Mount Saint Mary's Traffic and Transport Assessment

22.09.2024

24094-X-XXX-RP-TNT-TP-0001

TENT ENGINEERING

Site Address:

Mount Saint Mary's,
Dundrum Road,
Dundrum,
Dublin 14

Client Name:

Dún Laoghaire–Rathdown County Council

TENT ENGINEERING

Revision and Review

This report has been prepared for the sole benefit, use and information of the client. The liability of Tent Engineering with respect to the information contained in this report will not extend to any third party.

PURPOSE

- [ ] P1 Information
- [ ] P2 Coordination
- [x] P3 Planning
- [ ] P4 Building Control
- [ ] P5 Pre-tender
- [ ] P6 Tender
- [ ] P7 Construction

ACCEPTANCE (BY OTHERS)

- [x] S Issued
- [ ] A Accepted
- [ ] B Accepted subject to comments
- [ ] C Rejected
- [ ] D Acceptance not required

Accepted by

REVISION(S)

Rev.	Description	Date
P01	1st issue	13.10.2024

AUTHOR(S)

Name and qualifications
Conor Edwards Civil Engineer

REVIEWER(S)

Name
Diarmuid Healy Co-founder, Director Engineer
BEng (Hons) MIEI CEng FIStructE

Office Address:

Tent Engineering Ltd.
32 Francis Street
Dublin, D08NN96, IE

TENT ENGINEERING

Contents

1 Introduction

1.1 Background

Tent Engineering have been commissioned to prepare a transport statement in support of a proposed residential development on lands located at Mount Saint Mary's, Dundrum Road, Dundrum, Dublin 14.

The The development is delivering 129 units within three blocks. The blocks vary in height, reaching up to 6 storeys.

- Block A comprises 33 one-bedroom units designed for 2 occupants, 17 two-bedroom units designed for 3 occupants and 15 two-bedroom units designed for 4 occupants.
- Block B features 35 one-bedroom units designed for 2 occupants, 6 two-bedroom units designed for 3 occupants and 15 two-bedroom units designed for 4 occupants.
- Block C comprises 4 one-bedroom units designed for 2 occupants and 4 two-bedroom units designed for 4 occupants.

All associated internal and external amenity space, car and cycle parking, landscaping, bin stores, service provision and vehicular and pedestrian accesses are also proposed.

This report has been produced to address potential concerns that the local planning authority may have pertaining to the level of influence of the proposed development upon the local transportation system.

This report outlines the transport characteristics of the site and details how these factors will influence accessibility, traffic flow, and connectivity. It also provides an assessment of public transport options, pedestrian and cycling infrastructure, and potential impacts on the surrounding road network

Based on our study, we believe that there are no adverse traffic/transportation capacity or operation issues associated with the construction and occupation of the proposed development that would prevent planning permission being granted.

1.2 Assessment Context

Best practice guidance indicates that in some cases, the transport issues arising out of development proposals may not require a full Traffic and Transport Assessment (TTA) to inform the process adequately and identify suitable mitigation. In such instances, it has increasingly become common practice to produce a simplified report in the form of a Transport Statement (TS). There may also be situations where the transport issues relating to a development proposal are quite small and limited, and no formal assessment is deemed necessary.

With the objective of quantifying the scale of assessment required for the subject development proposals, Tent have made reference to the following guidance;

- Traffic and Transport Assessment Guidelines (May 2014) by the NRA / TII;
- Traffic Management Guidelines Dublin Transportation Office & Department of the Environment and Local Government (May 2003);
- Guidelines for Traffic Impact Assessments The Institution of Highways and Transportation (1994);
- Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities Department of Housing, Planning and Local Government (2018); and
- Dun Laoghaire Rathdown Development Plan 2022 - 2028

In each of the above guidance documentation, development thresholds (several of which are common to all) for various key land uses are presented above in which a full TTA is required as a mater of course. In the context of the subject site proposals these thresholds include;

- Traffic to and from the development exceeds 10% of the traffic flow on the adjoining road;
- Traffic to and from the development exceeds 5% of the traffic flow on the adjoining road where congestion exists, or the location is sensitive; or
- Residential development in excess of 200 dwellings.

In situations where these established thresholds are not met (e.g. the development is smaller and/ or is predicted to generate a sub-threshold impact) the NRA / TII guidance suggests that where National Roads are impacted it may still prove prudent to undertake a full TTA when the following sub-threshold impacts are forecast;

- 100 vehicle trips in / out combined in the peak hours for the proposed development;
- Development traffic exceeds 10% of turning movements at junctions with and on National Roads;
- 100 dwellings within urban areas with a population equal to or greater than 30,000; or
- More than 100 on-site parking spaces form part of the proposals.

The proposed development, consisting of 129 units on the site, is expected to fall below all relevant best practice thresholds for a Traffic Impact Assessment (TIA), as fewer than 100 on-site parking spaces are provided. Following a traffic count survey, it was determined that the development's traffic contribution remains under 5%. Accordingly, Tent Engineering has concluded that a TIA is not required for this development.

This TS seeks to set out the transport issues relating to the proposed residential development site (existing conditions), provides an overview of the transport and traffic aspects of the development proposals, in addition to quantifying the specific impact that is likely to be generated as a result of the proposed development upon the local road network. This information will enable the local authority to gain a full appreciation of the subject proposals during the planning process.

1.3 Report Structure

As introduced above, this transport statement report seeks to clarify the potential level of influence generated by the proposed development upon the local road network and subsequently ascertain the existing and future operational performance of the local transport system. The structure of the report responds to the various stages of this exercise including the key tasks summarised below.

Chapter 2 of this report describes the existing conditions at the proposed development site and surrounding area.

Chapter 3 outlines the relevant policies, guidelines, and standards that inform the transportation planning and decision-making process.

Chapter 4 assesses the ease of reaching destinations within the study area and evaluates the effectiveness of transportation infrastructure in providing access to key services, facilities, and activities

Chapter 5 outlines planned improvements and developments in transportation infrastructure aimed at addressing existing challenges, accommodating future growth, and enhancing the efficiency, safety, and sustainability of the transportation network.

Chapter 6 analyses the potential transportation impacts associated with a proposed development project.

Chapter 7 evaluates the potential impacts of a proposed development or project on the surrounding transportation network.

Chapter 8 refers to the Management Mobility Plan undertaken for the site.

Finally, **chapter 9** provides a concise overview of the key findings, recommendations, and implications discussed throughout the report.

2 Receiving Environment

2.1 Land Use

The subject site is situated on a greenfield area on the grounds of former chapel. The surrounding areas predominantly consist of recreational and residential settlements, characterized by low-density housing, including single-family homes, townhouses, and upscale properties.

The site is currently cleared and is not being used. The surrounding area primarily comprises of business parks, retail establishments, and residential settlements, with most of the residences being single-family homes.

2.2 Site Location

The general location of the subject site in relation to the surrounding road network is illustrated in Figure 2.1 below whilst Figure 2.2 shows the extent of the subject development plot. The development site is located on the Dundrum Road in the Dundrum area of Dublin. It is located approximately 4km to the south of Dublin City Centre. It is bounded to the North by the former Mount Saint Mary's Chapel, to the west by a Dundrum Road, to the south by CUS Rugby Grounds and east by a residential development.

Fig 2.1 - Site Location in Relation to the Regional Road

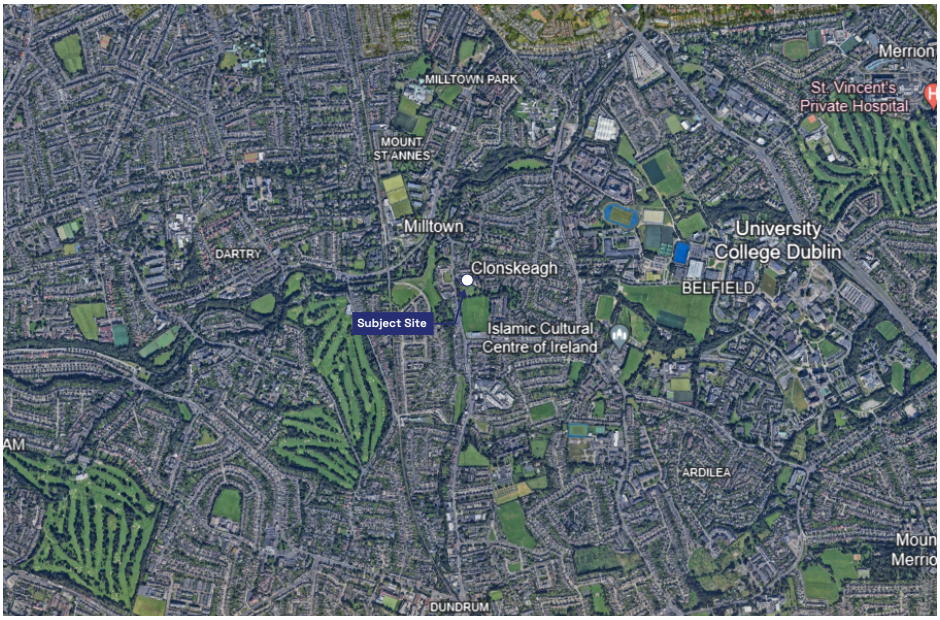


Fig 2.2 - Site Location in Relation to the Local Road Network

3 Policy Framework and Standards

3.1 Local Policy

Dun-Laoghaire Rathdown County Council Development Plan 2022-2028

Dun-Laoghaire Rathdown County Council's Development Plan 2022 - 2028 sets out a shared vision that will shape the future growth in the County over the next six years. This Plan outlines various transport related policies and objectives to be implemented during the period of the Plan. The policies and objectives relevant to this application are described below.

5.5.1 Policy Objective T4: Development of Sustainable Travel and Transport: It is a Policy Objective to promote, facilitate, and cooperate with other transport agencies in securing the implementation of the transport strategy for the County and the wider Metropolitan Area, as set out in the Department of Transport's Smarter Travel: A Sustainable Transport Future 2009–2020 and its subsequent updates, as well as the NTA's Transport Strategy for the Greater Dublin Area 2016–2035 and its subsequent updates, the RSES, and the MASP. (Consistent with NPOs 26 and 64 of the NPF and RPOs 5.2, 5.3, 8.4, 8.7, 8.8, and 8.9 of the RSES)

5.5.3 Policy Objective T6: Quality Bus Network/ Bus Connects: It is a Policy Objective to cooperate with the NTA and other relevant agencies to facilitate the implementation of the bus network measures as outlined in the NTA's Greater Dublin Area Transport 2016-2035 and Integrated Implementation Plan 2019-2024, as well as the BusConnects Programme. Additionally, the objective includes extending the bus network to other areas where appropriate, subject to design, environmental assessment, public consultation, approval, finance, and resources. (Consistent with RPO 8.9 of the RSES)

5.6.1 Policy Objective T11: Walking and Cycling: It is a Policy Objective to secure the development of a high-quality, fully connected, and inclusive walking and cycling network across the County. This includes integrating walking, cycling, and physical activity with placemaking and enhancing public realm permeability. (Consistent with NPO 27 and 64 of the NPF and RPO 5.2 of the RSES)

5.6.2 Policy Objective T12: Footways and Pedestrian Routes: It is a Policy Objective to maintain and expand the footway and pedestrian route network to provide accessible and safe pedestrian routes within the County, in accordance with best accessibility practice. (Consistent with NPO 27 and 64 of the NPF and RPO 5.3 of the RSES).

5.7.3 Policy Objective T18: Car Sharing Schemes: It is a Policy Objective to support the setup and operation of car sharing schemes to facilitate an overall reduction in car journeys and car parking requirements.

5.7.4 Policy Objective T19: Car Parking Standards: It is a Policy Objective to manage car parking as part of the overall strategic transport needs of the County in accordance with the parking standards set out in Section 12.4.5.

5.7.6 Policy Objective T21: Park and Ride: It is a Policy Objective to liaise with the Park and Ride Office of the NTA to facilitate the provision of Park and Ride facilities, both short-term and long-term. This includes providing suitable electric charging structures and adequate cycle parking in appropriate locations along strategic transport corridors, such as Woodbrook and Carrickmines, as well as other suitable sites to be identified with the NTA Park and Ride Office. This is subject to the outcome of environmental assessment and planning approval. (Consistent with RPO 8.14 of the RSES)

5.8.2 Policy Objective T24: Motorway and National Routes: It is a Policy Objective to promote, facilitate, and cooperate with relevant transport bodies, authorities, and agencies to secure improvements to the County's Motorway and National road network. The goal is to provide, protect, and maintain the safe and efficient movement of people and goods both within and through Dún Laoghaire-Rathdown.

Sections 12.4.5 & 12.4.6 of the Development plan set out the car and cycle parking standards respectively. The plan states that car parking standards are maximum in nature and may be reduced where other modes of transport provide sufficient mobility for residents. Alternative solutions will also be considered such as residential car clubs where there are site constraints. The cycle parking provided must in a secure and accessible location.

Regarding **car parking** provisions, the site is located in Zone 2, where parking is limited as follows: 1 space per 1-bedroom housing or apartment unit, 1 space per 2-bedroom housing or apartment unit, and 2 space per 3-bedroom housing or apartment unit. The total provision of car parking spaces on site is 65.

Regarding **bicycle parking**, the development plan outlines the standards required for new developments. For "Residential" land uses, the Dún Laoghaire-Rathdown County Council (DLRCC) Development Plan requires 1 space per residential unit and 1 space per 5 units for visitors.

The updated bicycle parking schedule for the development at Mount Saint Mary's, Dundrum Road, provides a total of 180 spaces. This includes 154 long-term spaces, with 8 non-standard spaces designated for cargo bikes and e-bikes, and 26 short-term spaces.

According to the Compact Settlement Guidelines (CSG), for residential units without ground-level open space or with smaller terraces, a minimum of 1 cycle storage space per bedroom is recommended. As per these guidelines, 148 long-term spaces are required, and 26 short-term spaces, bringing the total to 174 spaces.

The DLRCC guidelines set a slightly lower requirement, with 129 long-term spaces and 26 short-term spaces, totalling 155 spaces. To align with the CSG requirements, an additional 19 long-term spaces are provided, bringing the total provision on site to 174 bicycle parking spaces. An additional 6 spaces have been provided, bringing the overall total to 180 bicycle parking spaces on site.

Additionally, DLRCC standards require at least 50% of short-term and all long-term cycle parking to be covered, with short-stay parking within 25m of main entries and long-stay parking within 50m of the destination.

3.2 Regional Policy

Transport Strategy for the Greater Dublin Area 2016-2035

The National Transport Authority's Transport Strategy for the Greater Dublin Area (GDA) was adopted in April 2016.

The strategic purpose of the document is "to contribute to the economic, social and cultural progress of the Greater Dublin Area" by providing for the efficient, effective and sustainable movement of people and goods.

The Greater Dublin Area (GDA) has been organized into radial and orbital transport corridors, with the existing and proposed developments located near the Stillorgan Road radial corridor, which extends from Bray to Dublin City Centre. Consequently, the proposed infrastructure enhancements will specifically benefit this Bray-to-City Centre radial corridor. These improvements include:

- Heavy Rail Infrastructure;
- Light Rail Infrastructure
- Bus Infrastructure
- Cycling Infrastructure
- Walking
- Road Network

Greater Dublin Area Cycle Network Plan (2013)

The National Transport Authority published the 'Greater Dublin Area Cycle Network Plan' in December 2013, which identifies the planned cycle network for the GDA.

To the north of the site, the Dodder Greenway passes Mount Saint Mary's connecting the site to Ringsend in the north down to Glenasmole in south County Dublin.

A "C3 - Cycle Lane (even with bus lane)" exists north of the site which connects the site to the city centre while a "C2 - Cycle Track (immediately adjacent to road)" exists south of the site connecting the site to West Dublin and the surrounding area. It is intended that in future these routes would be upgraded to meet the required standards thus providing a high-quality cycle network near the site.

Bus Connects

The BusConnects proposal, published in July 2018 by the National Transport Authority, aims to overhaul the existing bus system in Dublin by**:**

- Redesigning the bus network to provide a more efficient network, connecting more places and carrying more passengers;
- Introducing Bus Rapid Transit on a number of routes;
- Improving bus priority infrastructure including provision of 220km of bus lanes;
- Improving payment systems; and
- Improving livery and bus stops.

This scheme will also deliver improvements to the cycle network through the provision of approximately 200km of cycle lanes which will be largely segregated from other traffic along these corridors.

Bus Connects will result in changes to bus services across the city, and it is expected that it will vastly improve the bus system in the Greater Dublin Area. The proposed development is located in Dundrum and will be set to significantly benefit from the planned changes. Specifically, Route 44, which passes by the site, will provide direct connectivity from Enniskerry to DCU. Additionally, the S4 Dublin Bus Route, also passing the site, will offer a connection to UCD and Liffey Valley.

3.3 National Planning

National Planning Framework

Project Ireland 2040 National Planning Framework (NPF) was published by the Government of Ireland in 2018. The NPF is the Governments' high-level strategic plan for shaping the future growth and development of Ireland to 2040.

The NPF priorities ten National Strategic Outcomes outlined below:

1. Compact Growth
2. Enhanced Regional Accessibility
3. Strengthened Rural Economies and Communities
4. Sustainable Mobility
5. A Strong Economy supported by Enterprise, Innovation and Skills
6. High-Quality International Connectivity
7. Enhanced Amenity and Heritage
8. Transition to a Low Carbon and Climate Resilient Society
9. Sustainable Management of Water, Waste and other Environmental Resources
10. Access to Quality Childcare, Education and Health Services

Smarter Travel 2009-2020

In February 2009, 'Smarter Travel -A Sustainable Transport Future: A New Transport Policy for Ireland 2009-2020' was published by the now Department of Transport, Tourism and Sport, setting out the vision of a sustainable transport future in 2020. This policy document proposes an alternative to the existing trends - which have resulted in increased traffic congestion and a loss in economic competitiveness. It sets out measures aimed at increasing the share of the population walking, cycling, using public transport and leaving their cars at home by 2020. Through this framework, the Government aims to reduce the national car-based share of total commuting trips from the current average of 65% to 45%.

The fundamental objective underpinning this policy document is the provision of a high quality, integrated and sustainable travel and transport infrastructure that supports the movement of goods and people, which in turn will ensure continued Irish competitiveness. This translates into goals, actions and objectives seeking to ensure the availability of sustainable transport alternatives to most of the population.

The 49 actions in the "Smarter Travel" Transport Policy document can be grouped under four key headings, as follows:

Actions to reduce distance travelled by private car and encourage smarter travel, including focusing population growth in areas of employment and to encourage people to live in close proximity to places of employment and the use of pricing mechanisms or fiscal measures to encourage behavioural change;

Actions aimed at ensuring that alternatives to the car are more widely available, mainly through improved and more accessible public transport and through investment in cycling and walking;

Actions aimed at improving the fuel efficiency of motorised transport through improved fleet structure, energy efficient driving, and alternative technologies; and

Actions aimed at strengthening institutional arrangements to deliver the targets.

National Cycle Policy Framework 2009-2020

The National Cycle Policy Framework (as part of Smarter Travel -A Sustainable Transport Future 2009) outlines national policy for cycling, in order to create a stronger cycling society, and a friendlier environment for cycling. The policy document sets an average national target of 10% of all trips by bicycle by 2020 and equally recognises the need for continuing promotion and integration of cycle networks in the state

Design Manual for Urban Roads and Streets

The Design Manual for Urban Roads and Streets (DMURS), published by Department of Transport, Tourism and Sport and the Department of Environment, Community and Local Government, 2019, provides guidance relating to the design of urban roads and streets.

It presents a series of principles, approaches and standards that are necessary to achieve balanced, best practice design outcomes regarding networks and individual streets.

DMURS aims to re-balance the transport modes and place the pedestrian and cyclist ahead of the vehicle when examining the street. The pedestrian perspective focuses on:

- Connectivity and legibility: where traffic movement is not given priority over pedestrians.
- Comfort: increased width and reduced clutter on footpaths. Promotion of passive surveillance and active street edges to help pedestrians feel less isolated and vulnerable.
- Safety: by designing a street with a perceived increase level of risk for drivers encourages reduced speed. Therefore, designing a street for pedestrian comfort will naturally be designed for reduced vehicle speed

Integrated approaches incorporate elements of urban design and landscaping that instinctively alter behaviour, thus reducing the necessity for more conventional measures (such as physical barriers and the road geometry) alone to manage behaviour. Streets and junctions are more compact, providing better value for money. Consequently, there are four Key Design Principles which are presented in DMURS. These are:

- Connected networks: 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.
- Multi-functions streets: The promotion of multi-functional, place-based streets that balance the needs of all users within a self-regulating environment.

- Pedestrian focus: The quality of the street is measured by the quality of the pedestrian environment.
- Multidisciplinary approach: Greater communication and co-operation between design professionals through the promotion of a plan-led, multidisciplinary approach to design

Sustainable Urban Housing: Design Standards for New Apartments – Guidelines for Planning Authorities

This document, published by the Department Housing, Planning and Local Government in March 2018, provides direction for local authorities taking account of the current and future need for housing in line with the National Planning Framework (NPF) and Project Ireland 2040.

The document outlines a number of Specific Planning Policy Requirements (SPPRs) which planning authorities and An Bord Pleanála are required to apply in carrying out their functions and supersedes the previous guidance issued in 2015.

In relation to traffic and transport, the guidelines address the requirements for car parking in areas with greater mobility options and higher levels of accessibility. For large scale, higher density residential developments located within an accessible urban location the guidelines state that "*the default policy is for car parking provision to be minimised, substantially reduced or wholly eliminated in certain circumstances.*" The criteria for these locations are to be within a 15-minute walk of the city centre, 10 min. walk to rail or tram or 5-minute walk to high frequency (10min peak hour frequency) bus services. Other considerations are walking proximity to "*significant employment centres, that may include hospitals and third level institutions.*"

These reductions in parking standards for developments in suitable locations are a direct application of Objective 13 of the NPF - National Planning Framework which states "*There should also generally be no car parking requirement for new developments in or near the centres of the five cities, and a significantly reduced requirement in the inner suburbs of all five*".

The guidelines also emphasise the importance of cycling as a mode and the provision of cycle facilities in new developments. The guidelines recommend a general minimum standard of 1 cycle storage space per unit. Visitor parking is also recommended at a ratio of 1 space per 5 units. Any proposed deviations from these standards are at the discretion of the planning authority and shall be justified by factors such as location, quality of facilities proposed and flexibility for future enhancement/enlargement.

4 Accessibility

4.1 Introduction

This section of the document presents the accessibility and receiving environment around the proposed development and presents the existing pedestrian, cyclist, public transport conditions as well as the local road network.

The site is considered to have excellent accessibility credentials.

Road Network

The site, located along Dundrum Road, consists of a greenfield plot with no existing dwellings. The construction will consist of 129 units within 3 blocks. The blocks vary in height, reaching up to 6 storeys.

The arterial roads surrounding the development such as Dundrum Road has a 50km/h speed limit.

Existing Pedestrian Facilities

Currently there are dedicated pedestrian facilities and bus lanes along Dundrum Road with vehicular traffic in the vicinity of the subject development site.

Located approx. 50m to the north is a dedicated signal-controlled pedestrian crossing.

Existing GDA Cycle Network Facilities

The GDA Cycle Network Plan outlines the existing cycle facilities in place throughout County Dublin and the Greater Dublin Area. The map illustrated in Figure 4.2 below shows an extract of the existing cycle facilities in proximity to the proposed development site. The site currently benefits from a dedicated 'C3' cycle lane, to the north of the site with runs even with the existing bus lane along Milltown Road, that extends all the way to Dublin City Centre.

Fig 4.1 - Pedestrian and Bus Facilities on Leapardstown Road (South of subject site)

Fig 4.2 - Existing Cycle Network

4.2 Pedestrian Accessibility

The site area includes numerous sports facilities including CUS Rugby Grounds which can be accessed within a 5 minute walk around the area.

Numerous shops/stores such as the Dundrum Business Park is accessible within a 10-minute walk from the site.

Within a 15 to 20 minute walk, educational institutions like University College Dublin (UCD) and Alexandra College Dublin are easily accessible, providing a convenient location for students residing at the proposed site.

The nearest Luas station to the site is Milltown Luas Station, approximately 15 minutes to the west.

Donnybrook, Rathgar, and Ranelagh are all within a 30-minute walk from the site.

Figures 4.3 and 4.4 below illustrate the walking catchment area in 5-minute intervals.

It can be concluded that the site is highly accessible on foot.

Fig 4.3 - Walking Catchment

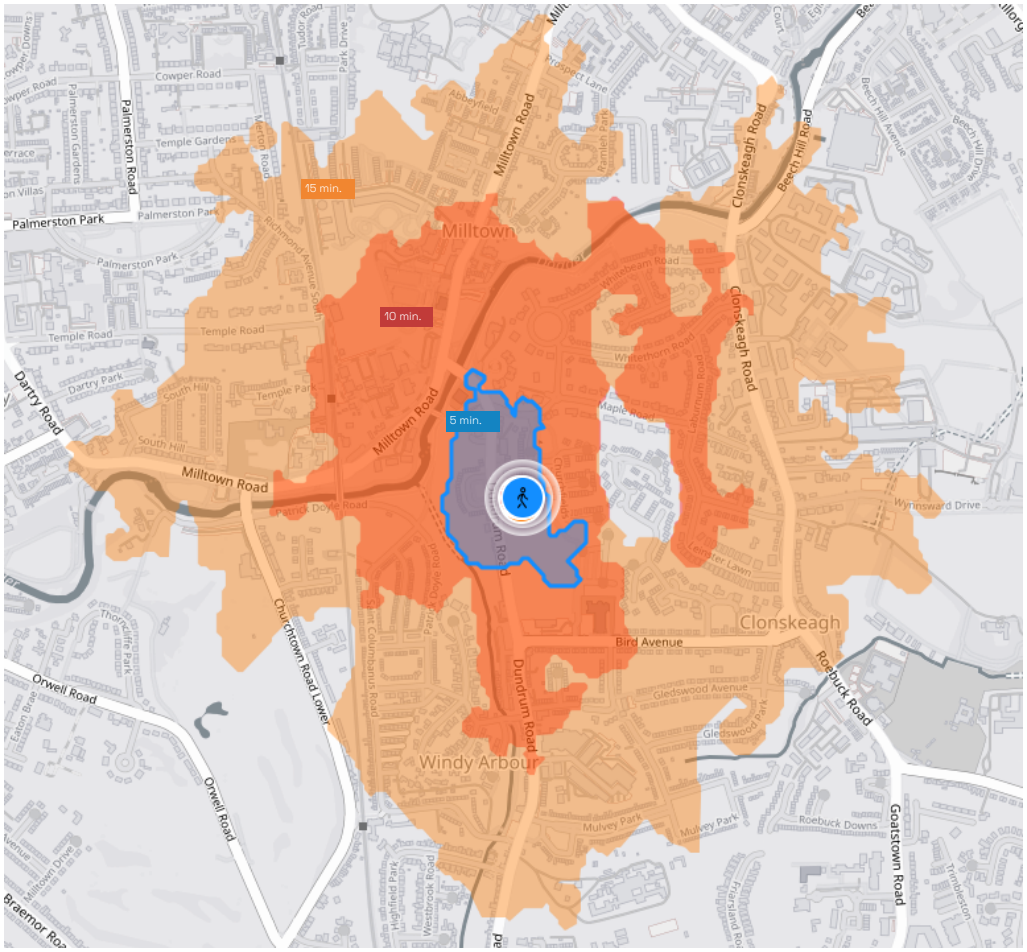
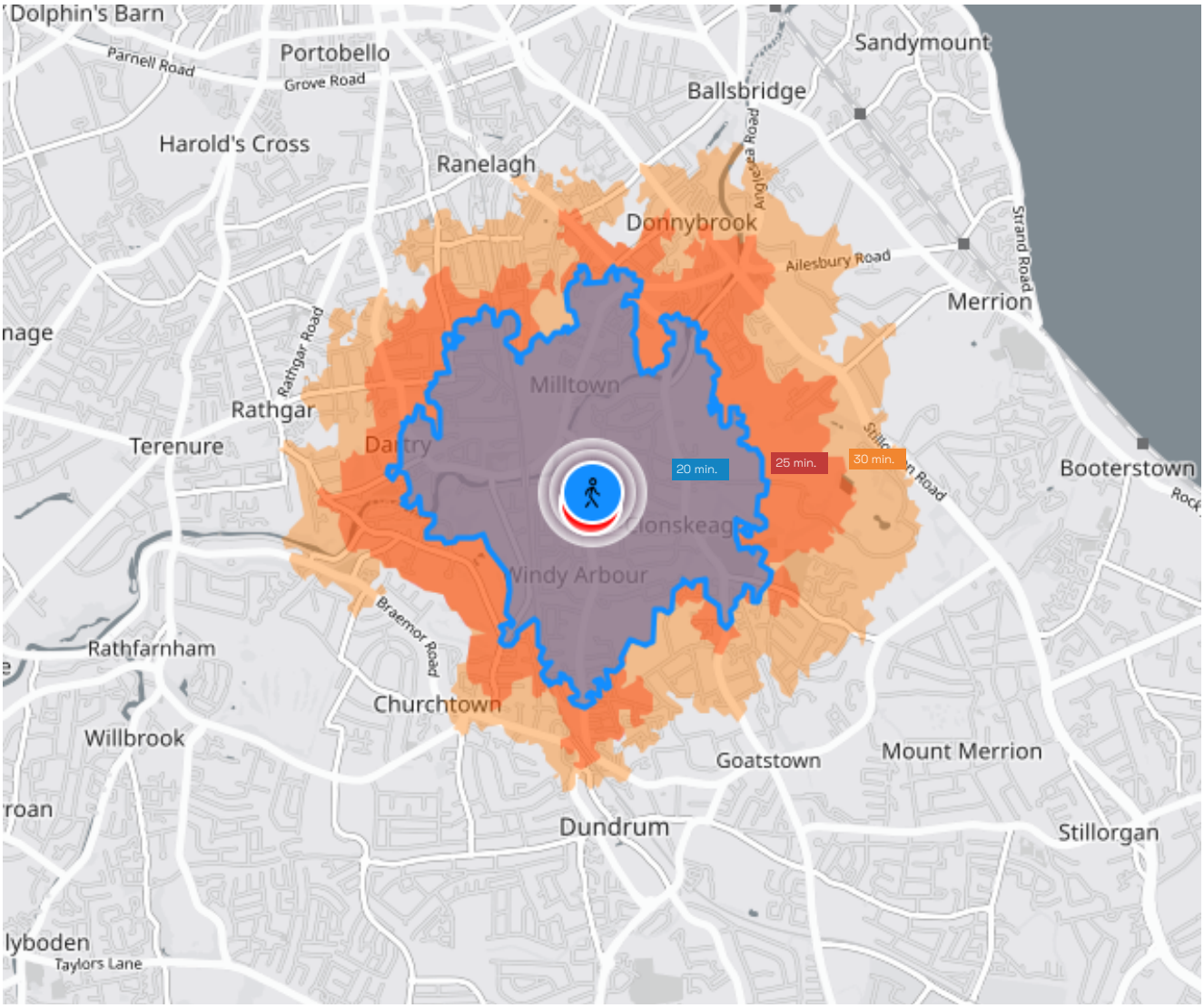


Fig 4.4 - Walking Catchment



4.3 Cycling Accessibility

The site is easily accessible by bike, with dedicated cycle lanes present along Dundrum Road.

