

These measures are intended to ensure that the waste arising from construction of the proposed development is dealt with in compliance with the provisions of the Waste Management Acts 1996 to 2013, the Litter Act of 1997, and the Eastern-Midlands Region (EMR) Waste Management Plan 2015-2021, achieving optimum levels of waste reduction, re-use and recycling.

### **6.3 Predicted Impacts of the Proposed Development**

Waste materials will be generated during the construction of the proposed development, including the initial site clearance and excavation. Careful management of these, including segregation at source, will help to ensure maximum recycling, reuse and recovery is achieved, in accordance with current local and national waste targets. It is expected, however, that a certain amount of waste will still need to be disposed of at landfill.

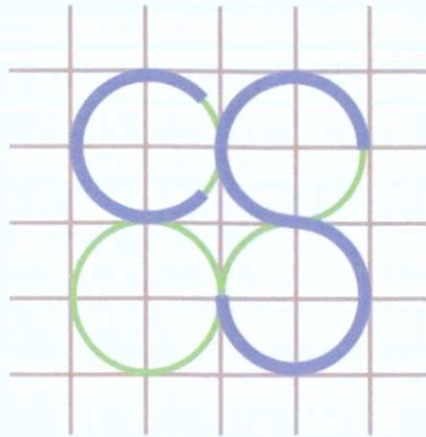
Given the provision of appropriate facilities, environmental impacts (e.g. litter, contamination of soil or water, etc.) arising from waste storage are expected to be minimal. Particular attention must be given to the appropriate management of any construction waste containing contaminated or hazardous materials. A detailed site investigation will be carried out prior to construction and the Contractor will be required to commission a detailed asbestos survey of the existing structures to be demolished. The use of suitably licensed waste contractors will ensure compliance with relevant legal requirements and appropriate off-site management of waste.

In summary, with a high level of due diligence carried out at the site, it is envisaged that the environmental impact of the construction phase of the proposed development will be of small scale and short duration, with respect to waste management.

## 7.0 SUMMARY

This document has been prepared with reference to the NCDWC "Guidelines for the Preparation of Waste Management Plans for Construction and Demolition Projects" (July 2006) and the EPA "Draft Best Practice Guidelines for the Preparation of Resource Management Plans for Construction and Demolition Projects" (April 2021). This outlines the principles and measures by which the waste generated during the demolition construction phases of the proposed development will be managed and disposed of in compliance with the provisions of the Waste Management Acts 1996 to 2013 and the Eastern-Midlands Region (EMR) Waste Management Plan 2015-2021. It describes the measures by which optimum levels of waste reduction, re-use and recycling shall be achieved.

**APPENDIX 6A**  
**OUTLINE CONSTRUCTION MANAGEMENT PLAN**



CS CONSULTING  
GROUP

DUBLIN LONDON LIMERICK

## Outline Construction Management Plan

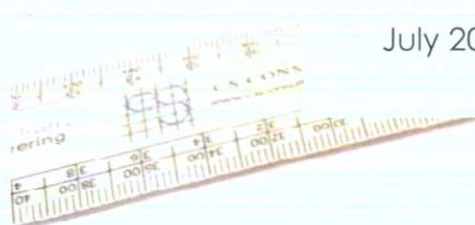
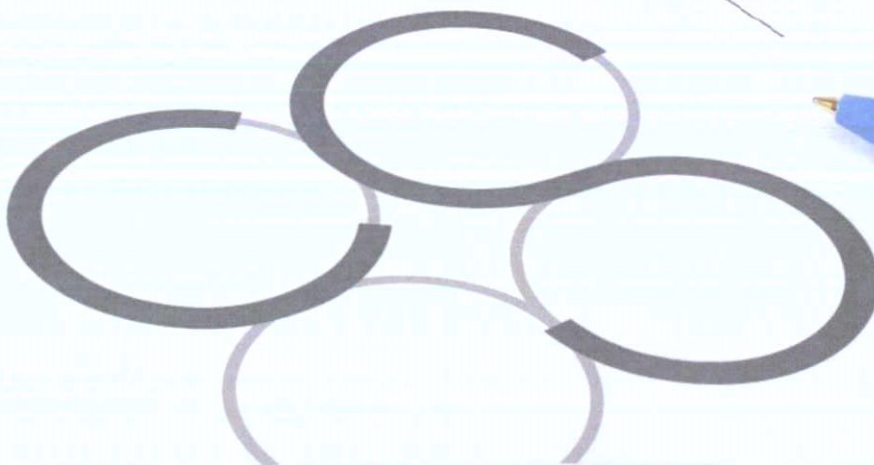
### Office and Hotel Development

Heuston South Quarter, St. John's  
Road West, Kilmainham, Dublin 8

Client: HPREF HSQ Investments Ltd.

Job No. H087

July 2022



**OUTLINE CONSTRUCTION MANAGEMENT PLAN**  
**OFFICE AND HOTEL DEVELOPMENT**  
**HEUSTON SOUTH QUARTER, ST. JOHN'S ROAD WEST, KILMAINHAM, DUBLIN 8**

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## 1.0 INTRODUCTION

Cronin & Sutton Consulting Engineers (CS Consulting) have been commissioned by HPREF HSQ Investments Ltd. to prepare an Outline Construction Management Plan (OCMP) for a proposed office and hotel development at Heuston South Quarter, St. John's Road West, Kilmainham, Dublin 8.

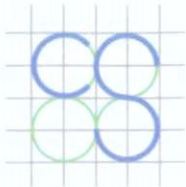
The aim of this OCMP is to address issues that can arise during construction including noise and vibration, traffic management, working hours, pollution control, dust control, road cleaning, site compound / welfare facilities and staff parking, all associated with the construction works. This plan will be updated by the appointed main contractor and agreed with Dublin City Council (DCC) in advance of the construction phase.

This Outline Construction Management Plan (OCMP) has been prepared to give an overview of the processes to be employed during construction of this project. Prior to the on-site activities commencing, this plan will be revised by the appointed lead contractor and expanded to produce a Detailed Construction Management Plan, which shall incorporate:

- Operational Health & Safety (OH&S) Management Plan
- Environmental Management Plan, including Waste Management Plan
- Pedestrian and Traffic Management Plan

The Construction Management Plan will be integrated into and implemented throughout the construction phases of the project to ensure that:

- all site activities are effectively managed to minimise the generation of waste and to maximise the opportunities for on-site reuse and recycling of waste materials;
- all waste materials generated by site activities, that cannot be reused on site, are removed from site by appropriately permitted waste



haulage contractors and that all wastes are disposed of at approved waste licensed/permitted facilities in compliance with the Waste Management Acts 1996 to 2005; and

- any environmental impacts (noise, vibration, dust, water) of project construction work activities on receptors and properties located adjacent to the project work areas, and on the local receiving environment, are managed and controlled.

## 2.0 SITE LOCATION AND EXISTING CONDITION

### 2.1 Site Location

The proposed development is located on St. John's Road West at the Heuston South Quarter (HSQ) complex in Dublin 8, within the administrative jurisdiction of Dublin City Council. The planning application boundary encloses an area of approx. 0.62ha. The development site is bounded to the west by the gardens of the Royal Hospital Kilmainham, to the north by St. John's Road West, to the east by an existing office building, and to the south by a further partially developed section of the wider HSQ complex that is also in the applicant's ownership.

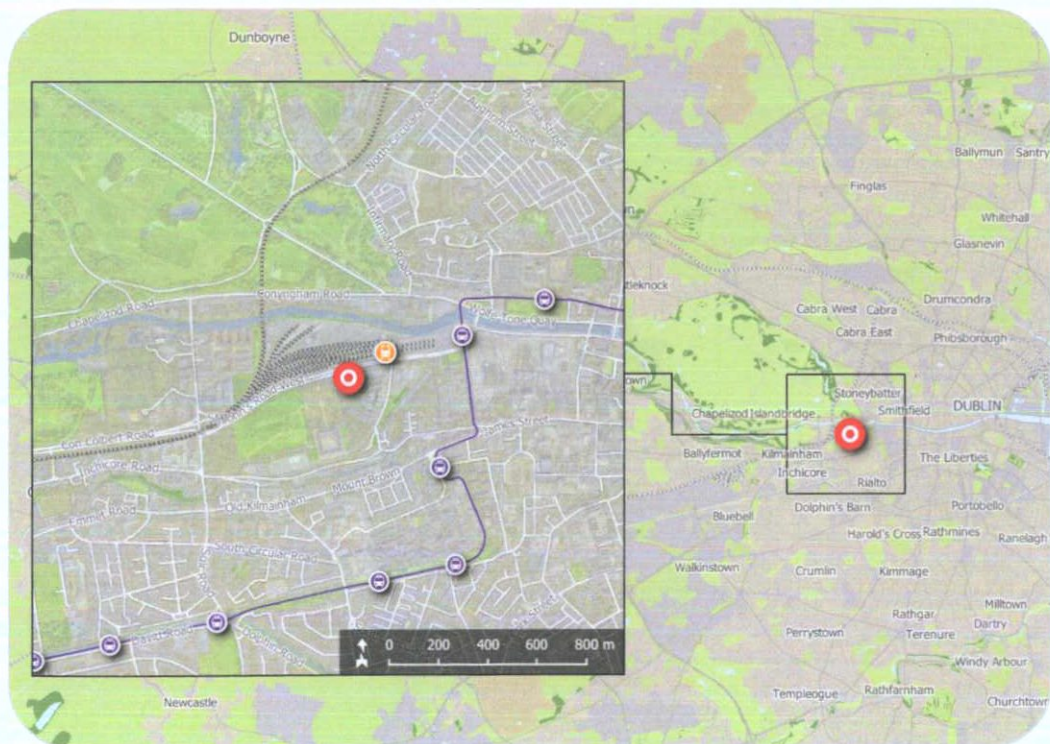


Figure 1 – Location of proposed development site  
(map data & imagery: EPA, OSi, NTA, OSM Contributors, Google)



The location of the proposed development site is shown in Figure 1; the indicative extents of the development site, as well as relevant elements of the surrounding road network, are shown in more detail in Figure 2.

