



BASEMENT IMPACT ASSESSMENT

**St. Vincent's Hospital Redevelopment,
Richmond Road and Convent Avenue,
Fairview, Dublin 3**

**PROJECT NO. R517
MARCH 2023**

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for

St. Vincent's Hospital,

Richmond Road and Convent Avenue,

Fairview, Dublin 3



OCSC

O'CONNOR | SUTTON | CRONIN

Multidisciplinary
Consulting Engineers

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DOCUMENT CONTROL & HISTORY

OCSC Job No.: R517	Project Code	Originator	Zone Volume	Level	File Type	Role Type	Number	Status / Suitability Code	Revision
	R517	OCSC	XX	XX	RP	S	003	S2	P05
Rev.	Status	Authors	Checked		Authorised		Issue Date		
P05	S2	SD	MOR		MOR		24.03.2023		
P04	S2	SD	MOR		MOR		23.03.2023		
P03	S2	SD	MOR		MOR		02.03.2023		
P02	S2	SD	MOR		MOR		20.10.2022		
P01	S2	SD	MOR		MOR		19.10.2022		

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1 INTRODUCTION

1.1 Appointment

O'Connor Sutton Cronin & Associates (OCSC) have been commissioned to undertake a Basement Impact Assessment Report associated with the proposed development at St. Vincent's Hospital, Richmond Road and Convent Avenue, Fairview, Dublin 3.

1.2 Administrative Jurisdiction

The proposed development is located in the jurisdiction of Dublin City Council (DCC), and therefore this report was carried out with reference to the Dublin City Council Development Plan (2022 – 2028).

1.3 Proposed Development Context

In summary, the proposed development can be described as follows:

- Provision of a new part two and part three storey hospital building, providing mental health services, accommodating 73 no. beds, associated facilities, a single storey facilities management building, plant rooms and service areas, associated car and cycle parking, access roads, and open space, all on a proposed hospital site of c. 2.67 ha.
- Refurbishment and repurposing of existing buildings on site including Brooklawn (RPS Ref.: 8789), Richmond House, including chapel and outbuildings (RPS Ref.: 8788), the Laundry building and Rose Cottage for ancillary uses associated with the new hospital. The existing gate lodge building will remain in residential use and used by visiting members of staff to the new hospital.
- Change of use, refurbishment, alterations and extensions, to the existing hospital building (part protected structure under RPS Ref.: 2032), to provide residential amenity areas, a gym, a café, co-working space, a library, a childcare facility, and a community hall (referred to as Block K).



- The proposal includes the demolition of existing structures on site with a GFA of 5,872 sq.m, including the (1) westernmost range of the hospital building, which includes St. Teresa's and the Freeman Wing, (2) extensions to the south and north of the main hospital building, including the conservatory extension, toilet block extension, an external corridor, toilet core, lift core, and stair core (which are all part of / within the curtilage of RPS Ref.: 2032), (3) hospital buildings and outbuildings located to the north of the existing main hospital building, (4) St. Joseph's Adolescent School located in the southeast of the site, (5) Crannog Day Hospital located in the southwest of the site, and (6) extensions to the Old Laundry Building and Rose Cottage.
- Provision of 9 no. residential buildings (Blocks A, B, C, D-E, F, G, H, J, and L) providing a total of 811 no. residential units, including 494 no. standard designed apartments (in Blocks A, B, C, G, H, J, and L) and 317 no. Build to Rent apartments (in Blocks D-E and F). Residential amenities and facilities are proposed in Block C, D-E, J and K. A retail unit is proposed in Block A and a café in Block F. Block J is proposed as an extension of the existing hospital buildings (protected structure RPS Ref.: 2032- referred to as Block K).
- The building heights of the proposed residential blocks range from part 2 to part 13 storeys. A proposed basement / lower ground level, containing car and cycle parking and plant areas, is located below and accessed via Blocks C, D-E and F.
- Access to the new hospital and associated grounds is provided from Richmond Road and Convent Avenue, with separate internal access points. A separate vehicular access to the residential development is provided from Richmond Road. The development includes a proposed pedestrian / cycle connection to Griffith Court, requiring alterations to the service yard of the Fairview Community Unit, pedestrian / cycle connections to the Fairview Community Unit campus to the north (providing an onward connection to Griffith Court), a pedestrian / cycle connection to Grace Park Wood, and makes provision internally within



the site for a potential future connection to Lomond Avenue / Inverness Road.

- The proposal includes public open space, including allotments, children's play areas, a central park, a linear park and an entrance plaza, with a set down area at Richmond Road, and communal open space at surface level. The proposal includes communal roof terraces on Block C and Blocks D-E and private balconies / terraces for the apartments.
- The proposal also includes provision of internal access roads, car and cycle parking, pedestrian and cycle infrastructure, associated set down areas, alterations to existing landscape features, landscaping, boundary treatments, lighting, telecommunications infrastructure at roof level of Block B, green roofs, lift overruns and plant at roof level, site services, including a watermain connection / upgrade via Griffith Court, Philipsburgh Avenue and Griffith Avenue, site clearance, and all associated site works.



Figure 1– Proposed Site Layout showing proposed basement outlined in blue

2 SCOPE OF BASEMENT IMPACT ASSESSMENT

This report is a Basement Impact Assessment (BIA) for a proposed development at St Vincent's Hospital, Fairview, Dublin 3. This report has been prepared following the guidelines outlined in *Appendix 9-Basement Development Guidelines* as set out in the *DCC Draft Development Plan 2022-2028* which provides a guidance on assessing Basement Impact.