Figures 4.5 and 4.6 below shows the cycling catchment accessible from the subject site from 5 to 30 minutes of cycling.

Within 5 minutes of cycling, Dundrum Business Park and Milltown Luas Station can be accessed.

Within 10 minutes of cycling the entirety of the UCD campus can be reached.

In 15 minutes of cycling Dundrum Town Shopping Centre is easily accessible.

After 20 minutes of cycling localities such as Sandyford, Ballyboden and Blackrock.

In a 25/30 minute cycle, the majority of Dublin City centre area and south Dublin can be reached.

Fig 4.5 - Cycling Catchment

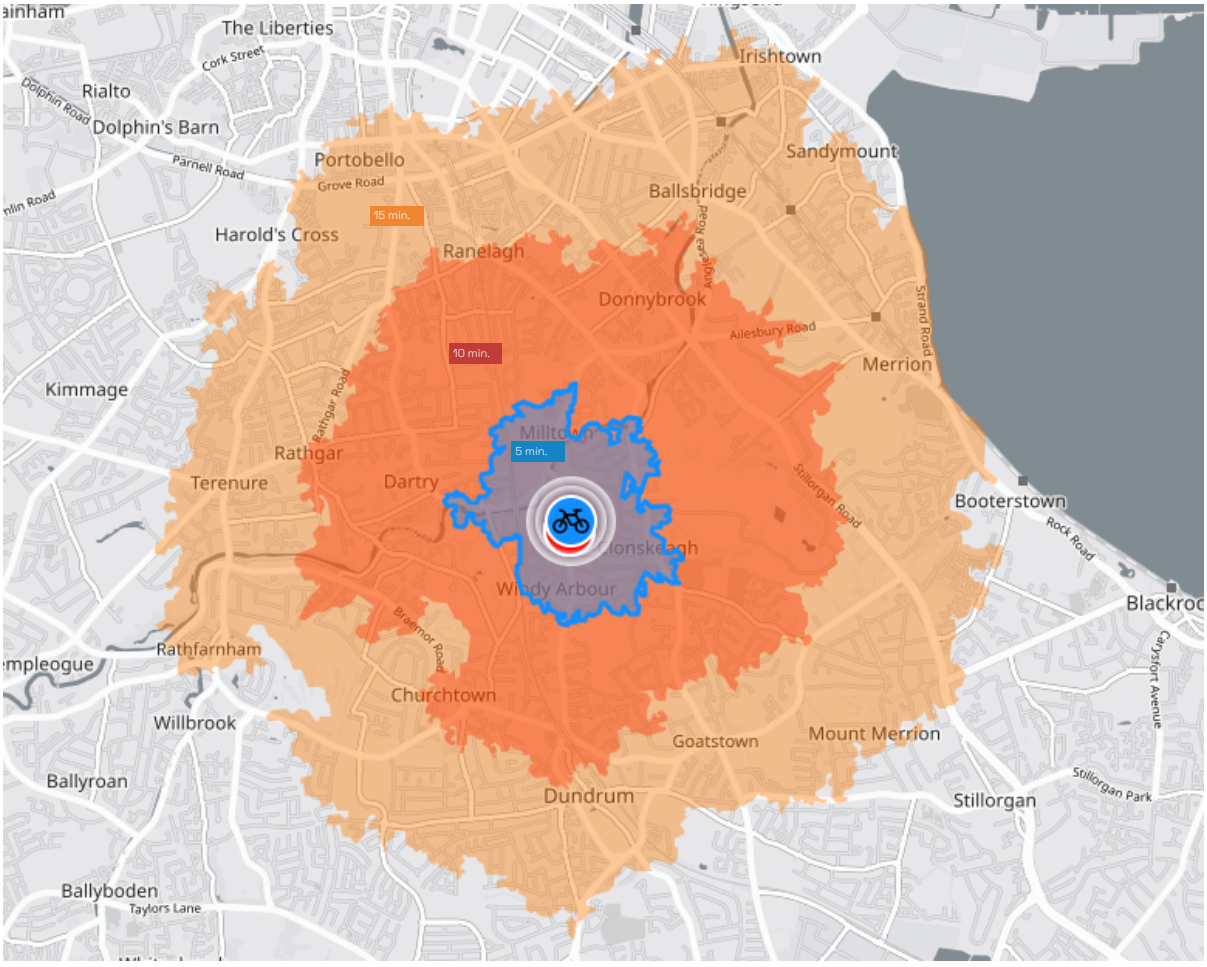
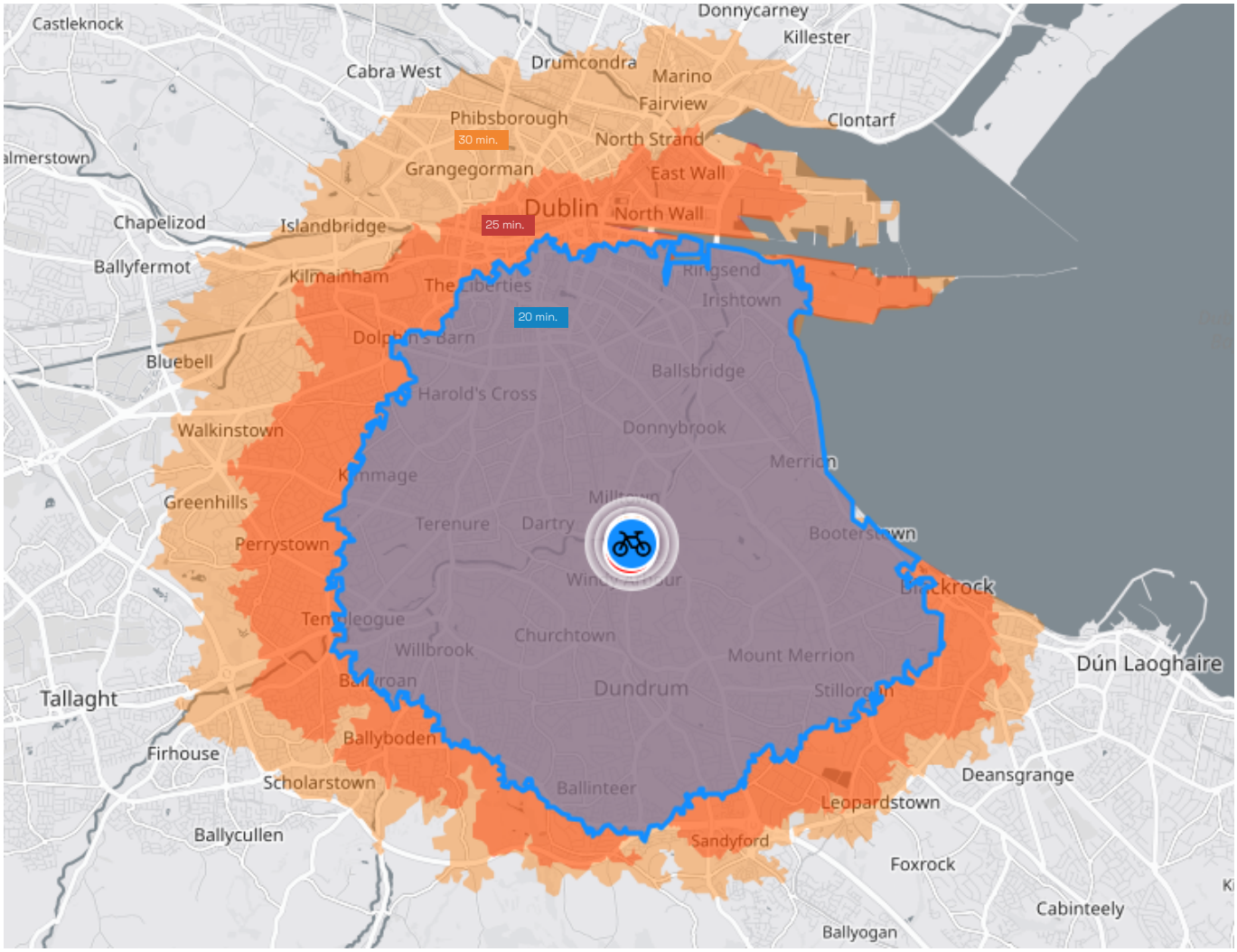


Fig 4.6 - Cycling Catchment



4.4 Public Transport Accessibility

Public Transport Bus

The subject site is well-served by public transport, with Dublin Bus Routes 44, 44D and S4, all operating within a 600m radius of the Mount Saint Mary's site.

The bus stops serving these existing bus service routes are illustrated below in Figure 4.7 which outline the location of each bus stop in relation to the proposed development site.

Table 4.1 below outlines the frequency of the bus services during the weekday AM peak hour & Inter peak as well as the weekend services. Bases on the frequencies outlined the site is an "accessible urban location" as defined by the DHPLG apartment guidelines.

Public Transport Bus Accessibility

Figures 4.3 and 4.4 above shows the walking catchments accessible from the subject site while figures 4.8a, 4.8b and 4.8c shows the public transport catchments for 30, 45 and 60 minutes.

Within 30 minutes by public transport, you can easily reach various Dublin suburbs, including Terenure, The Liberties, and Dundrum, as well as Dublin City Centre.

Walkinstown, Ballyogan and Blackrock regions among others are all accessible within 45 minutes of travel.

Within a 60-minute journey south, you can reach Shankill, while heading north gives you access to areas in North Dublin, including Raheny and Beaumont.

Fig 4.7 - Bus Stops in Close Proximity to the Subject Site

Table 4.1 Bus Service Frequency (min)

Route No.	Route	Weekdays		Weekend	
		AM Peak	Interpeak	Saturday	Sunday
44D	O'Connell Street - Dundrum Luas Station	N/A	x3 departures per day	N/A	N/A
44	DCU - Enniskerry	10 - 15	15 - 20	15 - 20	20-30
S4	Liffy Valley - UCD	10 - 15	20 - 25	10 - 15	15 - 20

Fig 4.8a - 30 minute travel time from site

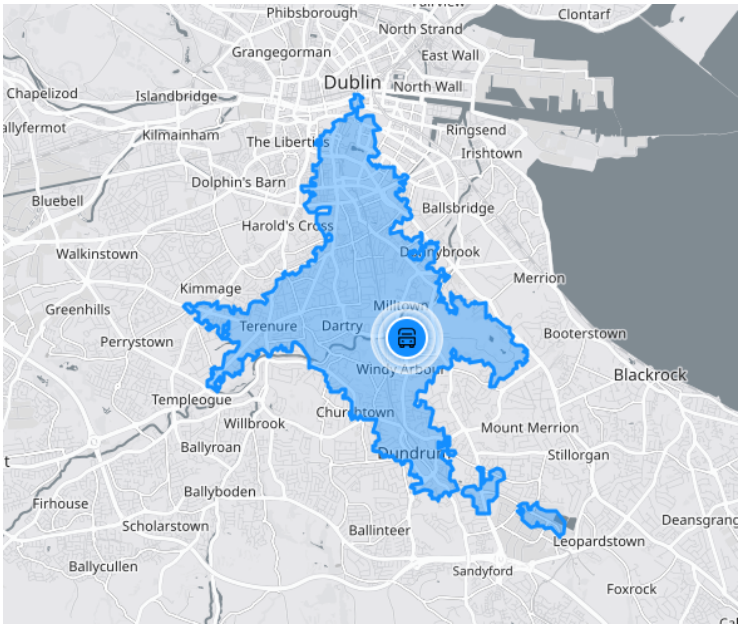


Fig 4.8b - 45 minute travel time from site

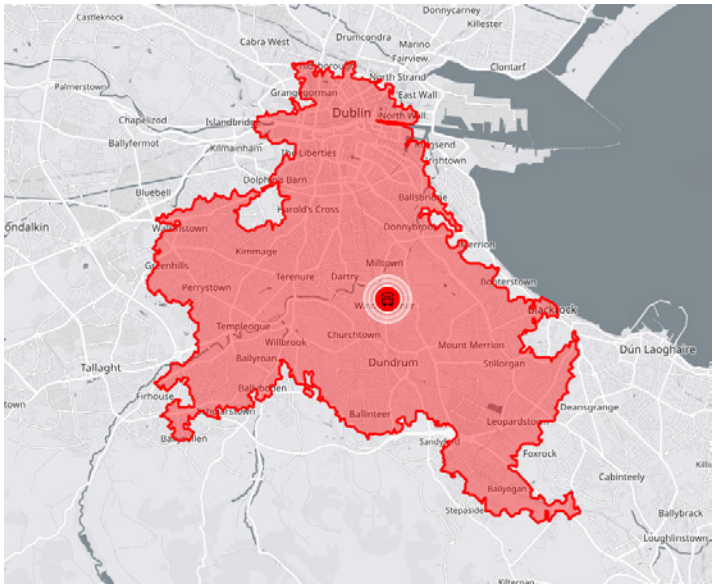
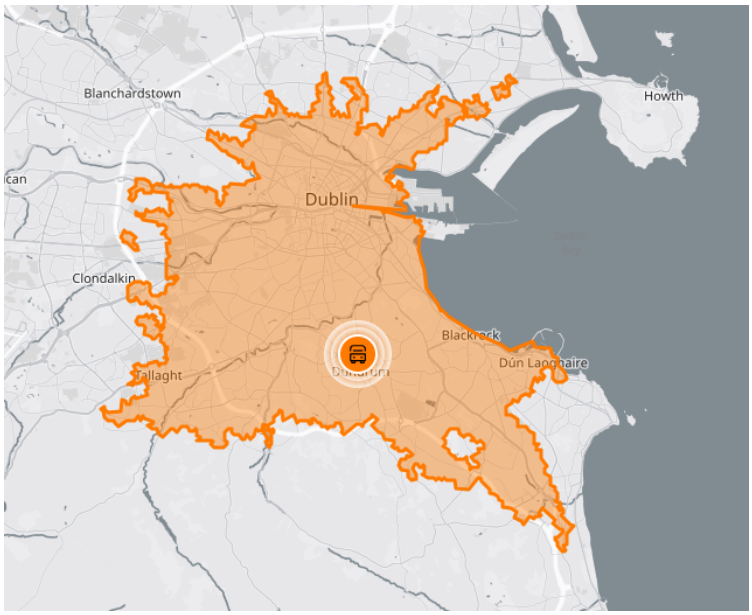


Fig 4.8c - 60 minute travel time from site



Public Transport LUAS

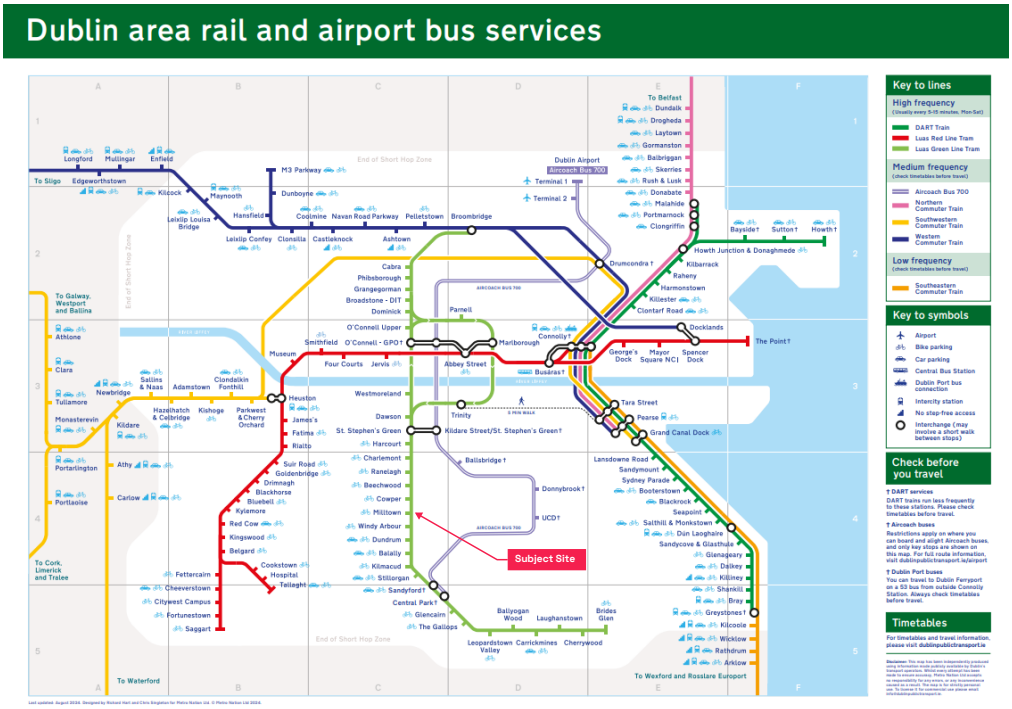
The closest Luas stop to the development is Milltown Luas Station, located c. 15mins walking to the north.

The LUAS offers good connectivity with Dublin City Centre, with a 25-minute ride from Milltown to Westmoreland Stop. The Luas operates from 5:30 AM to 11:30 PM midweek. At peak times, there is a Luas every 4-7 minutes, and at off-peak times this drops to approximately 7-10 minutes.
The standard adult Luas ticket with a Leap Card varies from €2.30 to €3.60 and for students varies from €1.15 to €1.80.

Table 4.2. - LUAS and Commutor Train Line Frequency (min.)

Route No.	Route	Weekdays		Weekend/ BH	
		PM Peak	Interpeak	Saturday	Sunday
Luas - Green Line	Sandyford - Broombridge	4-7	7-10	7-10	10-15
Luas - Green Line	Brides Glen - Broombridge	4-7	7-10	7-10	10-15
Luas - Green Line	Brides Glen - Parnell	4-7	7-10	7-10	10-15

Figure 4.9 - Map of Existing LUAS Network



4.5 Car Sharing

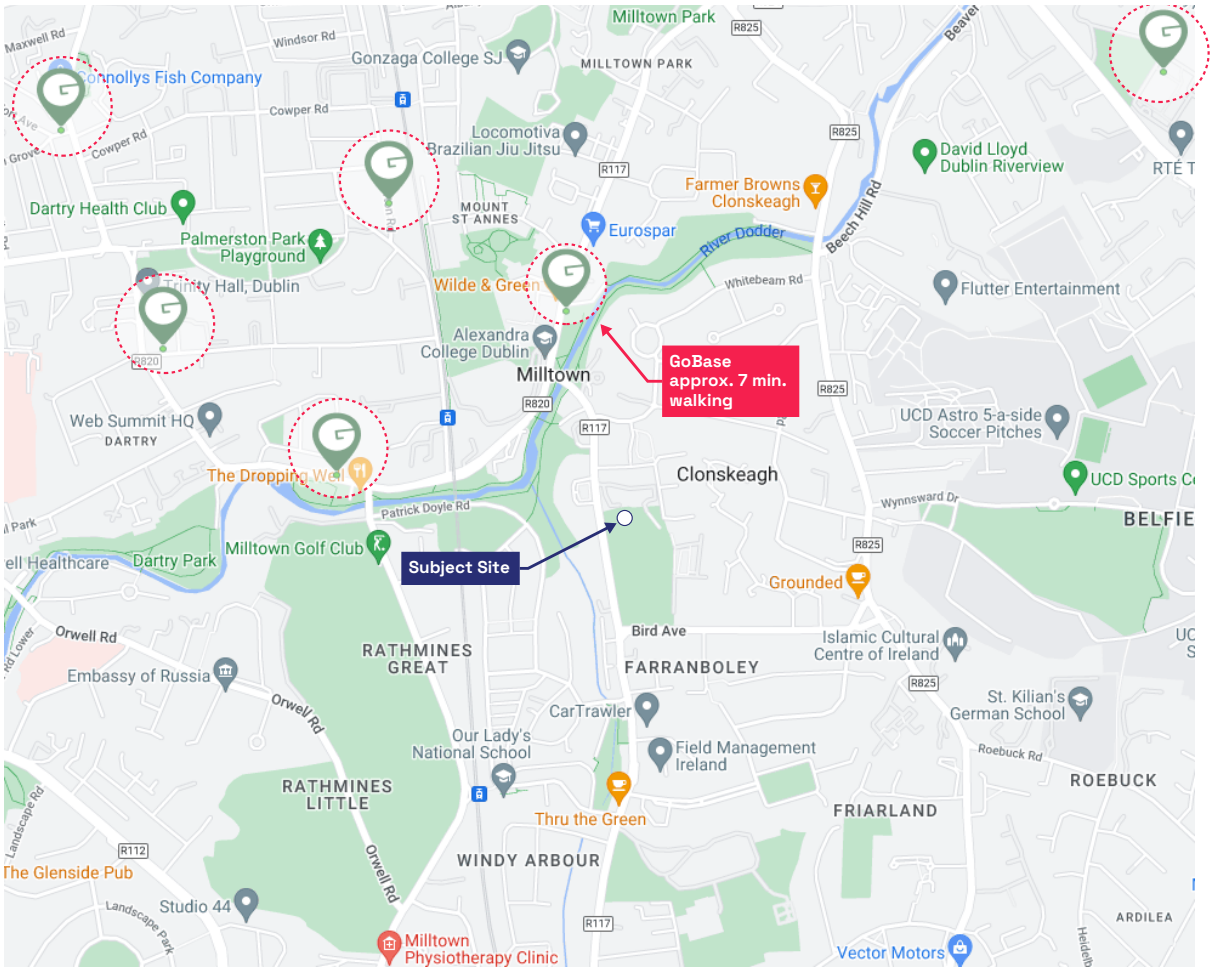
It is acknowledged that residents, such as young people, that do not own a car, may require the use of a car on certain occasions. GoCar (among other car sharing operators) offers a cost-effective, hassle-free, and greener alternative to car ownership and traditional vehicle hire in Dublin. The car sharing service allows users to view the availability of cars at designated parking bays throughout the country via a mobile application, where they can unlock and start driving their selected car on the spot.

The nearest bay is located at the Milltown Bottle Bank and Clothes Bank, c. 500m (7 min. walk) to the north of the site. Cars can be reserved by the hour, day or even longer. The price of the journey depends upon the vehicle type, the duration of the reservation and the miles driven, but starts at around €10 an hour with 50 free kilometres included.

Figure 4.10 shows additional locations in the vicinity of the site that GoCar currently operate in.

It is considered that car sharing could therefore be a highly attractive facility for residents who require occasional private car use, therefore, minimising the traffic impact.

Figure 4.10 - Car Sharing Bays in the Vicinity of the Site

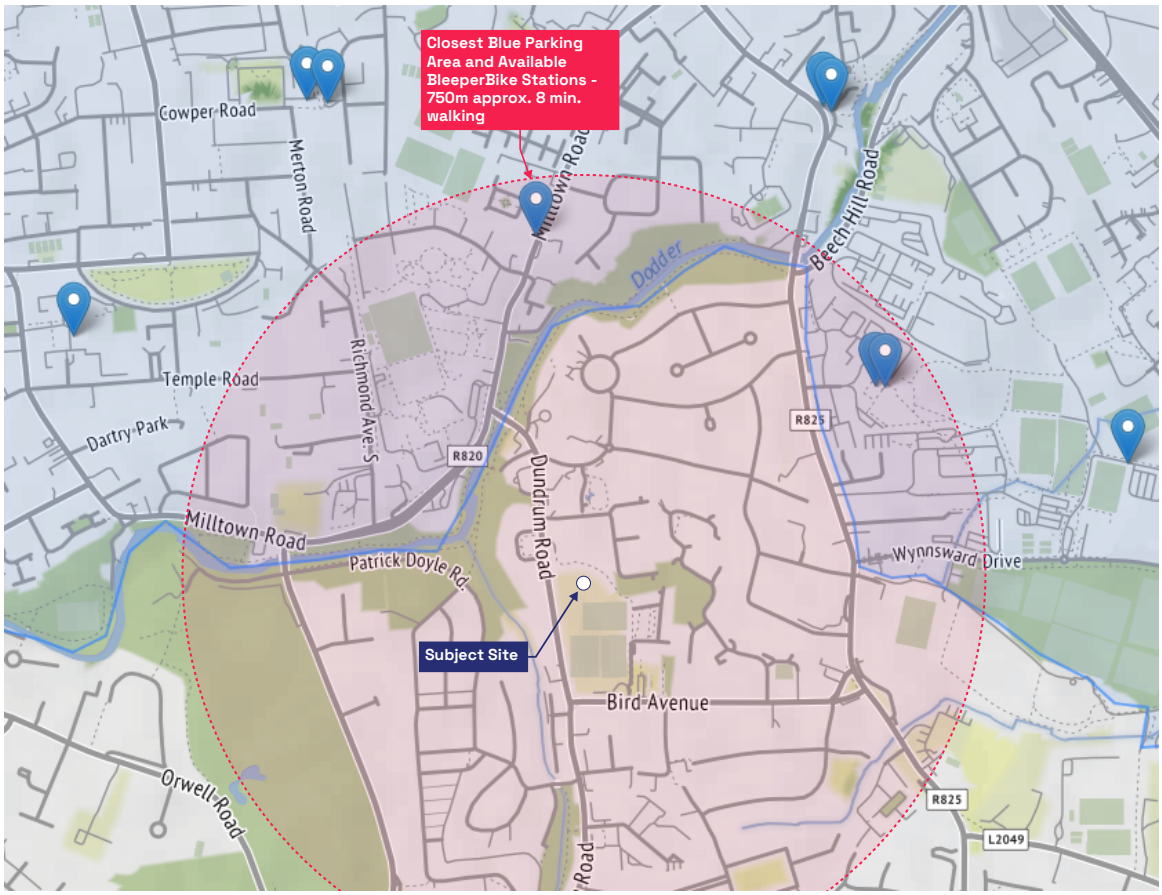


4.6 Bicycle Sharing

The 'BLEEPER bike' scheme is a relatively new station-less bike sharing scheme. This bicycle sharing scheme uses a phone application and bicycles can be picked up and left anywhere that traditional bicycle parking is permitted and they do not require custom built docking bays. Figure 4.11 below shows the BleeperBike "Purple Zone" parking locations in close proximity of the subject site.

Too many car journeys cover a very short distance in Dublin but e-bikes are a great alternative that can help improve congestion. Moby e-bike are available in the area, having a similar functionality as the previous presented schemes.

Figure 4.11 - BleeperBike Parking Locations



4.7 Access to Local Amenities

The proposed development site is very well placed in terms of the availability of local amenities providing an area of comprehensive range of facilities which will be accessible to future residents of the subject site, these include supermarkets, restaurants and many retail opportunities.