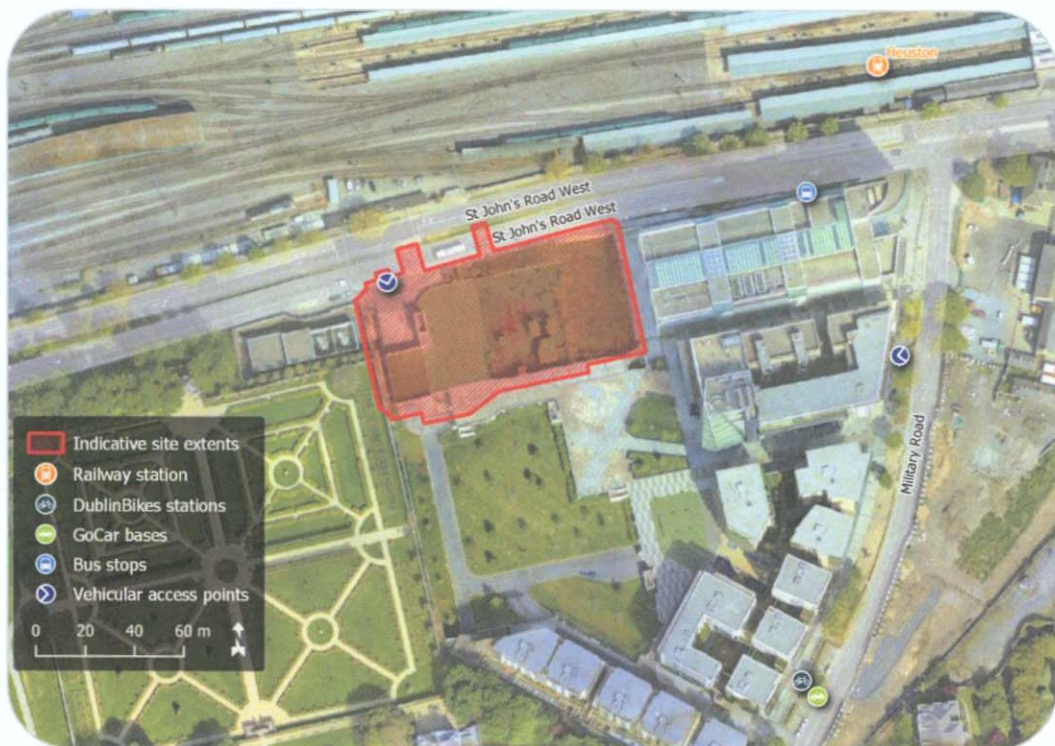


Figure 2 – Site extents and environs  
(map data & imagery: NTA, DCC, OSi, OSM Contributors, Google)

## 2.1 Existing Site Condition

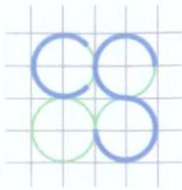
The subject site is brownfield, comprising a partially developed section of the Heuston South Quarter (HSQ) complex. Some surface level internal roads are present on the site, which benefits from the existing established HSQ vehicular accesses on St. John's Road West (R148) and Military Road. The site has been landscaped as an interim measure to improve its aesthetics pending its complete development. There is already an established road, pedestrian and cycle network in the vicinity of the site.

### **3.0 PROJECT DESCRIPTION AND PHASING**

#### **3.1 Description of Proposed Development**

The proposed development will provide a mixed use commercial development comprising of a hotel (241 no. bedrooms) and an office block delivering a cumulative Gross Floor Area (GFA) of 32,602, inclusive of basement area. The proposed development consists of:

- Site clearance and localised demolitions to remove part of the podium and Basement Level -1 reinforced concrete slabs at the interface of the proposed hotel and office blocks, together with the incorporation of part of the existing basement level structure extending to approximately 4,228 sq.m (GFA).
- The proposed basement will be integrated within the existing basement levels serving the wider HSQ development and will be accessed from the existing vehicular ramped accesses/egresses onto/off St. John's Road West and Military Road to the north and east, respectively. The proposed basement area is split into two areas to provide a dedicated Hotel Basement area of approximately 2,132 sq.m (GFA) and an Office basement area of 2,096 sq.m (GFA).
- The construction of a 5-storey hotel (over lower ground and basement levels) to provide 238 no. bedrooms. At basement level provision is made for 24 no. car parking spaces; 2 no. motorcycle spaces together with plant and storage rooms. A waste storage area with dedicated loading bay / staging area is provided along with dedicated set-down area for deliveries. A dual-purpose service bay is also provided at basement level with modifications to existing line markings to the basement parking area to accommodate the development. At Lower Ground floor level provision is made for 14 no. Bedrooms; Conference Room; Kitchen and Staff facilities and Changing Rooms / WCs plus ancillary Gym. This floor is arranged around an internal courtyard



space. Provision is made at Podium level for 19 no. Bedrooms; Dining Area and Foyer with entrance at the South-Eastern corner of the building onto a new laneway separating the proposed hotel and office building. Provision is made at the south-western corner at podium level for an ESB sub-station / switch room and 15 no Sheffield type bicycle stands are provided for the hotel and the retail / café unit, providing storage space for 30 no. bicycles. A total of 205 no. bedrooms are provided at the upper levels (above podium level). The top floor of the hotel (4th floor) has a splayed setback to provide a west facing roof terrace. An ancillary hotel bar (118 sq.m) opens onto this roof terrace.

- The construction of a 12-storey (over lower ground and basement levels) office building to the east of the proposed hotel building to provide 19,474 sq.m of office floorspace (GFA) from lower ground floor level and above. Provision is made at basement level for 30 no. car parking spaces; 2 motorcycle spaces and 120 no. bicycle storage spaces together with plant and storage rooms. Provision is made for a further 196 no. bicycle storage spaces at Lower Ground floor level plus changing rooms (including showers). At podium level 2 no. ESB sub-stations and switch rooms are proposed. The foyer and entrance is provided at the southern end of the building at Podium level along with a Retail/Café unit of 208 sq.m at the South-Western corner of the building. The building is setback at 4th floor level to provide a west facing roof terrace. Splayed setbacks to the southern and eastern elevations at the 11th floor level forms a roof terrace that wraps around the South-Eastern corner of the building. Plant is provided at rooftop level that is enclosed by curved louvred screens and PV panels.
- Works proposed along the St John's Road West frontage include the omission of the existing left-turn filter lane to the vehicular ramped access to the HSQ development and re-configuration of the pedestrian crossings at the existing junction together with the re-

configuration of the existing pedestrian crossing over the westbound lanes of St. John's Road West leading to an existing pedestrian refuge island and re-alignment of the existing footpath along the site frontage onto St John's Road West to tie into the reconfigured junction arrangement.

- Drainage works proposed include the provision of 2 no. below basement surface water attenuation tanks with duty/stand-by arrangement pump sumps and associated valve chambers, and 2 no. below basement foul pump sumps with duty/stand-by arrangement and 24hr emergency storage and associated valve chambers. New foul drainage and stormwater drainage connections are proposed to existing foul and storm sewers in St. John's Road West with associated site works.
- Hard and soft landscaping works are proposed at lower ground level along St John's Road West and at podium level to provide for the extension and completion of the public plaza to the south of the proposed Office Block and the provision of a new pedestrian laneway connecting St John's Road West with the public plaza at podium level.

### **3.2 Associated Permitted Development**

The subject site forms the northern part of the applicant's landholding in the existing HSQ complex. In the southern part of this landholding, permission has been granted by An Bord Pleanála for a Strategic Housing Development (SHD) comprising 359no. residential apartment units with 80no. car parking spaces (ABP case ref. TA29S.311591).

It is assumed for the purposes of the present report that the construction of this associated permitted development shall proceed concurrently with that of the subject proposed development.



Figure 3 – Associated development site  
(map data & imagery: OSM Contributors, Google)

### 3.3 Construction Programme

Subject to a successful grant of planning, it is intended for the works to commence in Q4 2023. The proposed development is anticipated to be constructed over a period of approximately 36-48 months.

The current indicative phasing suggests that the proposed development is to be constructed sequentially from east to west: the proposed office building to proceed first, followed by the hotel in the western part of the site. The final phasing and associated Construction Traffic Management Plan shall be determined by the appointed main contractor and submitted to DCC for approval prior to commencement.

## **4.0 SITE MANAGEMENT**

### **4.1 Site Establishment**

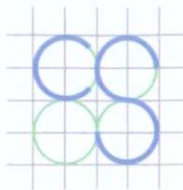
The contractor will provide all necessary accommodation, material handling and secure storage for its operations.

The facilities to be provided and maintained by the contractor will include:

- Construction plant
- Hoisting equipment and cranes
- Scaffolding, platforms, access ladders, barriers, handrails
- Barricades and hoardings
- Temporary driveways, road crossovers and construction zone
- Continuous emergency vehicle access to site during working hours
- On-site hardstand areas for vehicle loading and unloading
- Storage sheds and compounds
- Rubbish sorting areas
- Site amenities with all required equipment and facilities
- Construction worker accommodation
- First aid facilities
- Site administration accommodation

Construction plant and site amenities will comply with the requirements of all relevant authorities and be wholly contained within the hoarded site. All construction plant and equipment will be progressively removed when no longer required.

First Aid facilities for the use of all construction staff in the form of a fully provisioned first aid area within the site office with life-saving and safety equipment as required by relevant statutes, authorities and awards will be maintained at all times by the contractor.



The contractor will obtain all required permits, pay the applicable fees, and comply with all conditions.

#### **4.2 Hoarding and Fences**

Prevention of unauthorised access to the site is a very high priority and will be vigorously managed throughout the construction period. When the contractor is appointed, the site will be secured with site heras fencing until a hoarding is erected in accordance with the final Construction Management Plan. Any hoardings and signboards to the perimeter of the site will comply with the requirements of the relevant authorities and the relevant Health and Safety Acts. All hoarding positions shall respect the existing vehicular routes at podium level for servicing and emergency vehicles.

The contractor will be required to erect a single project signboard to the hoarding at the main entrance points to identify the site.

#### **4.3 Services Relocations and Temporary Protection of Public Domain**

Prior to any works commencing on site, detailed dilapidation reports will be carried out to properties and buildings adjoining the site.

Further dilapidation reports will be carried out for footpaths, kerbs, road pavements and utility infrastructure features of the main access routes in the immediate vicinity of the site.

The contractor will provide protection to existing surrounding building elements potentially impacted by the works. Protection may be in the form of screened hoardings, scaffolding and fencing, taped drop sheets and the like, all installed prior to commencement of any potentially disruptive works.

The type of required hoardings, scaffolding and fencing will vary over the duration of the works, depending on how the site activities potentially impact on the adjoining public domain and neighbourhood.

Dial-before-you-dig enquiries and detailed services location investigations shall be carried out to identify any need for temporary protection of elements of existing utility infrastructure that are not to be diverted as part of the works.

All temporary protection is to be installed and maintained for the duration of the works or until no longer required.

#### **4.4 Major Plant and Equipment**

Plant and equipment expected to be used during the development's construction include:

- Articulated and rigid trucks
- CFA piling rigs, bulldozers, excavators, backhoes, with ancillary equipment (rock hammers or saws)
- Tower cranes/mobile cranes
- Concrete delivery trucks
- Concrete pumps
- Personnel, and material hoists
- Scissor, boom, and fork lifts

All plant and equipment will be operated by experienced and qualified personnel with the appropriate registrations.

#### **4.5 Vehicular Access to Site**

The site is currently accessed directly from St. John's Road West. It is anticipated that for the duration of the construction works, all construction



access and egress for deliveries will be via St. John's Road West, which provides access to the M50.