The purpose of the Basement Impact Assessment is to identify potential impacts, short and long term; to inform whether a proposed basement is acceptable; and to identify whether appropriate mitigating measures can be incorporated. It must also demonstrate:

- That the construction of the basement will not unduly impact on groundwater conditions and that groundwater quality, quantity and classification will be protected.
- That groundwater or surface water flows will not be impacted on to the extent that there is likely to be an increase in the risk of flooding.
- That the basement development will not have an adverse effect on existing patterns of surface water drainage, including infiltration into groundwater and is consistent with best practice in SuDS.
- That the structural stability/integrity of adjoining and neighbouring buildings will not be compromised.
- That the basement has been designed to an appropriate standard and will be constructed in accordance with a detailed Construction Management Plan during the excavation and construction stages and that an appropriate suite of mitigation measures is proposed to address potential adverse impacts.
- That the basement development will not adversely impact on existing protected structures, heritage sites, conservation areas or sites of archaeological interest. The City Council in general does not support the construction of basements in close proximity to protected structures.
- That the design of the basement provides for adequate ventilation; a suitable means of escape to a place of safety at the external ground level



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and that depending on the intended use of the basement accommodation,
adequate sunlight/daylight penetration is provided.



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3 BASELINE CHARACTERISTICS OF THE PROJECT

3.1 Site Context

The subject site is located at St. Vincent's Hospital, Richmond Road and Convent Avenue, Fairview, Dublin 3. The site contains protected structures under RPS Ref.: 2032 (St. Vincent's Hospital), 8788 (Richmond House) and 8789 (Brooklawn).

The site is bound by the Grace Park Wood residential development to the northwest, Griffith Court and the 'Fairview Community Unit' nursing home to the north, the An Post depot on Lomond Avenue and residential properties on Inverness Road to the east, existing residential and commercial properties on Richmond Road and Convent Avenue to the south and Charthouse Business Centre, Dublin Port Stadium and Ierne Sports and Social Club to the west of the site.

Fairview is located northeast from the River Tolka and extends to Clontarf Road DART Station along Fairview Park to the south, and along Victorian part of Philipsburgh Avenue to the north. Neighbouring districts are Clontarf to the east, North Strand and Ballybough to the west and Marino to the north.

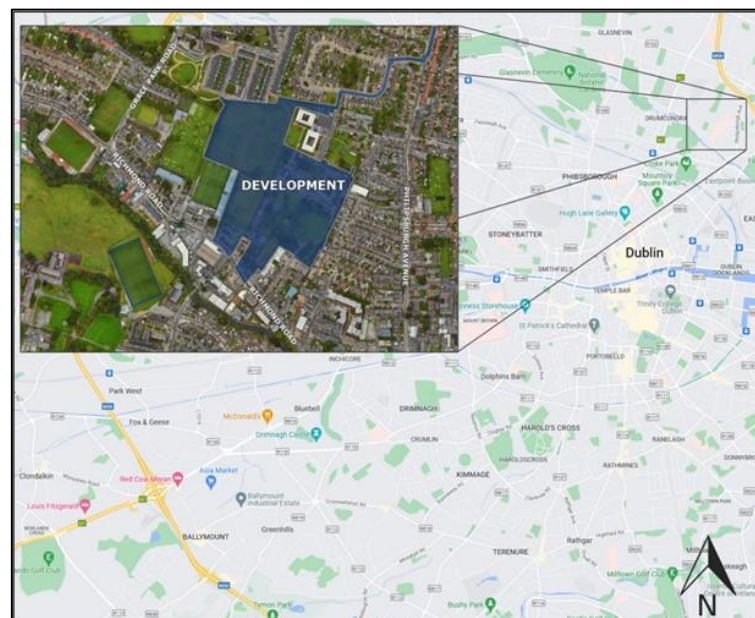


Figure 2 - Site Location Map

The subject site is approximately 9.46 hectares, of which 8.71 hectares are within the Applicants ownership, and the site is a mix of greenfield and existing hardstanding, see Figure 3 and 4.



Figure 3: Existing site overview

The site falls from north to south with levels along the northern boundary approximately 11m AOD falling to 4.5 m AOD in the south, see below extracts to assist,



Figure 4 – Site Contour Map (source: <https://contourmapcreator.ugr8.ch/>)

There is a sharp drop in elevation at the centre of the site as can be seen from below where the elevation drops from 11 mAOD to 5 mAOD.

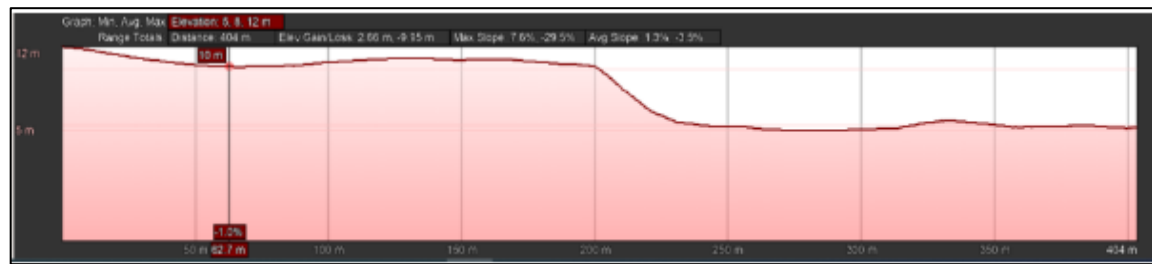


Figure 5. – Section through site (Section A-A on previous figure)

3.2 Site History

Due to the sensitive nature of the locality in which the development sits please refer to specialist Architectural heritage packages which describe and outline the history of the area and its structures. See below extract from this information which presents the location in the immediate context of the listed protected structures.

