CONSTITUTION HILL

PART 8 PLANNING REPORT **11 NOVEMBER 2022**

TRANSPORT STATEMENT
ARUP

CONHIL-ARUP-ZZ-XX-RP-YT-0100

Dublin City Council
Comhairle Cathrach Bhaile Átha Cliath

ARUP

Dublin City Council

Constitution Hill Renewal

Part 8 – Transport Statement

Reference: CONHIL-ARUP-ZZ-XX-RP-YT-0100

Issued for Planning (S4) – C02 | 11 November 2022

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Job number 281677-00

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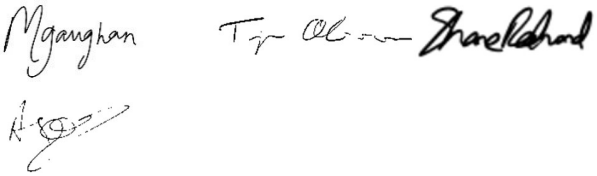
Signature			

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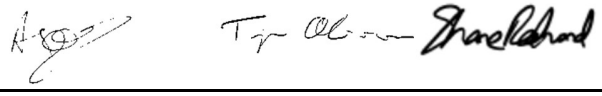
Signature			

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1. Introduction

This note has been prepared to support the Part 8 planning application for the proposed renewal to the Constitution Hill Flats on Constitution Hill, Dublin 7.

The Constitution Hill Flats comprise of three existing apartment blocks built along Constitution Hill Road in the 1960s. Each block has five storeys and in general the blocks are similar to each other. The ground floor level differs on each to follow the slope on the site, which rises from south to north. Figure 2.1 outlines the site boundary.

During the Pre-Part 8 circulation period, the Design Team received detailed comments from the Environment and Transportation Department and the Drainage Planning and Development Control Department. The team responded to each comment by means of a tracker and issued supplementary sketches where necessary. These comments and any updates relating to them have now been incorporated into our final Part 8 design proposal.

2. Site Characteristics

2.1 Site Location

The site is located at Constitution Hill, Dublin 7. The site is currently covered by a mix of landscaping and hardstanding, which include an access road and car parking. There is a pumphouse to the north of the site, an ESB substation building to the south of the site and several shed structures located throughout the site. The area between the blocks and the retaining wall adjacent to the Dublin Bus Depot to the west is primarily hardstanding, while the area between the blocks and Constitution Hill Road is soft landscaping.

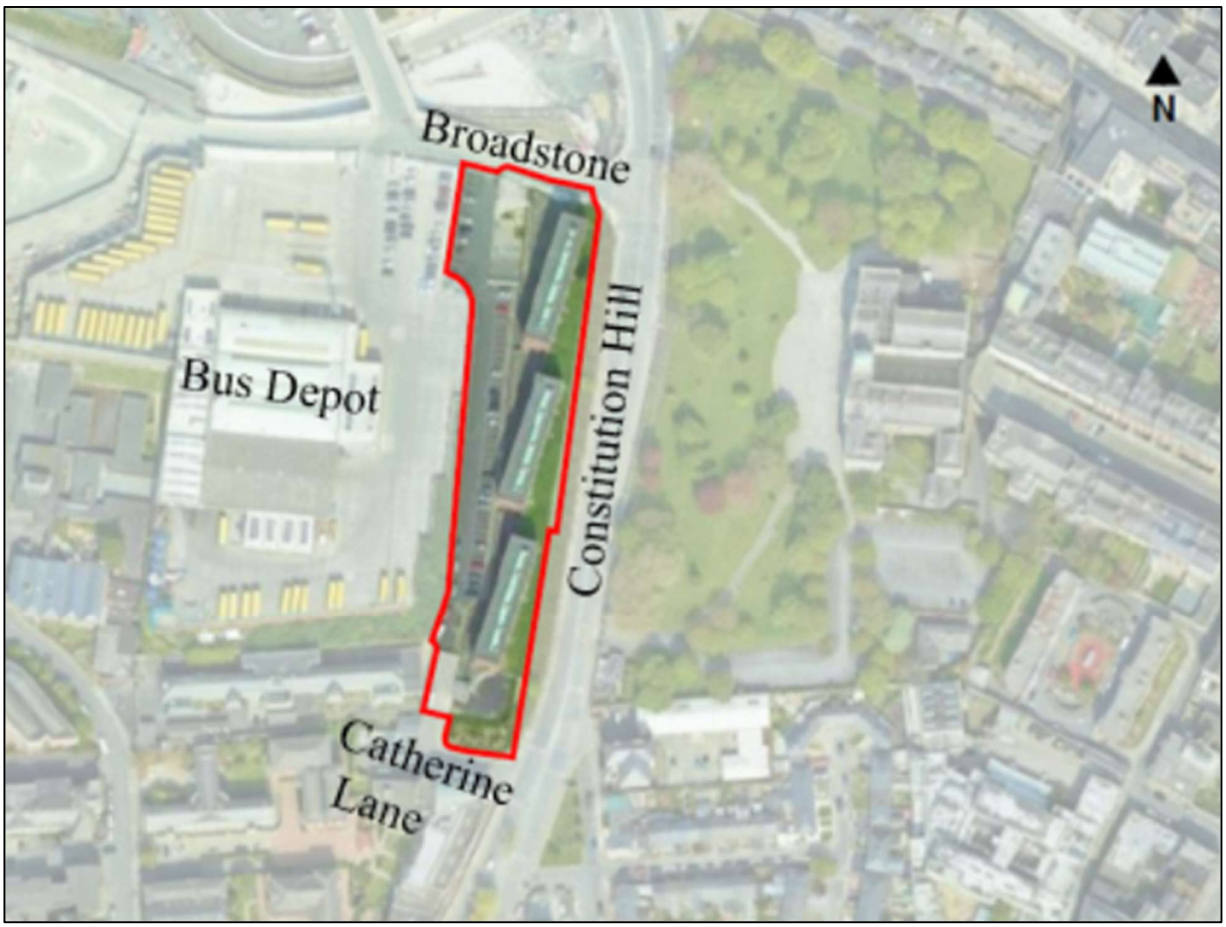

Figure 2.1 Aerial view of Constitution Hill with the proposed site area highlighted

The site is located in Dublin City centre, 700m north of the River Liffey, about 1km northwest of O'Connell Bridge and just over 1km northeast of Heuston Station. It is located immediately to the east of the new Grangegorman University Campus.

The site is bound to the east by Constitution Hill, to the north by Broadstone, to the west by a Dublin Bus depot and to the south by Catherine Lane.

2.2 Pedestrian and Cycle Facilities and Accessibility

By virtue of its location within the consolidated urban core of Dublin, the site is well catered by pedestrian facilities, both by way of footways along streets and formal pedestrian crossings. There is currently a well-developed pedestrian network surrounding the development as well as a number of pedestrian crossings in the vicinity including one at the Constitution Hill / Broadstone junction.

There are currently limited dedicated cycle facilities in the vicinity of the proposed development. Constitution Hill has protected cycle-facilities on either side of the carriageway, however the surrounding streets such as Broadstone and Brunswick Street North have no dedicated cycle facilities.

Constitution Hill is identified as a secondary cycle route in the GDA Cycle Network Plan prepared by the National Transport Authority. As such, these routes will likely be improved in future to better accommodate cyclists thereby improving accessibility for cyclists travelling to and from the proposed development.

Figure 2.2 presents the walking catchment within 5, 10, 15 and 20-minute periods. Smithfield is within a 5-minute walking distance. Phibsboro can be accessed on foot in under 10-minutes. Stoneybatter, O'Connell Street and Temple Bar can we accessed on foot within 15-minutes. Finally, Portobello is a 20-minute walk from the site.

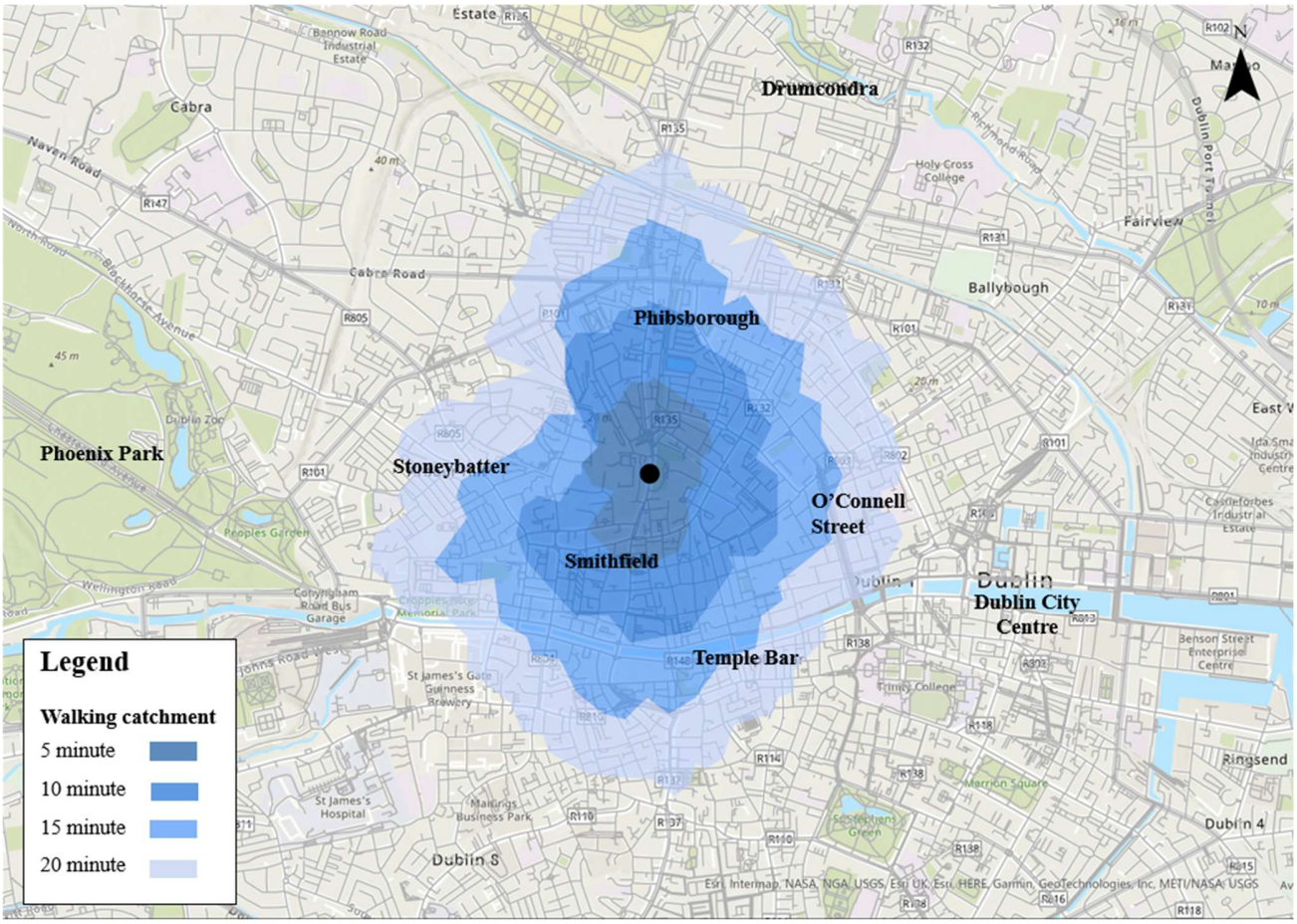

Figure 2.2 Walking catchment to and from the site

The site is easily accessible by bicycle. Figure 2.3 below represents the cycle catchment from the site within 5, 10, 15 and 20-minute periods. Phibsboro and Smithfield are both accessible in under a 5-minute cycle. Dublin City Centre can be reached within a 10-minute cycle. The site can be accessed from Marino, Ballsbridge and Harold's Cross within a 15-minute cycle and locations such as Santry, Terenure and the majority of Phoenix Park are within a 20-minute cycle.

