

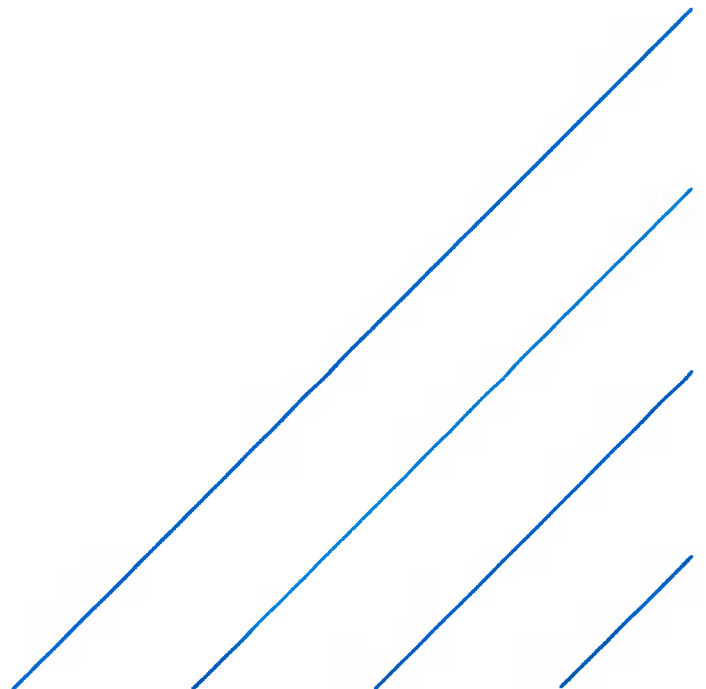


Adamstown Block G Amendment

Roads Engineering Report

Quintain Ireland Ltd

October 2021



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This document has 24 pages including the cover.

Document history

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Project	Adamstown Block G Amendment
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1. Introduction and Background

1.1. Introduction

This report details the design of the streets associated with the Adamstown District Centre Block G development in Adamstown.

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

- Street Design Requirements
- Pedestrian and Cyclist Facilities
- Parking Provision
- Access Arrangement for Vehicles
- Road Construction Details
- Traffic Signs & Road Markings

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. Proposed Development Description

The proposed development comprises the following:

- Repositioning of landscaped communal courtyard of Block G from first floor level to ground floor level due to removal of podium parking at level 0, and the consequential relocation of 83no. car parking spaces to within the Block F car park and to on-street locations immediately adjacent to Block G, including ancillary site development and landscape works.
- The introduction of 9no. ground floor units, facilitated by the removal of the podium from the core.
- A minor reduction to the overall provision of residential units from 185 to 184no. apartment units.
- The provision of an additional unit and changes to the unit mix on Level 1.
- Adjustments to the location of the bicycle, plant, and waste stores serving Block G.
- Adjustments to Block G2 consisting of a minor reduction to the footprint of the Block by 0.6m, the removal of setback to the North (level 5) and adjustments to the Southern gable.

This application seeks permission for these minor design changes to the development permitted under SDCC Reg Ref SDZ21A/0007.

1.3. 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
- 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	Rev	Title of Drawing
5150924 / HTR / 07 / DR / 0000	B	COVER SHEET
5150924 / HTR / 07 / DR / 0001	B	SITE LOCATION MAP
5150924 / HTR / 07 / DR / 0100	C	STREET TYPOLOGY
5150924 / HTR / 07 / DR / 0101	C	ROAD LAYOUT
5150924 / HTR / 07 / DR / 0102	C	JUNCTION - LOCATION PLAN
5150924 / HTR / 07 / DR / 0103	C	JUNCTION LAYOUT
5150924 / HTR / 07 / DR / 0104	B	JUNCTION VISIBILITY
5150924 / HTR / 07 / DR / 0105	C	REFUSE VEHICLE TRACKING
5150924 / HTR / 07 / DR / 0106	C	FIRE TENDER VEHICLE TRACKING – PUMP APPLIANCE
5150924 / HTR / 07 / DR / 0108	B	CROSS SECTIONS
5150924 / HTR / 07 / DR / 0109	C	TOUCAN CROSSING LAYOUT
5150924 / HTR / 07 / DR / 0110	B	TRAFFIC SIGNS TYPICAL DETAILS
5150924 / HTR / 07 / DR / 0111	B	TABLETOP RAMP TYPICAL DETAILS
5150924 / HTR / 07 / DR / 0112	C	TYPICAL ROAD SECTIONS AND CONSTRUCTION DETAILS
5150924 / HTR / 07 / DR / 0113	C	FIRE TENDER VEHICLE TRACKING – HIGH REACH APPLIANCE
5150924 / HTR / 07 / DR / 0114	A	PARKING ALLOCATION LAYOUT

3. Street Design Requirements

3.1. 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.