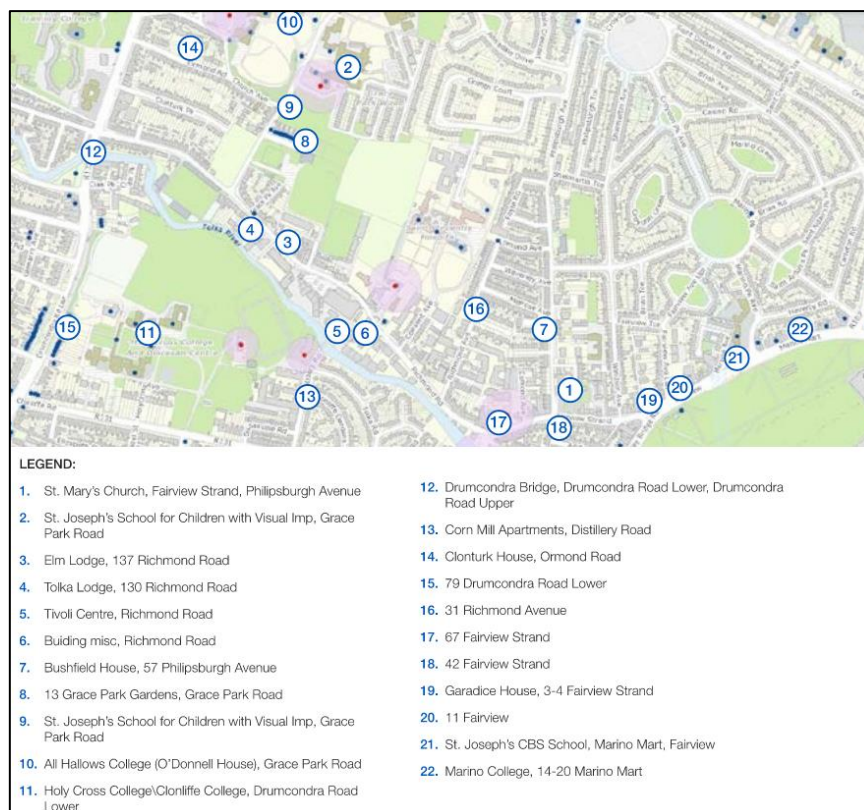


Figure 6 – Site history and context

3.3 Existing Buildings and Context

The site is bounded to the north by Grace Park Wood residential development, to the north-east by the recently constructed nursing home (Fairview Community Unit) and the Gheel autism service, to the east by the rear gardens of nineteenth century housing (Inverness Road and Foyle Road), to the south by the open space of the existing hospital and to the west primarily by sports facilities and the Charthouse Business Centre.

The area of open space immediately south of the existing main hospital buildings is proposed as location of the new hospital with potential for future expansion if required in the future.

Existing development on site includes the principal hospital buildings and ancillary structures to the north of same which are located to the eastern part of the site, set back from Richmond Road by approximately 250m.

The western part of the site is largely undeveloped except for the single storey unit (Crannog Day Hospital) located to the southern portion fronting onto Richmond Road.

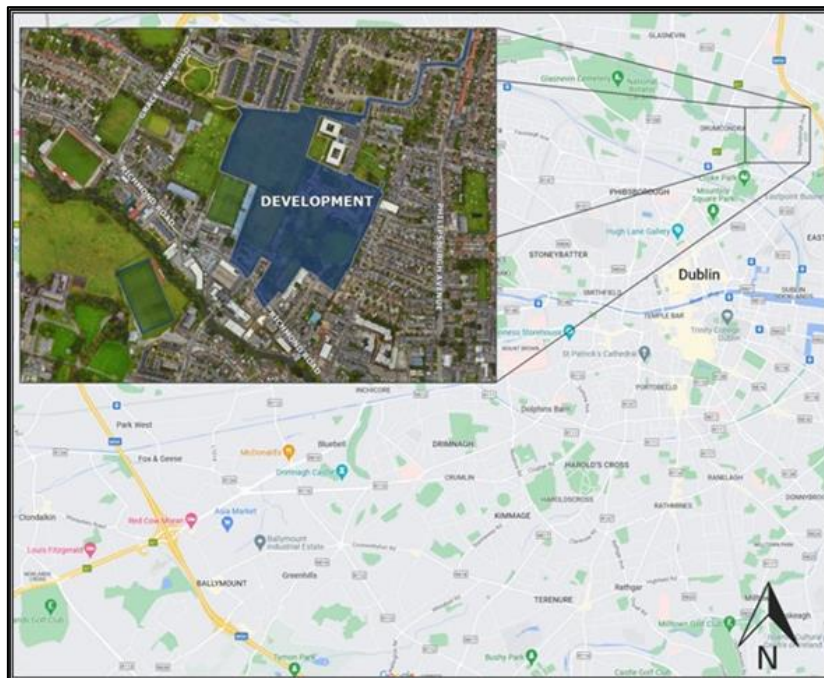


Figure 7 – Overview of proposed development in its existing surroundings

The existing site is occupied by numerous buildings as outlined below of various historical importance. Reference should be made to the Architectural Conservation Report prepared by STW for more details on the existing historical fabric and use. The following details are taken from the architectural reports, which outline the various elements to be demolished and also note the approximate age. It must be noted that there are a number of items identified in the Architectural Heritage packages that are to be retained and kept for later use. Reference is made to separate packages for details of the same.

