

# **Environmental Impact Assessment Report**

**Volume 2: Chapters 8-21**

**Lands at Cornelscourt Village,  
Old Bray Road, Cornelscourt,  
Dublin 18**

**On behalf of**

**Cornel Living Limited**

December 2019



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## 8 Water

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## 8.1 Introduction

**This chapter of the EIAR has been prepared by DBFL Consulting Engineers.**

This chapter of the EIAR comprises of an assessment of the likely impact of the proposed development on the surrounding surface water and hydrogeological environments (including flood risk, surface water drainage, foul drainage and water supply) as well as identifying proposed mitigation measures to minimise any impacts.

In summary, the project comprises the development of 452 apartments, 10 houses, 6 bungalows, a café / restaurant, office space, concierge and central residential amenity space on a 2.14 Ha site (approx.).

The site falls from its western corner toward its eastern corner forming a single catchment for both surface water and foul drainage.

The proposed surface water drainage network accords with SUDS principles, divides the site into three drainage sub-catchments and discharges to an existing 225mm diameter public surface water drain is located adjacent to the eastern corner of the site (lands north of Willow Grove) at a controlled greenfield runoff rate of 4.2l/sec/ha.

The proposed development's foul drainage network discharges to an existing 225mm diameter foul sewer located adjacent to the eastern corner of the site (lands north of Willow Grove). Pre-Connection Feedback has been received from Irish Water advises that *"Based upon the details that you have provided with your pre-connection enquiry and on the capacity currently available in the networks(s), as assessed by Irish Water, we wish to advise you that, subject to a valid connection agreement being put in place, your proposed connection to the Irish Water network(s) can be facilitated"*

An existing 24" Cast Iron and 4" uPVC watermains are located along Old Bray Road. The proposed development's water supply is to be taken from this existing infrastructure. As noted previously, Pre-Connection Feedback has been received from Irish Water advises that *"Based upon the details that you have provided with your pre-connection enquiry and on the capacity currently available in the networks(s), as assessed by Irish Water, we wish to advise you that, subject to a valid connection agreement being put in place, your proposed connection to the Irish Water network(s) can be facilitated"*

## 8.2 Study Methodology

Assessment of the likely impact of the proposed development on the surrounding surface water and hydrogeological environments included the following activities:

- Site inspection / walkover
- Review of existing topographic survey information
- Review of Irish Water utility plans (surface water drainage, foul drainage and water supply). Refer to Appendix 8.1.
- Ground investigations including trial pits, infiltration testing and environmental testing (waste acceptance criteria for landfills)
- Review of information available on the Environmental Protection Agency (EPA) online mapping service
- Review of information available on the Geological Survey of Ireland (GSI) online mapping service
- Review of Office of Public Works (OPW) National Flood Hazard Mapping and CFRAM Studies (Catchment Flood Risk Assessment and Management Studies)
- Consultation with Dún Laoghaire - Rathdown County Council's Water Services Section
- Consultation with Irish Water
- Submission of a Pre-Connection Enquiry Application to Irish Water
- Obtaining a Statement of Design Acceptance from Irish Water

As part of assessing the likely impact of the proposed development, surface water runoff, foul drainage discharge and water usage calculations were carried out in accordance with the following guidelines:

- Greater Dublin Strategic Drainage Study (GSDSDS)
- Method outlined in Irish Water's Pre-Connection Enquiry Application (water demand and foul drainage discharge)

### 8.3 The Existing Receiving Environment (Baseline)

#### Hydrology

The primary hydrological features in the vicinity of the site are the Deansgrange Stream (approx. 650m north-east of the site. Refer to Figure 8.1 for the location of Deansgrange Stream.

As noted previously, an existing 225mm diameter public surface water drain is located adjacent to the eastern corner of the site (lands north of Willow Grove). Refer to Figure 8.2 for the location of this drain. As the site falls from its western corner toward its eastern, the existing 225mm diameter public surface water drain noted above will provide a suitable surface water outfall for the proposed development.

The existing surface water drain noted above ultimately discharges to the Deansgrange Stream.