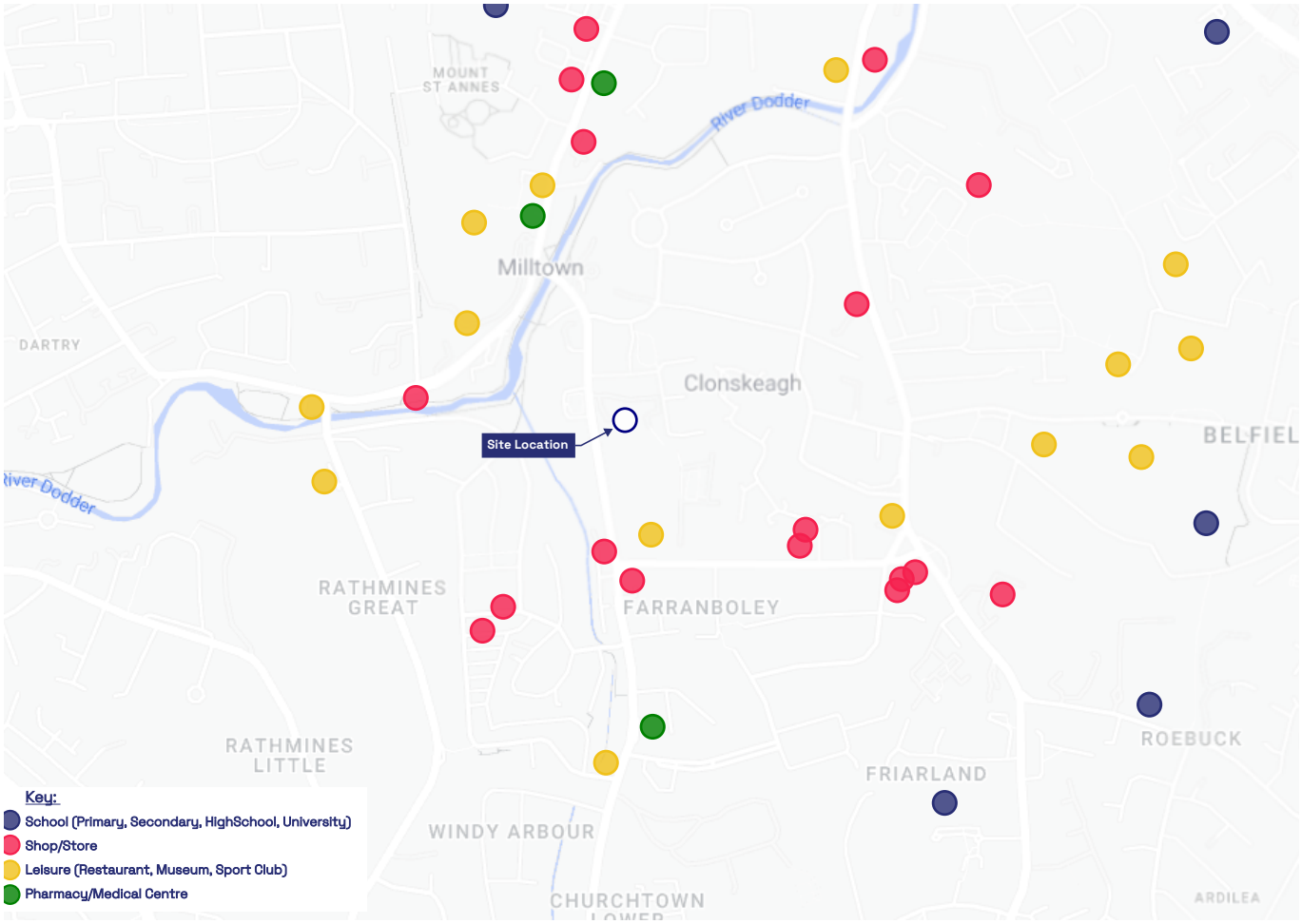
Several educational institutions are situated close to the site. To the east, you'll find University College Dublin (UCD), Our Lady's Grove Primary School, St. Killian's German School, and The Teresian School. To the north, Alexandra College Dublin and Gonzaga College are nearby.

The area also provides access to pharmacies and healthcare services. Notably, Milltown Total Health Pharmacy is located 600m away.

Additionally, the site benefits from excellent access to leisure and shopping facilities. Within 600m, Dundrum Business Park offers a variety of local shops and stores.

Figure 4.12 below shows indicatively the subject site's location in relation to the aforementioned amenities among others.

Figure 4.12 - Subject Site Local Amenities



5 Proposed Transport Infrastructure

Cycle Network Proposal

In December 2013 the NTA published the report entitled Greater Dublin Area Cycle Network Plan. The report summarises the findings of a comprehensive body of work detailing a proposed Cycle Network incorporating Urban, Inter-urban and Green-route networks covering the six county council areas that together form the defined Greater Dublin Area (GDA).

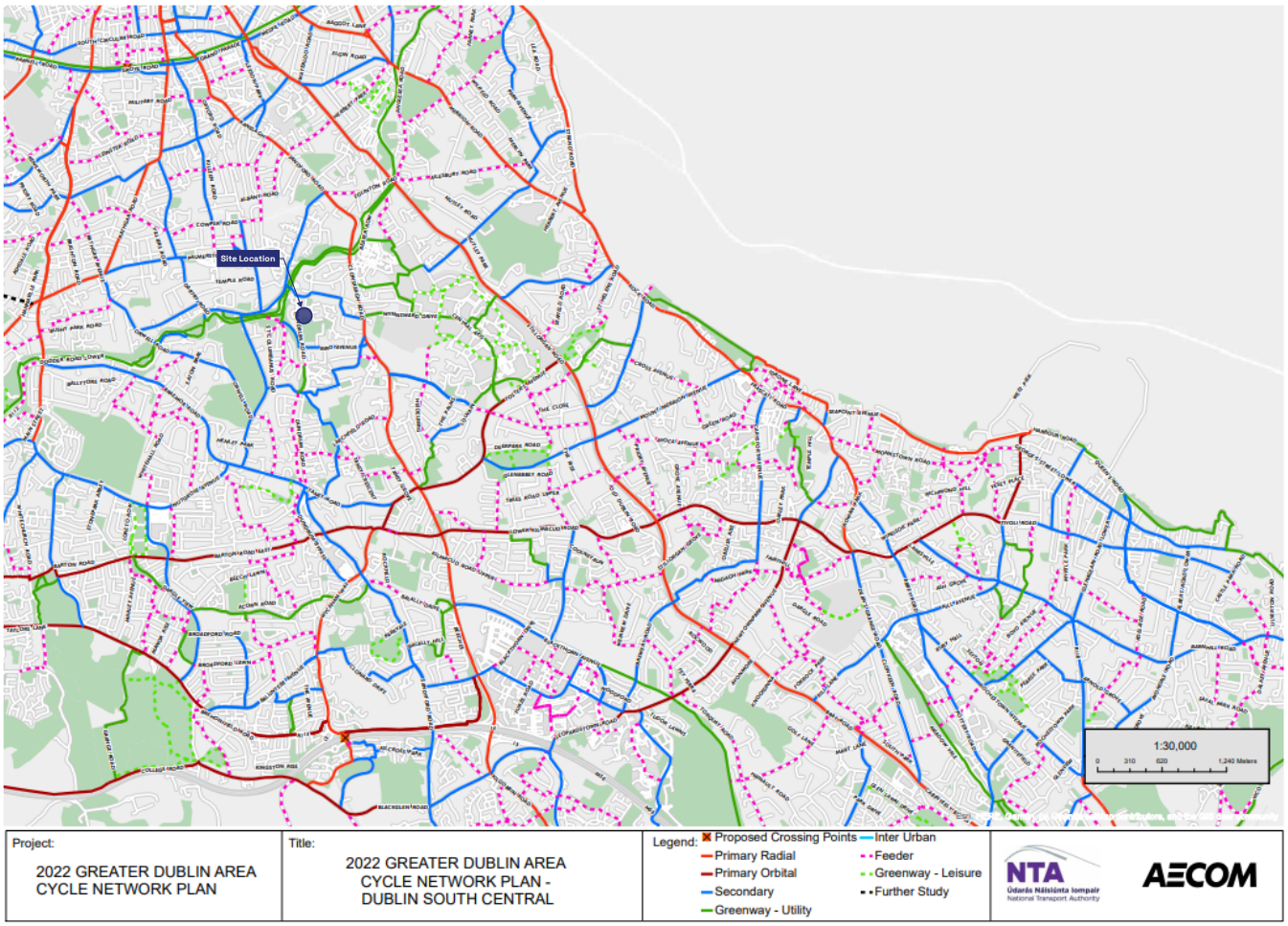
The Greater Dublin Area Cycle Network Plan sets out a 10-year strategy to expand the urban cycle network from 500km to 2,480km. The overarching ambition of the plan is to increase the national cycle mode share to 10% by 2020.

The network will consist of a series of primary, secondary and feeder routes as well as green ways routes. These routes will comprise of a mix of cycle tracks and lanes, cycleways and infrastructure-free cycle routes in low traffic environments.

The proposed cycle network near the development is illustrated below. The Dodder Greenway, which runs to the north of the site, provides a connection from Ringsend in the north to Glenasmole in South County Dublin.

Upgrades are planned for the existing "C2 - Cycle Tracks (immediately adjacent to the road)" located both north and south of the site. The southern section of this cycle lane connects the site to West Dublin and surrounding areas. The northern section connects the site to Inner City Dublin. In the future, these routes are expected to be enhanced to meet the required standards, creating a high-quality cycle network near the site, as depicted in Figure 5.1. The implementation of the above cycle infrastructure schemes by the local authority will be subject to further design, public consultation, approval, and importantly availability of funding and resources.

Figure 5.1. - Proposed Cycle Infrastructure



Public Transport Proposals - BusConnects

Figure 5.2 shows the proposed BusConnects network in the vicinity of the site as part of the New Dublin Area Bus Network scheme. The scheme aims to overhaul the existing bus system in Dublin by:

- Redesigning the bus network to provide a more efficient network, connecting more places and carrying more passengers
- Introducing Bus Rapid Transit on a number of routes
- Improving bus priority infrastructure including provision of 230km of bus lanes
- Improving payment systems; and
- Improving livery and bus stops.

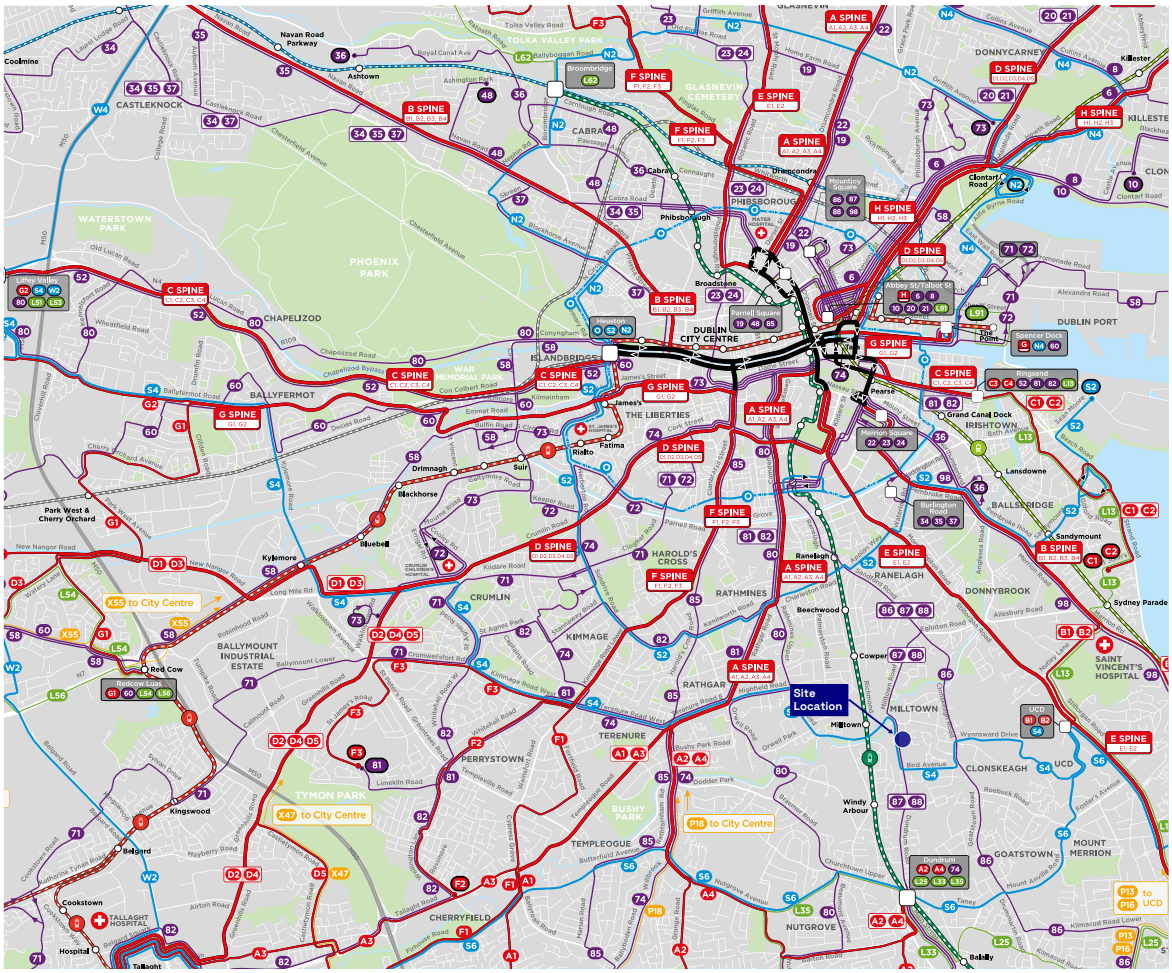
The nearest bus stops to the site are located c.50m to the North of the site along Dundrum Road. Table 4.1 details the services that call at these stops, and their associated frequencies.

These buses provide access to useful city centre destinations in Dublin, as well as many of the surrounding areas.

It is noted that the provision of bus services will change over time in response to current circumstances. The bus times are accurate at the time of writing, whereas up-to-date bus times can be found on Dublin Bus' and Go Ahead Ireland's websites: dublinbus.ie/Your-Journey1/Timetables/ and goaheadireland.ie/services.

On the above basis, it can be considered that the site is highly accessible by bus.

Figure 5.2 - BusConnect Proposal



6 Transport Characteristics of the Proposed Development

6.1 Proposed Development

The proposed development is delivering 129 residential units within three blocks. The blocks range in height up to 6 storeys. The site is located at the Mount Saint Mary's site, Dundrum Road, Dundrum in Dublin 14.

All associated internal and external amenity space, car and cycle parking, landscaping, bin stores, service provision and vehicular and pedestrian accesses are also proposed.

6.2 Pedestrian and Cyclist Access

The main pedestrian and cyclist access for residents is provided via Dundrum Road. Figure 6.4 outlines the key access points at ground level. The updated bicycle parking schedule for the development at Mount Saint Mary's, Dundrum Road, provides a total of 180 spaces. This includes 154 long-term spaces, with 8 non-standard spaces specifically designated for cargo bikes and e-bikes, and 26 short-term spaces.

In accordance with the Compact Settlement Guidelines (CSG), for residential units without ground-level open space or those with smaller terraces, a minimum of 1 cycle storage space per bedroom is recommended. Therefore, the guidelines suggest a provision of 148 long-term and 26 short-term spaces, amounting to a total requirement of 174 spaces.

Table 6.1 - Bicycle Parking Requirements

DLR Parking Requirements		
Land Use	Long Stay	Short Stay
Apartments	1 space per unit	1 space per 5 units
2 Bed Duplex	1 space per unit	1 space per 5 units
3 Bed Duplex	1 space per unit	1 space per 5 units

The Dún Laoghaire-Rathdown County Council (DLRCC) Development Plan sets slightly lower bicycle parking standards, requiring 1 long-term space per residential unit and 1 short-term space per 5 units (Table 6.1). Based on these guidelines, the development needs 129 long-term and 26 short-term spaces, totalling 155 spaces. To meet the higher CSG requirements (Figure 6.2), an additional 19 long-term spaces have been included, ensuring a total provision of 174 spaces. Furthermore, 6 additional long-term spaces have been provided, bringing the overall total to 180 bicycle parking spaces on site.

Additionally, DLRCC standards stipulate that at least 50% of short-term and all long-term cycle parking should be covered, with short-term parking located within 25 meters of main entries and long-term parking within 50 meters of the destination.

Cyclists can access the bicycle parking spaces via the main site entrance onto Leapardstown Road.

It is deemed that the overall level of cycle parking is of an order that will facilitate and encourage future residents to significantly uptake cycling for utility and recreational purposes, the majority enclosed within the dedicated cycle stores.

Guided by the "DLR Standards for Cycle Parking and associated Cycling Facilities for New Developments 2018", the subsequent principles for cycle parking storage are as follows:

(i) General Principles for Larger Sites: On larger sites: Cycle parking should be distributed throughout the site rather than concentrated in one area. This also applies to visitor/customer bike parking as well as staff bike parking. Cycle stands should be located in secure private or indoor spaces or in visible, well-lit places that have high levels of natural surveillance.

(ii) General Gradients: The gradients of roads and access routes within development sites should follow the National Cycle Manual. Cycle stands should not be placed sideways on ground with a slope greater than 2 degrees.

(iii) Access: Routes to cycle parking should be of a high standard and should not compromise personal safety. Private access routes between or behind buildings should be at least 1.5m wide (preferably 2.0m). A reduced width of 1.2m is acceptable for short distances (less than 10m).

(iv) Steps: Steps should not be used for cyclist access. Where unavoidable, steps should be equipped with wheel channels that allow cyclists to pass each other. Pedestrian needs should be considered during design. Cyclists should not be expected to use escalators, but moving sidewalks may be used with approval from the Planning Authority.
(v) Headroom: A minimum headroom of 2.4m should be provided wherever cyclists are expected to ride, including access to cycle parking in multi-storey or underground car parks.

(vi) Compounds: Lockable compounds should be used for long-term bike parking, preferably with smart card or proximity key access. Keypads may be used if managed with regular combination changes. No aperture in the compound should allow a bike to be passed through it. Sheffield cycle stands should be provided within compounds for added security.

(vii) Bike Lockers: Lockers accommodating various bike types can be an effective solution, especially for small numbers of bikes. However, they require active management for allocation, key issuance (smart card or proximity key preferred), and usage monitoring.

(viii) Doors: Doors used by cyclists with their bikes should be at least 1.2m wide and preferably electronically operated via automatic detection or push button located 3m from the door.
(ix) Signage: Clear signage should guide cyclists to parking areas, encouraging the use of designated parking and preventing bike parking on railings, posts, etc.

(x) Lighting: Cycle parking areas should be well-lit for ease of bike access and security. Parking areas should not be obstructed by landscaping or planting.

(xi) Natural/Passive Surveillance: Cycle parking, including visitor/customer parking, should be in locations with high visibility, either from passers-by or adjacent buildings.

(xii) CCTV: CCTV systems should cover cycle parking areas to enhance both bike and personal security.

(xiii) Public Realm: Cycle parking stands should be aesthetically pleasing and fit for purpose, reflecting the surroundings and located close to destinations.

Figure 6.1 outlines the minimum standards (sum of both short-stay and long-stay) of cycle parking provision that will be sought for residential developments (zone 1/ zone 2) within Dún Laoghaire-Rathdown County Council.

Figure 6.1 - Cycle Parking Standards for Residential Developments for Zones 1 & 2

Residential Development type	1 short stay (visitor) parking space per: (Minimum of 2 spaces)	1 long stay parking space per: (Minimum of 2 spaces)
Apartments, Flats, Sheltered housing	5 units	1 unit
Houses - 2 bed dwelling	5 units	1 unit
Houses - 3+ bed dwelling	5 units	1 unit
Sheltered housing	5 units	1 unit
Student Accommodation	5 bedrooms	2 bedrooms

Figure 6.2 - Cycle Parking Standards in line with Compact Settlement Guideline SPPR4

SPPR 4 - Cycle Parking and Storage

It is a specific planning policy requirement of these Guidelines that all new housing schemes (including mixed-use schemes that include housing) include safe and secure cycle storage facilities to meet the needs of residents and visitors.

The following requirements for cycle parking and storage are recommended:

(i) Quantity – in the case of residential units that do not have ground level open space or have smaller terraces, a general minimum standard of 1 cycle storage space per bedroom should be applied. Visitor cycle parking should also be provided. Any deviation from these standards shall be at the discretion of the planning authority and shall be justified with respect to factors such as location, quality of facilities proposed, flexibility for future enhancement/ enlargement, etc. It will be important to make provision for a mix of bicycle parking types including larger/heavier cargo and electric bikes and for individual lockers.

6.3 Car Parking

The Development Plan outlines car parking standards for new developments, detailing the required off-street parking for residential and non-residential land uses in Table 12.5. Section 12.4.5.1 indicates parking zone requirements.

Parking zones have differing requirements for vehicular parking based on their proximity to public transport services. Notably, Zone 2 mandates a maximum of 129 parking spaces, to accommodate the entire scheme.

For car parking spaces in “Zone 2”;

- For 1 bedroom apartment: 1 space per unit
- For 2 bedroom apartment : 1 space per unit
- For 3-3+ bedroom apartment : 2 spaces per unit

The proposed allocation of 65 car parking spaces is deemed adequate to serve the development. This includes accessible resident spaces and disabled spaces in line with section 12.4.5.3 in the development plan. Specifically, 65 long-term resident spaces are provided, including 12 ev charging spaces and 3 disabled spaces.

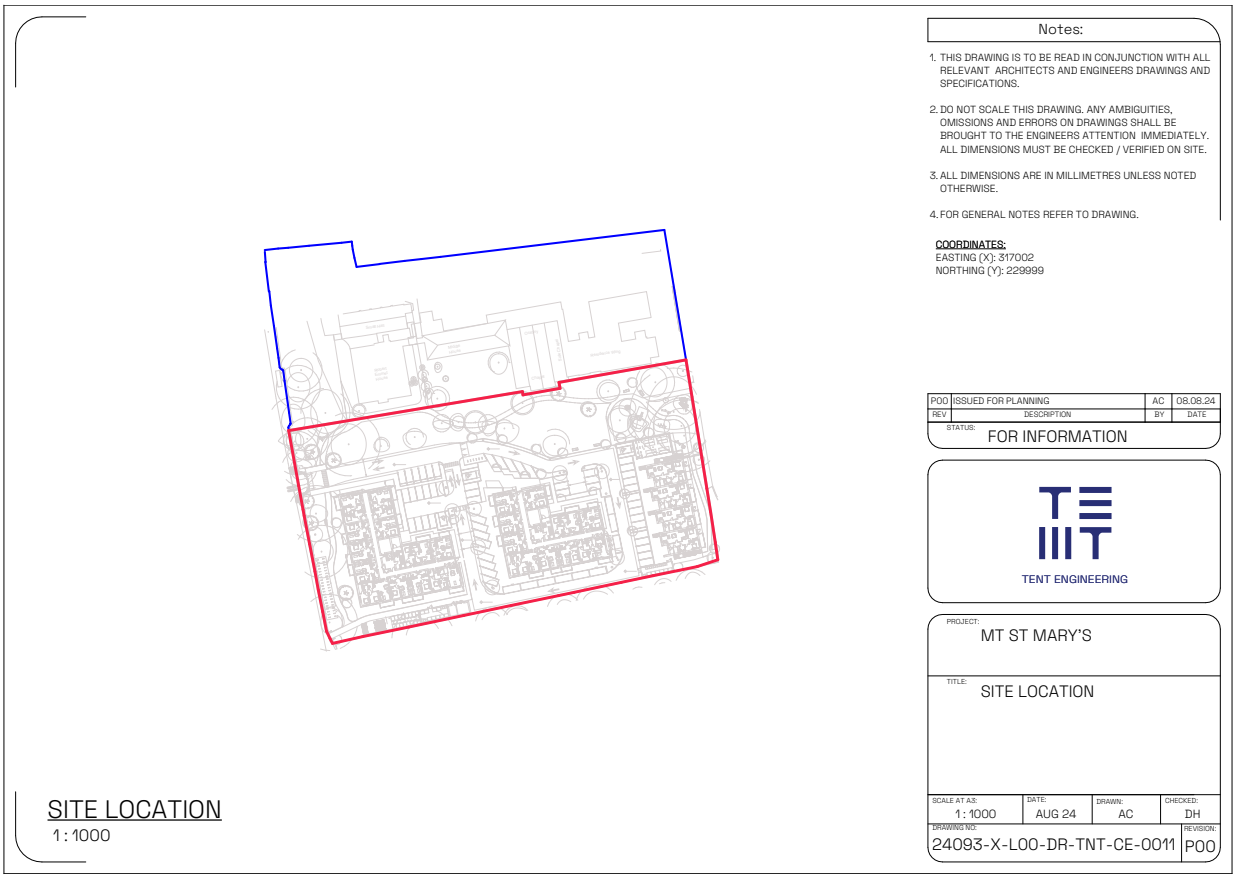
The development plan sets out a requirement for a standard of 129 spaces. After consulting with the local authorities, it was agreed that a minimum of 50% of the standard requirement should be achieved. This scheme provides 65 spaces. This is 50% of the standard required and agreed with DLR.

Given the relatively low parking requirement for the site, the impact on the local road network is considered negligible.

The Framework Mobility Management Plan (Section 8) has outlines measures to liaise with residents and engage with such car sharing companies should the need for increased provision in the area be determined.

DLR Parking Requirements (Zone 2)		
Land Use	Long Stay	Short Stay
1 Bed Apartment	1 space per unit	Not Specified
2 Bed Apartment	1 space per unit	Not Specified
3 Bed Apartment	2 space per unit	Not Specified

Fig. 6.2 - Site Location



6.4 Bike Parking Plan

The development provides a total of 180 bicycle parking spaces, comprising 154 long-term spaces, which include 8 non-standard bike spaces, along with 26 visitor spaces. This provision is considered sufficient to meet the bicycle parking needs of the development.

- **Long Stay Parking:** These are allocated to the residents and are located in secure, dedicated areas within the development. The parking facilities will include cycle cages and lockers to ensure security and ease of access. Two dedicated bike lock-up units will provide residents with ample bike parking space.
- **Short Stay Parking:** These are strategically located near building entrances and common areas to ensure convenience and accessibility for short-term use.
- **Design Considerations:** All bicycle parking facilities are designed to be high quality, attractive, well-located, easily accessible, and secure by design, adhering to the standards set forth in the Sustainable Residential Development and Compact Settlements Guidelines for Planning Authorities.

6.4.1 Security and Management of Bike Parking

The development provides secure, covered communal bike parking facilities, centrally located for resident convenience. In line with the Compact Settlement Guidelines, a minimum of 1 cycle storage space per bedroom is provided for units without ground-level open space or with smaller terraces. Robust racks offer secure locking points, and designated spaces accommodate larger bikes like cargo bikes and e-bikes, ensuring safe storage for all bicycle types.

The apartment blocks will benefit from dedicated communal bike parking areas located within close proximity to the units. These bike parking areas will be designed to accommodate the needs of the residents, providing ample space and secure bike racks.

To accommodate visitors, external Sheffield stand units will be installed at various strategic locations throughout the development. These stands are renowned for their durability and ease of use, allowing visitors to securely lock their bicycles during their visit. The Sheffield stands will be placed in well-lit, visible areas to ensure safety and deter theft. Additionally, clear signage will be provided to direct visitors to these bike parking areas, making it convenient for them to find secure parking options.

Fig. 6.3 - Secure Communal Bike Parking

6.5 Car Parking Plan

- **Resident Parking:** The development provides a total of 65 car parking spaces, including one space per 1-2 bedroom apartment and two spaces per 3-bedroom or larger apartment. This allocation constitutes 50% of the standard parking spaces, as agreed upon with Dún Laoghaire-Rathdown County Council prior to the planning submission. To improve safety and user experience, planters have been strategically placed between parking spaces. These planters act as buffers, reducing the likelihood of vehicle collisions and providing additional protection for pedestrians as they navigate between parked cars.
- **Accessible Parking:** A minimum of 4% of the provided car parking spaces will be reserved for wheelchair accessible spaces to ensure inclusivity and compliance with accessibility standards.

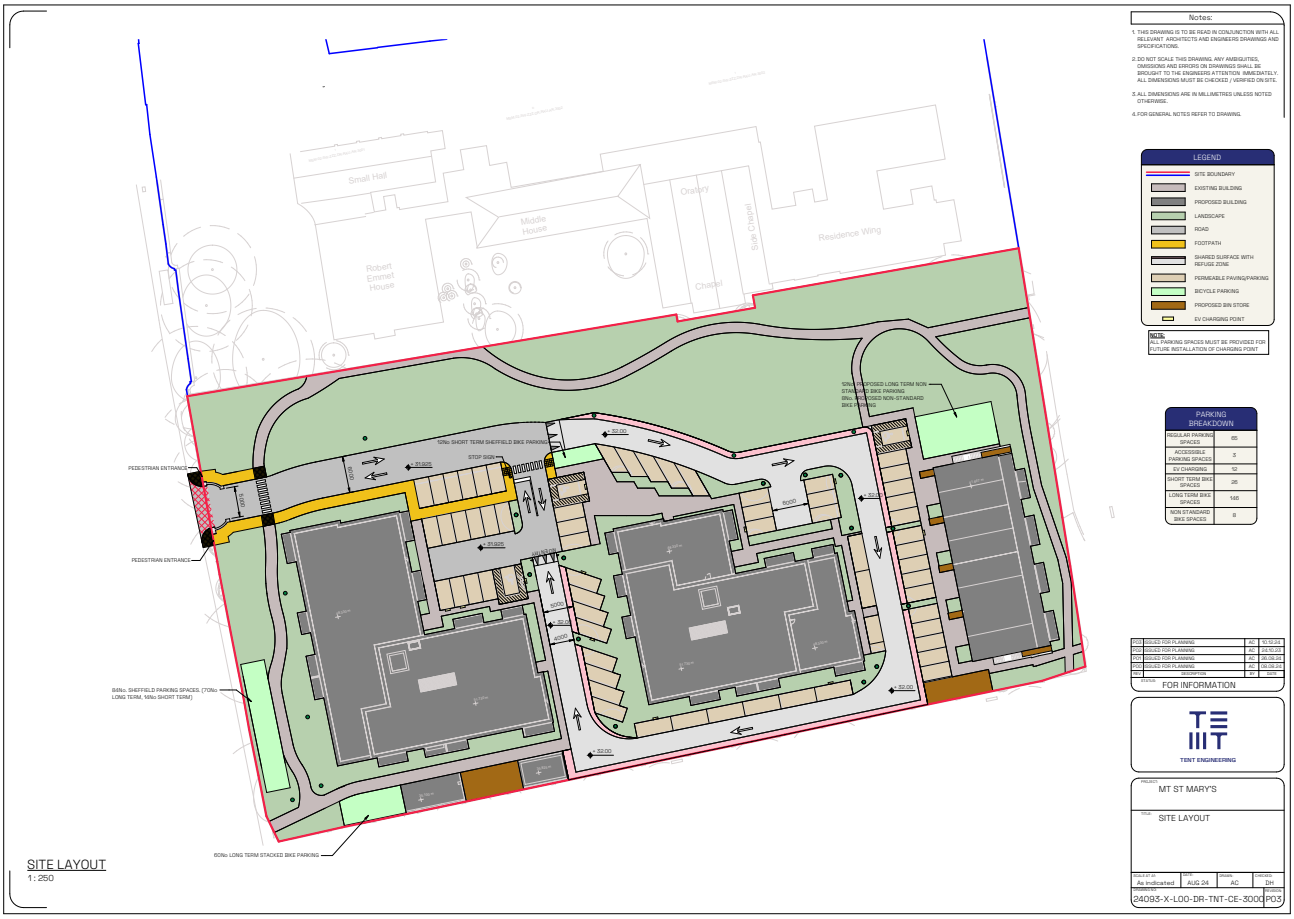
6.5.1 EV Charging Infastructure Plan

To address the requirements for electric vehicle (EV) charging, the proposed development includes a comprehensive EV charging infrastructure plan. A total of 12 EV charging points, at a rate of 1 charging point per 5 spaces, will be distributed throughout the development, ensuring accessibility for all residents and visitors.