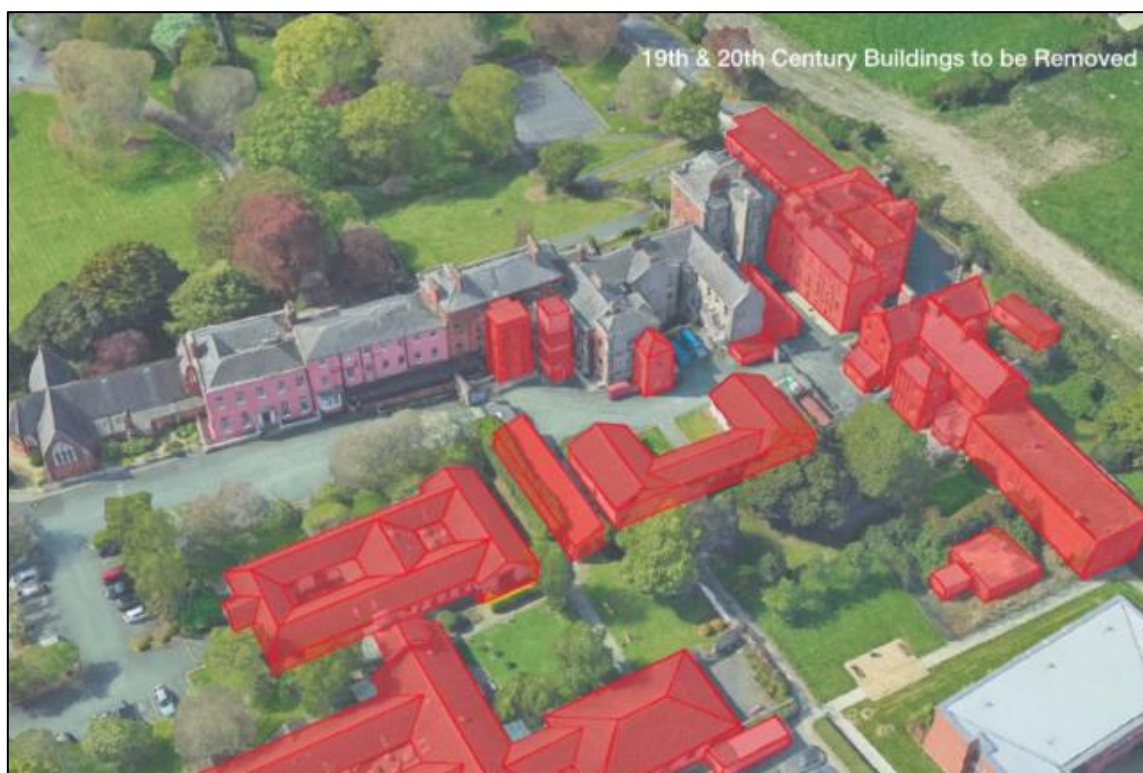


Figure 8 – Proposed demolition on the site

These existing structures will be demolished and removed as well as existing hard surfaces on-site prior to construction works commencing. This may be carried out on a phased basis.

3.4 Characteristics of Proposed Development

The description of the proposed development is set out earlier in this report. A more detailed plan layout marking each building within the development can be seen below:

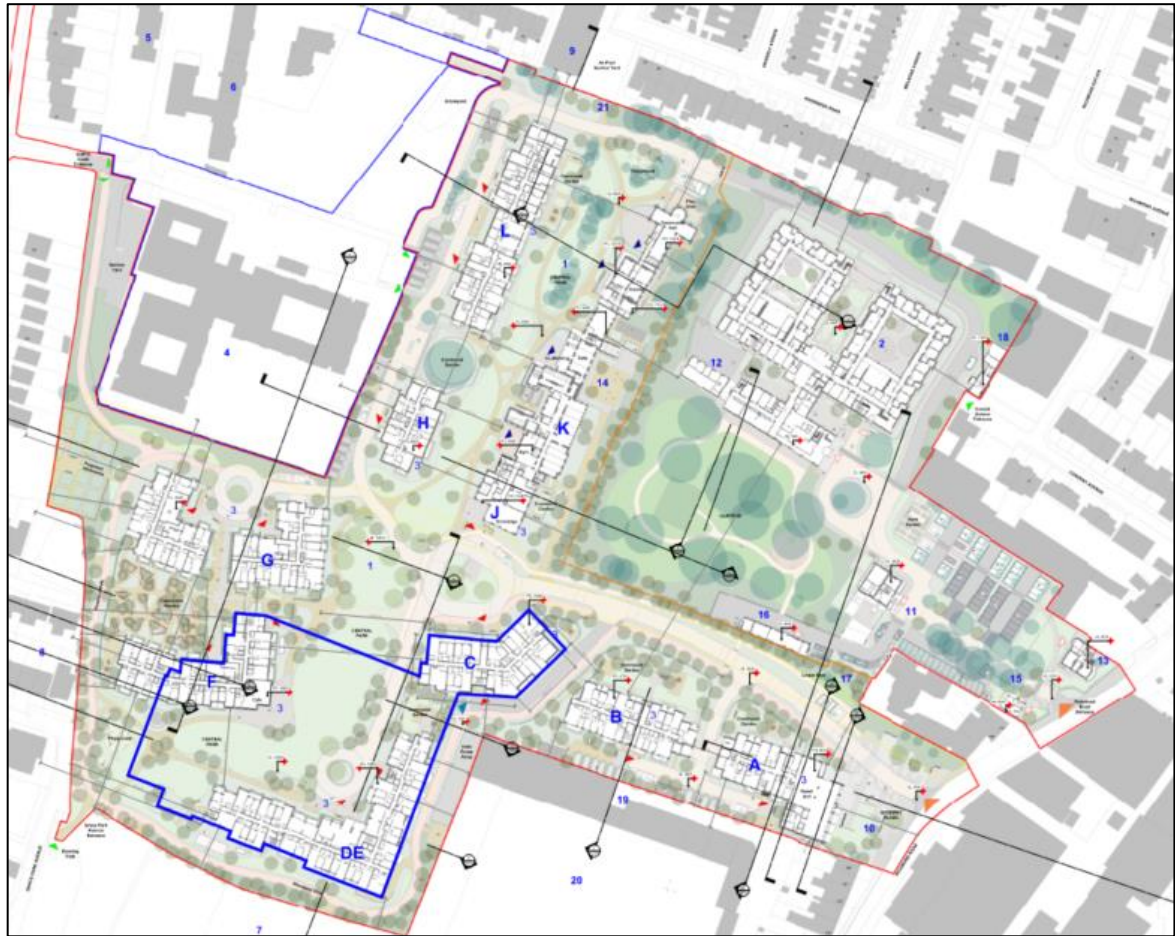


Figure 9 – Proposed key plan of the entire site with basement proposed in blue.

