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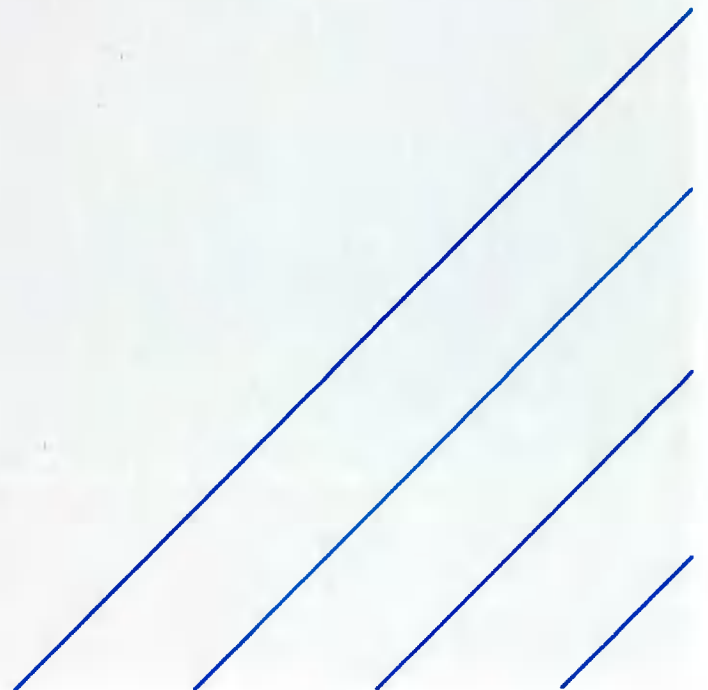
Member of the SNC-Lavalin Group

# Adamstown District Centre Block ACD

Roads Design Report

Quintain Developments Ireland Ltd

Spring 2022



## Notice

This document and its contents have been prepared and are intended solely as information for Quintain Developments Ireland Ltd and use in relation to the proposed Adamstown District Centre Block ACD development in Adamstown.

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This document has 25 pages including the cover.

## Document history

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## Client signoff

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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 ACD 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 facilities;
- Access Arrangement for Vehicles;
- Road Construction Details; and
- Traffic Signs & Road Markings.

The proposed design has been developed collaboratively with the wider Design Team as well as 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 consists of:

- A development to be constructed in 3no. blocks (known as Block A,C and D) ranging in height from 2 to 9 storeys including an ancillary residents Pavilion Amenity Building;
- 436no. apartments comprising 9no. studio units, 204no. 1-bedroom units, 213no. 2-bedroom units and 10no. 3-bedroom unit;
- Communal open space provided at podium and ground levels;
- 220no. car parking spaces are to be provided in a mixture of on-street parking, podium and within the already permitted Block F multi-storey car park; and
- The provision of 526no. bicycle parking spaces provided through stacked (416no. spaces) and Sheffield (110no. spaces) bicycle parking spaces.

The development also includes the provision of all ancillary site development and landscape works.

## 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; and
- Slow Zones Advice Note 2016.

## 2. Design Deliverables – Drawing Content

Table 2-1 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 / 08 / DR / 0000		COVER SHEET
5150924 / HTR / 08 / DR / 0001		SITE LOCATION MAP
5150924 / HTR / 08 / DR / 0100		STREET TYPOLOGY
5150924 / HTR / 08 / DR / 0101		ROAD LAYOUT
5150924 / HTR / 08 / DR / 0102		JUNCTION LAYOUT PLAN
5150924 / HTR / 08 / DR / 0103		JUNCTION LAYOUT
5150924 / HTR / 08 / DR / 0104		JUNCTION VISIBILITY
5150924 / HTR / 08 / DR / 0105		VEHICLE TRACKING – FIRE
5150924 / HTR / 08 / DR / 0106		VEHICLE TRACKING – REFUSE & HIAB
5150924 / HTR / 08 / DR / 0107		CROSS SECTION
5150924 / HTR / 08 / DR / 0108		TABLE TOP RAMP TYPICAL DETAILS
5150924 / HTR / 08 / DR / 0109		TRAFFIC SIGNS TYPICAL DETAILS
5150924 / HTR / 08 / DR / 0110		CAR PARKING
5150924 / HTR / 08 / DR / 0111		VEHICLE TRACKING – UNDERCROFT



### 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 0 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.

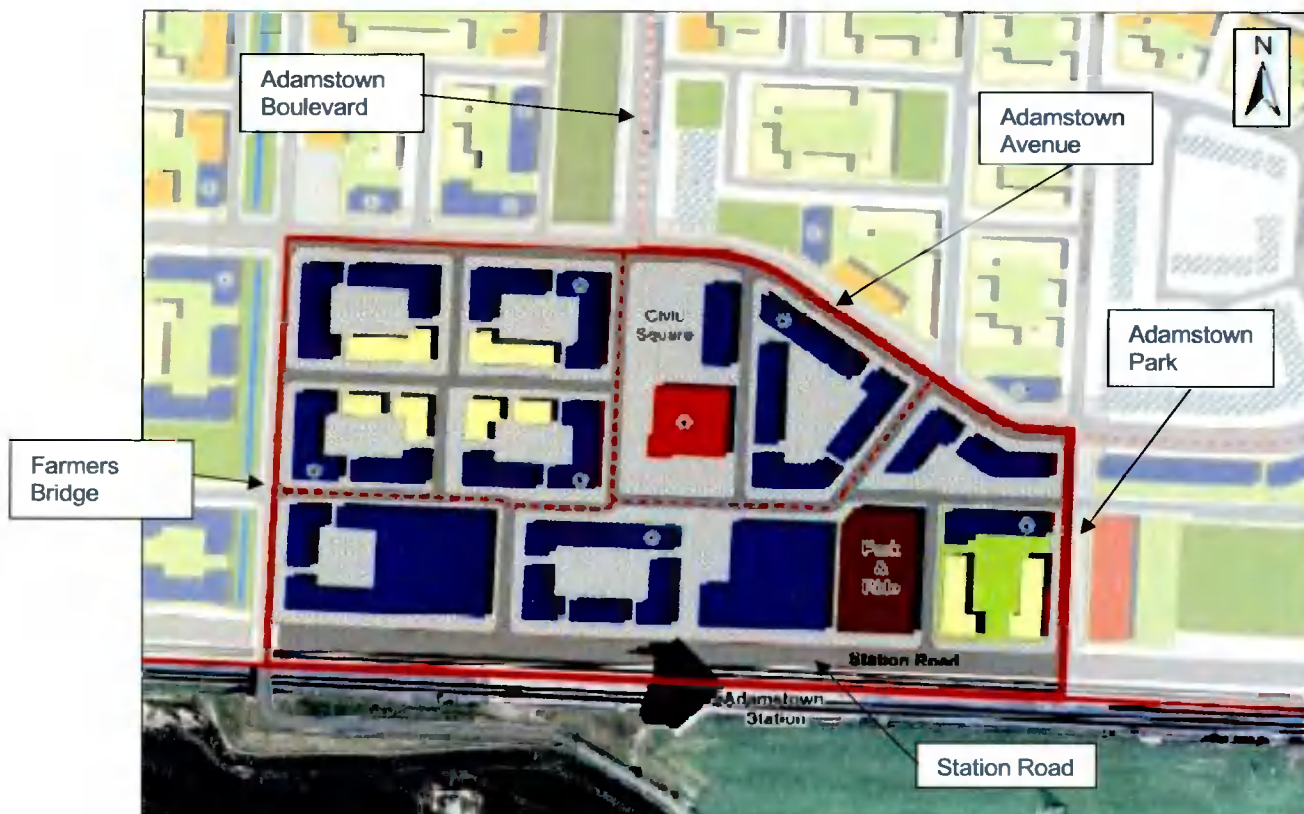
The street layout has been development with reference to the following design principals:

- Connectivity;
- Permeability;
- Legibility;
- Safety; and
- 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 Indicative Layout diagram detailed in Adamstown SDZ Section 3 Development and Amenities as shown in Figure 3-1.

**Figure 3-1 - Adamstown District Centre Indicative Layout**



### 3.2. 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.

The proposal has been developed to take account of the following elements DMURS as shown in Table 3-1.

**Table 3-1 - DMURS Compliance Criteria**

	DMURS Reference
Street networks	Chapter 3
Integrated Street Networks	Section 3.1
Movement and Place	Section 3.2
Permeability	Section 3.3
Street Design	Chapter 4
Movement, Place and Speed	Section 4.1
Streetscape	Section 4.2
Pedestrian and Cyclists Environment	Section 4.3
Carriageway Conditions	Section 4.4

### 3.3. Street Networks

The development integrates with the existing physical and social infrastructure in Adamstown SDZ to provide a cohesive and interconnected network of high quality streets as recommend in DMURS section 3.1 Integrated Street Networks.

