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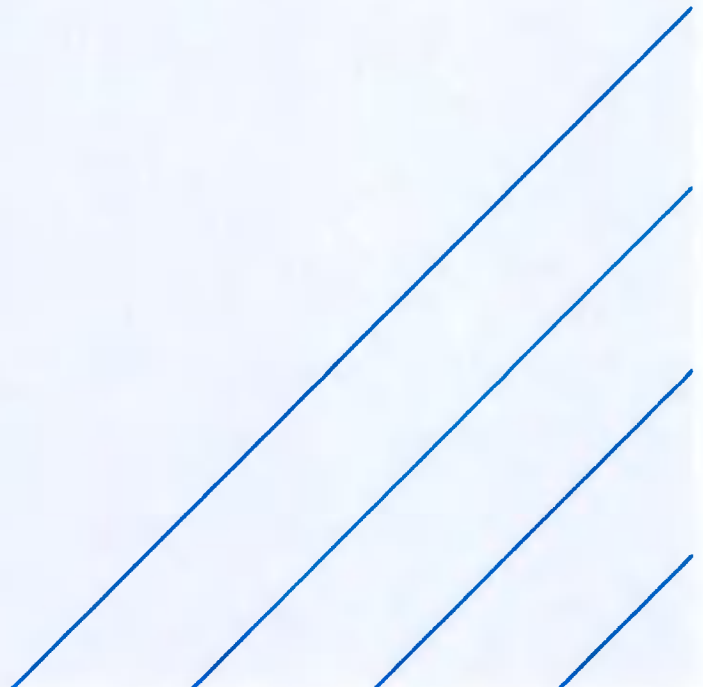
Member of the SNC-Lavalin Group

Aderrig Phase 2

Street Design Report

Quintain Developments Ireland Ltd

May 2021



Notice

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This document has 26 pages including the cover.

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Contents

Chapter	Page
1. Introduction and Background	5
1.1. Proposed Scheme	5
1.2. Principal Design Considerations	6
2. Design Deliverables – Drawing Content	7
3. Traffic Strategy	8
4. Street Requirements	9
4.1. Street Design Development	9
4.2. Compliance with DMURS	10
4.3. Internal Street Design	10
4.4. Vehicle Permeability	13
4.5. Junction Design	14
5. Pedestrian and Cyclist Facilities	16
5.1. Pedestrian provision	16
5.2. Cyclist Provision	17
5.3. Pedestrian and Cyclist Connections	18
5.4. External Roads Pedestrian & Cyclist Crossing Facilities	19
5.5. Internal Roads Pedestrian Crossing Facilities	19
5.6. Pedestrian & Cyclist Connection to School Sites	19
6. Parking Provision	21
6.1. Car Parking	21
6.2. Electric Vehicle Charging Provision	22
6.3. Bicycle Parking	23
7. Access Arrangement for Large Vehicles	24
7.1. Emergency & Refuse Vehicles	24
8. Traffic Signs & Road Markings	25

Tables

Table 2-1 - Drawing Schedule	7
Table 4-1 - Design Criteria	12
Table 4-2 - Street Typology	12
Table 6-1 - Car Parking	21
Table 6-2 - Car Parking Allocation	21
Table 6-3 - Bicycle Parking	23

Figures

Figure 4-1 - Aderrig Access & Movement	9
Figure 4-2 – Aderrig Phase 2 Street Layout and Typology	11
Figure 4-3 - Vehicle Connections	13
Figure 4-4 - Junction Locations	14
Figure 5-1 - Aderrig Phase 2 Pedestrian Provision	16
Figure 5-2 - Aderrig Phase 2 Cyclist Provision	17
Figure 5-3 - Pedestrian & Cyclist Connections	18
Figure 5-4 - Development Site and School Site Locations	19

1. Introduction and Background

1.1. Proposed Scheme

This report details the design of the streets associated with the Aderrig Phase 2 development in Adamstown. The current application site (4.9ha) is located within Development Area 8 – Aderrig of the Adamstown SDZ Planning Scheme, 2014, as amended.

