169-177 Merrion Road Student Accommodation Traffic and Transport Assessment

28.08.2024

24042-X-XXX-RP-TNT-TP-0008

TENT ENGINEERING

Site Address:
Gowan Motors Compound Site,
169-177 Merrion Road,
Dublin 4

Client Name:
1 Merrion Compound Land Limited

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

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Contents

1 Introduction 6

2 Receiving Environment 8

3 Policy Framework and Standards 9

4 Accessibility 13

5 Proposed Transport Infrastructure 25

6 Transport Characteristics of the Proposed Development 27

7 Traffic Impact Assessment 29

8 Mobility Management Plan 35

9 Summary and Conclusion 35

10 Appendix A - Drawings 36

11 Appendix B - Public Transport Capacity Assessment 41

12 Appendix C - Mobility Management Plan 64

13 Appendix D - Road Safety Audit 85

14 Appendix E - Outline Construction Management Plan 87

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 Gowan Motors Compound Site, 169-177 Merrion Road, Dublin 4.

The subject proposals seek planning permission for a Large Scale Residential Development delivering 200 no. student beds within two blocks. The blocks range in height up to 6 storeys. Block A and block B will share a single storey basement. All associated internal and external amenity space, 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 transport assessment confirms that the construction and full occupation of the scheme will have a negligible and unnoticeable impact upon the operation of the adjacent 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
- Dublin City Council 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 subject proposals which consider the implementation of 200 Student Bed Spaces, on the site; is predicted to fall some way short of all the above best practice TIA thresholds. Accordingly, Tent Engineering concluded that the subject development proposals do not require a TIA.

Tent note that Appendix B of the Guidance on Transport Assessments document, as published by the Department for Transport in England; details further indicative thresholds which can be referenced in specific sensitive circumstances when officers are deciding upon the level of assessment required. This guidance suggests that in particular circumstance's;

- A TTA may be required for residential developments that exceed 80 dwellings;
- A TS may be required for residential developments between 50 and 80 units;
- No assessment is required for proposed schemes with less than 50 dwellings.

In the context of the above best practice guidance it becomes apparent that the scale (and associated predicted impact) of the proposed 31 unit development at Gowan Motor Compound Site does fall under the criteria of a TS.

Accordingly, 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 relates to the in depth Management Mobility Plan undertaken for the site. The Management Mobility Plan ensures that all employees, visitors, and stakeholders have access to the site or facility in a convenient and efficient manner.

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 the former Gowans compound, which has been non-operational for several years. The site is currently cleared and used as a construction compound for adjacent developments. The surrounding area primarily comprises medical facilities, retail establishments, and residential settlements, with most of the residences being single-family homes along Merrion Road.

2.2 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 Merrion Road in the Merrion area of Dublin. It is located approximately 5km South-East to Dublin City Centre. It is bounded to the North and East by the Merrion Road, to the South by Cartis Care Home and to the east by private residences.

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

Dublin City Council Development Plan 2022-2028

Dublin 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.

It is an objective of the Council:

SC19: To promote the development of a network of active, attractive and safe streets and public spaces which are memorable, and include, where appropriate, seating, and which encourage walking as the preferred means of movement between buildings and activities in the city. In the case of pedestrian movement within major developments, the creation of a public street is preferable to an enclosed arcade or other passageway.

QH10: To support the creation of a permeable, connected and well-linked city and discourage gated residential developments as they exclude and divide established communities.

MT04: To support improvements to the city's bus network and related services to encourage greater usage of public transport in accordance with the objectives of the NTA's strategy and the government's 'Smarter Travel' document.

MT010: To improve existing cycleways and bicycle priority measures throughout the city, and to create guarded cycle lanes, where appropriate and feasible.

MT011: To review the 30kph speed limit that applies within the city centre (i.e. area between the canals).

Section 16.38 & 16.39 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.
In relation to car parking provision, the site is in Zone 2 and so car parking is restricted 1 space per 20 bed spaces on account of the proximity to public transport. A single accessible car parking space and a drop off parking bay is proposed as part of this development.

Regarding bicycle parking, the plan provides standards on the number of required spaces acceptable for new developments. For "Accommodation" land uses in All Zones, residential student accommodation requires 1 space per bedroom and 1 per 5 bedrooms for visitors. The total provision of bicycle parking spaces on site is 248 made up of 206 long term spaces 42 short term spaces including 12 larger non-standard bike spaces.

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 (GOA) 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 GOA has been divided into six radial and two central corridors, with the existing and proposed development falling within central corridor G (Dublin City Centre) from where all the radial corridors start from. Therefore, the infrastructure proposed for each corridor will benefit this central corridor G which includes improvements to:

- 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 GOA.

Local to the site, the N5 East Coast-South Greenway Trail passes by the Gowan Motors Compound Site connecting the site to the city centre to the north and Bray to the south.

Secondary route 13E connects the site to the city centre while primary route 13 also connects the site from South Dublin to the city centre. 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 within Dublin city centre and will be set to significantly benefit from the planned changes. In particular the proposed B Spine Route 3 and 4 will route just to the north and south respectively connecting the site to the south city and city centre.

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 bedroom. Visitor parking is also recommended at a ratio of 1 space per 5 bedrooms. 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 is located at the former Gowan Motors Compound Site in the Merrion Road. The site currently comprises The subject site is currently occupied by a construction compound.

The arterial roads surrounding the development, Strand Road and Merrion Road have speed limits of 50km/h.

Existing Cycle and Pedestrian Facilities

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

Located approx. 75m to the southeast 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. Currently the site benefits from the No. 13 cycle lane on Merrion Road which continues to the City Centre.

Fig 4.1 - Pedestrian and Bus Facilities on Merrion Road South (Norh-east of subject site)

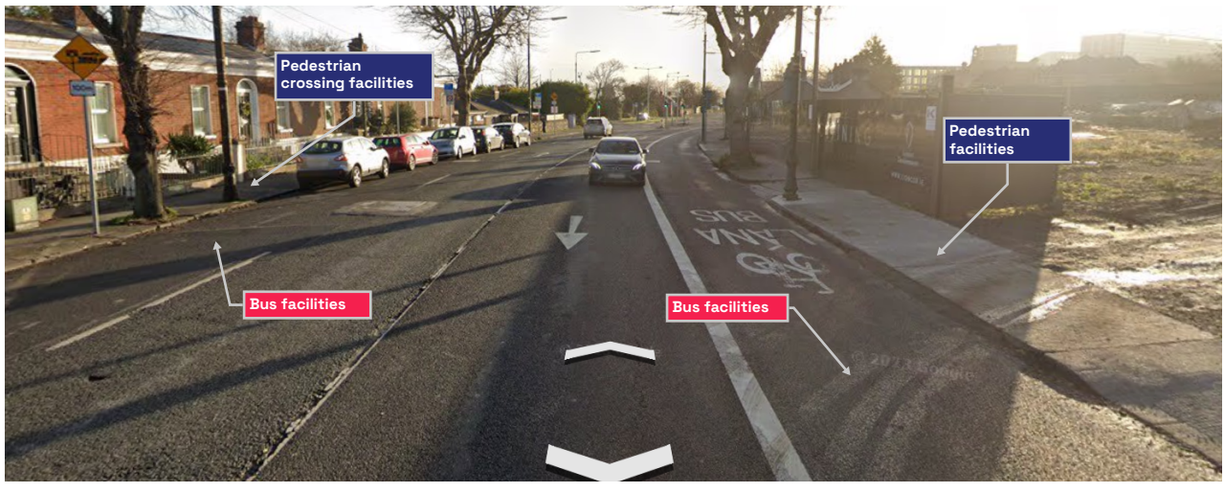
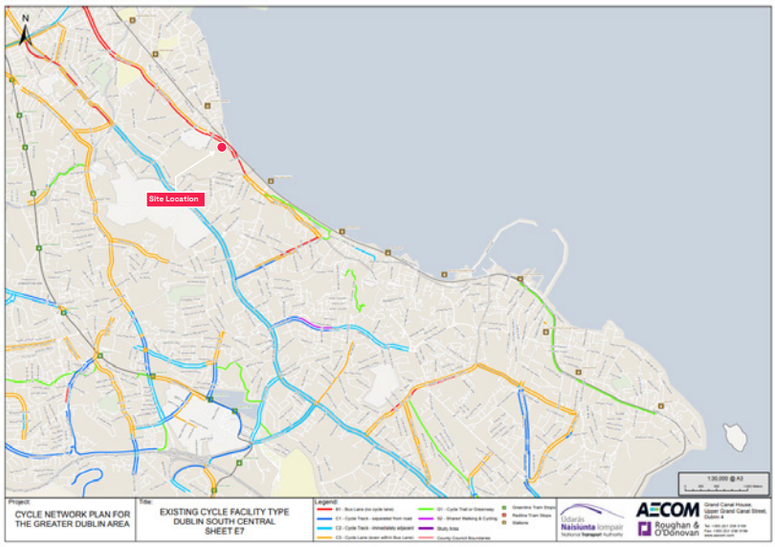


Fig 4.2 - Existing cycle network



4.2 Pedestrian Accessibility

The site area includes numerous amenities including places to eat/drink and shop which can be accessed within a 5 minute walk around the area.

Within a 10-minute walk from the site Merrion Strand, Maldron Hotel, St. Vincents Hospital i.e are all accessible.

Within 15-20 min. walking all the area up to the University College Dublin is accessible. The nearest Dart station to the site is Sydney Parade Train Station, located c. 15mins to the North.

Aviva Stadium and RDS are within 30-minute walk of the site. Figure 4.3 below outlines the walking catchment in 5-minute intervals.
It can be concluded that the site is highly accessible on foot.

Fig 4.3 - Walking Catchment

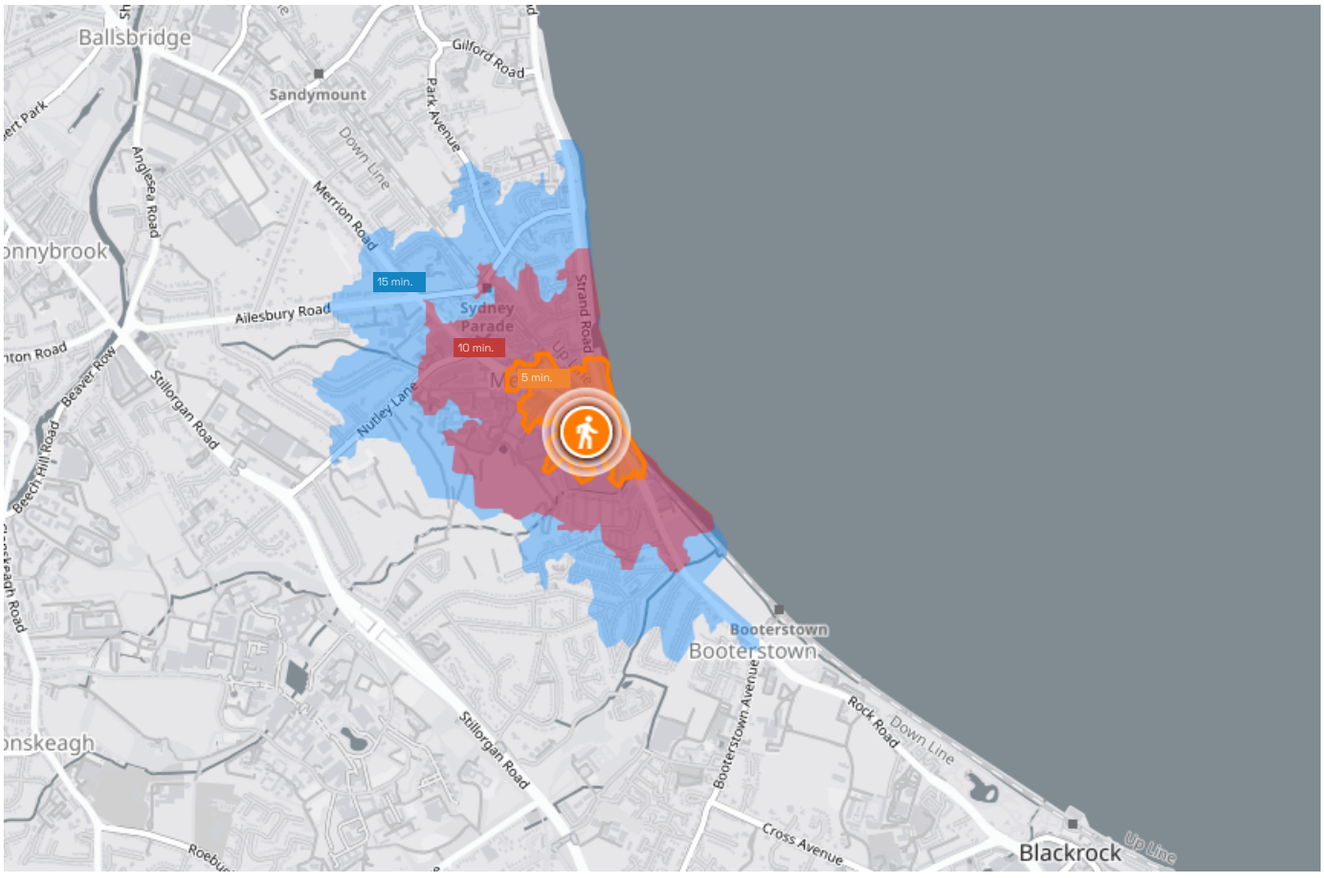
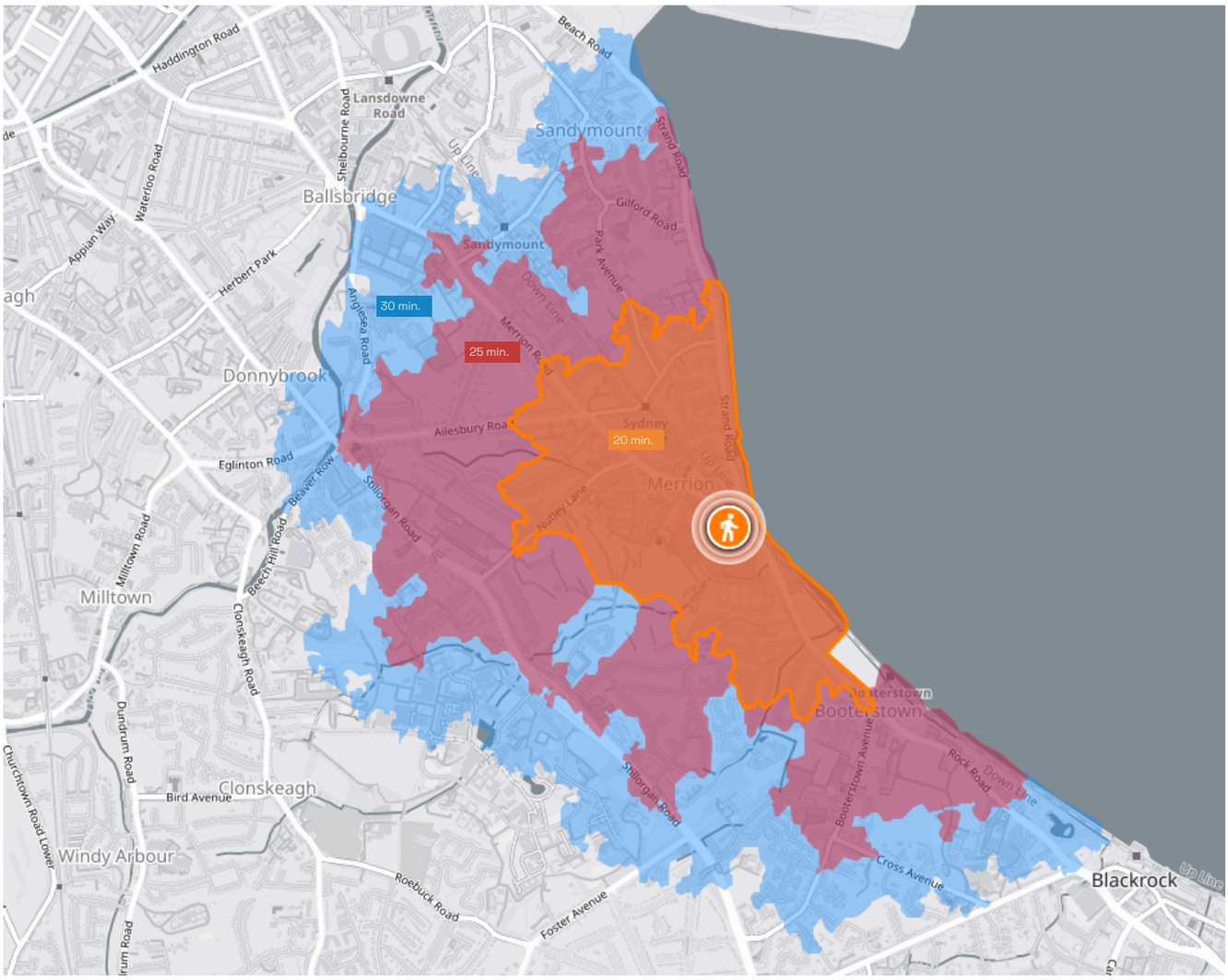


Fig 4.4 - Walking Catchment



4.3 Cycling Accessibility

The site is easily accessible by bike, with bus lanes (designed to be shared by both buses and cyclists) present along both sides of Merrion Road.

Figure 4.4 below shows the cycling catchment accessible from the subject site from 5 to 30 minutes of cycling.
Within 5 minutes of cycling, Sydney Parade DART Stop Station can be accessed.
Within 10 minutes of cycling Blackrock can be reached. In 15 minutes of cycling Ringsend and Clonskeagh are easily accessible.

In a 20 minutes cycle, the majority of Dublin City centre area and south Dublin can be reached.

Fig 4.5 - Cycling Catchment

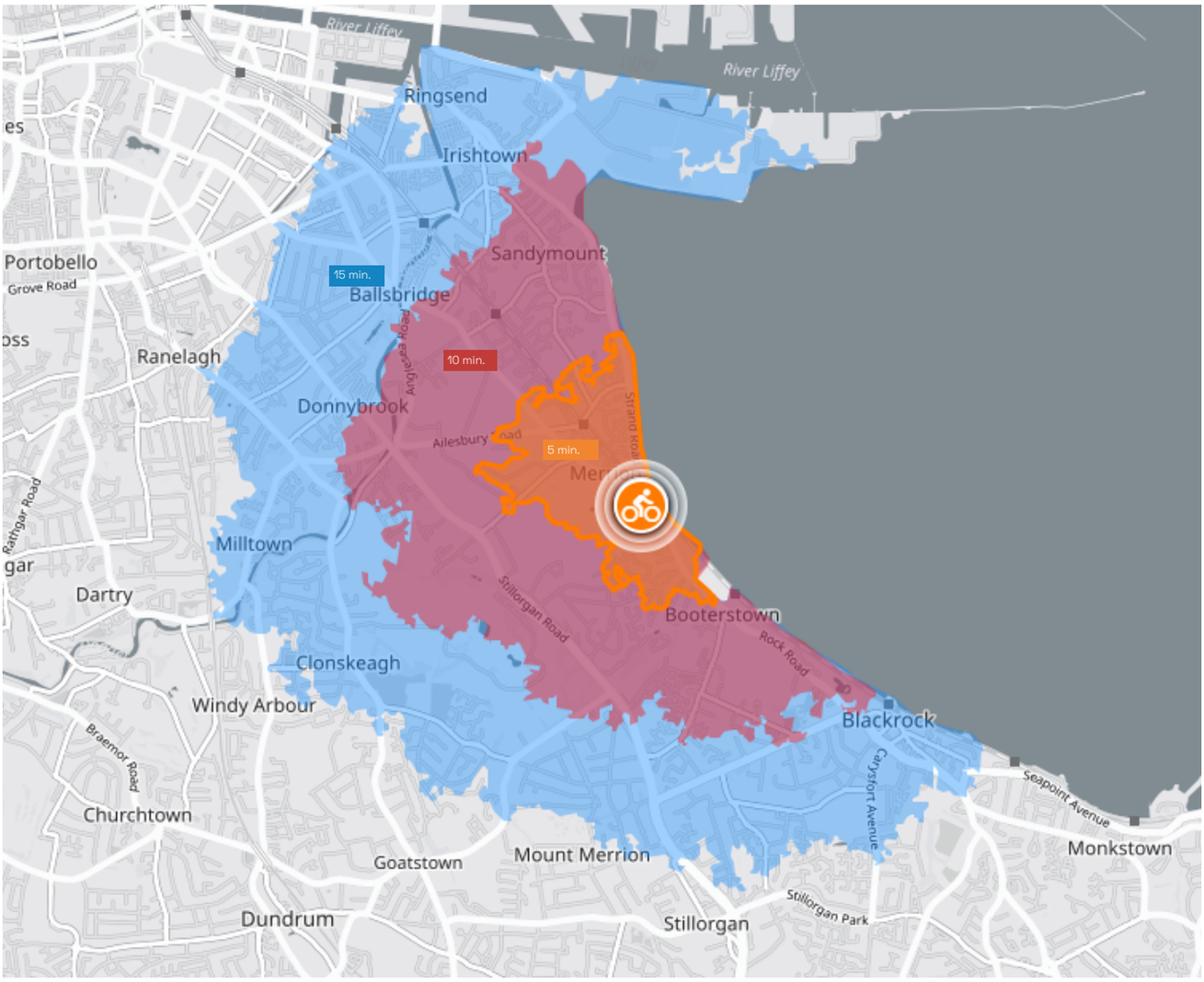
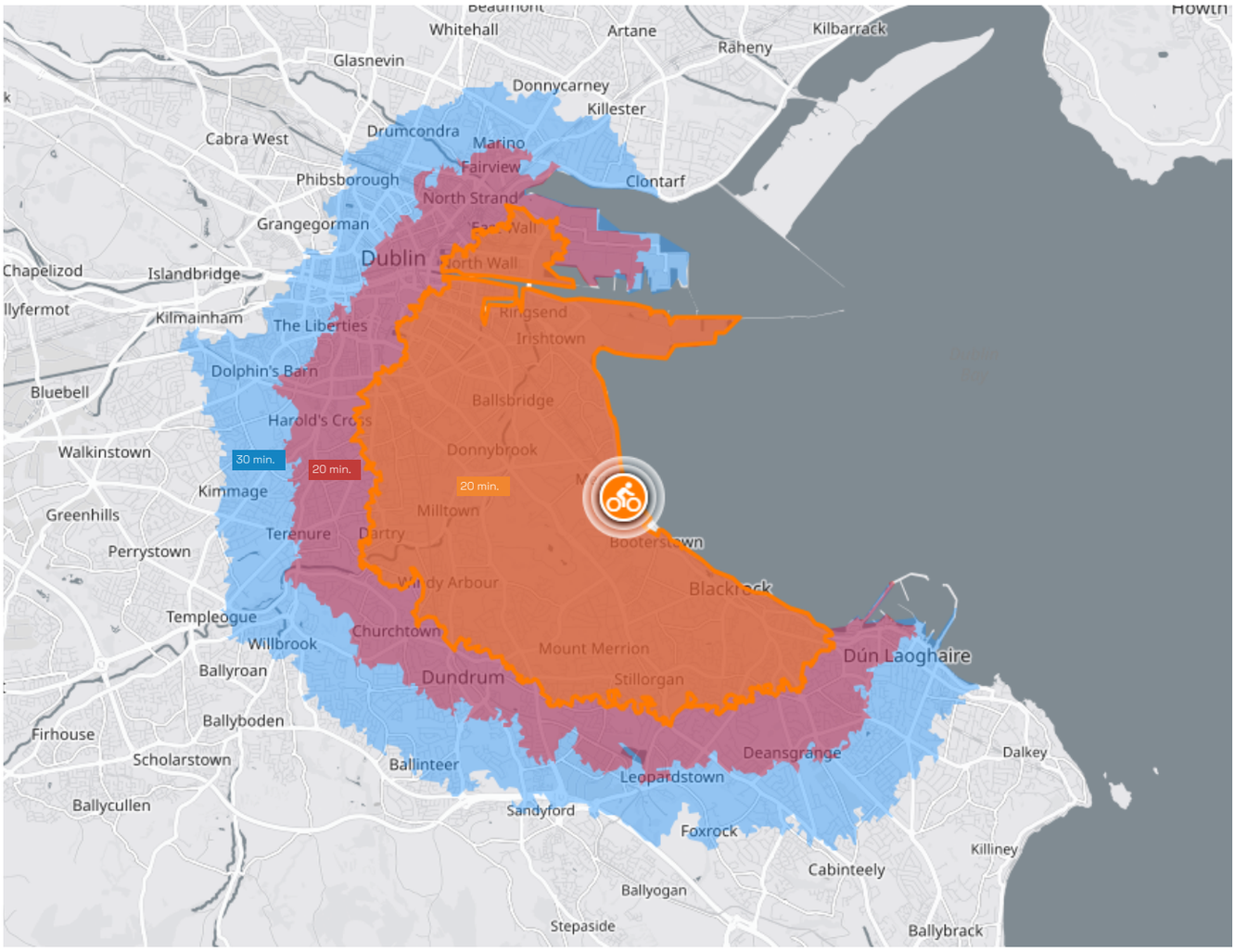