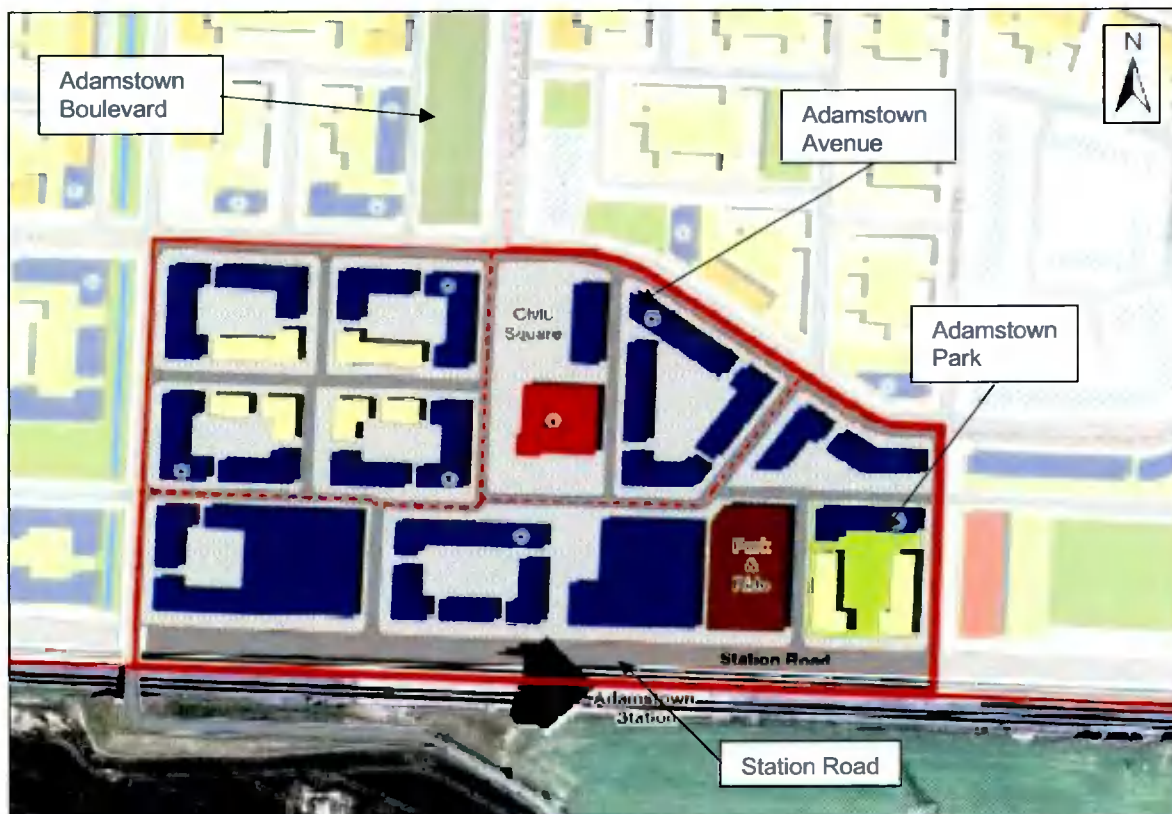
The street layout has been developed with reference to the following design principals:

- Connectivity
- Permeability
- Legibility
- Safety
- Accessibility

The provision of connections for the entire Adamstown District Centre Development onto the adjacent road network, Adamstown Avenue, Station Road & Adamstown Park, 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 Adamstown District Centre Access and Movement diagram detailed in Adamstown SDZ Section 3 Development and Amenities as shown in Figure 3-1 below.

Figure 3-1 - Adamstown District Centre Access & Movement



3.2. Compliance with DMURS

The street layout is designed with specific reference to DMURS design guidance, incorporating appropriate cross reference to the Nation 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.