The proposed development (24,513sq.m gross floor area) will consist of 227 dwellings and will comprise the following:

- 95no. 3 bed 2 storey terraced houses and associated gardens;
- 28no. 4 bed 3 storey terraced houses and associated gardens;
- 48no. 3 bed two storey duplex apartments over 48no. 2 bed apartments (i.e. 3 storey buildings with 2 storey duplex over single level ground floor unit) and associated communal and private open space; and
- 4no. 3 bed two storey duplex apartments over 4no. 3 bed two storey duplex apartments (i.e. 4 storey buildings with 2 storey duplex over 2 storey duplex) and associated communal and private open space.

A section of the East-West Avenue Road along the northern boundary of the site is included in the current application and two access points are proposed to this road. Otherwise, the development is accessed from roads already approved or under construction. Adamstown Way was permitted under Reg Ref SDZ06A/5 and bounds the site to the south and 1no. access point is proposed to this road. 4no access points are proposed to the east and west (i.e. 2no. each). The Celbridge Link Road permitted under Reg Ref SDZ17A/0009 bounds the site to the west and the road on the eastern boundary was permitted under "Aderrig Phase 1" (Reg Ref SDZ20A/0017).

Permission is also sought for all associated site and development works including roads, central public open space (0.12ha), car parking (361 spaces), bicycle parking (168 spaces), bin storage areas, 2no. ESB substations (22sq.m), associated pedestrian footpaths and cycle paths, hard and soft landscaping and boundary treatment. It is noted that 17no. spaces were permitted along the Celbridge Link Road under SDZ17A/0009, providing a total of 378no. spaces for this development.

This report deals with the following roads infrastructure elements associated with this development:

- Street Geometric Layout Requirements;
- Pedestrian and Cyclist Facilities;
- Parking Provision; and
- Access Arrangement for Vehicles.

The proposed design has been developed in close consultation with the Transport Department of South Dublin County Council. Relevant technical aspects of the street designs are incorporated on the street layout drawings and within this report.

1.2. Principal Design Considerations

The design of the proposed development included within this planning application was prepared in the context of the following planning policy and design guidance documents:

- Adamstown Strategic Development Zone Planning Scheme 2014;
- South Dublin Development Plan 2016 – 2022;
- Adamstown Street Design Guide February 2010;
- Design Manual for Urban Roads and Streets (DMURS) 2013;
- Transport Infrastructure Ireland (TII) Design Manual for Roads and Bridges (DMRB);
- National Cycle Manual (NCM) 2011;
- Traffic Signs Manual 2010; and
- Slow Zones Advice Note 2016.

2. Design Deliverables – Drawing Content

Table 2-1 below details the street design drawings submitted as part of this planning application. These drawings should be read in conjunction with all other architectural, landscape architectural and engineering drawings submitted as part of the planning application.

Drawings have a standardised title block for each series showing the drawings as presented below. Scales are shown within the title block and are in accordance with the Planning Guidelines.

Table 2-1 - Drawing Schedule

Drawing Number	Title of Drawing
5150924 / HTR / 06 / DR /0000	Cover Sheet
5150924 / HTR / 06 / DR /0100	Street Typology – Sheet 1 of 2
5150924 / HTR / 06 / DR /0101	Street Typology – Sheet 2 of 2
5150924 / HTR / 06 / DR /0102	Road layout – Sheet 1 of 2
5150924 / HTR / 06 / DR /0103	Road layout – Sheet 2 of 2
5150924 / HTR / 06 / DR /0104	Junction Layout – Sheet 1 of 3
5150924 / HTR / 06 / DR /0105	Junction Layout – Sheet 2 of 3
5150924 / HTR / 06 / DR /0106	Junction Layout – Sheet 3 of 3
5150924 / HTR / 06 / DR /0107	Junction Visibility – Sheet 1 of 3
5150924 / HTR / 06 / DR /0108	Junction Visibility – Sheet 2 of 3
5150924 / HTR / 06 / DR /0109	Junction Visibility – Sheet 3 of 3
5150924 / HTR / 06 / DR /0110	Vehicle Tracking – Sheet 1 of 4
5150924 / HTR / 06 / DR /0111	Vehicle Tracking – Sheet 2 of 4
5150924 / HTR / 06 / DR /0112	Vehicle Tracking – Sheet 3 of 4
5150924 / HTR / 06 / DR /0113	Vehicle Tracking – Sheet 4 of 4
5150924 / HTR / 06 / DR /0114	Cross Sections – Sheet 1 of 2
5150924 / HTR / 06 / DR /0115	Cross Sections – Sheet 2 of 2

