/cyclist activity and vulnerable users requirements whilst identifying appropriate 'transition' solutions between the different street types.

Design Element	DMURS Guidance	Proposed Development Adopted Design Approach
Place Function	The ' <i>Place Function</i> ' 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	The adopted design philosophy has sought to achieve a quality ' <i>sense of place</i> ' by incorporating several large green open space areas to encourage social activity including linear parks running north-south and east-west across the site. 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.
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 Donabate LAP March 2016, Fingal Development Plan 2023-2029, along with the previously approved Phase 1 and Phase 2 residential developments (Planning Ref: LRD0008/S3 and LRD0039/S3), boundary conditions, future and existing development, watercourses and hedgerows. The resulting street pattern is largely a grid pattern with some curvilinear sections, creating attractive curvilinear streetscapes. The use of cul-de-sacs has been limited with filtered permeability maintained for walking / cycling throughout, thereby optimising the permeability of the site and complying with DMURS design principles.
Block Sizes	DMURS state the following optimal block dimensions:	The block sizes within the proposed Ballymastone development are optimised in line with density being predominantly between <100m and thereby comply with the requirements of DMURS. These compact block

Design Element	DMURS Guidance	Proposed Development Adopted Design Approach
	• 60-80m for local centres • 100m in neighbourhoods or suburbs Block dimensions should not exceed 120m	sizes within the development maximise accessibility and permeability particularly for those travelling on foot or by bicycle.
Wayfinding	DMURS states " <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 legible in terms of wayfinding. The taller building height of the apartment blocks and duplexes which flank the DDR will further aid people in wayfinding around and through the site.
Permeability	Permeability can be categorised into four types: • Dendritic Networks • Open Networks • 3 Way Off-Set Networks • Filtered Permeability	The development strategy primarily adopts an open network model with elements of filtered permeability incorporated into the design, thereby maximising connectivity between key local destinations. The scheme affords a high degree of permeability and legibility for all network users, particularly for sustainable forms of travel. Filtered permeability is provided for example between the units which line the DDR providing links to/from to the dedicated footpaths and cycle tracks affording direct along the DDR and through the open space areas, providing convenient access for pedestrians and cyclists. Further permeability will also be achieved to the west via the existing residential area of The Links. This will enhance connectivity not only for future occupants travelling between the development and Donabate village centre, but also benefit current residents travelling east toward the DDR and future Recreational Hub development.

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		In addition to the paths along the Local Streets, the development incorporates an extensive network of off road pedestrian/cyclist paths through the open spaces. The connections maximise permeability through the development and to the wider residential area and cycling network by delivering a high quality, attractive facilities along what will be key travel desire lines. The development also layout offers a well-connected, self-regulating street network with appropriate levels of internal connectivity for motorists via the Primary and Secondary Local Streets.
Approach to Speed	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 (30km/h)	The proposed Local Streets have been designed in accordance with DMURS design parameters for a 30kph design 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).
Street Trees, Planting & Street Furniture	DMURS primarily considers street trees in terms of enclosure and suggests that	A comprehensive landscape masterplan for the proposed development has been prepared by Cunnane Stratton Reynolds Landscape Architects. The landscape masterplan reinforces a sense of street enclosure

Design Element	DMURS Guidance	Proposed Development Adopted Design Approach
	for ratios of building height and street width within this development that supplementary street trees are desirable	through the addition of areas of planting and street trees with appropriate canopy spreads best suited to the network of internal Local Streets and Homezone areas 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 through the adoption of 'own-door' dwellings and direct access to the apartments and duplex units from the Local Streets along with corner plots being designed as 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 low movement function of the Local Streets and Homezones , the proposed design has sought to specify minimal signage and line markings along the internal streets with such treatments used sensitively throughout.
Materials & Finishes	DMURS states designers should use " <i>contrasting materials and textures to inform pedestrians of</i>	The range of proposed materials is in line with the requirements of DMURS with Primary and Secondary Local Streets will be formed using standard macadam / asphalt finishes. It is proposed to use a coloured asphalt surface treatment on the Homezone areas. At each of the at-grade flat top pedestrian crossing /