DMURS section 3.2 Movement and Place recommends that a street hierarchy is used to understand the correct approach to take in relation to movement and place function.

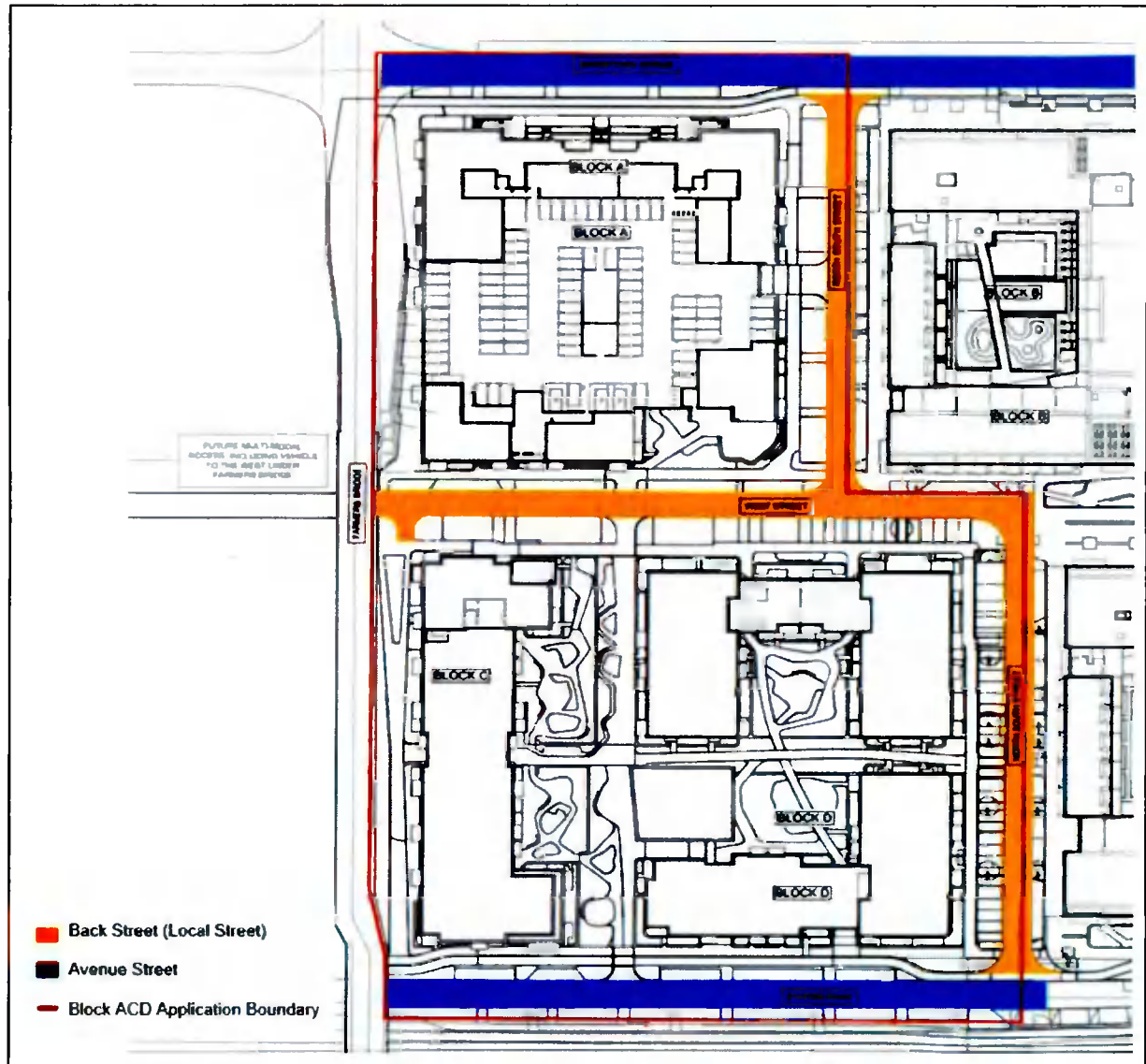
The street typology for the Adamstown District Centre ACD development consists of a single street typology, a Back Street, consistent with DMURS and the Adamstown Street design guide as outlined below and detailed in Figure 3-2. Full details are shown in Atkins drawings 5150924/HTR/10/DR/0100.

As shown in Figure 3-2 the Back Street, known as West Street, connects into an existing network of granted local streets, namely, North-South Street, that further connects to a series of Avenues to the north, Adamstown Avenue and to the south Station Road.

To the north of the development site Block A fronts on Adamstown Avenue and to the south of the development Block C and Block D front onto Station Road.

It should be noted that there is provision for a future connection to the at the end of west street under the Farmers Bridge to provide a multi-modal, including vehicle connections to the Boulevard Tile in accordance with the access strategy in the SDZ.

**Figure 3-2 - Adamstown District Centre Block ACD Street Typology**



The design criteria for the above street typologies are detailed below in Table 3-2.

**Table 3-2 - Design Criteria**

Design Criteria	Back Street (Local Street)	Avenue
DMURS Recommended Design Speed	10-30km/h	30-50km/h
Adopted Design Speed	30km/h	50km/h
Minimum Horizontal Radius	26m	N/A
Maximum Gradient	5%	5%
Minimum Gradient	0.5%	0.5%
Carriageway Width	5.5m	Varies (6m to 7m)
Footpath	2.0-3.6m	Varies

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

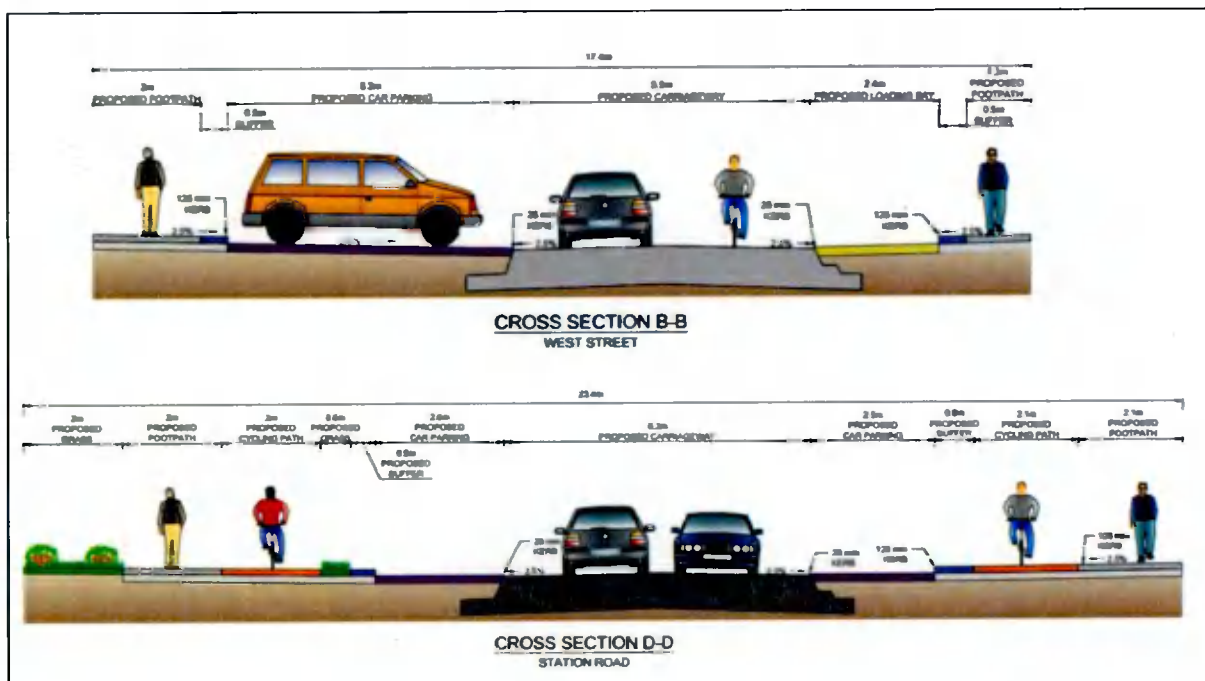


**Table 3-3 - Street Typology characteristics**

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

Details in relation to typical cross sections for the street typology outlined above are detailed on Atkins drawing 5150924/HTR/10/DR/0107 submitted as part of this planning application. An extract, showing West Street and Station Road is shown on Figure 3-3.