3. Traffic Strategy

The Adamstown masterplan has already considered traffic within its phasing and implementation of development numbers. Traffic was studied separately and extensively for the entire Adamstown SDZ lands allowing for full build out of the lands. The proposed development is in accordance with the masterplan and as agreed with South Dublin County Council Transport Department. No further analysis of traffic for this application is required.

4. Street Requirements

4.1. Street Design Development

The development of the street design is based on the details as outlined in the street layout drawings, taking cognisance of the development layout, the protection and retention (where possible) of existing trees, impact on adjacent developments, connectivity into adjacent development lands and in line with the requirements of the documents set out in Section 1.2 of this document. The street layout design has been generated in coordination with the architect, landscape architect and other engineers in terms of building lines, proposed landscape features etc.

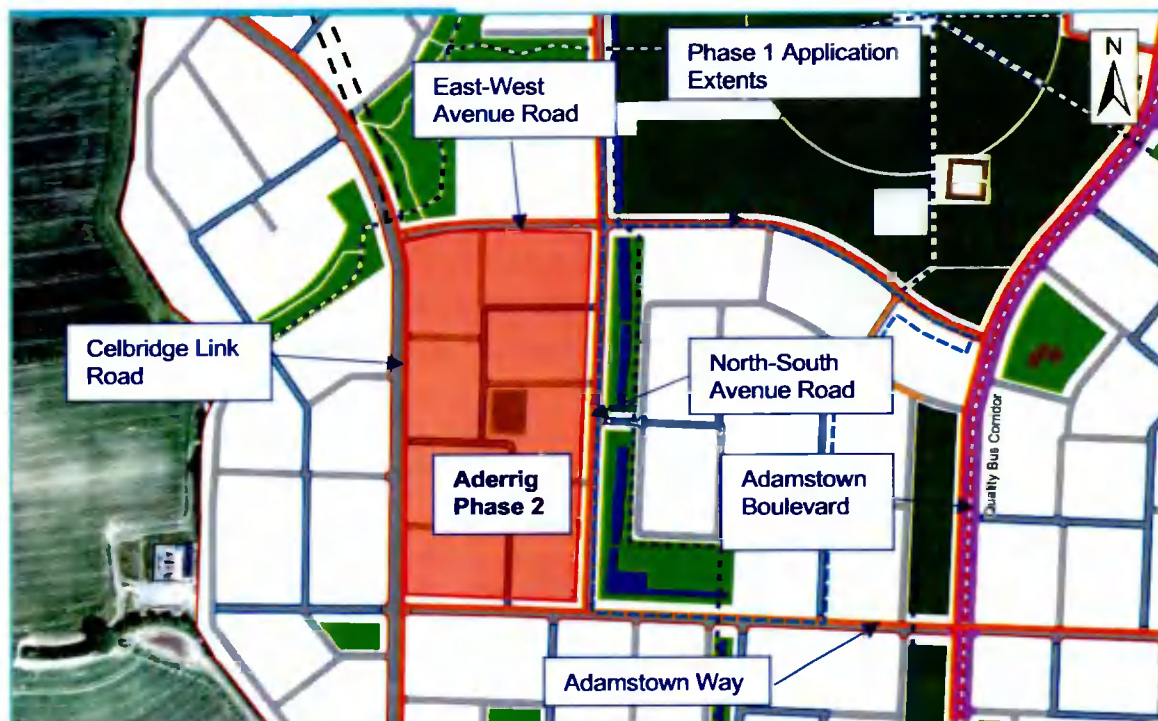
The street layout has been developed with reference to the following design principals:

- Connectivity;
- Permeability;
- Legibility;
- Safety; and
- Accessibility.

