



DMURS Report, including DMURS Statement of Consistency

Cherry Orchard Point – Proposed Development at Sites 4 and 5,
Park West Avenue, Dublin 10

October 2023

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This document has been prepared and checked in accordance with Waterman Group's IMS (BS EN ISO 9001: 2015 and BS EN ISO 14001: 2015)

Issue	Date	Prepared by	Checked by	Approved by
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Comments

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1. Introduction

1.1 Background of Report

This DMURS Report has been prepared by Waterman Moylan as part of the planning documentation for a proposed development at Sites 4 and 5, Park West Avenue, Dublin 10.

This report assesses the guidelines and design criteria as set out by the Design Manual for Urban Roads and Streets 2019 (DMURS) and illustrates how the proposed development is in accordance with such. The development of the road network design has also been finalised in conjunction with addressing the items highlighted in the Quality Audit. This Quality Audit incorporates a Road Safety Audit, and has been undertaken by Martin Deegan of Traffico, who have undertaken this Quality Audit as independent auditors. The Quality Audit is submitted under a separate cover as a standalone report.

1.2 Site Location and Description

The subject masterplan development is comprised of 2 No. sites. Site 4 & Site 5 are bisected by Park West Avenue and lie to the west and east of this roadway respectively, as per the blue boundary lines indicated on *Figure 1* overleaf.

Site 4 is bound to the west by the M50, to the south by the Dublin-Kildare rail line and the Park West & Cherry Orchard station, and to the east and north by Park West Avenue. Site 5 is bound to the west by Park West Avenue, the northwest by Cedar Brook Way, the northeast and east by Barnville Park, and to the south by the Dublin-Kildare rail line and the residential unit of 62 Barnville Park.

Site 4 is currently access via a secured gate from Park West Avenue. Site 5 is accessed via a similar arrangement from Cedar Brook Way.

The area of the subject application is indicated by the red boundary line, also on *Figure 1* overleaf. A letter of consent has been obtained from the Local Authority for the area of public works required.

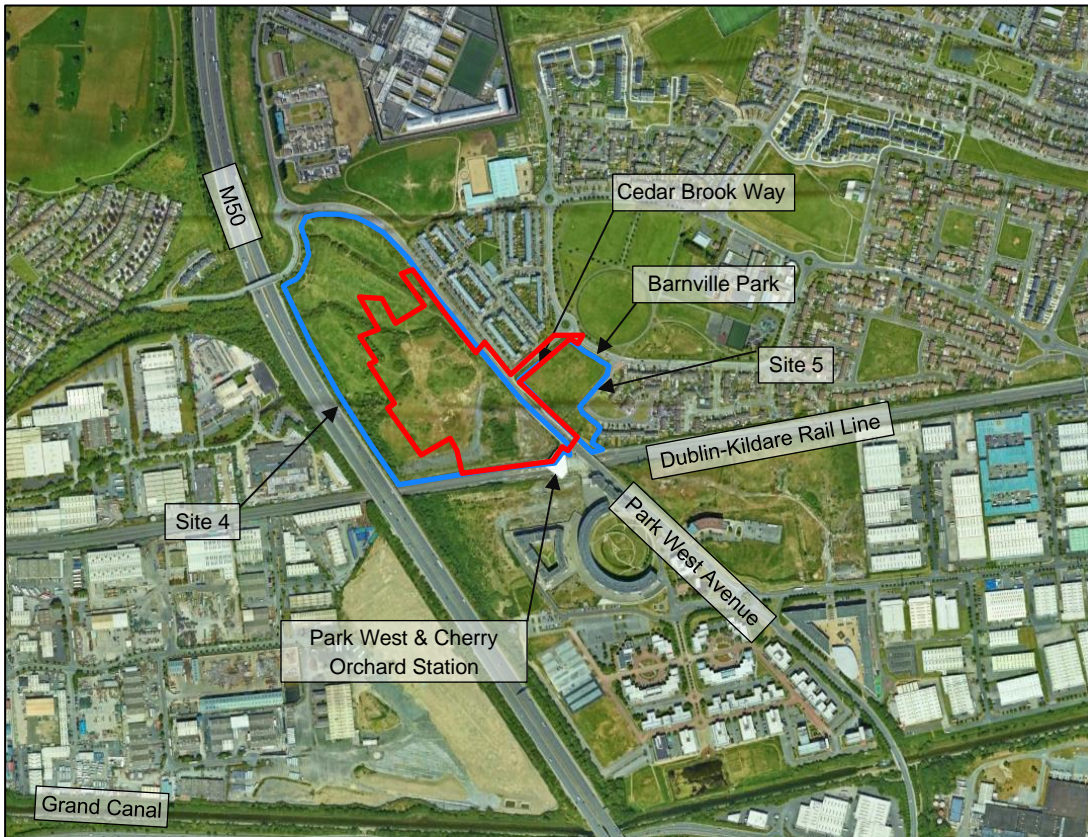


Figure 1 | Site Location (Source: Google Earth)

The overall masterplan development area as per the blue line boundaries is c. 13.02ha, with Site 4 being c. 11.41 ha and Site 5 being c. 1.61ha. The area of the subject application indicated by the redline boundary, including for works in the public domain, is 6.16ha (61,648m²).