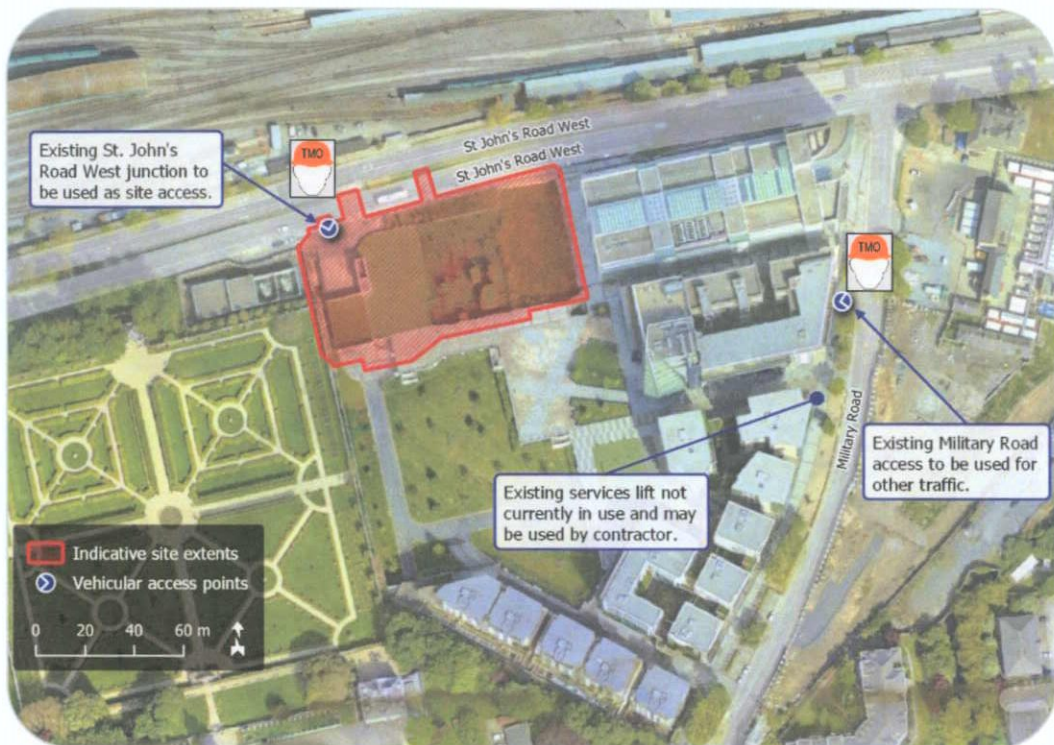


Figure 4 – Site access points  
(map data & imagery: NTA, DCC, OSi, OSM Contributors, Google)

During the construction works, access to the existing basement areas of the wider Heuston South Quarter (HSQ) complex will be maintained, with light vehicles (e.g. cars) encouraged to utilise the existing Military Road access point. An agreed traffic management strategy for the existing basement carpark will be provided to all HSQ residents and staff currently utilising the basement. This traffic management plan will be monitored on an ongoing basis throughout the works and altered as required depending on construction sequence. Access for large servicing and delivery vehicles to the retail units, and delivery areas at basement level, shall also be maintained from St. John's Road West. Construction traffic generation and the interim temporary diversions of existing traffic are addressed in the Traffic and Transport Assessment.

The shared access will necessitate full time Traffic Management Operatives at the St. John's Road West and Military Road access points for the duration of the works (see Figure 4).

The following are some measures that will be implemented to maintain smooth traffic flows.

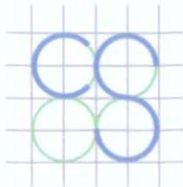
- Entrance will be wide enough to ensure two rigid body vehicles can pass each other, i.e. one can enter while another waits to leave.
- Entrance gate will be set back a minimum of 18m from the road edge to ensure all vehicles leave the road before stopping.
- Appropriate sight lines will be provided by placing the hoarding well enough back from the kerb edge.
- Advanced warning provided to all users on the road and directional signage for site traffic.

Revised measures will be developed further as part of the Construction Traffic Management Plan (CTMP) developed by the contractor in consultation with the Design Team and with Dublin City Council.

The principal objective of the CTMP is to ensure that the impacts of all building activities during construction of the proposed development upon both the public (off-site) and internal (on-site) environments are fully considered and proactively managed/programmed, respecting key stakeholders requirements, thereby ensuring that both public and construction worker safety is maintained at all times, disruptions minimised and undertaken within a controlled hazard free / minimised environment. It is noted that the impact of the construction works will be temporary in nature.

The CTMP will be prepared in accordance with the principles outlined below and shall always comply with the requirements of:

DCC PLAN NO: 4610/22  
RECEIVED: 04/08/2022



- Chapter 8 of the Department of the Environment *Traffic Signs Manual*, current edition;
- Guidance for the Control and Management of Traffic at Road Works (June 2010) prepared by the Local Government Management Services Board; and
- any additional requirements detailed in the Design Manual for Urban Roads and Streets (DMURS) or TII standards.

In order to ensure satisfactory operation of the construction stage the following is proposed:

- No construction traffic access will be permitted to the site via Military Road unless explicitly agreed with DCC and only then in exceptional circumstances
- Provision of sufficient on-site parking and compounding to ensure no potential overflow onto the local network.

The site will be able to accommodate employee and visitor parking throughout the construction period with construction of temporary hardstanding areas.

Finally, if deemed necessary truck wheel washes will be installed at construction entrances and any specific recommendations regarding construction traffic management made by the Local Authority will be adhered to.

The following mitigation measures will be incorporated into the CTMP:

- During the pre-construction phase, the site will be securely fenced off from adjacent properties, public footpaths and roads.
- The surrounding road network will be signed to define the access and egress routes for the development.

- The traffic generated by the construction phase of the development will be strictly controlled in order to minimise the impact of this traffic on the surrounding road network.
- All road works will be adequately signposted and enclosed to ensure the safety of all road users and construction personnel.
- All employees' and visitors' vehicle parking demands will be accommodated on-site.
- A programme of street cleaning if/when required.
- Directional signage will be provided.
- Careful management of the delivery of abnormal loads to the site.
- Measures to obviate queuing of construction traffic on the adjoining road network.

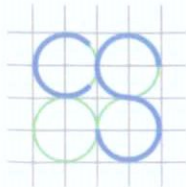
#### **4.6 Site Security**

Access to site will be controlled by means of an electronic access control system and camera remote monitoring system for out of hours use. During working hours, a gateman will control traffic movements and deliveries.

All personnel working on site will be required to have a valid Safe Pass card.

#### **4.7 Material Hoisting and Movement Throughout the Site**

It is expected that three to four tower cranes may be required on site to assist with superstructure and façade works during construction. All lifting activities will have to be coordinated on site by the appointed person on site. All lifts will have to have a proper lift plan in place prior to commencement. No loads will be lifted over the public domain or adjacent properties.



Hoists and teleporters may also be used within the site and around its perimeter as required during the project, to facilitate material and waste movements into and out of the site.

#### **4.8 Deliveries & Storage Facilities**

All deliveries to site will be scheduled to ensure their timely arrival and avoid the need for storing large quantities of materials on site. Deliveries will be scheduled outside of rush hour traffic, to avoid disturbance to pedestrian and vehicular traffic in the vicinity of the site, and will access via St. John's Road West only.

#### **4.9 Site Accommodation**

On-site facilities shall include:

- a materials and equipment storage area;
- a site office;
- staff welfare facilities (e.g. toilets, drying room, canteen, etc.).

Electricity will be provided to the site via national grid.

Water supply to the site during construction works will be provided by means of a temporary connection to a public watermain. Similarly, a temporary connection for foul water drainage will be made to the public network.

#### **4.10 Site Parking**

Vehicle parking for construction personnel shall be accommodated within the development site. To the extent possible, personnel will also be encouraged to use public transport, and information on local transportation will be published on site.

#### 4.11 Site Working Hours

Subject to the agreement of the Planning Authority, the following site operation hours are proposed:

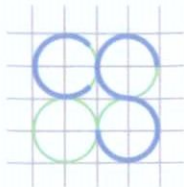
- Monday to Friday: 07:00 to 19:00
- Saturdays: 08:00 to 14:00
- Sundays & Bank Holidays: Works not permitted  
(unless under permit)

It may be necessary for some construction operations to be undertaken outside these times, for example: service diversions and connections; concrete finishing and fit-out works; etc. There may also be occasions where it is necessary to make certain deliveries outside these times, for example, where large loads are limited to road usage outside peak times.

#### 4.12 COVID-19 Pandemic Standard Operating Procedures

The main contractor will be required to implement the relevant HSE and CIF COVID-19 guidelines in accordance with CIF Construction Sector C-19 Pandemic Standard Operating Procedures. A non-exhaustive list of measures will include:

- The Main Contractor will be required to appoint a C-19 Compliance Officer.
- All visitors to have completed the CIF C-19 online induction
- Temperature checks for all visitors when entering the site
- Social distancing measures to be observed. In particular in canteens and drying rooms
- Hand sanitizer stations at regular intervals on site
- One-way system on site pedestrian access routes



## 5.0 ENVIRONMENTAL MANAGEMENT

The contractor will establish guidelines and controls for all activities that may impact on the surrounding environment for the duration of the works, including; air, water, land, natural resources, flora, fauna, humans, and their interrelation.

The project is to be developed to enable to all personnel with the means to understand their responsibilities and to meet the contractor's statutory, contractual and procedural obligations relating to environmental management.

For each activity, the environmental aspects and associated actual and potential impacts are to be identified as they relate to the following environmental elements:

- emissions to air
- releases to water
- releases to land
- use of raw materials & natural resources
- use of energy
- waste and by-products
- community & neighbours
- flora & fauna
- heritage & cultural

Specific construction-stage environmental impact mitigation measures are also listed in the accompanying Environmental Impact Assessment Report (EIAR). The lead contractor appointed to the project will be required to implement these measures as part of their final Detailed Construction Management Plan.

### **5.1 Materials and Decontamination**

Excavation works will each address the requirements of this investigation report and verify the treatment and removal of all materials and contamination encountered during the works.

### **5.2 Storm Water and Wastewater Management**

Storm water and wastewater management will be constructed as per the conditions of an approved planning permission. The purpose of these procedures is to ensure that storm water and wastewater runoff is managed and that there is no off-site environmental impact caused by overland storm water flows.

The project environmental management plan will be developed in detail to include:

- silt control on the roads
- diversion of clean water
- treatment and disposal of wastewater from general clean-up of tools and equipment
- spills control
- refuelling of machinery at a designated bunded refuelling area
- silt trapping and oil interception (to be considered where surface water runoff may enter watercourses)

### **5.3 Noise and Vibration**

During the construction works the Contactor shall comply with:

- Safety, Health and Welfare at Work (General Application) Regulations 2007, Part 5 Noise and Vibration.
- The Environmental Impact Assessment Report (EIAR) accompanying this planning application.



- BS 5228-1:2009+A1:2014 and BS 5228-2:2009+A1:2014

BS5228-1:2009+A1:2014 recommends that, for soundly constructed residential property and similar structures that are generally in good repair, a threshold for minor or cosmetic (i.e. non-structural) damage should be taken as a peak component particle velocity (in frequency range of predominant pulse) of 15mm/s at 4Hz increasing to 20mm/s at 15Hz and 50mm/s at 40Hz and above. Below these values, minor damage is unlikely. Where continuous vibration is such as to give rise to dynamic magnification due to resonance, the guide values may need to be reduced by up to 50%. BS 5228-2:2009+A1:2014 also comments that important buildings which are difficult to repair might require special consideration on a case-by-case basis.

All works on site shall comply with BS 5228-2:2009+A1:2014 which gives detailed guidance on the control of noise and vibration from construction activities.

In general, the contractor shall implement the following mitigation measures during the proposed infrastructure works:

- Avoid unnecessary revving of engines and switch off equipment when not required.
- Keep internal haul roads well maintained and avoid steep gradients.
- Minimise drop height of materials.
- Start-up plant sequentially rather than all together.

More specifically the Contractor shall ensure that:

- A construction noise and vibration management plan is prepared.
- In accordance with Best Practicable Means, plant and activities to be employed on site are reviewed to ensure that they are the quietest available for the required purpose.

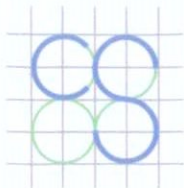
- Hoarding to be provided and, where required, improved sound reduction methods are used e.g. enclosures.
- Site equipment is located away from noise sensitive areas, as much as physically possible.
- Regular and effective maintenance by trained personnel is carried out to reduce noise and/or vibration from plant and machinery.
- Hours are limited during which site activities likely to create high levels of noise and vibration are carried out.

