

Project

**Proposed Residential Development
Regles, Lusk, Co. Dublin**

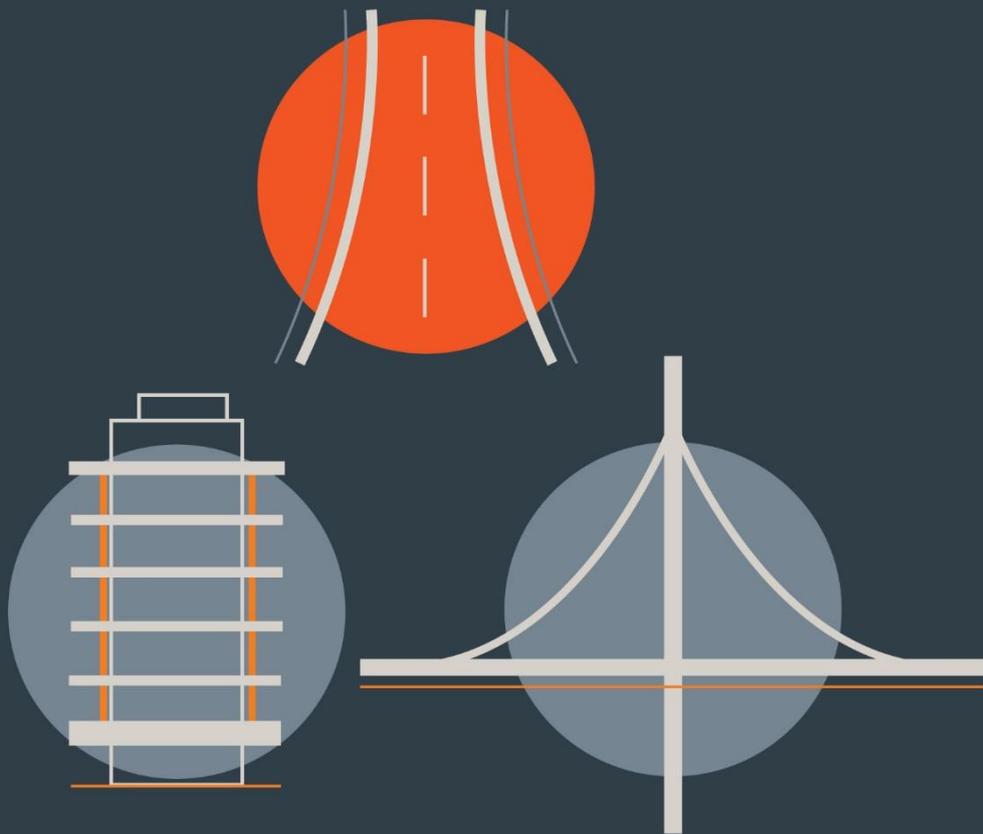
Report Title

DMURS Compliance Statement

Client

DWYER NOLAN DEVELOPMENTS LTD.

TRANSPORTATION



DBFL CONSULTING ENGINEERS

March 2022

Document Control

Job Title: Residential Development, Regles, Lusk, Co. Dublin

Job Number: p170006

Report Ref: 170006-DBFL-TR-XX-RP-C-8004

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Reviewed by: Thomas Jennings

Date: March 2022

Distribution: Client
Design Team
Planning Authority
DBFL Consulting Engineers

Revision	Issue Date	Description	Prepared	Reviewed	Approved
Final	16/06/2021	Stage 1 Submission	IA	TJ	TJ
Rev.A	09/03/2022	Planning Draft	SAS	MMK	TJ
Final	10/03/2022	Planning	SAS	MMK	TJ

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1.0 INTRODUCTION

1.1 OVERVIEW

1.1.1 DBFL Consulting Engineers (DBFL) have been commissioned by 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 SHD planning documentation) for a proposed residential development located at Regles in Lusk Co. Dublin.

1.1.2 The principal members of the design team include;

- **Armstrong Fenton Associates** (Planning Consultant).
- **Davey Smith Architects** (Architects).
- **Ronan Mac Diarmada & Associates** (Landscape Architects).
- **DBFL** (Consulting Civil, Structural and Transportation Engineers).

1.1.3 The scheme proposals now being presented to the planning authority 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 Lusk sites' characteristics and associated accessibility characteristics it is the design teams view that the design presented for the proposed residential 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 residential 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;

- Davey Smith Architects ***Design Statement***
- DBFL Consulting Engineers ***Traffic and Transport Assessment***' Report
- DBFL Dwg 170006-DBFL-RD-SP-DR-C-1001 entitled ***Road Layout***
- Ronan Mac Diarmada & Associates ***Landscape Design Rationale***'