1.3 Proposed Subject Development

The subject application is for Phase 1 of a 4-phase masterplan development as per *Figure 2*, overleaf.

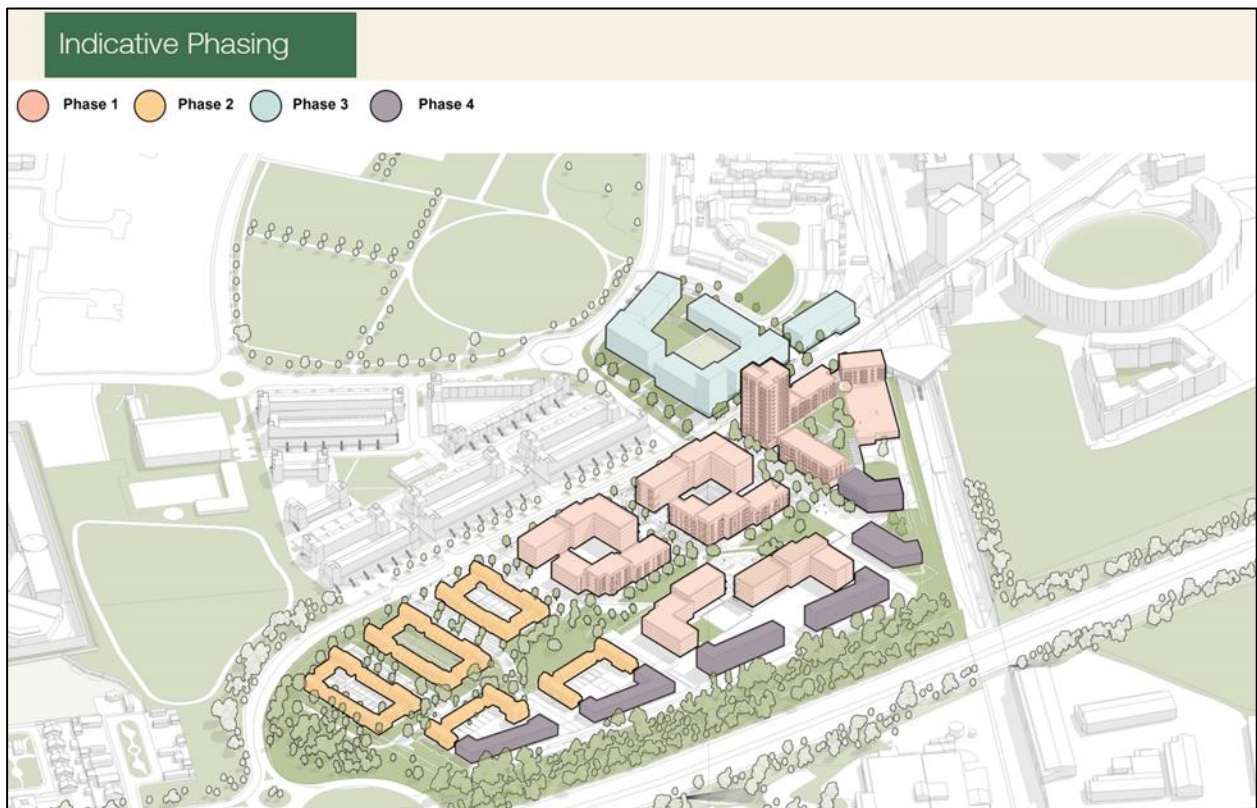


Figure 2 | Phasing Layout

Phase 1 is the medium and high-density area and the subject application area, which will provide a total of 708 residential units ranging in size from studio to 3-bed apartments, a 2,523m² supermarket, a combined area of 373m² for retail over 7 units, a 672m² creche and 1,222m² of community spaces over 13 buildings.

The development includes all associated site works, undergrounding of overhead lines, boundary treatments, drainage, and service connections.

1.4 Proposed Masterplan Development

The remainder of phases as per *Figure 2* will be subject to their own planning permission applications, however their preliminary details are outlined below so that the subject development may be assessed as part of the full masterplan development in its full context. It should be noted that the trunk foul and surface water drainage, including attenuation storage, to serve phases 2, 3, & 4 are part-provided under the subject application for Phase 1.

Phase 2: This is the low-density housing area located to the north of Site 4 and contains 153 residential units comprising 100 apartment/ duplex units and 53 houses.

Phase 3: This will be the development of Site 5, and comprises 254 residential units, 1,200m² of retail space, with community facilities to be confirmed.

Phase 4: This will be the construction of commercial office space over 6 blocks with a total area of c. 16,310m².

2. Roads and Transport Network

This section provides an overview of the existing and proposed road and transportation network in the vicinity of the site. A comprehensive Traffic and Transport Assessment and a Mobility Management and Travel Plan have been prepared by Waterman Moylan in accordance with the requirements of the Traffic and Transport Assessment Guidelines published by National Roads Authority in May 2014 and accompanies this submission under separate covers.