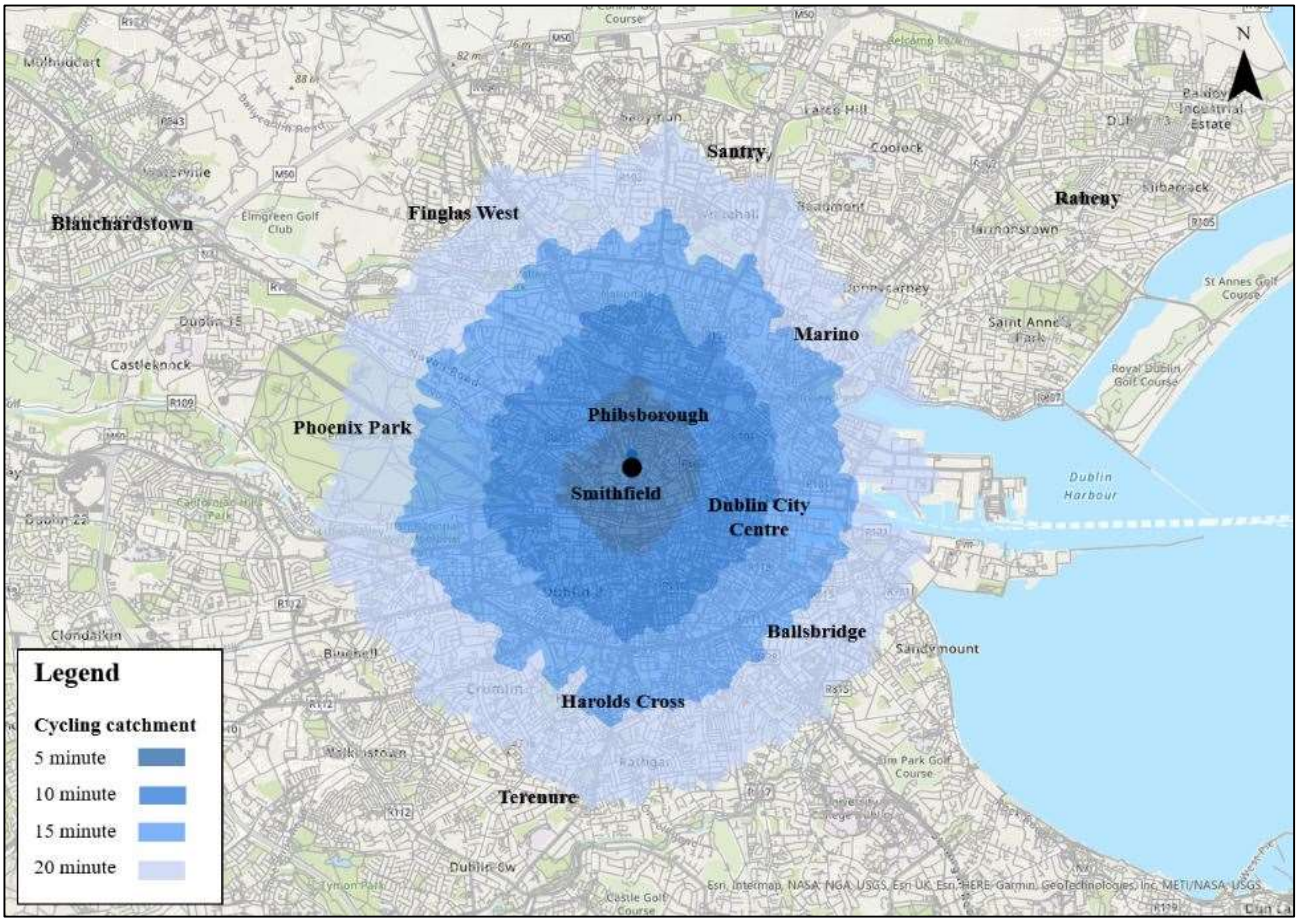

Figure 2.3 Cycling catchment to and from the site

2.3 Public Transport Accessibility

The proposed development is well served by public transport with Broadstone Luas station located within a 2-minute walk. This is the Luas green line, serving locations from Bridges Glen to Broombridge. There is a proposed extension of the Luas to Charlestown via Finglas from Broombridge. The extension will add four stops to the line, increasing connectivity and accessibility to and from the north and northwest of the city.

In addition, there are a number of high frequency bus services running along Constitution Hill including routes 83 and 83A servicing the stops 1619 and 1614. The nearest stops are located immediately adjacent to the proposed development. Furthermore, the Stops 195 and 190 serve the following routes 140, 4, 9 and 83. Figure 2.4 presents the location of bus stops and Luas Broadstone Station relative to the site.

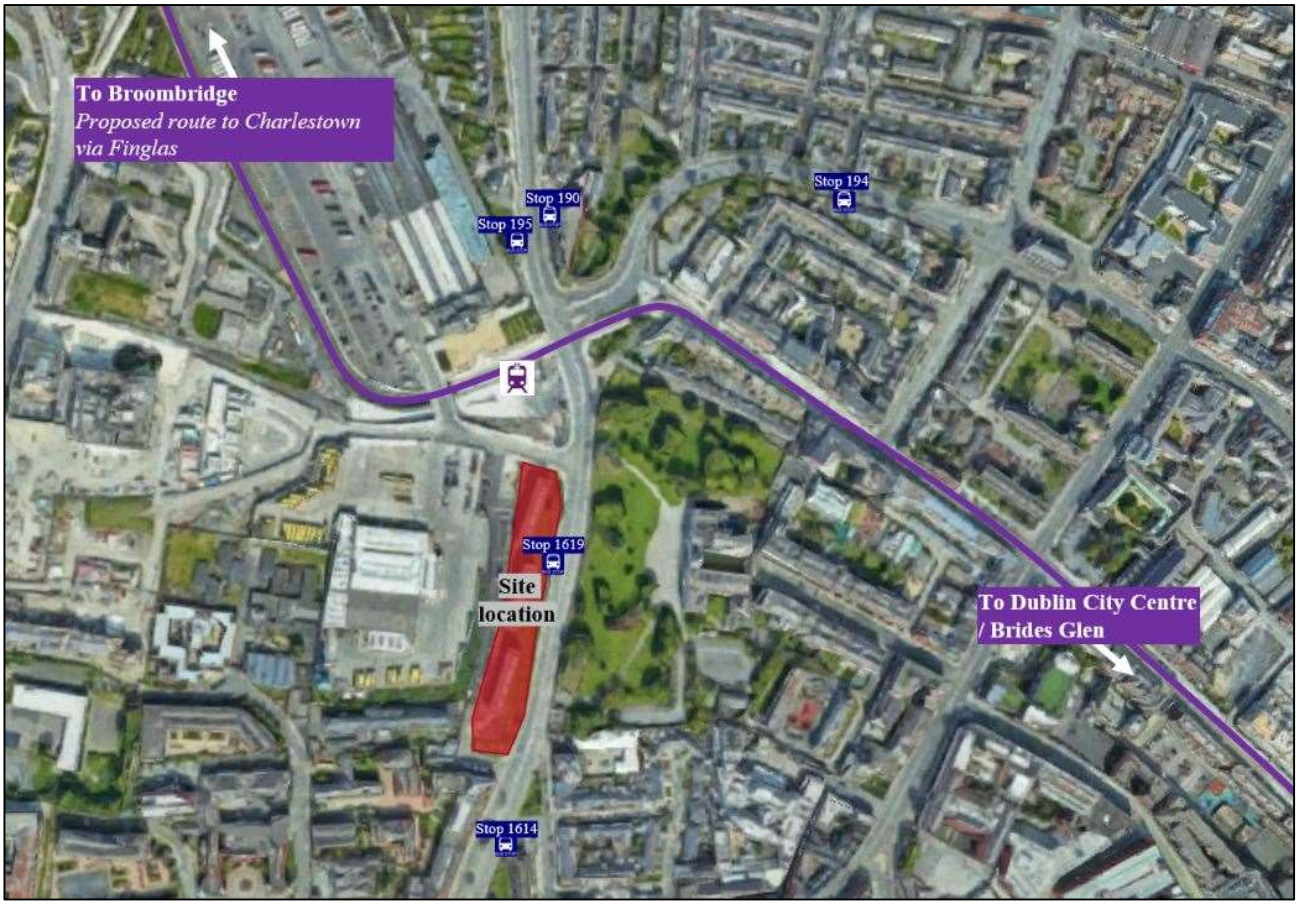

Figure 2.4 Public Transport Accessibility

Bus Connects is a National Transport Authority project, which aims to increase capacity, reliability and frequency of bus services. The program is being rolled out in phases. The proposed bus connects network can be seen in Figure 2.5 below. The site is highlighted as a yellow dot. The site location is not on any spines, however the bus routes 23 and 24 will run adjacent to the site. The E-Spine, which serves routes E1 and E2 is within a 5-minute walk from the site. The planning application for the physical infrastructure associated with this spine was not submitted at the time of writing this report.

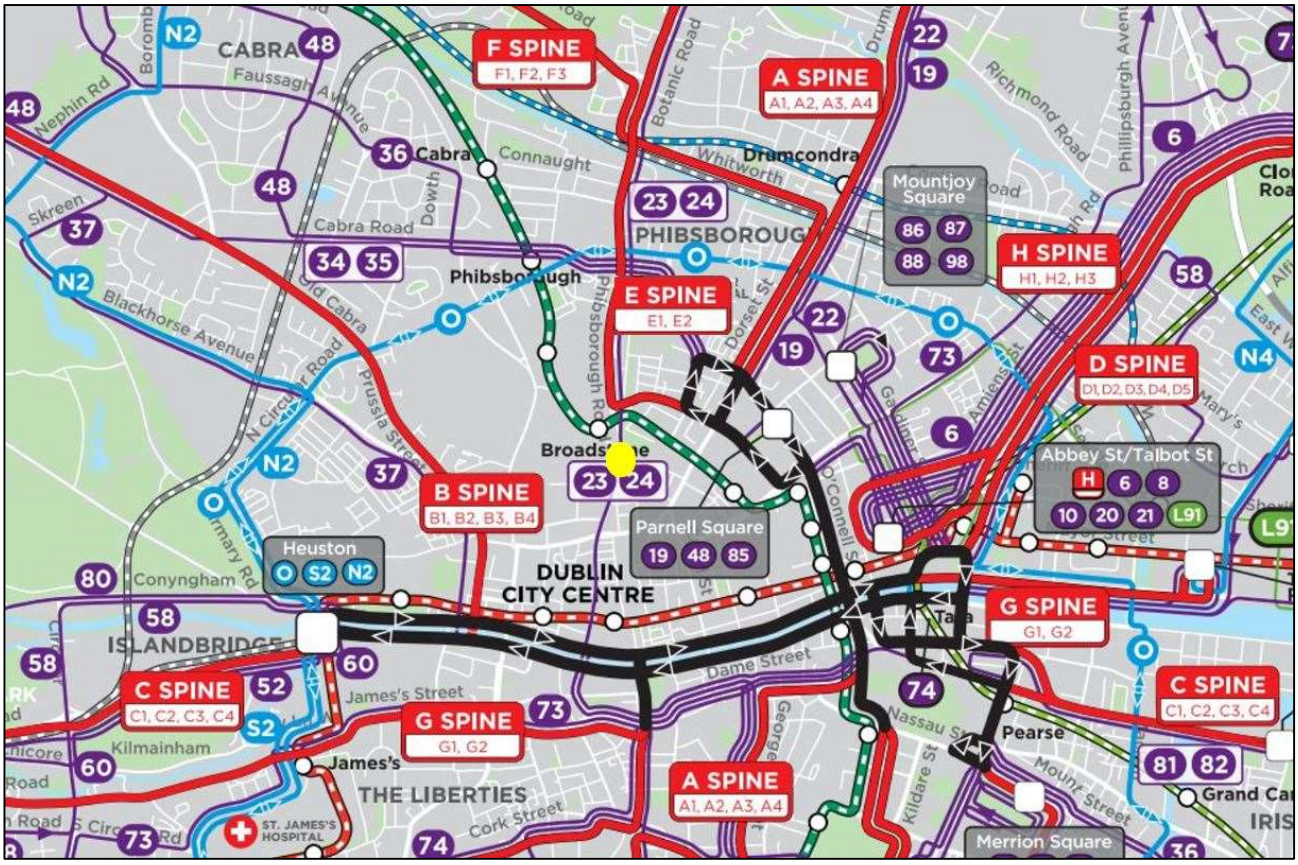

Figure 2.5 Bus Connects network within the vicinity of the site (Site marked with a yellow dot)