In terms of characteristics of the development relating to basement impact assessment, the following is noted:

A section of basement is to be provided within the residential development. This section of basement extends to 11.774 m². The basement is located.

- c. 15m from the boundary to the site
- c. 30m from the extension to the protected structures on the site

The plan layout of the basement is shown below with the proposed basement shown in blue under Block C, DE and F.



Figure 10 – Focused extract of basement with relevant site dimensions

- The basement will be constructed of Reinforced Concrete. It is expected, given the heights of the proposed superstructures, that the foundations will be supported on pile groups with in-situ pile caps.
- The basement will span between these pile groups and will be constructed in approximately 450mm thick concrete slab. The basement walls will also be constructed in cast in-situ concrete in the order of 300mm thick.
- It is intended that an external waterproof membrane will be incorporated to provide Grade 2 protection to the basement carparking area. This will be for our Type A water protection in line with BS 8102. A second line of waterproof defense will be provided at core areas and habitable areas within the basement. This will consist of crack design of the reinforced

concrete to 0.2mm or a proprietary shrinkage cracking reducing system will be incorporated to ensure cracking does not exceed 0.2mm. Either of these options will perform the Type B system for the proposed retaining structure in line with BS 8102. This then offers the basement structure two lines of defense against water ingress.

- The basement construction sequence will consist of the following outline;
 - Construction of load bearing piles from ground floor level.
 - Excavations down to the lowest formation level (c. 4.5m below ground level).
 - Temporary dewatering as may be required.
 - Breaking down of pile foundations.
 - Placing of waterproofing.
 - Casting of lower ground floor slab.
 - Casting of RC wall to perimeter.
 - Continuation of ground floor and superstructure.
- It is not envisaged that anchors be required in the temporary case to support the retaining wall during excavations given the single level nature of the basement and generous set back from the perimeters.
- The proposed foundation structure to all the buildings within the development are continuous flight auger piles to be socketed into the underlying bedrock where required-please refer to the following chapter on the existing ground conditions.
- It is envisaged that the works will commence in late 2023 with overall project completion in late 2026. However, the lower ground floor works would be envisaged to be undertaken at the outset of the project and would be completed within the first 6 months of the works on site. However, depending on planning and procurement these dates may vary.
- Reference should be made to the Outline Construction Management Plan that accompanies this application for further detail on matters relating to site management, particularly in terms of conditions surveys and vibration monitoring during the works.

4 SITE INVESTIGATION AND GEOTECHNICAL INFORMATION

4.1 Overview

A desktop review was undertaken at the outset of the project to review sources of previous information on the ground conditions on the St. Vincent's Hospital site and its surrounding areas. Following on from this an extensive Site investigation package was undertaken for the project as can be seen below. The final SI report from GII is included as a standalone report in this application.

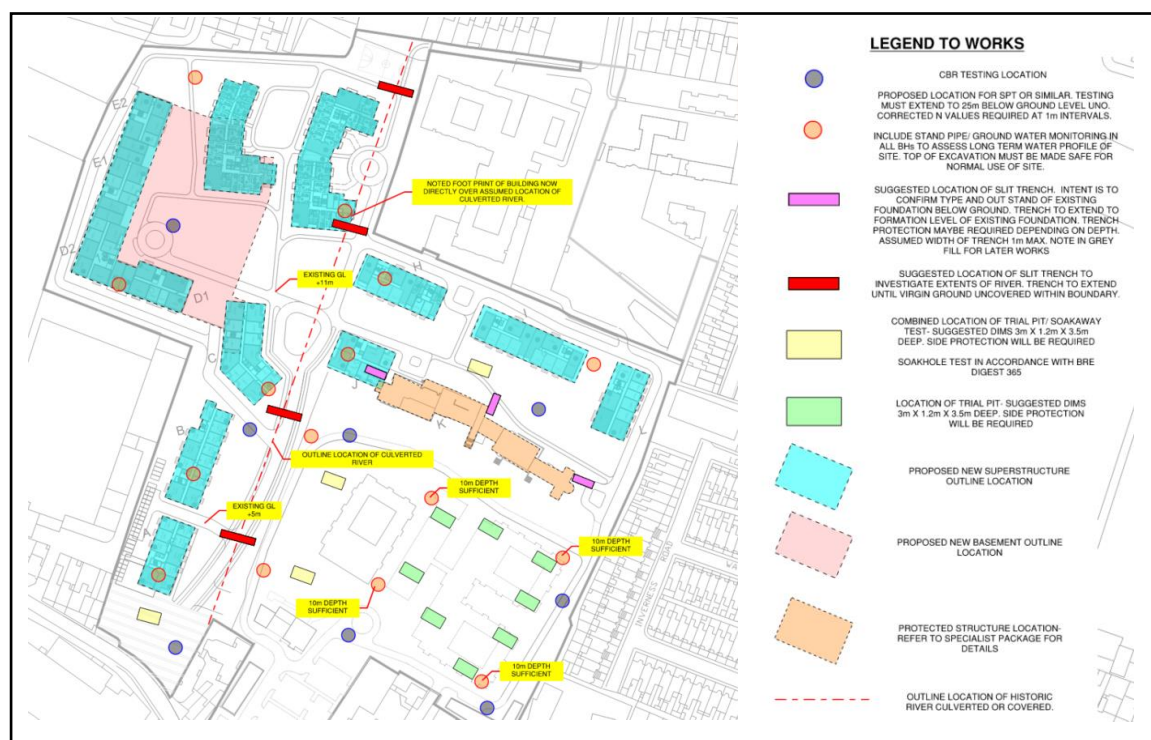


Figure 11 – Extract from site investigation strategy

This site investigation was carried out by Ground Investigations Ireland Ltd. between 13/09/2021 and 21/09/2021 at the site of the proposed hospital in St. Vincent's hospital, Fairview. The following investigative works were carried out on the site.