2.1 Existing Road Layout

Sites 4 (west) & Site 5 (east) are bisected by Park West Avenue. Site 4 is bound to the west by the M50 and to the south by the Dublin-Kildare rail line. Site 5 is bound to the northwest by Cedar Brook Way, to the northeast and southeast by Barnville Park. It is further bound to the south by the Dublin Kildare rail line.



Figure 3 | Park West Avenue & Cedar Brook Way Junction Facing Northwest

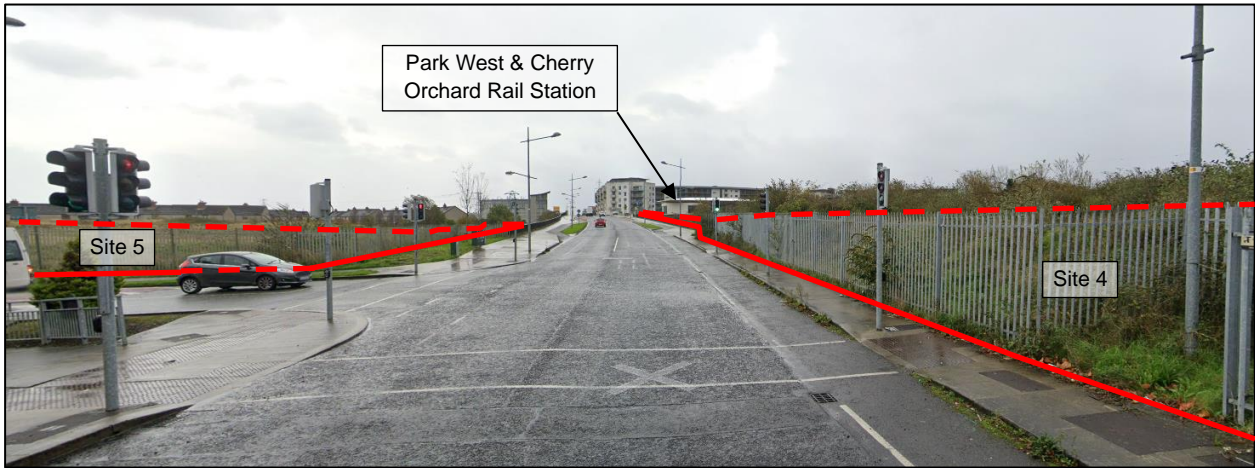


Figure 4 | Park West Avenue & Cedar Brook Way Junction Facing Southeast

Park West Avenue terminates to the north of Site 4 as the eastern arm of a 3-arm roundabout. The western arm is an overpass of the M50, while the northern arm is the Cloverhill Road which leads to the R833 (Ballyfermot Road). Southwards, the Park West Avenue connects with the R134 (New Nagor Road) at Fox and Geese.

Park West Avenue is a generally a 9m wide carriageway, with pedestrian and cycle paths on both sides of the road. The cycle lane on the east side of Park West Avenue becomes an on-road cycle lane for the crossing of the T-junction with Cedar Brook Way. Signalised pedestrian crossings are present at this location. Park West Avenue has a posted speed limit of 50kph.



Figure 5 | Site 4 (left) & Site 5 (right) Existing Access Points

2.2 Proposed Masterplan Road Layout

Site 4 is proposed to have 4 access points from the Park West Avenue. 2 of these access points will be direct to Homezones which serve the nearby apartment blocks. The other access points form the entrances/exits for the site’s main circulation route. The northernmost of the access points will be formed with a 4-way signalised junction with Park West Avenue and Cedar Brook Walk, the western entrance to the Cedar Brook residential development. The southern access to Site 4 will be a 4-way signalised junction with Park West Avenue and the realigned Cedar Brook Way. *Figure 6* overleaf is an extract of Drawing Number: 22-010-P010 Showing the Site 4 access points. This drawing is included as part of the planning submission.