Fig 4.6 - Cycling Catchment



4.4 Public Transport Accessibility

Public Transport Bus

The subject site is well served in terms of public transport provision. The Dublin Bus Routes 4, 7, 7A, 47, 27X and 2 are all operating along Merrion Road and Nutley Ln in close proximity of our subject 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, previously discussed in Section 2.

Public Transport Bus Accessibility

Figures 4.3 and 4.4 above shows the walking catchments accessible from the subject site while figure 4.8a, 4.8b and 4.8c shows the public transport catchments for 30, 45 and 60 minutes. Within 30 minutes using public transport various Dublin suburbs are accessible such as Dun Laoghaire and Stillorgan i.e. including also Dublin City Centre.

Within a 45 minutes journey Raheny, Shankill and Chapelizod regions can be reached.

Greystones, Donabate, Mahahide regions among others are all accessible within 1 hour.

Fig 4.7 - Bus Stops in close proximity to our subject site

Table 4.1 Bus Service Frequency (min)

Route No.	Route	Weekdays		Weekend	
		AM Peak	Interpeak	Saturday	Sunday
7	Mountjoy Square West - Brides Glen Luas	25 - 30	25 - 30	25-40	30-40
4	Harristown - Monkstown Avenue	12-20	12 - 20	15 - 20	15-30
7A	Loughlinstown Pk	30	30	25-40	30-40
703	Dublin Airport to Killiney	105-120	105-120	105-120	105-120
2	Wexford - Dublin Airport	60-120	60-120	60-120	60-120
27X	UCD - Donaghmede Roundabout	1 per day	1 per day	N/A	N/A
47	Belarmine	25-75	25-75	60	60

Fig 4.8a - 30 minute travel time from site

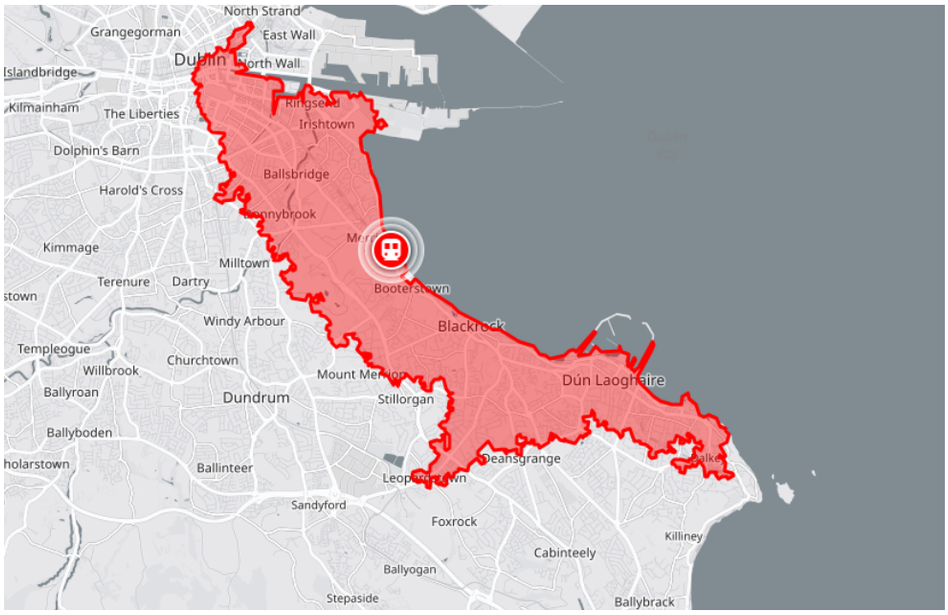


Fig 4.8b - 45 minute travel time from site

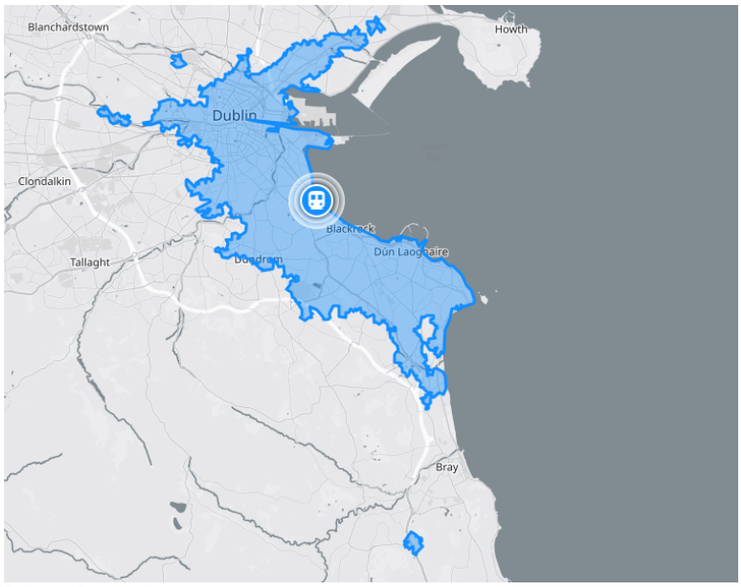
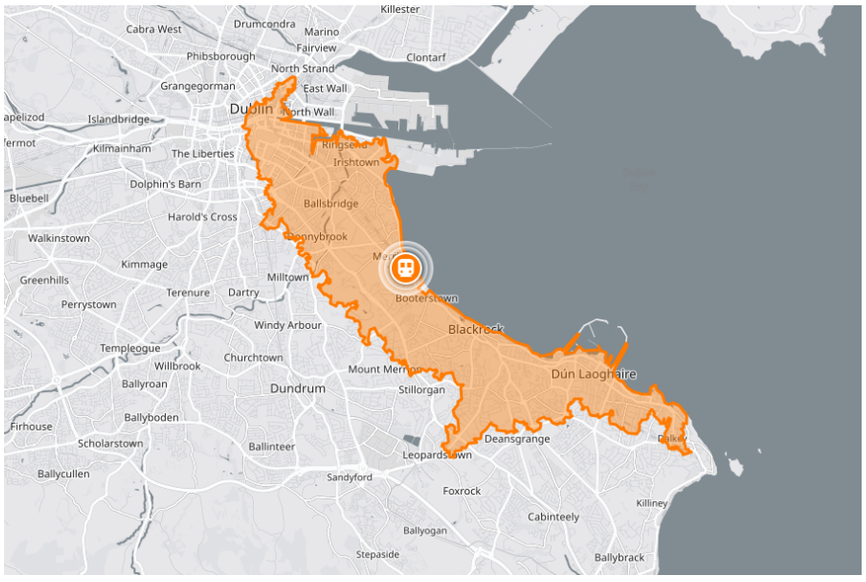


Fig 4.8c - 60 minute travel time from site



Public Transport Dart

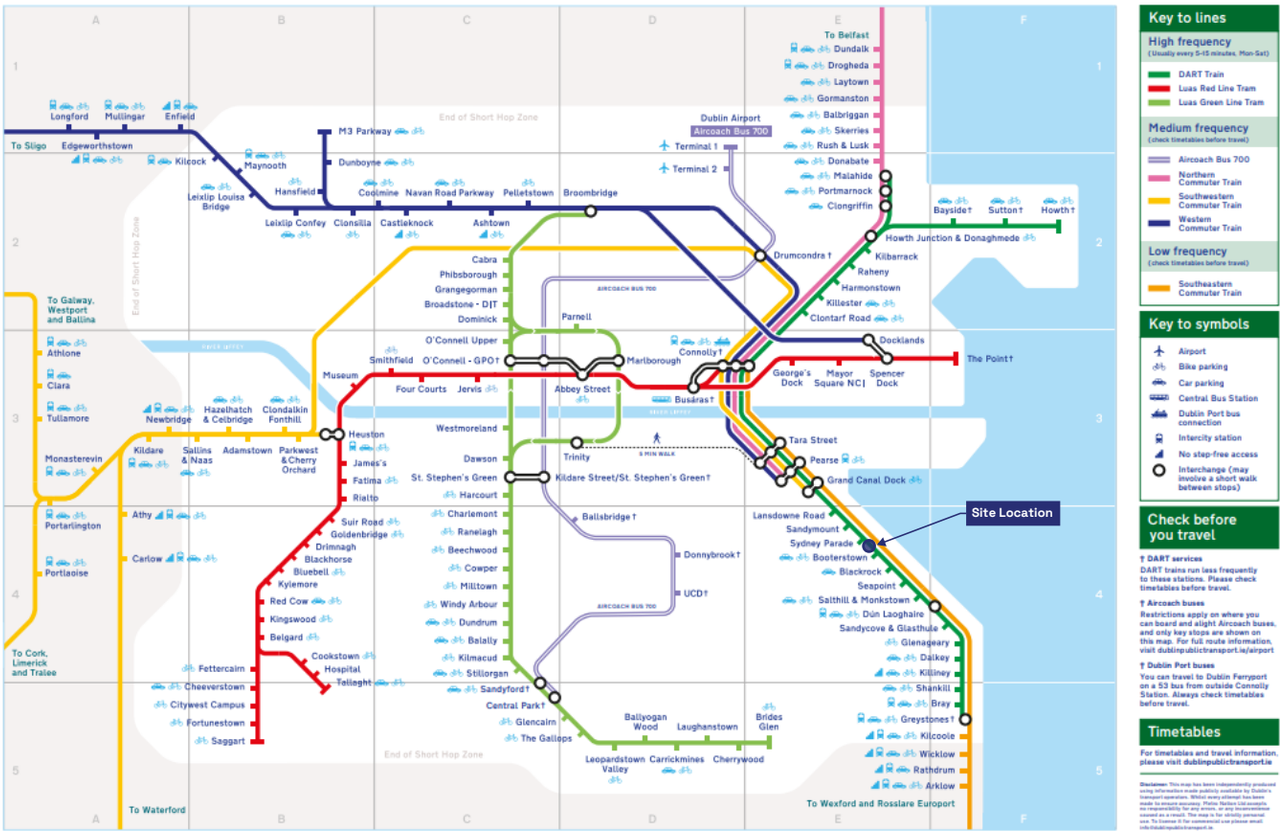
The closest DART stop to the development is Sydney Parade, located c. 15mins walking to the North.

The DART offers good connectivity with Connolly Train Station, only 20 minute ride with the DART or commuter train. The DART operates from 05:30-0:00 midweek. At peak times, there is a Dart every 10 min. and at off peak times this drops approx. 10-20mins.
The standard adult Luas Ticket with a Leap Card varies from 1.55 to 2.50 euros and for students varies from 0.95 to 1.55 euro.

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

Route No.	Route	Weekdays		Weekend/ BH	
		PM Peak	Interpeak	Saturday	Sunday
DART Train	Bray/Greystones- Malahide/ Howth	10	15-20	15	30
Southeastern Commutor Train	Dublin Connolly - Rosslare Europort	60	100-240	300	190-310

Figure 4.9. - Map of Existing Dart Network



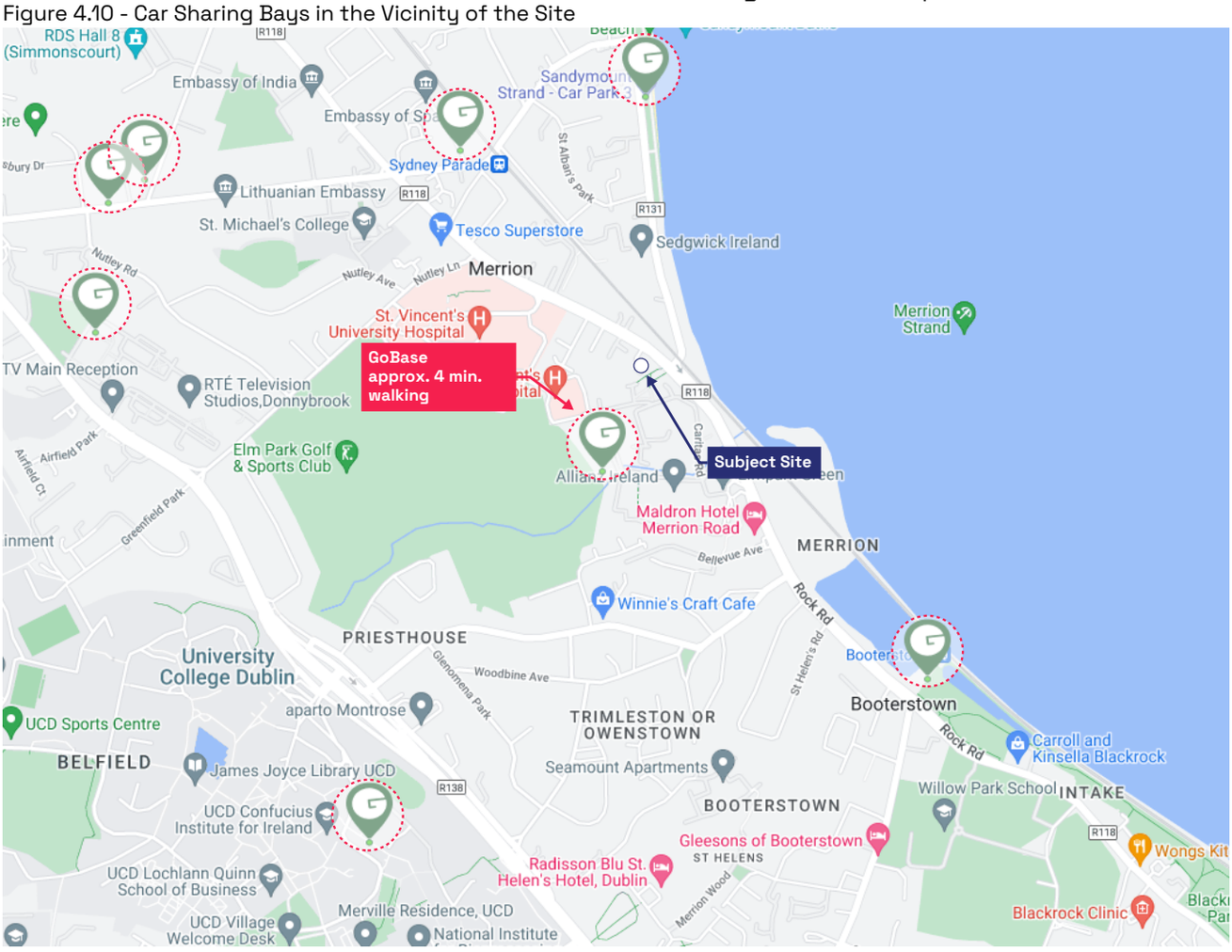
4.5 Car Sharing

It is acknowledged that many staff or residents (students) 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 a St. Vincents Hospital car park, c. 350m (4 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

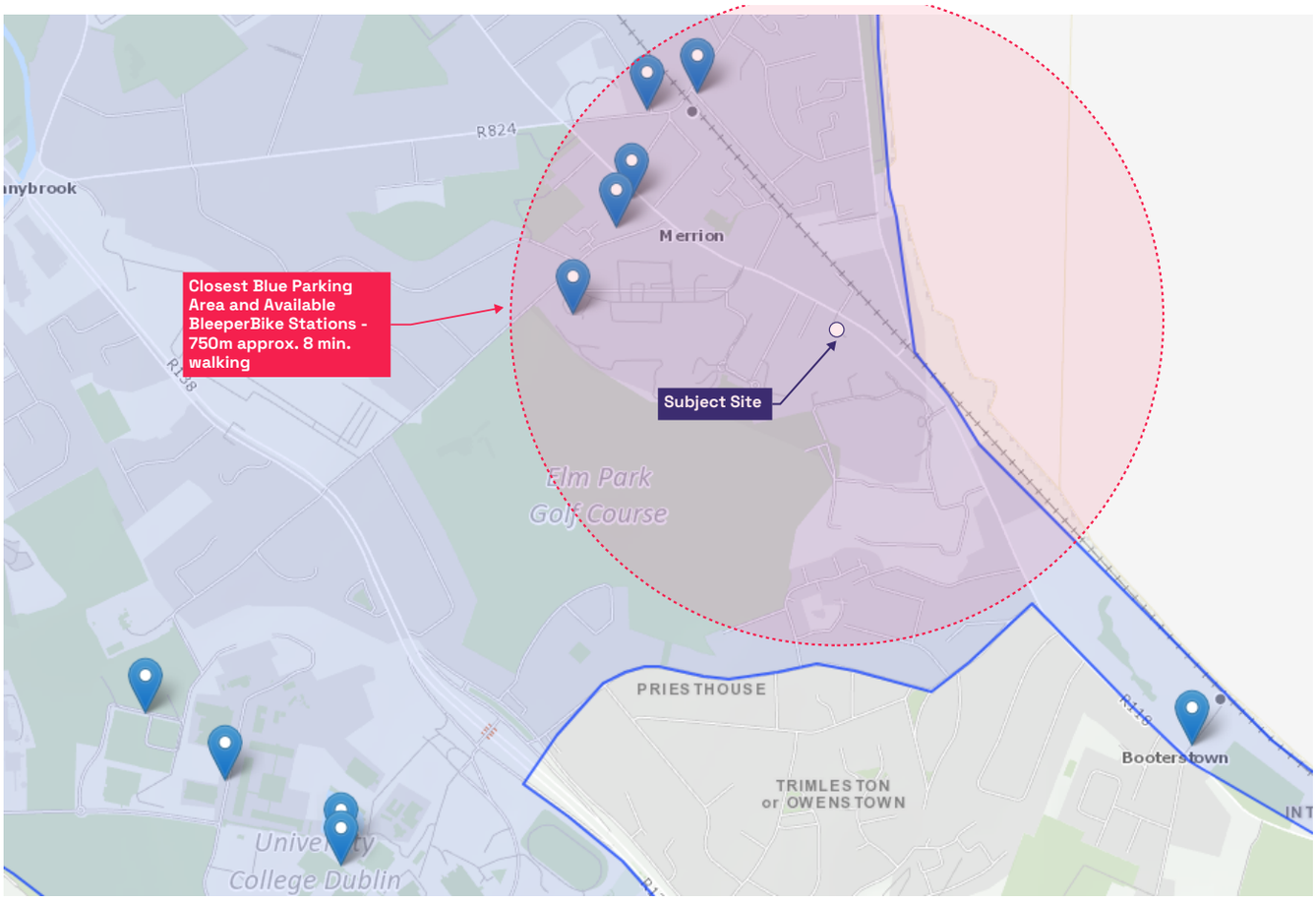


4.6 Bicycle Sharing

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

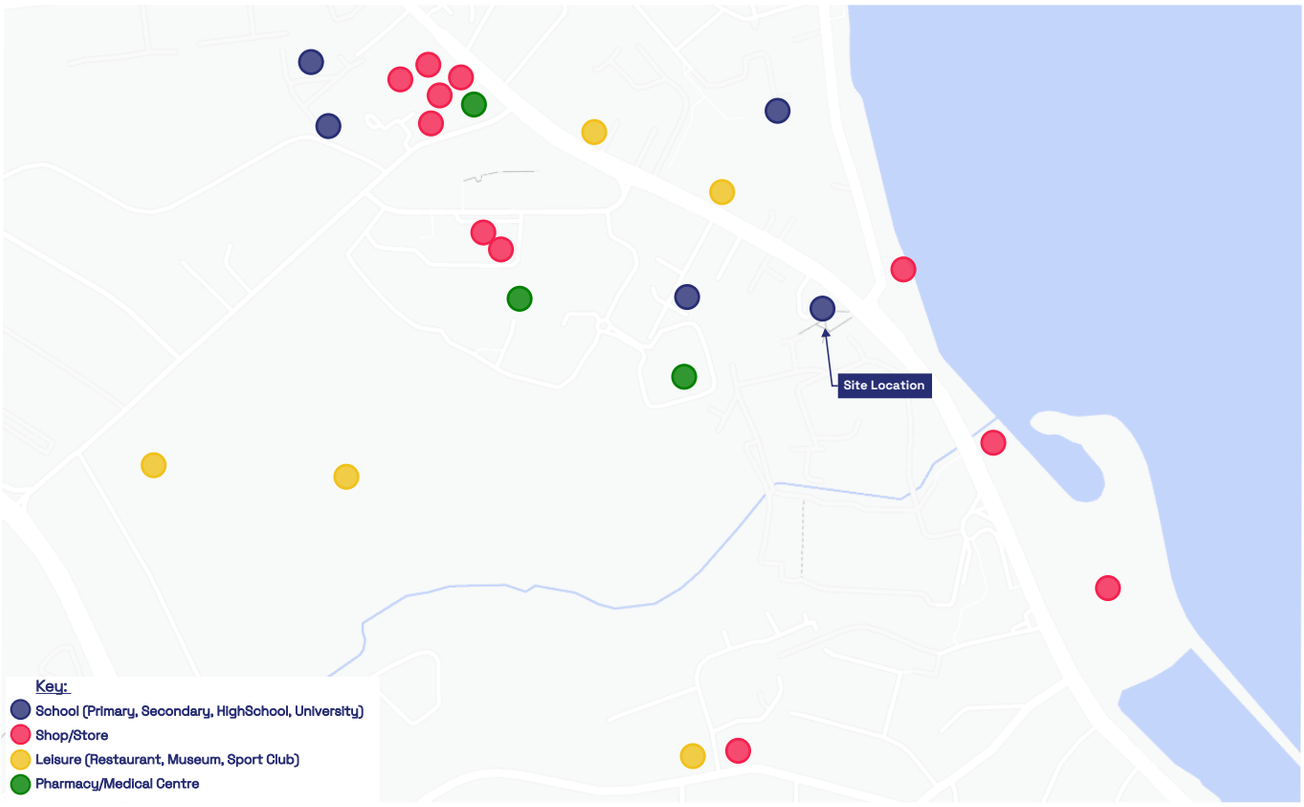
The proposed development site is very well placed in terms of the availability of local amenities providing an area of comprehensive range of facilities which will be accessible to future residents of the subject site, these include supermarkets, banking and many retail opportunities.
Bank and ATM facilities are just 2 minutes walking to the north-west, the AIB Bank being at approx. 500m to the north-west.