2.4 Car and Cycle Parking Policy

The Dublin City Development Plan (2016-2022) has a car parking standard for residential apartments within certain zones. The site is located within zone 1, parking Zone 1 is generally within the Canal Cordon and within North Circular Road in recognition of active travel infrastructure and opportunities and where major public transport corridors intersect. The maximum car parking standard for apartments in zone 1 is 1 space per dwelling. 5% or a minimum of one space needs to be provided as an accessible space. This is also in line with the Draft Dublin City Development Plan (2022-2028) standards.

The Dublin City Development Plan (2016-2022) requires 10% of all car parking spaces shall be equipped with fully functional EV charging points. Furthermore, all new developments must be futureproofed to include EV charging points and infrastructure for 50% of all car parking spaces, as per the Draft Dublin City Development Plan (2022-2028).

The Dublin City Development Plan (2016-2022) has a cycle parking standard for residential apartments of 1 space per unit. *"(Additional requirements for larger units and visitor parking will be decided on a case by case basis)".*

The Draft Dublin City Development Plan (2022-2028) has a cycle parking standard for residential apartments of 1 space per bedroom for long term residents and 1 space per 5 dwellings for visitors. These values include provision for e-bikes / cargo bikes / bike trailers / adapted bikes.

3. Proposed Development

The proposed redevelopment will consist of a deep retrofit to the existing blocks (Blocks 1, 2 and 3), the construction of two new residential blocks (North and South Blocks in Figure 3.1), and a row of duplex apartments to the west, adjacent to the Dublin Bus Depot. Landscaping will form an important part of the development with a shared garden courtyard and raised esplanade forming part of the proposed site plan.

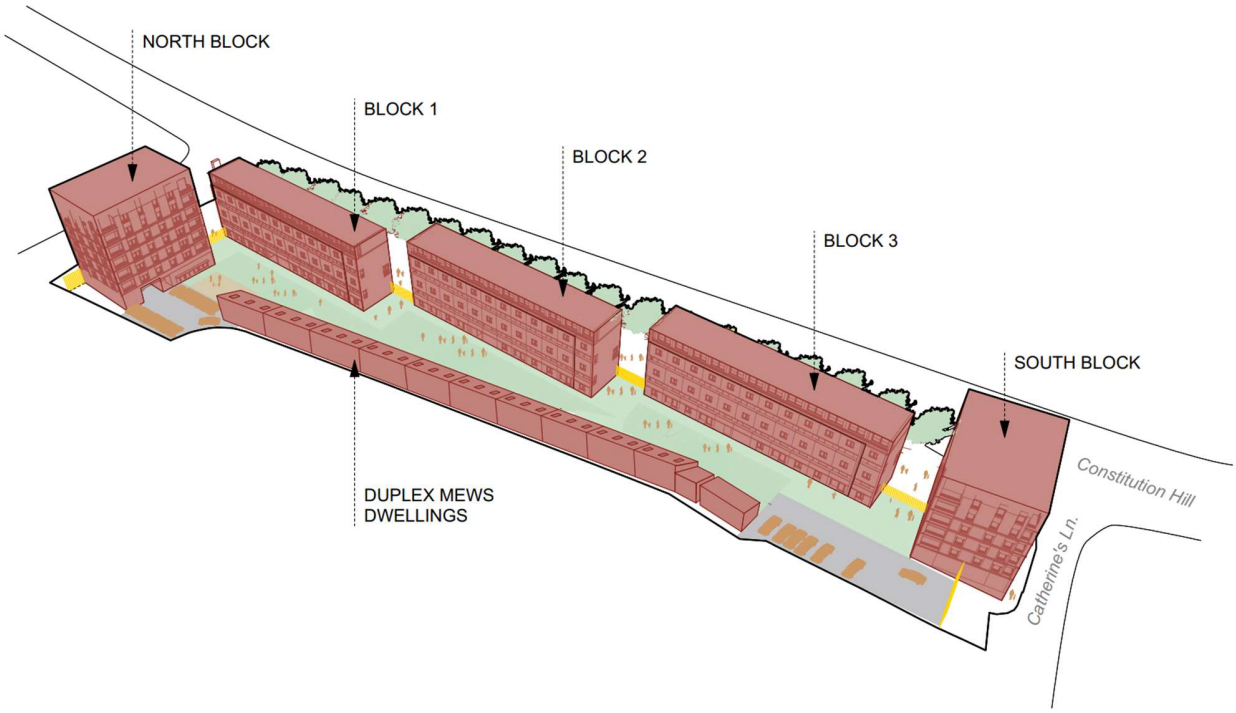

Figure 3.1 Block references for the proposed Constitution Hill Redevelopment

The regeneration and redevelopment is proposed for the existing Constitution Hill Estate bounded by Constitution Hill, Broadstone, Catherine's Lane North and Dublin Bus Phibsboro Depot in Dublin 7. The existing 0.76 hectare site currently comprises of 3 no. five-storey housing blocks providing 89 homes and a crèche which form the Constitution Hill Flats social housing scheme. The proposed redevelopment, which will be managed by Dublin City Council, comprises of:

- Provision of 124 homes (42 no. 1 bed apartments, 54 no. 2 bed apartments, 18 no. 3 bed apartments, 10 no. 2 bed duplex mews dwellings)
- Building heights ranging from 2-7 storeys
- Communal and public open space 0.28ha / 37% of site area
- Deep retrofit and extension to 3 no. existing five-storey existing housing blocks to include an additional floor and side bay with modifications to all elevations
- Construction of a new seven-storey apartment block to the north of the site
- Construction of a new seven-storey apartment block to the south of the site
- Construction of ten no. two-storey duplex dwellings to the west of the site

- The provision of a multi-use childcare facility
- Construction of a new ESB substation
- Reconfiguration of pedestrian access to the site with new entrance path to the east of the site including a new stepped access to the footpath on Constitution Hill
- Level access to be provided across the site with secure lines to entrances and communal open space
- Revision to the existing entrance on Broadstone to include a gated pedestrian and vehicular entry
- Revision to the existing entrance on Catherine's Lane to include gated pedestrian and vehicular entry
- Revision to boundary treatments to Constitution Hill, Broadstone and Catherine's Lane North
- Associated car and cycle parking provision
- Demolition of the existing substation and pump house on site
- Provision of public and private open spaces; ancillary structures and associated site infrastructure works / supporting infrastructure, landscaping, public lighting, revision to access roads, pavements, boundary treatments and all other necessary enabling works, roads and services.

3.1 Car Parking and Access

The application Dublin City Development Plan car parking standards described in Section 2.4 would point at a maximum car parking provision of 124 car parking spaces to serve this development. On the basis of the excellent conditions for sustainable transport provided by the development's location, a total of 23 spaces will be provided, two of which will be accessible spaces. This is in compliance with the Development Plan standards as described above.

Car parking is proposed to be located at two distinct areas:

- 15 spaces (one accessible), accessed off Broadstone; and
- 8 spaces (one accessible) accessed off Catherine Lane.

Vehicular access off Broadstone in the north is obtained via a one-way shuttle section underneath the North Block, whereas the car parking spaces off Catherine Lane in the south are accessed through a one-way gate. How the car parking will be managed will be covered in more detail in Section 4: Parking Management Plan.

3.2 Cycle Parking

The application of Dublin City Development Plan cycle parking standards described in Section 2.4 would point at a minimum cycle parking provision of 124 spaces to serve this development. A total of 163 cycle parking spaces are proposed, which is in compliance with the Development Plan standards as described above.

A total of 163 cycle parking spaces will be provided within, secure, cycle parking facilities within each of the buildings, accounting for a space for each residential unit. Three clusters of spaces for convenience and short-term visitors' needs will be provided on the esplanade and close to the childcare facility on Broadstone.

3.2.1 Long Term Bicycle Parking

- The Project Brief includes one bicycle space per unit, as per the current Dublin City Development Plan 2016-2022. This amounts to 124 resident cycle spaces in total across the site.
- During design development, it came to light that the new Draft Development Plan 2022-2028 requires one cycle space per bedroom (rather than per unit) for 'residential apartments', which would amount to 224 spaces. (Note 1 space per unit is noted for 'residential dwelling'). The design team have therefore

endeavoured to maximise cycle parking wherever possible, and the final Part 8 proposal is based on a total of 163 resident spaces. This is the maximum number of spaces that is feasible alongside the required residential accommodation to meet the Project Brief, due to the constraint nature of the site and the retrofitting of the existing buildings.

- There are 22 ground floor homes across the site, as well as the multi-use childcare facility. Cycle parking is provided at grade, along with bins stores and plant rooms.
- Long term cycle spaces have been provided in secure purpose-built cycle stores, located within each block.
- Residents currently have no cycle stores and carry their bikes up the common stair into their homes. During consultation, residents flagged their concerns regarding security and noted their reluctance to use dedicated storerooms. The design team have responded to this by enhancing the security of all bikes stores, and sizing the lifts to accommodate a bicycle should some residents still prefer to bring them into their homes.
- To enhance security, cycle stores are limited in size to housing only the bikes belonging to that building. Large centralised stores are avoided, for security as well as ease of access to encourage use. Entrance is always from behind the secure line, never straight from the public domain. CCTV and fob access will be provided.
- Cycle numbers are provided by double stackers due to limited space at ground floor of all units.
- For renovated blocks, there are 12 structural bays at ground floor. 1 bay is given over to bikes, 1 bay to the circulation core, 1 bay to bins & plant. The other 9 bays accommodate 3no. 3b5p apartments. There is no further room to provide additional bike store without losing a 3 bed unit.
- For the south block,there are 3no. 2b4p duplexes at street level, as well as bins and plant room. There is no further space to accommodate cycles at this level without reducing the accommodation offer.
- In the north block, the multi-use childcare facility and entry route to carpark means there is no additional space for cycle storage at this level.
- The above cycle parking numbers are deemed appropriate by the Design Team due to the constrained nature of the site and its central location within the north inner city. There are 2no. Dublin Bike stations less than 250m from the site, to the north and south. The Broadstone Luas station is immediately adjacent to the site and the new BusConnects bus corridor will run along the full length of the site. The city centre is within a 10 minute walk from the site.