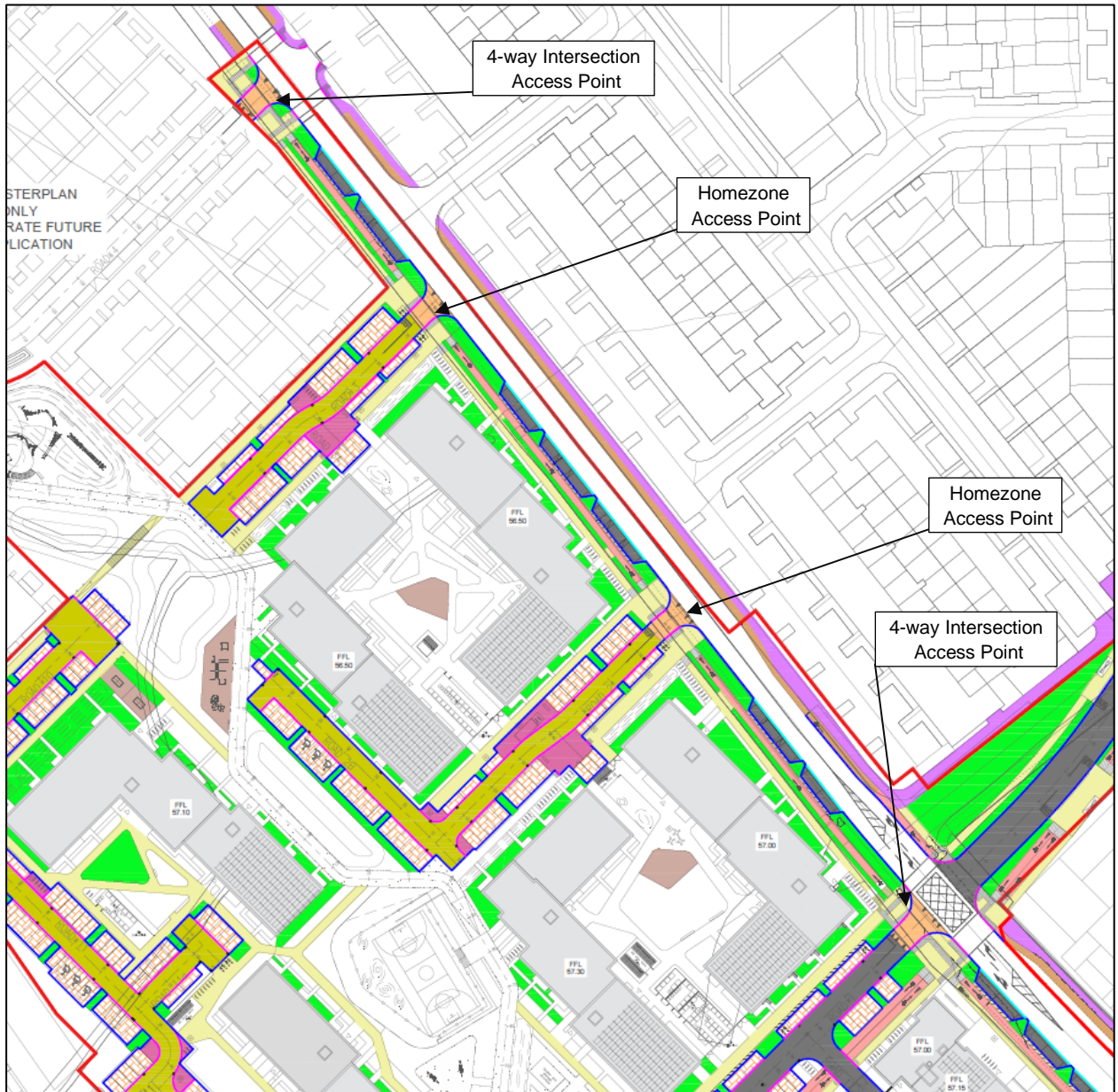


Figure 6 | Extract from Drawing Number: 22-010-P010

Site 5 will be served by 1 No. access point to the southeast of the site from Barnville Park cul-de-sac.

The main circulation road through Site 4 will be provided by Road 1 and its connection to Road 4, which has 2 access points from the Park West Avenue to the north at the 4-way intersection, and to the south from the signalised junction. This road will have a carriageway width of 6.5m.

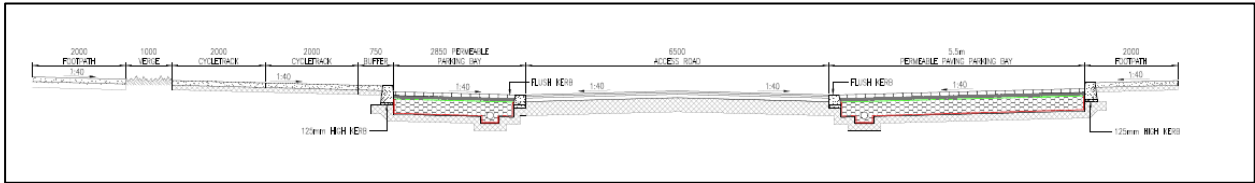


Figure 7 | Roads 1 & 4 Typical Cross-Section

Roads 1, 10, 11, 11a, & 12 will be local access roads and will access the site via the southern Road 1 access point. These roads will be afforded further route options as the masterplan phases are constructed. These roads will have a carriageway width of 5.5m.

Roads 13, 14, 15, 16, & 17 branch off Road 1 in a southerly direction and provide access to the commercial area parking and residential parking associated with upper floor residential units of these blocks.

Roads 2 and 3 are homezones which will be accessed directly from Park West Avenue and will also have a carriageway width of 5.5m. The homezones have been incorporated at selected locations where the road surface will be shared by cars, pedestrians, and cyclists with the associated reduction in vehicular priority.