1.2 PROPOSED DEVELOPMENT

- 1.2.1 The subject development land is approximately 23km north of Dublin City Centre and 1km to the west of Lusk urban centre in the administrative area of Fingal County Council. The subject lands are located to the north of Ministers Road in the western suburbs of Lusk Village. The subject green field site is bound to the east by Round Towers GAA Club, to the north by agricultural lands while the southern boundary is formed by Minister's Road.
- 1.2.2 This DMURS Compliance Statement has been compiled in support of the Stage 1 SHD planning application for the development at Regles, Lusk. The proposals incorporating a mixture of private and public housing and comprises a total of 312 no. residential units including:
- 67 no. Apartments,
 - 40 no. Duplex Units, and
 - 205 no. Houses
- 1.2.3 Access to the subject site will be provided via two new priority-controlled junctions on Minister's Road. These junctions will be utilised by all modes of transport travelling to/from the proposed development. The western access will be incorporated into Dun Emer Avenue/Minister Road priority junction, thereby creating a crossroad junction. The proposed eastern access will form a new priority-controlled tree arm T-junction on Minister's Rd. The proposed site access locations benefit from good visibility splays of 2.4m x 70m achievable at both locations as per the requirements.
- 1.2.4 The subject site will be highly accessible to pedestrians and cyclists from Minister's Road. Pedestrians will be given priority within the internal site layout to ensure desire lines within the site are accommodated, providing a good level of service and ensures the risk of vehicle/pedestrian conflict is minimised.
- 1.2.5 The proposals include the provision of a new cycle track along the northern side of Ministers Road over the entire length of the proposed developments site frontage in response to the local road authorities to enhance the provision of dedicated bicycle infrastructure along the northern side of Minister Road.



Figure 1.1: Plan Layout

1.3 STRUCTURE OF REPORT

1.3.1 The key design principles and overriding objectives of DMURS are introduced in **Chapter 2**.

1.3.2 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

2.1.1 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"

2.1.2 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

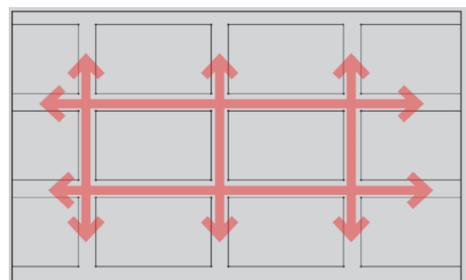
2.1.3 This integrated approach incorporates elements of urban design and landscaping that contribute to positively influence behaviour thereby reducing the necessity for conventional measures (e.g. physical barriers and road geometry) along to manage travel behaviour. The recommended approach creates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

2.2.1 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;

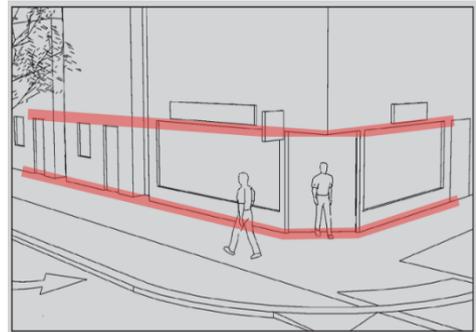
CONNECTIVITY : *The creation of a vibrant and active places requires pedestrian activity. This in turn requires walkable street networks that can be easily navigated and are well connected.*



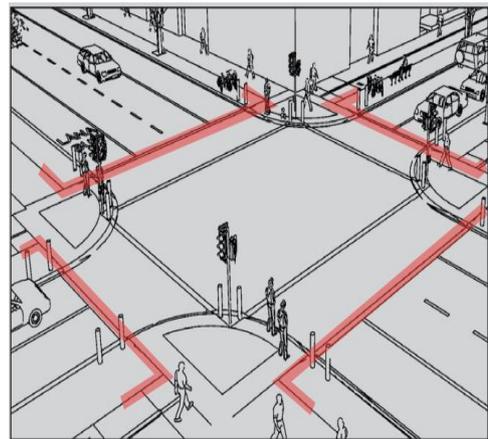
ENCLOSURE : A sense of enclosure spatially defines streets and creates a more intimate and supervised environment. A sense of enclosure is achieved by orientating buildings toward the street and placing them along its edge. The use of street trees can also enhance the feeling of enclosure.



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.