A site representative responsible for matters relating to noise and vibration will be appointed prior to construction on site.

A noise and vibration monitoring specialist will be appointed to carry out independent monitoring of noise and vibration during critical periods at sensitive locations for comparison with limits and background levels. It is proposed that noise and vibration levels be maintained below those outlined above as part of these infrastructure works.

All vehicles and mechanical plant used for the purpose of the works shall be fitted with effective exhaust silencers and shall be maintained in good and efficient working order.

In addition, all diesel engine powered plant shall be fitted with effective air intake silencers. All compressors shall be "sound reduced" models fitted with properly lined and sealed acoustic covers which shall be kept closed whenever the machines are in use. All ancillary pneumatic percussive tools shall be fitted with mufflers or silencers of the type recommended by the manufacturers, and where commercially available, dampened tools and accessories shall be used.



All ancillary plant, such as generators and pumps, shall be positioned to cause minimum noise disturbance. If operating outside the normal working week, acoustic enclosures shall be provided.

Where construction activities are required near neighbouring noise sensitive properties, a solid hoarding of approximately 2.4m in height should be erected to provide a degree of acoustic screening to the lower storeys.

Local screening should be provided for stationary plant such as generators and compressors.

An acoustically screened area should be provided on the site specifically for noisy operations such as grinding and cutting metal.

A noise liaison officer should be appointed and charged with the responsibility of keeping people informed of progress and setting down procedures for dealing with complaints.

#### **5.4 Air Quality Monitoring**

An air quality monitoring (Air Quality and Dust monitoring) specialist will be appointed to carry out independent monitoring during critical periods at sensitive locations for comparison with limits and background levels.

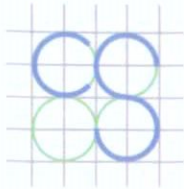
#### **5.5 Migrating Dust and Dirt Pollution**

The Contractor will ensure that all construction vehicles that exit the site onto the public roads will not transport dust and dirt to pollute the external roadways. This will be achieved through a combination of the following measures:

- Hard surface roads will be swept to remove mud and aggregate materials from their surface while any unsurfaced roads will be restricted to essential site traffic.

- Any road that has the potential to give rise to fugitive dust must be regularly watered, as appropriate, during dry and/or windy conditions.
- Vehicles exiting the site shall make use of a wheel wash facility where appropriate, prior to entering onto public roads.
- Vehicles using site roads will have their speed restricted, and this speed restriction must be enforced rigidly. On any unsurfaced site road, this will be 20kph, and on hard surfaced roads as site management dictates.
- Vehicles delivering material with dust potential (soil, aggregates) will be enclosed or covered with tarpaulin at all times to restrict the escape of dust.
- Public roads outside the site will be regularly inspected for cleanliness and cleaned as necessary.
- Material handling systems and site stockpiling of materials will be designed and laid out to minimise exposure to wind. Water misting or sprays will be used as required if particularly dusty activities are necessary during dry or windy periods.
- During movement of materials both on and off-site, trucks will be stringently covered with tarpaulin at all times. Before entrance onto public roads, trucks will be adequately inspected to ensure no potential for dust emissions.
- Restrict un-surfaced roads to essential site traffic.
- Construction techniques shall minimise dust release into the air.

The use of appropriate water-based dust suppression systems will greatly reduce the amount of dust and windborne particulates as a result of the construction process. This system will be closely monitored by site management personnel, particularly during extended dry periods and in accordance with site management methods.



## 5.6 Vibration Control and Mitigation Measures

The following specific vibration mitigation and control measures shall be considered during the construction phase:

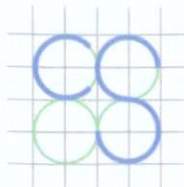
- Breaking out concrete elements using low vibration tools.
- Choosing alternative, lower-impact equipment or methods wherever possible.
- Scheduling the use of vibration-causing equipment, such as jackhammers, at the least sensitive time of day.
- Routing, operating or locating high vibration sources as far away from sensitive areas as possible.
- Sequencing operations so that vibration causing activities do not occur simultaneously.
- Isolating the equipment causing the vibration on resilient mounts.
- Keeping equipment well maintained.
- Confining vibration-generating operations to the least vibration-sensitive part of the day which could be when the background disturbance is highest.

## 5.7 Harmful Materials

Harmful material will be stored on site for use in connection with the construction works only. These materials will be stored in controlled manner. Where on site facilities are used, there will be a bunded filling area using double bunded steel tank at a minimum.

## 6.0 WASTE MANAGEMENT

A separate Construction and Demolition Waste Management Plan has been prepared by CS Consulting and is submitted under separate cover with this planning application. Please refer to this report for details on waste management during the demolition and construction phases of the project.



## 7.0 TRAFFIC MANAGEMENT

### 7.1 Vehicular Access Arrangements

The expected provisions for vehicular access to the construction site, and for maintaining access to the other existing areas of the HSQ complex, are described in sub-section 4.5.

### 7.2 Site Traffic and Pedestrian Management

The anticipated construction vehicle movements from and to the site in relation to the preliminary programme for the works will be nominated in the construction methodology by the main contractor. An indicative 'worst-case scenario' vehicular trip generation during construction is given in the accompanying Traffic and Transport Assessment report and reproduced below.

Table 1 – Maximum Peak Hour Construction Traffic Generation

Time Period	Heavy Goods Vehicles	Light Vehicles	TOTAL (PCU) <sup>1</sup>
Arrivals			
AM Peak	4	31	40
PM Peak	4	6	15
Departures			
AM Peak	4	6	15
PM Peak	4	31	40
Total Trips			
AM Peak	8	37	55
PM Peak	8	37	55

<sup>1</sup> 1 Light Vehicle (car or LGV) = 1 PCU; 1 HGV = 2.3 PCU

The construction site will be delineated by means of hoardings and lockable gates with screened fencing at the entry and exit points. The Contractor will pay particular attention to pedestrian traffic and safety at the entrances. All vehicles will enter and exit the site in a forward direction.

Pedestrians will have right of way. If required, alternate pedestrian routes around the site will be created and clearly signed. Depending on the progress of the works and temporary constraints imposed by the construction methodology, the location of access and exit points to the site may vary.

### **7.3 Minimisation of Construction Vehicle Movements**

Construction-related vehicle movements will be minimized through:

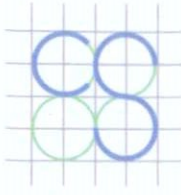
- consolidation of delivery loads to/from the site and scheduling of large deliveries to occur outside of peak periods;
- use of precast/prefabricated materials where possible;
- reuse of 'cut' material generated by the construction works on site where possible, through various accommodation works;
- provision of adequate storage space on site;
- development of a strategy to minimise construction material quantities as much as possible; and
- promotion of public transport use by construction personnel, in order to minimise staff vehicle movements.

The following headings identify some of the measures to be encouraged.

#### **7.3.1 Cycling**

Cycle parking spaces will be provided on the site for construction personnel. In addition, lockers will be provided to allow cyclists to store their cycling clothes.





### 7.3.2 Car Sharing

Car sharing among construction personnel will be encouraged, especially from areas where construction personnel may be clustered. The contractor shall aim to organize shifts in accordance with personnel origins, hence enabling higher levels of car sharing. Such a measure offers a significant opportunity to reduce the proportion of construction personnel driving to the site and will minimise the potential traffic impact on the surrounding road network. The car sharing protocol will be coordinated with the CIF Construction Sector C-19 Pandemic Standard Operating Procedures guidance regarding site personnel sharing a vehicle together.

### 7.3.3 Public Transport

Construction personnel will be encouraged to use public transport as means to travel to and from the site. An information leaflet shall be provided to all personnel as part of their induction on site, highlighting the location of the various public transport services in the vicinity of the construction site.

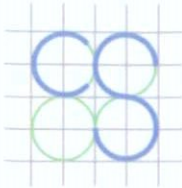
## 7.4 **Public Roads**

A Visual Condition Survey (VCS) will be carried out of all surrounding streets prior to any site works commencing. The contractor will liaise with the Transportation and Infrastructure department of DCC to agree any changes to load restrictions and construction access routes for the site. Measures will be put in place as required to facilitate construction traffic whilst simultaneously protecting the built environment.

All entrances and temporary roads will be continuously maintained for emergency vehicle access.

The following measures will be taken to ensure that the site, public roads and surroundings are kept clean and tidy:

- a regular program of site tidying will be established to ensure a safe and orderly site;
- scaffolding will have debris netting attached to prevent materials and equipment being scattered by the wind;
- food waste will be strictly controlled on all parts of the site;
- mud spillages on roads and footpaths outside the site will be cleaned regularly and will not be allowed to accumulate;
- wheel wash facilities will be provided for vehicles exiting the site; and
- in the event of any fugitive solid waste escaping the site, it will be collected immediately and removed.



## 8.0 COMPOUND FACILITIES / PARKING

The construction compound for the works shall be entirely within the site boundary. The compound shall be constructed using a clean permeable stone finish and will be enclosed with security fencing. Site accommodation to be provided will include suitable washing/drying room facilities for construction staff, a canteen, sanitary facilities, a first aid room, office accommodation, etc. Access to the compound will be security controlled and all site visitors will be required to sign in on arrival and sign out on departure. While signed in, all visitors will be required to comply with all site regulations.

A permeable hardstand area will be provided for staff parking and this area will be separate from designated machinery/plant parking.

A material storage zone will also be provided in the compound area. This storage zone will include material recycling areas and facilities.

A series of 'way finding' signage will be provided to route staff and deliveries into the site and to designated compound/construction areas.

On completion of the works, all construction materials, debris, temporary hardstands, etc. from the site compound will be removed off site and the site compound area reinstated in full.

## **9.0 PROVISIONS FOR CONSTRUCTION**

### **9.1 Hoarding, Set-Up of Site, and Access/Egress Points**

As previously described, the site area will be enclosed with hoarding, details of which are to be agreed with Dublin City Council. Hoarding panels will be maintained and kept clean for the duration of the project. This will involve erecting the hoarding around the proposed site perimeter in line with the finished development description.

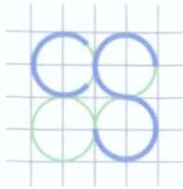
### **9.2 Removal of Services**

Prior to site clearance, a utility survey will be carried out by the contractor to identify existing services. All services on site will be disconnected, diverted, or removed as agreed with service providers.

### **9.3 Site Clearance**

The existing land previously underwent construction works and the site may contain existing services and hazards. The following is a high-level method statement for the demolition/break up of existing hardstanding.

1. Establish a site set-up and welfare facilities.
2. Prior to commencement of any earthworks, an invasive species inspection shall be carried out in accordance with the guidance outlined in the Wildlife Act 1976 and 2000 and further regulated through the European Communities (Birds and Natural Habitats) Regulations 2011 (SI 477 of 2011). Should the survey identify any areas of Japanese Knotweed infestation, a Treatment Plan shall be developed in accordance with published guidelines (namely, *The Environment Agency, Managing Knotweed on Development Sites, Knotweed Code of Practice, 2013*).



3. Carry out a detailed services survey of the site to identify all buried services, determine what services are live, redundant and potentially serve neighbouring properties. To be performed before any ground break up is performed on site.
4. Carry out any necessary services diversions and decommissioning works.