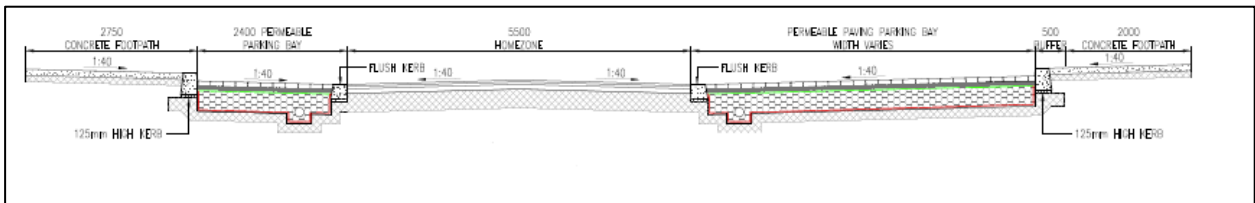


Figure 8 | Roads 2 & 3 Typical Cross-Section

Footpaths throughout the site will be 2m wide at minimum. In areas where pedestrian activity is projected to be of a higher volume, the widths will be increased.

The layout of the proposed developments road network has focused heavily on the desire line and permeability of pedestrians and cyclists, and their connectivity to local public transport hubs, such as bus stops and the Park West & Cherry Orchard rail station, as well as to commercial spaces and local shops and amenities.

The road layout and details are shown the following drawing numbers:

- 22-010-P010 Proposed Surfacing Layout.
- 22-010-P100 to P103 Proposed Road Layout & Levels.
- 22-010-P104 Junction Traffic Lights Layout.
- 22-010-P105 Road Cross Sections.
- 22-010-P106 Parkway Avenue-Cedar Brook way – Cycling Routes.
- 22-010-P120 Road Construction Details.
- 22-010-P130 Proposed Sightlines.
- 22-010-P140 Phase 1 Refuse Vehicle Movements.
- 22-010-P141 HGV Turning Movements at Supermarket Turning Head.

- 22-010-P142 Arial Platform Turning Movements.
- 22-010-P150 Parking Space Layout.

3. Design Manual for Urban Roads and Streets (DMURS)

3.1 Background

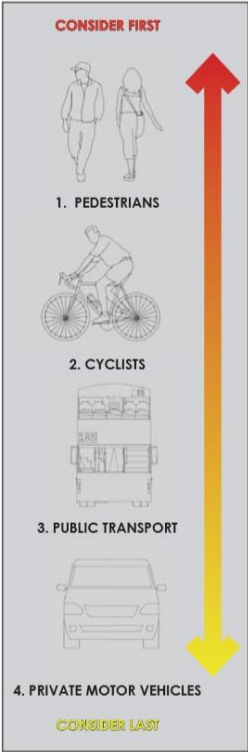
The stated objective of DMURS is to achieve better street design in urban areas. This will encourage more people to choose to walk, cycle or use public transport by making the experience safer and more pleasant. It will lower traffic speeds, reduce unnecessary car use, and create a built environment that promotes healthy lifestyles and responds more sympathetically to the distinctive nature of individual communities and places. The implementation of DMURS is intended to enhance how we go about our business, how we interact with each other, and have a positive impact on our enjoyment of the places to and through which we travel.

3.2 DMURS: Statement of Design Consistency

Waterman Moylan Consulting Engineers considers that the proposed road and street design is consistent with the principles and guidance outlined in the Design Manual for Urban Roads and Streets (DMURS). Outlined below are some of the specific design features that have been incorporated within the proposed scheme with the objective of delivering a design that is in compliance with DMURS.

3.3 Creating a Sense of Place

Four characteristics represent the basic measures that should be established in order to create people friendly streets that facilitate more sustainable neighbourhoods. These characteristics are connectivity, enclosure, active edges, and pedestrian activities/facilities.



Connectivity:

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

In order of importance, DMURS prioritises pedestrians, cyclists, public transport, and private cars. This is illustrated in the adjacent image extracted from DMURS.

The proposed development has been designed with pedestrians and cyclists taking precedence over other modes of transport. In this regard, footpaths are provided throughout the development with regular pedestrian crossings along anticipated desire lines. Footpaths within the development will be 2m wide at minimum, which is wide enough to allow 2 wheelchairs to pass each other without inconvenience.

Pedestrian crossings have been designed to allow pedestrians to cross the street at grade. ‘Homezones’ are proposed, which provide a safe space for residents, pedestrians, and cyclists with the dominance of cars reduced. Homezones are similar in design to shared surface style streets but located in residential areas. These can be viewed on the Proposed Surfacing Layout drawing. This drawing indicates the proposed homezones and also identifies the location of pedestrian crossings. All crossings will utilise tactile paving and drop kerbing to facilitate safe crossings at grade, and have been located on elevated road surfaces, such as

raised tables and the aforementioned homezones. These elevated road surfaces can only be accessed by car via a ramp, which is one of many safety measures implemented throughout the development, and in line with the recommendations of DMURS, to reduce the speed of vehicles. These elevated road surfaces will be of a different colour, and potentially texture, the exact composition of which is to be agreed with the Council, to further make motorists aware of the change of user priority, this being a change from a vehicle priority road to a pedestrian priority surface.