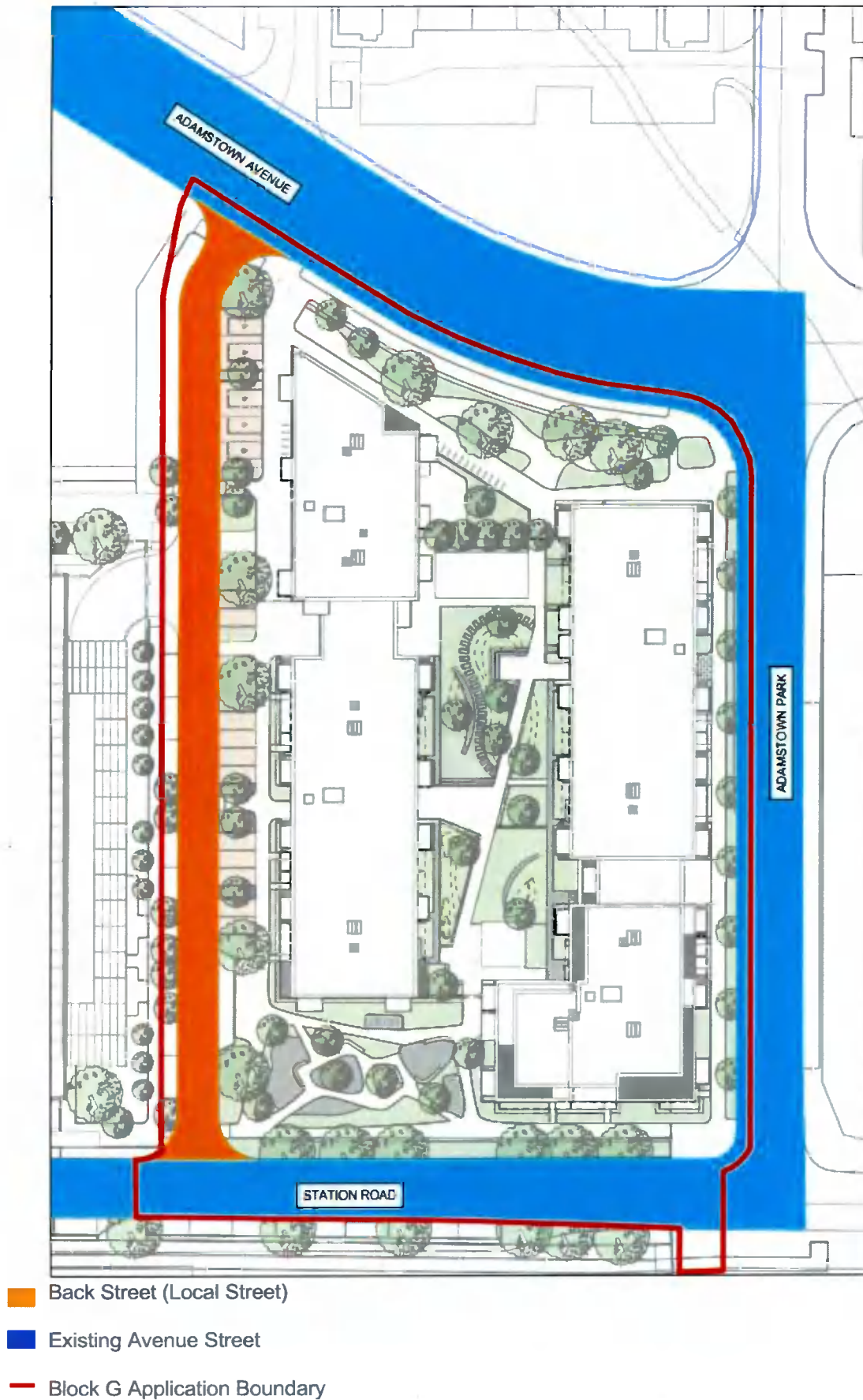
- Horizontal and vertical alignment designed to 30km/h
- Carriageway widths in line with DMURS requirement for street type.
- Constrained junction radii in line with DMURS requirement
- Raised Toucan Crossings at Adamstown Station
- Raised Crossing across External and Internal Road Junctions
- Provision of Raised Tables at Internal Road Junctions

A Road Safety Audit (ref 5150924DG0091_Adamstown Block G Amendment – RSA Stage 1) 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.

3.3. Internal Street Design

The street layout for the Adamstown District Centre development consists of a single street typology consistent with DMURS and the Adamstown Street design guide as outlined below and detailed in Figure 3-2:

Figure 3-2 - Adamstown District Centre Block G Street Typology and Layout



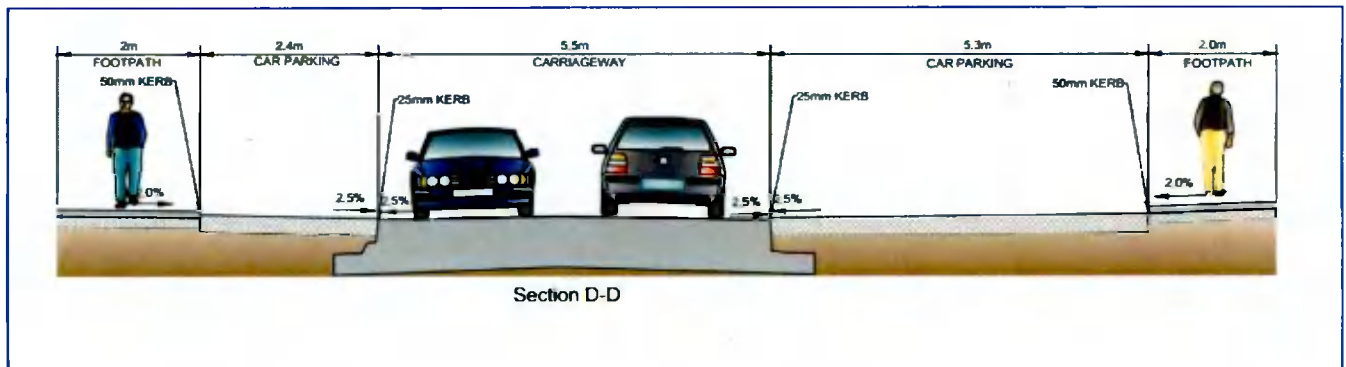
The design criteria for the street typologies are detailed below in Table 3-1.