Pharmacies, Healthcare and Hospitals are available in the area. Within 250m a private hospital and care home are available. Within 1km away - Tony Walsh's Pharmacy is accessible.

Furthermore, the subject site benefits from good access to leisure and shopping facilities . Within 1km Merrion Shopping Centre and Elm Park golf club, as well as multiple local shops, cafe places and restaurants are available.

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

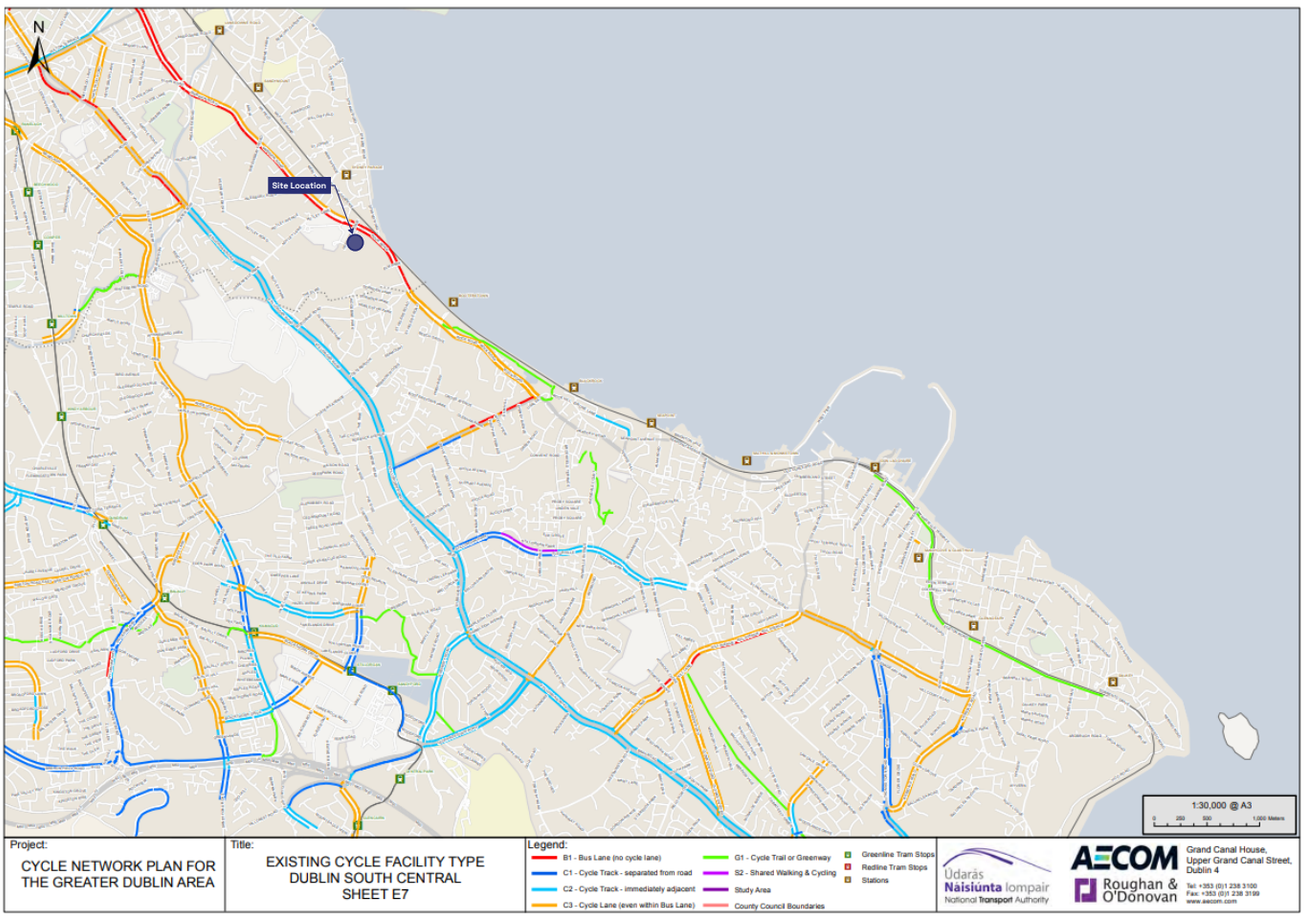
In December 2013 the NTA published the report entitled Greater Dublin Area Cycle Network Plan. The report summarises the findings of a comprehensive body of work detailing a proposed Cycle Network incorporating Urban, Inter-urban and Green-route networks covering the six county council areas that together 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 to the development is shown below, with the East Coast Greenway, the Primary Route 13 and the Secondary Route 13E running close to the site as shown 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 - BusConnect

Figure 5.2 shows the proposed Bus Connects 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.

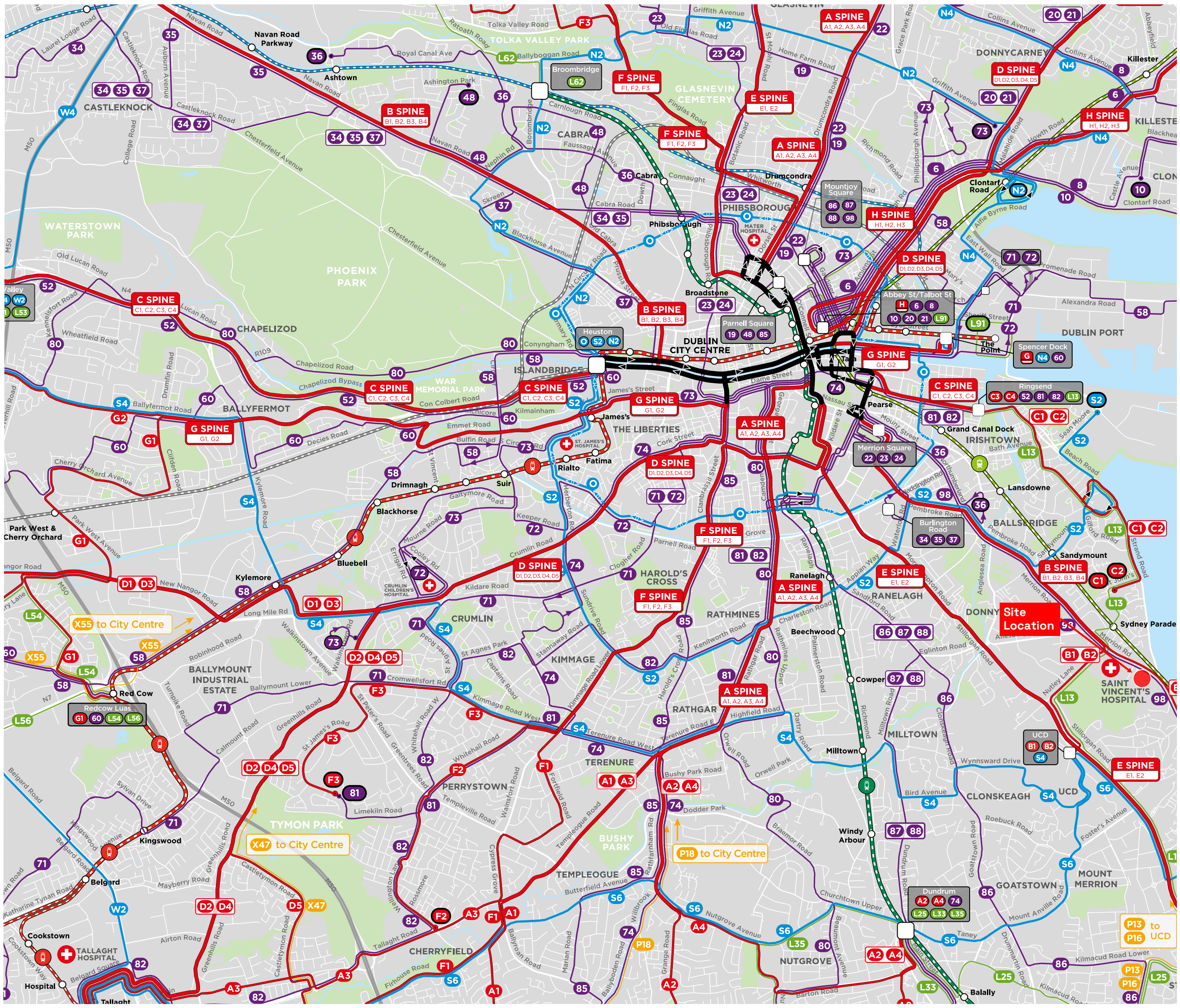
The nearest bus stops to the site are located c.50m to the North of the site along Merrion Road. Table 1 details the services that call at these stops, and their associated frequencies.

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 for a large scale residential development delivering 200 no. student residential units within two blocks. The blocks range in height up to 6 storeys and block A and block B will share a single storey basement. The site is located in the Gowan Motors Compound Site, 169-177 Merrion Road in Dublin.

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

Based on the Census of Population 2022 conducted by the Central Statistics Office (CSO), travel patterns of students in Dublin show diverse modes of commuting. The census introduced new questions focusing on how people, including students, travel to school, college, or work.

Outline on Student Travel Based on the 2022 Census:

Public Transport:

40-50% of students in Dublin typically use public transport, given the city's extensive network of buses, Luas, and DART services.

Public transport is heavily relied upon by both school and university students

The availability of Dublin Bus, Luas, and DART systems are key factors influencing this choice.

Walking:

Approximately 20-30% of students walk to school or college. Walking is more common in areas with close proximity to educational institutions, particularly in central parts of Dublin

The census highlights a national increase in walking as a preferred mode for short-distance travel.

Cycling:

About 5-10% of students use bicycles, thanks to the increasing availability of bike lanes and schemes like DublinBikes. Cycling is growing in popularity due to Dublin's push for sustainable transport options

Dublin's bike-sharing schemes and improved cycling infrastructure have contributed to this trend.

Private Cars:

Around 15-20% of students are driven to school or college by parents or guardians, especially in suburban and rural areas of Dublin, where public transport might not be as accessible

Car use is more prominent in households outside of central Dublin, where public transport options might be limited.

Figure 6.1 - Cycle Parking Facilities

6.2 Pedestrian and Cyclist Access

The main access for pedestrian is provided separately for residents via Merrion Road. Figure 6.1 outlines the main access points at the ground level.

The requirements for bicycle parking, as presented in the Dublin City Council Development Plan, are presented in Table 6.1.

In this case 206 residential spaces plus an additional plus 42 spaces (short term) for visitors.

Table 6.1 - Bicycle Parking Requirements

DCC Parking Requirements		
Land Use	Required	Provided
1 Bike per Bedspace (Long-term)	200	206
1 Bike per 5 Bedspace (Short-term)	40	42
Total	240	248

A total number of 248 bicycle parking spaces are provided for the development. Containing 206 long term spaces, 42 short term spaces and 5% (12) non-standard larger bike spaces including 3 charging points for E-bikes. These bicycle parking spaces are provided in a dedicated areas as shown in Fig. 6.1.

Cyclists can access the bicycle parking spaces via a dedicated entrance on Merrion Road.

The outlined provision of bicycle parking meets the DCC Development Plan Standards. 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. Given the proximity of the development to the Bus Network, and the short walking distance to the hopsital where many students will work during their time at the accommodation, the majority of student residents are likely to walk or take the bus to the campus.

6.3 Car Parking

As mentioned in the census above car usage is especially used for suburban and rural areas of Dublin, our site is well distributed by public transport and is within close proximity to St Vincent hospital and UCD to which the development will be associated. Removing completely the need of private car from the students. The only private cars susceptible to enter the development are some of the students being dropped off.

Students relying on being driven will be staying at the very least one full week within the development, therefore, impact on traffic will remain very low. Taking all these points we're confident overspill onto the main road is not going to happen. See section 7.3 of this statement for frequency of vehicles.

A single accessible car parking space is provided at ground level as part of this development. Additionally, a designated drop-off area has been provided to facilitate student drop-offs. As presented in Section 3.1 the Apartment Guidelines state that:

"*In larger scale and higher density developments, comprising wholly of apartments in more central locations that are well served by public transport, the default policy is for car parking provision to be minimised, substantially reduced or wholly eliminated in certain circumstances. The policies above would be particularly applicable in highly accessible areas such as in or adjoining city cores or at a confluence of public transport systems such rail and bus stations located in close proximity.*"

As presented in Section 4 the site is highly accessible and well served by bus, Luas, bike share and car sharing schemes. As such it is considered unnecessary for car parking to be provided on site for residents.

Additionally, due to the close proximity of an existing car sharing station, it is considered unnecessary to provide an additional car sharing station at this location. **The Framework Mobility Management Plan (Section 8.1)** 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.

7 Traffic Impact Assessment

The proposed development includes a single accessible parking space and a designated drop-off area, ensuring minimal additional commuting trips and generating very little traffic on the local road network.

While pick-up and drop-off trips may occur, they are expected to be infrequent and should not significantly affect local traffic flow.

In order to make sure no overspill will be created, we've established in section 7.3 the flow of each vehicle susceptible to enter the development.

Consequently, an operational assessment of the site is not deemed necessary.

7.1 Public Transport Capacity Assessment

A public transport capacity study was completed for the site and intended use.

Based on the findings of the public transport occupancy survey, resident mode share targets and analysis contained within this Note, it was found that residents of the proposed development would utilise ca. 0.08% and 0.06% of the total capacity of existing AM and PM peak hour public transport services respectively. Furthermore, it has been identified that local public transport services (bus and DART) have ample capacity to accommodate such demand. As a result, it is apparent that current public transport capacity is sufficient to accommodate additional demand generated by the proposed development.

7.2 Construction Assessment

One single entrance located on the southern side of the building will be provided for the construction phase of the development. Refer to Appendix E for the outline of the construction management plan accompanying this application. This document demonstrates the construction strategy for the site.

7.3 Trip Generation, Assignment & Distribution

The development of 200 student bedrooms is designed with sustainability in mind, offering a single on-site accessible parking space and a designated drop-off area to support student arrivals and departures. This approach emphasizes the use of alternative transport options, minimizing the need for vehicular trips.

The provision of a single accessible parking space ensures that traffic generation remains minimal, in line with industry best practices for student accommodations. The designated drop-off area is strategically included to manage peak-time traffic efficiently, without creating additional long-term parking demands.

With no typical parking provisions, the only vehicle susceptible to enter the development are:

1. 2 to 3 cars a day dropping off students (car parked no longer than 5 min)

2. Refuse vehicle (once a week and staggered). Collection shouldn't take longer than 10 min

3. 1 to 3 delivery vans dropping off small parcels ordered online daily (Vans typically deliver off peak hours and shouldn't be parked longer than 5-10min)

The anticipated trip generation during peak periods is expected to be very low. Theoretical traffic generation during the traditional commuter peak hours is likely to result in 2 or fewer two-way trips, largely limited to short-term drop-off activities, thus having a minimal impact on local traffic.

The entrance and turning circle have been updated following planners' comments for a fluid and operational traffic within the development.

Based on this assessment, the proposed development will have a negligible and almost imperceptible effect on local traffic conditions. The lack of dedicated parking spaces, combined with the provision of a designated drop-off

area, will encourage the use of pedestrian and cyclist routes, as well as public and alternative transport options, in line with sustainable urban development practices.

7.4 Stage 1 and 2 Quality and Road Safety Audit

The Stage 1 Road Safety Audit for the proposed residential development at Gowan Motors Compound, Merrion Road, Ballsbridge, was conducted by Trasky Ltd. (see Appendix D). This audit identified recommendations for further improvements. these improvements have been incorporated into the final design.

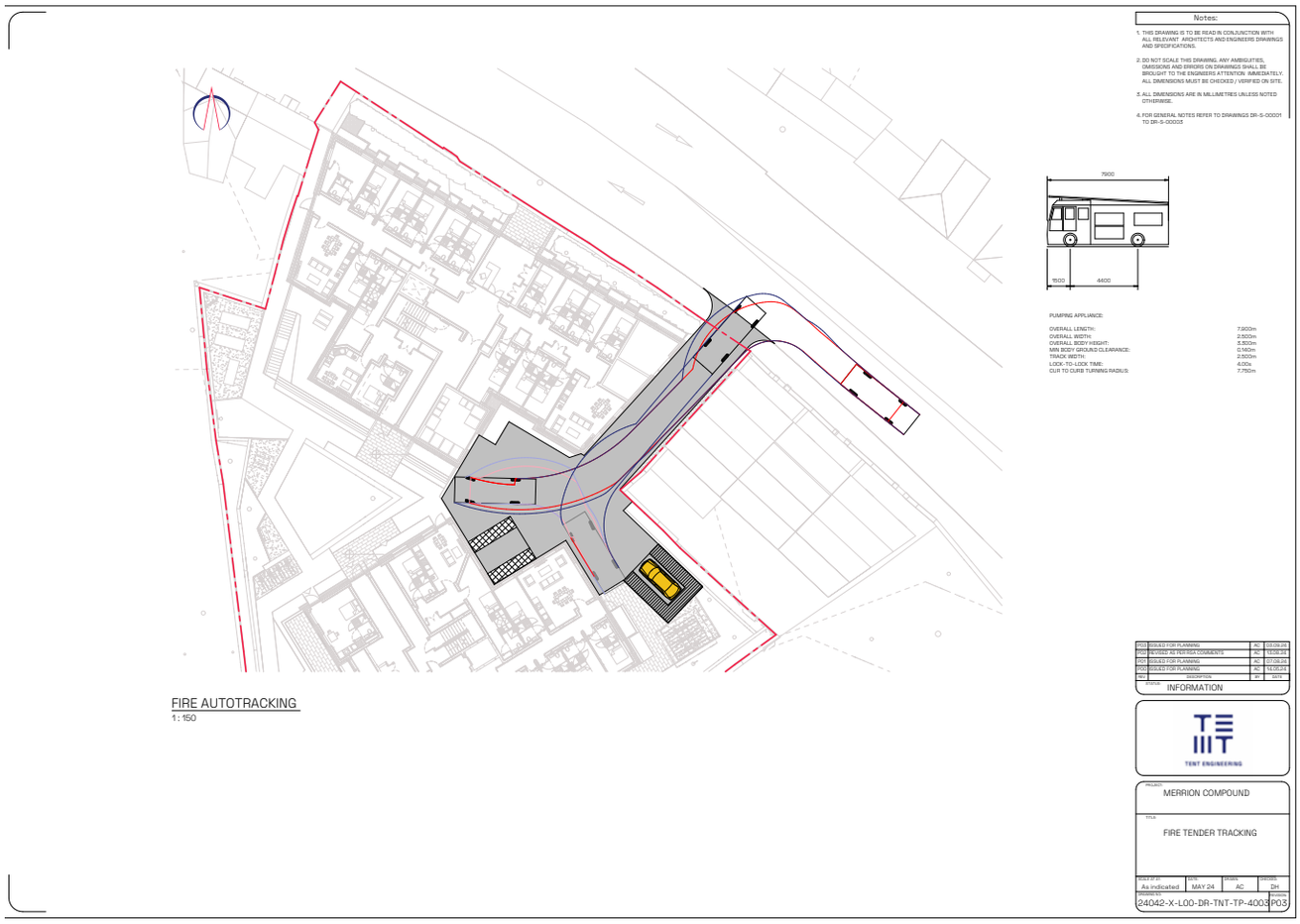
7.4.1 Findings

The audit report identified several safety issues, all of which were acknowledged by the project team, with the recommended measures largely accepted and integrated into the final design. To improve pedestrian safety, a shared surface with a reduced speed limit of 10 km/h was introduced, prioritizing pedestrian movement. Raised deflections were added to encourage vehicles to slow down, and tactile paving was incorporated to alert pedestrians, especially those with visual impairments, to potential hazards. Sightlines of 7 meters and 14 meters were also included to improve visibility. The design was further updated to incorporate all elements required by the Design Manual for Urban Roads and Streets (DMURS), such as vertical deflections, shared surface roads, and stop signs, to ensure pedestrian priority. For cyclists, the audit identified the need for safe crossing points, particularly concerning the Bus Connects layout. The approved Bus Connects upgrade was deemed sufficient to cater to vulnerable road users, with a dedicated cycling lane and traffic lights 35 meters from the site entrance ensuring cyclist safety when crossing the road.