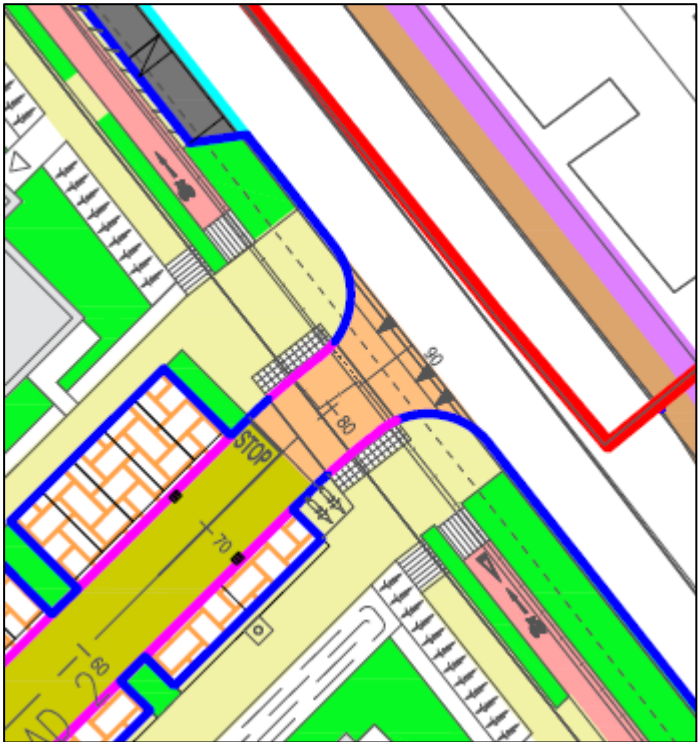


Figure 9 | *Example of a Pedestrian Crossing and Homezone Interface*

DMURS notes that cul-de-sacs should not dominate residential layouts, and their use should be limited. In particular, the number of walkable/cyclable routes between destinations should be maximised. Owing to the internal circulation route between the site access point, dendritic cells have typically been avoided, and through traffic does not need to be considered given the that the access points are to the same road with no potential for further connections to the north south and west given the topography, rail lines, and M50 respectively. Section 3.3.2 of DMURS notes that cul-de-sacs may be used to serve a small number of dwellings, to enable more compact/efficient forms of development. The proposed development does include some cul-de-sacs however, the proposed masterplan layout facilitates pedestrian and cyclist movement. The proposed cul-de-sacs are safe, with clear, open sightlines and passive surveillance.