**Figure 3-3 - Cross Sections**



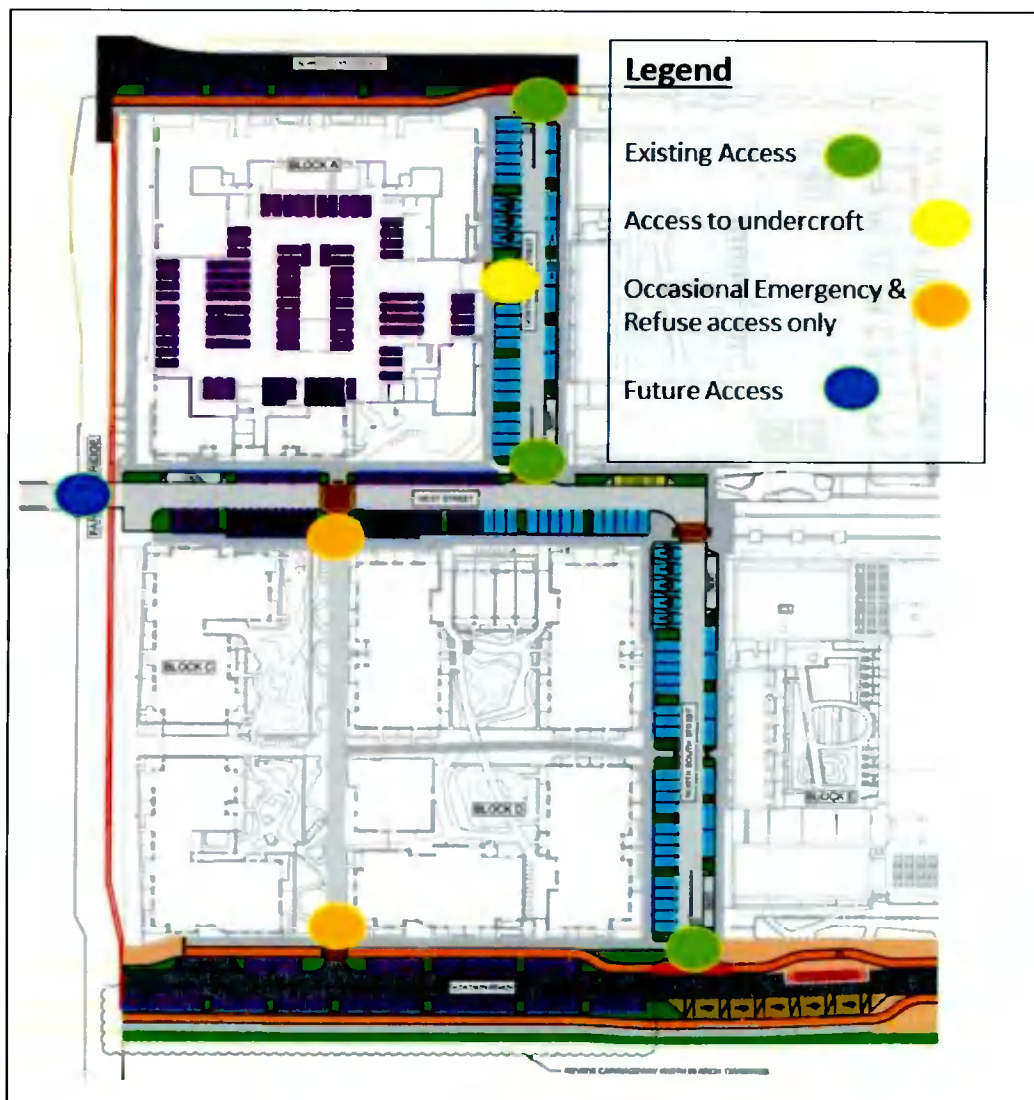
### 3.4. Vehicle Permeability

Figure 3-4 details a number of proposed vehicle connections to and from Block ACD development area that connects into a network of previously granted streets and connections. The proposed new connections are:

- A vehicle access to the undercroft area is proposed;
- Occasional access for refuse and emergency vehicle between blocks C & D. This access will be controlled and managed by the Management Company; and
- Future connection via West Street under the Farmers Bridge to Boulevard Tile.

To the north there is an access for North-South Street to Adamstown Avenue and to the south via North-south Street to Station Road. This provides connections to the Adamstown high capacity road network for users of the development. These connections align with those provided for the Adamstown District Centre Phase 1 Development.

**Figure 3-4 - Adamstown District Centre Block ACD Vehicle Access Points**

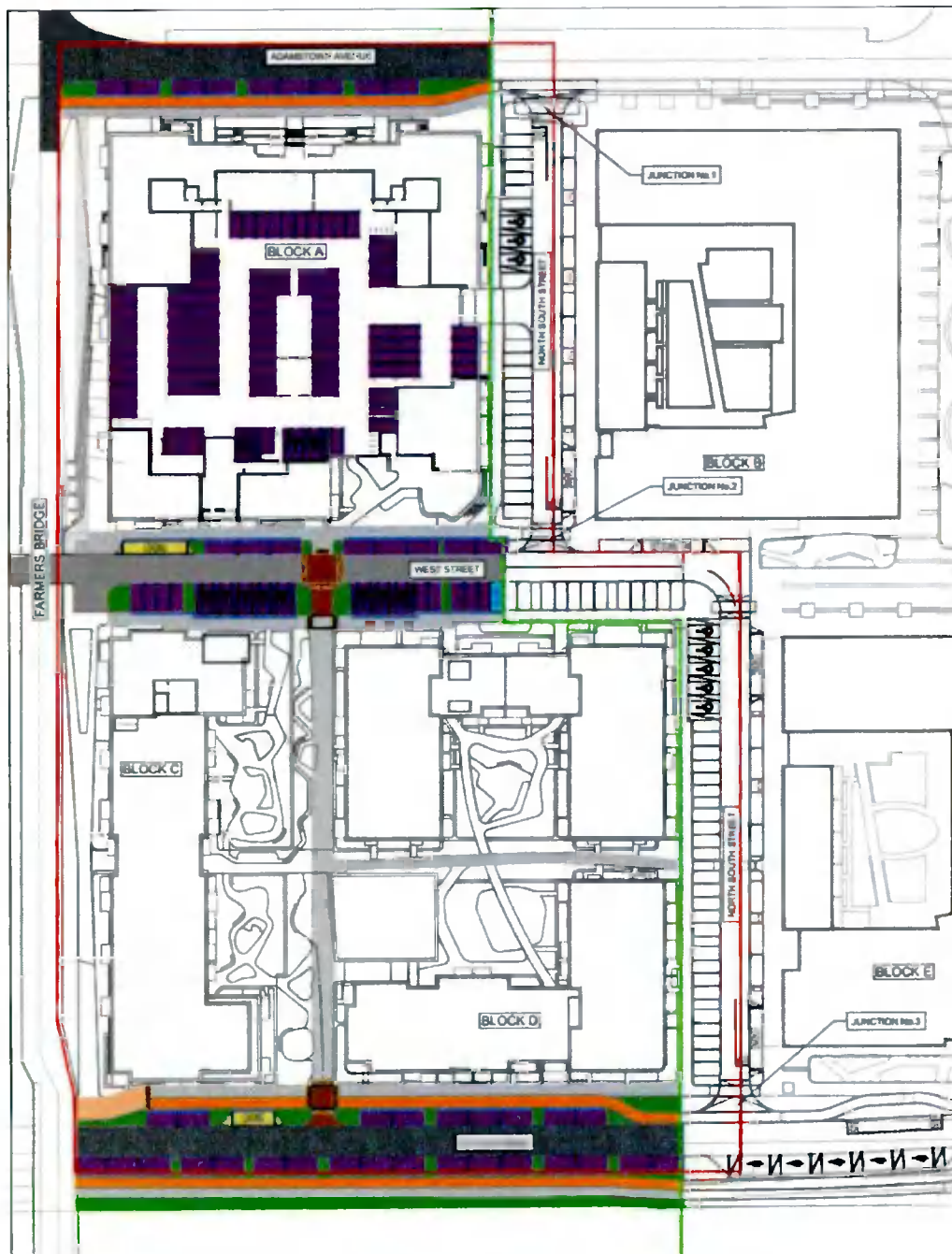


### 3.5. Junction Design

#### 3.5.1. Access Junctions

The main accesses junctions into the Adamstown District Centre Block ACD Development are detailed on Figure 3-5. These junctions are those previously granted for Adamson District Centre Phase 1 application.