The shared EV charging stations will be implemented to serve multiple parking bays efficiently. This shared approach minimizes the distance residents need to travel to access EV charging facilities and ensures that visitors have adequate access to charge their cars. Each charging station will be equipped with multiple charging points, providing flexibility and convenience for EV users.

Provision is also made for future expansion of the EV charging infrastructure to accommodate increased demand as more residents adopt electric vehicles. This future-proofing approach aligns with the sustainability goals and ensures long-term usability and satisfaction for the residents.

Fig. 6.4 - Parking Layout



6.5.2 Justification of Car Parking Provision

The car parking provision for the proposed development at Mount Saint Mary's, Dundrum Road, Dublin 14, has been carefully considered based on the feedback received from Dún Laoghaire-Rathdown County Council. The site has been classified within Parking Zone 2, where parking standards are applied on a 'normal' basis, as opposed to the 'maximum' standards applied in Zone 1.

In light of this classification, the proposal includes a parking provision of 50% of the maximum allowable standard for Zone 2. This percentage reflects the Council's recommendation, and any deviation from these standards would be subject to evaluation based on several key criteria outlined by the local authority. While the Council has indicated that 50% is a suitable target for this development, we have been advised not to reduce the provision below this level.

DLR Assessment Criteria for Deviation from Car Parking Standards

In line with Dún Laoghaire-Rathdown's guidance, we have assessed the parking provision against the following criteria:

- **Proximity to public transport services:** The site benefits from good public transport links, with both the Luas Green Line and multiple bus services in the vicinity. This access to high-quality public transport supports a reduced reliance on private car use and justifies a lower parking provision.
- **Walking and cycling accessibility:** The area surrounding the site offers excellent pedestrian and cycling facilities. The proposed development includes enhancements to these modes of travel, further encouraging a shift away from car dependency.
- **Modal shift and sustainable transport:** The proposal supports the ongoing investment in sustainable transport options, such as cycling and public transport. Reducing car parking provision aligns with the Council's objective of encouraging modal shift towards greener transport methods.
- **Car sharing and bike-sharing facilities:** The proximity of bike-sharing schemes and the potential for car-sharing services in the area further reduce the need for extensive on-site parking.
- **Urban design and vibrancy:** By limiting parking, the development promotes a more vibrant, pedestrian-friendly environment, enhancing the street-level experience and contributing to local urban regeneration efforts.
- **Mobility Management Plan:** A robust **Mobility Management Plan (MMP)** has been developed to promote sustainable travel options for future residents and visitors. The MMP includes measures to support public transport usage, cycling, and walking, thus further reducing the necessity for extensive parking provision.

6.6 Rationale of One-Way Closed Loop Road System

The road layout for the proposed development was carefully considered, with several design options considered to ensure the best balance of traffic flow, safety, and ease of access. After evaluating various configurations such as the two-way closed loop system and the one-way cul-de-sac system, the one-way closed loop system emerged as the most effective solution. By directing all vehicles in a single direction, this layout streamlines traffic, cutting down on congestion and simplifying navigation for drivers. It also reduces the need for complex manoeuvres like reversing or sharp turns, making access to residential units and parking areas much smoother.

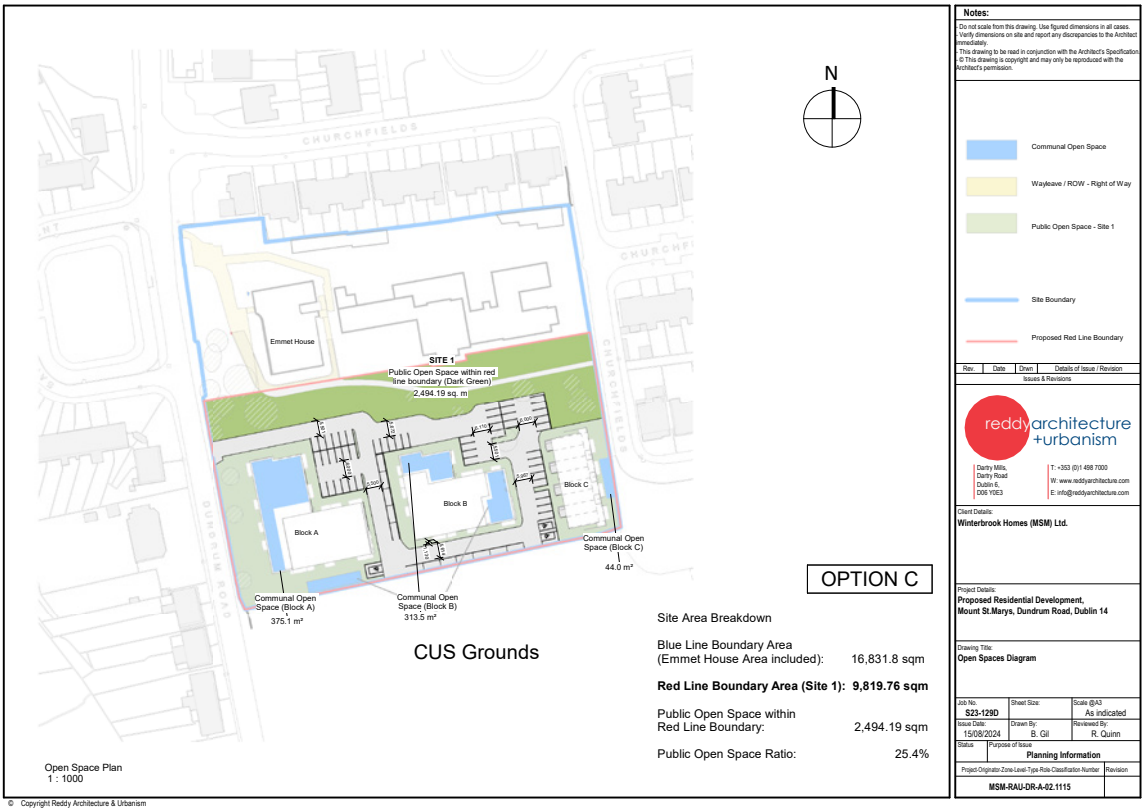
From a safety perspective, the one-way system offers advantages. Since all traffic moves in the same direction, the risk of head-on collisions or other vehicle conflicts is reduced. Drivers benefit from increased visibility at intersections and curves, lowering the chances of accidents, especially in a residential setting. Pedestrian safety also improves, as crossings and pathways can be more logically placed with the predictable flow of traffic in mind.

This design is also more efficient in terms of space. Because a one-way system allows for narrower roads, it frees up valuable space that can be used for open space and pedestrian paths. The narrower road also supports sustainable stormwater management, incorporating features like permeable surfaces and infiltration zones. The parking layout benefits, too—angled spaces can be safely added without taking up unnecessary space, making the overall design more compact and efficient.

The system improves access for emergency and service vehicles. With a clear, uninterrupted traffic flow, these vehicles can move through the development quickly and efficiently, reducing response times and avoiding bottlenecks.

Refer to the site layout drawing (fig 6.4 above) for the proposed One-Way Closed Loop Road System.

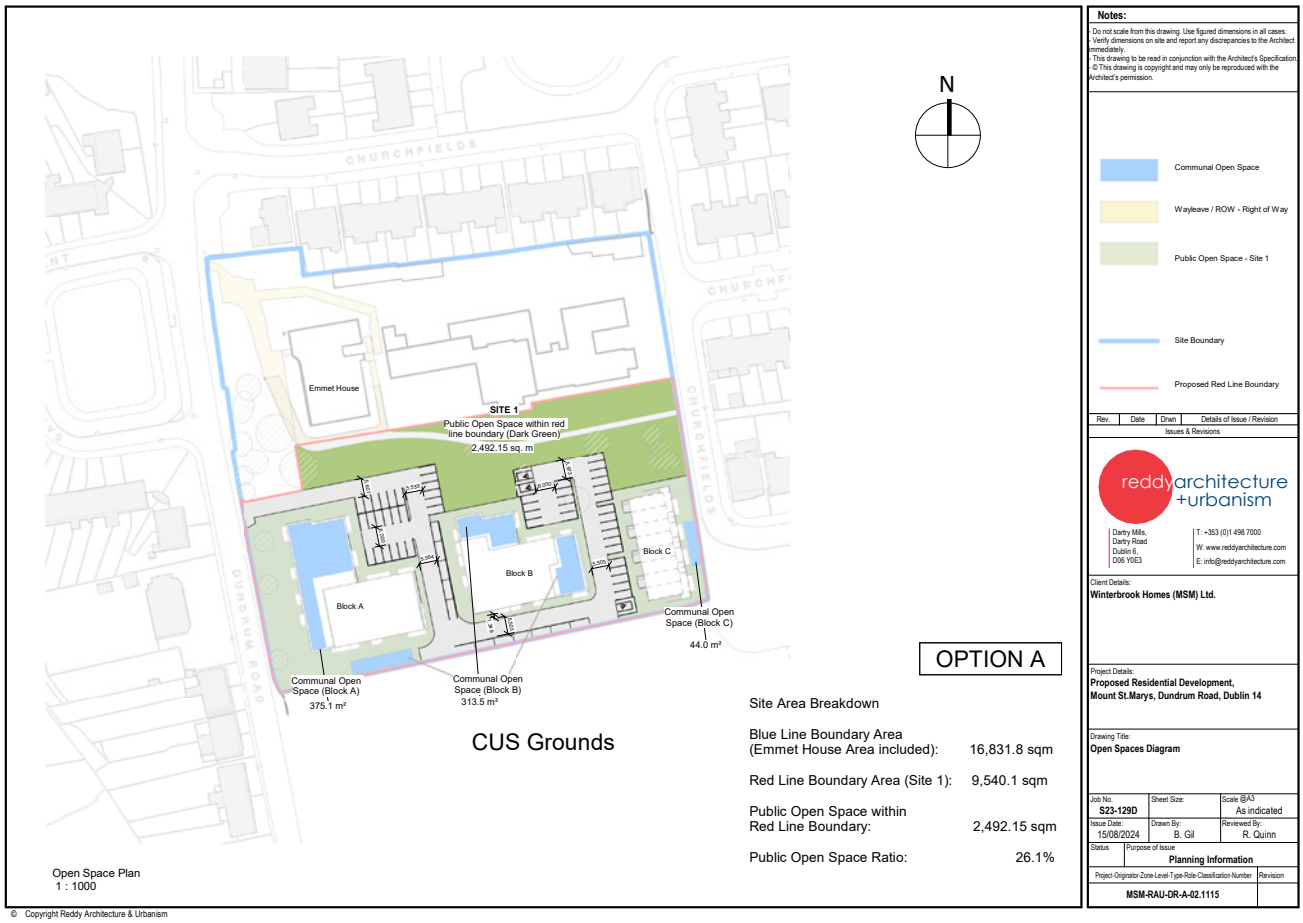
Fig. 6.5 - Two-Way Closed Loop System Road Layout



6.6.1 Comparison with Other Road Layout Options

- **Two-Way Closed Loop System (fig 6.5 above):** Although this option was considered, it was found to be less desirable due to the increased number of conflict points and the requirement for wider roads. A two-way system would complicate parking arrangements and pedestrian safety, leading to higher construction costs and reduced open space for landscaping and recreational use.
- **Hammerhead System (fig 6.6 below):** This alternative would limit through traffic but could create bottlenecks, especially during peak hours or emergencies. The hammerhead design also restricts circulation, which could make it harder for vehicles, particularly service and emergency vehicles, to navigate the development efficiently.

Fig. 6.6 - Hammerhead System Road Layout



7 Traffic Impact Assessment

The development provides 65 spaces. Based on Dun Laoghaire Rathdown standards, a slight shortfall in parking may require management strategies such as encouraging the use of public transport.

The additional traffic generated by the development is expected to have a minimal impact on the local road network. However, effective management and the promotion of sustainable transport options are recommended to continually encourage residents to walk, cycle, or take public transport as their first-choice mode of transport.

7.1 Traffic Data Analysis

A detailed traffic data analysis was conducted for the site located at Mount Saint Mary's, Dundrum Road, by IDASO Ltd. The Automatic Traffic Count (ATC) survey, spanning from Tuesday 27th August to Monday 2nd September, captured a total of 89553 vehicle movements over the seven-day period. The analysis highlights a well-distributed and manageable traffic volume, averaging 12793 vehicles per day, with a peak of 13850 vehicles on Friday 30th August. These insights confirm the site's capacity to handle current traffic effectively, and the data will be beneficial in ensuring that the proposed development integrates smoothly with existing traffic patterns.

If we conservatively assume the 65 car spaces we are adding with this development generate 65 additional PCUs during the peak periods, of which 32 travel south and 33 travel north, the impact on this development is calculated to be 0.51% traveling south and 0.44% traveling north at peak times.

In summary, the development is considered to have a negligible impact on Dundrum Road based on the worst-case assumptions set out above. It is noted within this report that the public transport links will likely see a reduced reliance on the car. In addition, the new habits related to remote working and flexible office hours will see the movement associated with cars from this development be less concentrated over the traditional peak AM and PM periods.

Detailed findings and analysis are available in Appendix E.

7.2 Road Safety Audit

Road Safety Audit to be completed as part of final issue.

7.3 Construction Management Plan

7.4 Public Transport Capacity Assessment

A public transport capacity study was completed fot the site and intended use. Refer to appendix F for the extent of the full report.

The study has been informed by comprehensive bus and Luas occupancy surveys, and review of a range of planning stage documents.

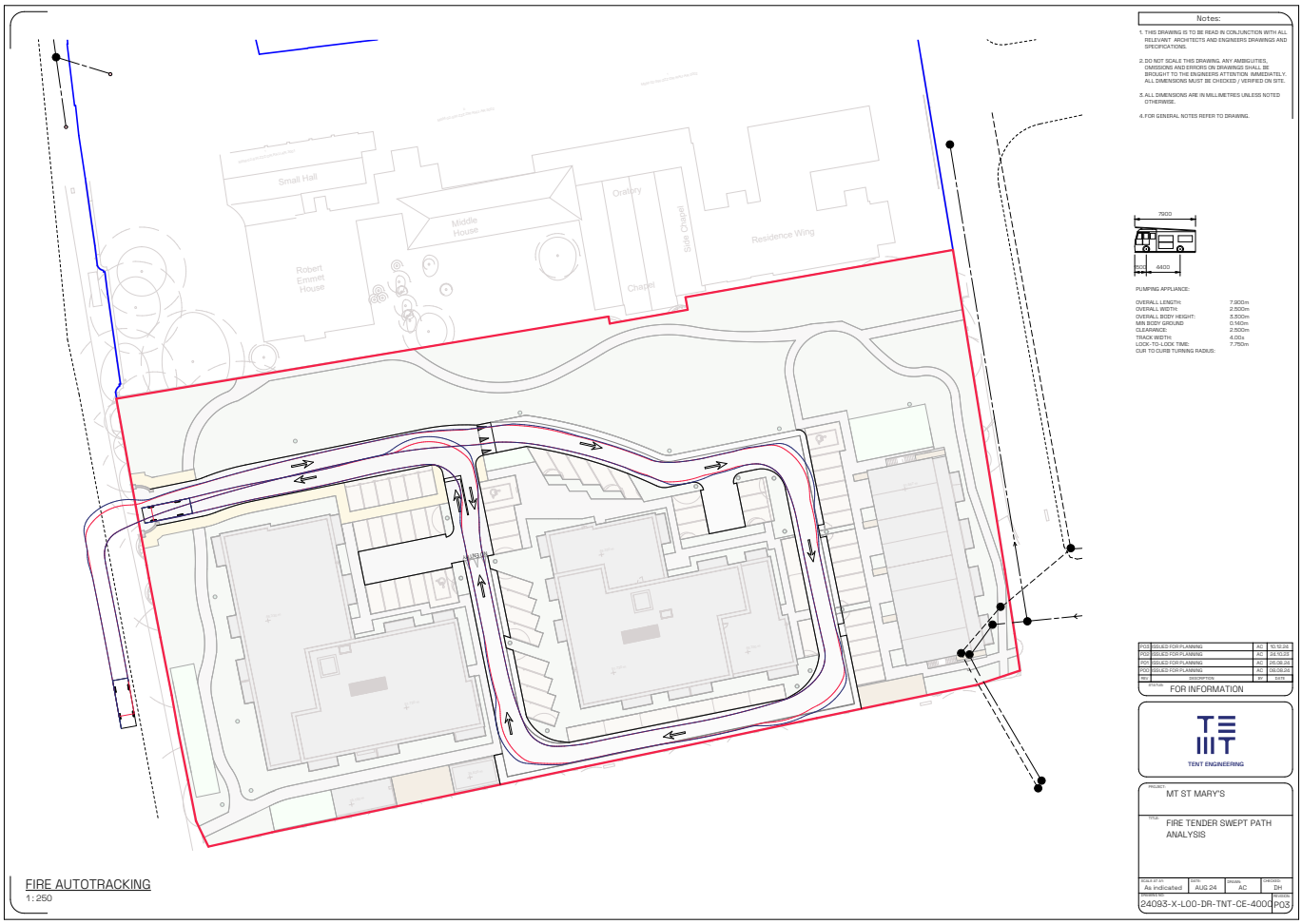
Based on the findings of the public transport occupancy survey and analysis contained within this Note, it was found that residents of the proposed development would utilise ca. 0.26% and 0.19% of the total capacity of existing AM and PM peak hour public transport services respectively. Furthermore, it has been determined that local public transport services (bus and Luas) have ample capacity to accommodate such demand. As such, it is apparent that current public transport capacity is sufficient to accommodate additional passenger demand generated by the proposed development.

7.5 Refer to appenix D for the Outline Construction Management Plan.

7.6 Emergency Services Access

Emergency services will access the site directly off Dundrum Road and enter the site. The access point, which can be reached in a forward gear, is deemed acceptable by our fire engineer. The fire tender will then complete a three-point turn in a zone closely coordinated with the landscape architect, allowing them to exit in a forward gear. This manoeuvre is tracked in Figure 7.1 below.

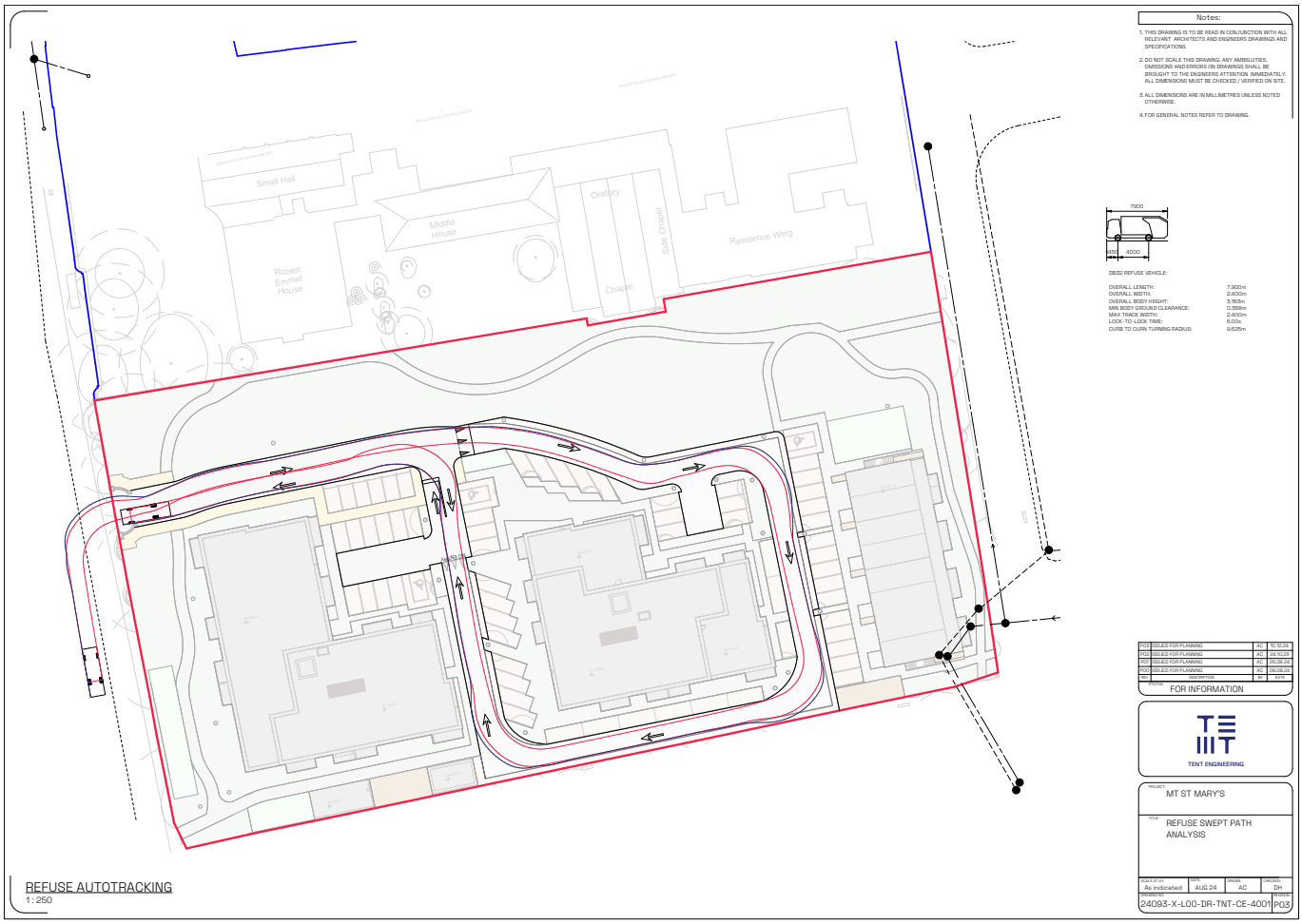
Figure 7.1 - Fire Tender Access



7.7 Servicing the Development

The development consists of 129 units. Given that the apartments have very limited servicing requirements, the primary issue is refuse collection. Each apartment has access to a managed bin storage area located on the ground floor. The Development Property Management Company will be responsible for moving the bins to a collection point weekly on the designated refuse collection day. Similar to the fire tender, the bin lorry will enter and exit in a forward gear.

Figure 7.2 - Bin Lorry Access



7.8 Sightliness and access

Sightlines have been tested for the site exit using the latest Bus Connects plans. These tests demonstrate that the sightlines are compliant for forward visibility of both oncoming vehicles and cyclists. This evaluation includes checks of the existing road layout as well as the proposed future Bus Connects layouts.

7.9 Future Bus Connects

Future Bus Connects plans have been studied, and it has been determined that the proposed development has no impact on these plans.

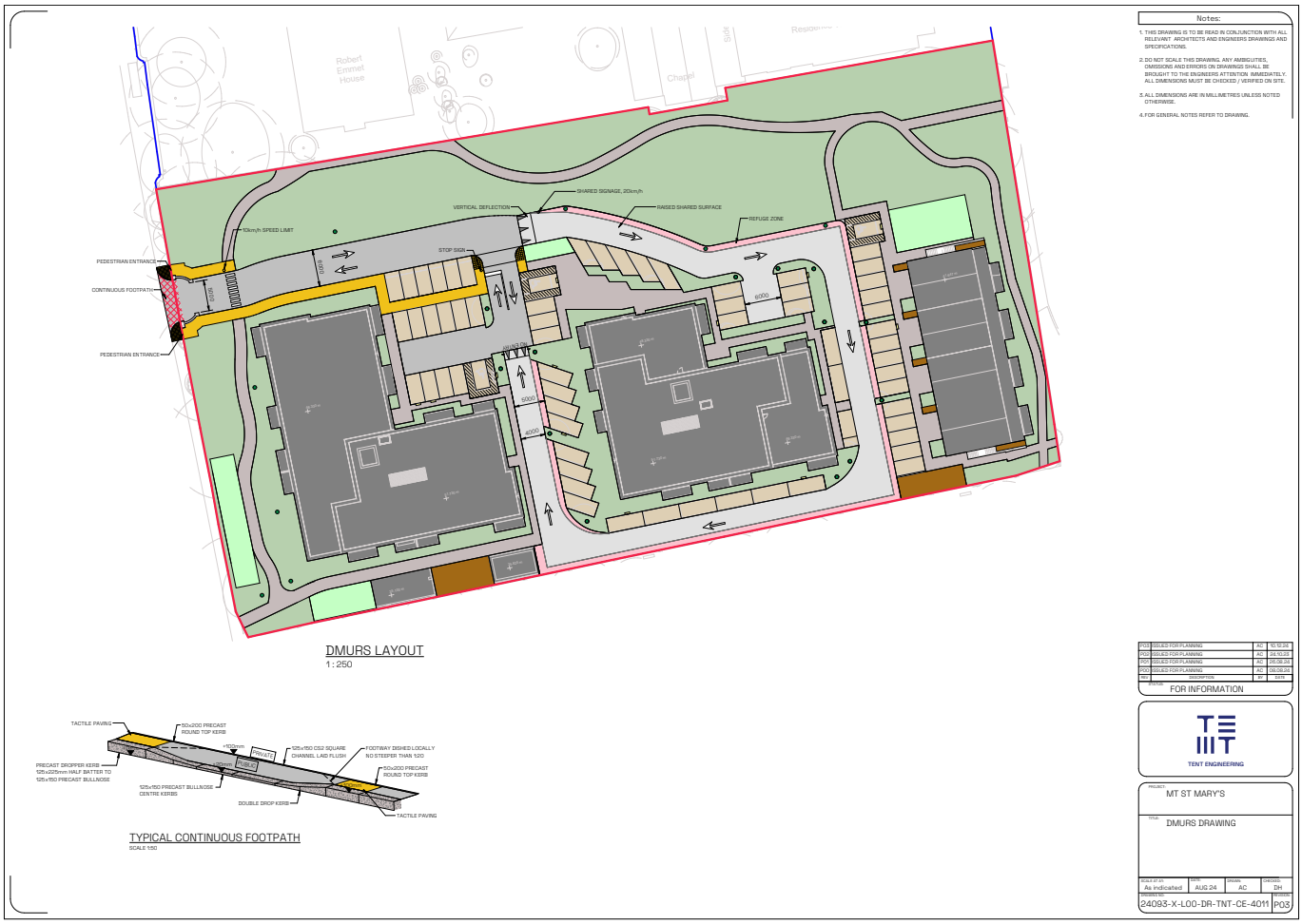
Figure 7.3 - Sightlines at Exit

7.10 DMURS compliant access

It is proposed to upgrade the access through Mount Saint Mary's to a DMURS compliant shared surface.

Details of the upgrades are shown below in fig 7.4. This helps creates a low speed environment where pedestrians and cyclist have priority.

Figure 7.4 - DMURS Layout



8 Mobility Management Plan

Refer to the appendix for the Mobility Management Plan for the site.

9 Summary and Conclusion

9.1 Summary

This Transport Statement (TS) has been prepared in support of the proposed residential development on lands located at Mount Saint Mary's, Dundrum Road, Dundrum, Dublin 14. The document assesses the transport planning context, accessibility, and transport characteristics of the proposed development.

The site is situated on Dundrum Road in South Dublin, approximately 4km from Dublin City Centre. It is bordered by private residences to the east, the Dundrum Road to the west, the former Mount Saint Mary's Chapel to the north and the CUS Rugby Grounds to the south.

The site benefits from excellent sustainable transport links, including strong pedestrian and cycling infrastructure. Several bus routes and Luas stations are within walking distance, providing convenient connections to Dublin and the surrounding areas.

The proposed development consists of 129 residential units across three blocks, with heights reaching up to 6 storeys. Block A comprises 33 one-bedroom units designed for 2 occupants, 17 two-bedroom units designed for 3 occupants and 15 two-bedroom units designed for 4 occupants. Block B features 35 one-bedroom units designed for 2 occupants, 6 two-bedroom units designed for 3 occupants and 15 two-bedroom units designed for 4 occupants. Block C comprises 4 one-bedroom units designed for 2 occupants and 4 two-bedroom units designed for 4 occupants.