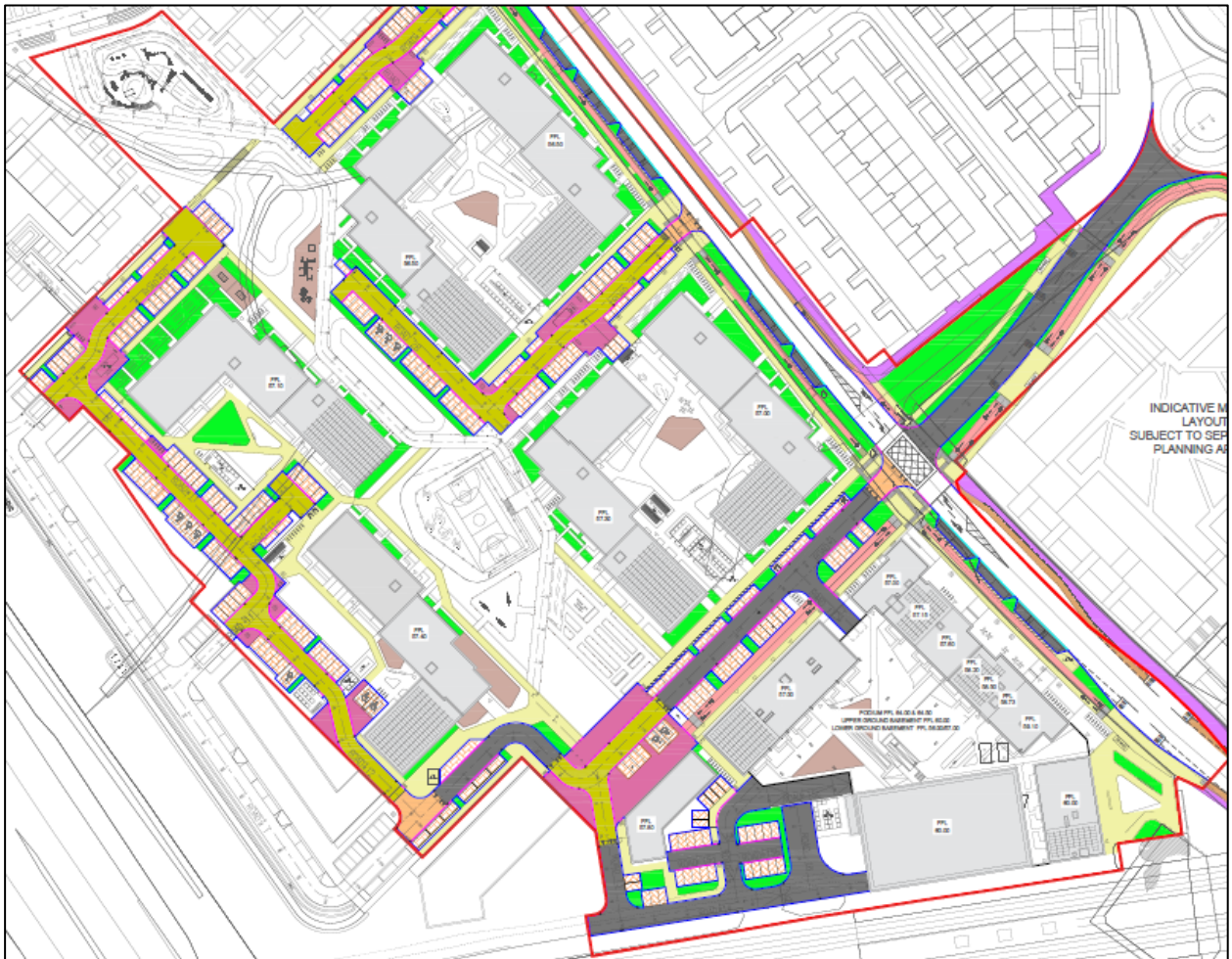


Figure 10 | Pedestrian and Cyclist Connectivity westwards via the “Central Green Corridor”

For Site 4, due to boundary constraints such as the M50 to the west and rail lines to the south, topography to the north, and the developed lands to the west, it is not considered realistic that there is potential for future pedestrian and cyclist connectivity routes to enter the site from those adjacent lands to the west and south. As such, no proposals have been made to facilitate future connectivity. For Site 5, the adjacent lands have already been developed. Pedestrian and cyclist connectivity to and through the site has been accounted for as part of the masterplan layout. Again, please note that the subject application is for Phase 1, and that Phases 2, 3, & 4 (Site 4 North, Site 5, & Site 4 West respectively), will be the subject of separate future planning applications.

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 towards the street and placing them along its edge. The use of street trees can also enhance the feeling of enclosure.”

The proposed development has been designed with residential units overlooking streets and pedestrian routes throughout. High quality landscaping and tree planting are proposed throughout the scheme which

creates a definitive sense of place. Road widths are generally 5.5m throughout the development and ensure that a strong sense of enclosure is achieved on residential roads.

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.”

As stated in Sections 2.2.1 & 4.2.3 of DMURS, 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. Section 3.4.1 of DMURS further notes that designers should avoid the creation of Dendritic networks, which place heavy restrictions on movement. This has been incorporated through the main internal circulation route, and the lack of desire lines for pedestrian/cyclist to and from the south and west, and the lack of potential future connectivity requirements to be considered due to the site boundaries topography, proximity to existing residential development, and existing infrastructural networks of the rail lines and M50.

The provision of pedestrian crossings will encourage and facilitate pedestrian and cyclist activity. The proposal includes strategically placed raised tables, which will promote lower vehicular speeds while enabling pedestrians to cross the street at grade, in accordance with Section 4.4.7 of DMURS.

There are a number of advantages to more permeable networks in regard to the management of traffic and vehicle speeds. Drivers are more likely to maintain lower speeds over shorter distances than over longer ones. Since drivers are able to access individual properties more directly from Access/Link streets (where speeds are more moderate), they are more likely to comply with lower speed limits on Local streets, as stated in Section 3.4.1 of DMURS. All proposed roads shall have a maximum speed limit of 30 km/h in accordance with Smarter Travel (2009) requirements for central urban areas.

Section 4.3.4 of DMURS advises that “The key condition for the design of any shared surface is that drivers, upon entering the street, recognise that they are in a share space and react by driving very slowly (20km/h or less)”. This is achieved through several measures such as ramps up entering homezones, a change in road surface colour and potentially texture (subject to local authority Taking in Charge requirements and approval). And appropriate road signage.

Section 4.4.7 of DMURS recommends the use of horizontal and vertical deflections on straights where there is more than 70m between junctions. The internal road network of the proposed development has been designed by the Civil Engineers in conjunction with the Architects so as to ensure that this distance of 70m has not been exceeded through the development, or where longer than 70m that a suitable deflection has been introduced. On-street parking separates pedestrians from the vehicle carriageway and, as per DMURS Section 4.4.9, can calm traffic by increasing driver caution, contribute to pedestrian comfort by providing a buffer between the vehicular carriageway and footpath and provide good levels of passive security. On-street parking has been designed at selected locations to implement the DMURS recommendation.



Figure 11 | Examples of Horizontal Deflection (Road Curvature) left, and Vertical Deflection (Ramps) right

Suitable sightlines have been provided throughout the development, ensuring that localised planting does not obscure visibility as cars make turning manoeuvres, improving the pedestrian safety at crossing points.

Pedestrian Activities/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.”