Table 3-1 - Design Criteria

Design Criteria	Back Street (Local Street)
DMURS Recommended Design Speed	10-30km/h
Adopted Design Speed	30km/h
Minimum Horizontal Radius	26m
Maximum Gradient	5%
Minimum Gradient	0.5%
Carriageway Width	5.5m
Footpath	2.0-3.6m

The cross section for "Western Street" is shown in Atkins drawing 5150924/HTR/07/DR/0108 – Section DD an extract of which is shown in Figure 3-3

Figure 3-3 - Cross Section of "Western Street"



The cross section of Western Street has been established through the grant of previous permission as shown in Table 3-2 including the recent grant of permission for Block G under SDZ21A/0007.

As shown in Figure 3-3 there is sufficient drop pack from the perpendicular car parking spaces (5.3m depth) with the road width (5.5m) to allow for a 6metre drop back. For reference the dimensions of car parking spaces are 5.3m x 2.5m).

Table 3-2 - Previous Planning History detailing road cross section

Application Name	Planning Reference	Planning Status	Construction Status	Roads Drawing No.	Established Road width
Adamstown Station Phase 1 (Block B, E and F)	SDZ20A/0008	Granted 17/09/2020	– Construction to be commenced 2021	5150924/HTR/03/DR/0101 Rev C (planning application) Rev D (Further Information)	5m
Block B & E Amendment	SDZ20A/0016	Granted 30/11/2020	– Construction to be commenced 2021	5150924/HTR/03/DR/0101 Rev E	5.5m
Block F Amendment	SDZ20A/0018	Granted 17/02/2021	–	5150924/HTR/03/DR/0101 Rev F	5.5m
Block G	SDZ21A/0007	Granted 13/09/2021		5150924/HTR/07/0101 Rev B	5.5m

As shown above, the principle of a 5.5metre cross section carriageway for this back street has been firmly established by previously granted permissions. The adopted carriageway typology is also consistent with the SDZ Planning Scheme and Adamstown Street Design Guidance.

The Adamstown SDZ Planning Scheme provides the basis for defining road and street typologies within the individual tiles and access the SDZ masterplan area.

According to Section 2.3 (vii) Road / Street Width defines a back street as – *these are local streets that provide access to and circulation within the individual neighbourhood, however, permeability may be filtered to reduce traffic flows such as via a turning restrictions or vehicular cul-de-sacs. The character of these streets will be defined by a wide range of design measure that passively calm traffic.*

The road / street typologies can be seen in the SDZ extracts Figure 3-4.

Figure 3-4 - SDZ Planning Scheme - Station Tile layout



Further detail associated with the street typologies and the provision of cyclist and pedestrian facilities are as outlined below in Table 3-3