- Carry out 8 No. Trial Pits to a maximum depth of 3.7m BGL
- Carry out 3 Slit trenches to investigate the presence of existing services.
- Carry out 2 Foundation Pits to investigate existing foundations.

- Carry out 3 No. Soakaways to determine a soil infiltration value to BRE digest 365
- Carry out 22 No. Cable Percussion boreholes to a maximum depth of 10.2m BGL
- Carry out 15 No. Rotary Core follow on Boreholes to a maximum depth of 26m BGL
- Carry out 3 No. Plate Bearing Tests to determine CBR Value.
- Installation of 19 No. Groundwater monitoring wells
- Geotechnical & Environmental Laboratory testing
- Report with recommendations

Please refer to the GII report for full details of all works and results advised other than those specifically discussed in this report as an overview.

4.1.1 Ground Conditions

The ground conditions encountered during the investigation are summarised below with reference to in-situ and laboratory test results contained in appendices of the report. The full details of the strata encountered during the ground investigation are provided in the exploratory hole logs also included in the appendices of the geotechnical report.

The sequence of strata encountered were variable across the site and generally comprised:

- Topsoil/Surfacing
- Made Ground
- Granular Deposits
- Cohesive Deposits

Topsoil:

Topsoil was encountered in the majority of exploratory holes and was present to a maximum depth of 0.3m BGL. Tarmac surfacing was present in BH05 and BH05A typically to a depth of 0.10m BGL.



Made Ground:

Made Ground deposits were encountered beneath the Topsoil/Surfacing in the majority of the trial pits (TP01 to TP08) and boreholes (BH01 to BH04) in the south eastern area of the site and was present to depths of between 0.6m and 1.80m BGL. Made ground deposits were also encountered in some of the boreholes in other areas of the site including BH06, BH08, BH09, BH10, BH12 and BH17 to depths of up to 3m BGL. These deposits were described generally as brown sandy slightly gravelly CLAY with occasional cobbles and contained occasional fragments of concrete, red brick, glass, ash, ceramic and plastic.

Granular Deposits:

The granular deposits were encountered within the cohesive deposits at some of the borehole locations and were typically described as Grey brown clayey sandy sub rounded to sub angular fine to coarse GRAVEL with occasional cobbles and rare boulders. The secondary sand/gravel and silt/clay constituents varied across the site and with depth while occasional or frequent cobble and boulder content also present where noted on the exploratory hole logs. Based on the SPT N values the deposits are typically medium dense or dense. It should be noted that some of the trial pits where granular deposits or groundwater were encountered, experienced instability. This was described either as side wall spalling or as side wall collapse in the remarks section at the base of the trial pit logs. Groundwater strikes were noted in some the boreholes where noted on the logs.

Cohesive Deposits:

Cohesive deposits were encountered beneath the Made Ground and were described typically as brown sandy gravelly CLAY with occasional cobbles and boulders overlying a stiff dark brown / grey sandy gravelly CLAY with occasional cobbles and boulders. The secondary sand and gravel constituents varied across the site and with depth, with granular lenses occasionally present in the glacial till matrix. The strength of the cohesive deposits typically increased with depth and was firm and stiff to very stiff below 1.5m to 2m BGL

in the majority of the exploratory holes. These deposits had some, occasional or frequent cobble and boulder content where noted on the exploratory hole logs.

4.1.2 Groundwater

Groundwater strikes are noted on the exploratory hole logs where they occurred and where possible drilling was suspended for twenty minutes to allow the subsequent rise in groundwater to be recorded. It must be noted that these exploratory holes did not remain open for sufficiently long periods of time to establish the hydrogeological regime and groundwater levels would be expected to vary with the tide, time of year, rainfall, nearby construction and other factors. For this reason, standpipes were installed in BH01, BH02, BH03 and BH04 to allow the equilibrium groundwater level to be determined

BOREHOLE	DATE	TIME	GROUNDWATER (m BGL)	Comments
BH01	14/12/2021	09:23	3.38	
BH02	14/12/2021	09:19	2.87	
BH05	14/12/2021	09:29	6.05	
BH06	14/12/2021	09:34	3.41	
BH07	14/12/2021	09:40	4.63	
BH10	14/12/2021	10:09	DRY	Base of pipe at 2.0m BGL
BH12	14/12/2021	09:50	1.78	
BH13	14/12/2021	10:00	+0.24	
BH14	14/12/2021	10:04	0.00	
BH15	14/12/2021	10:12	5.14	
BH16	14/12/2021	10:15	4.88	
BH17	14/12/2021	10:19	5.10	
BH18	14/12/2021	10:28	1.85	
BH19	14/12/2021	10:25	1.95	
BH20	14/12/2021	10:42	5.62	
BH21	14/12/2021	10:33	6.03	
BH22	14/12/2021	10:38	4.66	