As outlined in the items above, the proposed development has been designed to provide excellent pedestrian connectivity, with footpaths providing permeability throughout the site and to Park West Avenue.

Throughout the site, pedestrian routes are 2m wide or greater which, as mentioned previously, provides adequate space for two wheelchairs to pass one another. DMURS identifies a 1.8m wide footpath as being suitable for areas of low pedestrian activity and a 2.5m footpath as being suitable for low to moderate pedestrian activity. Pedestrian desire lines throughout the proposed development have been assessed to ensure that a footpath width over the minimum required width has been provided, especially in areas fronting commercial and amenity areas such as the central green corridor. This is in accordance with Figure 4.34 of DMURS. This figure outlines the following widths and their suitability:

- 1.8m – Minimum space for two people to pass comfortably. Areas of low pedestrian activity.
- 2.5m – Desirable space for two people to pass comfortably. Areas of low to moderate pedestrian activity.
- 3.0m – Minimum space for small groups to pass comfortably. Areas of moderate to high pedestrian activity.
- 4.0m – Minimum space for larger groups to pass comfortably. Areas of high pedestrian.

3.4 Key Design Principles

DMURS sets out four core design principles which designers must have regard to when designing roads and streets. These four core principles are set out below together with a commentary establishing how these design principles have been incorporated into the design of the proposed development.

Design Principle 1: Pedestrian Activity/Facilities:

“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.”

Streets have been designed in accordance with the alignment and curvature recommendations set out in DMURS Section 4.4.6. The road layout is generally orthogonal. Section 3.3.1 of DMURS notes that street networks that are generally orthogonal in nature are the most effective in terms of permeability (and legibility). Staggered junctions along with raised pedestrian tables/crossings at main pedestrian desire lines will encourage reduced driving speeds.

Design Principle 2: Multi-Functional Streets:

“The promotion of multi-functional, place-based streets that balance the needs of all users within a self-regulating environment.”

The road hierarchy typically comprises Local Access roads and homezones. The local access streets comprise of 5.5m wide carriageways (i.e., 2.75m wide vehicle lanes) with 2m minimum footpaths.

The proposed homezones are streets designed primarily to meet the needs of pedestrians, cyclists, children, and residents, where the speeds and dominance of cars is reduced.

It is proposed to utilise a buff-coloured chipping / macadam or similar approved surfacing at homezones, subject to the Council’s Roads and Transportation Department approval. Use of a shared-surface buff coloured chipping/macadam and flush kerb indicates to both drivers and pedestrians/cyclists that the road is a shared space. As stated in Section 4.4.2 of DMURS, paving materials combined with embedded kerbs can encourage a low vehicle speed shared environment.

Entry treatment to homezones is provided in the form of a ramp up, which helps announce that a driver is entering into a homezone. The ramp up and narrowing of the road width is to be in accordance with Figure 4.44 in Section 4.3.3 of DMURS.

It is stated in Section 4.3.4 of DMURS that shared surface streets and junctions are highly desirable where 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 Neighbourhoods and Suburbs.

Design Principle 3: Pedestrian Focus:

“The quality of the street is measured by the quality of the pedestrian environment.”

The design of the scheme has placed a particular focus on the pedestrian. Connectivity throughout the scheme is heavily weighted towards the pedestrian. There are excellent pedestrian links to the Park West Avenue and its associated public transport services for residents of the development. These are assessed in the Traffic and Transport Assessment, submitted under a separate cover as part of the planning package.

Raised tables are provided at the internal junctions, which allow pedestrians to continue at grade. The raised tables also promote lower vehicle speeds. Stop signs and road markings will be provided prior to the raised table, to give pedestrians priority.



Figure 12 | Extract from DMURS Figure 4.69

Design Principle 4: Multi-Disciplinary Approach:

“Greater communication and co-operation between design professionals through promotion plan led multidisciplinary approach to design.”

The design of the proposed scheme has been developed through the design team working closely together. The proposed development design is led by VDA & CCK Architects working together with multiple disciplines including Waterman Moylan Consulting Engineers, and Mitchell and Associates Landscaping Architects.

Public areas fronting and within the proposed development have been designed by a multidisciplinary design team to accommodate pedestrians and cyclists in accordance with the appropriate principles and guidelines set out in DMURS. In particular the vehicular access and public footways within the remit of the development will incorporate the relevant DMURS requirements and guidelines as set out above.

3.5 Traffic and Transport Assessment & Travel Plan

As noted above, a comprehensive Traffic and Transport Assessment, and a Mobility Management Plan, has been prepared by Waterman Moylan and accompanies this submission under separate covers.

3.6 Quality Audit

As discussed in the introduction this report, a Quality Audit comprising a Road Safety Audit has been undertaken independently by Traffico and is included as part of this planning submission under a separate cover. A part of this report is the identification of potential design flaws or weaknesses and remediation of these issues through further detailed design coordination between the engineers and independent consultants. Full details of the identified issues and the process by which they were resolved is included in the appendix of the Quality Audit.

UK and Ireland Office Locations