7.5 Emergency Services Access

Emergency services will access the site directly off Merrion Road and enter the vehicle. 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.

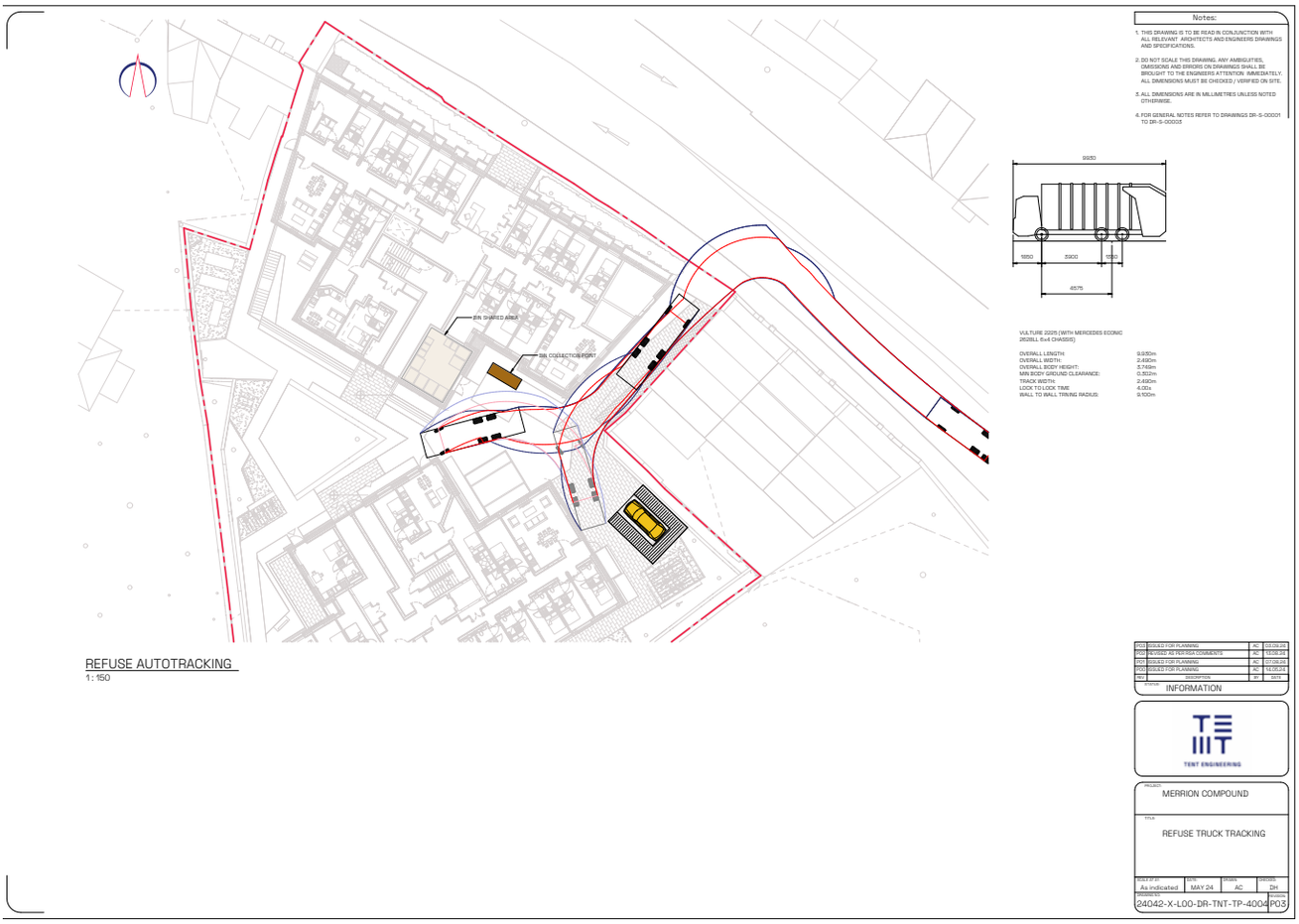
Figure 7.1 - Fire Tender Access



7.6 Servicing the development

The development consists of 200 bed spaces. 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



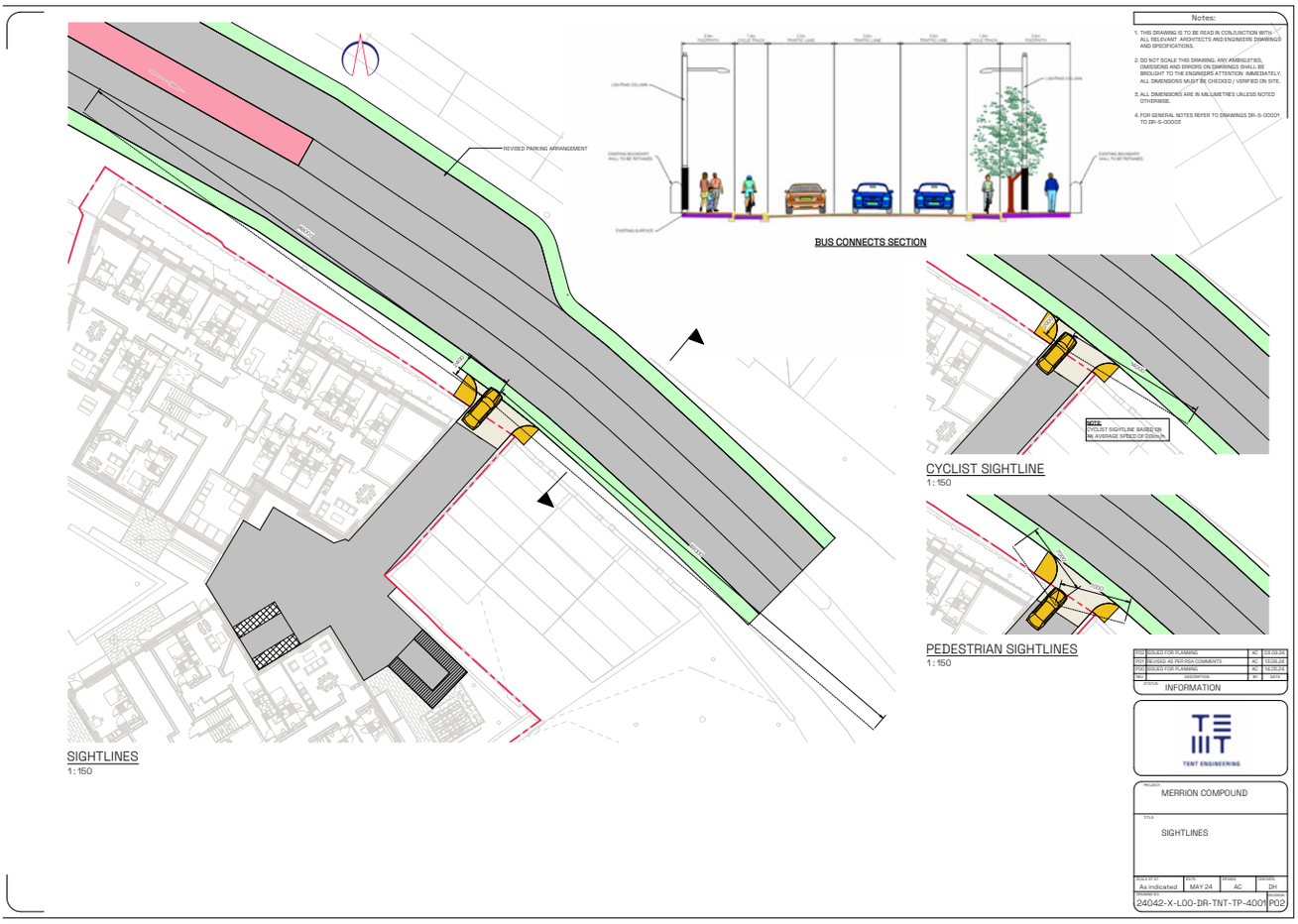
7.7 Sightliness and access

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.

7.8 Future Bus Connects

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

Figure 7.3 - Sightlines at Exit



7.9 Pick up and drop off

The nature of student accommodation means that during the start and end of term, students will need to move their possessions to and from their bed spaces. It is anticipated that some may complete this using private vehicles. A designated pick-up and drop-off zone has been identified and tracked to confirm it is safe to access.

The management company will manage and coordinate access to ensure there is no double parking during the start and end of term when loading and unloading.

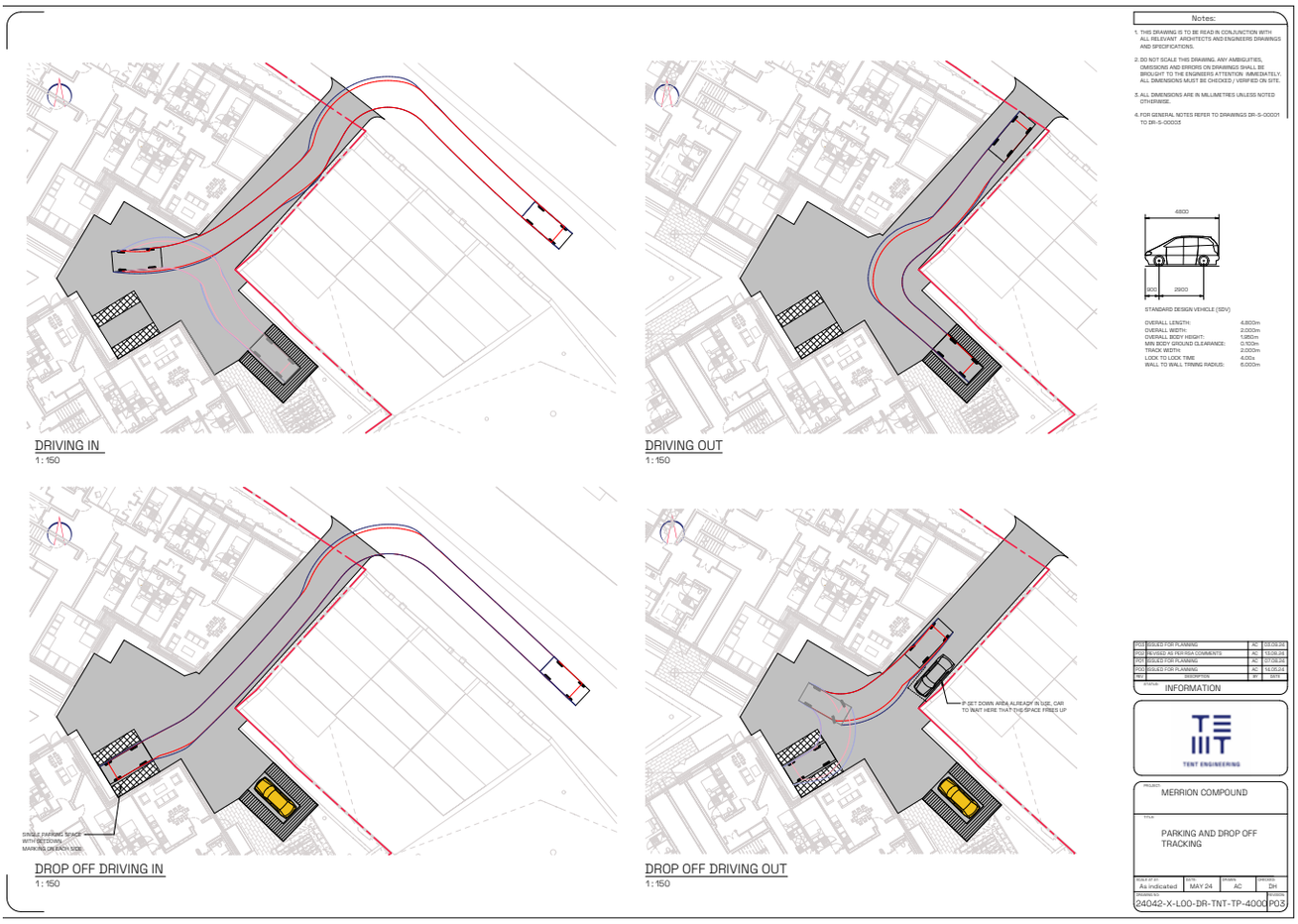
7.10 DMURS compliant access

DMURS 2019 document has been used as guidance for the design of the entrance road. Measures include:

Roads

Courtesy crossings to be provided on main entrance road. Vertical deflections provided to level of kerb to “allow pedestrians to informally assert a degree of priority over drivers.” Tactile paving to be installed to either side of crossing. Sections 4.3.2.

Figure 7.4 - Parking and Drop Off Tracking



Shared Surface

A shared surface is proposed within the site.

Surfaces applied to the shared surface space shall make use of contrasting materials to inform both pedestrians and vehicles of changes to the function of space as per section 4.2.6.

Visibility Splays

The visibility splays at the vehicular entrance is appropriately clear and unobstructed on both the horizontal and vertical planes, as per DMURS requirements. (Section 4.4.5)

3.0 Conclusions

Taking the above into consideration, the proposed development has incorporated a series of design measures to promote more sustainable modes of transport and support vulnerable road users which is in line with the core principles of DMURS and all other relevant guidance.

8 Mobility Management Plan

Refer to the appendix for the preliminary 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 Gowan Motors Compound Site, 69-177 Merrion Road, Dublin 4.

This document has assessed the transport planning context, the accessibility and transport characteristics of the proposed development.

The development site is located on the Merrion Road, North-East in the Merrion area of Dublin. It is located approximately 5km South-East to Dublin City Centre. It is bounded to the west by private residences, to the south by Caritas Care Home and to the north and east by Merrion Road.

The site benefits from very good sustainable transport links, including excellent pedestrian and cycle catchments from the site. Several bus and train stations are within walking distance of the site providing connections to Dublin and surrounding area.

The proposed development is for the redevelopment of the existing building with a new scheme of 200 student bed spaces.

A single accessible car parking spaces is proposed as part of this development.

The proposal provides 248 bicycle parking spaces made up of 206 long term spaces and 42 short term spaces. Including 12 larger non-standard bike spaces.

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

Refer to 24042-X-LOO-DR-TNT-TP-4000: PARKING AND DROP OFF TRACKING

Refer to 24042-X-LOO-DR-TNT-TP-4001: SIGHTLINES

Refer to 24042-X-LOO-DR-TNT-TP-4003: FIRE TENDER TRACKING

Refer to 24042-X-LOO-DR-TNT-TP-4004: REFUSE TRUCK TRACKING

11 Appendix B - Public Transport Capacity Assessment

Gowan Motors Compound – Public Transport Capacity Study

Contract Number	C1114
Topic	Gowan Motors Compound – Public Transport Capacity Study
Version Number	v1.0
Status	Final
Author(s)	Dilip Kumar, Tom Fitzgerald
Reviewer	Ciaran McKeon
Date	27 May 2024

1. Introduction

1.1. Overview

Transport Insights has been appointed by 1 Merrion Compound Land Limited to undertake a public transport capacity study in relation to a proposed student Large-Scale Residential Development (LRD) delivering 200 no. student residential units on the Gowan Motors Compound site at 169-177 Merrion Road, Dublin 4 (hereafter referred to as the application site).

The information outlined within this Note has been informed by the following documents furnished to Transport Insights:

- Mobility Management Plan (MMP) and Traffic and Transport Assessment (TTA) for a previous proposed apartment development at 169-177 Merrion Road; and
- Information relating to the current proposed student accommodation development provided by the Client, including no. of rooms, anticipated room occupancy, and resident mode split targets.

1.2. Proposed Development Location and Overview

Site Location

The proposed development site, as illustrated in Figure 1.1 (overleaf), is located at the Gowan Motors Compound site, 169-177 Merrion Road, Dublin 4. The application site's location with respect to its local context is illustrated in Figure 1.2 (also overleaf).

Figure 1.1 Site Location

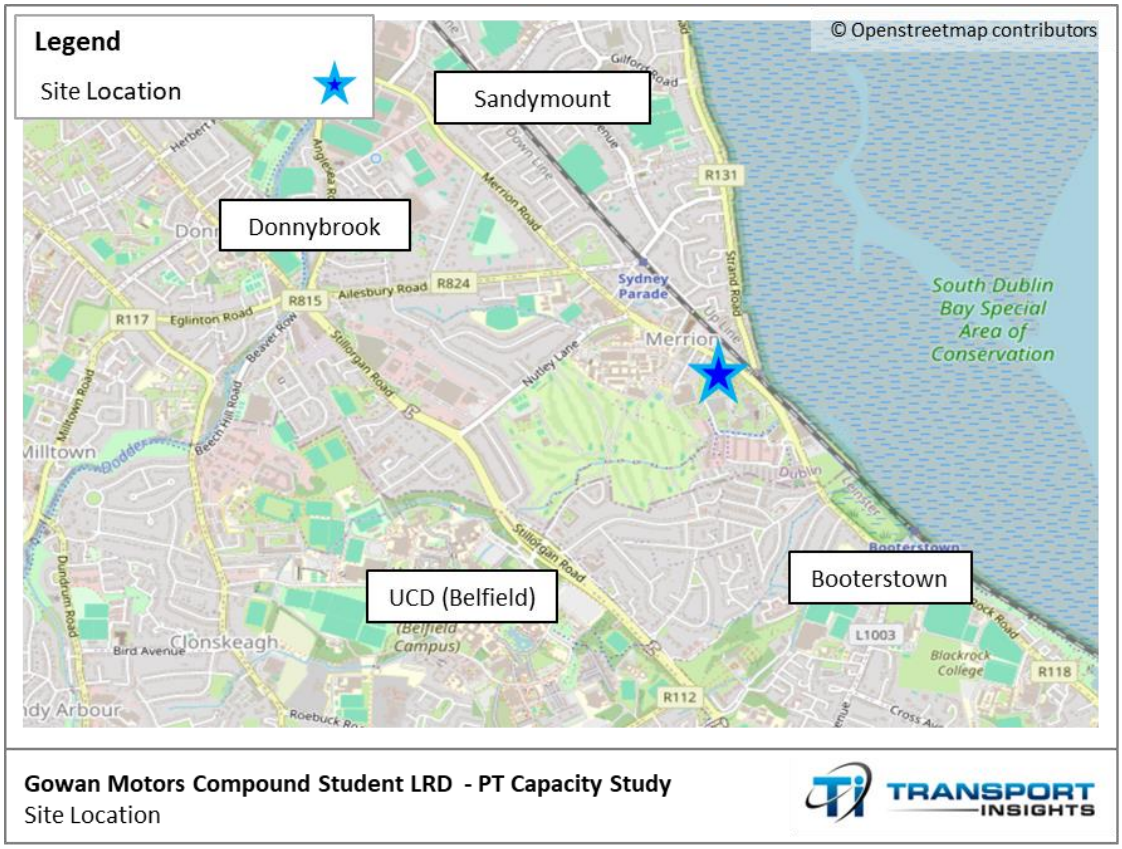
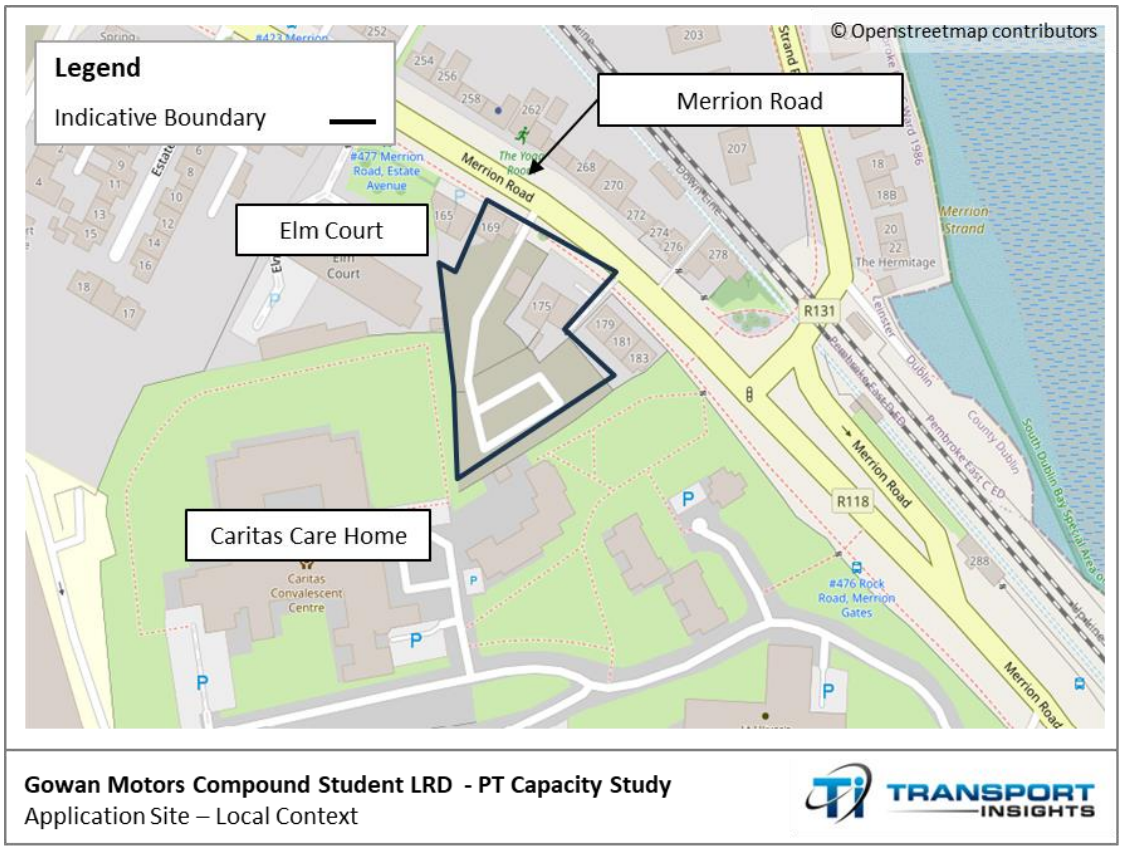


Figure 1.2 Application Site – Local Context



The application site has a gross site area of 0.28 hectares, and as illustrated in the preceding Figure 1.2, is bounded by Merrion Road to the north, the Elm Court apartment development to the west, Caritas Care Home to the south, and residential houses to the northeast.