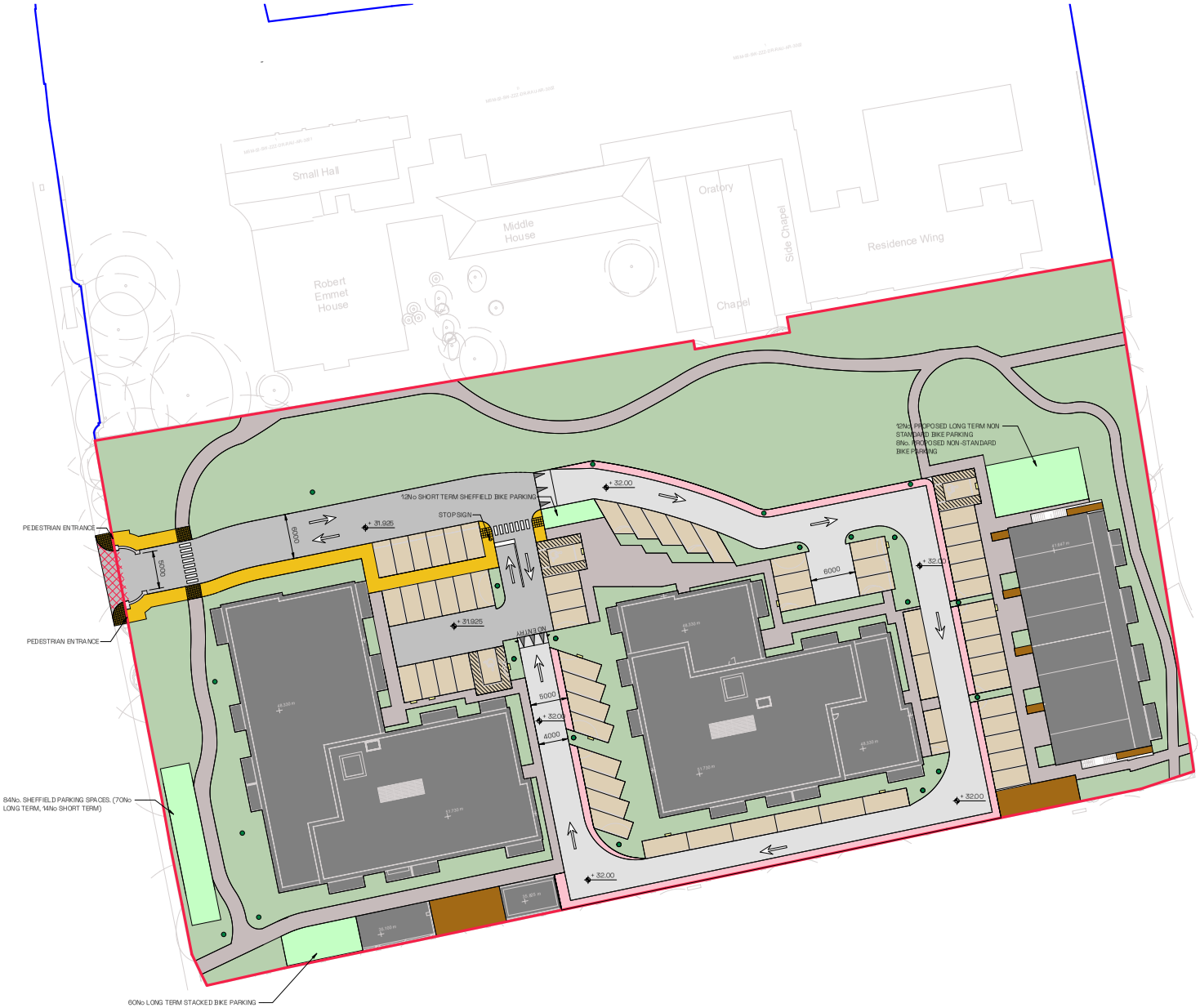
The development includes 180 secure bicycle parking spaces for residents and visitors at ground level, along with 65 car parking spaces catering to residents, visitors, people with disabilities, and parents with children.

9.2 Conclusion

The proposed development is not anticipated to have a detrimental impact on the local road network in terms of congestion and road safety.

In conclusion, it is considered that the development proposals are reasonable and appropriate for the location and that there are no reasons why the development proposal should not be granted planning permission on traffic and transport grounds.

10 Appendix A - Drawings



SITE LAYOUT
1 : 250

Notes:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
2. DO NOT SCALE THIS DRAWING. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON DRAWINGS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY. ALL DIMENSIONS MUST BE CHECKED / VERIFIED ON SITE.
3. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
4. FOR GENERAL NOTES REFER TO DRAWING.

LEGEND

- SITE BOUNDARY
- EXISTING BUILDING
- PROPOSED BUILDING
- LANDSCAPE
- ROAD
- FOOTPATH
- SHARED SURFACE WITH REFUGE ZONE
- PERMEABLE PAVING/PARKING
- BICYCLE PARKING
- PROPOSED BIN STORE
- EV CHARGING POINT

NOTE:
ALL PARKING SPACES MUST BE PROVIDED FOR FUTURE INSTALLATION OF CHARGING POINT

PARKING BREAKDOWN	
REGULAR PARKING SPACES	65
ACCESSIBILE PARKING SPACES	3
EV CHARGING	12
SHORT TERM BIKE SPACES	26
LONG TERM BIKE SPACES	146
NON STANDARD BIKE SPACES	8

REV	DESCRIPTION	BY	DATE
P03	ISSUED FOR PLANNING	AC	10.12.24
P02	ISSUED FOR PLANNING	AC	24.10.23
P01	ISSUED FOR PLANNING	AC	26.08.24
P00	ISSUED FOR PLANNING	AC	08.08.24

STATUS: FOR INFORMATION

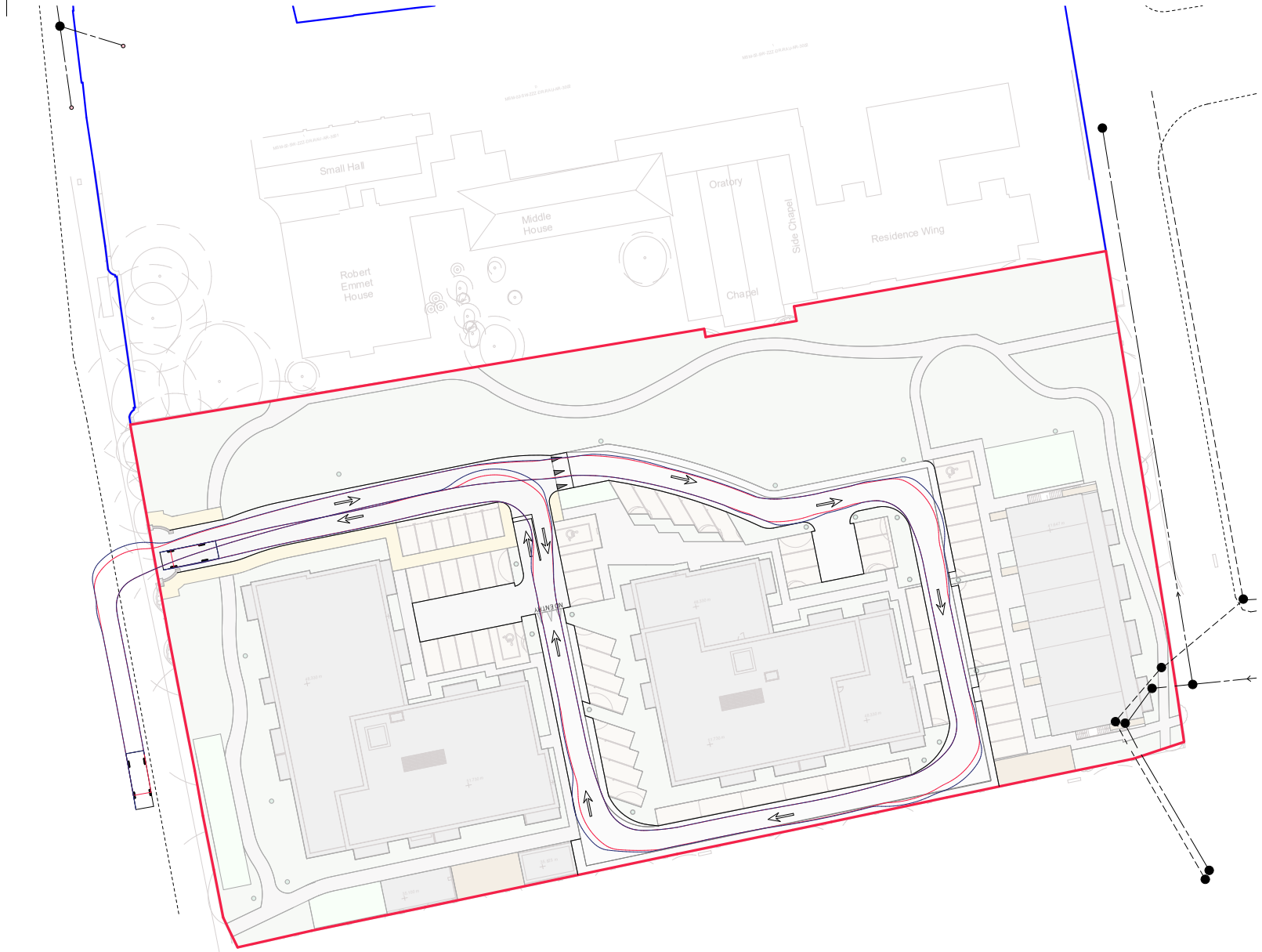
TENT ENGINEERING

PROJECT: MT ST MARY'S

TITLE: SITE LAYOUT

SCALE AT A1:	DATE:	DRAWN:	CHECKED:
As indicated	AUG 24	AC	DH

DRAWING NO: 24093-X-L00-DR-TNT-CE-3000 REVISION: P03



FIRE AUTOTRACKING
1:250

Notes:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
2. DO NOT SCALE THIS DRAWING. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON DRAWINGS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY. ALL DIMENSIONS MUST BE CHECKED / VERIFIED ON SITE.
3. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
4. FOR GENERAL NOTES REFER TO DRAWING.

PUMPING APPLIANCE:

OVERALL LENGTH:	7.900m
OVERALL WIDTH:	2.500m
OVERALL BODY HEIGHT:	3.300m
MIN BODY GROUND CLEARANCE:	0.140m
TRACK WIDTH:	2.500m
LOCK-TO-LOCK TIME:	4.00s
CUR TO CURB TURNING RADIUS:	7.750m

REV	DESCRIPTION	BY	DATE
P03	ISSUED FOR PLANNING	AC	10.12.24
P02	ISSUED FOR PLANNING	AC	24.10.23
P01	ISSUED FOR PLANNING	AC	26.08.24
P00	ISSUED FOR PLANNING	AC	08.08.24

STATUS: FOR INFORMATION

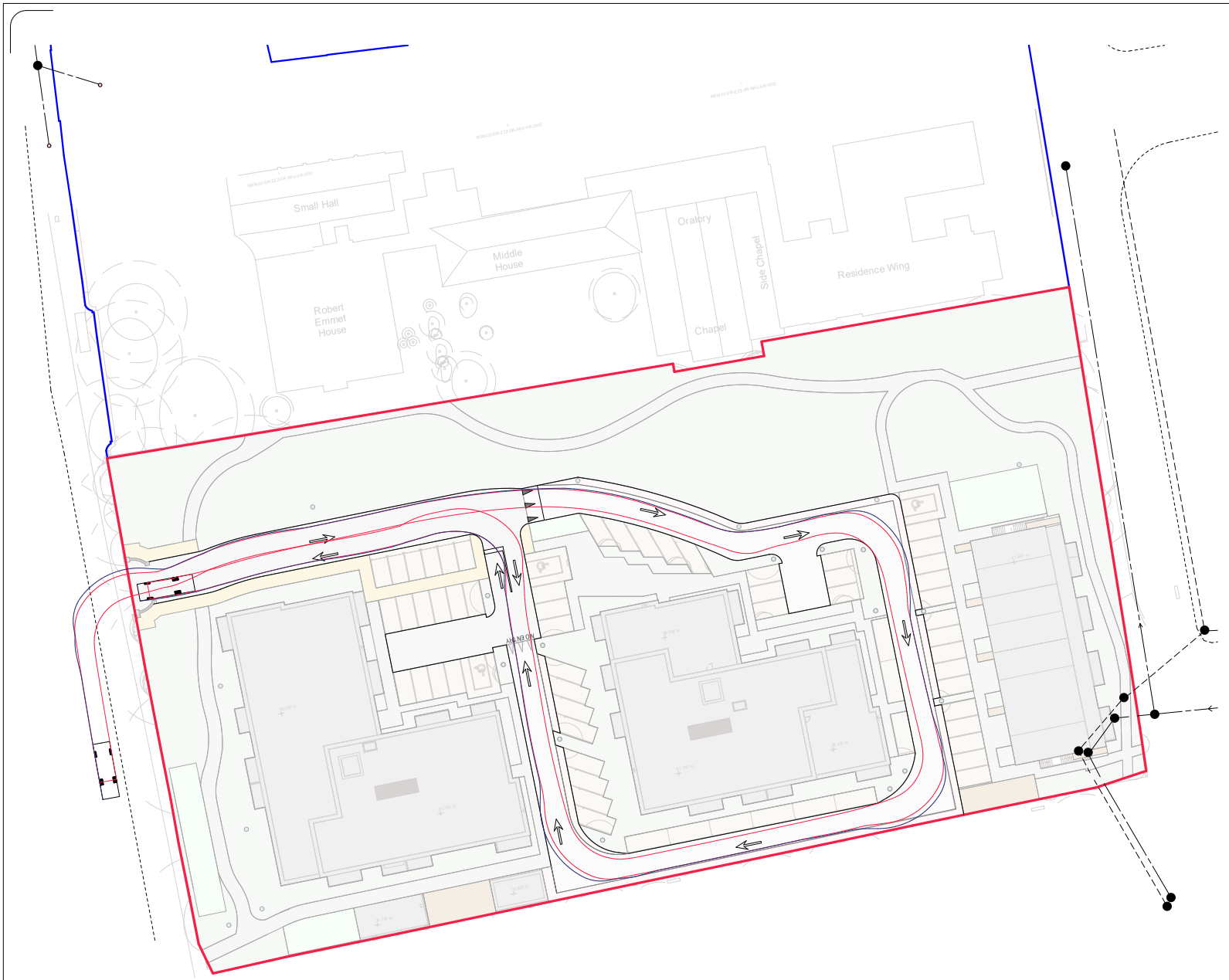
TENT ENGINEERING

PROJECT: MT ST MARY'S

TITLE: FIRE TENDER SWEPT PATH ANALYSIS

SCALE AT A1:	DATE:	DRAWN:	CHECKED:
As indicated	AUG 24	AC	DH

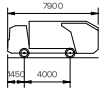
DRAWING NO: 24093-X-L00-DR-TNT-CE-4000 REVISION: P03



REFUSE AUTOTRACKING
1:250

Notes:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
2. DO NOT SCALE THIS DRAWING. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON DRAWINGS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY. ALL DIMENSIONS MUST BE CHECKED / VERIFIED ON SITE.
3. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
4. FOR GENERAL NOTES REFER TO DRAWING.



DB32 REFUSE VEHICLE:

OVERALL LENGTH:	7.900m
OVERALL WIDTH:	2.400m
OVERALL BODY HEIGHT:	3.183m
MIN BODY GROUND CLEARANCE:	0.388m
MAX TRACK WIDTH:	2.400m
LOCK-TO-LOCK TIME:	6.00s
CURB TO CURN TURNING RADIUS:	9.625m

REV	DESCRIPTION	BY	DATE
P03	ISSUED FOR PLANNING	AC	10.12.24
P02	ISSUED FOR PLANNING	AC	24.10.23
P01	ISSUED FOR PLANNING	AC	26.08.24
P00	ISSUED FOR PLANNING	AC	08.08.24

STATUS: FOR INFORMATION

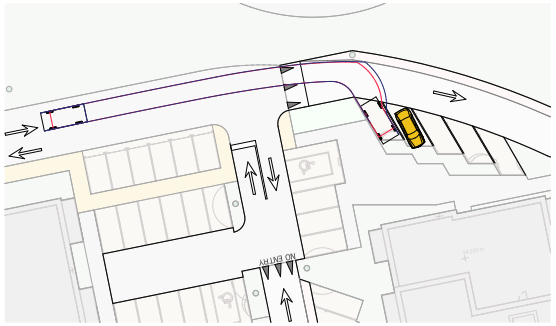
TENT ENGINEERING

PROJECT: MT ST MARY'S

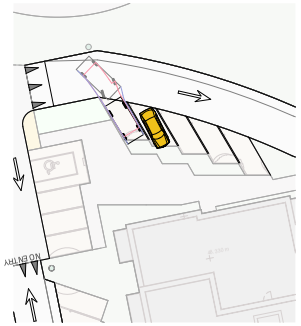
TITLE: REFUSE SWEPT PATH ANALYSIS

SCALE AT A1:	DATE:	DRAWN:	CHECKED:
As indicated	AUG 24	AC	DH

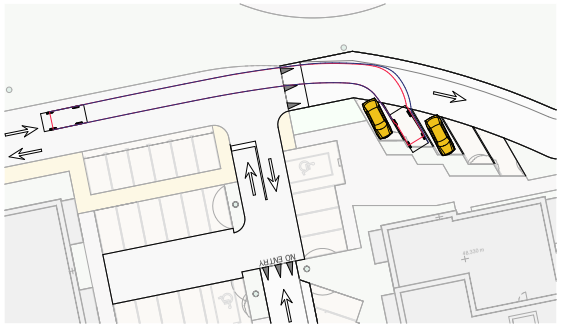
DRAWING NO: 24093-X-L00-DR-TNT-CE-4001 REVISION: P03



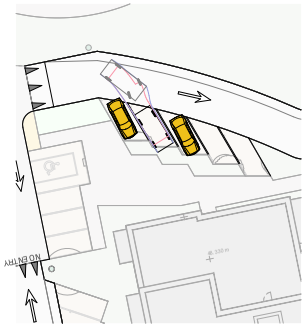
CAR AUTOTRACKING 1
1:250



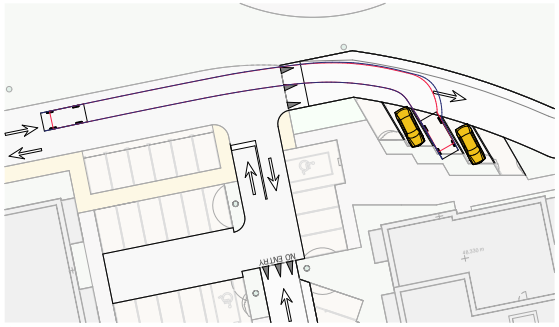
CAR AUTOTRACKING 1 OUT
1:250



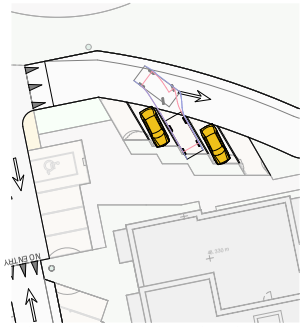
CAR AUTOTRACKING 2
1:250



CAR AUTOTRACKING 2 OUT
1:250



CAR AUTOTRACKING 3
1:250

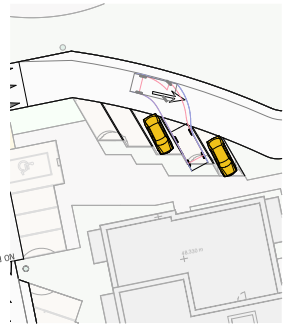


CAR AUTOTRACKING 3 OUT
1:250

Notes:

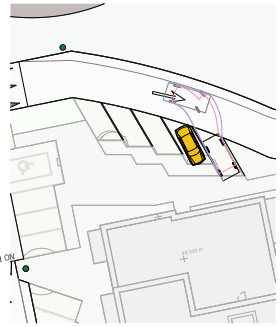
1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
2. DO NOT SCALE THIS DRAWING. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON DRAWINGS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY. ALL DIMENSIONS MUST BE CHECKED / VERIFIED ON SITE.
3. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
4. FOR GENERAL NOTES REFER TO DRAWING.

CAR AUTOTRACKING 4
1:250



CAR AUTOTRACKING 4 OUT
1:250

CAR AUTOTRACKING 5
1:250



CAR AUTOTRACKING 5 OUT
1:250

REV	DESCRIPTION	BY	DATE
P00	ISSUED FOR PLANNING	AC	10.12.24

STATUS: FOR INFORMATION

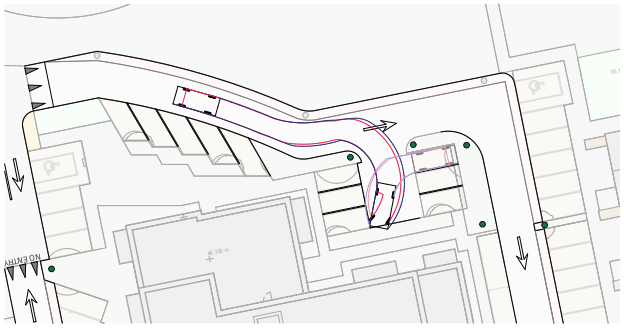
TENT ENGINEERING

PROJECT: MT ST MARY'S

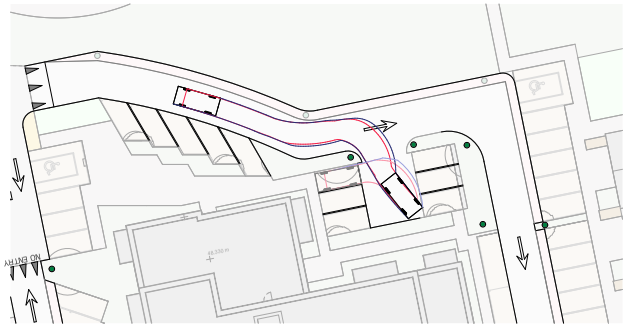
TITLE: CAR SWEPT PATH ANALYSIS

SCALE AT A1	DATE	DRAWN	CHECKED
1:250	AUG 24	AC	DH

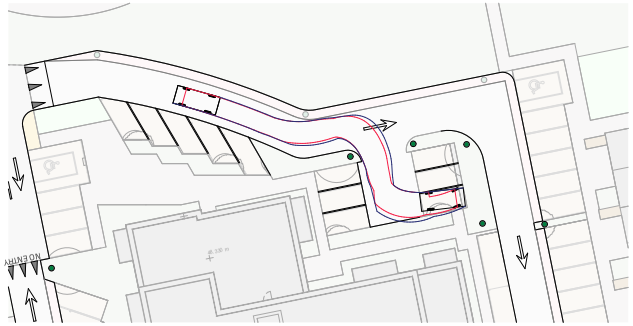
DRAWING NO: 24093-X-L00-DR-TNT-CE-4002 REVISION: P00



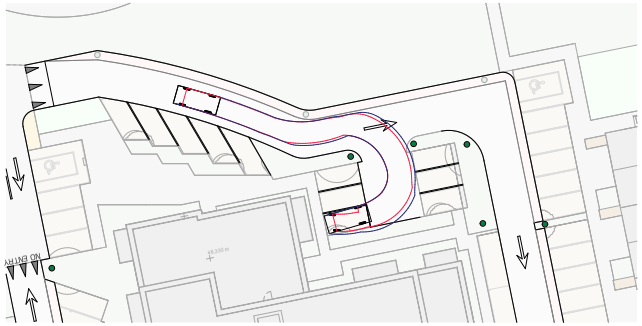
CAR AUTOTRACKING 6
1:250



CAR AUTOTRACKING 7
1:250



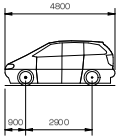
CAR AUTOTRACKING 8
1:250



CAR AUTOTRACKING 9
1:250

Notes:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
2. DO NOT SCALE THIS DRAWING. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON DRAWINGS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY. ALL DIMENSIONS MUST BE CHECKED / VERIFIED ON SITE.
3. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
4. FOR GENERAL NOTES REFER TO DRAWING.



STANDARD DESIGN VEHICLE (SDV)

OVERALL LENGTH:	4.800m
OVERALL WIDTH:	2.000m
OVERALL BODY HEIGHT:	1.950m
MIN BODY GROUND CLEARANCE:	0.100m
TRACK WIDTH:	2.000m
LOCK TO LOCK TIME	4.00s
WALL TO WALL TRNING RADIUS:	6.000m

REV	DESCRIPTION	BY	DATE
P00	ISSUED FOR PLANNING	AC	10.12.24

STATUS: FOR INFORMATION

TENT ENGINEERING

PROJECT: MT ST MARY'S

TITLE: CAR SWEPT PATH ANALYSIS 2

SCALE AT A1:	DATE:	DRAWN:	CHECKED:
As indicated	AUG 24	AC	DH

DRAWING NO: 24093-X-L00-DR-TNT-CE-4003 REVISION: P00

SIGHTLINES
1:250

Notes:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
2. DO NOT SCALE THIS DRAWING. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON DRAWINGS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY. ALL DIMENSIONS MUST BE CHECKED / VERIFIED ON SITE.
3. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
4. FOR GENERAL NOTES REFER TO DRAWING.

REV	DESCRIPTION	BY	DATE
P03	ISSUED FOR PLANNING	AC	10.12.24
P02	ISSUED FOR PLANNING	AC	24.10.23
P01	ISSUED FOR PLANNING	AC	26.08.24
P00	ISSUED FOR PLANNING	AC	09.08.24

STATUS: FOR INFORMATION

TENT ENGINEERING

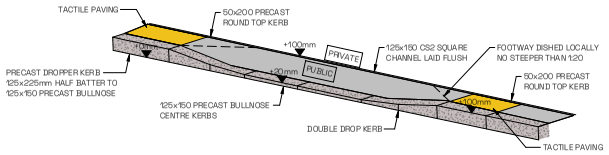
PROJECT: MT ST MARY'S

TITLE: SIGHTLINES

SCALE AT A1	DATE	DRAWN	CHECKED
1:250	AUG 24	AC	DH

DRAWING NO: 24093-X-L00-DR-TNT-CE-4010 REVISION: P03

DMURS LAYOUT
1 : 250



TYPICAL CONTINUOUS FOOTPATH
SCALE 1:50

Notes:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
2. DO NOT SCALE THIS DRAWING. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON DRAWINGS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY. ALL DIMENSIONS MUST BE CHECKED / VERIFIED ON SITE.
3. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
4. FOR GENERAL NOTES REFER TO DRAWING.

REV	DESCRIPTION	BY	DATE
P03	ISSUED FOR PLANNING	AC	10.12.24
P02	ISSUED FOR PLANNING	AC	24.10.23
P01	ISSUED FOR PLANNING	AC	26.08.24
P00	ISSUED FOR PLANNING	AC	08.08.24

STATUS: FOR INFORMATION

TENT ENGINEERING

PROJECT: MT ST MARY'S

TITLE: DMURS DRAWING

SCALE AT A1	DATE	DRAWN	CHECKED
As indicated	AUG 24	AC	DH

DRAWING NO: 24093-X-L00-DR-TNT-CE-4011 REVISION: P03

11 Appendix B - Mobility Management Plan

Mount Saint Mary's Outline Mobility Management Plan

13.10. 2024

24093-X-XXX-RP-TNT-CE-0003

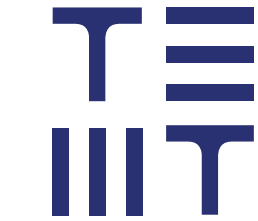
TENT ENGINEERING

Site Address:

Mount Saint Mary's,
Dundrum Road,
Dundrum,
Dublin 14

Client Name:

Winterbrook Homes Ltd.



TENT ENGINEERING

Revision and Review

This report has been prepared for the sole benefit, use and information of the client. The liability of Tent Engineering with respect to the information contained in this report will not extend to any third party.

PURPOSE

- ☐ P1 Information
- ☐ P2 Coordination
- ☐ P3 Planning
- ☐ P4 Building Control
- ☐ P5 Pre-tender
- ☐ P6 Tender
- ☐ P7 Construction

ACCEPTANCE (BY OTHERS)

- ☐ S Issued
- ☐ A Accepted
- ☐ B Accepted subject to comments
- ☐ C Rejected
- ☐ D Acceptance not required

Accepted by

REVISION(S)

Rev.	Description	Date
00	1st Issue	13.10.2024
01	2nd Issue	10.02.2025

AUTHOR(S)

Name
Conor Edwards Civil Engineer

REVIEWER(S)

Name and qualifications
Diarmuid Healy Co-founder, Director Engineer BEng (Hons) MIEI CEng FIStructE

Office address:

Tent Engineering Ltd.
32 Francis Street, Dublin
Co. Dublin, D08NN96

Contents

1 Existing Situation

1.1 Background

Tent Engineering has been appointed by Dún Laoghaire–Rathdown County Council to provide traffic and transport advice in relation to the proposed redevelopment of land at Mount Saint Mary's, Dundrum Road, Dundrum, Dublin 14 to provide a new residential development.

This Outline Mobility Management Plan (MMP) provides an assessment of the existing mobility issues accessing the site. It outlines the process of developing the Mobility Management Plan Strategy, and finally it examines the scope available for sustainable modes of transport to and from the site.

1.2 Site Context

The development site is located on the Dundrum Road in the Dundrum area of Dublin. The site is currently cleared and is not being used. The surrounding area primarily comprises of business parks, retail establishments, and residential settlements, with most of the residences being single-family homes. It is located approximately 4km to the south of Dublin City Centre. It is bounded to the North by the former Mount Saint Mary's Chapel, to the west by a Dundrum Road, to the south by CUS Rugby Grounds and east by a residential development.

Fig 1.1 - Site Location in Relation to the Regional Road

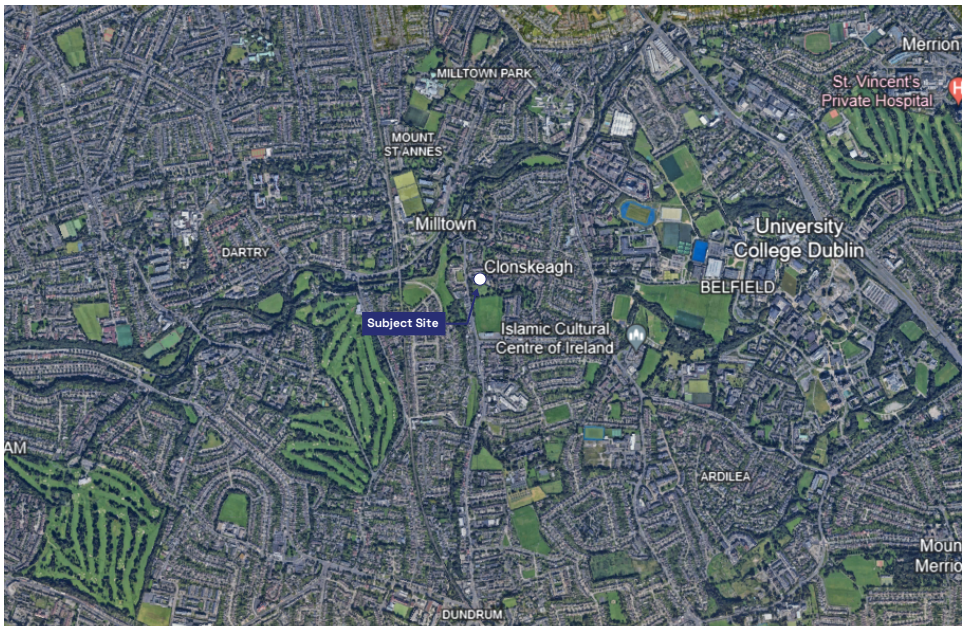


Fig 1.2 - Site Location in Relation to the Local Road Network

1.3 Summary of Developments Proposal

Refer to the transport statement report for full details of the site proposals. This document is intended to accompany it to provide details of the mobility management plans for the site.