Table 3-3 - Street Typology

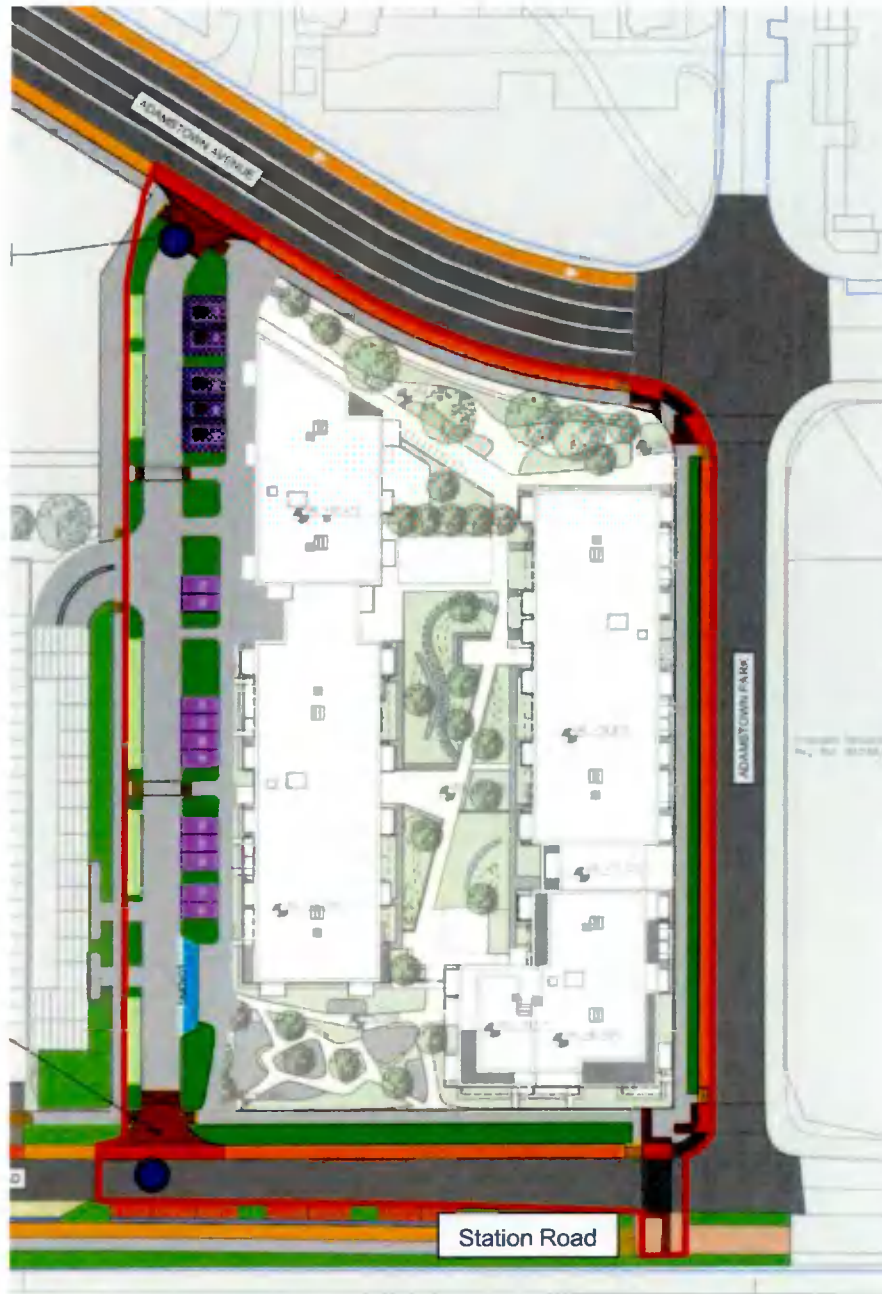
Typology	Description	Pedestrian Provision	Cyclist Provision
Back Street (Local Street)	A local street will provide connectivity more locally within the development and reinforce permeability.	Footpaths both sides	Shared Street Provision, cyclist shares carriageway with vehicles in low traffic speed and low traffic volume environment
Existing Avenue Street	Adamstown Avenue	Footpaths both sides	Cycle Lane on northern side & cycle path on southern side
Existing Avenue Street	Station Road	Footpaths both sides	Cycle Lanes on both sides
Existing Avenue Street	Adamstown Park	Footpaths both sides	Cycle Lanes on development side

Details in relation to typical cross sections for the street typology outlined above are detailed on drawing 5150924/HTR/07/DR/0108 submitted as part of this planning application.

3.4. Vehicle Permeability

Figure 3-5 below details a number of proposed vehicle connections within the Adamstown District Centre Block G Development street layout to facilitate appropriate vehicular connections onto the existing street network. These connections align with those provided for the Adamstown District Centre Phase 1 Development.

Figure 3-5 - Adamstown District Centre Block G Vehicle Connections



- Vehicle Connections
- Block G Application Boundary

The cross section of Western Street has been established through the grant of previous permission as shown in Table 3-2 including the recent grant of permission for Block G under SDZ21A/0007.

3.5. Junction Design

3.5.1. Access Junctions

The main accesses junctions into the Adamstown District Centre Block G Development are detailed on Figure 3-6. These junctions align with those provided for the Adamstown District Centre Phase 1 Development.

Figure 3-6 - Adamstown District Centre Block G Junction Locations



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

For junctions onto Adamstown Avenue & Station Road 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/07/DR/0102, 5150924/HTR/07/DR/0103 submitted as part of this planning application.

As noted elsewhere in this report the cross section of Western Street has been established through the grant of previous permission as shown in Table 3-2 including the recent grant of permission for Block G under SDZ21A/0007.

3.5.2. Junction Visibility

The visibility requirements for the priority junctions have been selected based on the requirements of DMURS. For priority junctions onto Adamstown Avenue & Station Road a visibility splays of 2.4m x 49m (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.

Details in relation to the junction visibility requirements as outlined above are detailed on drawings 5150924/HTR/07/DR/0104 submitted as part of this planning application.