Proposed Development Overview

The proposed development consists of student accommodation with 200 no. rooms, with an assumed occupancy of 1 no. person per room. In addition, the following parking facilities are to be provided: 1 no. accessible car parking spaces; and 248 no. bicycle parking spaces.

Access to the development is provided from Merrion Road, and the proposed development's year of opening is assumed to be 2027.

2. Public Transport Provision

2.1. Existing Public Transport Provision

The proposed development site is directly served by a number of bus routes serving stops located on Merrion Road, namely the 4, 7, 7a, 7e and 84a services. Of these routes, the 4 service is noted to be the most frequent, operating at headways of 12 minutes throughout the day. Details in relation to the peak and off-peak frequencies of currently available public transport (bus and DART) services set out in the following Table 2.1.

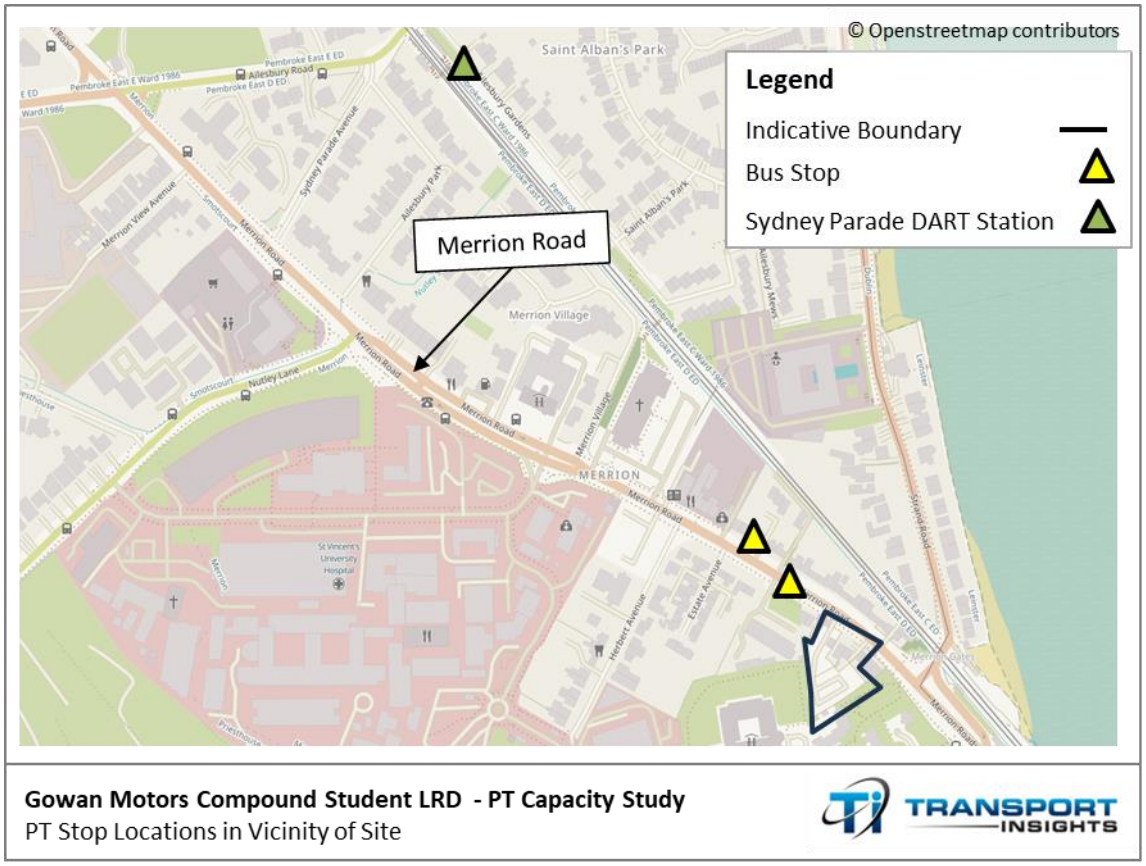
Other bus services within the general vicinity of the site include the 27x and 47 routes which operate from Nutley Lane ca. 700 metres to the north of the site. While further enhancing the application site's public transport accessibility, their capacity has not been reviewed, with the scope of analysis within this Note focusing on more proximate bus services and DART.

Table 2.1 Current Public Transport Services in Application Site's Vicinity

Route No.	Route	Weekday Off-Peak Frequency	Weekday Peak Frequency
4	Monkstown Avenue – Harristown	12 minutes	12 minutes
7	Brides Glen Luas – Mountjoy Sq.	30 minutes	20 minutes
7a	Loughlinstown – Mountjoy Sq.	30 minutes	30 minutes
7e	Dalkey - Mountjoy Sq.	1 service in 24 hours	
84a	St Vincent's Hosp – Bray	3 services in 24 hours	
DART	Bray/Greystones – Malahide/Howth	10 minutes	10 minutes

Public transport stops in the vicinity of the application site are illustrated in the following Figure 2.1, including the 2 no. closest stops on Merrion Road, and the Sydney Parade DART Stop ca. 750 metres (ca. 9 minutes' walk) to the northeast.

Figure 2.1 Public Transport Stop Locations in Vicinity of Site



As outlined in the preceding Table 2.1 and Figure 2.1, the subject site is well served by frequent bus routes operating within its vicinity. Furthermore, as noted above, the application site is conveniently located ca. 750 meters from the Sydney Parade DART Station on the Bray/ Greystones – Malahide/ Howth Line, offering residents high-quality public transport access to Dublin City Centre, and coastal areas in South and North Dublin along the DART line. DART services also function as a gateway to regional and national transportation hubs, facilitating interchange for trips across Ireland.

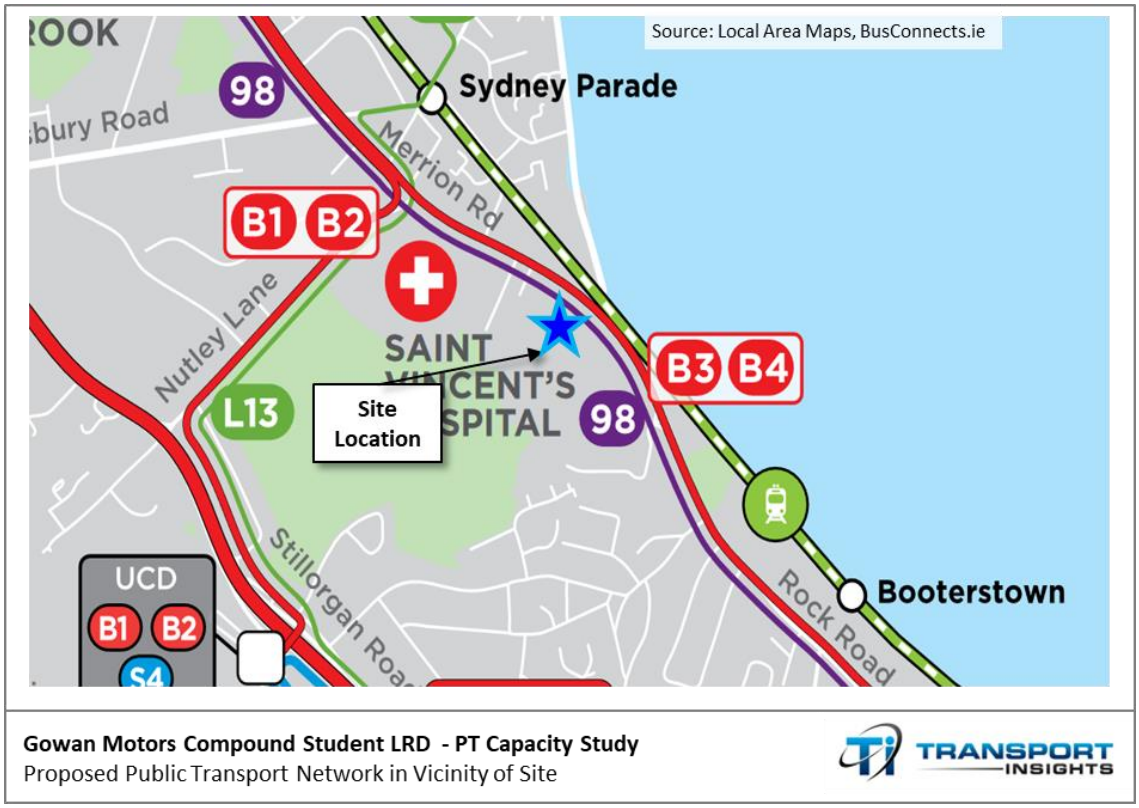
Considering local bus and DART service provision, they offer the application site a cumulative peak frequency of one vehicle every ca. 3.5 minutes.

2.2. Proposed Public Transport Provision

Final proposals from the New Dublin Area Bus Network Project, developed as part of the broader BusConnects programme, were published by the National Transport Authority in September 2020

following extensive prior public consultation. The revised network includes amendments to the bus network within the application site's vicinity, as illustrated in the following Figure 2.2.

Figure 2.2 Proposed Public Transport Network in Vicinity of Site



As can be seen in the preceding Figure 2.2, within the application site's vicinity, route B3, B4 forming part of the high-frequency 'B-Spine', will operate on Merrion Road which adjoins the application site's eastern boundary. Furthermore, it is also proposed that radial route 98 (Loughlinstown Drive – Dún Laoghaire – Mountjoy Sq.) will operate on Merrion Road.

Details of the above identified proposed routes are presented within the following Table 2.2.

Table 2.2 Planned Public Transport Services in Application Site's Vicinity

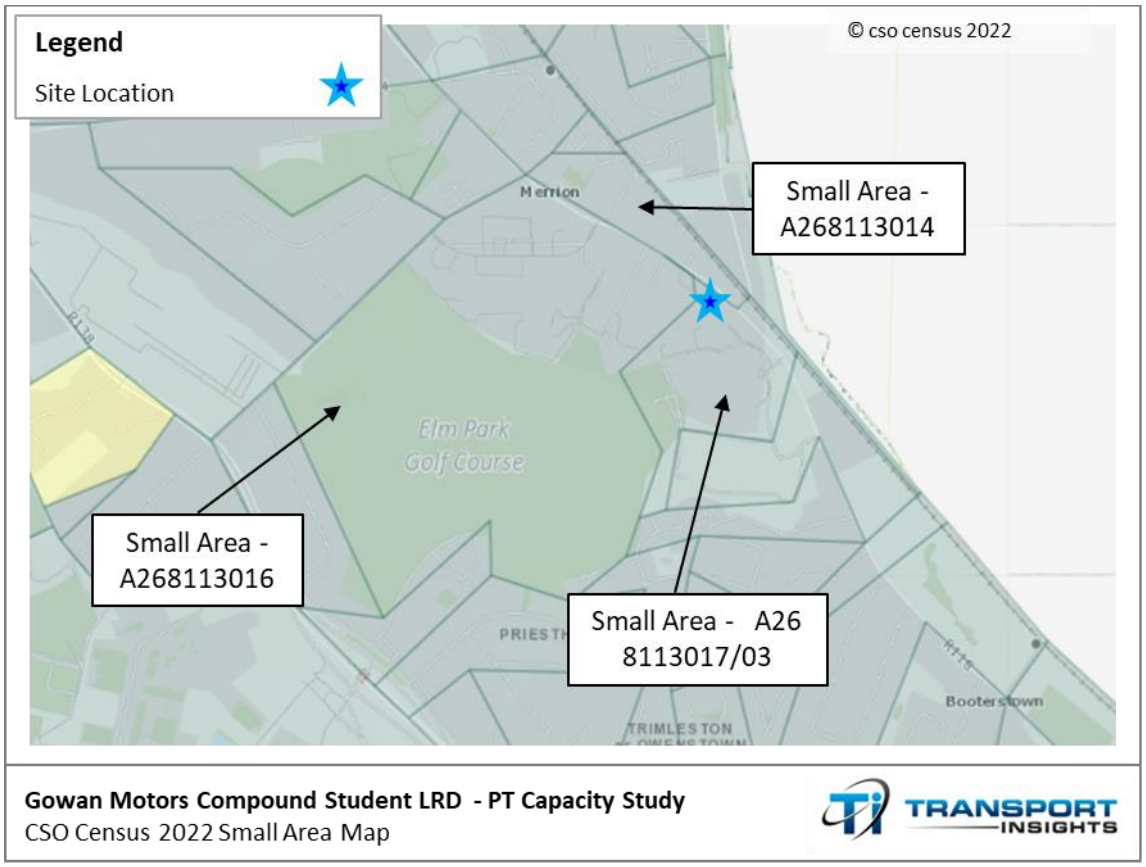
Route No.	Route	Weekday Peak Frequency
B3	Tyrrelstown – City Centre – Dún Laoghaire	15 minutes
B4	Blanchardstown SC – City Centre – Sallynoggin	15 minutes
98	Loughlinstown Drive – Dún Laoghaire – Mountjoy Sq.	60 minutes
DART	Bray/Greystones – Malahide/Howth	10 minutes

Together, the planned public transport offering set out above offers a cumulative peak frequency of one vehicle every ca. 4 minutes, thereby offering comparable frequency and capacity relative to existing situation. Timelines for the delivery of future phases is somewhat unclear, however, at the time of writing it is understood that 'B' spine (B3 and B4) service which comprises high-frequency services within the applications site's vicinity are expected to be delivered by 2025-2026. As such, it appears likely that the enhanced bus network will be operational before the subject development's expected completion.

2.3. Existing Commuting Patterns in the Vicinity of the Subject Site

An assessment of Central Statistics Office (CSO) Census 2022 data was undertaken to inform potential commuting patterns associated with the proposed development site. This assessment was undertaken using the CSO Small Area Population Statistics tool and was based on characteristics of Small Areas 'A268113017/03' (which includes the application site), and 'A268113014' and '268113016' (to the immediate north and west respectively of the application site) presented in the following Figure 2.3, which are deemed to represent an appropriate baseline for establishing peak travel departure times from the proposed development.

Figure 2.3 CSO Census 2022 Small Area Map



The following Table 2.3 presents the identified travel times of the population within the analysed small areas aged 5 years and over by time leaving home to travel to work, school or college. As shown in this table, 23% and 19% of the population within the analysed Small Areas aged 5 years and over commence their trip during the 07:31-08:00hrs and 08:01–08:30hrs time periods respectively. Together this one-hour time period represents 42% of all commuting trips undertaken by those resident within the Small Areas assessed.

Table 2.3 Population Aged 5 Years and Over by Time Leaving Home To Travel To Work, School Or College

Time Period	CSO 2016 Small Area ID			Total	% Share
	A268113017/03	A268113014	A268113016		
Before 06:30	16	11	3	30	4%
06:30-07:00	48	29	9	86	12%
07:01-07:30	31	28	4	63	9%
07:31-08:00	**86**	**33**	**41**	**160**	**23%**
08:01-08:30	**80**	**42**	**10**	**132**	**19%**
08:31-09:00	31	19	6	56	8%
09:01-09:30	5	5	2	12	2%
After 09:30	28	12	12	52	7%
Not Stated	33	69	12	114	16%
Total	**358**	**248**	**99**	**705**	**100%**

3. Public Transport Survey Data Collection and Analysis

3.1. Survey Overview

In order to determine baseline public transport capacity, a bus occupancy survey was undertaken at 2 no. bus stops within the vicinity to the application site and Sydney Parade DART station. Both bus stops, located on Merrion Road ca. 50 metres from the application site, are serviced by routes 4, 7, 7a, 7e and 84a. The survey was undertaken on Wednesday 01 May 2024, which is deemed to be representative as it is during the peak midweek period (Tuesday to Thursday) and falls within the school/ university academic year. The survey sought to collect the following information:

- time of each bus/ DART passing;
- bus service number/ DART service;

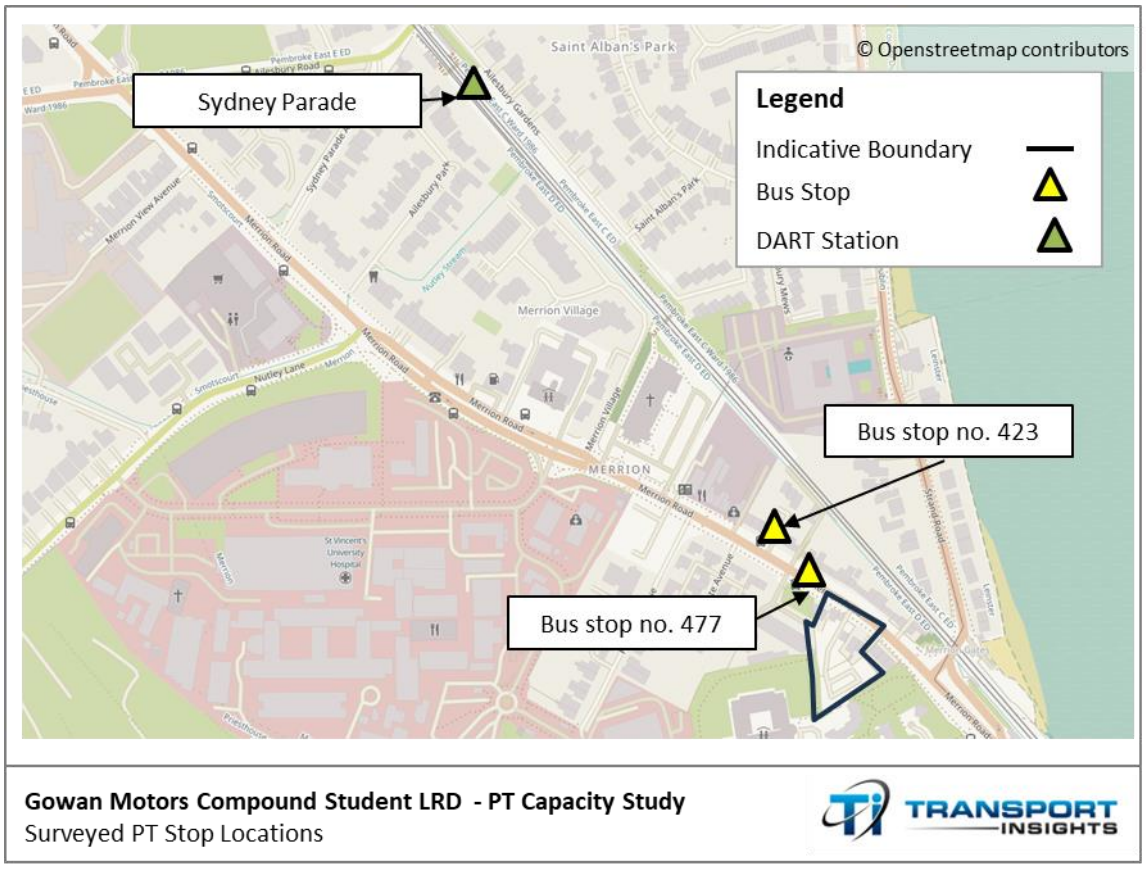
- estimated capacity (seating and standing); and
- bus/ DART occupancy count (total passengers seating and standing).

The survey was undertaken at the following public transport stops:

- Bus stop no. 477, Merrion Road, Dublin 04 – buses heading northbound;
- Bus stop no. 423, Merrion Road, Dublin 04 – buses heading southbound;
- Platform 1, Sydney Parde DART Sation, Dublin 04 – trains heading northbound; and
- Platform 2, Sydney Parde DART Sation, Dublin 04 – trains heading southbound.

The following Figure 3.1 illustrates the location of the surveyed public transport stops outlined above.

Figure 3.1 Surveyed Bus Stop Locations



The survey was undertaken during both the AM peak period (07:30-09:30hrs) – as identified from the Census data at Table 2.3 to include the AM peak hour (07:31-08:30hrs), and PM peak period (16:30-18:30hrs) at the above-mentioned bus stops.

3.2. Survey Results: Merrion Road Bus Services

Northbound AM Peak (Bus Stop No. 477)

Within the following Table 3.1, the survey results for the AM peak period (07:30-09:30hrs) at bus stop no. 477 (Merrion Road northbound, i.e. in direction of peak travel towards Dublin City Centre) are shown. It should be noted that all buses identified by the survey were found to be double-decker buses with a capacity of 64 no. seats passengers and 30 no. standing passengers, giving a total capacity of 94 no. passengers.