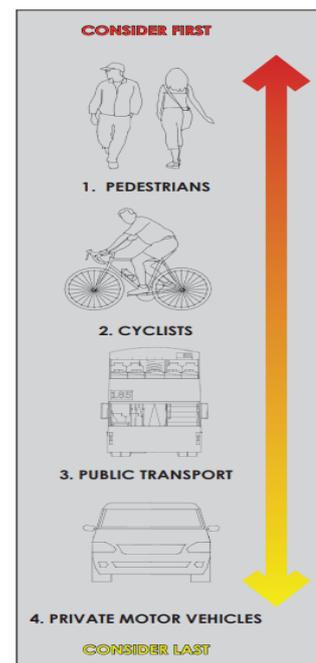


PEDESTRAIN ACTIVITY / FACILITIES: The sense of intimacy, interest and overlooking that is created by a street that is enclosed and lined with active frontages enhances a pedestrian's feeling of security and well-being. Good pedestrian facilities (such as wide footpaths and well designed crossings) also 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 Primary Development Road exhibiting LOCAL 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 : Primary Local Street – 30kph design speed • Type 2 : Secondary Local Street – 20kph design speed • Type 3 : Shared surface ‘Homezone’ – 20kph design speed • Type 4 : Pedestrian footpath (leisure route / connection) <p>Meandering through the subject site, the Primary LOCAL Street connects to Minister’s Road providing easy access to Dublin, Balbriggan and Lusk. This LOCAL street is designed in accordance with the standard as set out by DMURS (however to facilitate areas of perpendicular parking 6m carriageway width has been adopted for the Primary Local Street) has been purposively designed (30kph design speed) through the masterplan development lands to actively manage vehicle speeds.</p> <p>The narrower (5.5m) Secondary LOCAL streets (20kph) branching off the aforementioned Primary LOCAL 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 Secondary LOCAL streets is to provide access within/across the immediate development quarter. The ‘Homezone’ (20kph) will be enclosed lightly trafficked vehicle squares/ Cul-de-sac’s with onwads permeability provided for only pedestrians and cyclists. Within the courtyards higher quality material specifications will be applied to influence its place function.</p>
<p>Place Function</p>	<p>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</p>	<p>The adopted design philosophy has sought to achieve a quality ‘<i>sense of place</i>’ by incorporating several quality 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, active 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 Fingal County Council Development Plan 2017-2023, boundary conditions, future and existing development, watercourses, and hedgerows. The resulting street pattern is largely a grid pattern with some minor curvilinear sections, creating attractive legible and traffic calmed streetscapes. The street layout was derived from several factors which include, the distinct shape of the site, boundary conditions and travel desire lines. This has led to the creation of a street network that comprises elements of an orthogonal and organic layout in specific areas but with through access maintained for walking and cycling throughout, thereby maximising connections within the site and adopting only short Cul-de-sac lengths which offer opportunities for future pedestrian and cycle permeability to neighbouring lands or and when required.
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 are optimised in line with density and comply with the requirements of DMURS (between 60m-120m).
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 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 and legibility for sustainable forms of travel.
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 speed 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 and raised tables). <ul style="list-style-type: none"> • Primary Road – LOCAL Street (30kph) • Secondary LOCAL Street – 20kph design speed • Tertiary - 'Homezone' – 20kph 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 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 connection through the adoption of 'own-door' dwellings and corner plots have been designed with dual aspect units to maximise pensive surveillance opportunities.
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 Minister's Road and predominantly at key junctions.
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 off-site requirements of DMURS with Local Streets (e.g. leading to/from the site access nodes with the Link Street) will be formed using standard tarmac/tarmac with colour chip. 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 appropriate width are provided throughout the scheme, with connections and tie-ins to existing external pedestrian networks thereby complying with DMURS requirements.
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 in accordance with the standards as set out by DMURS.

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"> • Internal Primary Local / Secondary Local nodes has been specified as 3.0m • LINK/ LOCAL node (site access junction) nodes have been as 6.0m.
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>	The proposed residential development promotes the concept of more liveable streets. The development incorporates many pedestrian amenities such as ‘play areas’ catering to all age groups. Furthermore, shared surfaces have been incorporated and 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 is considered to be compliant with DMURS, incorporating the following carriageway width characteristics:</p> <ul style="list-style-type: none"> • Carriageway Type 1 : The Primary LOCAL Street – A width of 6.0m has been provided which is noted as being slightly wider to the DMURS requirement of 5.5m. The 6.0m has been provided for sufficient manoeuvring space into 2.5m wide perpendicular car parking bays. • Carriageway Type 2 secondary LOCAL Street – Typically 5.5m wide carriageway as per the DMURS guideline. • Carriageway Type 3 : Shared surface ‘Homezone’ – Typically 4.8 wide carriageway complying with the standards as set out by DMURS.
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 such as Homezone area will be differentiated through the application of differing coloured surfacing on the carriageways.
Junction Design	DMURS notes that junction design has traditionally being determined by traffic volumes however it 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 traffic flows and complies with the requirement of DMURS for junctions between Local Streets and between Local / Link Streets.

Design Element	DMURS Guidance	Proposed Development Adopted Design Approach
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. <ul style="list-style-type: none"> • Site Access Junctions (50kph design speed) • Internal Primary LOCAL/Secondary LOCAL junctions (30kph design speed) • Secondary LOCAL junctions and private access points (20kph design speed)
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 Local Street network to promote lower design speeds and enable pedestrians to cross the street at-grade. Raised tables / platforms have been located at a number of internal 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). Speed reduction bends have also been incorporated into the Local Streets as traffic calming features thereby maximising the local streets self-regulating abilities.
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"> • External Link Street: 125mm, • Internal Primary / Secondary Local Streets: 60mm • Shared Streets/Courtyards: No raised kerb
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 provided through a mix of in curtilage perpendicular spaces measuring 5m x 2.5m, off streetcar park areas and parallel spaces measuring 6m x 2.5m. The provision of on-streetcar 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 streetcar park areas are minimised through the provision of landscaped buffers and street trees in parallel with the sizing of primary parking clusters.
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 Davey Smith (architects), DBFL Consulting Engineers (civil engineers & transport planning), and Ronan Mac Diarmada & Associates (landscape architects).