Breaking ground will only take place following a full survey. Any materials identified as being hazardous will be removed and disposed of in strict accordance with the applicable legislation. All services will be disconnected and removed. Any existing slabs or hardstanding and concrete foundations will be broken by excavators. All reinforced concrete will be partially processed on site to separate the steel from the concrete. All materials will either be fully separated on site and disposed of to the applicable landfills / processing facility or failing that material will be sent to a processing facility for separation. Relevant certification and documentation confirming the final separation and most environmentally friendly disposal will be available.

#### **9.4 Excavation**

The current landscaped area and existing hardstanding within the development site were formed in 2013/2014. Approximately 3m of inert material was imported to form the landscaping. The excavated site below this imported material consists of virgin black boulder clay, typical of this area of the city. In addition, a perimeter secant pile wall was constructed around the proposed site in 2004/2005, with additional works carried out in 2013/2014. Therefore it will not be necessary to construct any further perimeter piled walls.

Before foundation works commence, site flooding mitigation measures must be put in place and appropriate method statements submitted to the design team.

The Contractor must prepare a Construction Waste Management Plan in accordance with the "Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects" (Department of Environment, Heritage and Local Government, 2006) and ensure that all material is disposed of at an appropriately licenced land fill site. The Contractor must also outline detailed proposals within the Construction Management Plan to accommodate construction traffic.

## **9.5 Foundation Works**

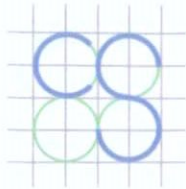
It is likely that a combination of CFA piling and traditional strips will be required for the substructure of the proposed buildings. The excavation and preparation of the foundation works will generate spoil that must be disposed of at an appropriate licensed land fill site. The concrete operations associated with the foundation will require concrete deliveries to site.

## **9.6 Superstructure**

The construction of the superstructure will involve complex sequencing of activities and various construction methodologies could be adopted to deliver the Contract. As noted, the construction methodology and therefore the programme of the construction activities will be dictated by the Contractor.

Potential options for the superstructure design are:

- RC Column & Flat Slab
- RC/Masonry Cross Wall & Precast Slab



- Precast Concrete Twin Wall & Precast Slab

The following is an indicative outline of the construction programme:

1. Building Structure

- Demolition of the existing basement and podium structure where required.
- Construction of the foundations/substructure.
- Construction of rising elements to 1st floor and 1st floor slabs.
- Similar sequence of construction of rising elements and floor slabs.
- Note allowance for service construction concurrently or before superstructure.

2. Envelope / Cladding

- Envelope works will follow in a sequential manner.

3. Mechanical & Electrical fit-out

- First fix will commence at each level behind structure.
- This will be followed by the second fix and the final connections.

4. Fit-out

- Initial installation of any stud work when cladding is complete and floor is weather tight.
- Installation of equipment and associated connection to services.
- Completion of finishes.

5. Commissioning

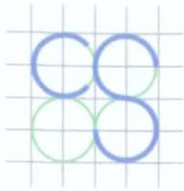
- The final commissioning period will commence during fit-out.

The above is an indicative construction sequence. The final sequence will be dictated by the Contractor. The Contractor must issue a detailed construction programme outlining the various stages prior to commencement of works.

## 9.7 Erection and Operation of Cranes

It is envisaged that three to four tower cranes will be temporarily erected to accommodate the construction works for the distribution of reinforcing steel, concrete skips, concrete formwork elements, and general building materials. The contractor will need to obtain all necessary licences from the Local Authority. A "mast climber" may be installed at some local areas to facilitate façade features. The mast climber is essentially a climbing platform that allows the user to safely access any level without the requirement for a full scaffold tower.





## 10.0 SUMMARY

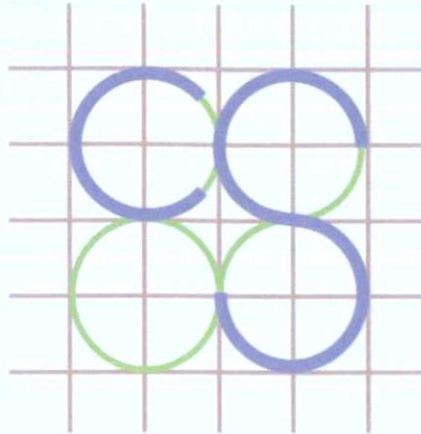
This Outline Construction Management Plan (OCMP) has been prepared for a proposed office and hotel development at Heuston South Quarter, St. John's Road West, Kilmainham, Dublin 8. It gives an overview of the processes to be employed during construction of this project.

The aim of this OCMP is to address the following issues that can arise during construction:

- Noise and vibration
- Traffic management
- Working hours
- Pollution control
- Dust control
- Road cleaning
- Compound / public health facilities and staff parking
- Construction methodology

This plan will be revised by the appointed lead contractor and expanded to produce a Detailed Construction Management Plan which will be agreed with Dublin City Council (DCC) in advance of the construction phase.

**APPENDIX 6B**  
**ENGINEERING SERVICES REPORT**



CS CONSULTING  
GROUP

DUBLIN LONDON LIMERICK

## Engineering Services Report

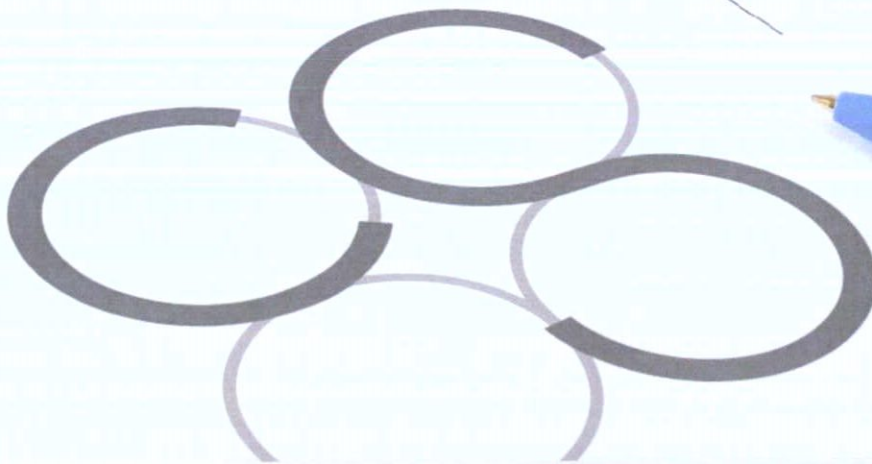
### Office and Hotel Development

Heuston South Quarter, St. John's  
Road West, Kilmainham, Dublin 8

Client: HPREF HSQ Investments Ltd.

Job No. H087

July 2022



**ENGINEERING SERVICES REPORT**

**OFFICE AND HOTEL DEVELOPMENT**

**HEUSTON SOUTH QUARTER, ST. JOHN'S ROAD WEST, KILMAINHAM, DUBLIN 8**

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**Appendix A:** Irish Water Drainage and Watermain Records

**Appendix B:** Irish Water Correspondence

**Appendix C:** Attenuation Calculations

**Appendix D:** GDSDS 2031 Performance Map

**Appendix E:** Indicative Existing Infrastructure

This Report has been prepared by CS Consulting for the benefit of its Client only. The contents of this Report are shared with interested parties for information only and without any warranty or guarantee, express or implied, as to their accuracy, reliability or completeness. This Report cannot be relied on by any party other than the party who commissioned it.					
File Location: Job-H087\B_Documents\C_Civil\A_CS Reports\ESR					
<b>BS 1192 FIELD</b>		<b>HSQ-CSC-ZZ-XX-RP-C-0201-P4</b>			
Job Ref.	Author	Reviewed By	Authorised By	Issue Date	Rev. No.
H087	RFM	GF	OS	19.07.2022	P4
H087	RFM	GF	OS	16.05.2022	P3
H087	RFM	GF	OS	05.04.2022	P2
H087	RFM	GF	OS	18.02.2022	P1
H087	RFM	GF	OS	04.02.2022	P0

## 1.0 INTRODUCTION

Cronin & Sutton Consulting Engineers (CS Consulting) have been commissioned by HPREF HSQ Investments Ltd. to prepare an Engineering Services Report to accompany a planning application for a proposed office and hotel development at Heuston South Quarter, St. John's Road West, Kilmainham, Dublin 8.

This report assesses the proposed development under the following headings:

- Foul Drainage Infrastructure
- Stormwater Drainage Infrastructure
- Potable Water Infrastructure

In preparing this report, CS Consulting has made reference to the following:

- Dublin City Development Plan 2016–2022
- Regional Code of Practice for Drainage Works
- The Greater Dublin Strategic Drainage Study
- Irish Water Code of Practice for Water
- Irish Water Code of Practice for Wastewater
- Local Authority Drainage Records

The Engineering Services Report is to be read in conjunction with the engineering drawings and documents submitted by CS Consulting and with all relevant further documentation submitted by other members of the design team as part of this planning submission.

## 2.0 SITE LOCATION AND PROPOSED DEVELOPMENT

### 2.1 Site Location

The proposed development is located on St. John's Road West at the Heuston South Quarter (HSQ) complex in Dublin 8, within the administrative jurisdiction of Dublin City Council. The planning application boundary encloses an area of approx. 0.62ha. The development site is bounded to the west by the gardens of the Royal Hospital Kilmainham, to the north by St. John's Road West, to the east by an existing office building, and to the south by a further partially developed section of the wider HSQ complex that is also in the applicant's ownership.

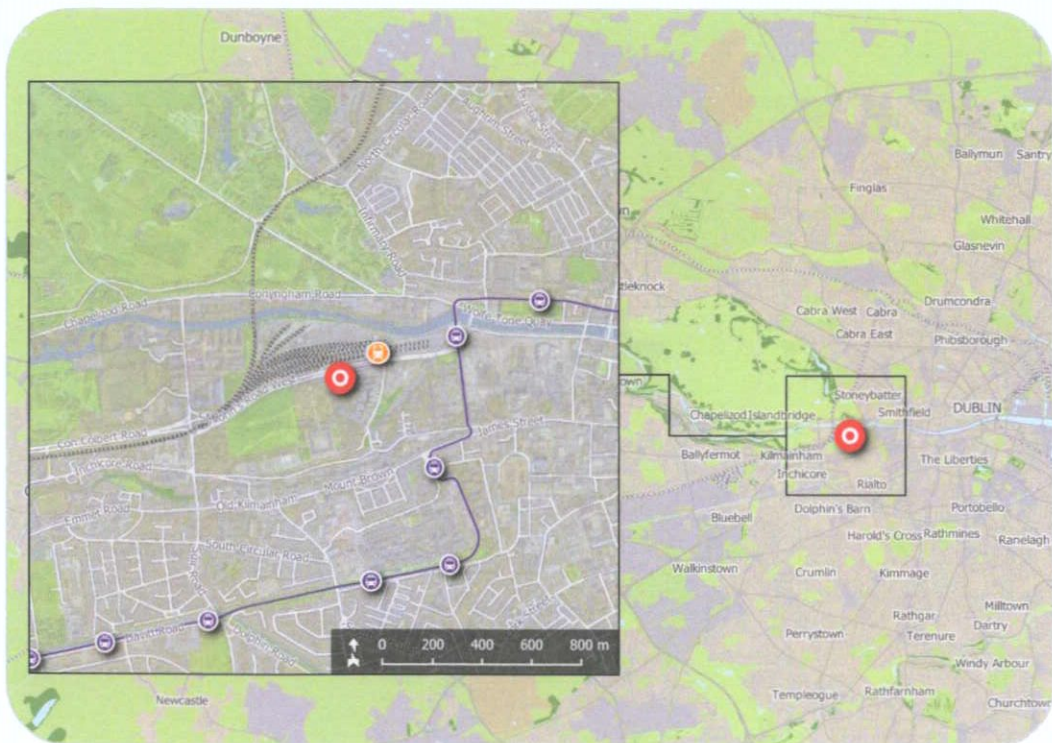


Figure 1 – Location of proposed development site  
(map data & imagery: EPA, OSi, NTA, OSM Contributors, Google)

The location of the proposed development site is shown in Figure 1 above; the indicative extents of the development site, as well as relevant elements of the surrounding road network, are shown in more detail in Figure 2.