1.4 What is a Mobility Management Plan?

A Mobility Management Plan (MMP) is defined by the National Transport Authority (NTA) as:

"A management tool that brings together transport and other staff and site management issues in a coordinated manner. A successful plan can help competitiveness by reducing transport costs for both the employer and staff and provide a more conducive working environment".

In essence, an MMP is intended to encourage people to choose alternative transport modes (such as public transport, walking, cycling and car share schemes) over single occupancy car use and, where possible, reduce the need to travel at all. Such a plan should include a range of measures designed to achieve this goal.

1.5 Document Purpose

An Outline MMP is the first stage of the mobility management process and is often prepared during the planning stage prior to the construction of the development. It includes a list of potential measures that could be implemented to affect modal choice, and a management strategy for producing a full Mobility Management Plan in the future.

The NTA strongly endorses the need for MMPs in order to reduce the impact of transport on the local environment, to improve accessibility and to encourage 'active travel' which improves peoples' health. According to the Dublin Transportation Office (DTO)'s (succeeded by the NTA in 2009) advice note titled 'Mobility Management Plans', an MMP should achieve the following targets:

- A reduction in car journeys to and from the work site
- An increase in the number of people who share their journeys by car
- A reduction in the need to travel, especially during the rush-hour periods
- Enabling staff to use alternative modes of transport

This document has been written in accordance with the above statement, and the following core guidance documents:

- National Planning Framework, Government of Ireland, 2018
- Smarter Travel -A Sustainable Transport Future: A New Transport Policy for Ireland 2009 - 2020, Department of Transport, Tourism and Sport, 2009
- Transport Strategy for the Greater Dublin Area (2016 - 2035), NTA, 2016
- Dun-Laoghaire Rathdown County Council's Development Plan 2022 - 2028.

1.6 Document Structure

Following this introductory section, **Section 2** of the report sets out keys aims and objectives for the mobility management process.

The accessibility of the site by sustainable modes of travel is assessed in **Section 2.** This includes the local road network and facilities for pedestrians, cyclists and public transport users. **Section 2** also considers the proposed servicing

Section 3 provides an insight on baseline mode share based on the most recent Census data arrangements.

Section 4 outlines various measures that will be considered to encourage maximum uptake in sustainable modes of travel, whereas **Section 5** outlines the Mobility Management Plan target strategy.

Section 6 concludes the report by providing details on the monitoring and review process, and the responsibility and management of the document.

Section 7 presents the proposed action plan for the implementation of the MMP.

2 Mobility Management Plan Benefits

2.1 Introduction

The benefits from an MMP can be loosely categorised under three main headings:

- Environmental Benefits
- Health Benefits; and,
- Financial Benefits

This section explores just some of the improvements which can be made during a successful mobility management process.

2.2 Environmental Benefits

Climate change is a global issue that affects all nations. According to the Environmental Protection Agency (EPA), Ireland's greenhouse gas (GHG) emissions have increased by 10.1% from 1990 to 2019. In 2019, the energy industries, transport and agriculture sectors accounted for 71.4% of total GHG emissions, with the transport sector accountable for 20.3% of total GHG emissions.

On a national scale, the government of Ireland has pledged to play its part in achieving its long-term goal of transitioning to a low-carbon, climate-resilient and environmentally sustainable economy by 2050, by setting the following targets by 2030:

- Cutting greenhouse gas emissions by at least 30%
- Reaching a target of at least 32.5% energy efficiency. and
- Delivering 70% renewable electricity

Encouraging people to make smarter choices in the way they travel can drastically reduce the impact that a particular development or organisation makes on the environment.

2.3 Health Benefits

A reduction in polluting vehicles on the roads surrounding the site will mean better air quality throughout the area. There are also well documented health benefits associated with active travel, and activity levels across Ireland could still be improved.

"54% of men and 38% of women aged 15 to 75+ are achieving the minimum level of activity recommended by the National Guidelines by being moderately active for at least 150 minutes a week. Almost two-thirds (61%) of those aged between 15 and 24 achieve this minimum level of activity. However this declines steadily across the life course to 18% of those aged 75 or older While the proportion that has a normal weight declines wit/1 age. The proportion that is overweight or obese rises with age. Among those aged between 15 and 24. 65% have a normal weight and 28% are overweight or obese. However. Among those aged 65 and older. 26% have a normal weight and 74% are overweight or obese."

Regular moderate physical activity (including walking and cycling), can help prevent and reduce the risk of cardiovascular disease, cancer, obesity, diabetes, stroke, mental health problems, high blood pressure, and musculoskeletal problems.

2.4 Financial Benefits

Although secondary to health and environmental benefits, there are also financial benefits to be gained from increasing active travel rates:

Estimates of the direct (health care) and indirect costs of physical inactivity (loss of economic output due to illness. Disease-related work disabilities or premature death) are alarming.

Physical inactivity has been estimated to cost each of the WH0 Region·s countries about €150-300 per citizen per year In a worst-case scenario this could imply a cost in Ireland of approximately €1.5 b1//1on per year .

Individuals can also benefit financially from travelling to and from a site with an MMP in place due to the improved range of transport options available, some of which may be more cost-effective than car travel.

In some circumstances, MMP measures can remove an individual's need for a car (or their household's need for a second car), removing the capital and on-going cost of car ownership.

An effective MMP can help encourage staff and visitors to lessen their environmental impact by reducing emissions from transport, lead a healthier and more active lifestyle, and reduce financial wastage.

2.5 Mutual Benefits

As demonstrated, there are multiple reasons as to why MMPs are important to modern society. The measures in this MMP will have a positive effect on the future staff and visitor. They must be communicated correctly.

"The motivations for an employer I developer to implement mobility management may include.

- The need to improve accessibility to the worksite for employees and customers, which may help in retaining staff and enhancing company image
- The desire to promote a more flexible working environment, and
- The desire to reduce costs associated with off site parking business mileage and other cost overheads.

2.6 Mobility Management Plan Aims & Objectives

Considering the above benefits, this MMP aims to:

- Reduce the need to travel;
- Discourage the use of unsustainable modes of transport and enable users of the site to make travel choices that benefit themselves and their community;
- Maximise social inclusion by making the site accessible to all members of the community; and
- Raise awareness of alternative modes of transport and thus encourage a modal shift towards more sustainable travel modes.

The aims of this MMP will be supported with the following objectives:

- Objective 1 - To increase the level of active travel (walking and cycling) to and from the site;
- Objective 2 - To increase the level of public transport use to and from the site;
- Objective 3 - To increase the level of car sharing to and from the site; and, in turn
- Objective 4 - To reduce single occupancy car travel to and from the site.

3 Existing Situation

3.1 Local Road Network

The proposed development is surrounded by a well-established road network.

Dundrum Road (R117)

Dundrum Road is a regional road subject to a 50km/h speed limit.

Footpaths are provided either side of the road measuring 1.5m in width and are well lit and maintained. Amenities such as traffic lights, pedestrian crossings and bus stops are provided. These features enhance safety and accessibility for different modes of transportation.

Bus stops are present on Dundrum Road in both directions comprising flag and timetable arrangements.

Milltown Road

Milltown Road is situated 350m to the north of the site. The Milltown is a local road which commences at Rathgar and finishes in Donnybrook. The road is subject to a 50km/h speed limit. The road is two-carriage way and has cycle lanes present on either side. There are wide pedestrian footpaths either side and controlled crossings along the route.

Fig 3.1 - Local Road Network

3.2 Accessibility

A key element of national, regional, and local policy is to ensure that new developments are located in areas where alternative modes of travel are available. It is important to ensure that developments are not isolated but are located close to complementary land uses. This supports the aims of integrating planning and transport, providing more sustainable transport choices, and reducing overall travel and car use.

The accessibility of the proposed development is considered in this context for the following modes of travel:

- Pedestrian Accessibility
- Accessibility by Cycle; and
- Accessibility by Public Transport

This section also provides an overview on the local road network surrounding the site.

3.2.1 Pedestrian Infrastructure and Accessibility

Pedestrian infrastructure in the vicinity of the site is good, with 1.5m wide well-lit footpaths provided along both sides of Dundrum Road.

There are signal controlled crossing facilities with dropped kerbs, tactile paving and central refuge islands located approximately 350m north of the site, were Dundrum Road converges with Milltown Road and 250m to the south of the site, in proximity to the CUS Rugby Grounds.

The site area includes numerous sports facilities including CUS Rugby Grounds which can be accessed within a 5 minute walk around the area.

Numerous shops/stores such as the Dundrum Business Park is accessible within a 10-minute walk from the site.

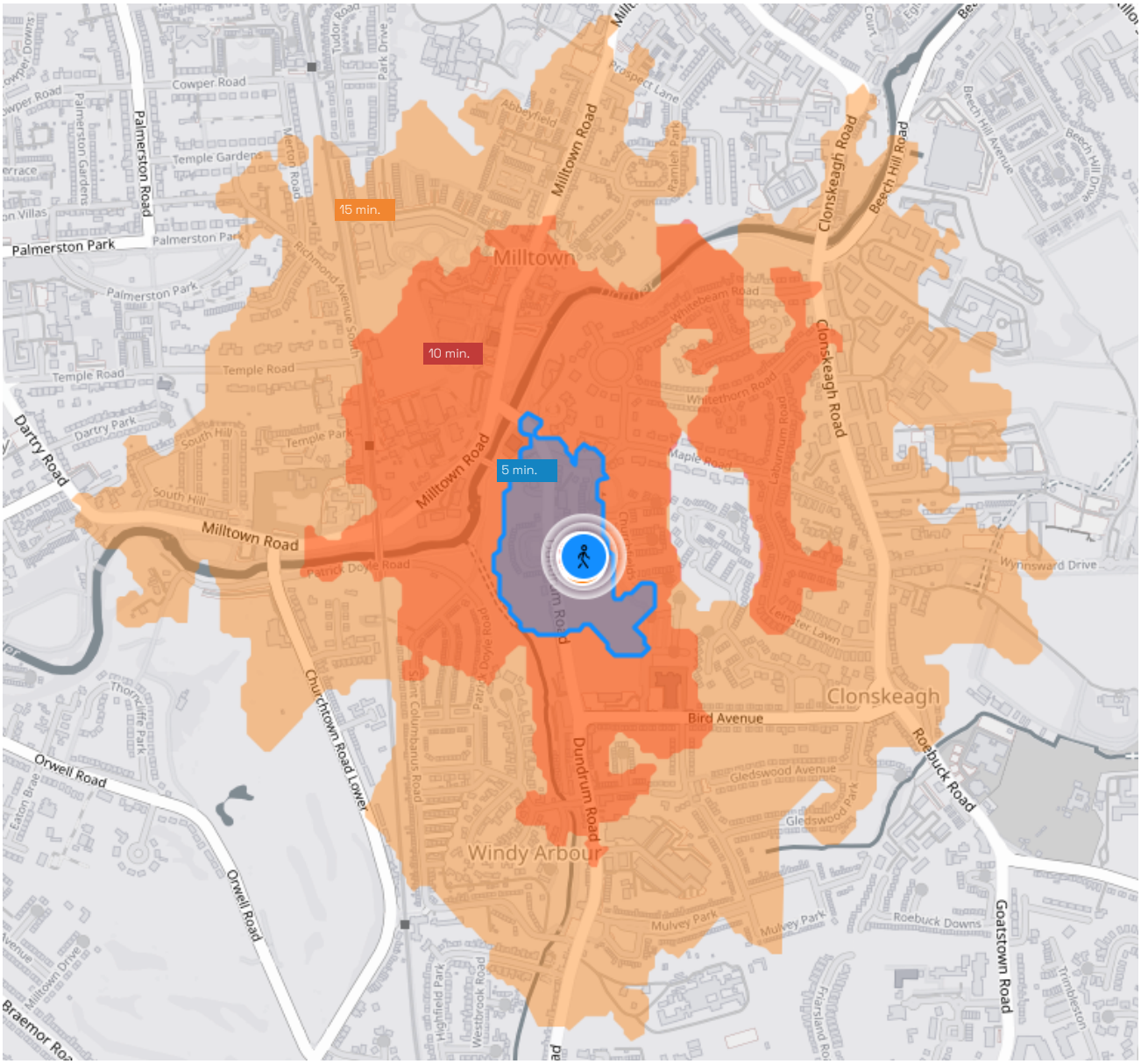
Within a 15 to 20 minute walk, educational institutions like University College Dublin (UCD) and Alexandra College Dublin are easily accessible, providing a convenient location for students residing at the proposed site.

The nearest Luas station to the site is Milltown Luas Station, approximately 15 minutes to the west.

Donnybrook, Rathgar, and Ranelagh are all within a 30-minute walk from the site.

Most notably the development is situated less than a minute walk from Bus Stops 2987, 2818 on Dundrum Road.

Fig 3.2 - Walking Catchment



3.2.2 Cycling Infrastructure and Accessibility

The site is currently accessible from a dedicated 'C3' cycle lane, to the north of the site with runs even with the existing bus lane along Milltown Road, that extends all the way to Dublin City Centre. Figure 3.3 shows the site location in the context of the existing cycle network.

The site is situated adjacent to a local cycleway which links to the national cycleway surrounding Dublin City Centre.

Figure 3.4 illustrates the proposed cycle network and infrastructure improvements in the vicinity of the site extracted from the National Transport Authority's 'Greater Dublin Area Cycle Network Plan'.

The proposed cycle network near to the development is shown below, with the Dodder Greenway and 'C3' cycle lanes running to the north and south of the site as shown in Figure 3.4. The implementation of the above cycle infrastructure schemes by the local authority will be subject to further design, public consultation, approval, and importantly availability of funding and resources.

Within 5 minutes of cycling, Dundrum Business Park and Milltown Luas Station can be accessed.

Within 10 minutes of cycling the entirety of the UCD campus can be reached.

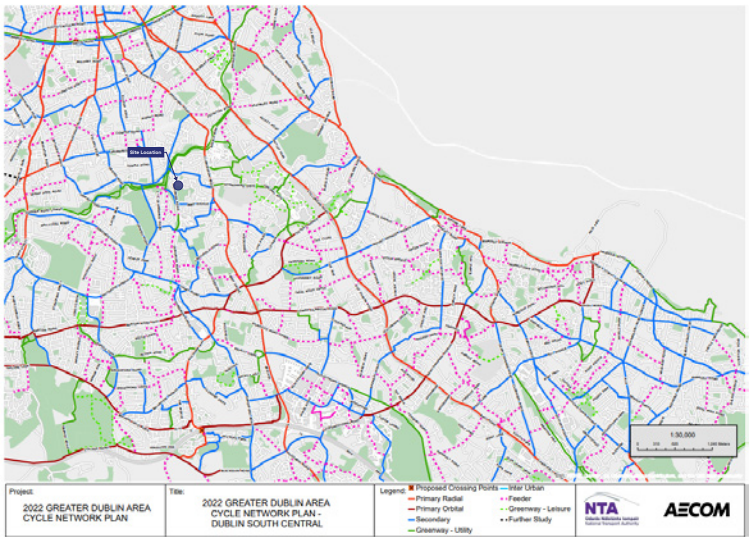
In 15 minutes of cycling Dundrum Town Shopping Centre is easily accessible.

After 20 minutes of cycling localities such as Sandyford, Ballyboden and Blackrock.

In a 25/30 minute cycle, the majority of Dublin City centre area and south Dublin can be reached.

Fig 3.3 - Existing Cycle Network

Fig 3.4 - Proposed Cycle Network



3.2.3 Public Transport Infrastructure and Accessibility

Bus Services

Figure 3.5 details the proposed Bus Connects network in the vicinity of the site as part of the New Dublin Area Bus Network scheme.

The New Dublin Area Bus Network scheme aims to overhaul the existing bus system in Dublin by:

- Redesigning the bus network to provide a more efficient network, connecting more places and carrying more passengers;
- Introducing Bus Rapid Transit on a number of routes:
- Improving bus priority infrastructure including provision of 230km of bus lanes;
- Improving payment systems; and
- Improving livery and bus stops.

Figure 3.5 - Proposed Bus Connects Routes

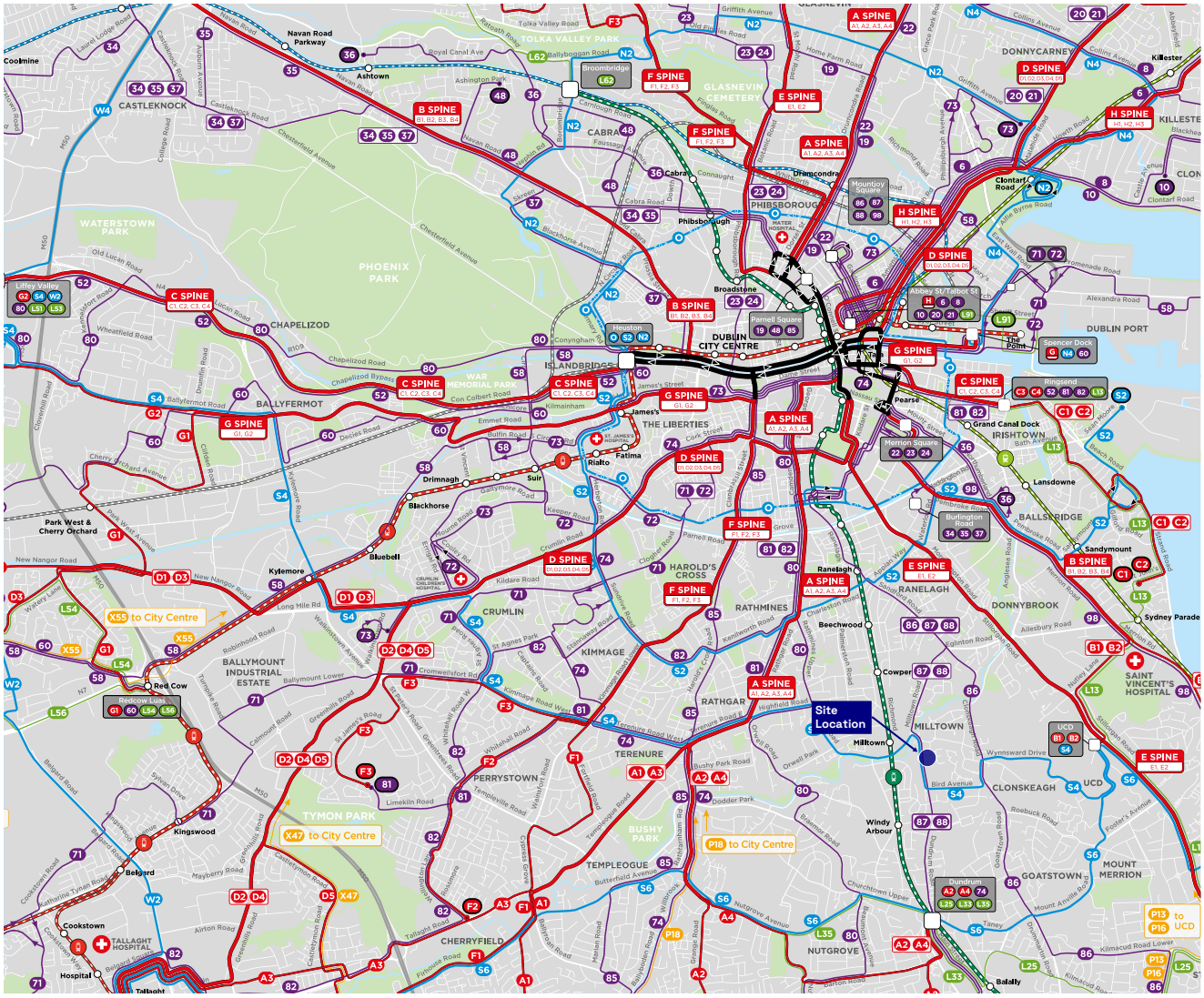


Table 3.1 - Bus Service Frequency (min)

Route No.	Route	Weekdays		Weekend	
		AM Peak	Interpeak	Saturday	Sunday
44D	O'Connell Street - Dundrum Luas Station	N/A	x3 departures per day	N/A	N/A
44	DCU - Enniskerry	10 - 15	15 - 20	15 - 20	20-30
S4	Liffy Valley - UCD	10 - 15	20 - 25	10 - 15	15 - 20

3.2.4 Car Sharing

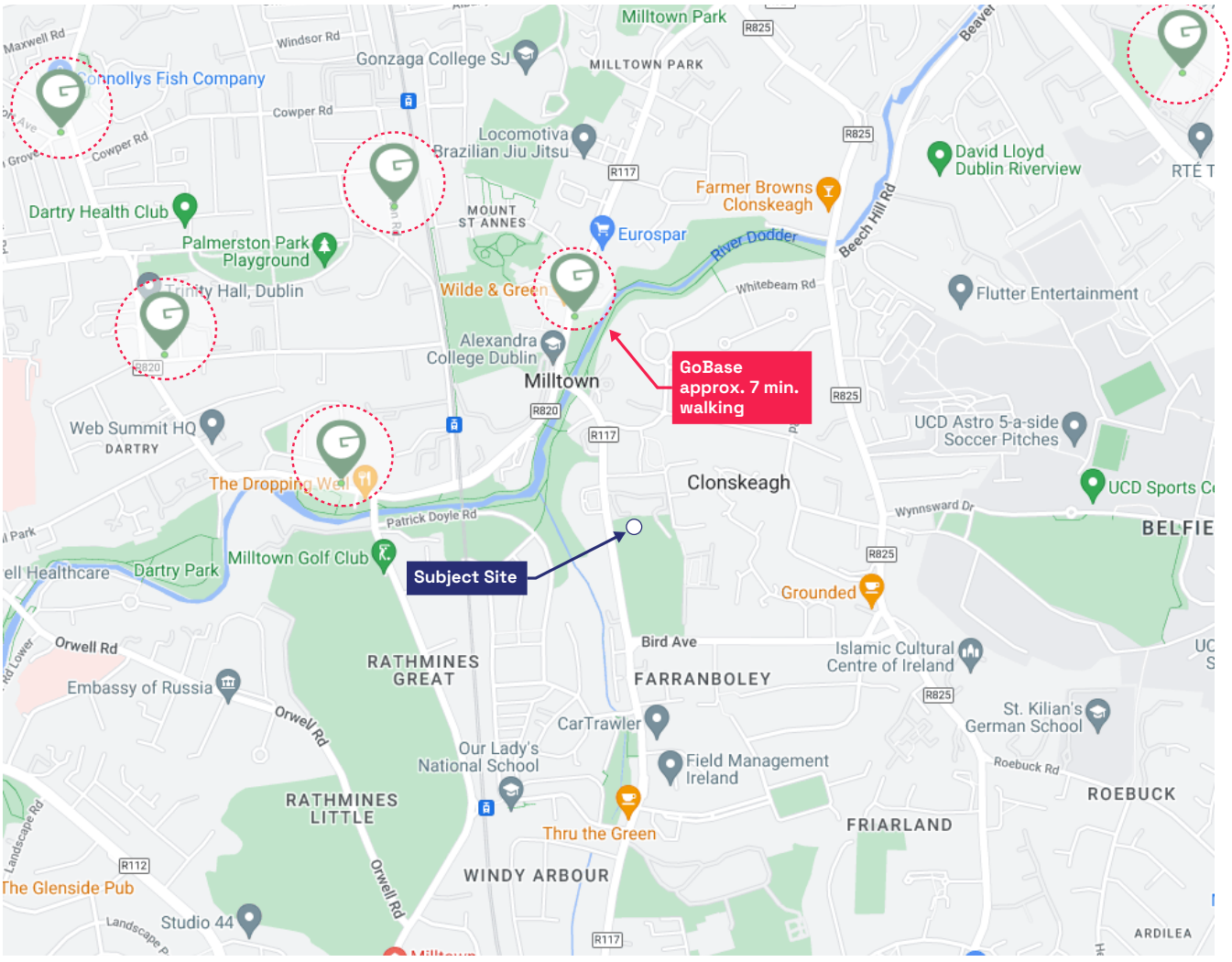
It is acknowledged that many residents that do not own a car may require the use of a car on certain occasions. GoCar (among other car sharing operators) offers a cost-effective, hassle-free, and greener alternative to car ownership and traditional vehicle hire in Dublin. The car sharing service allows users to view the availability of cars at designated parking bays throughout the country via a mobile application, where they can unlock and start driving their selected car on the spot.

The nearest bay is located in at Milltown Bottle Bank and Clothes Bank, c. 500m (7 min. walk) to the north of the site. Cars can be reserved by the hour, day or even longer. The price of the journey depends upon the vehicle type, the duration of the reservation and the miles driven, but starts at around €10 an hour with 50 free kilometres included.

Figure 3.6 shows additional locations in the vicinity of the site that GoCar currently operate in.

It is considered that car sharing could therefore be a highly attractive facility for residents who require occasional private car use, therefore, minimising the traffic impact.

Figure 3.6 - Local GoCar Bays



4 Mobility Management Measures

4.1 Introduction

Considering the level of accessibility, it is considered the vast majority of users will travel to/from the site via sustainable modes of travel.

One of the primary reasons for undertaking a modal split survey is to ensure the Mobility Management Plan is implemented as effectively as possible. For example, if the vast majority of residents and visitors already travel by public transport, it might be more worthwhile to promote measures encouraging walking and / or cycling. Notwithstanding, this section of the MMP sets out the measures that could be implemented in a full Mobility Management Plan for the proposals.

The measures are designed to encourage sustainable modes of travel. They are in line with the aims and benefits set out in Section 2 of this document and Over, at Work, Usually Resident and Present in the State 2011 to 2016', and filtered by means of travel for all aggregate town areas to establish a baseline for staff at the new development.

4.2 Mobility Management Coordinator (MMC)

A Mobility Management Coordinator (MMC) will be appointed for the site, and their contact details will be circulated to DLR County Council (DLRCC) and made available to staff and visitors at the site. Should the MMC change, DLRCC will be notified and the details of the incumbent MMC provided.

The duty of the MMC will be to take responsibility for ensuring that the various elements of the Plan are monitored and operate effectively to offer a genuine choice of travel modes. They will be the first point of contact in relation to travel issues. Additional responsibilities of the MMC are further detailed in Section 6 of this report.

4.3 Hard Measures

The development will be provided with 180 cycle parking spaces.

The development is located in a highly accessible area close to public transport hubs, Dublin's cycle network and existing car club bays.

4.4 Soft Measures

Welcome packs can be critical in influencing travel patterns from the outset. All new residents will be provided with a pack of information, either physically or digitally, comprising:

- Introduction to the MMP concept detailing objectives and aspirations including details of the MMC;
- Maps showing local walking / cycling routes and places of interest;
- Promote the Get Ireland Active website: getirelandactive.ie;
- Details of public transport (bus and rail) services, including timetables and routes.

As well as providing such travel information throughout the Welcome Packs, relevant information as set out above will be provided on notice boards in communal areas and the development website.

Measures to Encourage Walking

Walking is the most sustainable and accessible mode of travel. Any individual in relatively fair health can incorporate walking into part of their journey. It has been demonstrated within Section 3 of this MMP that there is a good level of pedestrian infrastructure in the surrounding area, with access to local services on foot. The following measures will be provided in order to encourage residents to walk:

- Promote / raise awareness of the health benefits of walking;
- Adequate lighting, landscaping and shelter to create pleasant pedestrian waiting areas;
- Marketing campaigns in line with "National Walking Day" and via schemes incorporating free issue pedometers and alarms;

- Promote the 2KM / 5KM from home tool to check walkable distances from the site: 2kmfromhome.com; and
- Promote the availability of walking information, including walking groups and useful tips and guidance, on the Get Ireland Walking website getirelandwalking.ie.

Measures to Encourage Cycling

It has been demonstrated throughout Section 3 of this MMP that the site is conducive to cycling. To encourage more staff and visitors to cycle, the following measures will be provided:

- Information on the local cycle network routes made available through the previously discussed welcome packs;
- Promoting the Cycle to Work scheme;
- Shower and changing room facilities to be provided
- Promote the availability of cycling information, including route maps and useful tips and guidance, on the Cycling Ireland website cyclingireland.ie;
- Initiating an informal "cycle buddy scheme";
- Promotion of events such as "National Bike Week"
- Promotion of local cycle stores; and
- Setting up of a development-wide Bicycle User Group (BUG)

Measures to Encourage Public Transport

It has been demonstrated throughout Section 3 of this MMP that the site is highly accessible by public transport, and that there are further opportunities for wider public transport travel throughout the Greater Dublin Area. The following measures will be provided in order to encourage more staff and visitors to travel by public transport:

- Distribute details of the Transport for Ireland Journey Planning tool (online and in the form of an mobile application: transportforireland.ie/journey-planner-app;
- Provide up to date bus details including timetables information in the welcome packs;
- Advertise any promotions/discounts offered by public transport operators;
- Provide wayfinding towards key transport nodes; and,
- Providing special offers for interest-free season ticket loans.