3.2.2 Short Term Bicycle Parking

- The new Draft Development Plan 2022-2028 requires 1no. short stay visitor parking space for every 5 dwellings. With 124 dwellings, this amounts to 25 short term spaces. We are providing 26 spaces.
- These are distributed in clusters along the esplanade and adjacent to the multi-use childcare facility. Dedicated cargo and modified bike spaces are also included in the short-term bicycle space offering.

3.2.3 E-Bikes, Cargo bikes, Bike Trailers & Adapted Bikes

- The new Draft Development Plan 2022-2028 requires provision for the above bikes, without defined percentages.
- The proposals include a dedicated space for cargo/e-bikes for residents, located behind the secure line and adjacent to the ESB substation.

How the cycle parking will be managed will be covered in more detail in Section 4: Parking Management Plan.

3.3 Service and Emergency Access

The proposals have been developed to ensure that the access of vehicles associated with service, waste collection and emergency would be adequately catered for. In particular, the manoeuvring needs of fire tender and high-reach appliance vehicles was thoroughly tested and coordinated with the public realm design.

- Drop-off / Set-down Areas: Two set-down areas have been provided. One to the north and one to the south. Drop-off zone to the north has a clear zone as each end. It is intended that these will be clearly marked for set-down only and have a clear zone at each end to allow emergency vehicles to pass.
- The proposal includes the formalisation of the parking on St. Catherine's Lane and the inclusion of a small clear zone to allow a turning route for delivery and waste collection vehicles in the lane.
- The proposed set-down area to the north is within the red line boundary and is required for Universal Design (UD) drop-off to the site and to the north block. It is not possible to move it further west for two reasons:
    1. The fire tender access strategy requires a route through the gap between Block 1 and the proposed north block. The tracking of this high reach vehicle needs to be kept clear of the set-down area, in the event that a vehicle is left unattended in the set-down area and blocks fire tender access during an emergency.
    2. Due to the steep slope of the existing footpath along Broadstone, it is not possible to move this set-down further west as the levels begin to slope steeply from the proposed entry point to the north block. In its current location, UD level access (1:25) is provided from the set-down area to the north block entrance and the esplanade entrance.

The proposal allows for the UD set-down area to double up as a service area to allow for deliveries to residents. Double yellow lines will be used here to avoid vehicles being left unattended and signage will note a max stay of 5 minutes.

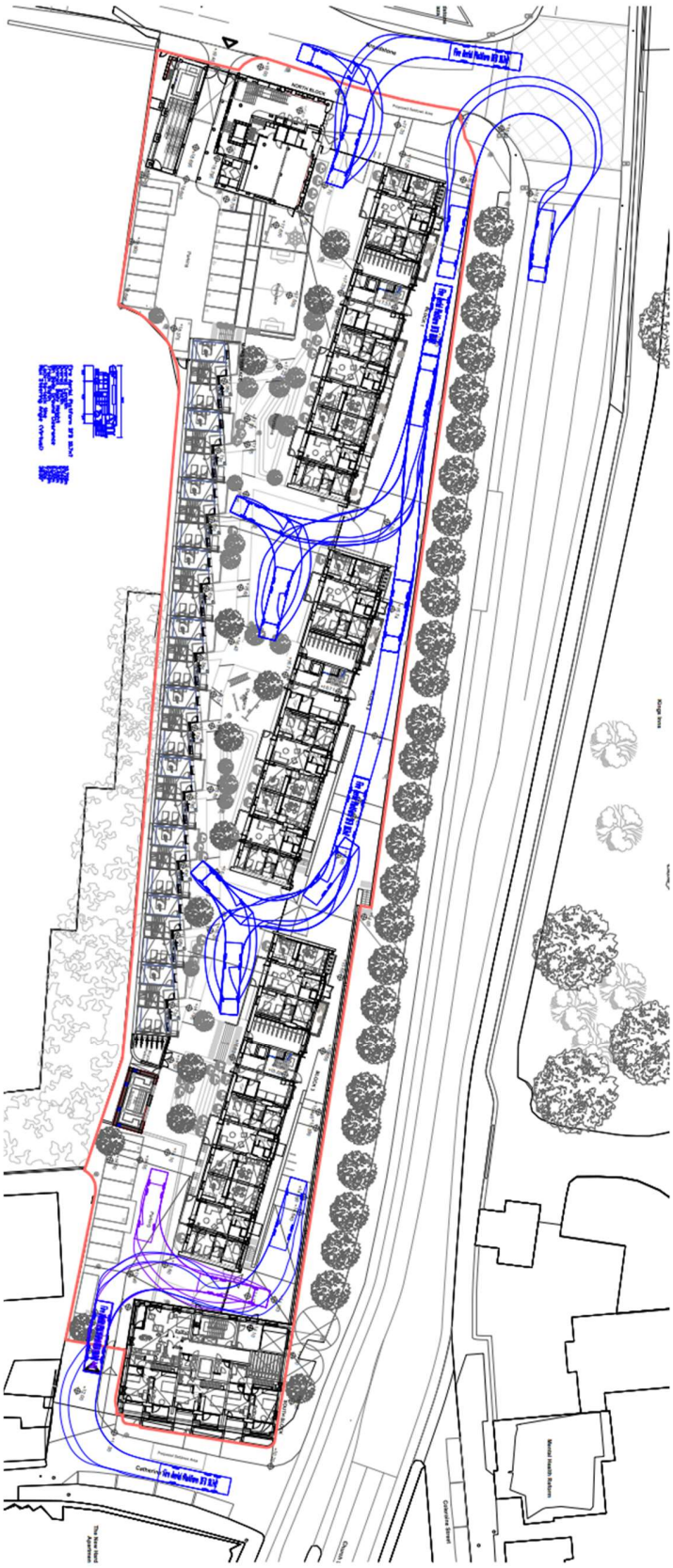

Figure 3.2 Emergency Access swept path analysis

Waste collection will avail of a layby located at Broadstone, to the north of the development, and of space on Catherine Lane. Both locations will operate well, without disruption to the normal flow of traffic. These areas will also cater for deliveries' requirements of short-duration. With regards to Catherine Lane, it is proposed that the car parking located along its southern side will be formalised to avoid misuse.

Northern set down area

Southern set down area and service access

Figure 3.3 Northern Set down access and Southern Service Access swept path analysis

3.4 Interaction with Existing and Future External Street Layouts

The proposals include tie-ins with the existing layouts of external streets, but also consider the potential impacts in the emerging proposals for Bus Connects along Constitution Hill, particularly at the junction with Catherine Lane.

The changes to the junction layout at Catherine Lane include a tightening of the radius on the northern side of the junction, associated with a proposed raised entry treatment. Both elements combine to reduce traffic speeds and improving the safety and comfort of pedestrians. The tighter radius and associated additional pedestrian space gained will also enable the proposal to extend the footprint of a proposed new building towards what is the existing footway. The resulting pedestrian space will therefore continue to be adequate to accommodate pedestrian movements.

This modification is also consistent with the emerging design for the Bus Connects proposals along Constitution Hill and will not in any way preclude an adequate design solution for this scheme. This is clearly illustrated in the figure below, representing the proposals without and with the Bus Connects scheme in place.

A Proposed Site Plan with Proposed BusConnects Network layout is contained in Appendix B.

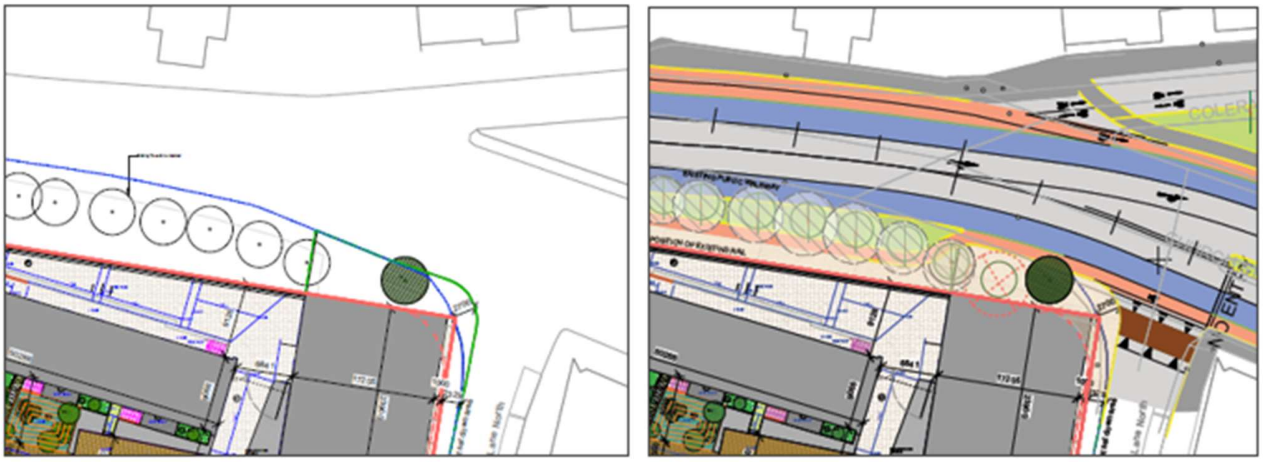

Figure 3.4 Proposed modifications at Constitution Hill / Catherine Lane junction – without (left) and with (right) Bus Connects

At Broadstone, the radius will also be tightened in a way that does not impact on the use of this junction by buses accessing and egressing the adjacent Dublin Bus depot. This element of design, however, is only triggered by the delivery of Bus Connects, and has been developed to tie in with the emerging proposals, as shown in the figure below.

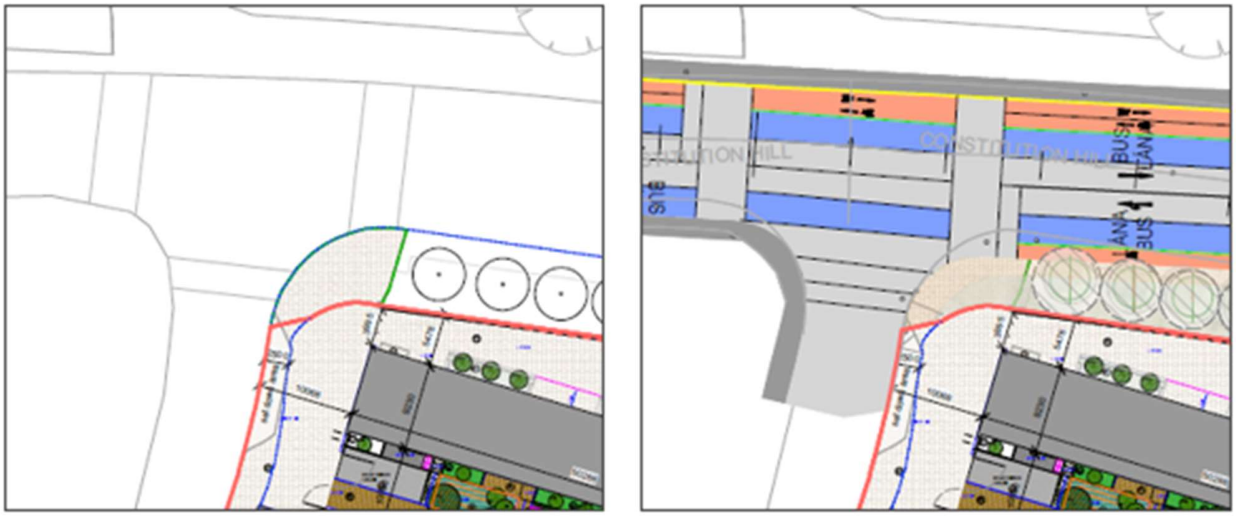

Figure 3.5 Proposed modifications at Constitution Hill / Broadstone junction – without (left) and with (right) Bus Connects

4. Parking Management Plan

This section presents a strategy for the management of both car and cycle parking at the proposed redeveloped Constitution Hill Flats. Both cycle and car parking have been designed in accordance to The Dublin City Development Plan (2016-2022).