The provision of connections for the entire Aderrig Development onto the adjacent road network is a key requirement in the generation of the development layout. These connections are detailed in the following sections of this report.

The proposed street layout is based on the Aderrig Access and Movement diagram detailed in Adamstown SDZ Section 8 Development and Amenities as shown in Figure 4-1 below.

Figure 4-1 - Aderrig Access & Movement



4.2. Compliance with DMURS

The street layout is designed with specific reference to DMURS design guidance, incorporating appropriate cross reference to the National Cycle Manual and Adamstown Street Design guide.

In particular, the 30km/h special speed limit as required on residential streets is promoted via the combination of the design elements below:

- Horizontal and vertical alignment designed to 30km/h;
- Carriageway widths in line with DMURS requirement for street type;
- Constrained junction radii in line with DMURS requirement;
- Raised Crossings at the Access Junctions; and
- Provision of Raised Tables at Internal Road Junctions.

A Stage 1 Road Safety Audit was undertaken for the proposed scheme. Please refer to this document included as part of the planning application for details in relation to issues and comments raised. The issues and comments raised within the Road Safety Audit report have been addressed and the proposed design revised to accommodate recommendations as applicable.

4.3. Internal Street Design

The street layout for the Aderrig Phase 2 development consists of three types of street typology consistent with DMURS and the Adamstown Street Design Guide which are outlined below and detailed in Figure 4-2. Further details in relation to street typologies are detailed on drawings 5150924 / HTR / 06 / DR / 0100 to 0101 submitted as part of this planning application.

Figure 4-2 – Aderrig Phase 2 Street Layout and Typology



The design criteria for the street typologies are detailed below in Table 4-1.

Table 4-1 - Design Criteria

Design Criteria	Avenue Street (Link Street)	Side Street (Local Street)	Home Zone Street
DMURS Recommended Design Speed	50km/h	10-30km/h	10-30km/h
Adopted Design Speed	50km/h	30km/h	30km/h
Maximum Gradient	5%	5%	5%
Minimum Gradient	0.5%	0.5%	0.5%
Carriageway Width	6.0m	5.5m	4.5m
Footpath / Footway Strip Width	2.0m	2.0m	Shared provision

Further detail associated with the street typologies and the provision of cyclist and pedestrian facilities are as outlined below in Table 4-2.

Table 4-2 - Street Typology

Typology	Description	Pedestrian Provision	Cyclist Provision
Avenue Street (Link Street)	An avenue will provide connectivity to the wider road network and provide permeability to neighbourhoods and centres.	Footpaths both sides	A mix of offline cycle paths and shared street provision
Side Street (Local Street)	A local street will provide connectivity more locally within the development and reinforce permeability.	Footpaths both sides	Shared Street Provision, cyclist shares carriageway with vehicles in low traffic speed and low traffic volume environment
Homezone Street	A homezone street will provide intimate and safe local access streets prioritising pedestrians and cyclists.	Shared surface with flush pedestrian footway strip	Shared Street Provision, cyclist shares carriageway with vehicles in low traffic speed and low traffic volume environment

Details in relation to typical cross sections for the street typologies outlined above are detailed on drawing 5150924 / HTR / 06 / DR / 0114 to 0115 submitted as part of this planning application.

4.4. Vehicle Permeability

Figure 4-3 below details a number of proposed vehicle connections within the Aderrig Phase 2 development street layout to facilitate appropriate vehicular connections onto the existing street network.