Figure 3-5 - Adamstown District Centre Block ACD Junction Locations Junction Radii





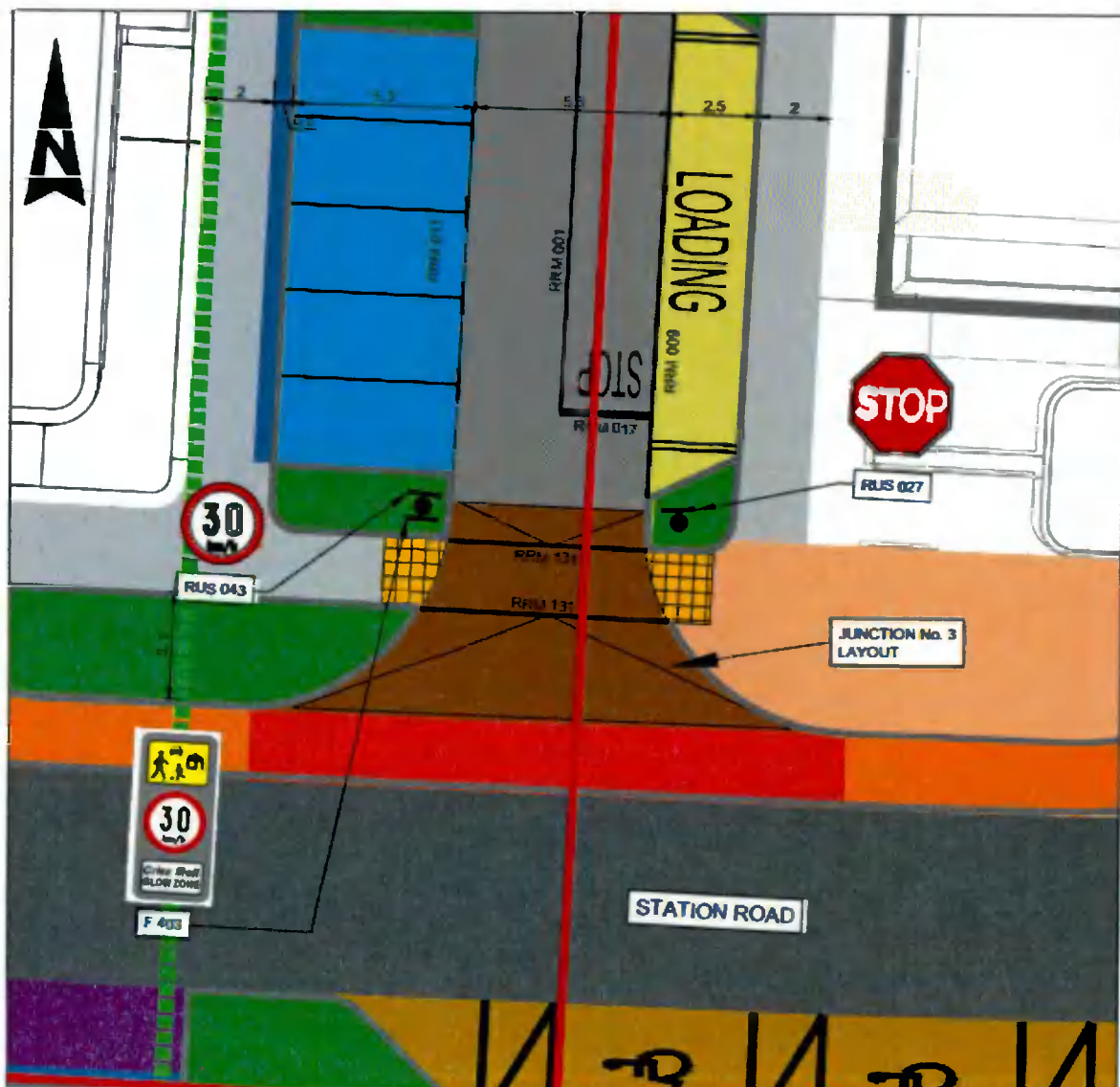
For reference purposes the junction radii have been selected based on the requirements of DMURS and the Adamstown Street Design Guide.

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/10DR/0102 – 0103 submitted as part of this planning application. An extract showing the junction layout where North-South street meets Station Road is shown in Figure 3-6.

Figure 3-6 - Junction layout - North-South Street & Station Road



### 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.

As noted in DMURS Section 4.4.5 *Visibility Splays*

*In general, junction visibility splays should be kept clear of obstructions, however, objects that would not be large enough to wholly obscure a vehicle, pedestrian or cyclist may be acceptable providing their impact on the overall visibility envelope is not significant. Slim objects such as signs, public lighting columns and street trees may be provided.*

DMURS goes onto state that:

*Designers may have concerns about reducing visibility splays at junctions that carry higher volumes of traffic at more moderate speeds. This issue was addressed further in respect of research carried for the UK Manual for Streets 2 (2010). This included 'busy radial roads', many of which included bus routes within a variety of 20, 30 and 40 mph environments. The research concluded that there is no evidence that reduced SSDs are directly associated with increased collision risk, as shown on a variety of street types at a variety of speeds. The Manual for Streets 2 (2010) also refers to research where it was found that higher cycle collision rates occurred at T-Junctions with greater visibility. The research concluded that this was because drivers were less cautious where greater visibility was provided.*

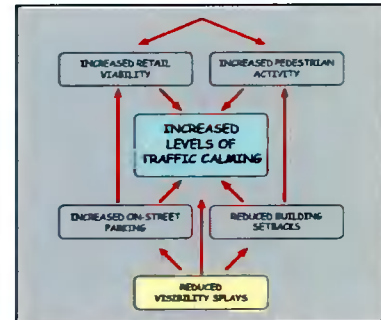


Figure 4.64: Flow diagram showing the inter-linked traffic calming and place making benefits of reduced visibility splays.

*Designers must also take a holistic view of the application of reduced forward visibility splays. As illustrated in the Adamstown Street Design Guide (2010), there are other place making and traffic calming benefits that can be implemented by reducing forward visibility splays at junctions (see Figure 4.64).*

Details in relation to the junction visibility requirements as outlined above are detailed on drawings 5150924/HTR/10/DR/0104 submitted as part of this planning application. An extract is shown in Figure 3-7. While there are small areas where car parking is located within the visibility splays the overall approach to safety is consistent with DMURS and Adamstown Street Design Guide outlined above given the nature of the road, vehicle volumes and speeds and desire to create a traffic calmed environment.

Figure 3-7 - Visibility Splay - Extract





### 3.5.3. Safety and Speed

Within in the local street network a design speed of 30km/h has been set. This 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 Crossing across External and Internal Road Junctions;
- Provision of Raised Tables at Internal Road Junctions;

A Road Safety Audit (Atkins Ref 5150924DG0077) 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. 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 proposed development. The proposed network of pedestrian facilities is consistent with the approach taken on previous applications on the District Centre Tile and tie into that granted network of facilities. The network includes pedestrian and cyclist only streets within landscaped areas providing a safe attractive and overlooked environment for users.

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 Table 4-1.

**Table 4-1 - Pedestrian and Cyclist Facilities**

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 sides both	Shared Street Provision, cyclist shares carriageway with vehicles in low traffic speed and low traffic volume environment
Existing Avenue Street	Adamstown Avenue	Footpaths sides both	Cycle Lane on northern side & cycle path on southern side
Existing Avenue Street	Station Road	Footpaths sides both	Cycle Lanes on both sides
Farmers Bridge Linear Path	A north south pedestrian and cyclist only link running along the western flank of the development parallel to the Farmers Bridge	Pedestrian & cyclist only link	Shared Pedestrian & cyclist only link
North-south linear parkland	A north-south pedestrian and cyclist route	Pedestrian & cyclist. Very occasional refuse & emergency access.	Shared Pedestrian & cyclist facility
North-south linear parkland	A n east-west pedestrian and cyclist route	Pedestrian & cyclist. Very occasional refuse & emergency access.	Shared Pedestrian & cyclist facility

The pedestrian and cyclist facilities are detailed on Figure 4-1 and

Figure 4-2. The location and range of pedestrian and cyclist infrastructure aligns with facilities required under Section 11 Adamstown Station Access and Movement strategy of the SDZ