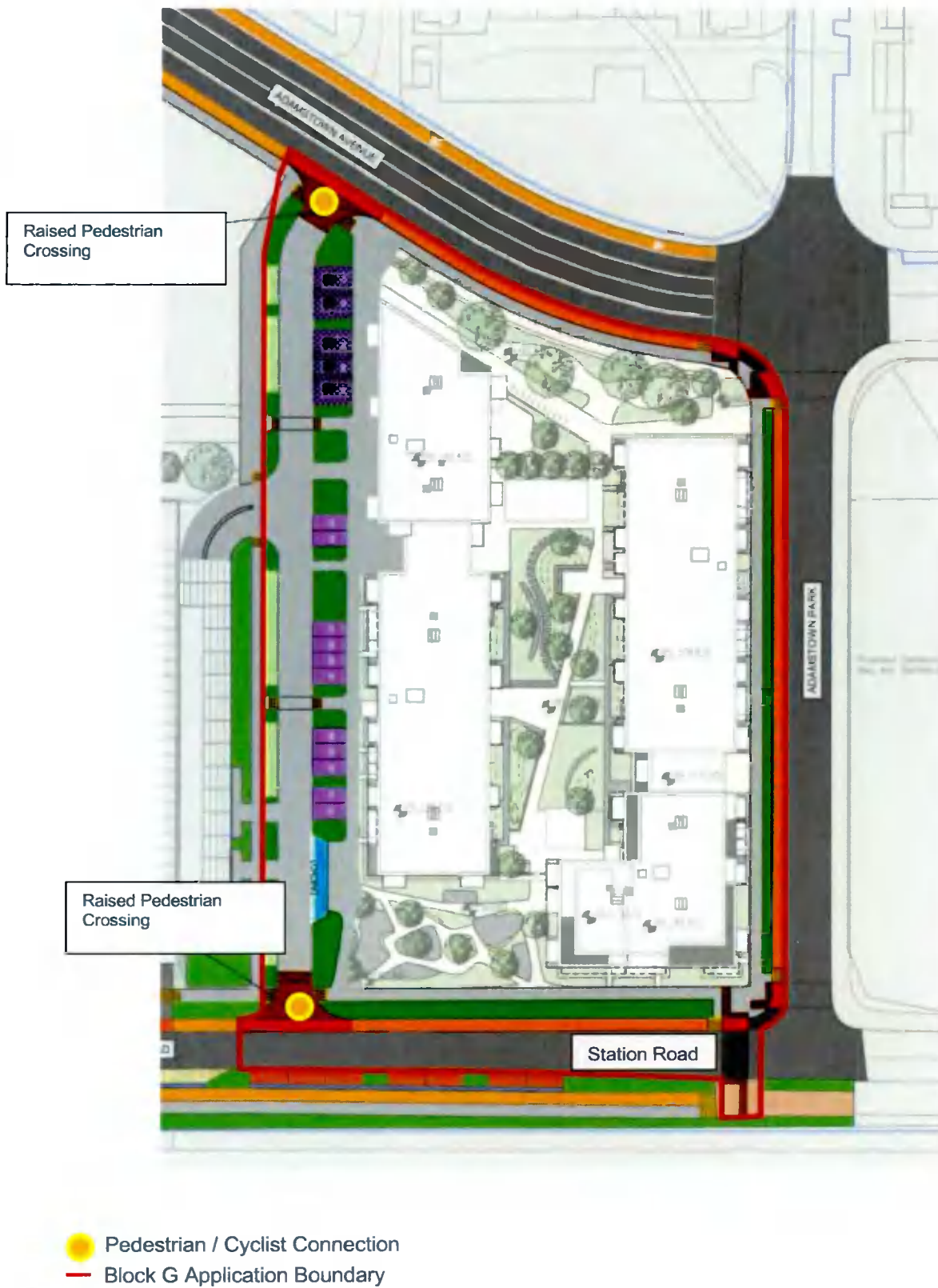
4. Pedestrian and Cyclist Facilities

4.1. 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 Adamstown District Centre Phase 1 Development. The cyclist facilities on the internal streets will be integrated shared street facilities in line with the principles set out in DMURS. The cyclist facilities on the external streets will be a mix of segregated cycle paths and cycle lanes as outlined in section 3.3.

Figure 4-1 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 3-5.

Figure 4-1 - Adamstown District Centre Block G Pedestrian & Cyclist Connections



4.2. External Roads Pedestrian & Cyclist Crossing Facilities

As part of the Adamstown District Centre Phase 1 development raised crossings are proposed on the priority T-junctions off Adamstown Avenue & Station Road in order to provide connectivity of the proposed footpaths and/or cycle paths across these junctions. This is detailed on drawings 5150924/HTR/07/DR/0102 & 103.

To provide connectivity from Adamstown Park onto the southern side of Station Road a Toucan Crossing is provided across Station Road at the location indicated on drawing 5150924/HTR/07/0101.

4.3. Internal Roads Pedestrian Crossing Facilities

Raised tables/raised crossing are provided on the local street junctions adjacent to Block G. Two drop kerb crossings are provided on the local streets to provide additional crossing points for pedestrians as shown on drawing reference 5150924/HTR/07/DR/0101.