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	<i>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>	traffic calming table treatments, different surface material treatments are proposed to alert and subsequently influence driver behaviour and vehicle speeds. The use of tactile paving has been applied throughout in accordance with the guidance contained within the Traffic Management Guidelines (2003) and the UK Guidance on the use of Tactile Paving Surfaces to ensure a logical and navigable pedestrian environment is delivered for those with visual impairments.
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 2.0m wide are provided throughout the scheme, with connections and tie-ins to existing external pedestrian networks. High-quality off-road links through the open spaces areas are provided at 4.0m wide.
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 / continuous footpath treatment thereby allowing pedestrians to informally assert a degree of priority. All informal pedestrian crossing facilities are at least 2.0m wide.

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	With the objective of encouraging low vehicle speeds and maximising pedestrian safety and convenience, corner radii have been provided as per DMURS guidance being predominantly 3.0m-4.0m, with the exception of a small number which are 6.0m required due to road alignment and swept path requirements.
Cycling Facilities	DMURS refers to the <i>National Cycle Manual (NCM)</i> as the principle form of guidance in relation to guidance on the design and provision of appropriate cycle facilities.	Phase 3 of the development ties into the active travel facilities being provided as part of Phase 1 and Phase 2 of the development and will help to encourage and promote cycling not only for the proposed residential development, but for the future recreational and educational development proposed on the lands to the east of the DDR. Along the remaining lightly trafficked, low speed internal streets, cyclists will share the carriageway with other street users as per the CDM guidance for such situations. This well designed integrated environment will provide a high Quality of Service for cyclists by offering quiet, interesting and well-surfaced streets along with the self-evident and self-enforcing nature of the environment.
Carriageway Widths	DMURS recommends the following carriageway / lane widths: • Local Street lane widths within the range of 2.5-	The proposed residential developments internal street network and carriageway widths are compliant with DMURS, incorporating: • Link Street: The Link Streets comprise 6.0m wide carriageways, providing direct connections to the wider network including the DDR and Portrane Road. • Primary Local Streets:

Design Element	DMURS Guidance	Proposed Development Adopted Design Approach
	2.75m (i.e. carriageway width of 5.0m-5.5m) • Shared Surface carriageway width should not exceed 4.8m	The Primary Local Streets comprise 5.5m wide carriageways providing direct connections between the Secondary Local Streets and Link Streets. • Secondary Local Streets: The street network within the development also comprises Secondary Local Streets which have 5.0m wide carriageways. • Homezones The shared surface areas will be designed to have a 4.8m wide surface width and will be differentiated from local street through contrasting colour surfacing.
Carriageway Surfaces	For low design speeds (i.e. 30km/h) changes in colour and/or texture should be used, where shared carriageways proposed (i.e. 10-20km/h) applied to the full length of the street	The Local Street and Homezone network will be primarily formed using standard macadam / coloured asphalt finishes. Contrasting materials will also be applied at the at-grade flat top crossing / traffic calming treatments to assist in alert drivers to the low speed environment and reinforce pedestrian/cyclist priority at crossings. Contrasting coloured surfacing will also be applied to the cycle tracks to increase driver awareness of the presence of cyclists.
Junction Design	This is determined by traffic volumes and designers should take a balanced approach to junction design catering for all users	All junctions within the proposed Phase 3 development will be priority controlled which is consistent with the proposed traffic flows and complies with the requirement of DMURS.

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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.
Horizontal & Vertical Deflections	DMURS highlights that traffic calming features should be provided on longer straights where there is more than 70m between junctions	Vertical deflections in the form of raised tables have been strategically placed across the internal street network to promote lower design speeds, enable pedestrians to cross key nodes at-grade. Horizontal deflections including buildouts and speed reduction bends have also been incorporated at strategic locations to create a self-regulating speed environment as well as offering opportunities to facilitate soft landscaping features such as street trees.
Kerbs	DMURS recommends kerbs heights of 125mm on Link Streets and lower kerb heights of 60mm where pedestrian activity is higher & design speeds lower. No kerb for shared surface.	Internally within the development carriageway kerb heights will comply with DMURS requirements and include the following: • Flush kerbs (6mm max) will be provided in Homezone areas • Chamfered Kerbface (30mm – 50mm) provided where vehicles will cross over cycle tracks / footpaths, thereby avoid dipped tracks / paths • Reduced kerb height (60mm-75mm) in areas where Homezones abut open space areas • Full height kerb (100mm-125mm) in all remaining areas
On-Street Parking	Well-designed on-street parking can help calm	In accordance with DMURS, parking is provided through a mix of in curtilage perpendicular spaces measuring: - In curtilage (dwellings): 5.0m x 2.5m