Figure 4-3 - Vehicle Connections



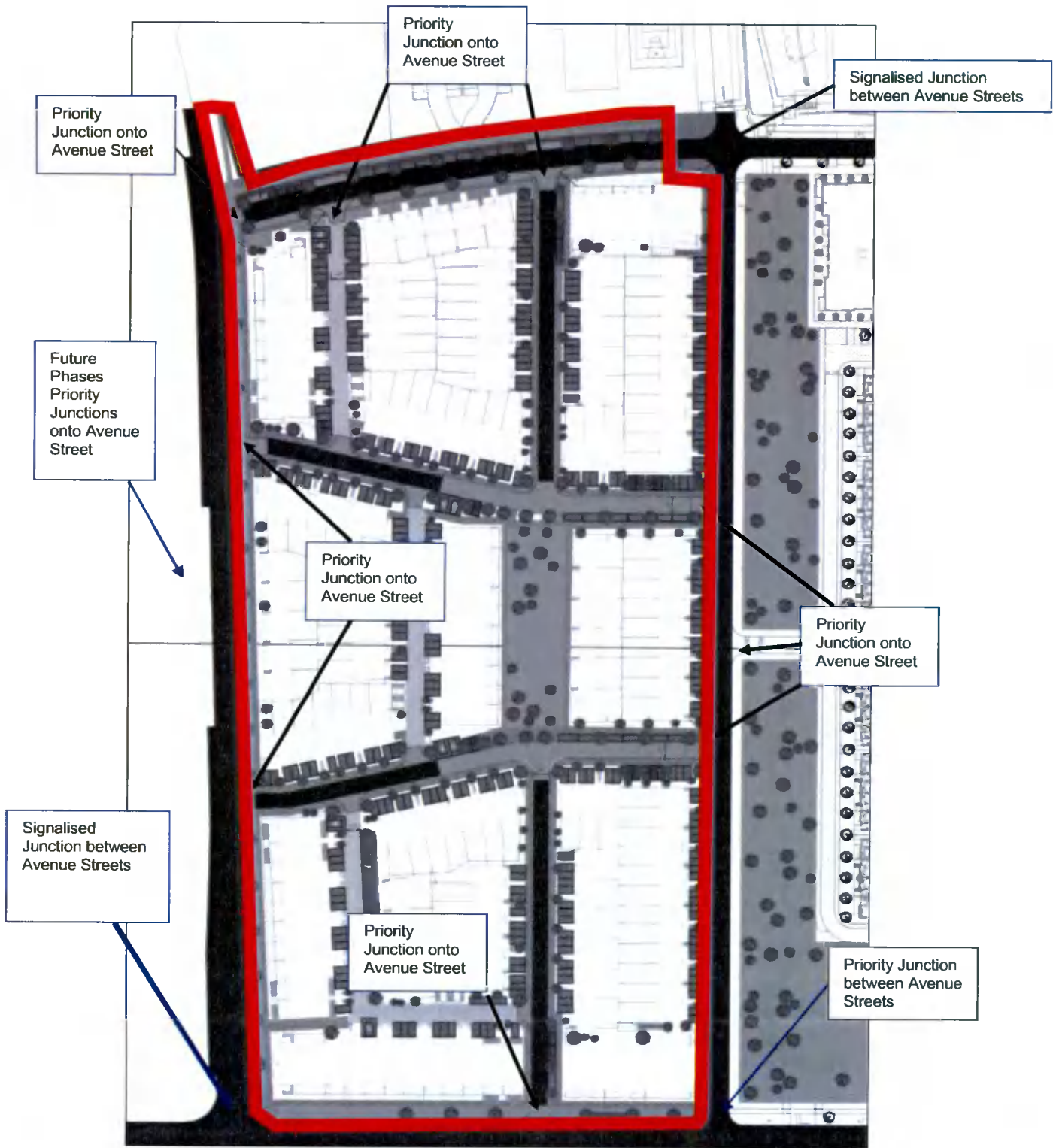
- Vehicle Connections
- Future Phase 3 Vehicle Connection

4.5. Junction Design

4.5.1. Access Junctions

The main accesses junctions into Aderrig Phase 2 Development are detailed on Figure 4-4 below.

Figure 4-4 - Junction Locations



4.5.2. Junction Radii

The junction radii have been selected based on the requirements of DMURS and the Adamstown Street Design Guide.

For junctions between and onto Avenue Streets the junction radii are proposed to be 6m. This allows for larger vehicles (refuse & emergency vehicles) to access the development without crossing into the opposing lane.