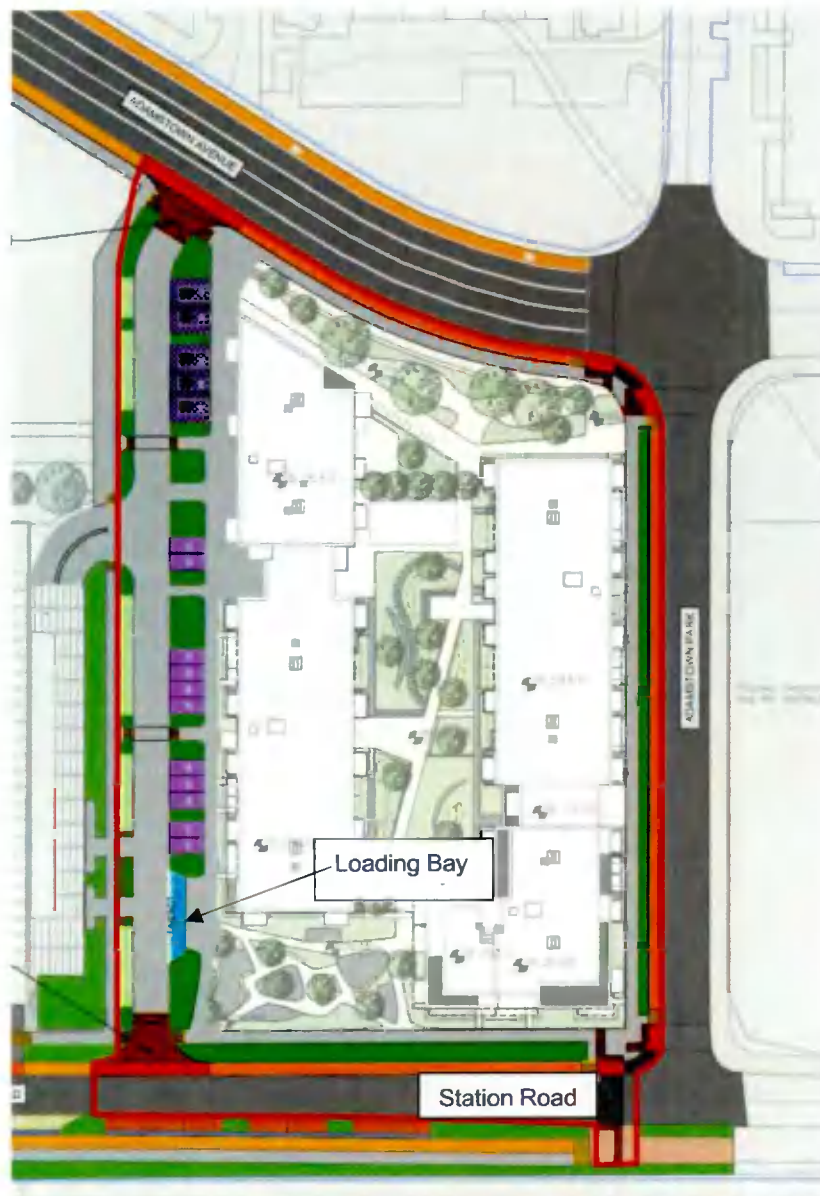
The use of raised pedestrian table crossing points will have the benefit of providing both a convenient crossing point and traffic calming effect. The raised table pedestrian crossing design is based on the recommendations in DMURS and the Traffic Management Guidelines with a height of 75mm.

5. Access Arrangement for Large Vehicles

The site layout has been designed taking cognisance of the access requirements for refuse vehicles and emergency services within the site. Drawings 5150924/HTR/07/DR/0105, 0106 details the refuse vehicle and emergency service vehicle (pumping appliance & high reach appliance) tracking manoeuvres within the development.

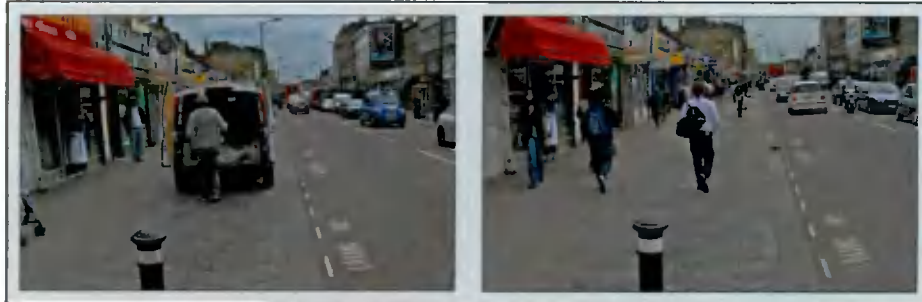
A loading bay is provided on the local streets adjacent to Block G as indicated in figure 5-1 below.