BOREHOLE	DATE	TIME	GROUNDWATER (m BGL)	Comments
BH01	05/04/2022	09:33	3.32	
BH02	05/04/2022	08:51	2.78	Logger installed
BH03				Blocked at 1.40m
BH04	05/04/2022	09:49	2.03	Logger installed
BH05	05/04/2022	09:29	5.93	
BH06	05/04/2022	09:25	3.30	
BH07	05/04/2022	09:09	4.42	Logger installed
BH10	05/04/2022	10:32	DRY	Base of pipe at 2.0m BGL
BH12	05/04/2022	10:11	1.75	Logger installed
BH13	05/04/2022	10:00	Above GL	
BH14	05/04/2022	10:27	Above GL	Logger installed
BH15	05/04/2022	10:51	4.57	
BH16	05/04/2022	11:01	4.06	
BH17	05/04/2022	10:51	4.90	
BH18	05/04/2022	10:46	1.23	
BH19	05/04/2022	10:49	1.05	
BH20	05/04/2022	10:37	5.39	
BH21	05/04/2022	10:44	5.66	
BH22	05/04/2022	10:41	4.24	

Figure 12 – Ground water monitoring results

4.1.3 Lab Testing

A series of laboratory testing was undertaken on samples from site. These included:

- Geotechnical testing on soil samples recovered to confirm the descriptions on logs and to establish geotechnical parameters of same;

- Chemical testing including pH and sulphate testing- The pH and sulphate testing completed on samples recovered from the exploratory holes indicates the pH results are near neutral and the sulphate results are low, when compared to the guideline values from BRE Special Digest 1:2005. No special precautions are required for concrete foundations to prevent sulphate attack. The samples tested were below the limits of DS1 in the BRE Special Digest 1:2005.
- Rock testing to establish physical and strength parameters of the underlying bedrock.



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5 IMPACT ASSESSMENT

5.1 General

The construction of any below ground structure has the potential, if not managed and executed correctly, to impact upon neighbouring properties and public realm. The following is noted with regards to the basement associated with the proposed development:

- The basement is located within the site and set back from adjacent properties.
- No works outside of the site boundary would be required to facilitate the construction of the basement;
- Condition surveys of adjacent buildings to be undertaken prior to works commencing on site where they are in close proximity to the works;
- Strict vibration, noise and dust monitoring to be undertaken during the works as outlined in the Outline Construction Management Plan that accompanies this application.

5.2 Groundwater Flow

It is noted that the groundwater flow would generally be in a south westerly direction towards the Tolka River. The footprint of the proposed basement is small relative to the overall site extents with the space set back from adjacent buildings and site boundaries. In relation to ground water flows towards the Tolka river the impact of this basement is relatively small as its obstructing a minor section of the river in the grand scale of the overall development. In addition, the prevailing ground conditions consist of boulder clay material which would limit the flow of groundwater in the overburden layers. However, it is considered that there is sufficient space to allow for any groundwater flow around the basement without impacting upon adjacent buildings.

The works are likely to require temporary dewatering to facilitate excavations over a short period of time. It is proposed that monitoring of groundwater levels outside of the excavation be undertaken during the works to ensure there is adverse impact on groundwater levels outside of the excavations.

5.3 Land Stability and Ground Movement

It is noted that due to the location of the basement on the site and its considerable set back from the boundary of the site the basement will be excavated using a traditional open cut. Similarly due to the location and set back of the proposed basement and also is considerable distance from all listed and protected structures there is no adverse impact expected on any adjacent structure. We are approximately 15m set back from the perimeter of the site and greater than 30m away from the protected structures on the site. The Outline CMP outlines appropriate monitoring of the vibration, noise and dust during the works. The proposed RC walls to the permanent structure will provide the required support to the land and ground surrounding the lower ground floor space in the permanent condition.

With these measures in place. it is thus considered that the proposed works should not impact upon adjacent buildings from a lateral stability and ground movement perspective.

5.4 Surface Flow and Flooding

A site-specific flood risk assessment has been undertaken for the proposed development-please refer to OCSC report R517-OCSC-XX-XX-RP-C-0003-S2-P01 for detail of same. This assessment demonstrates that the site is located outside of Flood Zones A and B and thus the general restriction against the development of basements below the estimated flood levels is not applicable.

The proposed development incorporates a series of SuDS measures all of which have been designed in accordance with CIRIA C753, the SuDS Manual-please refer to Engineering Services Report R517-OCSC-XX-XX-RP-C-0003-S2 that accompanies this report for more detail. Measures adopted include:

- Pervious paving.
- Green roofs.
- Trapped road gullies.
- Filter drains
- Underground pipe system.



- Silt traps.
- Cellular storage systems with interception.
- Bio-retention/detention ponds.
- Outlet protection.
- Flow control device (to control run-off to green field rates)
- Oil separator.

Thus, it is considered that the proposed development will not cause an impact from a surface flow and flooding perspective.

5.5 Cumulative Effects

It is noted that the proposed basement only forms a very small percentage of the overall site footprint. Given the relatively small footprint of the proposed basement within the context of the overall site layout together with the fact that there are no other major basement structures existing within the vicinity of the project, the proposed development is not considered to provide a cumulative impact.

5.6 Construction Related Impacts

The proposed design seeks to minimise the risk of any construction related impacts associated with the proposed development. The basement structure is set back from adjacent structures and site boundaries. A series of site management and monitoring measures are suggested in the Outline CMP.

With the above measures in place, the risk of construction related impacts is considered to be low.

5.7 Temporary Works

Due to the location of the proposed basement inboard of the perimeter of the site at this point in the project it is not envisioned any secant piling will be required to complete the basement construction. We believe that sufficient space is available to create the basement via open cut and battering or surround existing ground levels. Thus, there are no temporary works either

below third party lands or public lands to facilitate the lower ground floor plant space works.