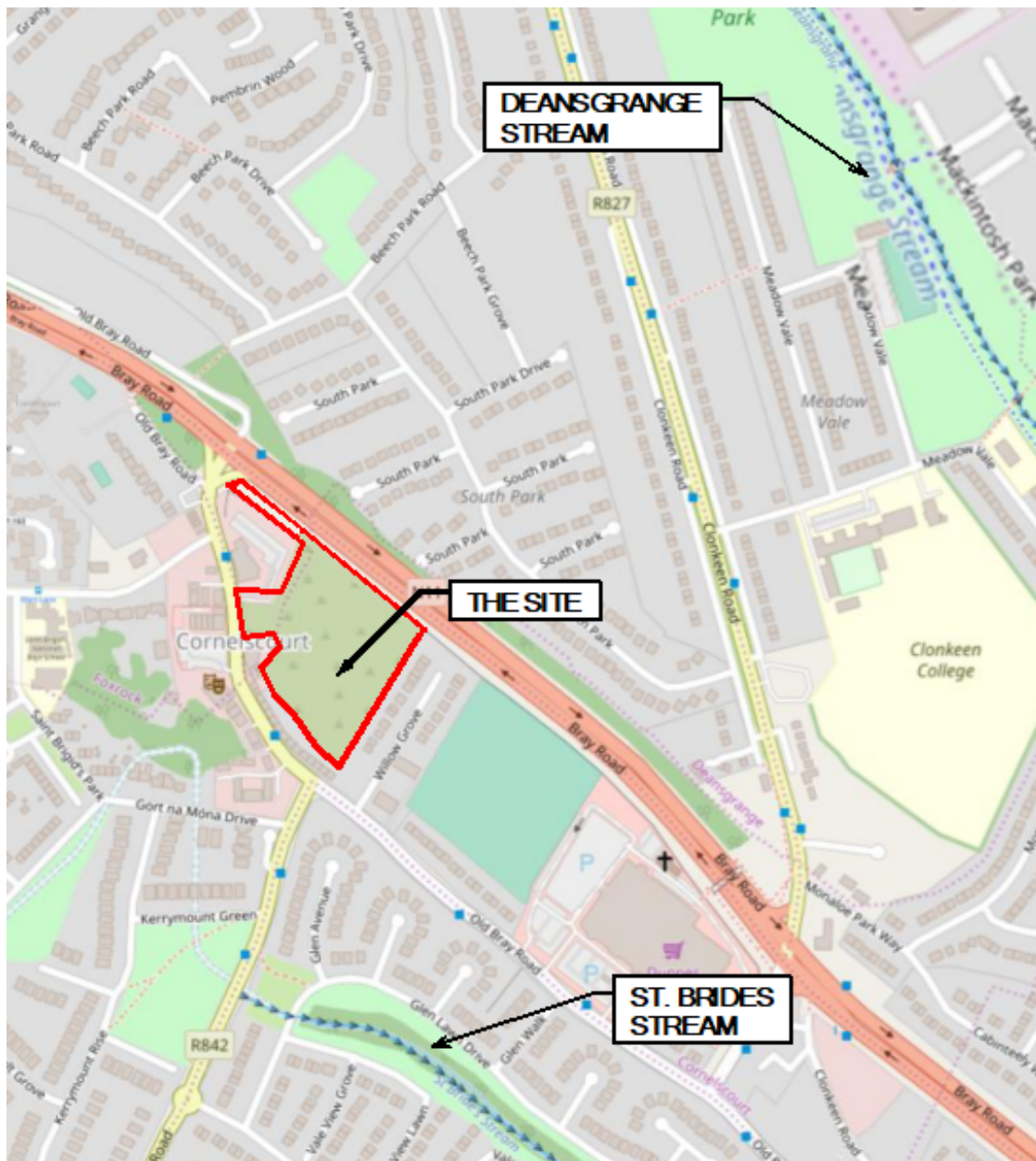


Figure 8.1 - Extract from EPA Online Mapping Service (Site Boundary Indicative Only)