Table 3.1 Survey Results – AM Period (07:30-09:30hrs), Bus Stop No. 477, Merrion Road

Route No.	Time	Est. No. Occupants on Arrival	Est. No. Alighters	Est. No. Boarders	Est. No. Occupants on Departure	Excess Capacity	Excess Capacity (%)
4	07:32	55	2	0	53	41	44%
7A	07:49	60	7	3	56	38	40%
7	07:56	50	0	0	50	44	47%
4	07:58	60	2	0	58	36	38%
4	08:15	55	3	5	57	37	39%
4	08:27	60	0	0	60	34	36%
7A	08:33	25	0	3	28	66	70%
7	08:36	20	1	0	19	75	80%
4	08:36	10	0	0	10	84	89%
7A	08:55	25	4	5	26	68	72%
4	08:59	55	4	2	53	41	44%
4	09:01	10	0	1	11	83	88%
84A	09:17	1	0	0	1	93	99%
4	09:20	40	0	0	40	54	57%
4	09:20	10	0	0	10	84	89%
7	09:24	20	0	0	20	74	79%
7A	09:25	25	1	0	24	70	74%
Total		**581**	**24**	**19**	**576**	**1,022**	**64%**

As can be seen from the preceding Table 3.1, during the AM peak survey period all buses in the northbound direction were found to have excess capacity. During the survey period (07:30-

09:30hrs), the average occupancy of the buses surveyed was found to be 34 no. passengers. Average excess capacity across the 2-hour survey period on the buses surveyed was found to be 60 no. passengers (64%).

As set out in Section 2.3, an analysis of Census data demonstrated that the peak hour for those commuting to their place of work or education was found to be 07:31-08:30hrs. During this time period, the average occupancy of northbound buses surveyed was found to be 56 no. passengers and average excess capacity was found to be 38 no. passengers (41%).

Southbound AM Peak (Bus Stop No. 423)

Within the following Table 3.2, the survey results for the AM peak period (07:30-09:30hrs) at bus stop no. 423 (Merrion Road southbound, i.e. in direction of non-peak travel from Dublin City Centre) are shown. As per the northbound direction, all buses were found to be double-decker buses with a capacity of 64 no. seats passengers and 30 no. standing passengers, giving a total capacity of 94 no. passengers.

Table 3.2 Survey Results – AM Period (07:30-09:30hrs), Bus Stop No. 423, Merrion Road

Route No.	Time	Est. No. Occupants on Arrival	Est. No. Alighters	Est. No. Boarders	Est. No. Occupants on Departure	Excess Capacity	Excess Capacity (%)
7A	07:33	65	2	0	63	31	33%
4	07:34	30	3	0	27	67	71%
7	07:45	65	6	0	59	35	37%
4	07:48	10	0	1	11	83	88%
7	08:03	45	3	1	43	51	54%
4	08:05	25	0	1	26	68	72%
7A	08:09	14	1	0	13	81	86%
4	08:29	35	1	5	39	55	59%
7	08:31	40	3	0	37	57	61%
7A	08:36	20	0	2	22	72	77%
4	08:41	15	0	0	15	79	84%
7	08:52	15	0	1	16	78	83%
4	08:56	10	0	0	10	84	89%
4	09:12	25	4	2	23	71	76%

Route No.	Time	Est. No. Occupants on Arrival	Est. No. Alighters	Est. No. Boarders	Est. No. Occupants on Departure	Excess Capacity	Excess Capacity (%)
7A	09:21	20	4	1	17	77	82%
4	09:28	5	1	0	4	90	96%
7	09:29	7	1	0	6	88	94%
Total		**446**	**29**	**14**	**431**	**1,167**	**73%**

As can be seen from the preceding Table 3.2, during the AM peak survey period all buses in the southbound direction were found to have excess capacity. Average occupancy of buses surveyed was found to be 25 no. passengers, and average excess capacity was found to be 69 no. passengers (73%).

During the busiest AM peak hour, i.e. 07:31-08:30hrs, the average occupancy of southbound buses surveyed was found to be 35 no. passengers and average excess capacity was found to be 59 no. passengers (63%).

Northbound PM Peak (Bus Stop No. 477)

Within the following Table 3.3, the survey results for the PM peak period (16:30-18:30hrs) at bus stop no. 477 (Merrion Road northbound, i.e. in direction of non-peak travel towards Dublin City Centre) are shown.

Table 3.3 Survey Results – PM Period (16:30-18:30hrs), Bus Stop No. 477, Merrion Road

Route No.	Time	Est. No. Occupants on Arrival	Est. No. Alighters	Est. No. Boarders	Est. No. Occupants on Departure	Excess Capacity	Excess Capacity (%)
4	16:35	35	2	0	33	61	65%
4	16:46	20	7	0	13	81	86%
7A	16:55	25	1	1	25	69	73%
7	16:59	40	0	0	40	54	57%
4	17:06	40	0	3	43	51	54%
4	17:09	40	3	2	39	55	59%
4	17:21	60	0	1	61	33	35%
4	17:33	40	1	1	40	54	57%

Route No.	Time	Est. No. Occupants on Arrival	Est. No. Alighters	Est. No. Boarders	Est. No. Occupants on Departure	Excess Capacity	Excess Capacity (%)
7	17:41	50	1	2	51	43	46%
4	17:45	30	0	0	30	64	68%
7A	17:52	20	0	1	21	73	78%
4	17:57	25	0	2	27	67	71%
7	17:59	24	1	0	23	71	76%
4	18:04	25	0	0	25	69	73%
4	18:25	40	0	4	44	50	53%
7	18:27	20	0	0	20	74	79%
Total		**534**	**16**	**17**	**535**	**969**	**64%**

As can be seen from the preceding Table 3.3, during the PM peak survey period all buses in the northbound direction were found to have excess capacity. During the survey period (16:30-18:30hrs), the average occupancy of the buses surveyed was found to be 33 no. passengers. Average excess capacity across the 2-hour survey period on the buses surveyed was found to be 61 no. passengers (64%).

During the busiest PM peak hour, i.e. 17:30-18:30hrs, the average occupancy of northbound buses was found to be 31 no. passengers and average excess capacity was found to be 63 no. passengers (67%).

Southbound PM Peak (Bus Stop No. 423)

Within the following Table 3.4, the survey results for the PM peak period (16:30-18:30hrs) at bus stop no. 423 (Merrion Road southbound, i.e. in direction of peak travel from Dublin City Centre) are shown.

Table 3.4 Survey Results – PM Period (16:30-18:30hrs), Bus Stop No. 423, Merrion Road

Route No.	Time	Est. No. Occupants on Arrival	Est. No. Alighters	Est. No. Boarders	Est. No. Occupants on Departure	Excess Capacity	Excess Capacity (%)
7	16:34	23	0	0	23	71	76%
4	16:36	55	2	0	53	41	44%

Route No.	Time	Est. No. Occupants on Arrival	Est. No. Alighters	Est. No. Boarders	Est. No. Occupants on Departure	Excess Capacity	Excess Capacity (%)
4	16:43	25	2	0	23	71	76%
7A	16:47	60	0	3	63	31	33%
4	17:01	55	1	2	56	38	40%
7	17:05	40	0	0	40	54	57%
4	17:06	15	2	0	13	81	86%
7A	17:21	50	0	0	50	44	47%
4	17:22	55	1	0	54	40	43%
4	17:32	70	0	1	71	23	24%
7	17:40	28	0	1	29	65	69%
4	17:52	70	0	1	71	23	24%
7A	18:01	60	2	2	60	34	36%
7	18:04	50	0	0	50	44	47%
4	18:09	18	0	1	19	75	80%
7A	18:18	20	1	0	19	75	80%
4	18:18	45	0	0	45	49	52%
4	18:20	15	0	0	15	79	84%
Total		**754**	**11**	**11**	**754**	**938**	**55%**

As can be seen from the preceding Table 3.4, during the PM peak survey period all buses in the southbound direction were found to have excess capacity, with average occupancy of buses surveyed found to be 42 no. passengers. Average excess capacity on the buses surveyed was found to be 52 no. passengers (55%). Passenger demand during both hours surveyed, i.e. 16:30-17:30hrs and 17:30-18:30hrs, was found to be the same.

3.3. Survey Results: DART Services

Northbound AM Peak (Platform 1, Sydney Parade DART Station)

Within Table 3.5 (overleaf), the survey results for the AM peak period (07:30-09:30hrs) at Platform 1, Sydney Parade DART Station (northbound, i.e. in direction of peak travel towards Dublin City Centre) are shown. At present, a mix of 8500 EMU, 8510 EMU and 8520 EMU are

operating having capacities of 906 no., 902 no. and 886 no. passengers[1] respectively. Hence average passenger capacity of 898 no. per DART train has been considered (160 no. seated passengers and 738 no. standing passengers).

Table 3.5 Survey Results – AM Period (07:30-09:30hrs), Platform 1, Sydney Parade DART Station

Route Service.	Time	Est. No. Occupants on Arrival	Est. No. Alighters	Est. No. Boarders	Est. No. Occupants on Departure	Excess Capacity	Excess Capacity (%)
Malahide	07:38	78	25	11	64	834	93%
Howth	07:45	84	16	12	80	818	91%
Malahide	07:59	131	18	15	128	770	86%
Howth	08:08	146	25	31	152	746	83%
Malahide	08:19	121	28	51	144	754	84%
Howth	08:27	304	24	28	308	590	66%
Malahide	08:44	612	32	23	603	295	33%
Howth	08:46	126	25	11	112	786	88%
Howth	08:56	665	6	18	677	221	25%
Howth	09:15	523	15	21	529	369	41%
Malahide	09:17	94	3	5	96	802	89%
Howth	09:27	102	11	5	96	802	89%
Total		**2,986**	**228**	**231**	**2,989**	**7,787**	**72%**

As can be seen from the preceding Table 3.5, during the AM peak survey period all DART trains in the northbound direction were found to have excess capacity. During the survey period (07:30-09:30hrs), the average occupancy of the DART trains surveyed was found to be 250 no. passengers. Average excess capacity across the 2-hour survey period on the DART trains surveyed was found to be 647 no. passengers (72%).

As set out in Section 2.3, an analysis of Census data demonstrated that the peak hour for those commuting to their place of work or education was found to be 07:31-08:30hrs. During this time period, the average occupancy of northbound DARTs surveyed was found to be 146 no. passengers and average excess capacity was found to be 752 no. passengers (84%).

[1] Details are extracted from Irish Rail website.

Southbound AM Peak (Platform 2, Sydney Parade DART Station)

Within the following Table 3.6, the survey results for the AM peak period (07:30-09:30hrs) at Platform 2, Sydney Parade DART Station (southbound, i.e. in direction of non-peak travel from Dublin City Centre) are shown. As per the northbound direction, DART trains are assumed to have a capacity of 160 no. seated passengers and 738 no. standing passengers, with each train therefore having a total capacity of 898 no. passengers.

Table 3.6 Survey Results – AM Period (07:30-09:30hrs), Platform 2, Sydney Parade DART Station

Route No.	Time	Est. No. Occupants on Arrival	Est. No. Alighters	Est. No. Boarders	Est. No. Occupants on Departure	Excess Capacity	Excess Capacity (%)
Bray	07:43	127	35	4	96	802	89%
Bray	07:54	184	75	3	112	786	88%
G-stones	08:03	157	51	22	128	770	86%
Bray	08:20	144	46	14	112	786	88%
Bray	08:24	120	65	9	64	834	93%
Bray	08:27	73	32	7	48	850	95%
Bray	08:32	64	22	6	48	850	95%
G-stones	08:38	139	51	8	96	802	89%
Bray	08:47	111	66	3	48	850	95%
Bray	08:52	64	36	4	32	866	96%
Bray	09:00	74	47	5	32	866	96%
Bray	09:07	47	17	2	32	866	96%
G-stones	09:14	70	34	4	40	867	97%
Bray	09:25	45	23	2	24	884	98%
Total		**1,419**	**600**	**93**	**912**	**11,679**	**93%**

As can be seen from the preceding Table 3.6, during the AM peak survey period all DART trains in the southbound direction were found to have excess capacity. Average occupancy of DART trains surveyed was found to be 65 no. passengers, and average excess capacity was found to be 834 no. passengers (93%).

During the busiest AM peak hour, i.e. 07:31-08:30hrs, the average occupancy of southbound DART trains surveyed was found to be 93 no. passengers and average excess capacity was found to be 804 no. passengers (90%).

Northbound PM Peak (Platform 1, Sydney Parade DART Station)

Within the following Table 3.7, the survey results for the PM peak period (16:30-18:30hrs) at Sydney Parade DART station (northbound, i.e. in direction of non-peak travel towards Dublin City Centre) are shown.

Table 3.7 Survey Results – PM Period (16:30-18:30hrs), Platform 1, Sydney Parade DART Station

Route No.	Time	Est. No. Occupants on Arrival	Est. No. Alighters	Est. No. Boarders	Est. No. Occupants on Departure	Excess Capacity	Excess Capacity (%)
Howth	16:30	20	11	55	64	834	93%
Malahide	16:36	51	6	35	80	818	91%
Howth	16:47	13	9	44	48	850	95%
Malahide	16:56	24	2	42	64	834	93%
Howth	17:09	20	7	67	80	818	91%
Malahide	17:20	42	5	75	112	786	88%
Drogheda	17:27	5	4	95	96	802	89%
Howth	17:30	33	2	17	48	850	95%
Maynooth	17:34	3	0	45	48	850	95%
Malahide	17:40	40	1	25	64	834	93%
Howth	17:48	84	8	20	96	802	89%
Malahide	17:55	100	4	32	128	770	86%
Maynooth	18:00	26	1	7	32	866	96%
Howth	18:07	14	4	22	32	866	96%
Malahide	18:22	101	6	49	144	754	84%
Howth	18:26	23	2	11	32	866	96%
Total		**599**	**72**	**641**	**1,168**	**13,200**	**92%**

As can be seen from the preceding Table 3.7, during the PM peak survey period all DART trains in the northbound direction were found to have excess capacity. During the survey period (16:30-18:30hrs), the average occupancy of DART trains surveyed was found to be 73 no. passengers.

Average excess capacity across the 2-hour survey period on DART trains surveyed was found to be 825 no. passengers (92%).

During the busiest PM peak hour, i.e. 17:30-18:30hrs, the average occupancy of northbound DART trains surveyed was found to be 69 no. passengers and average excess capacity was found to be 829 no. passengers (92%).

Southbound PM Peak (Platform 2, Sydney Parade DART Station)

Within the following Table 3.8, the survey results for the PM peak period (16:30-18:30hrs) at Platform 2, Sydney Parade DART Station (southbound, i.e. in direction of peak travel from Dublin City Centre) are shown.

Table 3.8 Survey Results – PM Period (16:30-18:30hrs), Platform 2, Sydney Parade DART Station

Route No.	Time	Est. No. Occupants on Arrival	Est. No. Alighters	Est. No. Boarders	Est. No. Occupants on Departure	Excess Capacity	Excess Capacity (%)
Bray	16:30	787	7	44	824	74	8%
G-stones	16:44	275	9	42	308	590	66%
Bray	16:53	109	7	10	112	786	88%
Bray	17:01	149	10	5	144	754	84%
G-stones	17:16	738	14	26	750	148	16%
Bray	17:25	367	11	25	381	517	58%
Bray	17:36	900	17	15	898	0	0%
G-stones	17:43	534	11	6	529	369	41%
Bray	17:54	307	17	18	308	590	66%
Bray	18:001	156	22	10	144	754	84%
G-stones	18:10	892	10	9	891	7	1%
Bray	18:25	320	24	12	308	600	67%
Total		**5,534**	**159**	**222**	**5,597**	**5,189**	**48%**

As can be seen from the preceding Table 3.8, during the PM peak survey period, with the exception of 1 no. train, all other DART trains in the southbound direction were found to have excess capacity, with average occupancy of DART trains surveyed found to be 470 no. passengers. Average excess capacity on the DART surveyed was found to be 432 no. passengers (48%).

During the busiest PM peak hour, i.e. 17:30-18:30hrs, the average occupancy of southbound DART train surveyed was found to be 513 no. passengers and average excess capacity was found to be 387 no. passengers (43%).

3.4. AM and PM Peak Hour Direction of Peak Demand Overview

Based on the bus survey results presented within Section 3.2, it has been established that during the weekday AM and PM peak hours surveyed, buses have ca. 41% and 55% excess capacity in the direction of peak demand, i.e. towards the City Centre in the AM peak hour and from the City Centre in the PM peak hour respectively. Additionally, based on the DART survey results presented in Section 3.3, DART trains have been identified to have ca. 84% and 43% excess capacity in the direction of peak demand, i.e. towards the City Centre in the AM peak hour and from the City Centre in the PM peak hour respectively. Considering overall bus and DART services capacity and utilisation, excess capacity in the direction of peak travel, i.e. northbound in the AM peak hour and southbound in the PM peak hour has been identified to be ca. 63% and 39% respectively.

While bus and DART passenger demand may vary from day to day, such variations are relatively small and therefore the above survey results can be deemed to provide a robust basis for assessing the impact of additional demand generated by the current proposed student accommodation development.

3.5. Existing Peak Hour Public Transport Service Capacity

The AM and PM peak hours have been identified through CSO and public transport occupancy survey data to be 07:31-08:30hrs and 17:31-18:30hrs respectively.

Bus Services

Table 3.9 which follows details the number of local bus services, i.e. 4, 7, 7a, 7e, and 84a, observed to operate from the surveyed bus stops on Merrion Road.

Table 3.9 Existing AM and PM Peak Hour Bus Service Capacity

	AM Peak Hour (07:31-08:30hrs)	PM Peak Hour (17:31-18:30hrs)
Northbound		
No. Services	6	9
Capacity (pphpd)	564	846
Southbound		
No. Services	8	9

	AM Peak Hour (07:31-08:30hrs)	PM Peak Hour (17:31-18:30hrs)
Capacity (pphpd)	752	846

As shown in the preceding table, based on the capacity of buses operating on these routes, i.e. 94 no. passengers per vehicle, bus service capacity in the northbound direction has been estimated as 546 passengers per hour per direction (pphpd) in the AM peak hour and 846 pphpd in the PM peak hour. Similarly, in the southbound direction, bus service capacity has been estimated as 752 and 846 in AM and PM peak hours respectively.

DART Services

The following Table 3.10 details the number of DART services, observed to operate from the surveyed Sydney Parade DART Station. As outlined within Section 3.3, average passenger capacity of 898 no. per DART train has been assumed, and as shown in this table, DART services operating via the Sydney Parade DART Station offer capacity of between 5,388 and 7,134 pphpd during AM and PM peak hours.

Table 3.10 Existing AM and PM Peak Hour DART Service Capacity

	AM Peak Hour (07:31-08:30hrs)	PM Peak Hour (17:31-18:30hrs)
Northbound		
No. Services[2]	6	8
Capacity (pphpd)	5,388	7,184
Southbound		
No. Services	6	6
Capacity (pphpd)	5,388	5,388

As can be seen from Tables 3.9 and 3.10 for bus and DART respectively, total public transport capacity of direct relevance to the proposed development is as follows:

- Public transport capacity (bus and DART) in the northbound direction of 5,952 and 8,030 pphpd in AM and PM peak hours respectively; and
- Public transport capacity (bus and DART) in the southbound direction of 6,140 and 6,234 pphpd in AM and PM peak hours respectively.

4. Public Transport Demand

4.1. Proposed Development Modal Splits

It is understood that the proposed student accommodation development will primarily Be occupied by medical/ nursing students with close links to the nearby St. Vincent's University Hospital. As a result, the development's assumed modal split targets are as outlined in the following Table 4.1.

Table 4.1 Proposed Modal Splits

Mode		
Walk	Cycle	Public Transport
50%	25%	25%

4.2. Proposed Development Public Transport Demand

In support of the proposed development, TRICS People Trip rates have been extracted with residential/ student accommodation land use as category. Further details of TRICS selection parameters and outputs are presented in Appendix A. In order to determine whether the modal splits outlined in the preceding Section 4.1 above are achievable in relation to existing public transport (i.e. bus and DART) provision in the vicinity of the application site, an analysis of the daily residential public transport demand has been undertaken. This analysis is based on the modal splits set out above and TRICS People Trip rates, and the public transport capacities determined in the preceding Section 3.

The following Table 4.2 provides an overview of estimated residential travel demand based on the proposed no. of units within the development.

Table 4.2 Peak Hour Residential Public Transport Demand

Time Period		TRICS 'People' Trip Rate per Reside	% Public Transport	No. Units Proposed	Additional Number of PT Trips
AM Peak	AM Arrival	0.015	25%	200	1
	AM Departure	0.115			6
PM Peak	PM Arrival	0.105			5
	PM Departure	0.062			3

As demonstrated within the preceding Table 4.2, the AM peak hour departure trips (6 trips) from the proposed development and PM peak hour arrival trips (5 trips) to the proposed development represent the peak demand as regards the public transport capacity assessment. Within the following Table 4.3, estimated peak hour public transport trips are detailed. It should also be noted that it has been assumed that 80% of public transport resident trips will take place in the direction of peak demand, i.e. northbound in the AM peak period and southbound in the PM peak period. The assumed 'worst case' 80% directional demand is deemed conservative on the basis of assessing the impact of the majority of students boarding buses in the direction of peak demand, where more limited excess capacity exists compared to the opposing direction.

Table 4.3 Peak Hour Residential Public Transport Directional Demand

Time Period	Total No. Peak Hour Trips To/ From Development	No. of Peak Hour PT Trips in Direction of Peak Demand To/ From Development (80%)
AM Peak	6	5
PM Peak	5	4

4.3. Impact of Proposed Development on Existing Services

Within the following Table 4.4, the number of trips to and from the development in the AM and PM peak hours in the direction of peak demand are calculated. The percentage of new users with respect to existing public transport capacity in the AM and PM peak hours has also been estimated. It should be noted that it has been assumed that there will be no change in the capacity of existing public transport services in order to provide a robust assessment.

Table 4.4 Existing Public Transport Service (Bus and DART) Capacity – Peak Demand Direction

AM Peak Hour PT Trips Depart in Direction of Peak Demand	Northbound AM Peak Hour Bus Service Capacity (pphpd)	% New PT Users/ AM Peak Hour Capacity	No. of PM Peak Hour PT Trips Arrive in Direction of Peak Demand	Southbound PM Peak Hour Bus Service Capacity (pphpd)	% New PT Users/ PM Peak Hour Capacity
5	5,952	**0.08%**	4	6,234	**0.06%**

As set out in Table 4.4 above, 5 no. and 4 no. trips are expected to be undertaken by public transport in the direction of peak demand between 07:30-08:30hrs and 17:30-18:30hrs

respectively. This represents ca. 0.08% and 0.06% of total bus and DART service capacity in AM and PM peak hours respectively. In Section 3.4, it was determined that overall bus and DART excess capacity in the direction of peak travel, i.e. northbound in the AM peak hour and southbound in the PM peak hour has been identified to be ca. 63% and 39% respectively. As such, it is apparent that current public transport capacity within the vicinity of the application site is sufficient to accommodate the small additional demand generated by the proposed development.