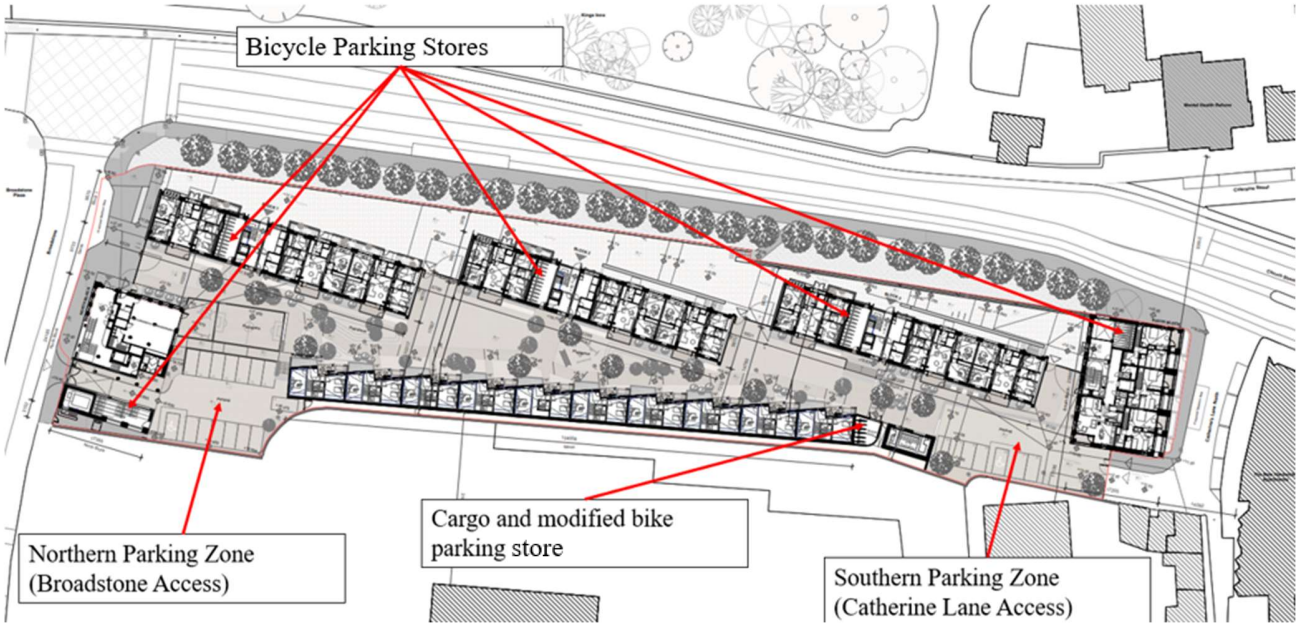

Figure 4.1 Parking layout (bicycle and car parking)

4.1 Car Parking Management

On the basis of the excellent conditions for sustainable transport provided by the development's location, a total of 23 no. car parking spaces will be provided, two of which will be accessible spaces.

Car parking access is proposed to be located at two distinct zones: one accessed off Broadstone, comprising of 15 spaces (one accessible); and another off Catherine Lane, with 8 spaces (one accessible).

Car parking spaces are to be allocated to permit holders only, thus all residents using said parking should be familiar with the car park and its access arrangements. Due to the small numbers of permit holders, it is not anticipated that there will be a lot of movement to and from the site at the same time. For example, in the mornings it is likely that movement will be mainly outbound and in the evening the movement will likely be mainly inbound.

Due to the single-lane access (3.4m width) on the northern side of the complex accessed off Broadstone, a parking strategy is required to avoid conflicts with vehicles exiting the parking at this location. The strategy is that the vehicle entering the parking at this location has the Right of Way. In the event of two-way movement, an outbound car would have sight of an inbound car before it accessed the driveway and would then remain in the carriageway area until the inbound car has passed through. Alternatively, if they encountered the car on the driveway, they would reverse back to the two-way carriageway. All permit holders will be required to sign up to this strategy. The gates to the car parking areas will be powered gates, they will require a fob to gain entry.

Fobs will be granted to residents with access to allocated parking spaces only. The parking permit allocation will be controlled by the Local Area Office Manager, as per the current arrangement on site.

In summary this raises no concerns from a traffic management point of view due to the number of spaces involved, good visibility, and generous manoeuvring space (6m aisle increased to 7.4m). This would allow a vehicle to turn in the event that all spaces are occupied, and another car arrives. See Figure 4.2 for auto-tracking demonstration.

Swept Path Analysis drawings are contained in Appendix C.

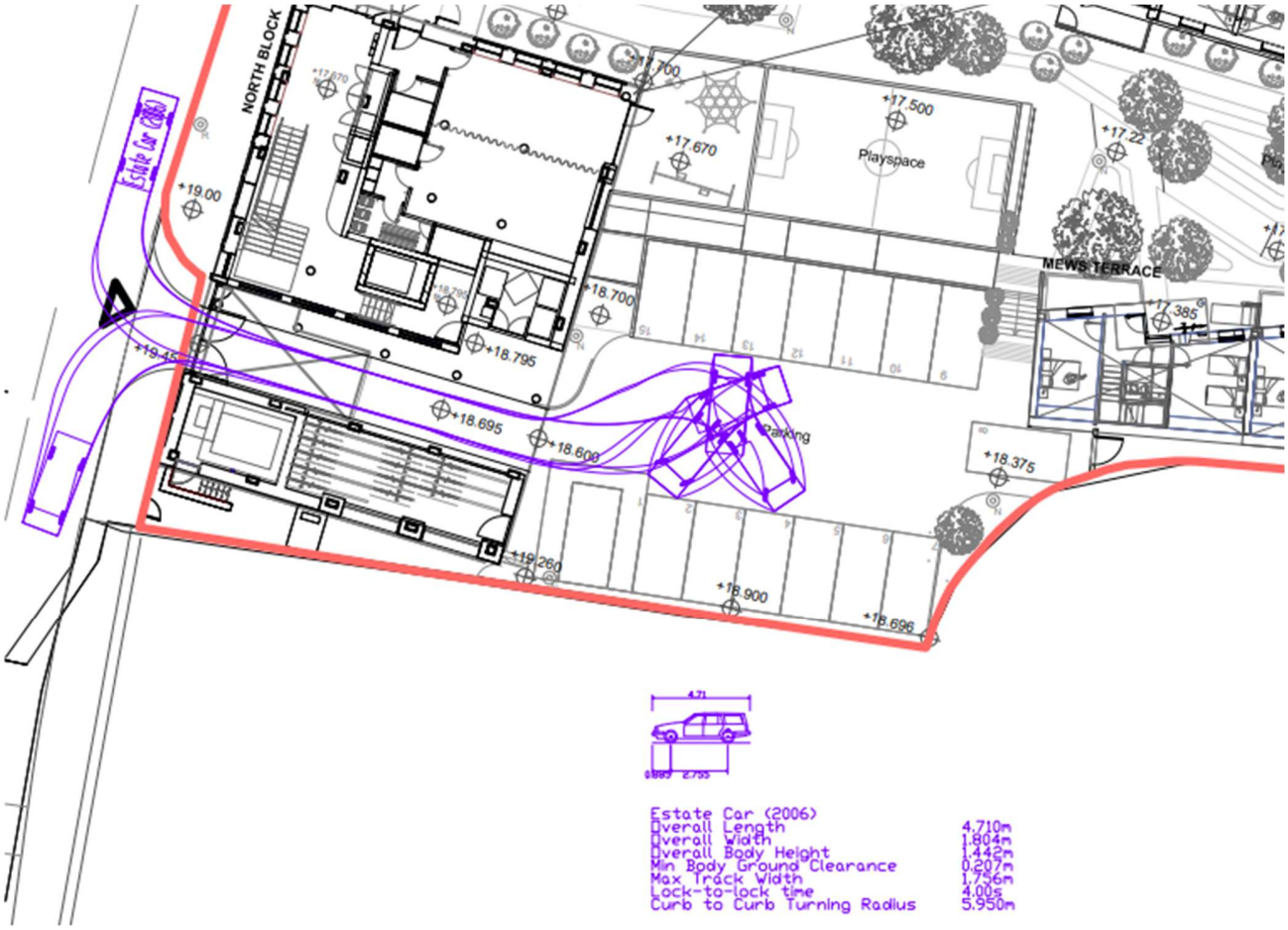

Figure 4.2 Car park manoeuvring swept path analysis

The car parking spaces off Catherine Lane (southern access) in the south are accessed through a one-way gate. There are 8 spaces in this parking zone, thus there will not be many traffic movements in this area of the site, coupled with the fact that Catherine's Lane is a quiet street with very low levels of traffic and good visibility for motorists to see each other, no right of way system is needed for this parking zone.

4.2 EV Charging Management

The EV parking permit allocation will be controlled by the Local Area Office Manager. It is recommended that the EV charging spaces should be managed by the Local Area Office Manager with a booking system in place to

avoid conflicts between residents. Two EV charging spaces will be provided, with future-proofing allowing the conversion of more general parking spaces into EV charging spaces.

4.3 Bicycle Parking Management Plan

163 spaces of resident cycle parking will be provided within indoor cycle parking facilities inside the secure perimeter of the site. That allows for one bicycle parking space per residential unit.

Bicycle spaces for the north block are accessed directly from the parking area. In the renovated buildings, bike parking is located close to the core where passive surveillance is possible. An entrance to the esplanade is proposed to facilitate ease of movement from the home through the bike store and out of the building.

It is proposed that access to the bike storage areas is only enabled to the residents of the corresponding block. For example, a resident of the north block will have access to the north block parking zone only and will not have access to any other block's parking zone and vice versa.

With regards to the duplex mews buildings, the dedicated secure bike parking area is provided adjacent to the main door, under a covered area.

There is also a dedicated space for cargo bikes and modified bikes located next to the substation with a larger entrance to allow for easier access and egress.

Four clusters of on-street spaces for convenience and short-term visitors' needs will be provided outside the secure perimeter and near the multi-use childcare facility on Broadstone. These include 4 spaces for modified and cargo bikes. These will be highly visible, thus availing of the required levels of passive surveillance.

Figure 4.3 Bike parking design

4.4 Micro-mobility / E-bike Infrastructure

Bicycle parking will be able to accommodate bicycles as well as e-bikes, which are increasingly of similar dimensions to push-bikes. It is expected that e-scooters and mobility scooters would be stored in the residential units, as this is currently the general practice allowing for security and ease of charging.

5. Traffic Impact

5.1 Operational Traffic Impact

The provision of only 23 car parking spaces represents a reduction of car parking numbers when compared with the present situation. As a result, less trips are likely to be generated and the traffic impact of this particular development is considered positive.

5.2 Construction Traffic Impact

Subject to successful grant of planning, it is intended for the main works to commence in 2023. The proposed development is anticipated to be constructed over a number of enabling works and two main Contract phases. The main enabling works is estimated to last five months, while the building work phases are estimated to last 15 and 18 months respectively.

During the construction works, all site vehicular access and egress (including construction vehicles) will be via both Broadstone and Catherine Lane, as illustrated below. The detailing of these accesses will be subject to a detailed traffic management plan developed by the Main Contractor as agreed with DCC Roads and Traffic Department.