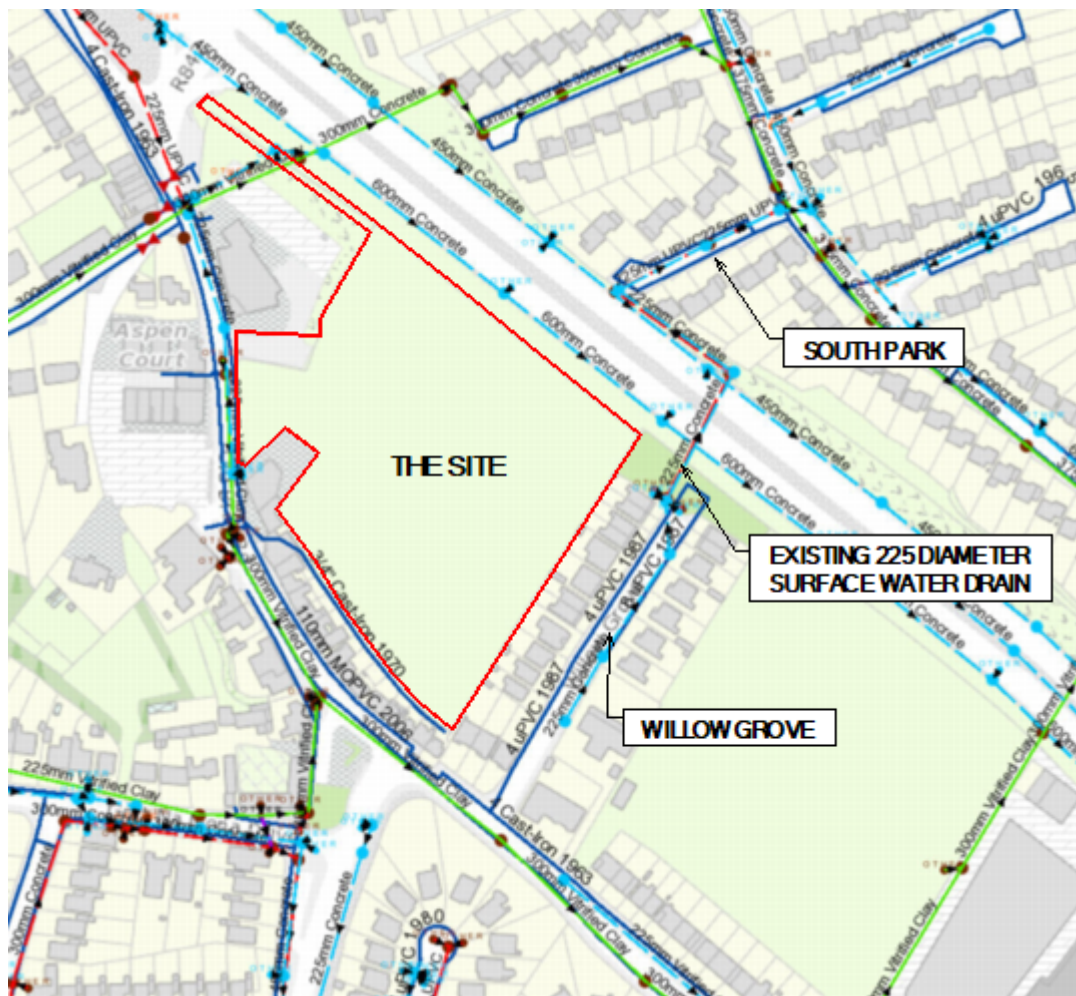


Figure 8.2 - Extract from Irish Water Network Plan (Site Boundary Indicative Only)



### Hydrogeology

GSI’s Groundwater Data Viewer indicates that the site is located on a “Bedrock Aquifer” and classifies the underlying aquifers as “Poor Aquifer – Bedrock which is generally unproductive except for local zones”. Refer to Figure 8.3.

GSI generally classifies the site’s groundwater vulnerability as “Moderate” (although a localised area in the southern corner of the site is classified as “High”). Refer to Figure 8.4.