Figure 4-1 - Pedestrian facilities

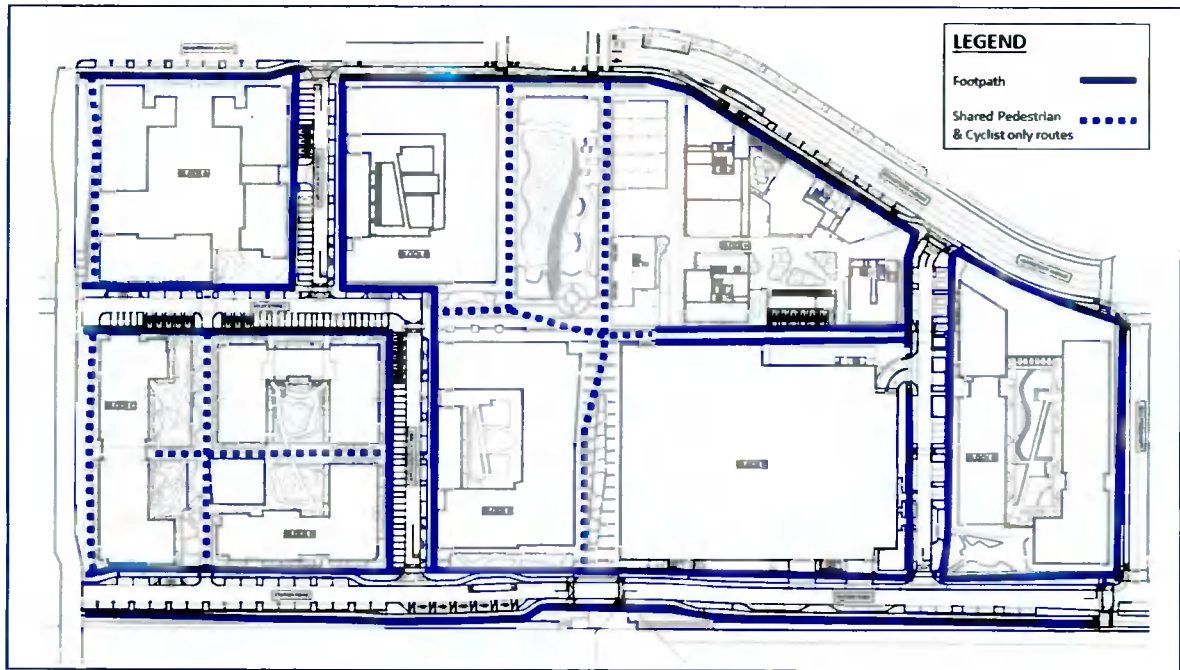
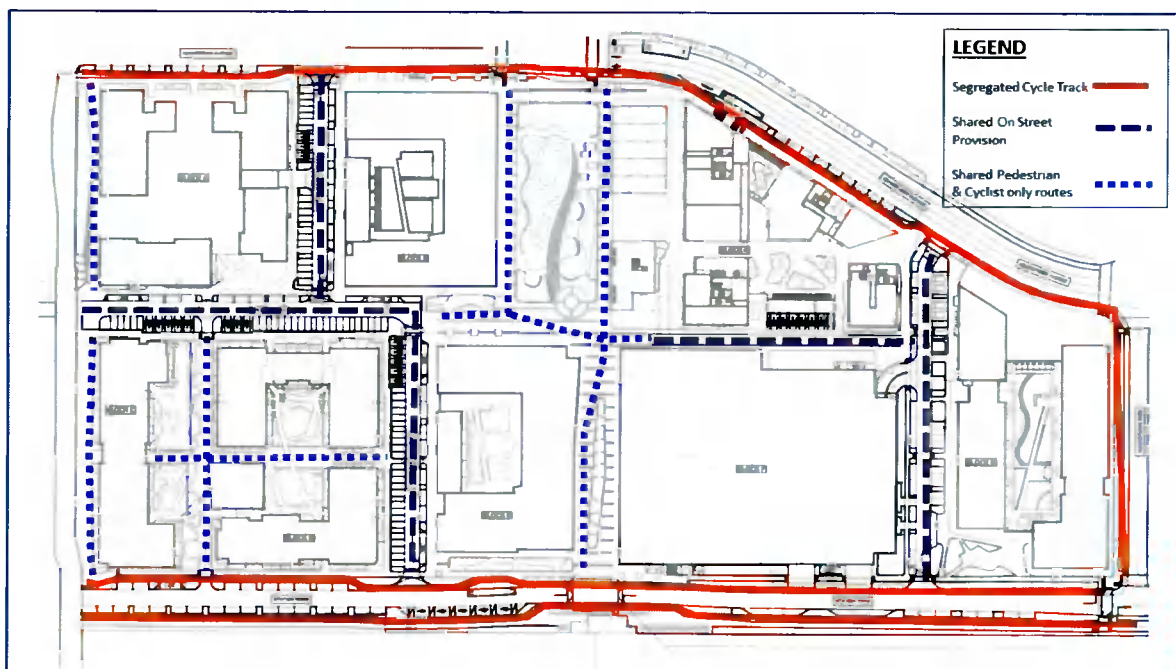


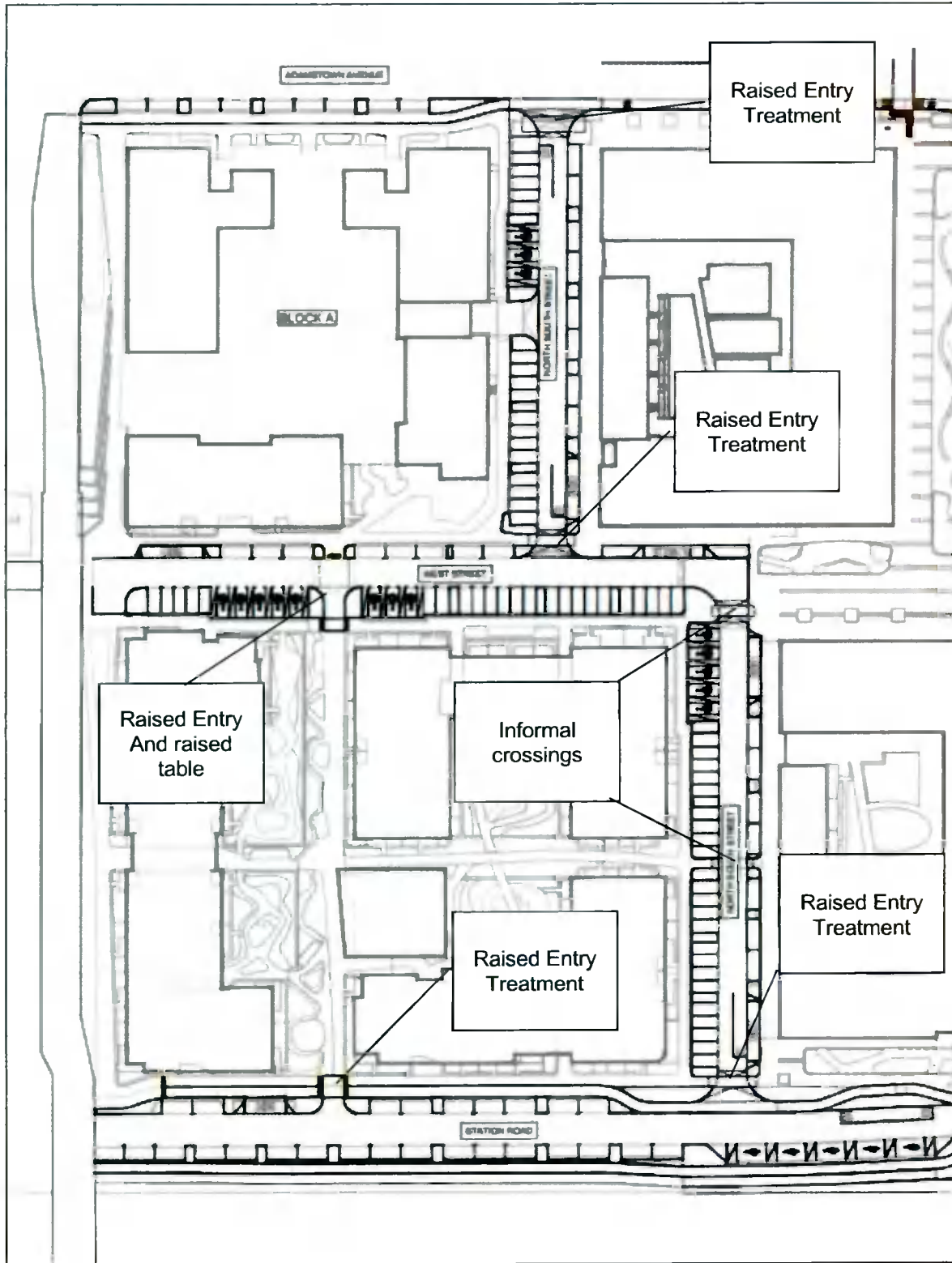
Figure 4-2 - Cyclist facilities



## 4.2. Pedestrian & Cyclist Crossing Facilities

As part of the proposed development raised crossings are proposed at all junctions in order to provide pedestrian and cyclists priority at these locations as recommend by DMURS. Raised tables/raised crossing are provided on West Street to provide a connection between the North South Linear Park and the pocket park on the southern side of Block A. This also provides a 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. This is detailed on drawings 5150924/HTR/10/DR/0109 An extract is shown in Figure 4-3.