Design Element	DMURS Guidance	Proposed Development Adopted Design Approach
	traffic, although a balance needs to be struck as an over provision will conflict with sustainability objectives and be visually dominant.	- On-street perpendicular spaces: 5.0m x 2.5m - On-street parallel spaces: 6.0m x 2.4m minimum The potential dominance of on street car parking, particularly around the apartment blocks, is actively managed through the provision of landscaped buffers, street trees and the provision of landscaped communal open space areas with blocks of perpendicular parking being limited to no more than six spaces.
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 Ballymastone scheme has been prepared by a multi-disciplinary design team including Brady Shipman Martin (planning), McCauley Daye O'Connell Architects, DBFL Consulting Engineers (civil engineers & transport planning) and Cunnane Stratton Reynolds (landscape architects).

4 Summary and Conclusion

4.1 Summary

DBFL Consulting Engineers have been commissioned to prepare a Design Manual for Urban Road and Street (DMURS) Design Statement with regards to the proposed Phase 3 Residential Development at Ballymastone, in Donabate, Co. Dublin. The report has sought to identify how the scheme is consistent with and adheres to the principle and guidance within DMURS and supporting guidance such as the Cycle Design Manual (CDM).

The development layout has been prepared with careful consideration of optimising connectivity between key local areas through the provision of a high degree of permeability and legibility for all network users and particularly prioritising sustainable forms of travel.

Furthermore, the scheme will tie into and expand the overall pedestrian and cycle network being delivered as part of the Phase 1 and Phase 2 development, including connections to the continuous east-west shared path which provides links to key destinations including Donabate town centre, Donabate Rail Station, bus routes to the west and the future Educational and Recreational Hub to the east of the site.

The scheme also ties into the proposed pedestrian/cyclist infrastructure upgrades along The Links which enhance connectivity between key destinations of to the north of Portrane Road (including Donabate Portrane Community Centre, Donabate Portrane Educate Together National School, Donabate Community College) and the future Recreational Hub, via the off-road 4.0m east-west shared path which runs through the development.

Accordingly, the proposed residential scheme delivers greater modal and route choices along direct, attractive and safe linkages to a range of amenities, public transport nodes and local service destinations as illustrated in the supporting proposed transportation linkages plan submitted as part of the planning application.

The development layout incorporates a clear and legible hierarchy of streets. The development can be accessed via the DDR signalised junction and connection to the existing The Links street. The internal network of Local Streets provide connectivity and access within/through the proposed new residential community.

The design approach also sought to achieve a quality 'sense of place' by incorporating several large open green spaces areas including large linear parks. The context / place status of each Local Street was also considered in terms of the level of connectivity provided, level of pedestrian/cyclist

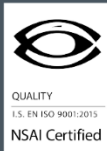
activity and vulnerable users requirements, whilst identifying appropriate 'transition' solutions between different street types.

Appropriately sized blocks, together with the grid and curvilinear street patterns and filtered permeability delivers an overall street network that is highly permeable, legible and accessible in nature for all road users.

4.2 Conclusion

The preceding sections of this report outline the specific Ballymastone Phase 3 Residential Scheme attributes which contribute to achieving the DMURS design objectives. The overall design approach successfully achieves an appropriate balance between the functional requirements of different network users, whilst also providing for an enhanced sense of place. The implementation of a self-regulating street network will actively manage movement by offering real modal and route choices in a low speed, high quality residential environment.

Consequently, the proposed development at Ballymastone is the outcome of an integrated design approach which will ultimately deliver safe, convenient and attractive networks in addition to promoting real and viable alternatives to car-based journeys.



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