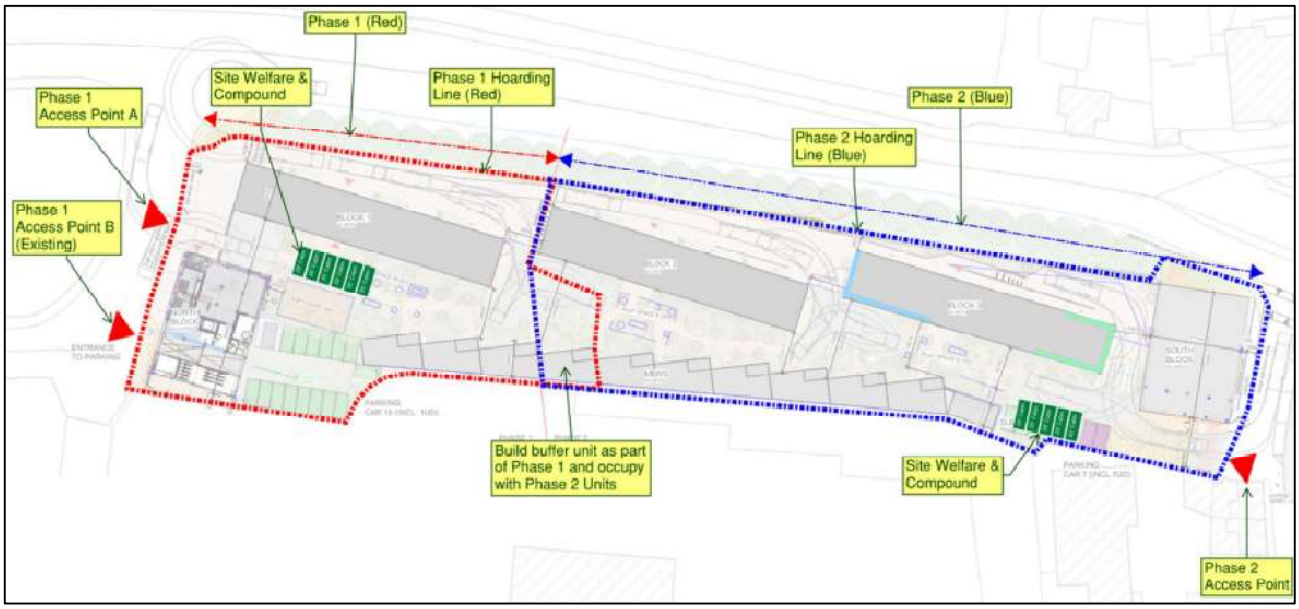

Figure 5.1 Proposed construction phasing and access points

It is envisaged that no more than 100 construction staff will be on site at any given time throughout the duration of the works. The site is very accessible by walking, cycling, and public transport, so there is no requirement for dedicated staff car parking on site. However, to provide for construction staff who will be required to drive to the

site, approximately 20 parking spaces will be provided for Contractor parking. These will be allocated within the existing provision and so the overall quantity of car parking will not be increased. These movements will overwhelmingly occur before 07:00 hence not impacting the peak traffic conditions. The total construction traffic volumes per hour are not significant in terms of the overall existing traffic flows.

It is anticipated that at the peak construction stage, the number of trips generated will be no more than 4 two-way trips in a peak hour, corresponding to an average of one trip every 15 minutes in average. The total construction traffic volumes per hour are not significant and as such the construction traffic impact is considered to be negligible.

5.3 Construction Management Plan

During construction, a Construction Traffic Management Plan will be implemented to ensure adequate measures are taken to minimise disruption to normal traffic. This may include provision of road signage and designated times of access by construction vehicles.

As part of the construction works the appointed Contractor shall prepare a Construction Traffic Management Plan which will outline their approach to the project, identify construction access routes and detail potential impacts for the public road system. It will include measures to mitigate any potential noise and air quality impacts resulting from construction activities, namely from traffic movements in and out of the site

Included within the Construction Management Plan will be a Mobility Management Plan to encourage access to the site by means other than by private car. This may include provision of cycle facilities and encouragement of car sharing for staff.

The Plan will be agreed with both Dublin City Council and An Garda Síochána, prior to commencement of works.

6. Mobility Management Framework

6.1 Framework Mobility Management Plan

The proposed development will have a Mobility Management Plan (MMP) prepared as and when the development is operational. At this stage, it is not possible to prepare a full MMP but it is important to set out the aims and potential contents of such a Plan. This section outlines therefore the framework on which an MMP for the development will be based upon once the development is operational.

In addition to the elements of the proposals that will assist in encouraging a sustainable modal split, the MMP will set out a number of pro-active measures to promote sustainable modes of travel among residents. These may include:

- Provide travel information and journey planning;
- To promote/advertise initiatives and measures set out in the Travel Plan;
- To develop and support a culture of sustainable travel into the building;
- Car park demand management scheme; and
- Events (pedometer challenge, etc.).

The main mobility management initiatives and measures will be carried out by the occupier of the proposed development. The owners will be encouraged to ensure pro-active engagement with residents with the aim of improving the development's sustainable transport credentials.

The aim of the plan will be to reduce car-based travel to work and to encourage residents to use more sustainable modes of travel such as walking, cycling, public transport and car sharing.

6.2 Mobility Management Measures

The Mobility Management Plans will consider the following measures:

Appointment of an MMP Manager / Co-ordinator

It is important that an MMP Manager is appointed as the main point of contact and co-ordinator of the MMP activities for individual occupiers or preferably to represent the whole development, should this have various occupiers.

This individual will oversee the promotion and implementation of the initiatives and measures that form part of the MMP. This person should be a resident thus lending the process the required credibility and strength.

Travel Information

To encourage residents to use sustainable modes, information including bus and Luas information, walking routes, accessibility maps, etc., should be made available. The pack may also include complimentary public transport tickets to encourage early establishment of sustainable travel patterns.

Car Pooling

The coordinator should encourage the residents to set-up a development-wide 'Car Pooling Club' or join car-sharing service. Furthermore, a bespoke resident car-club can be implemented.

Cycling

The following can be implemented to encourage the use of cycling:

- Organise a Bike Maintenance class.
- Provide Cyclists' equipment (pump, puncture repair kit etc.).
- Participate in National Bike Week events.
- Organise a Bike Maintenance class and provide cyclists' equipment (pump, repair kit etc.)
- Display local area maps for cyclists / walkers interested in local routes.
- Arrange tours of cycling facilities for interested / new residents.

Walking

The following can be implemented to encourage walking:

- Improve 'natural surveillance' on site (e.g. cutting back bushes, improving lighting).
- Offer in-house health checks for people interested in getting more active.
- Leave umbrellas at reception for residents to borrow on wet days.

7. Conclusion

This document clearly illustrates that the transport-related impacts of the proposed redevelopment of this site at Constitution Hill are broadly positive.

By virtue of its location within the consolidated urban core of Dublin, the development will avail of excellent walking, cycling and public transport facilities with wide catchments including numerous employment, education, retail and leisure opportunities within 20 minutes by sustainable transport modes.

Furthermore, the proposals have been designed with limited car parking, excellent cycle parking provision and good links to adjacent public transport nodes including bus stops and the Luas at Broadstone.

The scheme adequately caters for servicing and emergency vehicles, without negatively impacting on the safety and comfort of vulnerable road users, and considers the emerging Bus Connects proposals so as not to hinder their delivery, which will be of great benefit to future residents.

Based on the above and reinforced by formal Mobility Management Plans, the traffic impact of the development, both during the construction and the operation stages is considered to be insignificant or positive.

It is therefore concluded that, from a traffic and transport viewpoint, the proposals are suitable to be granted planning permission by Dublin City Council.

Appendix A

Road Safety Audit

ARUP

Dublin City Council

Constitution Hill Renewal, Dublin

Stage 1 Road Safety Audit

Reference: 281677-R-001 RSA1

Issue | 10 November 2022

This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 281677

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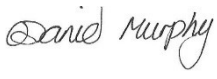
ARUP

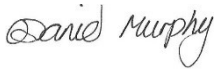
Document Verification

Project title	Constitution Hill Renewal, Dublin
Document title	Stage 1 Road Safety Audit
Job number	281677-12
Document ref	281677-R-001 RSA1
File reference	

Revision	**Date**		
		Filename	Constitution Hill Renewal, Dublin Stage 1 RSA Report Issue
Issue	28 October 2022	**Description**	Issue document

	Prepared by	**Checked by**	**Approved by**
Name	Daniel Murphy	Aaron Dougan	Brian Devlin
Signature			

Issue	10 November 2022	**Filename**	Constitution Hill Renewal, Dublin Stage 1 RSA Report Issue 02
		Description	Update to 3.3 location description to amend a typo

	Prepared by	**Checked by**	**Approved by**
Name	Daniel Murphy	Aaron Dougan	Brian Devlin
Signature			

		Filename	
		Description	

	Prepared by	**Checked by**	**Approved by**
Name			
Signature			

Issue Document Verification with Document ☑

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Project Details

Road Safety Audit (RSA) Title:	RSA 1 Constitution Hill Renewal, Dublin
Stage of Audit:	Stage 1
Date of Audit	19 October 2022
Document Reference and Revision:	281677-R-001 RSA1 Issue
Prepared by;	Ove Arup & Partners Ltd
For:	Arup
On behalf of:	Dublin City Council

1. Introduction

1.1 Scheme Location, Description and Objectives

1.1.1 Scheme Location

The site is located along Constitution Hill, with the Broadstone Plaza to the north, Catherine Lane North at the southern end, and a Dublin Bus Depot to the west with the Grangegorman TU Dublin campus beyond.

1.1.2 Scheme Description

Constitution Hill Redevelopment: Redevelopment of three existing apartment blocks with vertical and horizontal extensions, construction of two new apartment block and single storey terraced houses. Realignment of kerbs to public roads at north and south of site. Reduction in number of existing car parking spaces with two small carparks which will replace existing. Car park to south accessed from south of site. Car park to north accessed from north of site through building (note that single lane provided through building given low car use – see Transport Statement for more information.) Provision of long term and short-term cycle parking.

1.1.3 Strategic Decisions

None highlighted to the Audit Team.

1.1.4 Scheme Objectives

None highlighted to the Audit Team.

1.1.5 RSA Scope

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

The project has been examined and this report compiled in respect of the consideration of those matters that have an adverse effect on road safety. It has not been examined or verified for compliance with any other standards or criteria.

If any of the recommendations within this safety audit report 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.

No previous road safety audits were carried out for this project.

A list of the documents provided to the Audit Team is contained in **Appendix A**.

A Problem Location Map is contained in **Appendix B.**

A Feedback Form is contained in **Appendix C**.

1.2 Road Safety Audit Brief

The Audit Brief provided to the Audit Team by the Designer is appended to this report as Appendix A.

1.3 Road Safety Audit Team

The RSA team membership was as follows:

Team Leader:	D. Murphy BEng (Hons), MSc, CEng, MIEI (Professional Certificate in Road Safety Audit gained in 2019)
Organisation:	Ove Arup & Partners Ltd, Belfast
Team Member:	L. Smith MEng (Hons), MCIHT, GMICE, SoRSA (Certificate of Competency gained in January 2017)
Organisation:	Ove Arup & Partners Ltd, Belfast

1.4 Site Visit

The Road Safety Audit comprised an examination of the information provided and a site visit by the Audit team members, together on the 19th of October 2022.

It was raining at the time of the site visit and the road surface was wet.

1.5 Terms of Reference

The RSA team members meet the training and experience requirements set out in TII-GE-01025 Road Safety Audit – Audit Team Qualifications. The RSA team has examined and reported only on the road safety implications of the scheme as presented and has not examined or verified the compliance of the design to any other criteria. However, to clearly explain a problem or recommendation the RSA team may occasionally refer to design standards.

All problems and recommendations identified by this RSA are referenced to the design drawings and the locations have been indicated on the figures(s) included in this report.