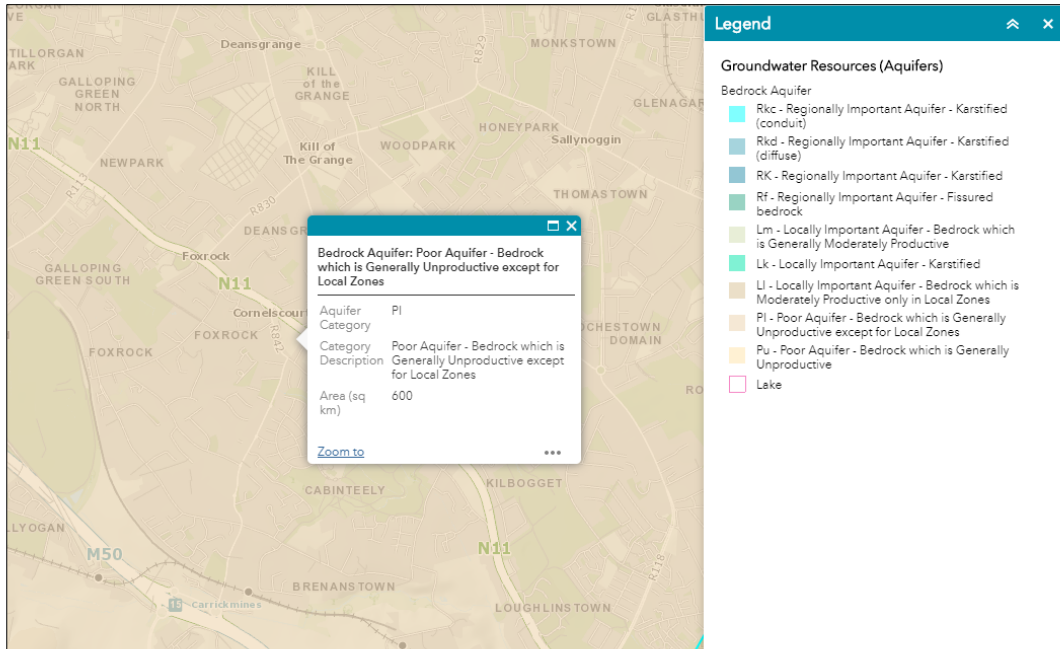


Figure 8.3 - Extract from GSI Online Mapping Service – Groundwater Aquifers

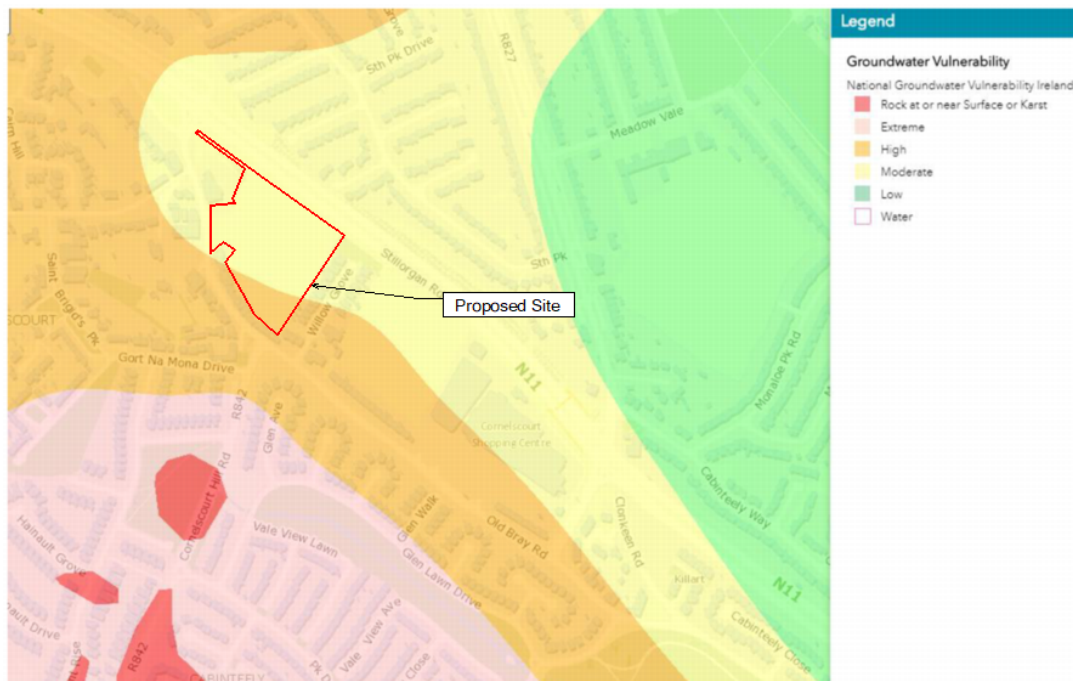


Figure 8.4 Extract from Groundwater Vulnerability Map (source GSI Online Mapping Service)

### **Flood Risk**

A flood hazard assessment has been undertaken by reviewing information from the Office of Public Works (OPW) National Flood Hazard Mapping ([www.floods.ie](http://www.floods.ie)) and the Eastern CFRAM Study.

This assessment has been carried out in accordance with the procedures for a “Flood Risk Assessment” as outlined in the OPW’s Guidelines for Planning Authorities – The Planning System and Flood Management (November 2009).

#### OPW Flood Hazard Mapping

OPW’s Summary Local Area Report is included in Appendix 8.2 (Flood Hazard Information).

This report is sourced from the OPW website ([www.floodmaps.ie](http://www.floodmaps.ie)) and summarises all flood events within 2.5 km of the site. No flood events or benefitting lands are noted in the immediate vicinity of the site.