Figure 2 – Site extents and environs  
(map data & imagery: NTA, DCC, OSi, OSM Contributors, Google)

## 2.2 Existing Land Use

The subject site is brownfield, comprising a partially developed section of the Heuston South Quarter (HSQ) complex. Some surface level internal roads are present on the site, which benefits from the existing established HSQ vehicular accesses on St. John's Road West (R148) and Military Road. The site has been landscaped as an interim measure to improve its aesthetics pending its complete development. There is already an established road, pedestrian and cycle network in the vicinity of the site.

### 2.3 Description of Proposed Development

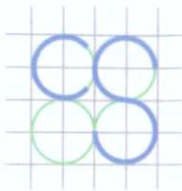
The proposed development will provide a mixed use commercial development comprising of a hotel (241 no. bedrooms) and an office block delivering a cumulative Gross Floor Area (GFA) of 32,602, inclusive of basement area. The proposed development consists of:

- Site clearance and localised demolitions to remove part of the podium and Basement Level -1 reinforced concrete slabs at the interface of the proposed hotel and office blocks, together with the incorporation of part of the existing basement level structure extending to approximately 4,228 sq.m (GFA).
- The proposed basement will be integrated within the existing basement levels serving the wider HSQ development and will be accessed from the existing vehicular ramped accesses/egresses onto/off St. John's Road West and Military Road to the north and east, respectively. The proposed basement area is split into two areas to provide a dedicated Hotel Basement area of approximately 2,132 sq.m (GFA) and an Office basement area of 2,096 sq.m (GFA).
- The construction of a 5-storey hotel (over lower ground and basement levels) to provide 238 no. bedrooms. At basement level provision is made for 24 no. car parking spaces; 2 no. motorcycle spaces together with plant and storage rooms. A waste storage area with dedicated loading bay / staging area is provided along with dedicated set-down area for deliveries. A dual-purpose service bay is also provided at basement level with modifications to existing line markings to the basement parking area to accommodate the development. At Lower Ground floor level provision is made for 14 no. Bedrooms; Conference Room; Kitchen and Staff facilities and Changing Rooms / WCs plus ancillary Gym. This floor is arranged around an internal courtyard space. Provision is made at Podium level for 19 no. Bedrooms; Dining Area and Foyer with entrance at the South-Eastern corner of the



building onto a new laneway separating the proposed hotel and office building. Provision is made at the south-western corner at podium level for an ESB sub-station / switch room and 15 no Sheffield type bicycle stands are provided for the hotel and the retail / café unit, providing storage space for 30 no. bicycles. A total of 205 no. bedrooms are provided at the upper levels (above podium level). The top floor of the hotel (4th floor) has a splayed setback to provide a west facing roof terrace. An ancillary hotel bar (118 sq.m) opens onto this roof terrace.

- The construction of a 12-storey (over lower ground and basement levels) office building to the east of the proposed hotel building to provide 19,474 sq.m of office floorspace (GFA) from lower ground floor level and above. Provision is made at basement level for 30 no. car parking spaces; 2 motorcycle spaces and 120 no. bicycle storage spaces together with plant and storage rooms. Provision is made for a further 196 no. bicycle storage spaces at Lower Ground floor level plus changing rooms (including showers). At podium level 2 no. ESB sub-stations and switch rooms are proposed. The foyer and entrance is provided at the southern end of the building at Podium level along with a Retail/Café unit of 208 sq.m at the South-Western corner of the building. The building is setback at 4th floor level to provide a west facing roof terrace. Splayed setbacks to the southern and eastern elevations at the 11th floor level forms a roof terrace that wraps around the South-Eastern corner of the building. Plant is provided at rooftop level that is enclosed by curved louvred screens and PV panels.
- Works proposed along the St John's Road West frontage include the omission of the existing left-turn filter lane to the vehicular ramped access to the HSQ development and re-configuration of the pedestrian crossings at the existing junction together with the re-configuration of the existing pedestrian crossing over the westbound lanes of St. John's Road West leading to an existing pedestrian refuge



island and re-alignment of the existing footpath along the site frontage onto St John's Road West to tie into the reconfigured junction arrangement.

- Drainage works proposed include the provision of 2 no. below basement surface water attenuation tanks with duty/stand-by arrangement pump sumps and associated valve chambers, and 2 no. below basement foul pump sumps with duty/stand-by arrangement and 24hr emergency storage and associated valve chambers. New foul drainage and stormwater drainage connections are proposed to existing foul and storm sewers in St. John's Road West with associated site works.
- Hard and soft landscaping works are proposed at lower ground level along St John's Road West and at podium level to provide for the extension and completion of the public plaza to the south of the proposed Office Block and the provision of a new pedestrian laneway connecting St John's Road West with the public plaza at podium level.

### 3.0 EXISTING INTERNAL DEVELOPMENT INFRASTRUCTURE

The original masterplan for the entire HSQ development was granted planning permission by Dublin City Council in 2003 (DCC Ref 2656/03). As part of this planning grant, the developer was obliged to construct infrastructure to serve the entire development at the outset. This included new foul and surface water sewers along St. John's Road West and Military Road. The new 300mm foul sewer connected to a public combined sewer at Dr. Steeven's Hospital. The new 300mm surface water sewer connected to the existing Camac Culvert, also adjacent to Dr. Steeven's Hospital. Finally, a new 450mm watermain was extended down Military Road, from an existing line at Bow Lane, as part of these initial infrastructure works (see Appendix E).

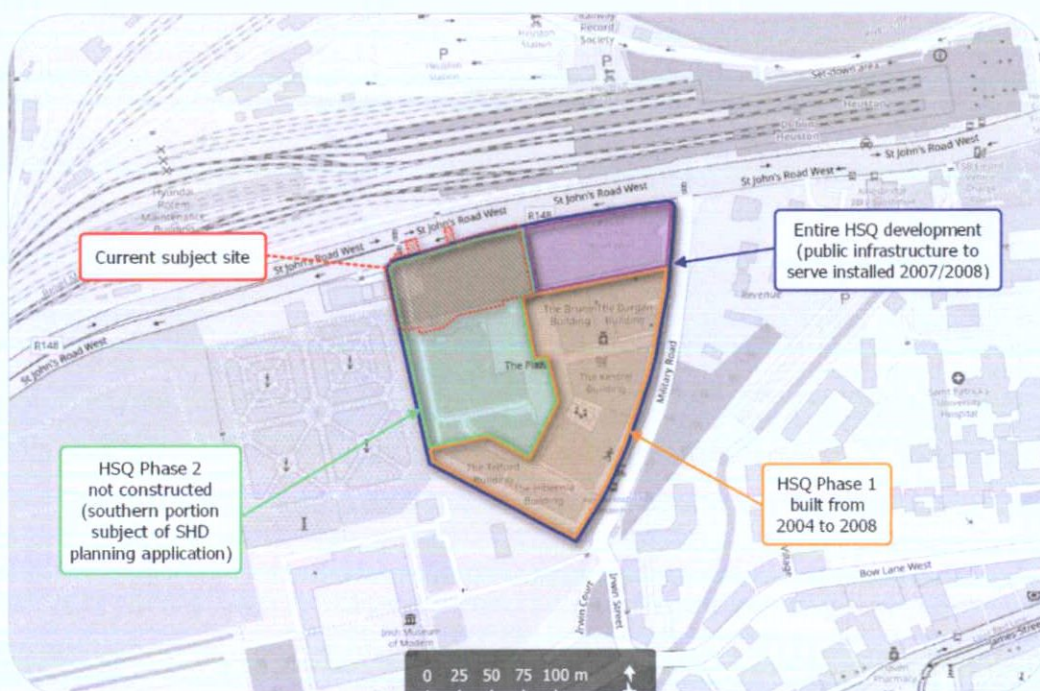


Figure 3 – Indicative location of early works  
(background map imagery: OSM Contributors)

A number of subsequent applications were approved by DCC, based on connecting into the infrastructure noted in the 2003 masterplan. The

majority of the east of the site was constructed prior to the financial crash in 2008.

During the basement construction works for the completed portions of the development, much of the foul, surface and watermain infrastructure was constructed to connect to the newly installed public infrastructure.

### **3.1 Existing Site Foul Drainage Infrastructure**

A 300mm diameter perimeter foul sewer was constructed to the internal face of the southern and eastern retaining wall, discharging via gravity to the last private foul manhole adjacent to the Military Road ramp.

In addition, a sub-basement collection tank and pump arrangement was constructed below the central podium area, to collect all basement gullies (via a petrol interceptor). The effluent from this tank is pumped via rising main to the last private foul manhole adjacent to the Military Road ramp (see Appendix E).

### **3.2 Existing Site Surface Drainage Infrastructure**

In order to facilitate gravity flow of the surface water infrastructure, and as outlined in the original masterplan scheme and subsequent amended applications, attenuation tanks were constructed at both the Military Road ramp and the St. John's Road ramp. The attenuation tanks are fitted with flow control devices, and discharge to the final private surface water manholes at both locations, and in turn discharge to the public sewer systems constructed in 2007/2008. A third central attenuation tank to cater for run-off from the central and western buildings was not constructed.

The internal site surface water infrastructure is located below the podium slab, and connect to perimeter 300mm surface sewer, along the retaining wall, before discharging to the attenuation tanks noted (see Appendix E).

### 3.3 Existing Watermain Infrastructure

There is an existing internal potable watermain network below the current podium slab. The network is connected to the 450mm public watermain on Military Road, to the south of the site (near the entrance to the RHK). There are existing fire hydrants along Military Road which connect to the 450mm public watermain. The fire hydrants within the podium area connect to the internal watermain network (see **Appendix E**).