Figure 4-3 - Adamstown District Centre Block ACD Pedestrian & Cyclist Connections





## 5. Parking

The section below deals of the design of the car parking spaces with the proposed development. For further details in relation to parking numbers and justification for the provision of the quantum proposed please refer to Atkins Transport Statement (5150924DG0074) submitted in support of this planning application

### 5.1. Car Parking Design

The section below deals with the design if the car parking spaces with the proposed development.

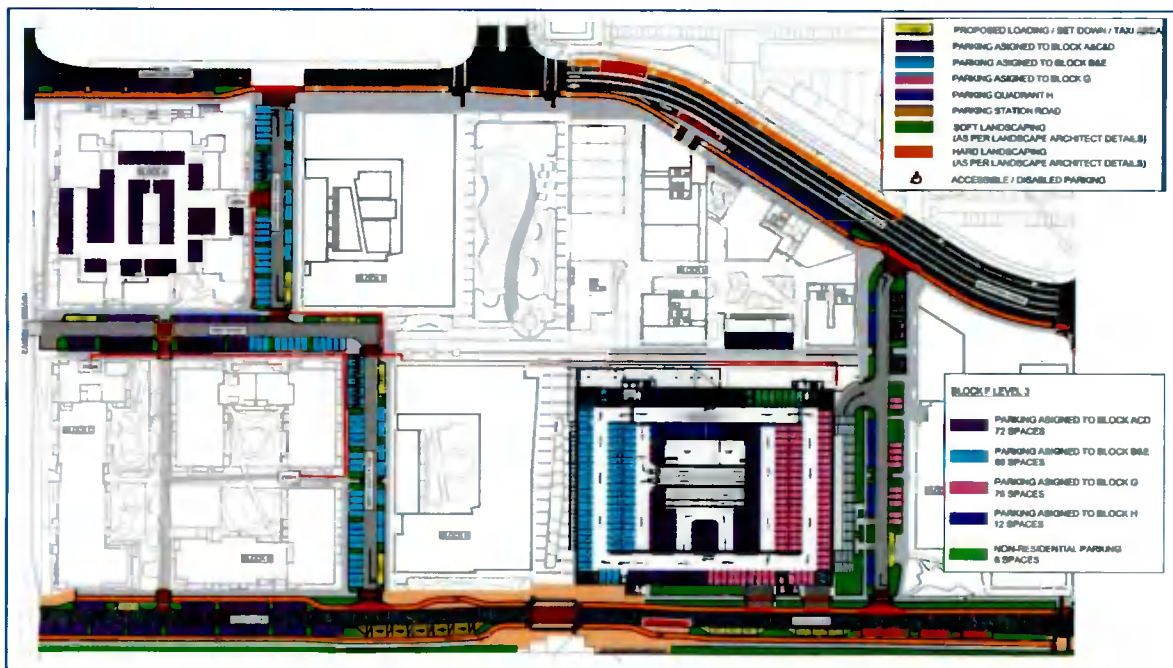
As noted in DMURS 4.4.9 *On-Street Parking and Loading* the location, design and quantum of car parking has an important role in street design and the promotion of sustainable transport. Well designed car parking can enhance a street, act as a traffic calming measure and provide passive surveillance.

The development is providing 220no. Car parking spaces for the 436 No. units (i.e.; 0.5 spaces per unit) for the residents. The car parking spaces are provided in a range of locations as set out below:

- 60no. spaces in the public realm;
- 88no. spaces in undercroft Block A; and
- 72no. spaces are provided in Block F MSCP.

The Block ACD and Station Tile car parking allocation is shown in Atkins Drawing 5150924/HTR/10/DR/0110, an extract is shown in

**Figure 5-1 - Station Tile Car Parking Allocation**



In relation to car parking dimensions DMURS recommends that:

- Standard width of a car parking spaces should be 2.4m
- Standard length of a car parking spaces should be 4.8m
- Parallel car parking should be 6m long

Where disabled bays are provided the dimensions are 3.6m x 6m



Perpendicular spaces generally require a minimum carriageway width of 6m, which is generally too wide for Local streets (5.5M). To accommodate these additional spaces as recommended by DMURS the additional spaces is provided within the car parking spaces (5.3m). This detail is shown on the cross sections 5150924/HTR/10/DR/0107 an extract is shown in Figure 5-2.

**Figure 5-2 - Perpendicular Car Parking to Local Street**

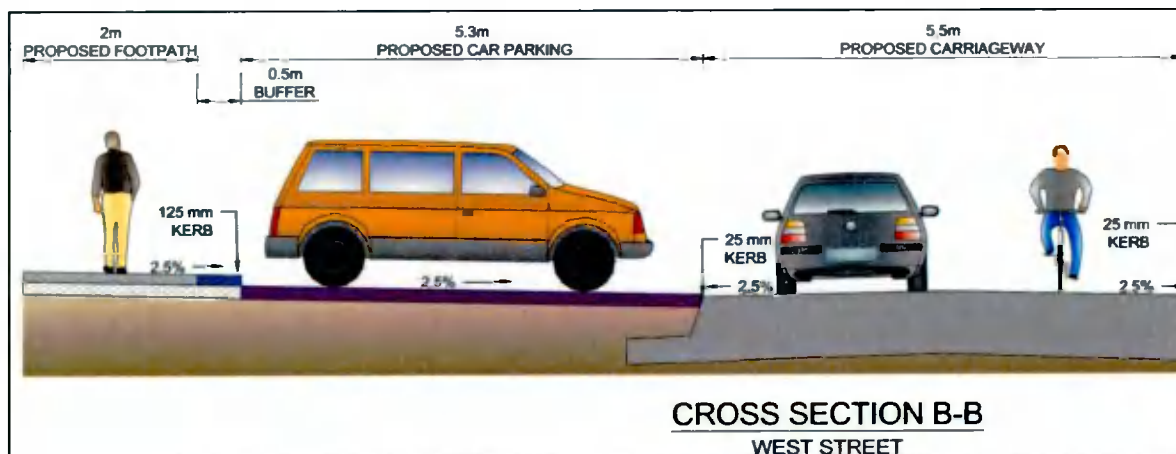
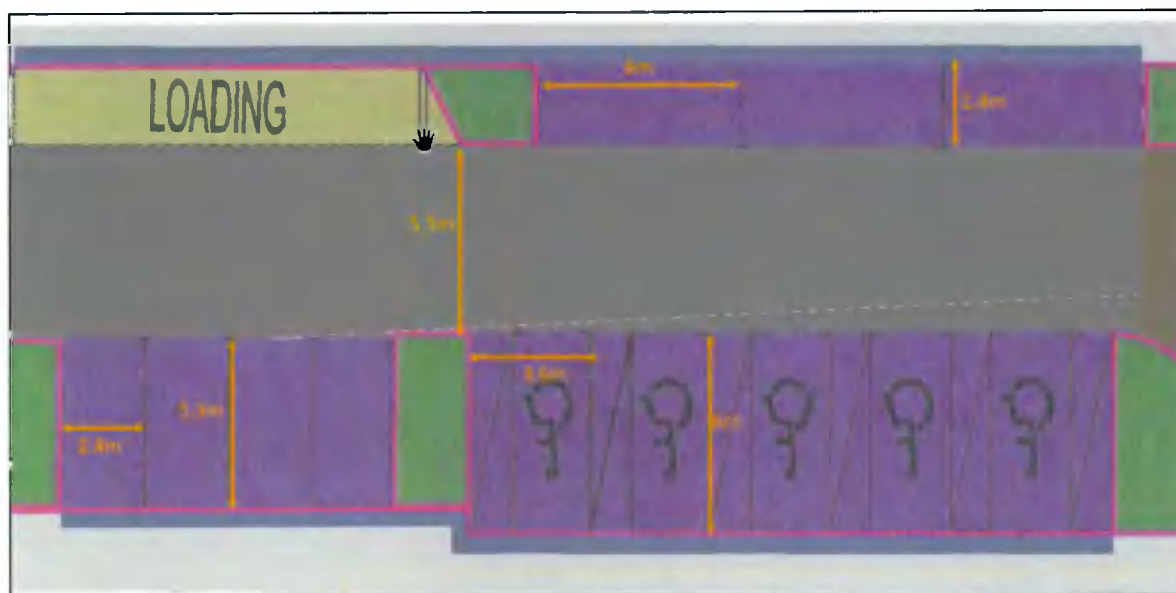


Figure 5-3 shows an example of car parking layouts and dimensions within the proposed development that shows the design of car parking accords with DMURs and Adamstown Street Design Guidance.