5.8 Heritage and Biodiversity Issues

It is noted that the proposed location of the basement is outside of the footprint of the historical buildings and is outside the zone of influence of all adjacent existing buildings and structures. It is also located greater than 30m away from the remaining historical buildings and this not considered to have an impact on heritage.

It is noted that there are no mature trees near the proposed basement. There is an extensive soft and hard landscaping proposal for the development which will add to the biodiversity of the site-please refer to landscape architect drawings and reports which accompany this application for further detail.

5.9 Land Use

The proposed use of the basement is for car parking and plant to service the residential development above, thus supporting its development. The use of the site for residential development/mixed use development is in line with zoning as set out in the accompanying Planning Reports



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6 CONSTRUCTION MANAGEMENT PLAN

6.1 Overview

An Outline Construction Management Plan (CMP) has been prepared by OCSC as a separate report to accompany this application. The Outline CMP has been prepared as an outline construction strategy setting out construction method and activities required for the construction of the proposed development. This outline plan seeks to demonstrate how works can be achieved in a logical, sensible and safe sequence with the incorporation of specific measures to mitigate the potential impact on people and the environment.

Included within the plan are construction and site management issues such as:

- Groundwater and Surface Water control;
- Dust;
- Dirt;
- Noise;
- Vibrations;
- Condition Surveys

Please refer to OCSC Report R517-OCSC-XX-XX-RP-S-002 Outline Construction Management Plan for further detail.



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7 IMPACT ASSESSMENT AND MITIGATION

The potential impacts associated with the proposed development are discussed under section 5 of this report.

This assessment has noted that the potential impacts of the basement have been mitigated against through:

- Positioning of the space away from adjacent buildings and site boundaries;
- Minimisation of the basement space relative to the overall site footprint;
- Positioning of the space remote from the perimeter of the site in the event further basements are constructed in the vicinity;
- Due to the geometry of the site and location of the basement adjacent to Green spaces we believe there will be no impact on ground water flow;
- Adoption of strict vibration, noise and dust monitoring during the critical stages of the works;
- Construction of cast in-situ RC box for the permanent structure.



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8 NON-TECHNICAL SUMMARY

The Basement impact assessment has followed the guidelines as set out in Appendix 9 of the Draft Dublin City Council Development Plan 2022-2028. The assessment reviewed potential impacts on:

- General items;
- Groundwater Flow;
- Land Stability and Ground Movement;
- Surface Flow and Flooding;
- Cumulative Effects;
- Construction Related Impacts;
- Temporary Works;
- Heritage and Biodiversity Impacts;
- Land use.

An Outline Construction and Environmental Management Plan for LRD application will be prepared to accompany the final application.

This assessment has demonstrated that:

- The construction of the basement will not unduly impact on groundwater conditions and that groundwater quality, quantity and classification will be protected;
- Groundwater or surface water flows will not be impacted;
- The basement development will not have an adverse impact on existing patterns of surface water drainage, including infiltration into groundwater consistent with best practice in SuDS;
- The structural stability/integrity of adjoining and neighbouring buildings will not be compromised;
- The design of the basement relates to the characteristics of the site-the footprint is only a small portion of the overall site;



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- The basement structure is of suitable design and will be constructed in line with the Construction Management Plan;
- The construction will not cause undue nuisance to the residential amenities of the local area;
- The design of the space considered impacts on future planting;
- The development will not adversely impact on existing protected structures.



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9 BASEMENT IMPACT ASSESSMENT CHECKLIST

Please see below completed checklist as included in the Appendix package as noted in the outset.

	Item	Yes/ No
1	Description of proposed development.	✓
2	Plan showing boundary of development including any land required temporarily during construction.	✓
3	Plan, maps and photographs to show the location of basement relative to surrounding structures.	✓
4	Plans, maps and or photographs to show topography of surrounding area with any nearby watercourses/ waterbodies including consideration of the relevant maps on the SFRA (Vol 7).	✓
5	Plans and sections to show foundation details of adjacent structures (reference to pre-condition reports).	✓
6	Plans and sections to show layout and dimensions of proposed basement and all proposed foundation details.	✓
7	Modelling evaluation of baseline groundwater levels and flows.	
8	Modelling and evaluation of groundwater levels and flows during construction and following construction of basement.	
9	Programme of enabling works and construction and restoration.	✓
10	Identification of potential risks to land stability (including surrounding structures and infrastructure and groundwater flooding).	✓
11	Assessment of potential risks on neighbouring properties and surface groundwater.	✓
12	Identification of significant adverse impacts.	✓
13	Ground Investigation Report and Conceptual Site Model including: • Desktop study • Exploratory hole record • Results from monitoring the local groundwater regime • Confirmation of baseline conditions • Factual site investigation report	✓
14	Ground Movement Assessment.	✓
15	Plans, drawings, reports to show extent of affected area.	✓
16	Construction Sequence Methodology (CSM) referring to site investigation and containing basement, floor and roof plan, sections, sequence of construction and temporary works.	✓
17	Proposals for monitoring during and post construction (groundwater movement and levels, ground movement, vibration with comparisons to baseline) – limits to be advised in BIA and monitored. Any breaches should be reported to DCC E&T.	✓
18	Consideration of potential impacts to protected structures, conservation areas and archaeology where relevant.	✓
19	Consideration of potential impacts to biodiversity and amenity.	✓
20	Construction Management Plan.	✓
21	Impact assessment and specific mitigation measures to reduce or offset significant adverse impacts with comparisons to baseline study.	✓
22	Provision for monitoring post construction (post-condition surveys, groundwater levels/flows etc.)	✓
23	Non-technical summary of full report.	✓

Shaun Doody BE MSc CEng MIEI MStructE RCONSEI

Associate Director

On Behalf of

OCSC MULTIDISCIPLINARY CONSULTING ENGINEERS



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