Figure 5-1 - Adamstown District Centre Block G Loading Bay Location



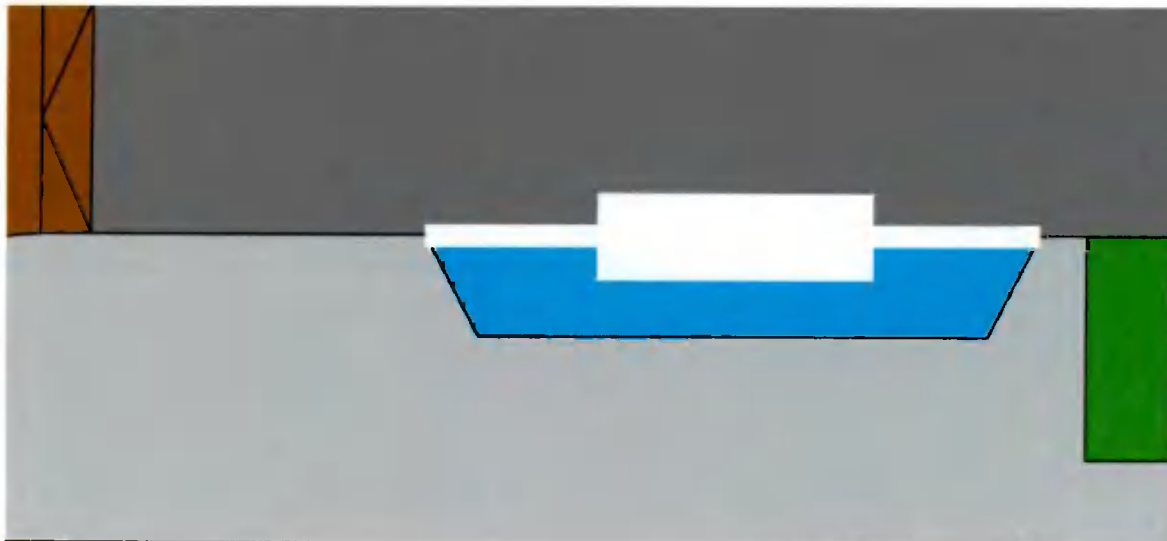
The loading bays will take the form recommended in DMURS as detailed in figure 5-2, the loading bay will revert to pedestrian space when not in use.

Figure 5-2 - DMURS Loading Bay



The loading bay layout is provided as detailed in figure 5-3, this layout provides adequate clear space between the building and loading bay for pedestrians to pass when the loading bay is in operation.

Figure 5-3 - Loading Bay Layout



6. Road Construction Details

The minimum road construction details are detailed below and on Drawings

- 5150924/HTR/07/DR/0111.
- 5150924/HTR/07/DR/0112

Local Street

- 40mm surface course - PSMA 10 65 / 105 Des In Accordance with CI942 TII SRW
- 60mm binder course - AC20 Dense Bin 40 / 60 Des To IS EN13108-1
- 80mm base course - AC32 Dense Base 40 / 60 des to IS EN1310-1
- 150mm sub-base course- Granular Material Type B to Clause 804
- Capping as Required

Parking

- 80mm paving - 208x173x80mm Concrete Block Paviers with 3 - 6mm joints
- 40mm laying course - Crushed Rock 3mm to dust in accordance with BS 7533-7
- 100mm base course - C25 / 30 Concrete to IS EN206-1
- 150mm sub-base course - Granular Material Type B to Clause 804
- Capping as Required

Footpath

- 40mm paving - 400x300x40mm Concrete Flags with 3 - 6mm joints
- 40mm laying course - Crushed Rock 3mm to dust in accordance with BS 7533-7
- 100mm base course - C25 / 30 Concrete to IS EN206-1
- 100mm sub-base course - Granular Material Type B to Clause 804

Cyclepath

- 25mm surface course - PSMA 10 65 / 105 Des In Accordance with CI942 TII SRW
- 50mm binder course - AC20 Dense Bin 40 / 60 Des To IS EN13108-1
- 150mm sub-base course - Granular Material Type B to Clause 804

Buffer

- 100mm paving – In-situ Concrete C25 / C30 Concrete to IS EN206-1 (Exposed Aggregate Finish)
- 100mm sub-base course - Granular Material Type B to Clause 804
- Capping as Required

Raised Crossing / Raised Table

- 40mm surface course - PSMA 10 65 / 105 Des In Accordance with CI942 TII SRW (Natural Red Aggregate on Bus Lane)
- 60mm binder course - AC20 Dense Bin 40 / 60 Des To IS EN13108-1
- 80mm base course - AC32 Dense Base 40 / 60 des to IS EN1310-1

- 150mm sub-base course- Granular Material Type B to Clause 804
- Capping as Required

7. 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/07/DR/0110.

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