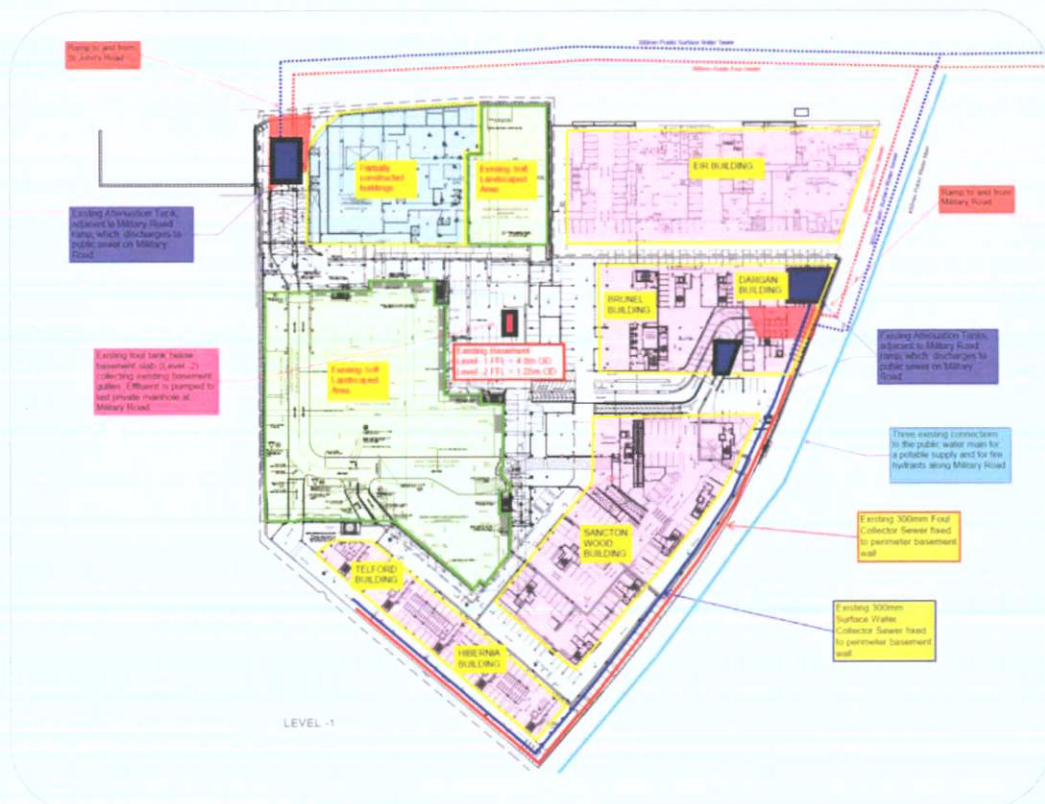


Figure 4 – Indicative existing services Infrastructure  
(see Appendix E)

## 4.0 FOUL DRAINAGE

### 4.1 Existing External Foul Drainage Infrastructure

Irish Water drainage records supplied by Dublin City Council indicate that there is a dedicated public foul sewer in St. John's Road West, running from west to east parallel to the subject site's northern boundary. This sewer varies in cross-section and construction along the extent of the site boundary, transitioning from a 300mm diameter vitrified clay pipe to a 1020mm by 630mm brick sewer. There is an existing connection from the overall HSQ complex to this public foul sewer.

See **Appendix A** for Dublin City Council's drainage records and Irish Water records.

### 4.2 Foul Wastewater Generation

The proposed development comprises the following elements:

- offices with a total net internal floor area of 15,698m<sup>2</sup> (including a retail/café unit but excluding basement area); and
- a 238-bedroom hotel (including bar/restaurant).

#### 4.2.1 Office wastewater generation

To calculate the predicted number of employees within the development's office element, the following average staff density figure has been sourced from the UK Homes & Community Agency's *Employment Density Guide (3<sup>rd</sup> Edition)*:

- General Offices (max. density) – 1 staff member per 10m<sup>2</sup> NIFA

The development's office element is therefore predicted to have a total employee population of 1,570no. people.

The Irish Water *Code of Practice for Wastewater Infrastructure* specifies an average foul effluent flow rate of 50 litres per person per

day for offices without canteens. The maximum average effluent flow (dry weather flow or DWF) to be generated by the proposed development's office element may be calculated as:

$$DWF = 1,570pe \times 50l/day/pe = 78,500l/day = 0.909l/s$$

The corresponding peak effluent flow (Design Flow) is calculated by applying a commercial peak factor ( $Pf_{Dom,Ind}$ ) of 4.5:

$$Design\ Flow = DWF \times Pf_{Dom,Ind} = 0.909l/s \times 4.5 = 4.091l/s$$

#### 4.2.2 Hotel wastewater generation

For the purposes of estimating foul wastewater generation, it is assumed that the proposed hotel shall accommodate a maximum of 476no. guests at any one time (an occupancy rate of 2 guests per bedroom).

The Irish Water Code of Practice for Wastewater Infrastructure specifies an average foul effluent flow rate of 250 litres per person per day. Based on the proposed hotel's anticipated maximum occupancy, the maximum average effluent flow (dry weather flow or DWF) to be generated by the hotel may be calculated as:

$$DWF = 476pe \times 250l/day/pe = 119,000l/day = 1.377l/s$$

The corresponding peak effluent flow (Design Flow) is calculated by applying a commercial peak factor ( $Pf_{Dom,Ind}$ ) of 4.5:

$$Design\ Flow = DWF \times Pf_{Dom,Ind} = 1.377l/s \times 4.5 = 6.197l/s$$

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RECEIVED: 04/08/2022

Table 1 – Development Wastewater Generation

Development Element	Average Flow	Peak Flow
Offices	0.909 l/s	4.091 l/s
Hotel	1.377 l/s	6.197 l/s
TOTAL	2.286 l/s	10.288 l/s

### 4.3 Proposed Foul Drainage Arrangements

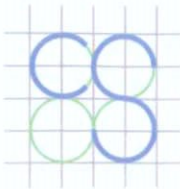
All foul effluent generated by the proposed development at upper ground (podium) level and above shall be collected in pipes between 150mm and 225mm in diameter and flow under gravity to the existing public foul sewer in St. John's Road West. Foul effluent generated at basement and lower ground floor levels shall drain to 2no. pumping chambers beneath basement level (to serve the development's office and hotel elements, respectively), each providing 24-hour emergency storage. Effluent shall be pumped from these chambers via an 80mm rising main to a standoff manhole at street level, from which it shall also discharge by gravity to the existing public foul sewer in St. John's Road West. This existing foul sewer drains to the east and ultimately outfalls into the Regional Wastewater Treatment Plant at Ringsend.

The drainage network for the development will be in accordance with Part H of the Building Regulations and to the requirements and specifications of Irish Water.

A Pre-Connection Enquiry has been submitted to Irish Water, based on the predicted foul effluent generation, and we have received a favourable response. See **Appendix B** for a copy of the submitted Pre-Connection Enquiry and the Irish Water response.



The proposed foul water drainage infrastructure and routing plan are shown on CS Consulting drawings **HSQ-CSC-XX-XX-DR-C-0201** and **HSQ-CSC-XX-XX-DR-C-0202** included with this submission.



## 5.0 STORMWATER DRAINAGE

### 5.1 Existing External Stormwater Drainage Infrastructure

Drainage records received from Dublin City Council indicate that a dedicated concrete public storm sewer is in place beneath the footpath along the southern side of St. John's Road West, running from west to north along the subject site's northern boundary. This varies in diameter along the extent of the site boundary, increasing from 225mm to 375mm.

A review of the Local Authority hydraulic performance maps prepared by Dublin City Council as part of The Greater Dublin Strategic Drainage Study (GDSDS) for the 2031 hydraulic scenario indicates that adjacent storm sewers are currently under hydraulic pressure, and flooding is predicted for storm events with return periods of less than 30years. See **Appendix D** for GDSDS map.

### 5.2 Proposed Stormwater Drainage Arrangements

The proposed scheme will have a separate, attenuated storm water drainage system designed in accordance with the *Greater Dublin Strategic Drainage Study* and the *Regional Code of Practice for Drainage Works*. Both documents are used within the jurisdiction of Dublin City Council.

The first aspect is to reduce any post development run-off to pre-development discharge rates. The development is to retain storm water volumes predicted to be experienced during extreme rainfall events. This is defined as the volume of storm water generated during a 1-in-100-year storm event, increased by a factor of 20% for the predicted effects of climate change. The effective positively drained impermeable area of the development site is approximately 0.45ha, which gives an attenuation volume requirement of 340m<sup>3</sup> for a 1-in-100-year storm event. This is due to

the fact that the allowable discharge rate from the site is 2.27 l/s, based on the requirements of the *Regional Code of Practice for Drainage Works*.

Stormwater collected within the proposed development shall be collected in pipes 225mm in diameter and flow under gravity into 2no. storm water attenuation tanks beneath the proposed basement, each with a storage volume of 170m<sup>3</sup>. It is proposed to pump the storm water from these attenuation tanks via an 80mm rising main to a standoff manhole at street level, from which it shall discharge by gravity to the existing public storm sewer in place along the southern side of St. John's Road West. The proposed discharge rate will be 2.27 l/sec.

The proposed discharge of storm water to the public sewer at a controlled rate for all storm water events will aid in freeing up hydraulic capacity during high intensity storms. See **Appendix C** for the Attenuation Calculation.

The second aspect is the policy of the Local Authority to include Sustainable Drainage Systems (SuDS) for all new applications. As such, it is proposed to use a range of SuDS devices for the scheme. These are listed below:

- Water butts for local water rainwater reuse.
- Use of green roof technology to cater for the initial interception storage (refer to CS Consulting drawing **HSQ-CSC-XX-XX-DR-C-0203**).
- Low water usage appliances, to restrict potable water demand.
- Attenuation tank with flow control device, sized to contain a 1-in-100-year storm event and increased by 20% for predicted climate change effects, to limit discharge from the site during extreme rainfall events.

The proposed stormwater management plan requires that various stages of treatment are provided to surface water prior to its ultimate disposal.

### 5.2.1 Interception

The proposed hotel building will have a sedum roof to capture the first 5mm of rainfall. When greater volumes of rainwater are experienced, an overflow system takes this storm water to lower levels and into the treatment stage. The landscaped areas also act to capture the first 5mm of rainfall with a positive outfall to a perimeter drain.

### 5.2.2 Treatment

As noted above, rainfall greater than 5mm will pass through the interception stage and into the treatment stage. Treatment will consist of a perimeter drain to allow water to filtrate into the subsoil. Due to the physical constraints of the site and the low porosity of the clays in this part of Dublin, the treatment stage will be limited to a section of the site; the proximity of the site boundary is also a restriction. When a volume of storm water is experienced that is greater than the infiltration capacity of the liner drain, an overflow system will allow this exceedance of storm water to overflow into the positive outfall, which ultimately connects to a dedicated storm water sewer which discharges to the combined sewer.

### 5.2.3 Attenuation

Rainwater exceedances that cannot be dealt with by the interception treatment stages positively drain by gravity into the development's attenuation tank. As noted above, this has been sized to cater for a 1-in-100-year storm event, increased by 20% for the predicted effects of climate change. The storm water flows from the development are released via a flow control device limited to 5.0 l/sec, as per Dublin City Council requirements. The proposed storm water drainage infrastructure and routing plan are shown on CS Consulting drawings **HSQ-CSC-XX-XX-DR-C-0201** and **HSQ-CSC-XX-XX-DR-C-0202** included with this submission.

## 6.0 POTABLE WATER SUPPLY

### 6.1 Existing Potable Water Infrastructure

Records obtained from Dublin City Council indicate a 450mm diameter HPPE public watermain in place in Military Road, along the eastern boundary of the wider HSQ complex. There is an existing connection from this watermain into the HSQ complex.

### 6.2 Potable Water Demand

The Irish Water *Code of Practice for Water Infrastructure* does not specify potable water consumption rates for non-domestic uses. On the principle that the development's water consumption shall not exceed its foul effluent generation, the foul generation rates used in sub-section 4.2 have therefore also been employed for calculating average potable water demand.

Similarly, the Irish Water *Code of Practice for Water Infrastructure* does not specify a default peaking factor for non-domestic uses. The standard domestic peak factor ( $Pf_{Dom}$ ) of 5 has therefore been applied to all elements of the proposed development.