It should also be noted while planned further improvements to the local bus network being delivered as part of the overall BusConnects programme will offer similar cumulative frequencies and capacity relative to the existing local service offer, such improvements will deliver a better integrated, more attractive service offer to residents of the proposed development. At the time of writing, it is understood that B-spine services are expected to be delivered in 2025-2026, and will therefore be fully delivered before the subject development's completion.

5. Conclusion

Transport Insights has been appointed by 1 Merrion Compound Land Limited to undertake a public transport capacity study in relation to a proposed LRD delivering 200 no. student residential units on the Gowan Motors Compound site, 169-177 Merrion Road, Dublin 4. The study has been informed by a comprehensive bus and DART occupancy survey undertaken in May 2024.

Based on the findings of the public transport occupancy survey, resident mode share targets and analysis contained within this Note, it was found that residents of the proposed development would utilise ca. 0.08% and 0.06% of the total capacity of existing AM and PM peak hour public transport services respectively. Furthermore, it has been identified that local public transport services (bus and DART) have ample capacity to accommodate such demand. As a result, it is apparent that current public transport capacity is sufficient to accommodate additional demand generated by the proposed development.

12 Appendix C - Mobility Management Plan

169-177 Merrion Road Student Accommodation Outline Mobility Management

19.08. 2024

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TENT ENGINEERING

Site Address:
Gowan Motors Compound Site,
169-177 Merrion Road,
Dublin 4

Client Name:
1 Merrion Compound Land Limited

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

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Contents

1 Existing Situation 5
1.1 Background 5
1.2 Site Context 5
1.3 Summary of Developments Proposal 6
1.4 What is a Mobility Management Plan? 6
1.5 Document Purpose 6
1.6 Document Structure 6
2 Mobility Management Plan Benefits 7
2.1 Introduction 7
2.2 Environmental Benefits 7
2.3 Health Benefits 7
2.4 Financial Benefits 7
2.5 Mutual Benefits 8
2.6 Mobility Management Plan Aims & Objectives 8
3 Existing Situation 9
3.1 Local Road Network 9
3.2 Accessibility 9
3.2.1 Pedestrian Infrastructure and Accessibility 10
3.2.2 Cycling Infrastructure and Accessibility 11
3.2.3 Public Transport Infrastructure and Accessibility 11
3.2.4 Car Sharing 12
4 Mobility Management Measures 14
4.1 Introduction 14
4.2 Mobility Management Coordinator (MMC) 14
4.3 Hard Measures 14
4.4 Soft Measures 14
5 Targets 16
5.1 Introduction 16
5.2 Data Collection and Analysis 16
5.3 Smart Targets 16
6 Monitoring and Review 18
6.1 Introduction 18
6.2 Responsibility and Management 18
6.3 Mobility Management Coordinator (MMC) 18
6.4 Monitoring and Evaluation 18
7 Action Plan 19

1 Existing Situation

1.1 Background

Tent Engineering has been appointed by 1 Merrion Land Limited to provide traffic and transport advice in relation to the proposed redevelopment of land at 169-177 Merrion Road in Dublin, 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 site is located at Gowan Motors Compound Site, 169-177 Merrion Road, in region of Dublin 4. The site currently comprised for ground floor retail units with office space above.

The site is bound by Merrion Road to the north, Caritas Nursing Home to the west and south, 179-181 Merrion Road to the east, Elm Court apartments to the north and St. Mary's Merrion Road to the south. The location of the site is shown Figure 1.1.

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

The subject proposals seek planning permission for a Large Scale Residential Development delivering 200 no. student beds within two blocks. The blocks range in height up to 6 storeys. Block A and block B will share a single storey basement. All associated internal and external amenity space, cycle parking, landscaping, bin stores, service provision and vehicular and pedestrian accesses are also proposed.

Car ownership will be lower than the average population as it is student accomadation. More active forms of transport are expected due to the site being in close proximity to the two accosiated teaching schools of UCD & SVUH.

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
- Dublin City Development Plan (2016 - 2022), Dublin City Council, 2016.

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 3. This includes the local road network and facilities for pedestrians, cyclists and public transport users. Section 3 also considers the proposed servicing

Section 4 provides an insight on baseline mode share based on the most recent Census data arrangements.

Section 5 outlines various measures that will be considered to encourage maximum uptake in sustainable modes of travel, whereas Section 6 outlines the Mobility Management Plan target strategy.

Section 7 concludes the report by providing details on the monitoring and review process, and the responsibility and management of the document.

Section 8 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 ha 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.

Merrion Road

Merrion Road is a two-way dual carriageway road subject to a 50km/h speed limit. Generally a shared cycle/bus lane is provided adjacent to the main vehicle lanes, however, in the direct vicinity of the site the eastbound cycle/bus lane comprises on-street car parking fronting residential properties.

Footpaths are provided either side of carriageway measuring 2.0m in width and are well lit and maintained.

Bus stops are present on Merrion Road in both directions comprising flag and timetable arrangements with shelter and seating.

R138/Stillorgan Road

Stillorgan Road is situated 2km to the west of the site. The R138 is a regional road which commences at the south end of O'Connell Bridge in Dublin city centre and onwards to the junction joining the N11. The road is subject to a 60km/h speed limit. The road is two-carriage way and has a bus lane on either side. There are wide pedestrian footpaths either side and controlled (green man) crossings along the route.

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 2.0m wide well-lit footpaths provided along both sides of Merrion Road.

There are signal controlled crossing facilities with dropped kerbs, tactile paving and a central refuge islands located approximately 100m southeast of the site along Merrion Road near the Strand Road train crossing.

Directly north-west of the development is Dublin City Centre which is approximately 5km away which provides many amenities, restaurants, commercial and retail services. Employment opportunities are present within the Elm Park Green business park circa 450m to the south (5-minute walk). The Merrion Shopping Centre is also approximately 550 metres (7-minute walk) from the site which has a Tesco Superstore, Pharmacy and Starbucks. The proposed development is also in close proximity to St. Vincent's University Hospital.

Within a 15-minute walk of the site is Sandymount Strand and Sandymount Beach, providing areas for recreational activity and extensive walks. Other areas of green space located close to the development are Blackrock Park and Elm Park Golf and Sports Club.

University College Dublin (Belfield Campus) is located approximately 2km from the site (24-minute walk).

Most notably the development is situated less

than a minute walk from Bus Stop 447 on Merrion Road.

The Sydney Parade Rail Station can also be accessed within a 10-minute walk of the site, additional information on the rail services that operate from this station are outlined in the following sections.

3.2.2 Cycling Infrastructure and Accessibility

The site is accessible by cycle via a shared westbound bus and cycle lane on Merrion Road. Figure 3.1 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.

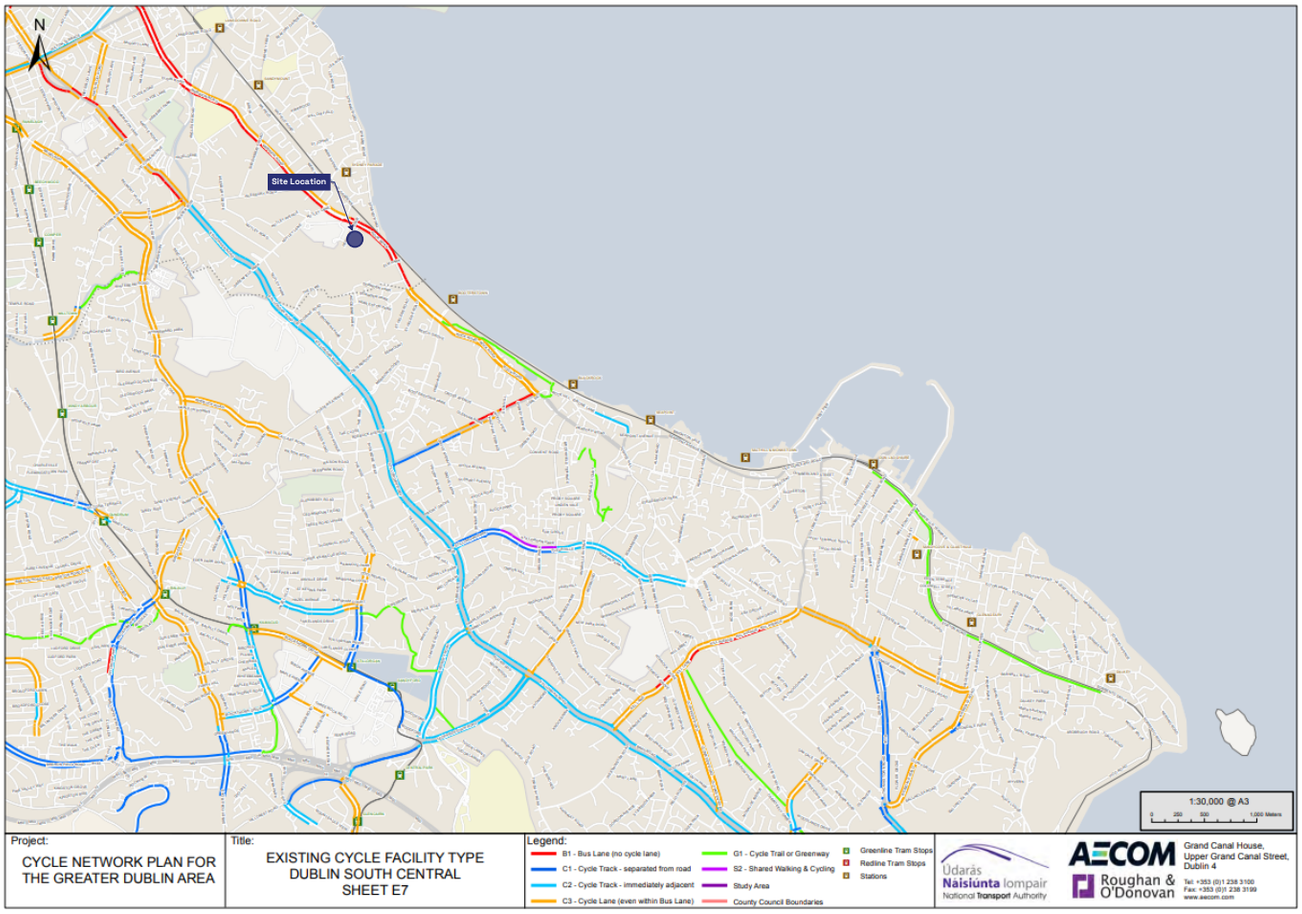
Figure 3.1 illustrates the existing cycle network and infrastructure in the vicinity of the site extracted from the National Transport Authority's 'Greater Dublin Area Cycle Network Plan'.

The site is situated on a primary route from Monkstown along the south-east coastline. There are various designated secondary cycle routes within this sector, along with other primary routes to the west of the site (such as routes 13E and N5 which lead into Dublin city centre).

The proposed cycle network map also shows where cyclists can permeate through blocks within the road network by using quiet streets and roads that do not require cycling facilities due to the low volumes and speed of traffic. In the vicinity of the site, these "feeder" routes lead to Goatstown and Donnybrook.

Within a 10-minute cycle of the site is University College Dublin, Blackrock, Sandymount and Milltown. Within a 20-minute cycle of the site lies the entirety of Drimnagh, Rathgar, Dublin Docks,Portobello and Harold's Cross.

Fig 3.1 - Existing Cycle Network



3.2.3 Public Transport Infrastructure and Accessibility

Bus Services

Figure 3.2 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.
- The nearest bus stops to the site are located on Merrion Road within 100m of the site access. The westbound bus stop is located 50m to the west and is adjacent to Elm Court, whilst the eastbound bus stop is located 90m to the west adjacent to no. 246 Merrion Road. Table 3.1 details the services that call at these stops and their associated frequencies.

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.

Figure 3.2 - Cycle Time to UCD

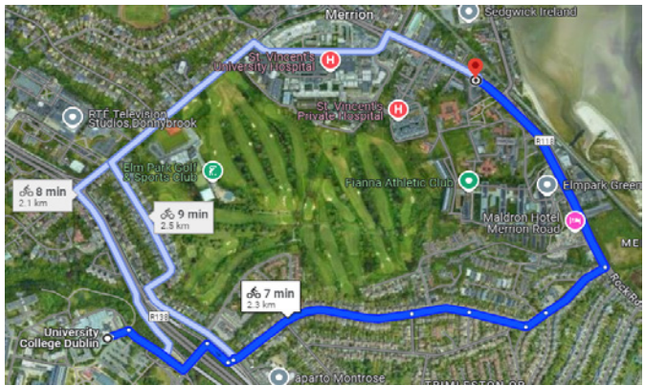


Figure 3.3 - Proposed Bus Connects Routes

Figure 3.4 - Busconnects Upgrade at Site

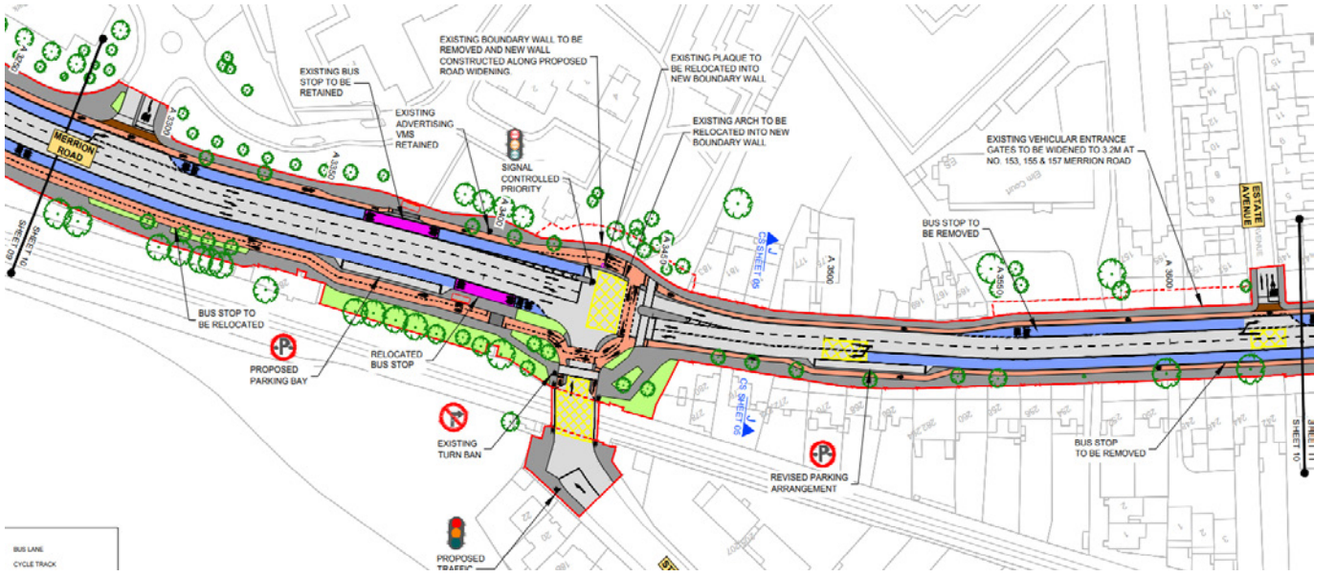


Figure 3.5 - Existing Road at the SIte Location

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 along Elm Park Green, circa 350m to the south-west 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 distance driven, but starts at around €9 an hour with 50 free kilometers 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

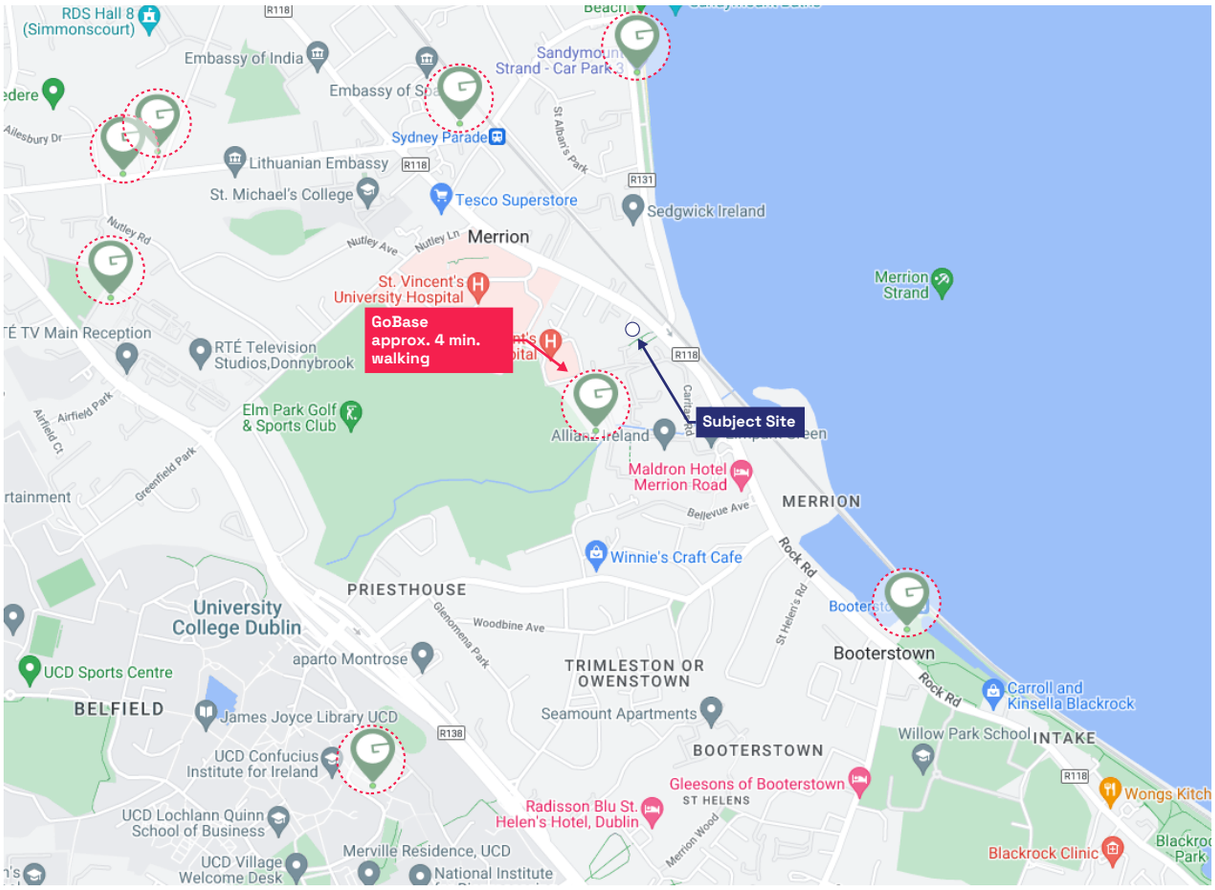


Table 3.1 - Bus Service Frequency (min)

Route No.	Route	Weekdays		Weekend	
		AM Peak	Interpeak	Saturday	Sunday
7	Mountjoy Square West - Brides Glen Luas	25 - 30	25 - 30	25-40	30-40
4	Harristown - Monkstown Avenue	12-20	12 - 20	15 - 20	15-30
7A	Loughlinstown Pk	30	30	25-40	30-40
703	Dublin Airport to Killiney	105-120	105-120	105-120	105-120
2	Wexford - Dublin Airport	60-120	60-120	60-120	60-120
27X	UCD - Donaghmede Roundabout	1 per day	1 per day	N/A	N/A
47	Belarmine	25-75	25-75	60	60

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.

Refer to Section 6.1 in the Transport Statement for details on the 2022 census .

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 Dublin City Council (DCC) and made available to staff and visitors at the site. Should the MMC change, DCC 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 7 of this report.

4.3 Hard Measures

The development will be provided with 248 cycle parking spaces. These are comprising 206 long term spaces and 42 short term spaces. 5% (12) spaces are dedicated to larger non-standard bikes.

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

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.

Our targets are based on the 2022 census (see transport statement part 6.2). Based on those values we estimated the new targets after Busconnects upgrades are complete.

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.

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 6.1. 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

Table 5.1 - Proposed Trip Generation Mode

Mode	Overall Modal Target
By Car (Private)	0%
Pedestrians	50%
Cyclists	25%
Public Transport	25%

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 Dublin City Council (DCC). 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 students/ 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. Dublin City 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 Dublin City Council (DCC) on transport related matters, the main monitoring process will involve travel surveys as described in Section 6.2.

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 DCC 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 DCC.

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

• How the management structure for the MMP will be established, associated timeframe and responsibility:

• The implementation of stated measures and initiatives;

The monitoring procedures and promotion of the MMP.

Table 8.1 - 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 DCC	MCC
Present Annual Monitoring Report	Annually for at least five years following the agreement of targets with DCC	MCC

TENT ENGINEERING

13 Appendix D - Road Safety Audit

Title: **Stage 1&2 DMURS Quality Audit including Stage 1&2 Road Safety Audit,**

For;

Proposed Student Accommodation at 169-177 Merrion Road.