**Figure 5-3 - Car Parking Dimension and Layouts on West Street**



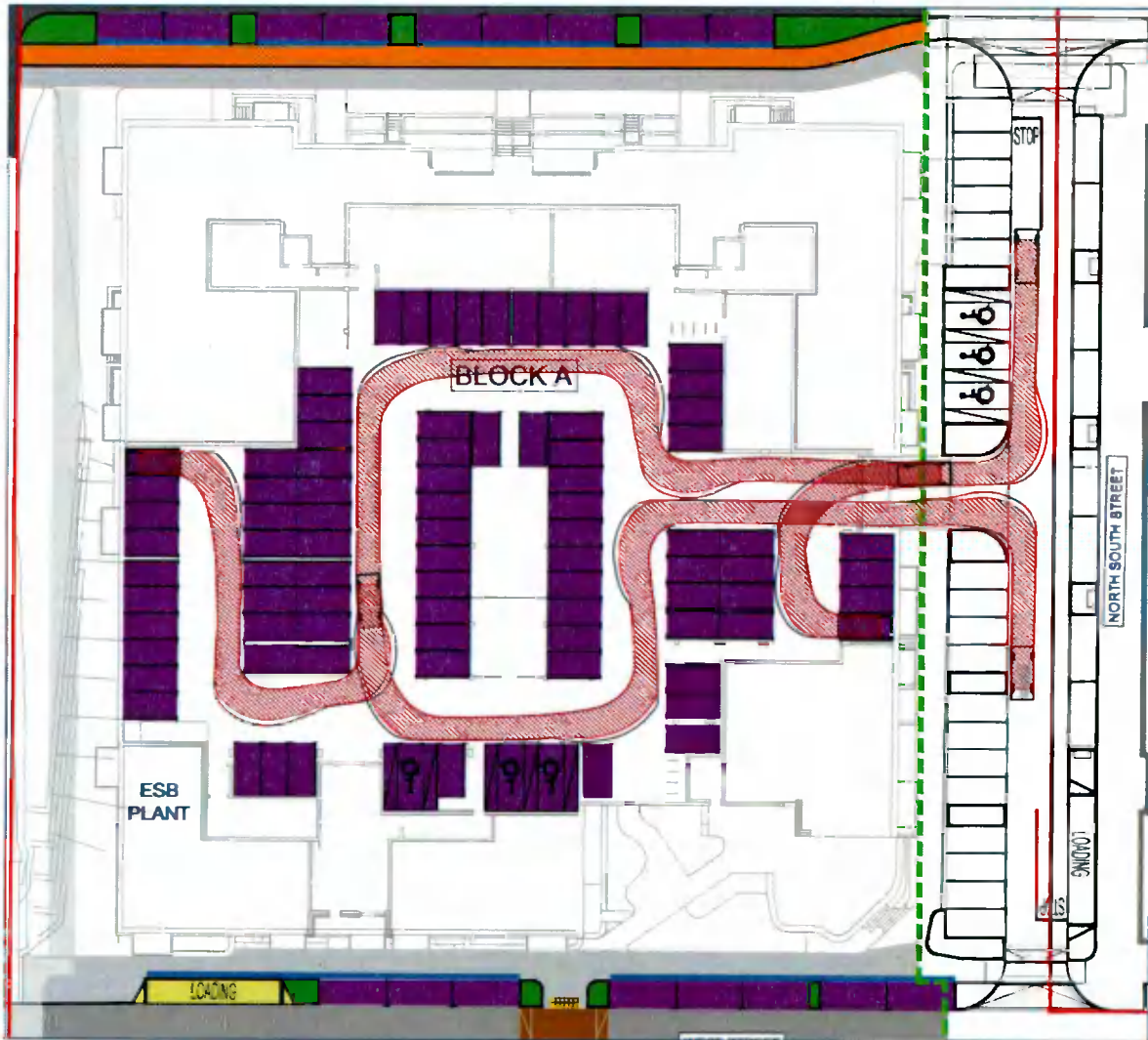
### 5.1.1. Undercroft & MSCP Car parking

The design of Block A undercroft car parking area is in accordance with Institute of Structural Engineers *Design Recommendations for Multi Storey and Underground Car Park Fourth Edition* (2011). The design and layout of the car parks accords with the key critical design criteria including:

- Aisle capacities including widths and bin width – 6m;
- Design speeds – (5-10km/ph.);
- Ramps gradients- (max gradient 1:12);
- Head height clearances (2.6m);
- Entry control systems (entry fob);
- Car parking space geometry and orientation (min 2.4, x 4.8M);

Entry to the Block A car parking area will be controlled by a barrier and fob entry system. The residential spaces will be allocated and clearly demarcated as resident only parking. An extract from the vehicle tracking drawings 5150924/HTR/10/DR/0111 is shown in Figure 5-4 that indicates the undercroft layout is accessible.

**Figure 5-4 - Vehicle Tracking within undercroft Block A**



## 5.2. Public Cycle Parking

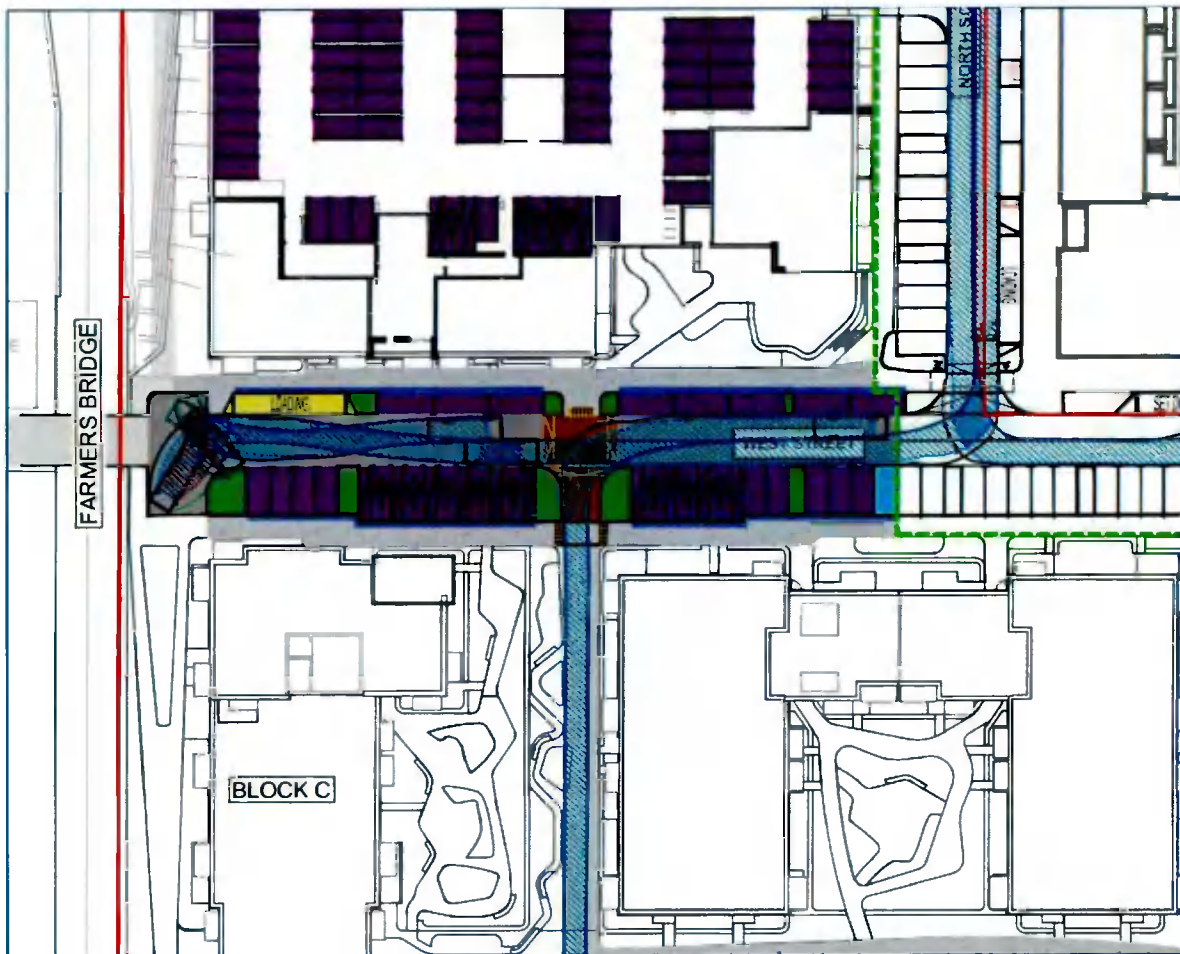
As recommend in DMURS and NCM a range of public / visitor cycle parking is located in the public realm, including locations adjacent to entrances to residential blocks and at amenity areas such as the pocket park, central landscapes courtyard to encourage and promote cycling. For further details refer to Architect and Landscape Architects drawings.