For internal development junctions the junction radii are proposed to be 4.5m. This allows for occasional large vehicles (refuse & emergency vehicles) to access the development while encroaching into the opposing lane due to the low speeds and low traffic flows on these streets.

Details in relation to the junction layouts as outlined above are detailed on drawing 5150924 / HTR / 06 / DR / 0104 to 0106 submitted as part of this planning application.

4.5.3. Junction Visibility

The visibility requirements for the priority junctions have been selected based on the requirements of DMURS.

For priority junctions onto Avenue Streets, visibility splays of 2.4m x 45m (for 50kph design speed) have been provided with visibility splays of 2.0m x 23m (for 30kph design speed) provided at all other junctions, as agreed with South Dublin County Council Transport Department.

The visibility requirements for the signalised junction is based on the requirements of TII document ref: DN-GEO-03044 - The Geometric Layout of Signal-Controlled Junctions and Signalised Roundabouts.

Details in relation to the junction visibility requirements as outlined above are detailed on drawings 5150924 / HTR / 06 / DR / 0107 to 0109.

5. Pedestrian and Cyclist Facilities

5.1. Pedestrian provision

The proposed pedestrian provision for Aderrig Phase 2 in the context of the Adamstown SDZ is detailed in Figure 5-1.

Figure 5-1 - Aderrig Phase 2 Pedestrian Provision



5.2. Cyclist Provision

The proposed Cyclist provision for Aderrig Phase 2 in the context of the Adamstown SDZ is detailed in Figure 5-2.

Figure 5-2 - Aderrig Phase 2 Cyclist Provision



- Existing Segregated Cycle Track
- - - Proposed Shared Street (Cyclist and Vehicles)
- · · Proposed Shared Path (Cyclist & pedestrian)

5.3. Pedestrian and Cyclist Connections

The provision of high-quality pedestrian and cyclist facilities and permeability within the development is central to the design principles adopted in relation to the Aderrig Phase 2 Development. The majority of the cyclist facilities will be integrated shared street facilities in line with the principles set out in DMURS.

Figure 5-3 below details proposed and potential pedestrian / cyclist connections to the streets network. A number of these connections are coincident with the vehicle connections as shown in Figure 4-3.

Figure 5-3 - Pedestrian & Cyclist Connections



5.4. External Roads Pedestrian & Cyclist Crossing Facilities

As part of Aderrig Phase 2 development, raised crossings are proposed on the priority T-junctions onto Avenue Streets in order to provide connectivity of the footpath and/or cycle path across these junctions. Toucan crossings are provided on all arms of the Signalised Junction to the north adjacent to Aderrig 1. Uncontrolled raised crossings are provided at the junctions across the northern, southern, eastern and western avenues.

This is detailed on drawings 5150924 / HTR / 06 / DR / 0104 to 0106.