Client: **TENT Engineering on behalf of 1 Merrion Compound Land Limited**

Date: **August 2024**

Report reference: **2348R01**

VERSION: **FINAL**

Prepared By:

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CONTENTS SHEET

Contents

1.0 Introduction 2
2.0 Background 3
3.0 Issues Common to More Audits than RSA 5
4.0 Items Raised in This Stage 1&2 Road Safety Audit 6
4.1 Problem 6
4.2 Problem 7
4.3 Problem 8
4.4 Problem 9
5.0 Items Raised in This Stage 1&2 Quality Audit – Accessibility Audit. 10
6.0 Items Raised in This Stage 1&2 Quality Audit – Walking Audit. 10
7.0 Items Raised in This Stage 1&2 Quality Audit – Cycling Audit 10
8.0 Observations 11
8.1 Observation 11
8.2 Observation 11
9.0 Audit Statements. 12
Road Safety Audit Statement 12
Quality Audit Statement 12
Appendix A 13
Appendix B 14
Appendix C 16

1.0 Introduction

This report was prepared in response to a request from Mr. Diarmuid Healy, TENT Engineering, for a Stage 1&2 DMURS Quality Audit Including a Stage 1&2 Road Safety Audit for the proposed student accommodation large scale residential development (LRD) at 169-177 Merrion Road, Dublin 4.

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 FIEI
	TII Auditor Approval no. OO 1291756

The Audits involved the examination of drawings and other material provided and a site visit by both team members, together, on the 8th of August 2024. The weather at the time of the site visit was dry and the road surface was also dry.

The Combined Stage 1&2 Road Safety Audit has been carried out in accordance with the requirements of TII Publication Number GE-STY-01024, dated December 2017.

The Stage 1&2 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, accessibility and parking for all road users (including vulnerable road users). 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 200 bed LRD student accommodation at 169-177 Merrion Road, Dublin 4. The development would be over 6 blocks and ranging in height up to 6 storeys plus basements in each block.

The site is currently a hoarded construction compound and was formally a Gowan Motors compound site.

Access to the development will be off Merrion Road (R118). Merrion Road is an arterial route to Dublin city centre which at this location is a single carriageway, 1 general traffic lane in both directions with a bus (part time)and cycle lane inbound and on-street parking (and partial bus facilities) outbound. It has footpaths on both sides and the speed limit is 50km/hr.

There is a signalised junction at the Merrion Gates R118/R131 (Strand Road) junction including pedestrian crossing facilities.

There is also a controlled pedestrian crossing close to the Herbert Avenue junction.

It is proposed to provide a single accessible car parking space. Refuse vehicles and emergency vehicles can drive into, turn and exit the development. The swept path analysis for such manoeuvres has been provided to the Audit Team.

A dedicated and marked space is also provided for student drop off and collection at term end by private car. This process will be managed to avoid double parking by use of a waiting procedure to use the dedicated drop off space.

It is proposed to provide secure bicycle parking spaces for residents, staff and visitors. Cycle parking will be provided in three areas. Two for short term parking and one to the rear of the site for long term parking. A path is provided directly to this point from Merrion Road.

The potential future cross section of Merrion Road with cycle lanes in both directions has been provided.

The site location is shown below.

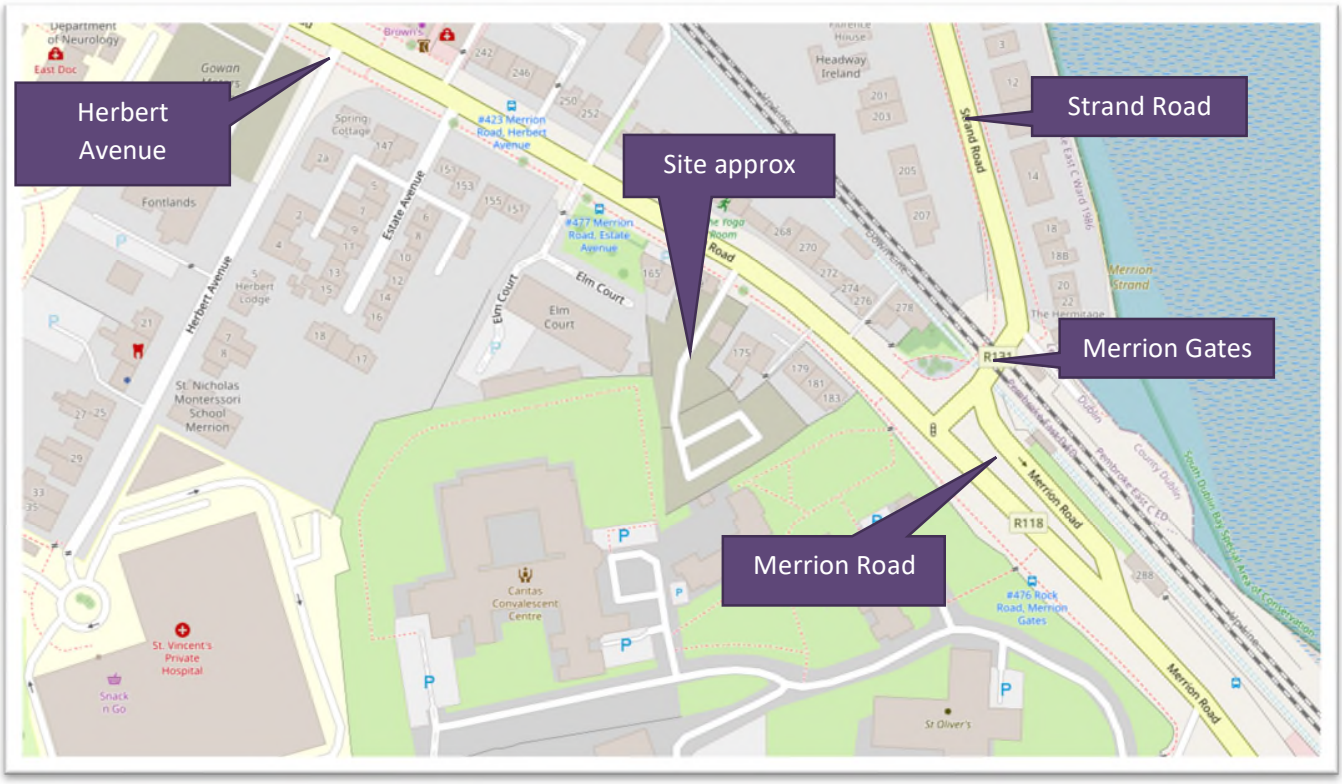


Image courtesy of openstreetmap.org

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	✓			
4.2	✓		✓	✓
4.3	✓		✓	
4.4	✓			✓

4.0 Items Raised in This Stage 1&2 Road Safety Audit

4.1 Problem

Location

Sightlines.

Problem.

The sightlines drawing shows 45m sightlines. Merrion Road is a busy bus route. Vehicles may be passing slower buses or buses may be stopped in the bus lane which could lead to drivers needing to see potential overtaking or it result in side-impact or rear-end collisions.

Recommendation

It is recommended that suitable sightlines for a bus route be provided.

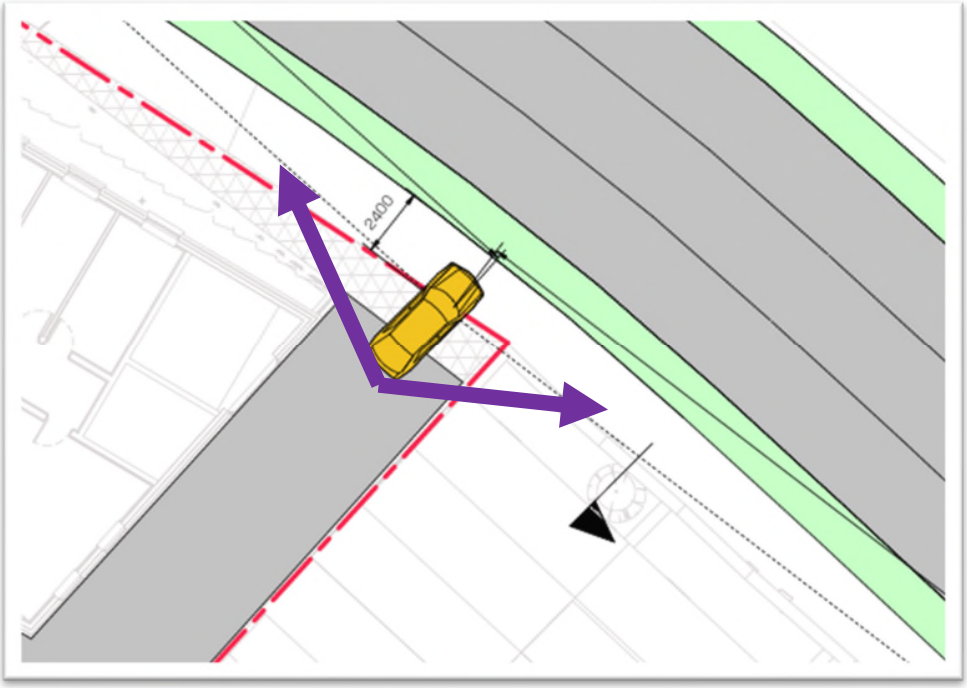
4.2 Problem

Location

Sightlines.

Problem.

The extent of the sightlines for exiting vehicles to crossing pedestrians is unclear. A lack of visibility could lead to collisions with pedestrians and with cyclists or e-scooter users on the footpath



Recommendation

It is recommended that suitable visibility be provided to those crossing the vehicle access on the footpath.

4.3 Problem

Location

Vehicle access.

Problem.

It is unclear what type of access detail is proposed. The access will have very infrequent use and therefore priority should be with pedestrians who cross the access. A lack of clarity on priority could lead to collisions with those crossing pedestrians.

Recommendation

It is recommended that a continuous footpath be provided with suitable kerb upstand for vehicular traffic and that a stop line and sign be provided to the rear of the footpath.

4.4 Problem

Location

Cyclists crossing Merrion Road.

Problem.

There will be a large demand for cyclists to cross Merrion Road to access/leave the proposed development. There are between 3 and 4 lanes to cross on a busy arterial route which could lead to collisions especially at night if cyclists are wearing dark clothes and have no lights.

Recommendation

It is recommended that suitable measures be provided to cater for crossing cyclists. Given the proposed upgrade of Merrion Road as part of the Bus Connects scheme, the Design Team should confirm if that proposed scheme addresses this issue.

5.0 Items Raised in This Stage 1&2 Quality Audit – Accessibility Audit.

No accessibility problems were encountered as part of the Audit.

6.0 Items Raised in This Stage 1&2 Quality Audit – Walking Audit.

No additional walking problems were encountered as part of the Audit.

7.0 Items Raised in This Stage 1&2 Quality Audit – Cycling Audit

No additional cycling problems were encountered during this Audit.

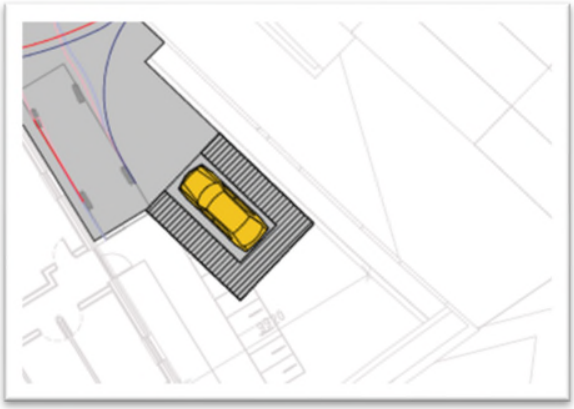
8.0 Observations

8.1 Observation

It is assumed that existing dropped kerbs at existing access points will be raised and that any utility poles close to the new access will be relocated as part of the detailed design process.

8.2 Observation

On some drawings the set down parking space is shown on or close to the short term bicycle parking. It is assumed this is a draughting error.



9.0 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:** _5-9-2024_____

Owen O'Reilly **Signed:** __ _____

(Audit Team Member) **Dated:** __5-9-2024_____

Appendix A

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

Information Supplied to the Audit Team

- Drawing 24042-X-L00-DR-TNT-TP-4003 P01
- Drawing 24042-X-L00-DR-TNT-TP-4004 P01
- Drawing 24042-X-L00-DR-TNT-TP-4000 P01
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For Background Information

- Traffic & Transport Assessment, TENT Engineering, May 2024

Appendix B

Feedback Forms (Road Safety Audit & Quality Audit)

FEEDBACK ON AUDIT REPORT

Scheme: 169-177 Merrion Road, Student Accommodation LRD
Stage: 1&2
Date Audit (Site Visit) Completed: 8-8-2024

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		
4.2	Yes	Yes	Various measures present to guarantee pedestrian safety: • 10km/h shared surface giving priority to pedestrians • Raised deflection encouraging vehicles to slow down • Tactile paving encouraging pedestrians to be careful 7m and 14m sightlines added to drawing	Yes
4.3	Yes	Yes	Site layout showing all DMURS elements has been added to the pack. Vertical deflection, shared surface road, stop sign; all present to ensure pedestrian priority.	Yes
4.4	Yes	Yes	We confirm the approved bus connects layout sufficient caters for the crossing points of vulnerable road users. The approved bus connects upgrade will provide a safe cycling lane crossing the road at the traffic lights 35m away from the entrance. Cyclists will also be able to cross there.	Yes

Signed: Diarmuid Healy **Date** 13/08/2024

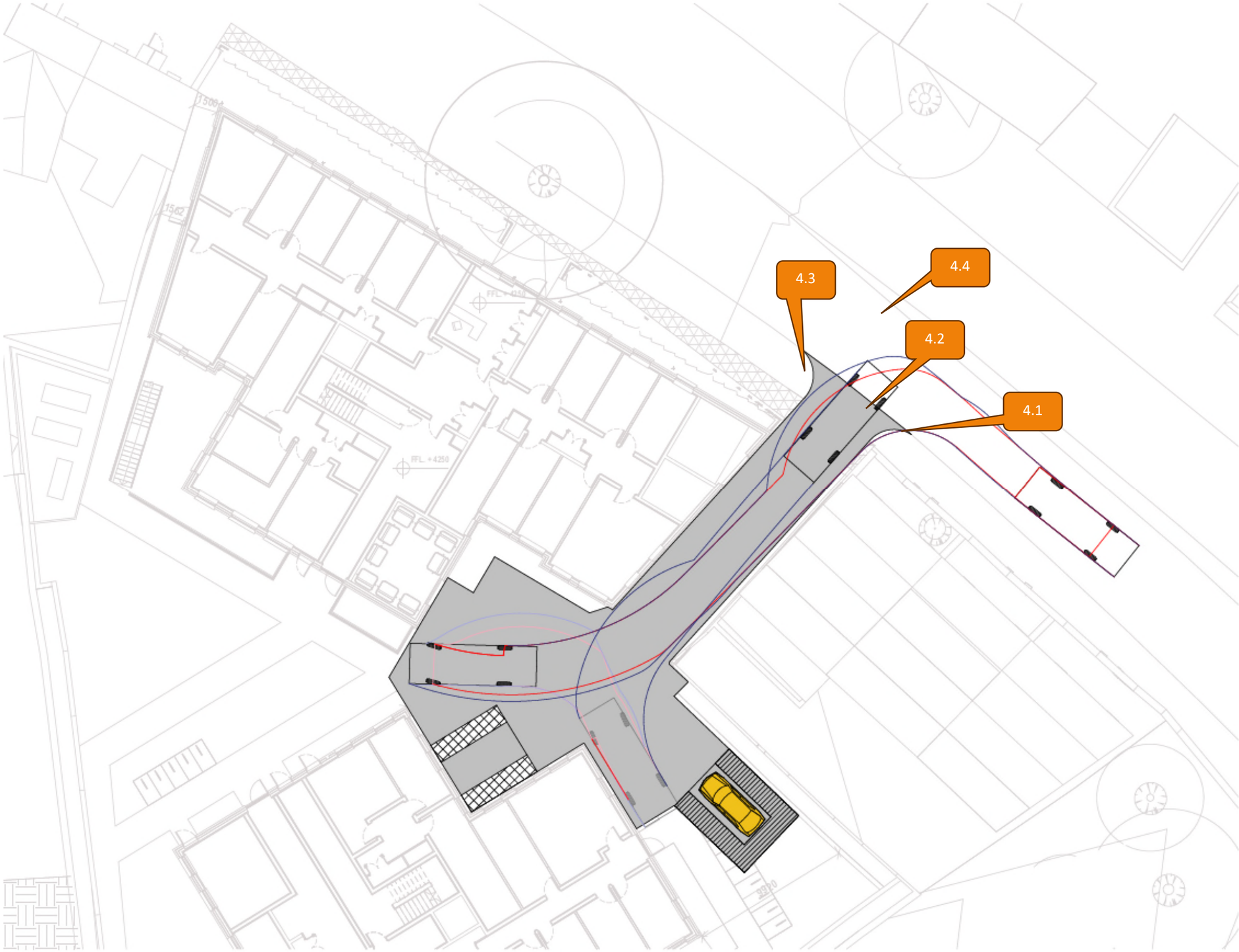
Design Team Leader

Signed……**Date**…29/8/2024…
Audit Team Leader

Signed……**Date**…29/8/2024…
Developer

Appendix C

Problem Location Plan.



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14 Appendix E - Outline Construction Management Plan

169-177 Merrion Road Student Accomadation Outline Construction Management Plan

19.08. 2024

24042-X-XXX-RP-TNT-CE-0006

TENT ENGINEERING

Site Address:

Gowan Motors Compound Site
169-177 Merrion Road
Dublin 4

Client Name:

1 Merrion Compound Land Limited

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
P01	1st issue	24.05.2022
P02	2nd Issue	19.08.2024

AUTHOR(S)

Name
Conor Edwards Civil Engineer

REVIEWER(S)

Name and qualifications
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BEng (Hons) MIEI CEng MIStructE FIStructE

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Contents

1 Introduction 4

2 Site Location and proposals 5

3 Site Management 6

4 Environmental Management 9

5 Waste Management 11

6 Traffic Management 12

7 Provision for Construction 14

8 Appendix A - Site Construction Layout 16

1 Introduction

Tent Engineering has been appointed by 1 Merrion Compound Land Limited to provide an **Outline Construction Management Plan (OCMP)** in relation to the proposed development at Gowan Motors Compound Site, 169-177 Merrion Road, Dublin 4.

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 Dublin City Council (DCC) 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, including Waste 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
- 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 Site Location and proposals

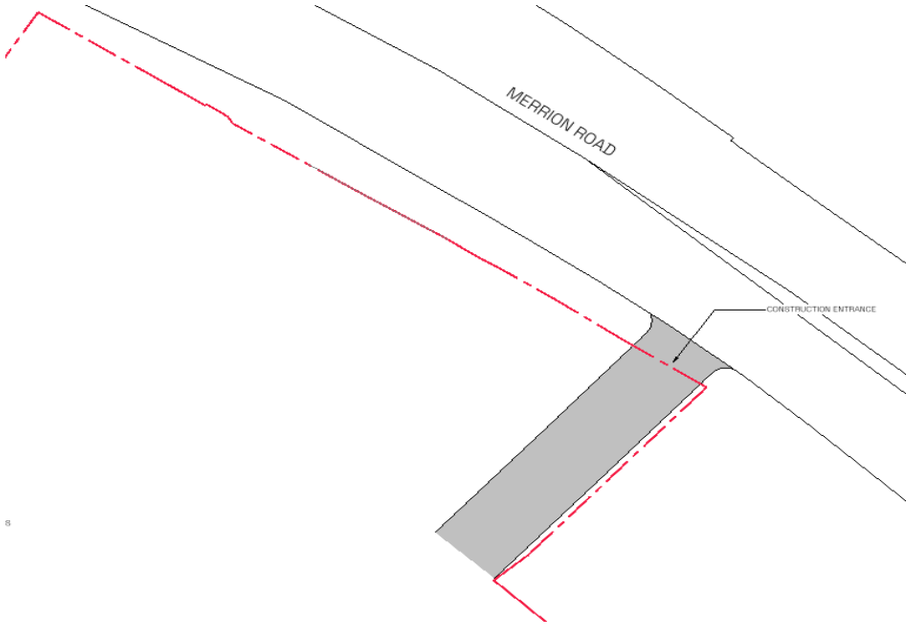
Tent Engineering has been commissioned by 1 Merrion Land Limited to carry out a desk study and procure specific ground investigations at Compound Site, 169-177 Merrion Road, Dublin 4. This report also forms part of a Basement Impact Assessment (BIA), which has been carried out in accordance with guidelines from Dublin City Council (DCC) in support of planning application (Planning Application Ref: 4477/19).

The subject site is currently occupied by an existing car service yard, an associated small car-servicing shed building, and a number of dwellings. The majority of the site consists of an impervious car park. The proposed development consists of a residential apartment block and includes the following:

Construction of 200 new student rooms with 32 clusters.

Fig 2.1 - Site Location in Relation to the Regional Road

Fig 2.2 - Aerial View and Site Access of Existing Site at 169-177 Merrion Road



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 accommodation;
- First aid facilities;
- Site administration accommodation.

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. The contractor has secured the site with site barriers and hoardings in accordance with the final construction management plan. Any hoardings and signboards to the perimeter of the site should comply with the requirements of the relevant authorities and the relevant Health and Safety Acts.

The contractor has erected 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 has provided protection to existing surrounding building elements that may be impacted by the works. Protection is 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 (rock hammers or saws);
- Mobile 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

Access to the construction site will be from Merrion Road, which runs in a northwest-southeast direction. The entry point for construction vehicles is located at the northern end of the site. Refer to Appendix A Site Construction Layout.

- 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 DCC.

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 pro-actively 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 Merrion 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.

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 gate-man 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 form-work element and general building materials. In addition to the tower crane, separate mobile crane visits will be required from time to time. Mobile crane visits will be coordinated with the other site activities to ensure that all risks are correctly assessed and guarded against. 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, the table 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.

5 Waste Management

Refer to Waste Management Plan prepared by Tent Engineering for details of waste management during the construction phase of the subject development.

Table 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

6 Traffic Management

6.1 Site Traffic, Traffic and Pedestrian Management

The anticipated truck movements to and from 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 has been delineated by 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 has been enclosed with hoarding, details of which have been agreed with Dublin County Council. 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 form-work 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 site is brownfield 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 no.2 6 storey buildings. 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.

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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 form-work element and general building materials. In addition to the tower crane, separate mobile crane visits will be required from time to time. 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.

8 Appendix A - Site Construction Layout

Refer to 24042-X-XXX-DR-TNT-CE-0102: SITE CONSTRUCTION LAYOUT

TENT ENGINEERING