## 6. 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.

Swept path analysis has been undertaken to show that occasional larger vehicles can manoeuvre safely through the street network. Atkins drawings 5150924/HTR/10/DR/0105 and drawings 5150924/HTR/10/DR/0106 details the refuse vehicle and emergency service vehicle (pumping appliance & high reach appliance) tracking manoeuvres within the development. An extract of fire vehicle tracking is shown in Figure 6-1.

Figure 6-1 - Fire Vehicle Tracking



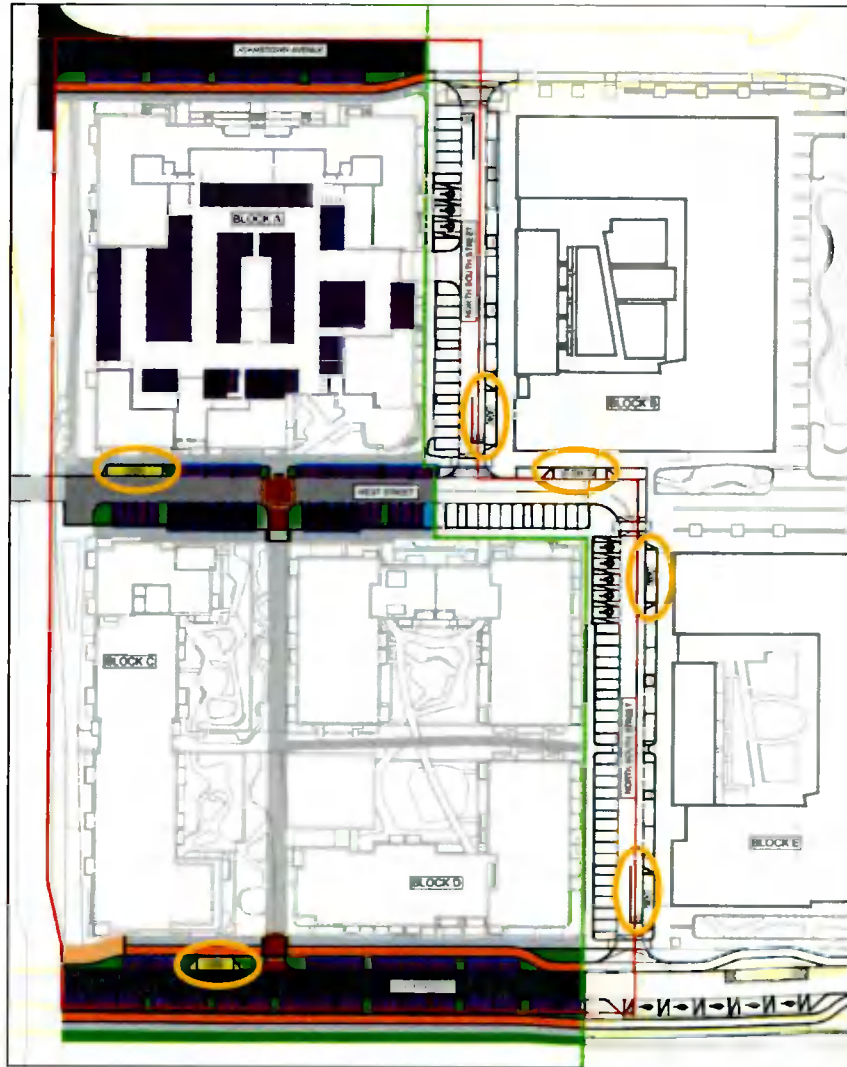
Swept path drawings also shows that the undercroft parking area within Block A is accessible. This can be seen in Atkins drawings 5150924/HTR/10/DR/0111 as shown in Figure 5-4.



## 6.1. Deliveries and loading

A number of loading bays are provided on the local streets network around the site, as indicated in Figure 6-2. The bays on North-South Street were granted as part of previous District Centre Phase 1 planning applications. As part of this application these locations will be supplemented by facilities on West Street and Station Road. These loading bays are strategically placed around the proposed development to afford opportunities for deliveries and loading and unloading to occur.

Figure 6-2 - Adamstown District Centre Block ACD Loading Bay Location



## 7. Road Construction Details

The minimum road construction details are detailed below.

### 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 Pavors 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

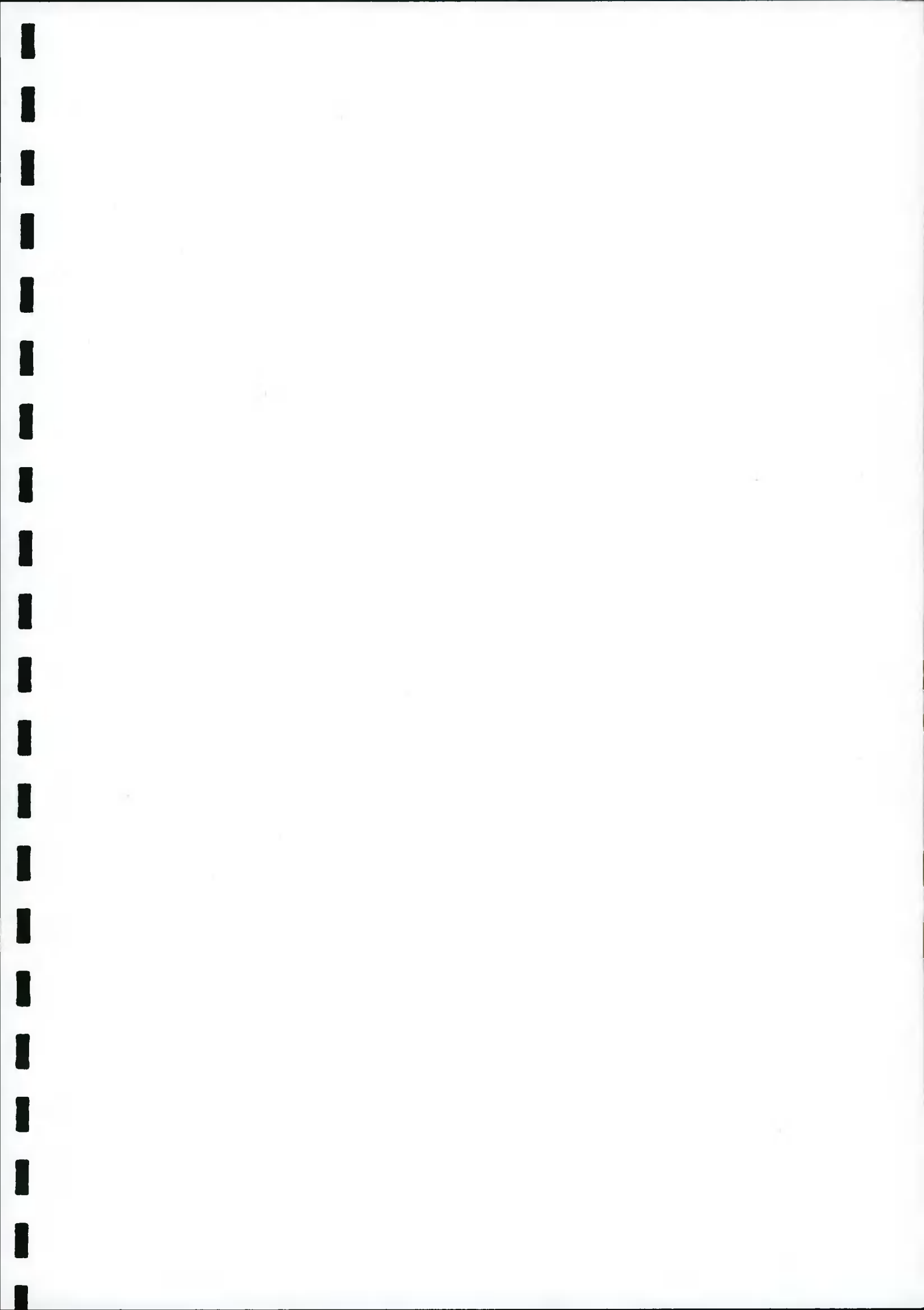
- 40mm surface course - PSMA 10 65 / 105 Des In Accordance with CI942 TII SRW (Natural Red Aggregate on Bus Lane)
- 60mm binder course - AC20 Dense Bin 40 / 60 Des To IS EN13108-1
- 80mm base course - AC32 Dense Base 40 / 60 des to IS EN1310-1
- 150mm sub-base course- Granular Material Type B to Clause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



## 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/10/DR/0103



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