5.5. Internal Roads Pedestrian Crossing Facilities

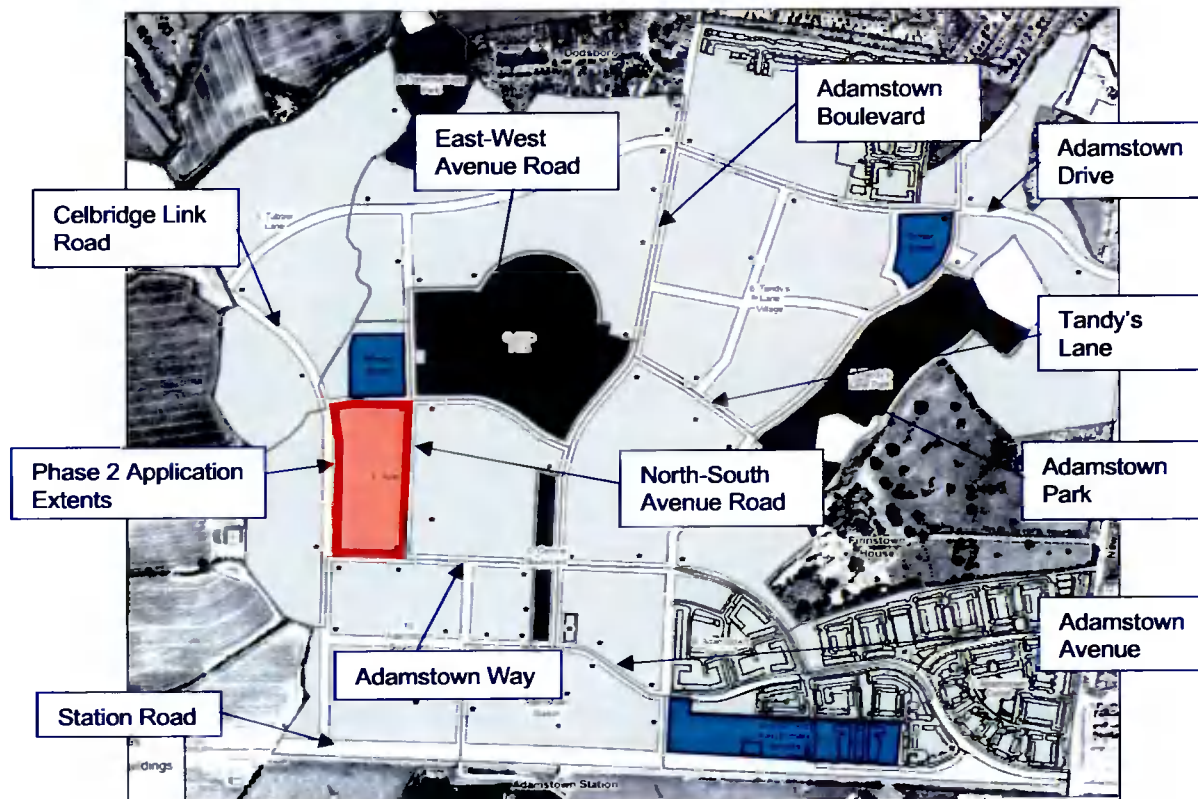
Drop kerbs will be provided at crossings across local street junctions and flush kerb crossings will be provided at crossings located on home zone streets and on raised tables provided on a number of local street junctions. The internal road junction layouts as detailed on drawing reference 5150924 / HTR / 06 / DR / 0104 to 0106 and on the architectural layout drawings.

The use of raised pedestrian table crossing points will have the benefit of providing both a convenient crossing point and traffic calming effect. The raised table pedestrian crossing design is based on the recommendations in DMURS and the Traffic Management Guidelines with a height of 75mm.

5.6. Pedestrian & Cyclist Connection to School Sites

The figure below details the school sites locations in related to the proposed development.

Figure 5-4 - Development Site and School Site Locations



The development is located directly south of the proposed primary school. On the development side of the East -West Avenue there is a 2.2m footpath while on the school side of the East -West Avenue

there is a 2m wide dual cycle track and 3m wide footpath to cater for additional footfall associated with school trips.

A signal-controlled toucan crossing provides a safe mean of crossing of the North-South Avenue Road/East-West Avenue Road signalised junction to access the school site.

The development provides an offline cycle path and footpath on the development side of Adamstown Way between Celbridge Link Road and North South Avenue that provides an onward offline cycle path to Adamstown Boulevard.

The development provides footpaths on both sides of the North-South Avenue Road between the East-West Avenue Road and Adamstown Way providing a safe facility from Adamstown Boulevard to the school site adjacent Arlie Park. This is further supplemented with the provision of the pedestrian and cycle facilities provided within Airlie Park.

The facilities noted above in tandem with the existing pedestrian and cyclist facilities on the existing road network will provide access to the school sites off Station Road and Adamstown Park.

6. Parking Provision

6.1. Car Parking

The table below details the maximum car parking provision required by Adamstown SDZ for the 227 no. unit development.

Table 6-1 - Car Parking

Type	No.	Adamstown SDZ Car Parking 2.4.27 - Table 2.12 Maximum Requirement	Adamstown SDZ Car Parking No. Maximum Provision
3 Bed House	95	2 per unit	190
4 Bed House	28	2 per unit	56
2 Bed Duplex	48	1.5 per unit	72
3 bed Duplex	56	2 per unit	112
TOTAL UNITS	227	TOTAL	430

The minimum parking requirement under Adamstown SDZ is 1 car parking space per unit, equating to a minimum of 227 No. car parking spaces.