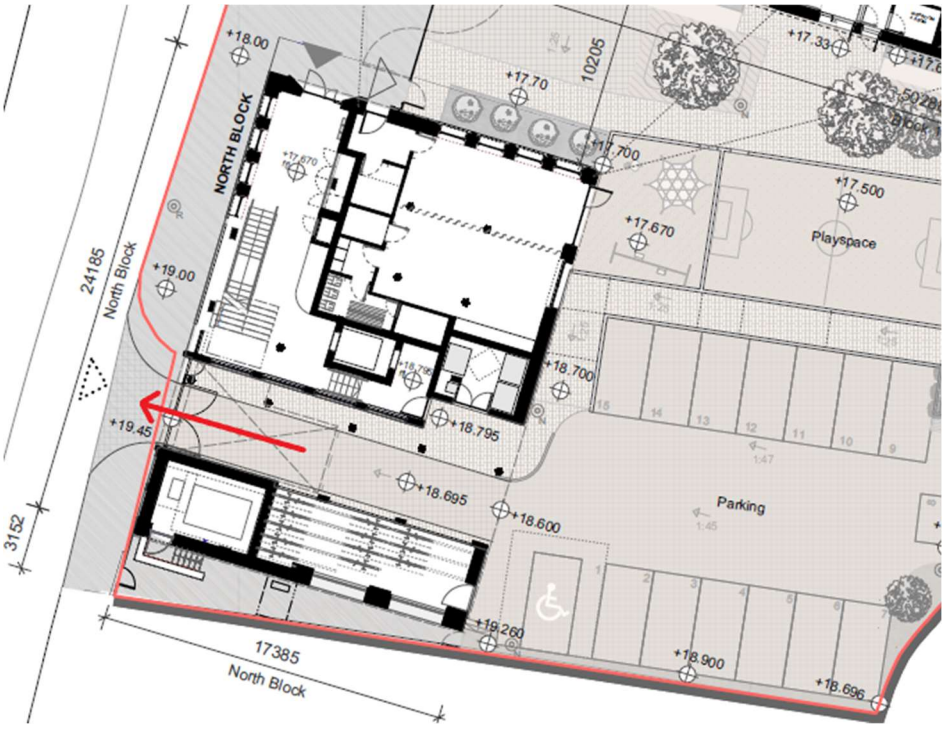
Other observations which the RSA team wishes to draw to the attention of the client have been set out in separate correspondence. These may include safety issues excluded from the RSA by the Terms of Reference or the RSA brief but do not require a formal Designer's Response.

2. Previous Road Safety Audit(s)

It is understood that no previous RSAs have been conducted on this project.

3. Items raised in this Road Safety Audit

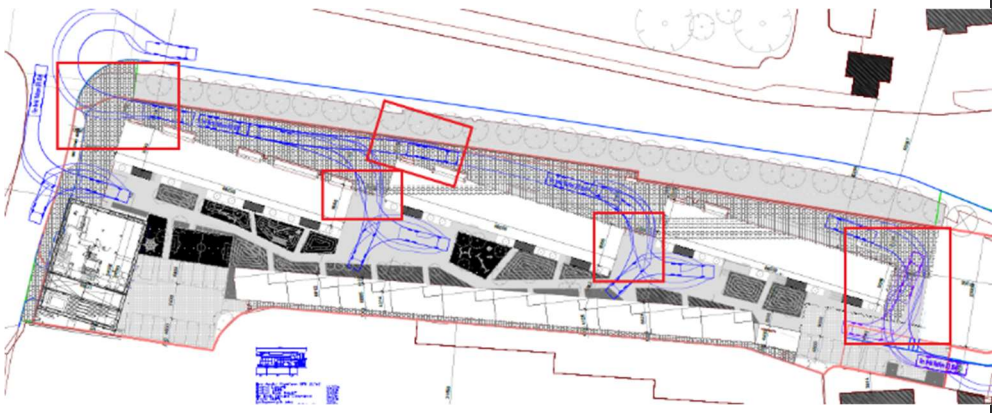
3.1 Problem – Conflict at Vehicular Access

Location:	Vehicular Access to Broadstone Plaza
Drawing:	CHR_GRA_S2_SK175_Site Plan update
Summary:	Visibility of the footway for cars passing underneath the proposed apartment will be obstructed by the building.
Problem:	Visibility of the footway for cars passing underneath the proposed apartment will be obstructed by the building increasing the potential for a collision with a pedestrian crossing the entrance.
Photograph:	
Recommendation:	Pedestrians travelling on the footway should be given priority at the access and measures should be taken to restrict vehicle speeds exiting the complex.

3.2 Problem – Vehicles mounting the kerbs

Location:	Vehicle exiting Catherine's Lane
Drawing:	CWRD-1210-33
Summary:	The revised kerb line at the eastern side of the complex may lead to vehicles striking the existing splitter island.
Problem:	The kerb line at the eastern side of the complex has been revised. There are currently splitter islands on either side of the access. Only one of these splitter islands is currently shown on the drawings. The revised kerb line at the eastern side of the complex may lead to vehicles striking the splitter island as they turn left out of Catherine's Street.
Photograph:	
Recommendation:	Swept path analysis should be undertaken to confirm that service vehicles can exit left from Catherine Street without encroaching on the splitter island. If vehicles are found to encroach on the splitter island, the kerb line should be adjusted accordingly.

3.3 Problem – Potential for Emergency access routes to be obstructed

Location:	Emergency access routes within development
Drawing:	TSK0001-01
Summary:	Parking within the complex may obstruct emergency access.
Problem:	Emergency access routes have been provided as part of the brief. At the time of the site visit, the auditors noted vehicles parked in the existing car park and around the back of the building. The number of parking spaces within the complex appears to be reduced in the scheme design. The reduction in parking spaces and the existing parking requirement seen on site, may result in vehicles parked in the emergency access routes. It is not clear how other road users will be prevented from parking within the complex which may lead to parked vehicles obstructing emergency access at a time when it is needed.
Photograph:	
Recommendation:	Steps should be taken to ensure that emergency access routes are kept clear at all times and vehicles are prevented from parking outside the designated parking area.

End of list of problems identified and recommendations offered in this RSA.

4. Road Safety Audit Statement

We certify that this RSA has been carried out in accordance with GG 119.

Audit Team Leader

Name:	Daniel Murphy
Signed:	
Position:	Senior Engineer
Organisation:	Ove Arup & Partners Ltd Bedford House 3rd Floor, 16-22 Bedford Street, Belfast, BT2 7FD
Date:	03/11/2022

Audit Team Member(s)

Name:	Lindsey Smith
Signed:	
Position:	Engineer
Organisation:	Ove Arup & Partners Ltd Bedford House 3rd Floor, 16-22 Bedford Street, Belfast, BT2 7FD
Date:	03/11/2022

Appendix A - Documents and Drawings

The following documents and drawings were supplied to the RSA team by the Design Organisation and have been examined in the course of conducting this audit.

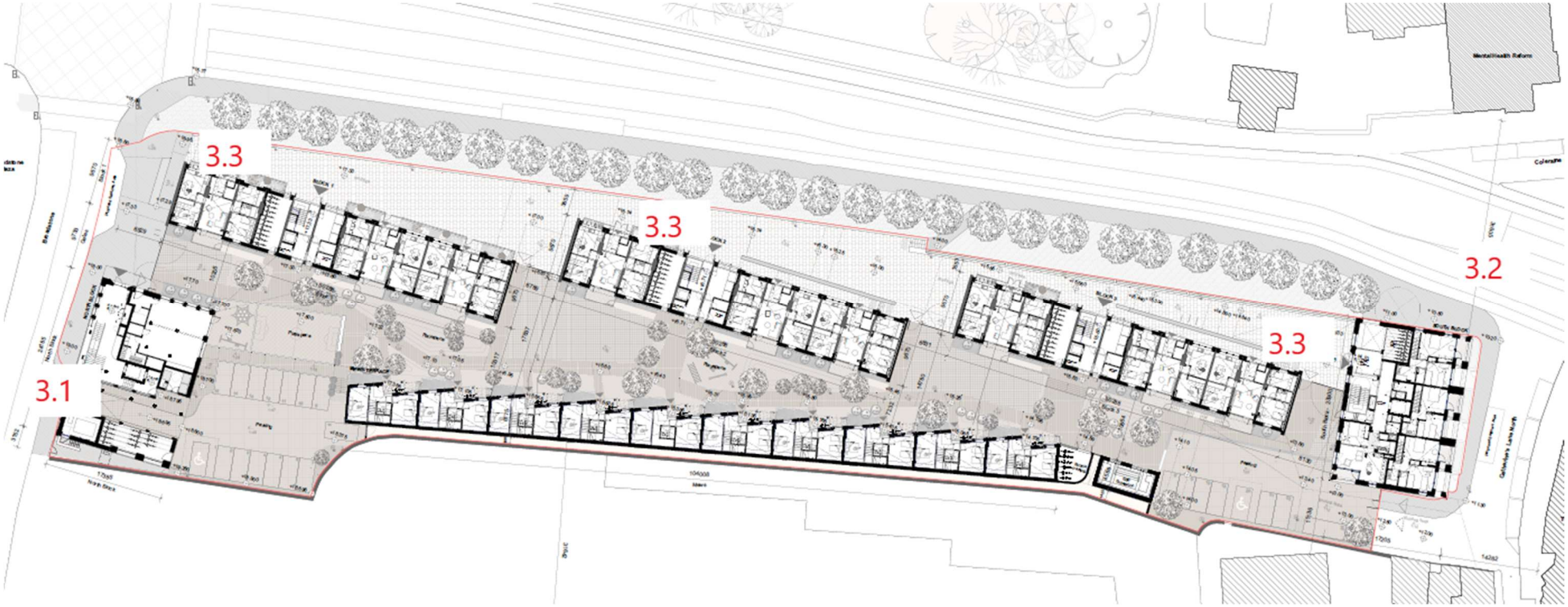
Documents

Title	Reference
281677-00_20221012_Stage 1 Road Safety Audit Brief	RSA 1 Brief
CONHIL-ARUP-ZZ-XX-RP-YT-0100	Part 8 Transport Statement

Drawings

Title	Reference	Revision
Site Location Plan OSI	CH-GRA-XX-00-DR-A-000000	P01
Existing Site Plan	CH-GRA-XX-00-DR-A-000101	P01
Proposed Site Plan - Existing Road	CH-GRA-XX-00-DR-A-000201	P01
Proposed Site Plan - Bus Connects	CH-GRA-XX-00-DR-A-000202	P02
LANDSCAPE MASTERPLAN	CON-BSM-XX-00-DR-L-1000	0
Site Autotrack Analysis - High Reach Fire Appliance	TSK0001_P02-01	P02
Site Autotrack Analysis - Car and Refuse	TSK0001_P02-02	P02
Site Plan update	CHR_GRA_S2_SK175	-

Appendix B - Problem Location Plan


3.3
3.3
3.2
3.3
3.1

Appendix C – Designer's Response Form

SAFETY AUDIT FORM – DESIGNERS RESPONSE

Scheme: Constitution Hill Renewal
Stage: 1 Road Safety Audit
Date Audit (Site Visit) Completed: 19th October 2022

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)
3.1	yes	yes		
3.2	yes	yes		
3.3	yes	yes		