Cost awareness can be a contributing factor in the decision to travel by car or by public transport. Staff and visitors will be made aware of the savings that can be made by purchasing season and other ticket prices.

5 Targets

5.1 Introduction

Target setting is an important part of any Mobility Management Plan, providing a focus for the overall process and a measure against which the mobility management measures can be judged. This section sets out the target strategy and provides an overview of the data that should be collected as part of future travel surveys to inform the Mobility Management Plan once developed.

5.2 Data Collection and Analysis

In order to understand travel habits, a representative sample survey will be undertaken at three months following first operation. Staff and residents will be encouraged to participate, and the surveys would extract the following key information

- Place(s) of residence/study;
- Usual mode of travel and reason for modal choice;
- Attractiveness of various sustainable modes;
- Any barriers to sustainable modes; and
- Initiatives that would encourage staff and visitors to travel more sustainably.

Surveys could be distributed in two ways; `electronically, and as paper copies.

Table 5.1 - Proposed Trip Generation Mode

Mode	Overall Modal Target
By Car (Private)	35%
Pedestrians	12.5%
Cyclists	22.5%
Public Transport	30%

Firstly, questions could be transferred to SurveyMonkey, which is an online survey service widely used by both private and public sector organisations for data collection. Staff would be sent this link in the early stages of operation and can simply click on it and get directed to an internet-based survey. Additionally, visitors can also be sent this link when they log into the site Wi-Fi service. All results can be recorded on a computer database for analysis.

Paper surveys could also made available to visitors across the site. Surveys could be printed and distributed at the reception areas. All the results could be manually transferred to the computer database for analysis alongside the electronic surveys.

The information obtained will be used to undertake a modal split analysis, whereby an answer rate of 50% could be considered a sufficient representation of staff across the site. These can be used to set SMART targets for the site, with an example provided in Table 5.1. Site users would then be surveyed annually from the initial survey.

5.3 Smart Targets

Once the travel surveys have been undertaken, it is possible to monitor modal splits so that the mobility management measures can be tailored to increase uptake of certain modes of travel. Modal split targets are set for a reduction in private car use offset by an increase in sustainable modes.

All performance indicator and modal split targets will be set through consultation with Dun-Laoghaire Rathdown County Council (DLRCC). The official targets will be SMART (Site-specific-Measurable-Achievable-Realistic-Time bound). The following phrases have been used to give a general indication of time-scales for the 'SMART' targets following the adoption of this Mobility Management Plan.

Table 5.1 illustrates the modal split targets.

As can be seen from the targets, there will be a large emphasis on encouraging residents to walk, cycle and use public transport.

The above targets are indicative at the time of writing, and will be updated in future MMP versions once further travel surveys are undertaken. The updated MMP versions will include a comparative table containing updated modal split data in order to best understand travel habits, and shape effective measures.

The targets are considered to be realistic when taking into account the mobility management measures as detailed throughout Section 4 of this MMP.

6 Monitoring and Review

6.1 Introduction

This section of the report sets out the proposed management arrangements associated with the MMP. It also sets out the next steps with regards to converting this Outline MMP into a full Mobility Management Plan, which will be carried out for the life of the development.

6.2 Responsibility and Management

Overall responsibility for the MMP will lie with the appointed Mobility Management Coordinator (MMC). Following construction and full operation, the Outline MMP will need to be updated to a full Mobility Management Plan. This will involve the distribution of travel surveys. The survey information will enable analysis to be undertaken to establish final targets. It will also provide information on the reasons for modal splits and identify measures that may encourage a modal shift.

Adequate consultation and support from the developer is also required to ensure the smooth implementation of the MMP. A number of measures to be undertaken comprise

A commitment to actively pursue sustainable travel opportunities for the development;

Maintenance of walking facilities, lighting and any CCTV installations;

Support for an MMC in ways including, but not limited to, funding to enable them to fulfil their duties and deliver the MMP as intended; and

A commitment to actively promoting car-sharing and sustainable transport options at the site.

A MMP document should be considered as merely the starting point of the process. The implementation of a MMP is an on-going requirement and will require support and leadership in achieving its objectives.

6.3 Mobility Management Coordinator (MMC)

The MMC will take responsibility for ensuring that the various elements of the plan are monitored and operate effectively to offer a genuine choice of travel modes. Typical duties include:

- Leading on the delivery of the MMP;
- Representing the human face of the MMP and explaining its purpose and opportunities on offer
- Implementing and promoting sustainable travel measures to ensure a coordinated approach across the site as a whole;
- Promoting individual measures in the MMP and instigate a marketing campaign upon first operation of the site;
- Liaising with public transport operators and represent the operator at relevant forums;
- Administering the car share scheme;
- Monitoring the MMP and identifying trends in relation to the targets and reporting the findings to relevant parties (i.e. DLR County Council).

6.4 Monitoring and Evaluation

The monitoring of travel behaviour is vital to measure progress towards the targets and would be the responsibility of the appointed MMP. Apart from liaising with Dun-Laoghaire Rathdown County Council (DLRCC) on transport related matters, the main monitoring process will involve travel surveys as described in Section 5 above.

The results of each survey would be used to review progress against target modal splits, where the MMC will be required to calculate the percentage share of all travel modes to and from the site. Where targets are not met, remedial actions will be proposed, agreed and then monitored for effect.

Monitoring reports will be provided to officers at DLRCC every year following the receipt of the first surveys.

Monitoring will be carried out for a period of at least five years from the date of the baseline travel surveys or until agreed upon with DLRCC.

7 Action Plan

This section details the mechanisms by which the MMP will be secured and provides an Action Plan for the implementation of the identified measures including time frames and responsibilities.

Table 7.1 below sets out the proposed implementation plan for this MMP, explaining:

• How the management structure for the MMP will be established, associated time-frame and

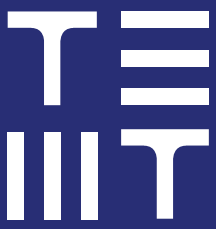
responsibility:

• The implementation of stated measures and initiatives;

The monitoring procedures and promotion of the MMP.

Table 7.1 - Action Plan

Action	Target Date	Responsibility
Appoint MMC	Within 3 months of commencement of marketing	Management
Produce Welcome Packs	Occupation of development	MMC
Undertake Initial Travel Surveys	Within 3 months of first appointment (to coincide with MMP launch)	MMC
Decide Modal Split Targets	Within one month of receiving the initial surveys	MMC in conjunction with DCC
Update IMMP to a full MMP	Within two months of agreeing modal splits with DLRCC	MCC
Present Annual Monitoring Report	Annually for at least five years following the agreement of targets with DLRCC	MCC



TENT ENGINEERING

12 Appendix C - Road Safety Audit

Title: **Stage 1 Road Safety Audit and**

DMURS Quality Audit,

For;

Proposed Residential Development, Mount St. Mary's, Dundrum Road, Milltown, Dublin 14.

Client: **TENT Engineering**

Date: **October 2024**

Report reference: **2450R02**

VERSION: **DRAFT**

Prepared By:

Bruton Consulting Engineers Ltd

Glaspistol
Clogherhead
Drogheda
Co. Louth.

Tel: 041 9881456
Mob: 086 8067075
E: admin@brutonceng.ie
W: www.brutonceng.ie

CONTENTS SHEET

Contents

1.0 Introduction

This report was prepared in response to a request from Mr. Diarmuid Healy, TENT Engineering, for a Stage 1 Road Safety Audit and a DMURS Quality Audit for a proposed residential development scheme at Mount St. Mary's off Dundrum Road, Milltown, Dublin 14.

The Audit Team comprised of;

Team Leader:	**Norman Bruton**, BE CEng FIEI, Cert Comp RSA.
	TII Auditor Approval no. NB 168446
Team Member:	**Owen O'Reilly**, B.SC. Eng Dip Struct. Eng NCEA Civil Dip Civil. Eng CEng MIEI
	TII Auditor Approval no. OO1291756

The Audits involved the examination of drawings and other material provided and a site visit by both team members, on the 17th of October 2024. The weather at the time of the site visit was dry and the road surface was also dry.

The Stage 1 Road Safety Audit has been carried out in accordance with the requirements of TII Publication Number GE-STY-01024, dated December 2017.

The Quality Audit has been carried out in accordance with the guidance in the Design Manual for Urban Roads and Streets (DMURS), produced by Department of Transport Tourism and Sport in March 2013 and as updated in June 2019 including Advice Notes. The Quality Audit is composed of a number of distinct audits which include an Accessibility Audit, a Walking Audit and a Cycling Audit (i.e. aspects of a Quality Audit carried out independent of the Design Team and generally included as appendices to the overall Audit).

Many issues raised in the Road Safety Audit would also be raised in the various aspects of the Quality Audit, however to avoid repetition items that are common to more than the Road Safety Audit have been included in a table at the start of Section 3.0 of this report.

The scheme has been examined and this report compiled in respect of the consideration of those matters that have an adverse effect on road safety. It has not been examined or verified for compliance with any other standards or criteria. The problems identified in this report are considered to require action in order to improve the safety of the scheme for road users.

If any of the recommendations within these audits are not accepted, a written response is required, stating reasons for non-acceptance. Comments made within the report under the heading of Observation are intended to be for information only. Written responses to Observations are not required.

The information supplied to the Audit Team is listed in **Appendix A.** The feedback form is contained in **Appendix B.** A plan drawing showing the problem locations is contained in **Appendix C**.

2.0 Background

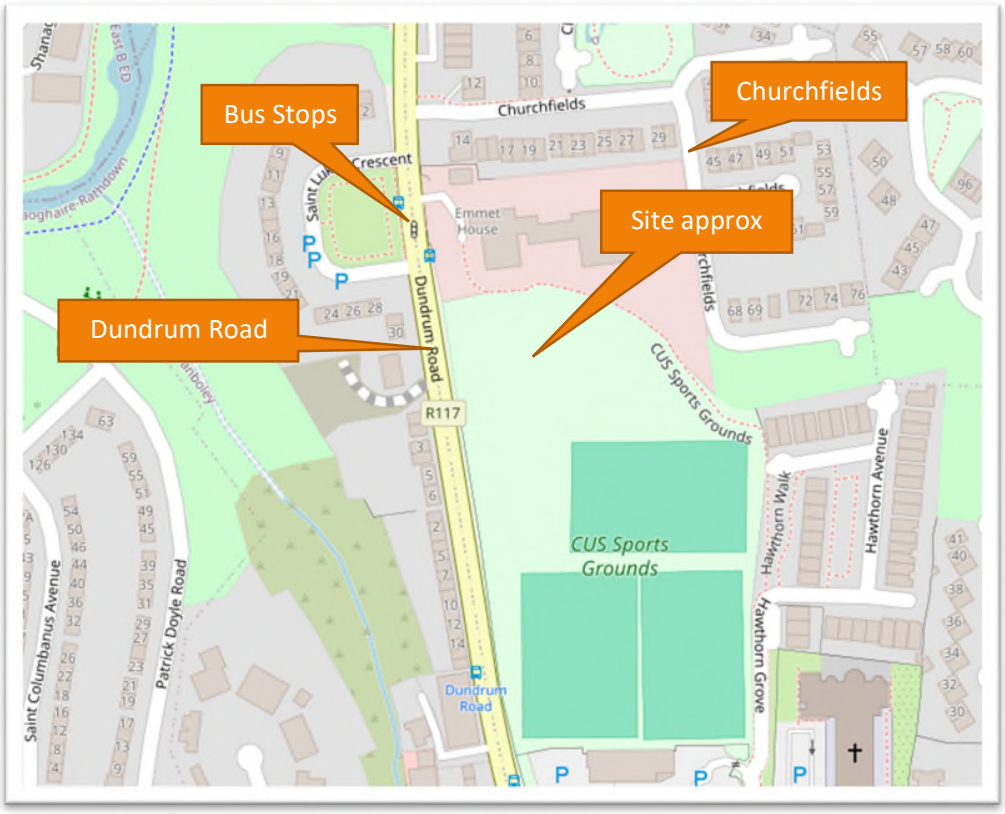
It is proposed to construct a residential development in three blocks at Mount St. Mary's off Dundrum Road (R117) in Milltown, Dublin 14.

Dundrum Road is an arterial route. It is a single carriageway with footpaths on both sides. It is a bus route.

The speed limit is 50km/hr.

Th existing boundary to the site is a high stone wall. It is proposed to provide a flared opening (perhaps existing behind the wall) with a vehicular and pedestrian access. A separate pedestrian /cyclist access is to be provided towards the southern end of the scheme and also to the neighbouring residential development, Churchfields.

The site location is provided below.



Site Location Map (image courtesy of www.openstreetmaps.org)

3.0 Issues Common to More Audits than RSA

Below is a summary table of problems raised in the Road Safety Audit that would also be raised in the Quality Audit however are not repeated for clarity and brevity.

Problem Reference	Road Safety Audit	Access Audit	Walking Audit	Cycling Audit
4.1	✓	✓	✓	✓

4.0 Items Raised in This Stage 1 Road Safety Audit.

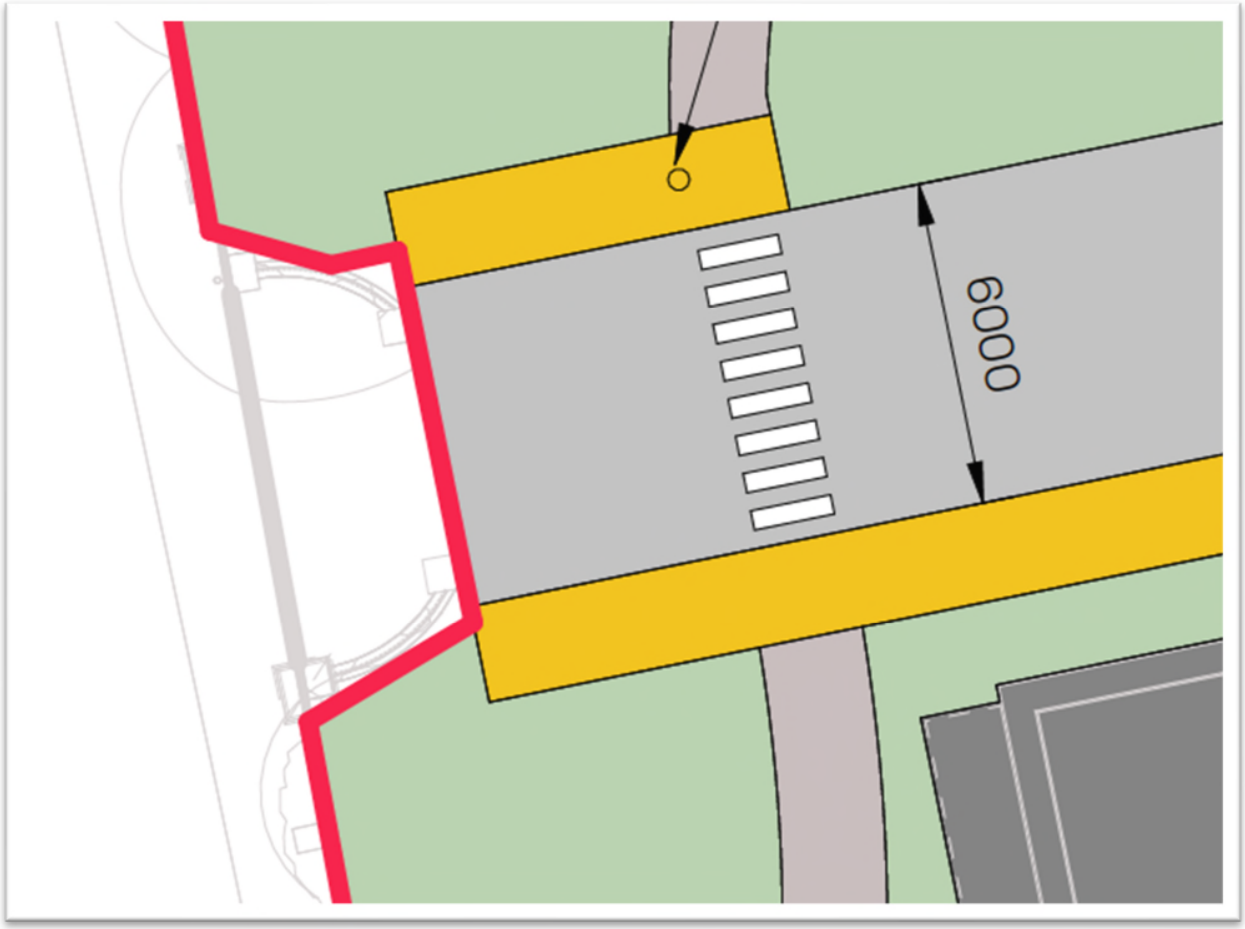
4.1 Problem

LOCATION

Drawing 24093-X-L00-DR-TNT-CE-3000 P01, Vehicular and Pedestrian access.

PROBLEM

The access road is shown to be 6m wide however the distance between the proposed piers is shown to be less and there is no separate access for pedestrians shown. This could lead to side-swipe collisions at the access and for pedestrians to have to share space with vehicular traffic.



RECOMMENDATION

It is recommended that the layout be modified not to have a restriction in the access width and to have separate accesses for pedestrians on both sides.

5.0 Items Raised in This Stage 1 Quality Audit – Accessibility Audit.

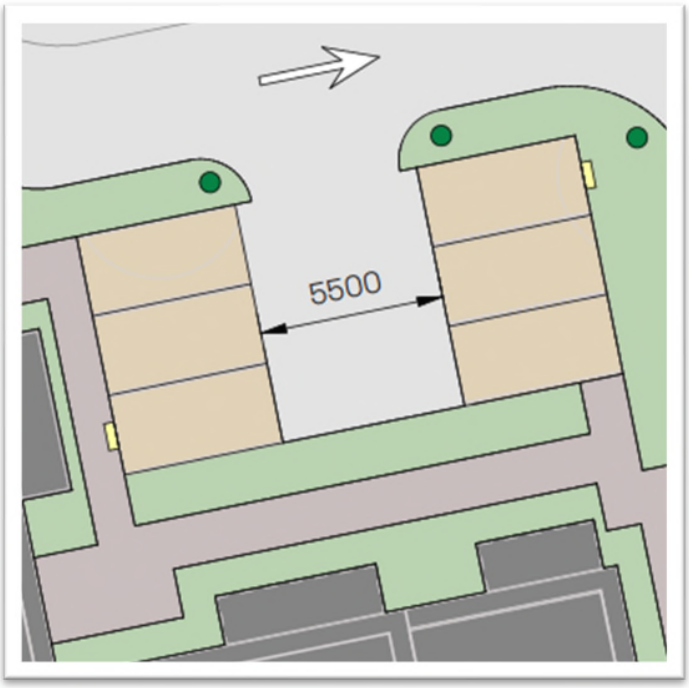
5.1 Issue

LOCATION

Drawing 24093-X-L00-DR-TNT-CE-3000 P01, Car park, Block B.

PROBLEM

There is a proposed small car park at Block B with a 5.5m wide aisle. This could lead to drivers finding it difficult to access/egress from spaces especially if the adjacent spaces are occupied.



RECOMMENDATION

It is recommended that suitable space is provided in accordance with the guidance provided in DMURS.

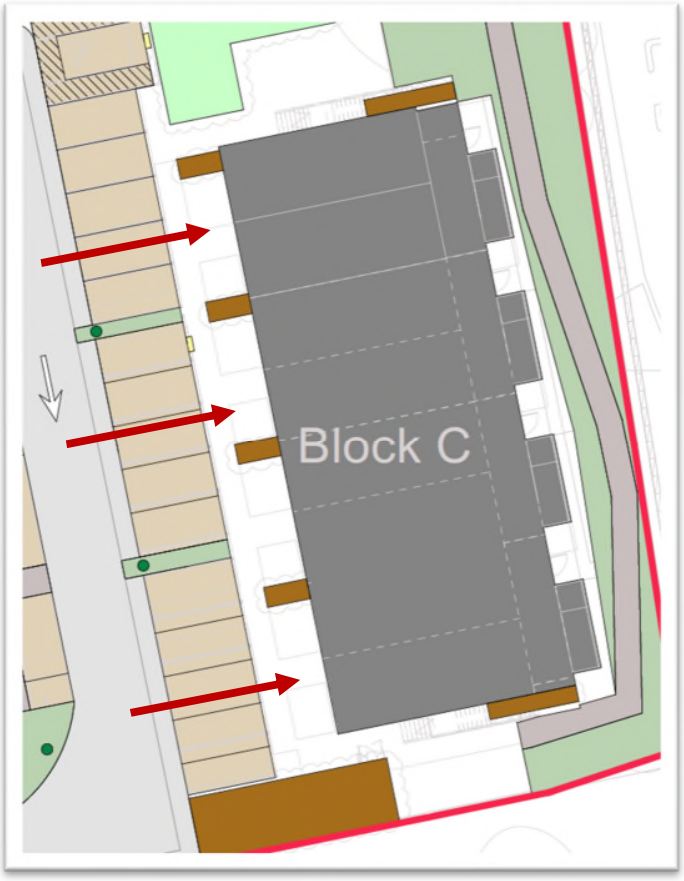
5.2 Issue

LOCATION

Drawing 24093-X-L00-DR-TNT-CE-3000 P01, Pedestrian access to Block C.

PROBLEM

It is unclear if there is allowance for pedestrian access from the shared street to Block C if all the parking spaces are occupied. This could result in in inaccessibility for the mobility impaired.



RECOMMENDATION

It is recommended that access points be provided for pedestrians.

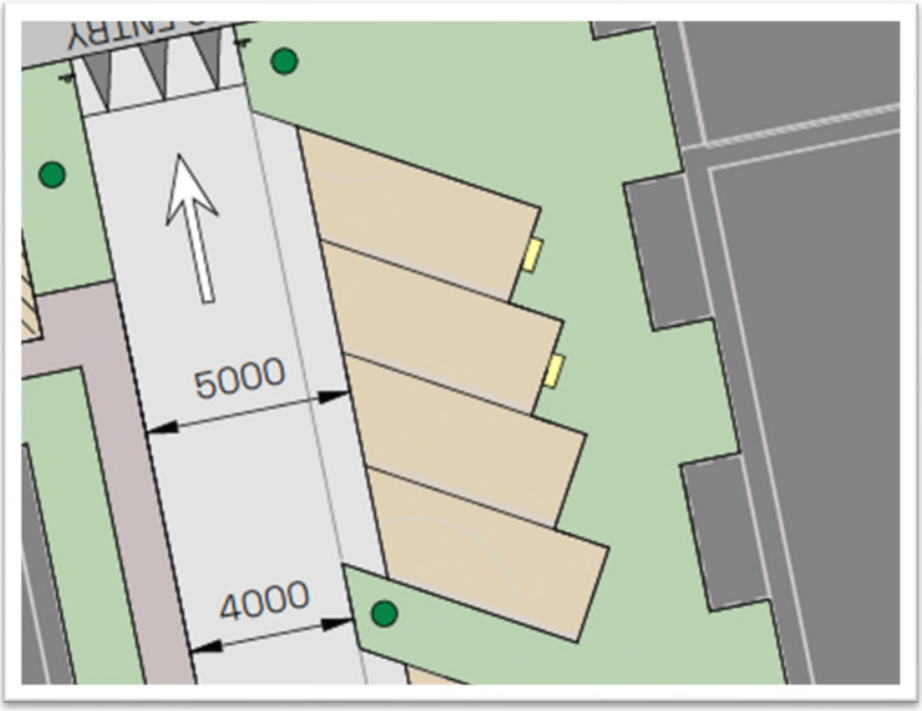
5.3 Issue

LOCATION

Drawing 24093-X-L00-DR-TNT-CE-3000 P01, Echelon Parking, Block B.

PROBLEM

It is proposed to provide echelon parking at Block B. Drivers will have to reverse into these spaces. Some spaces appear to be for electric vehicle charging. It may not suit some vehicles to charge when reversed and as a result cables may not be long enough or may be left adjacent to vehicles where they would be trip hazards.



RECOMMENDATION

It is recommended that buffer zones be provided for some EV charging spaces or that the chargers be located where front charging is easily accessible.

5.4 Issue

LOCATION

Drawing 24093-X-L00-DR-TNT-CE-3000 P01, Disabled Parking Bay . Block A.

PROBLEM

The effective width of the footpath adjacent to the disabled parking bay will be very low given the indent of the buffer zone and the presence of the EV charger. This could lead to inaccessibility for some.

RECOMMENDATION

It is recommended that suitable width footpaths be provided and at least the minimum widths specified in DMURS.

6.0 Items Raised in This Stage 1 Quality Audit – Walking Audit.

6.1 Issue

LOCATION

Drawing 24093-X-L00-DR-TNT-CE-3000 P01, Car Park, Block A.

PROBLEM

The effective width of the footpath between the car parking spaces north of Block A may be minimal and unsuitable for pedestrians especially with the overhang of vehicles parking in the car parking spaces. Pedestrians may opt to walk on the carriageway where they would be at risk of being struck by passing vehicles.

RECOMMENDATION

It is recommended that an effective width of minimum 1.8m footpath be provided as per guidance in DMURS.

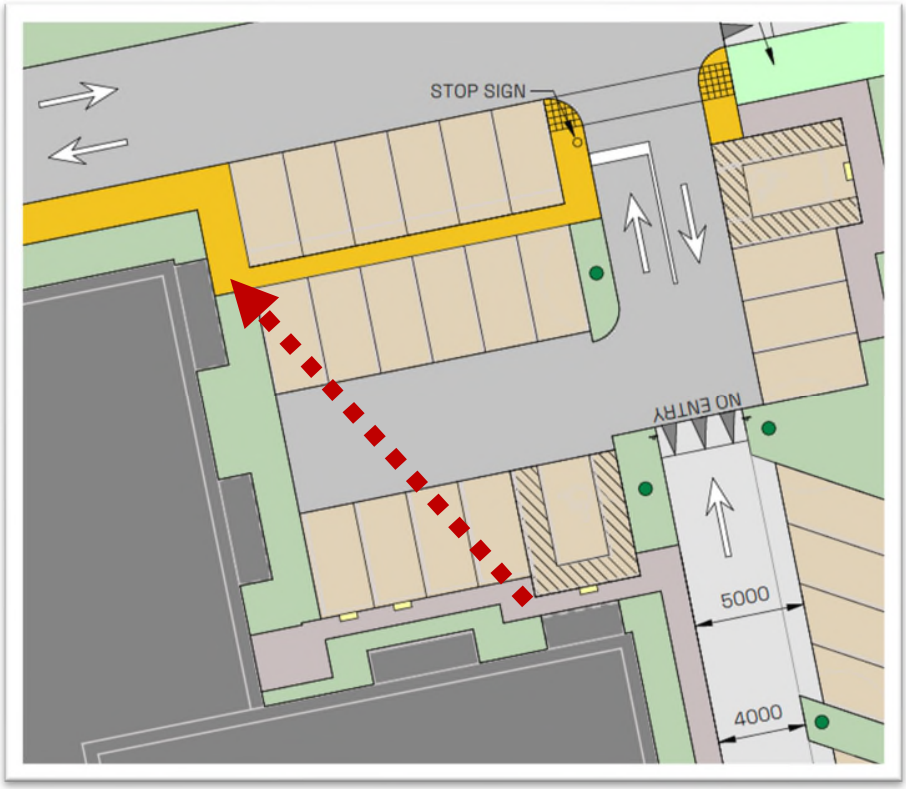
6.2 Issue

LOCATION

Drawing 24093-X-L00-DR-TNT-CE-3000 P01, Pedestrian Route , Block A.

PROBLEM

There is no clear route for pedestrians to get from Block A to the main footpath leading to Dundrum Road. A lack of a pedestrian route could lead to trips and falls on high kerbs or slips on grassed areas.



RECOMMENDATION

It is recommended that a route be provided for pedestrians.

7.0 Items Raised in This Stage 1 Quality Audit – Cycling Audit

No additional items raised.

8.0 Audit Statements.

Road Safety Audit Statement

We certify that we have examined the information provided and the site. The examination has been carried out with the sole purpose of identifying any features of the design which could be removed or modified in order to improve the safety of the scheme.

The problems identified have been noted in this report together with associated safety improvement suggestions which we would recommend should be studied for implementation. The audit has been carried out by the persons named below who have not been involved in any design work on this scheme as a member of the Design Team.

Quality Audit Statement

We certify that we have carried out this audit in accordance with DMURS for those areas independent of the Design team.

Norman Bruton **Signed:** _____

(Audit Team Leader) **Dated:** _____

Owen O'Reilly **Signed:** _____

(Audit Team Member) **Dated:** _____

Appendix A

List of Material Supplied for this Road Safety Audit and Quality Audit;

Drawing 24093-TNT-X-L00-DR-CE-4010_SIGHTLINES

Drawing 24093-TNT-X-L00-DR-CE-3000_SITE LAYOUT

Drawing 24093-TNT-X-L00-DR-CE-4000_FIRE TENDER SWEPT PATH ANALYSIS

Drawing 24093-TNT-X-L00-DR-CE-4001_REFUSE SWEPT PATH ANALYSIS

Appendix B

Feedback Forms (Road Safety Audit & Quality Audit)

SAFETY AUDIT FORM – FEEDBACK ON AUDIT REPORT

Scheme: Mt St. Mary's

Stage: 1 Road Safety Audit
Date Audit (Site Visit) Completed: 17-10-2024

Paragraph No. in Safety Audit Report	Problem accepted (yes/no)	Recommended measure accepted (yes/no)	Alternative measures (describe)	Alternative measures accepted by Auditors (Yes/No)
4.1	Yes	Yes	New entrance width now 5m. Which is sufficient to allow 2No cars to cross each other. The reduction at the gate will help reducing the traffic speed.	Yes

Signed.....
Design Team Leader

Date: 24.10.24

Signed.....
Audit Team Leader

Date: 25.10.24

Signed
Employer

Date. 25.10.24

QUALITY AUDIT FORM – FEEDBACK ON QUALITY AUDIT REPORT

Scheme: Mt. St. Mary's

Quality Audit- Stage 1 (Planning Stage)
Date Audit (site visit) 17-10-2024

Paragraph No. in Quality Audit Report	Problem accepted (yes/no)	Recommended measure accepted (yes/no)	Alternative measures (describe)	Alternative measures accepted by Auditors (Yes/No)
5.1	No	No	Autotracking provided to show that parking here is manageable.	Yes
5.2	Yes	No	Moving the bike store by block C Eastbound will be proposed post-planning to introduce a path in order to facilitate mobility impaired pedestrians to block C	Yes
5.3	Yes	Yes	EV charging points now located on the side of the car parking space to allow users to charge at the front or the back.	Yes
5.4	Yes	Yes	Charging point moved to the side of the parking space	Yes
6.1	Yes	Yes	Road layout slightly updated to allow for the 1.8m footpath between the car parking spaces	Yes
6.2	Yes	Yes	Footpath extended to the entrance of block A	Yes

Signed.....
Design Team Leader

Date: 24.10.24

Signed.....
Audit Team Leader

Date: 25.10.24

Signed
Employer

Date: 25.10.24

Appendix C

Problem Location Plan.