The development provides 378 No. car parking spaces which includes 17No. spaces permitted along the Celbridge Link Road under SDZ17A/0009. Therefore, the development provides an additional 361 No. car parking spaces. Table 6-2 outlines how the spaces are allocated.

The number of car parking spaces provide is within the min -max car parking numbers permitted under the Adamstown SDZ and is appropriate for the location of the site.

This provision equates to approx. 1.7¹ car parking spaces per unit and would be an appropriate provision for this development and is in line with the Adamstown SDZ objective not to be car dominated.

Table 6-2 - Car Parking Allocation

Allocation	No. of car spaces
In curtilage	192
Off Curtilage	156
Visitor	22
Accessible bays	8
Total Spaces	378 ²
10% of off curtilage EV spaces	20 spaces

Further details of car parking is outlined on BKD drawing 6259-P-006 Parking Strategy.

50.8% of parking is provided as in-curtilage, this is below the maximum requirement of 60% as per section 2.4.22 of the Adamstown SDZ.

¹ Based on 378 No. spaces

² 378 No. car parking spaces 17No. of which are permitted along the Celbridge Link Road under SDZ17A/0009.

Car parking design allows for the provision of deeper perpendicular parking bays on street less than 6.0m wide to provide 6.0m clearance for manoeuvring into and out of the parking spaces. For 5.5m wide streets the perpendicular parking bay depth increases from 4.8 to 5.3m and for 5.0m wide streets the perpendicular parking bay depth increases from 4.8 to 5.8m.

6.2. Electric Vehicle Charging Provision

The development will provide ducting for all off-curtilage parking spaces to facilitate the future full provision of electric charging facilities for these spaces.

10% of the off-curtilage parking spaces will be provided with charging facilities in line with Section 11.4.3 of the SDCC Development Plan 2016-2022. A total of 20 spaces are provide with EV facilities as detailed on BKD drawing 6259-P-006 Parking Strategy.

6.3. Bicycle Parking

The table below details the minimum bicycle parking provision required by Adamstown SDZ for the XX no. unit development.

Table 6-3 - Bicycle Parking

Type	No.	Adamstown SDZ Bicycle Parking 2.4.29 - Table 2.13 Minimum Requirement	Adamstown SDZ Bicycle Parking No. Minimum Provision
3 Bed House	95	1 per unit	Parking provided within the Property
4 Bed House	28	1 per unit	Parking provided within the Property
2 Bed Duplex	48	1 per unit	48
3 bed Duplex	56	1 per unit	56
TOTAL UNITS	227	TOTAL	104

The development provides 168 No. secure bicycle parking spaces for the residents of the duplexes, this provision is in excess of that required by Adamstown SDZ, as noted in the table above, and promotes use of cycling as a transport mode. The location of the secure sheltered facilities is detailed on BKD drawing 6259-P-006 Parking Strategy.

7. Access Arrangement for Large Vehicles

7.1. Emergency & Refuse Vehicles

The vehicle tracking for the refuse vehicle falls in line with the requirements for the emergency vehicles. The permeable nature of the layout means that there are no cul-de-sac streets allowing for large vehicles (emergency and refuse) to safely manoeuvre through the development. Drawings 5150924 / HTR / 06 / DR / 0110 to 0113 details the refuse vehicle tracking manoeuvres within the development.

8. Traffic Signs & Road Markings

All traffic signs, including information, regulatory and warning signs will be designed in accordance with the Traffic Signs Manual TSM & Slow Zones Advice Note. The location of traffic signs, mounting heights and orientation will be designed in accordance with the Traffic Signs Manual. Road markings shall be designed in accordance with Chapter 7 of the Traffic Signs Manual.

Proposed signage and road marking at the access junctions is detailed on drawings 5150924 / HTR / 06 / DR / 0104 to 0106.

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