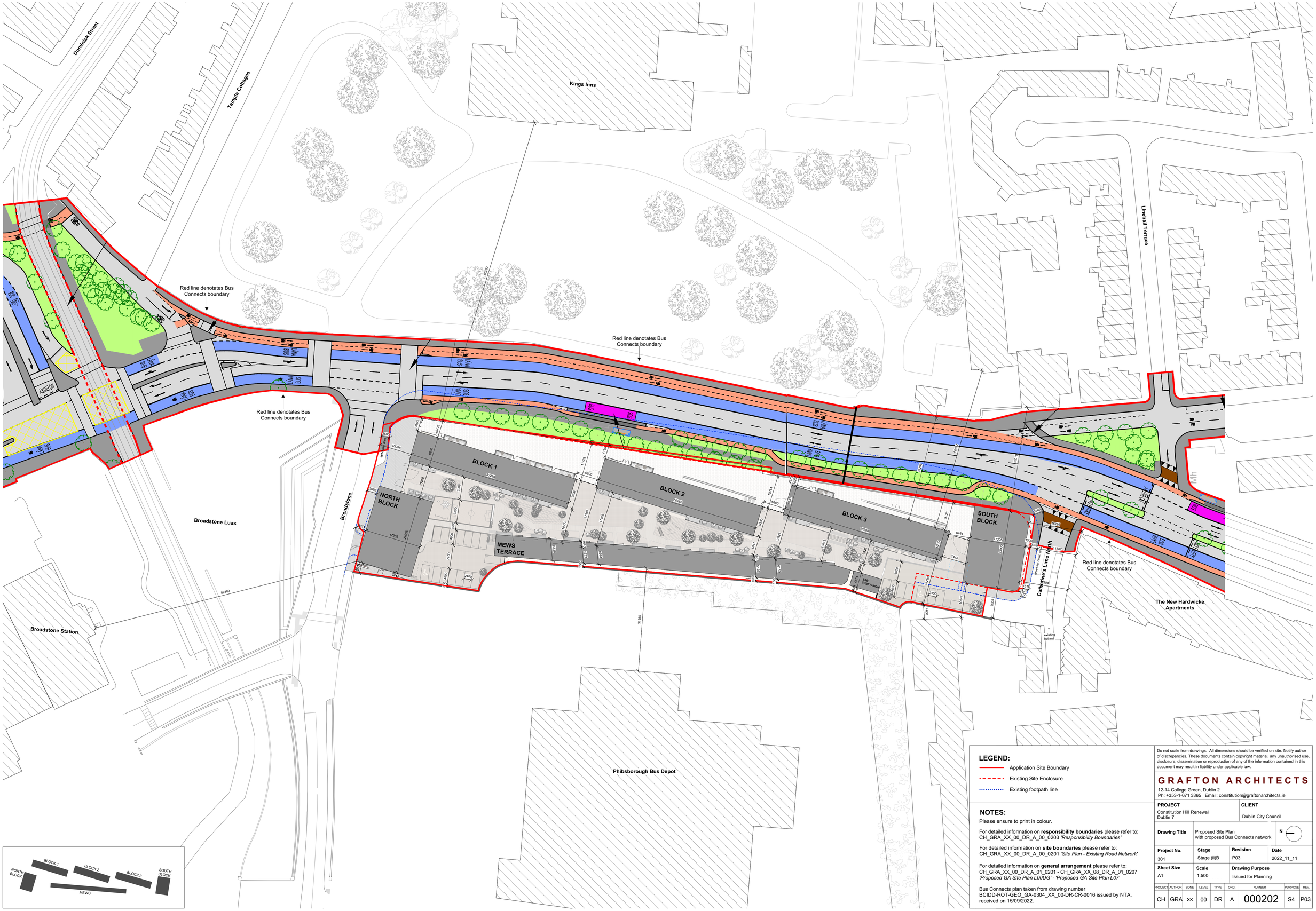
Signed…. ……**…** **Date**11.11.22……..
Design Team Leader

Signed……. **Date**11.11.22……
Audit Team Leader

Signed…… **Date**11.11.22……
Employer/Developer

Appendix B

Proposed Site Plan with Proposed BusConnects Network



LEGEND:

- Application Site Boundary
- Existing Site Enclosure
- Existing footpath line

NOTES:

Please ensure to print in colour.

For detailed information on **responsibility boundaries** please refer to: CH_GRA_XX_00_DR_A_00_0203 *'Responsibility Boundaries'*

For detailed information on **site boundaries** please refer to: CH_GRA_XX_00_DR_A_00_0201 *'Site Plan - Existing Road Network'*

For detailed information on **general arrangement** please refer to: CH_GRA_XX_00_DR_A_01_0201 - CH_GRA_XX_08_DR_A_01_0207 *'Proposed GA Site Plan L00UG' - 'Proposed GA Site Plan L07'*

Bus Connects plan taken from drawing number BCIDD-ROT-GEO_GA-0304_XX_00-DR-CR-0016 issued by NTA, received on 15/09/2022.

Do not scale from drawings. All dimensions should be verified on site. Notify author of discrepancies. These documents contain copyright material, any unauthorised use, disclosure, dissemination or reproduction of any of the information contained in this document may result in liability under applicable law.

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PROJECT	CLIENT
Constitution Hill Renewal Dublin 7	Dublin City Council

Drawing Title	Proposed Site Plan with proposed Bus Connects network	N

Project No.	Stage	Revision	Date
301	Stage (ii)B	P03	2022_11_11

Sheet Size	Scale	Drawing Purpose
A1	1:500	Issued for Planning

PROJECT	AUTHOR	ZONE	LEVEL	TYPE	ORG.	NUMBER	PURPOSE	REV.
CH	GRA	xx	00	DR	A	000202	S4	P03

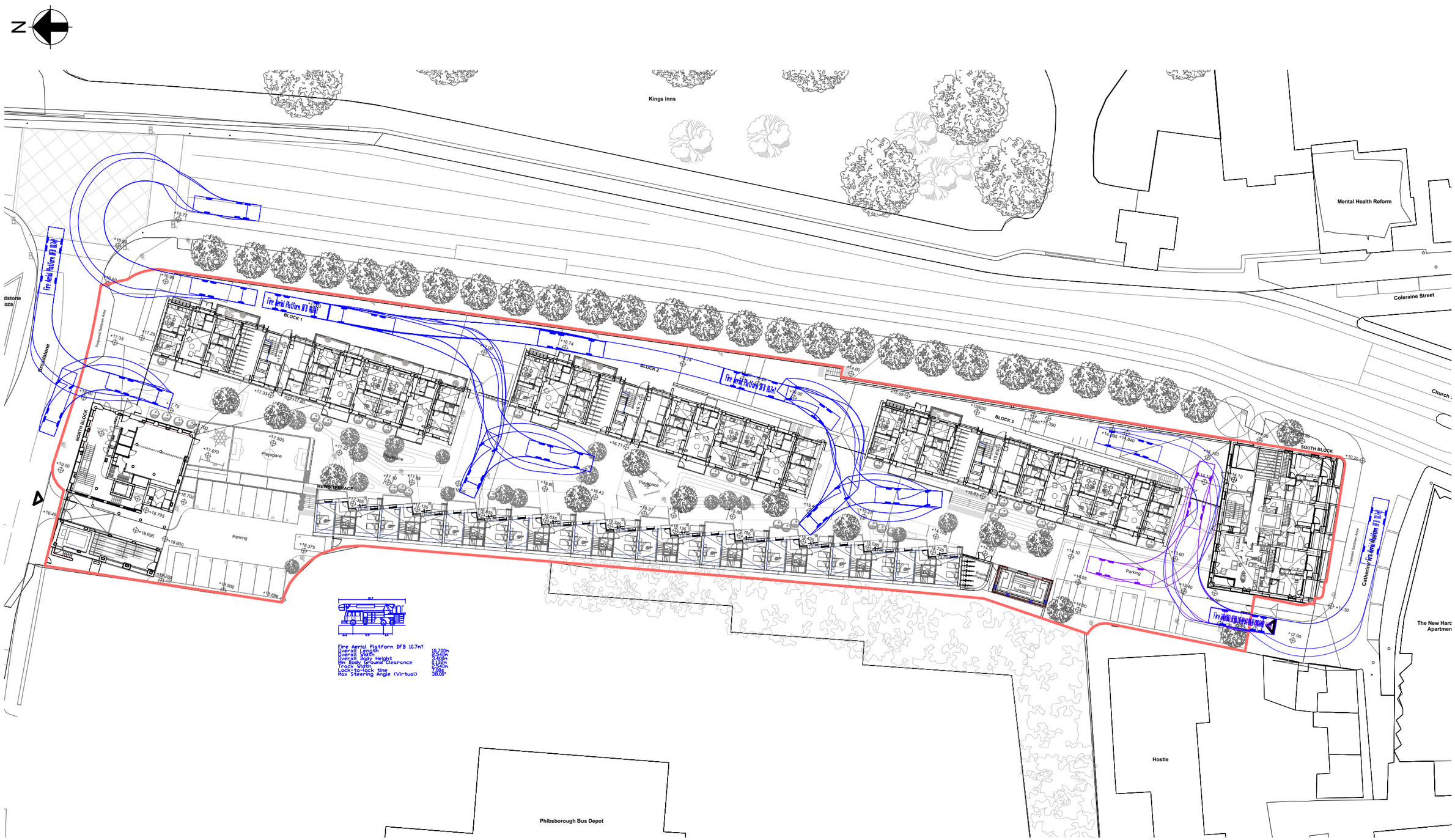
Appendix C

Swept Path Analysis

A3

A | B | C | D | E | F | G | H

1 | 2 | 3 | 4 | 5



Rev	Date	By	Chkd	Appd
P03	02/11/22	ES	AJO'D	TO
P02	30/08/22	ES	AJO'D	TO
P01	16/06/22	ES	AJO'D	TO

ARUP

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Dublin, D04 T6X0
www.arup.ie
Tel +353(0)1 233 4455 Fax +353(0)1 668 3169

Project Title
Constitution Hill

Client

Drawing Title
Site Autotrack Analysis
High Reach Fire Appliance

Scale at A3
1:600

Role
Planning

Suitability
S2 - Suitable for Information

Arup Job No
281677-00

Rev
P03

Name
TSK0001-01

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A3

A B C D E F G H

1 2 3 4 5

N

Kings Inns

Mental Health Reform

Coleraine Street

Church

Broadstone

Broadstone Plaza

Proposed Guidelines Track

NORTH BLOCK

BLOCK 1

BLOCK 2

BLOCK 3

SOUTH BLOCK

MEWS TERRACE

Playspace

Parking

Bicycle Parking

ESB Substation

Catherine McAuley Mental Health Unit

Pedestrian Access

The New Harc Apartmen

Hostle

Phibsborough Bus Depot

Estate Car (2006)

Overall Length	4.710m
Overall Width	1.804m
Overall Body Height	1.445m
Min Body Ground Clearance	0.097m
Max Track Width	1.726m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	5.950m

Vulture 2225 (with Mercedes Econic 2628LL 6x4 chassis)

Overall Length	9.930m
Overall Width	2.550m
Overall Body Height	3.749m
Min Body Ground Clearance	0.300m
Track Width	2.498m
Lock-to-lock time	4.00s
Wall to Wall Turning Radius	9.100m

Rev	Date	By	Chkd	Appd
P03	02/11/22	ES	AJO'D	TO
P02	30/08/22	ES	AJO'D	TO
P01	16/06/22	ES	AJO'D	TO

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Project Title
Constitution Hill

Client

Drawing Title
Site Autotrack Analysis
Car and Refuse

Scale at A3
1:600

Role
Planning

Suitability
S2 - Suitable for Information

Arup Job No
281677-00

Rev
P03

Name
TSK0001-02

\\globaleurope\Dublin\jobs\281000\281677-0004. Internal\4-02 Drawings\4-02-16 Transportation\TSK0001_P03.dwg

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