CHURCHFIELDS
Block C
Block B
Block A
Communal Open Space (Block B)
177.3 m²
5.1
5.2
5.3
5.4
6.1
6.2
4.1
RAISED SHARED SURFACE
VERTICAL DEFLECTION
STOP SIGN
60.00
5000
4000
SITE 2
Within bike line boundary
Emmet House
DUNDRUM ROAD
EX. Ø150 WM CAST IRON

13 Appendix D - Outline Construction Management Plan

Mount Saint Mary's Outline Construction Management Plan

29.09. 2024

24093-X-XXX-RP-TNT-CE-0005

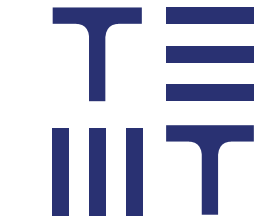
TENT ENGINEERING

Site Address:

Mount Saint Mary's,
Dundrum Road,
Dundrum,
Dublin 14

Client Name:

Dún Laoghaire–Rathdown County Council


TENT ENGINEERING

Revision and Review

This report has been prepared for the sole benefit, use and information of the client. The liability of Tent Engineering with respect to the information contained in this report will not extend to any third party.

PURPOSE

- ☐ P1 Information
- ☐ P2 Coordination
- ☐ P3 Planning
- ☐ P4 Building Control
- ☐ P5 Pre-tender
- ☐ P6 Tender
- ☐ P7 Construction

ACCEPTANCE (BY OTHERS)

- ☐ S Issued
- ☐ A Accepted
- ☐ B Accepted subject to comments
- ☐ C Rejected
- ☐ D Acceptance not required

Accepted by

REVISION(S)

Rev.	Description	Date
00	1st Issue	29.09.2024
01	2nd Issue	28.02.2025

AUTHOR(S)

Name
Conor Edwards Civil Engineer

REVIEWER(S)

Name
Diarmuid Healy Co-founder, Director Structural Engineer
BEng (Hons) MIEI CEng MIStructE FIStructE

Office address:

Tent Engineering Ltd.
32 Francis Street, Dublin
Co. Dublin, D08NN96

Contents

1 Introduction

Tent Engineering has been appointed by Dún Laoghaire–Rathdown County Council to provide an **Outline Construction Management Plan (OCMP)** in relation to the proposed development at Mount Saint Mary's, Dundrum Road, Dundrum, Dublin 14. The aim of this OCMP is to address issues that can arise during construction including noise and vibration, traffic management, working hours, pollution control, dust control, road cleaning, compound / public health facilities and staff parking, all associated with the construction works. This plan will be updated by the contractor and agreed with Dun Laoghaire Rathdown County Council (DLRCC) in advance of the construction phase.

This Outline Construction Management Plan (OCMP) has been prepared to give an overview of the processes to be employed during construction of this project. Prior to the on-site activities commencing, this plan will be revised by the appointed lead contractor and expanded to produce a Detailed Construction Management Plan, which shall incorporate:

- Operational Health & Safety (OH&S) Management Plan;
- Environmental Management Plan;
- Pedestrian and Traffic Management Plan.

The Construction Management Plan will be integrated into and implemented throughout the construction phases of the project to ensure the following:

- that all site activities are effectively managed to minimise the generation of waste and to maximise the opportunities for on-site reuse and recycling of waste materials;
- that all waste materials generated by site activities, that cannot be reused on site, are removed from site by appropriately permitted waste haulage contractors and that all wastes are disposed of at approved waste licensed permitted facilities in compliance with the Waste Management Acts 1996 to 2005.
- that any environmental impacts (noise, vibration, dust) of project construction work activities on receptors and properties located adjacent to the project work areas, and on the local receiving environment, are managed and controlled.

2 Recieving Environment

2.1 Land Use

The subject site is situated on a greenfield area on the grounds of former chapel. The surrounding areas predominantly consist of recreational and residential settlements, characterized by low-density housing, including single-family homes, townhouses, and upscale properties.

The site is currently cleared and is not being used. The surrounding area primarily comprises of business parks, retail establishments, and residential settlements, with most of the residences being single-family homes.

2.2 Site Location

The general location of the subject site in relation to the surrounding road network is illustrated in Figure 2.1 below whilst Figure 2.2 shows the extent of the subject development plot. The development site is located on the Dundrum Road in the Dundrum area of Dublin. It is located approximately 4km to the south of Dublin City Centre. It is bounded to the North by the former Mount Saint Mary's Chapel, to the west by a Dundrum Road, to the south by CUS Rugby Grounds and east by a residential development.

Fig 2.1 - Site Location in Relation to the Regional Road

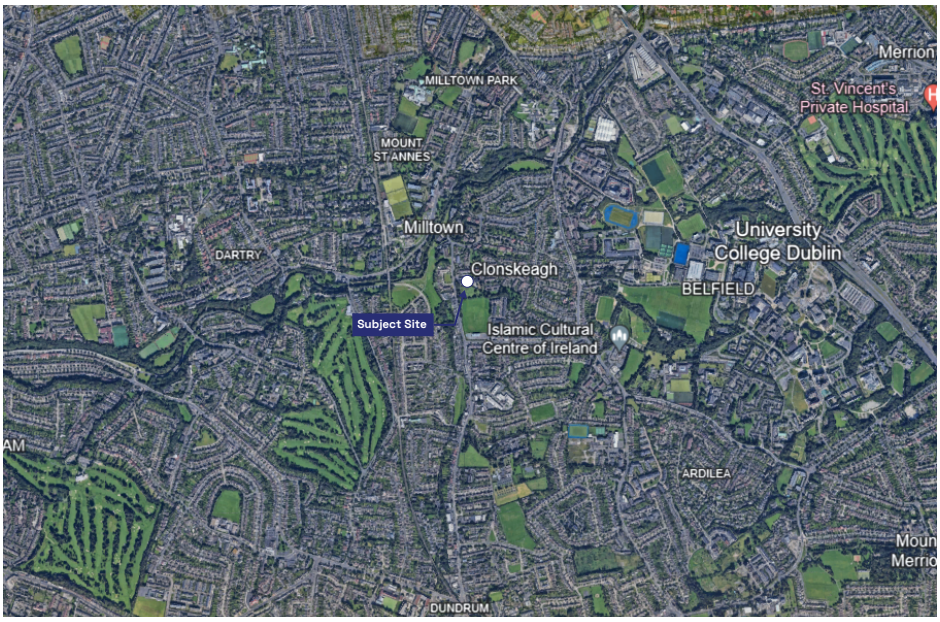


Fig 2.2 - Site Location in Relation to the Local Road Network

3 Site Management

3.1 Site Establishment

The contractor will provide all necessary accommodation, material handling and secure storage for its operations.

The facilities to be provided and maintained by the contractor will include:

- construction plant;
- hoisting equipment and cranes;
- scaffolding, platforms, access ladders, barriers, handrails;
- barricades and hoardings;
- temporary driveways, road crossovers and construction zone;
- 24/7 emergency vehicle access to site during working hours;
- on-site hardstand areas for vehicle loading and unloading;
- storage sheds and compounds;
- rubbish sorting areas;
- site amenities with all required equipment and facilities;
- construction worker facilities;
- first aid facilities;
- site administration offices.

Construction plant and site amenities will comply with the requirements of all relevant authorities and be wholly contained within the hoarded site. All construction plant and equipment will be progressively removed when no longer required.

First Aid facilities for the use of all construction staff in the form of a fully provisioned first aid area within the site office with life-saving and safety equipment as required by relevant statues, authorities and awards will be maintained at all times by the contractor.

The contractor will obtain all required permits, pay the applicable fees and comply with all conditions.

3.2 Hoarding and Fences

Prevention of unauthorised access to the site is a very high priority and will be vigorously managed throughout the construction period. When the contractor is appointed, the site will be secured with site barriers and hoardings in accordance with the final construction management plan. Any hoardings and signboards to the perimeter of the site will comply with the requirements of the relevant authorities and the relevant Health and Safety Acts.

The contractor will be required to erect a single project signboard to the hoarding at the main entrance points to identify the site.

3.3 Services Relocations and Temporary Protection of Public Domain

Prior to any works commencing on site, detailed dilapidation reports will be carried out for footpaths, kerbs, road pavements and utility infrastructure features of the main access routes in the immediate vicinity to the site.

The contractor will provide protection to existing surrounding building elements potentially impacted by the works. Protection may be in the form of screened hoardings, scaffolding and fencing, taped drop sheets and the like, all installed prior to commencement of the demolition works.

The type of required hoardings, scaffolding and fencing will vary over the duration of the works, depending on how the site activities potentially impact on the adjoining public domain and neighbourhood.

Dial-before-you-dig enquiries and detailed services location investigations shall be carried out to identify any need for temporary protection of elements of existing utility infrastructure that are not to be diverted as part of the works.

All temporary protection is to be installed and maintained during the duration of the works until they are no longer required.

3.4 Major Plant and Equipment

Plant and equipment used during the entire works are:

- articulated and rigid trucks;
- rigs, bulldozers, excavators, backhoes, with ancillary equipment (saws);
- tower cranes;
- concrete delivery trucks;
- concrete pumps;
- man, and material hoists;
- scissor, boom and fork lifts.

All plant and equipment will be operated by experienced and qualified personnel with the appropriate registrations.

3.5 Vehicular Access to Site

Construction site access will be via the Dundrum Road which runs in a north to south direction.

- Advanced warning provided to all users on the road and directional signage for site traffic

Revised measures will be developed further as part of the Construction Traffic Management Plan (CTMP) developed by the contractor in consultation with the Design Team and DLRCC.

The principal objective of the CTMP is to ensure that the impacts of all building activities generated during the construction of the proposed development upon both the public (off-site) and internal (on-site) workers environments, are fully considered and proactively managed / programmed respecting key stakeholders requirements thereby ensuring that both the public's and construction workers safety is maintained at all times, disruptions minimised and undertaken within a controlled hazard free / minimised environment. It is noted that the impact of the construction works will be temporary in nature.

The CTMP will be prepared in accordance with the principles outlined below and shall always comply with the requirements of:

- Chapter 8 of the Department of the Environment Traffic Signs Manual, current edition, published by The Stationery Office, and available from the Government Publications Office, Sun Alliance House, Molesworth Street, Dublin 2;
- Guidance for the Control and Management of Traffic at Road Works (June 2010) prepared by the Local Government Management Services Board; and
- Any additional requirements detailed in the Design Manual for Roads and Bridges & Design Manual for Urban Roads & Streets (DMURS).

Note that all construction traffic will travel to and from the site via the proposed Dundrum Road. In order to ensure satisfactory operation of the construction stage the following is proposed

- Provision of sufficient employee and visitor parking and compounding to ensure no potential overflow onto the local network.

Site offices and compound will be located within the site boundary where feasible. Due to the location and nature of access to the site, there will be limited site parking or construction parking anywhere in the vicinity of the site. Nearby off-site car parking will be identified to avoid congestion in the surrounding areas. Construction staff will be encouraged to use public transport and information on local transportation will be published on site.

Finally, truck wheel washes will be installed at construction entrances and any specific recommendations regarding construction traffic management made by the Local Authority will be adhered to.

The following mitigation measures will be incorporated into the CTMP:

- During the pre-construction phase, the site will be securely fenced off from adjacent properties, public footpaths and roads.
- The surrounding road network will be signed to define the access and egress routes for the development.
- The traffic generated by the construction phase of the development will be strictly controlled in order to minimise the impact of this traffic on the surrounding road network.
- All road works will be adequately signposted and enclosed to ensure the safety of all road users and construction personnel.
- Nearby off-site car parking will be identified for use by employees and visitors to avoid

congestion in the surrounding areas.
- Construction staff will be encouraged to use public transport and information on local transportation will be published on site.
- A programme of street cleaning if/when required.
- Any associated directional signage
- Any proposals to facilitate the delivery of abnormal loads to the site
- Measures to obviate queuing of construction traffic on the adjoining road network.

3.6 Site Security

Access to site will be controlled by means of an electronic access control system and camera remote monitoring system for out of hours use. During working hours, a gateman will control traffic movements and deliveries. All personnel working on site will be required to have a valid Safe Pass card.

3.7 Material Hoisting & Movement Throughout the Site

It is envisaged that a tower crane will be temporarily erected to accommodate the construction works for the distribution of reinforcing steel, concrete skips, concrete formwork element and general building materials. A detailed crane analysis will be prepared for verification of the safe load parameters. No loads will be lifted over the public domain or adjacent properties.

Hoists and teleporters may also be used within the site and around its perimeter as required during the project, to facilitate material and waste movements into and out of the site.

3.8 Deliveries & Storage Facilities

All deliveries to site will be scheduled to ensure their timely arrival and avoid the need for storing large quantities of materials on site. Deliveries will be scheduled outside of rush hour traffic to avoid disturbance to pedestrian and vehicular traffic in the vicinity of the site.

3.9 Site Accommodation

On-site facilities shall include:

a materials and equipment storage area;

- a site office;
- staff welfare facilities (e.g. toilets, drying room, canteen, etc.).
- Electricity will be provided to the site via national grid.

Water supply to the site during construction works will be provided by means of a temporary connection to a public watermain. Similarly, a temporary connection for foul water drainage will be made to the public network.

3.10 Site Parking

Due to the location and nature of access to the site, there will be limited site parking or construction parking anywhere in the vicinity of the site. Nearby off-site car parking will be identified to avoid congestion in the surrounding areas. Construction staff will be encouraged to use public transport and information on local transportation will be published on site.

3.11 Site Working Hours

Subject to the agreement of the Planning Authority, the following site operation hours are proposed:

- Monday to Friday: 07:00 to 19:00
- Saturdays: 08:00 to 14:00
- Sundays & Bank Holidays: Works not permitted

It may be necessary for some construction operations to be undertaken outside these times, for example: service diversions and connections; concrete finishing and fit-out works; etc. There may also be occasions where it is necessary to make certain deliveries outside these times, for example, where large loads are limited to road usage outside peak times.

4 Environmental Management

The contractor will establish guidelines and controls for all activities that may impact on the surrounding environment for the duration of the works, including; air, water, land, natural resources, flora, fauna, humans, and their interrelation.

The project is to be developed to enable to all personnel with the means to understand their responsibilities and to meet the contractor's statutory, contractual and procedural obligations relating to environmental management.

For each activity, the environmental aspects and associated actual and potential impacts are to be identified as they relate to the following environmental elements:

- emissions to air;
- releases to water;
- releases to land;
- use of raw materials & natural resources;
- use of energy;
- waste and by-products;
- community & neighbours;
- flora & fauna;
- heritage & cultural.

4.1 Materials and Decontamination

Excavation works will each address the requirements of this investigation report and verify the treatment and removal of all materials and contamination encountered during the works.

4.2 Noise

The Contractor shall implement measures to eliminate and reduce noise levels where possible.

All construction activities will be carried out in compliance with the recommendations of BS 5228, Noise Control on Construction and open sites part 1 and comply with BS 6187 Code of Practice for Demolition.

The following is an outline of the possible noise mitigation measure which the Contractor may consider implementing on site to address potential noise levels;

General Considerations:

1. All site staff shall be briefed on noise mitigation measure and of best practicable means to be employed to control noise.
2. Site hoarding should be erected to maximise the reduction in noise levels.
3. The Contractor should but in place a liaison officer to engage with neighbours on a weekly basis and keep them a braised of the pending works on site and address any concerns raised.
4. Internal haul routes shall be maintained, and steep gradients shall be avoided where possible.
5. Material and plant loading and unloading shall only take place during normal working hours unless the requirement for extended hours for traffic management (i.e. road closure) or health and safety reasons has been granted (application must be made to the Council a minimum of 4 days prior to proposed works)
6. Minimise opening and shutting of gates through good coordination of deliveries and vehicle movements.

Plant

- Contractor should ensure that each item of plant and equipment complies with the noise limits quoted in the relevant EC Directive 2000/14/EC.
- Fit all plant and equipment with appropriate mufflers or silencers of the type recommended by the manufacturer.
- Use all plant and equipment only for the tasks for which it has been designed.
- Shut down all plant and equipment in intermittent use in the intervening periods between work or throttle down to a minimum.
- Power plant by mains electricity where possible rather than generators.
- Employ partial or full enclosures for fixed plant where possible.
- Locate movable plant away from noise sensitive receptors where possible.

- All plant operators to be qualified in their specific piece of plant.
- Compressors and generators will be sited in areas least likely to give rise to nuisance where practicable.

Vehicle activity:

- Ensure all vehicle movement on site occur within permitted working hours unless permission to the contrary has been granted
- Plan deliveries and vehicle movements so that vehicles are not waiting or queuing on the public road, if unavoidable engines should be turned off.
- Contractor should plan the site layout to ensure that reversing is kept to a minimum.
- Wheel washing of vehicles prior to exiting the site shall take place to ensure that adjoining roads are kept clean of dirt and debris. Regular road sweeping of adjoining roads should take place as necessary.

4.3 Air Quality & Dust Monitoring

Dust prevention measures shall be included for control of any site airborne particulate pollution. The Contractor shall monitor dust levels in the vicinity of the site in accordance with planning conditions. Records shall be kept of such monitoring for review by the Planning Authority. The minimum criteria to be maintained shall be the limit for Environmental Protection Agency (EPA) specification for licensed facilities in Ireland, which is 350mg/m^2/day.

The Contractor shall continuously monitor dust over the variation of weather and material disposal to ensure the limits are not breached throughout the project.

4.4 Migrating Dust & Dirt Pollution

- A regime of "wet" road sweeping can be set up to ensure the roads around the immediate site are as clean and free from dirt/dust arising from the site, as is reasonably practicable.
- Footpaths immediately around the site can be cleaned by hand regularly, with damping as necessary.
- Scaffolding to be cleaned regularly. Netting can be provided to enclose scaffolding at sensitive areas of the site.
- Vehicle waiting areas or hard standings can be regularly inspected and kept clean.
- Vehicle and wheel washing facilities can be provided at the site exit where practicable. If necessary, vehicles can be washed down before exiting the site.
- Internal combustion plant should not be left running unnecessarily.
- Where possible fixed plant such as generators should be located away from residential areas.
- The number of handling operations for material should be kept to a minimum in order to ensure that dusty material is not moved or handled unnecessarily.
- The transport of dusty materials and aggregates should be carried out using covered/sheeted lorries.
- Vehicles loading should be dampened down and drop heights for material to be kept to a minimum.
- Dust dispersal over the site boundary should be minimised using static sprinklers or other watering methods necessary.
- Stockpiles of material should be kept to a minimum and may be sheeted or watered down. These should be located away from sensitive boundaries.
- Equipment and techniques for cutting/ grinding sawing/sanding etc., which minimise dust emissions and which have the best available dust suppression measures, should be employed.

Where possible pre-mixed plasters and masonry compounds should be used to minimise dust arising from on-site mixing.

Prior to commencement, the main contractor should identify the construction operations which are likely to generate dust and to draw up action plans to minimise emissions. Furthermore, the main contractor should prepare environmental risk assessments for all dust generating processes, which are envisaged. The main contractor should allocate suitably qualified personnel to be responsible for ensuring the generation of dust is minimised and effectively controlled.

4.5 Harmful Materials

Harmful material will be stored on site for use in connection with the construction works only. These materials will be stored in a controlled manner. Where on-site facilities are used there will be a bunded filling area using double bunded steel tank at a minimum.

4.6 Vibration

The Contractor will be required to carry out the works such that the effect of vibration on the adjoining buildings and surroundings is minimised and does not cause any damage.

The Contractor shall be required to comply with the requirements of the planning permission for any vibration limits for the works. In the absence of any Local Authority requirements, Table 4.1 shall set the limitations:

Background vibrations shall be established prior to commencement. A vibration monitoring system is to be put in place prior to any works taking place. This system is to raise an alarm if an agreed limit is exceeded at which time the working methods are to be adjusted so as to reduce vibrations generated.

Table 4.1 - Trigger Values for Vibraiton

	Peak Particle Velocity (PPV)	
Trigger Level	50Hz and Below	Above 50Hz
1	10mm/s	10mm/s
2	10mm/s	12mm/s
3	10mm/s	15mm/s

5 Waste Management

All waste should be minimised and where it does occur it should be categorised and disposed of appropriately. Skips are likely to be a feature for the waste disposal on this site. The contractor is to carefully plan and sequence skip arrival time and where possible skips should be dropped and picked on the same day.

6 Traffic Management

6.1 Site Traffic, Traffic and Pedestrian Management

The anticipated truck movements from and to the site in relation to the preliminary programme for the works will be nominated in the construction methodology by the main contractor.

The construction site will be delineated by means of hoardings and lockable gates with screened fencing at the entry and exit points. The Contractor will pay particular attention to pedestrian traffic and safety at the entrances. Where possible, all vehicles will enter and exit the site in a forward direction.

Pedestrians will have right of way. If required, alternate pedestrian routes around the site will be created and clearly signed.

6.2 Minimization of Construction Vehicle Movements

Construction-related vehicle movements will be minimized through:

- consolidation of delivery loads to/from the site and scheduling of large deliveries to occur outside of peak periods;
- use of precast/prefabricated materials where possible;
- reuse of 'cut' material generated by the construction works on site where possible, through various accommodation works;
- provision of adequate storage space on site;
- development of a strategy to minimise construction material quantities as much as possible;
- promotion of public transport use by construction personnel, in order to minimise staff vehicle movements.

The following headings identify some of the measures to be encouraged.

Cycling

Cycle parking spaces will be provided on the site for construction personnel. In addition, lockers will be provided to allow cyclists to store their cycling clothes.

Car Sharing

Car sharing among construction personnel will be encouraged, especially from areas where construction personnel may be clustered. The contractor shall aim to organize shifts in accordance with personnel origins, hence enabling higher levels of car sharing. Such a measure offers a significant opportunity to reduce the proportion of construction personnel driving to the site and will minimise the potential traffic impact on the surrounding road network.

Public Transport

Construction personnel will be encouraged to use public transport as means to travel to and from the site. An information leaflet shall be provided to all personnel as part of their induction on site, highlighting the location of the various public transport services in the vicinity of the construction site.

Public Roads

A Visual Condition Survey (VCS) will be carried out of all surrounding streets prior to any site works commencing. The contractor will liaise with the Transportation and Infrastructure department of DLRCC to agree any changes to load restrictions and construction access routes for the site. Measures will be put in place as required to facilitate construction traffic whilst simultaneously protecting the built environment.

All entrances and temporary roads will be continuously maintained for emergency vehicle access.

The following measures will be taken to ensure that the site, public roads and surroundings are kept clean and tidy:

- a regular program of site tidying will be established to ensure a safe and orderly site;
- scaffolding will have debris netting attached to prevent materials and equipment being scattered by the wind;
- food waste will be strictly controlled on all parts of the site;
- mud spillages on roads and footpaths outside the site will be cleaned regularly and will not be allowed to accumulate;
- wheel wash facilities will be provided for vehicles exiting the site;
- in the event of any fugitive solid waste escaping the site, it will be collected immediately and removed.

Compound Facilities / Parking

The construction compound for the infrastructure works shall be entirely within the site boundary, although in some instances located outside the phase being constructed. The compound shall be constructed using a clean permeable stone finish and will be enclosed with security fencing. Site accommodation to be provided will include suitable washing / dry room facilities for construction staff, canteen, sanitary facilities, first aid room, office accommodation etc. Access to the compound will be security controlled and all site visitors will be required to sign in on arrival and sign out on departure.

A permeable hardstand area will be provided for staff parking and these areas will be separate from designated machinery / plant parking.

A material storage zone will also be provided in the compound area. This storage zone will include material recycling areas and facilities.

A series of 'way finding' signage will be provided to route staff / deliveries into the site and to designated compound / construction areas.

On completion of the works all construction materials, debris, temporary hardstands etc. from the site compound will be removed off site and the site compound area reinstated in full on completion of the works.

7 Provision for Construction

7.1 Hoarding, Set-up of Site & Access/Egress Points

The site area will be enclosed with hoarding, details of which are to be agreed with Dun Laoghaire Rathdown County Council (DLRCC). Hoarding panels will be maintained and kept clean for the duration of the project.

This will involve erecting the hoarding around the proposed site perimeter in line with the finished development description.

The restricted confines of the site will require the contractor to set up an off-site "Construction Staging Area". This off-site facility should be suitably located to allow efficient delivery of materials and personnel to site. A "Just in Time" approach will be required for the delivery of particular building materials such as concrete formwork and reinforcement cages for the piles. The location of this facility should be highlighted within the Construction Management Plan.

7.2 Removal of Services

Prior to any works a utility survey will be carried out to identify existing services. All services on site will be disconnected, diverted or removed as agreed with service providers.

7.3 Site Clearance

The red line site boundary is greenfield and does not generate any significant vehicular traffic. The following is a high-level method statement for the clearance of the site:

- Establish a site set-up and welfare facilities;
- Carry out an invasive species survey using a qualified and approved surveyor.
- Carry out a detailed services survey of the site to identify all buried services, determine what services are live, redundant and potentially serve neighbouring properties.
- Carry out any necessary services diversions and decommissioning works.

7.4 Excavation

This development will involve a bulk excavation and removal of material during the construction of the building foundations. The Contractor will prepare a Construction Waste Management Plan in accordance with the "Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects" (Department of Environment, Heritage and Local Government, 2006) and ensure that all material is disposed of at an appropriately licensed land fill site. The Contractor must also outline detailed proposals within the Construction Management Plan to accommodate construction traffic.

7.5 Site Service Installations

Drainage, power, water and the like will be installed to serve the proposed development.

7.6 Construction Stage

The super structure is a series of 3 blocks ranging varying in height, reaching up to 5 storeys. The buildings are constructed as an RC frame of loading bearing perimeter and internal walls, supporting floor slabs. The building façade will be constructed in accordance with the Architect's specification.

Works to the façade will commence following partial completion of the external envelope. Once the buildings are weather sealed, the internal fit out and completion works will take place.

Works to the façade will commence following partial completion of the external envelope. Once the buildings are weather sealed, the internal fit out and completion works will take place.

7.7 Superstructure

The construction of the superstructure will involve complex sequencing of activities. The building will be constructed as a reinforced concrete frame subject to change in detailed design stages. As noted, the construction methodology and therefore the programme of the construction activities will be dictated by the Contractor.

The following outlines a general construction sequence for the superstructure:

Buildings Structure

- Site clearance including install/removal of below ground services, demolition and removal of existing building.
- Excavation of site and construction of the foundation and ground slab
- Construction of rising elements to ground floor and construction of ground floor slab
- Construct the RC floor slab
- Repeat for upper floors.

Envelope / Cladding:

- Commencement of envelope works to ground floor when structure has progressed to approximately Level 2/3, with suitable temporary openings in the façade left for ease of transport of construction material.
- Advancing of external leaf two or three levels behind the structure

Mechanical & Electrical fit-out:

- First fix will commence at each level behind structure;
- This will be followed by the second fix and the final connections

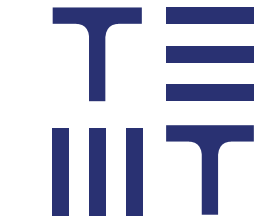
Fit-out:

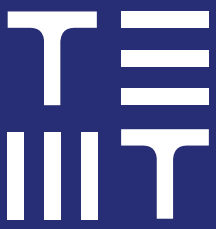
- Initial installation of stud work when cladding is complete, and floor is weather tight;
- Installation of equipment and associated connection to services;
- Completion of finishes.
- The final commissioning period will commence during fit-out

The above is an indicative construction sequence. The final sequence will be dictated by the Contractor. The Contractor must issue a detailed construction programme outlining the various stages prior to commencement of works.

Erection and operation of cranes

It is envisaged that a tower crane will be temporarily erected to accommodate the construction works for the distribution of reinforcing steel, concrete skips, concrete formwork element and general building materials. These visits will be coordinated with the other site activities and crane operations to ensure all risks are correctly assessed and mitigated against. The Contractor will need to obtain all necessary licences from the Local Authority.
A “mast climber” maybe installed at some local areas to facilitate particular façade features. The mast climber is essentially a climbing platform that allows the user safely to access any level without the requirement for a full scaffold tower.

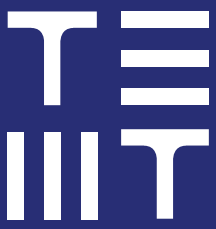

TENT ENGINEERING



TENT ENGINEERING

14 Appendix E - Automatic Traffic Count Survey

15 Appendix F - Public Transport Capacity Assessment



TENT ENGINEERING