#### 6.2.1 Office water demand

Based on the development's calculated office staff population of 1,570 people, the maximum average potable water demand to be generated by the proposed development's office element may be calculated as:

$$\text{Average} = 1,570pe \times 50l/day/pe = 78,500l/day = 0.909l/s$$

The corresponding peak water demand is:

$$\text{Peak} = \text{Average} \times Pf_{Dom} = 0.909l/s \times 5 = 4.545l/s$$

### 6.2.2 Hotel water demand

The average potable water demand to be generated by 476no. hotel guests may be calculated as:

$$Average = 476pe \times 250l/day/pe = 119,000l/day = 1.377l/s$$

The corresponding peak water demand is:

$$Peak = Average \times Pf_{Dom} = 1.377l/s \times 5 = 6.885l/s$$

Table 2 – Development Potable Water Demand

Development Element	Average Demand	Peak Demand
Offices	0.909 l/s	4.545 l/s
Hotel	1.377 l/s	6.885 l/s
TOTAL	2.286 l/s	11.430 l/s

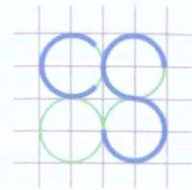
### 6.3 **Proposed Potable Water Supply Arrangements**

It is proposed to utilise the existing water connection into the HSQ complex to supply the subject development.

The proposed watermain arrangements will be designed in accordance with the Irish Water Specifications and Code of Practice.

A Pre-Connection Enquiry has been submitted to Irish Water, based on the predicted water demand, and we have received a favourable response. See **Appendix B** for a copy of the submitted Pre-Connection Enquiry and the Irish Water response.

The proposed watermain infrastructure and routing plan is shown on CS Consulting drawing **HSQ-CSC-XX-XX-DR-C-0204** included with this submission.

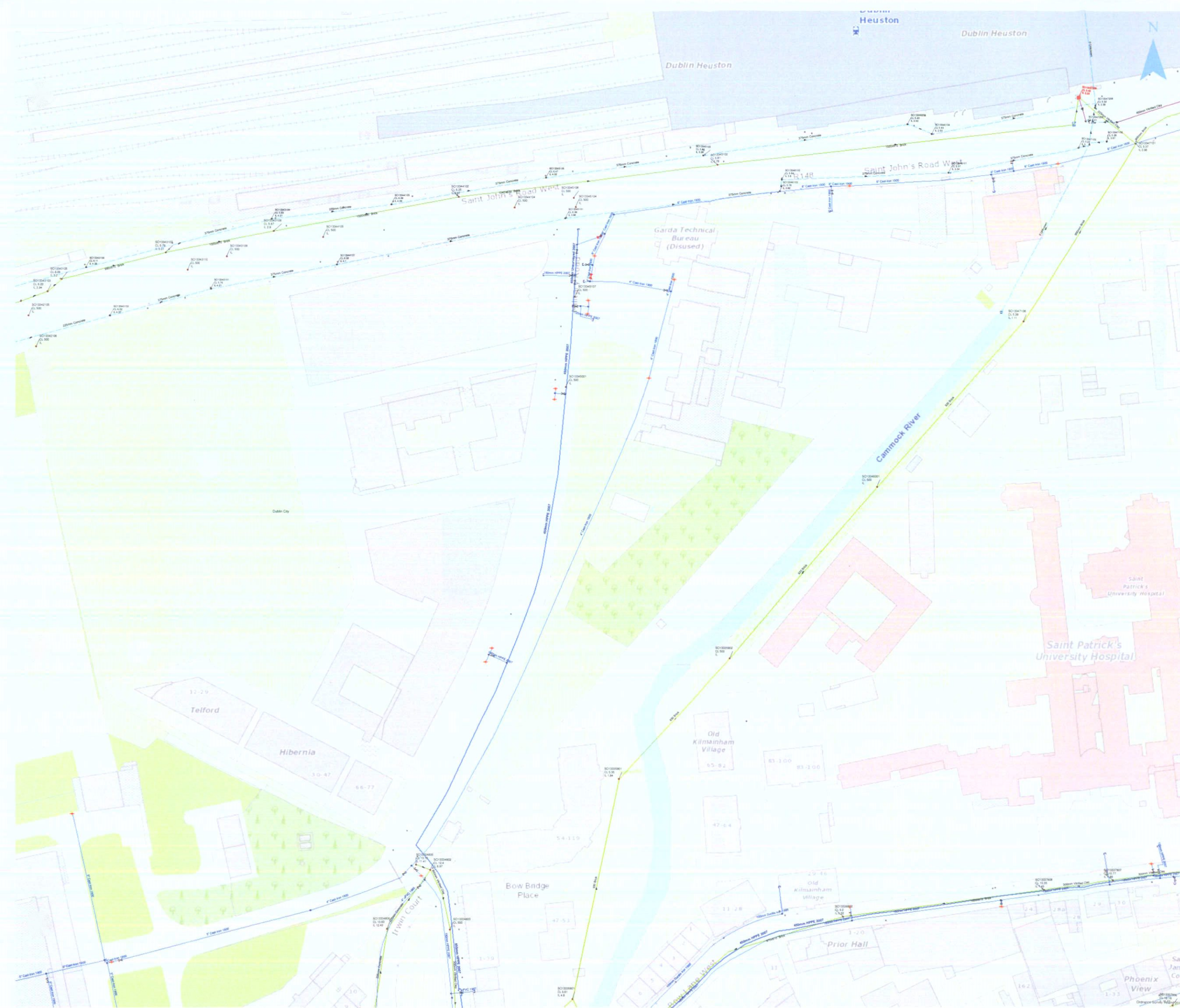


CS CONSULTING  
GROUP

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## Appendix A

### **Irish Water Drainage and Watermain Records**



**Legend**

- ⊗ Unknown Meter - Other Meter
- ⊗ Sluck Valve Open
- ⊗ Sluck Valve Closed
- Water Hydrants**
- Hydrant Function
- Fire Hydrant
- ⊗ Cap
- Other Fittings
- Water Distribution Mains**
- Owned By
- Irish Water
- Irish Water
- Sewer Manholes**
- Manhole Type
- Standard
- Sewer Inlets**
- Inlet Type
- ⊗ Catchpit
- ⊗ Sewer Chambers
- Gravity - Combined
- Gravity - Overflow
- Storm Manholes**
- Manhole Type
- Standard
- Surface Gravity Mains
- Storm Inlets**
- Inlet Type
- Standard

1:500 at A0 Last edited: 29/04/2020

Metres



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2. Whilst every care has been taken in its compilation, Irish Water gives this information as to the position of its underground network as a general guide only on the strict understanding that it is based on the best available information provided by each Local Authority in Ireland to Irish Water. Irish Water can assume no responsibility for and give no guarantee, undertakings or warranties concerning the accuracy, completeness or up to date nature of the information provided and does not accept any liability whatsoever arising from any errors or omissions. This information should not be relied upon in the event of excavations or any other works being carried out in the vicinity of the Irish Water underground network. The onus is on the parties carrying out excavations or any other works to ensure the exact location of the Irish Water underground network is identified prior to excavations or any other works being carried out. Service connection pipes are not generally shown but their presence should be anticipated.

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## Appendix B

### **Irish Water Correspondence**

# Pre-connection enquiry form

## Business developments, mixed use developments, housing developments



This form is to be filled out by applicants enquiring about the feasibility of a water and/or wastewater connection to Irish Water infrastructure. If completing this form by hand, please use BLOCK CAPITALS and black ink.

Please refer to the **Guide to completing the pre-connection enquiry form** on page 13 of this document when completing the form.

\* Denotes mandatory/ required field. Please note, if mandatory fields are not completed the application will be returned.

### Section A | Applicant details

#### 1 \*Applicant details:

Registered company name (if applicable):

H P R E F H S Q I n v e s t m e n t s L i m i t e d

Trading name (if applicable):

Company registration number (if applicable): 6 5 1 7 1 4

If you are not a registered company/business, please provide the applicant's name:

\*Contact name: P i e r c e O ' L e a r y

\*Postal address: 3 2 , M o l e s w o r t h S t r e e t

\*Eircode:

\*Telephone:

Mobile:

\*Email: p o l e a r y @ h e n d e r s o n p a r k . c o m

#### 2 Agent details (if applicable):

Contact name: O W E N S U L L I V A N

Company name (if applicable): C S C O N S U L T I N G

Postal address: 1 9 - 2 2 D A M E S T R E E T , D U B L I N 2

E M A I L : O W E N . S U L L I V A N @ C S C O N S U L T I

N G . I E

Eircode: D 0 2 E 2 6 7

Telephone: 0 1 5 4 8 0 8 6 3

Email: S E E A B O V E

3 \*Please indicate whether it is the applicant or agent who should receive future correspondence in relation to the enquiry:

Applicant

Agent

### Section B | Site details

4 \*Site address: H e u s t o n S o u t h Q u a r t e r ,  
S a i n t J o h n ' s R o a d W e s t ,  
K i l m a i n h a m , D u b l i n 8

5 \*Irish Grid co-ordinates of site: Eastings (X) 3 1 3 3 3 2 Northings (Y) 2 3 4 0 4 1

Eg. co-ordinates of GPO, O'Connell St., Dublin: E(X) 315,878

N(Y) 234,619

6 \*Local Authority:

Local Authority that granted planning permission (if applicable):

D U B L I N C I T Y C O U N C I L

7 \*Has full planning permission been granted? Yes  No

If 'Yes', please provide the current or previous planning reference number:

## Section C | Development details

8 Please outline the domestic and/or industry/business use proposed:

Property type	Number of units	Property type	Number of units	Property type	Number of units
House		Apartments		Agricultural	
Office	15,128sqm	School		Retail unit	
Residential care home		Institution		Industrial unit	
Hotel	244 beds	Factory		Other	
Other (please specify type)					

9 \*Approximate start date of proposed development:

/   /

10 \*Is the development multi-phased?

Yes  No

If 'Yes', application must include a master-plan identifying the development phases and the current phase number.

If 'Yes', please provide details of variations in water demand volumes and wastewater discharge loads due to phasing requirements.

11 \*Please indicate the type of connection required by ticking the appropriate box below:

Water  Please go to Section D

Wastewater  Please go to Section E

Both  Please complete both Sections D and E

## Section D | Water connection and demand details

- 12 **\*Is there an existing connection to public water mains at the site?** Yes  No
- 12.1 If yes, is this enquiry for an additional connection to one already installed? Yes  No
- 12.2 If yes, is this enquiry to increase the size of an existing connection? Yes  No

13 **Approximate date water connection is required:**   /   /

14 **\*What diameter of water connection is required to service the development?**    mm

15 **\*Is more than one connection required to the public infrastructure to service this development?** Yes  No

If 'Yes', how many?

16 **Please indicate the business water demand (shops, offices, schools, hotels, restaurants, etc.):**

Post-development peak hour water demand	2.630	l/s
Post-development average hour water demand	1.824	l/s

Please include calculations on the attached sheet provided. Where there will be a daily/weekly/seasonal variation in the water demand profile, please provide all such details.

17 **Please indicate the industrial water demand (industry-specific water requirements):**

Post-development peak hour water demand	N/A	l/s
Post-development average hour water demand	N/A	l/s

Please include calculations on the attached sheet provided. Where there will be a daily/weekly/seasonal variation in the water demand profile, please provide all such details.

18 **What is the existing ground level at the property boundary at connection point (if known) above Malin Head Ordnance Datum?**

m

19 **What is the highest finished floor level of the proposed development above Malin Head Ordnance Datum?**

m

20 **Is on-site water storage being provided?** Yes  No

Please include calculations on the attached sheet provided.