#### Eastern CFRAM Study

Extracts from the Eastern CFRAM Study (Fluvial Flood Extent and Fluvial Flood Depth Plans) are included in Appendix 8.2 (Flood Hazard Information) which indicates the extent of fluvial flooding in the vicinity of the site.

No fluvial flooding is indicated in the vicinity of the site.



### Foul Drainage

Existing public foul drainage infrastructure is located adjacent to the eastern corner of the site (refer to Figure 8.5 and Appendix 8.1). As the site falls from its western corner toward its eastern corner, this existing infrastructure will facilitate a gravity foul drainage connection.

As previously noted, Pre-Connection Feedback has been received from Irish Water advises that “Based upon the details that you have provided with your pre-connection enquiry and on the capacity currently available in the networks(s), as assessed by Irish Water, we wish to advise you that, subject to a valid connection agreement being put in place, your proposed connection to the Irish Water network(s) can be facilitated”. Refer to Appendix 8.3 for Correspondence with Irish Water.

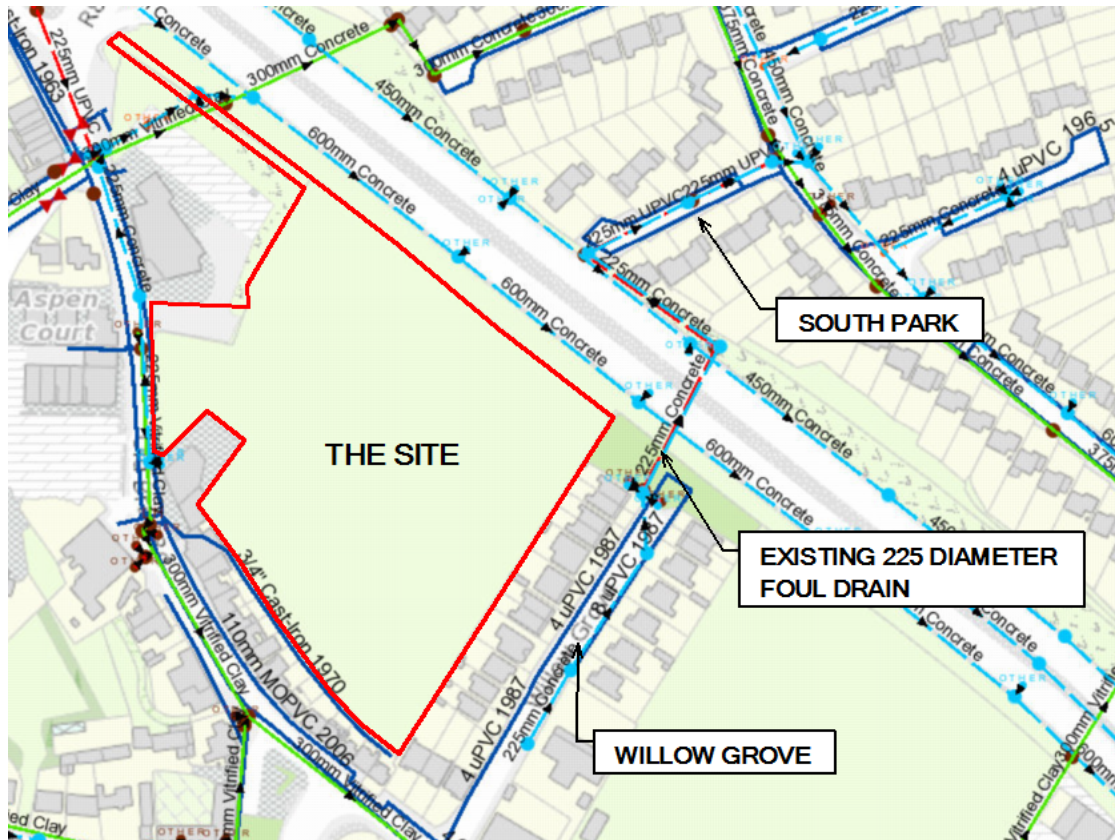


Figure 8.5 Extract from Irish Water Utility Plan

**Surface Water**

Existing public surface water drainage infrastructure is located adjacent to the eastern corner of the site (refer to Figure 8.6 and Appendix 8.1). This pipeline outfalls to the east via a crossing under the N11, South Park and Clonkeen College

As the site falls from its western corner toward its eastern corner, this existing infrastructure will facilitate a surface water drainage connection for the proposed development.

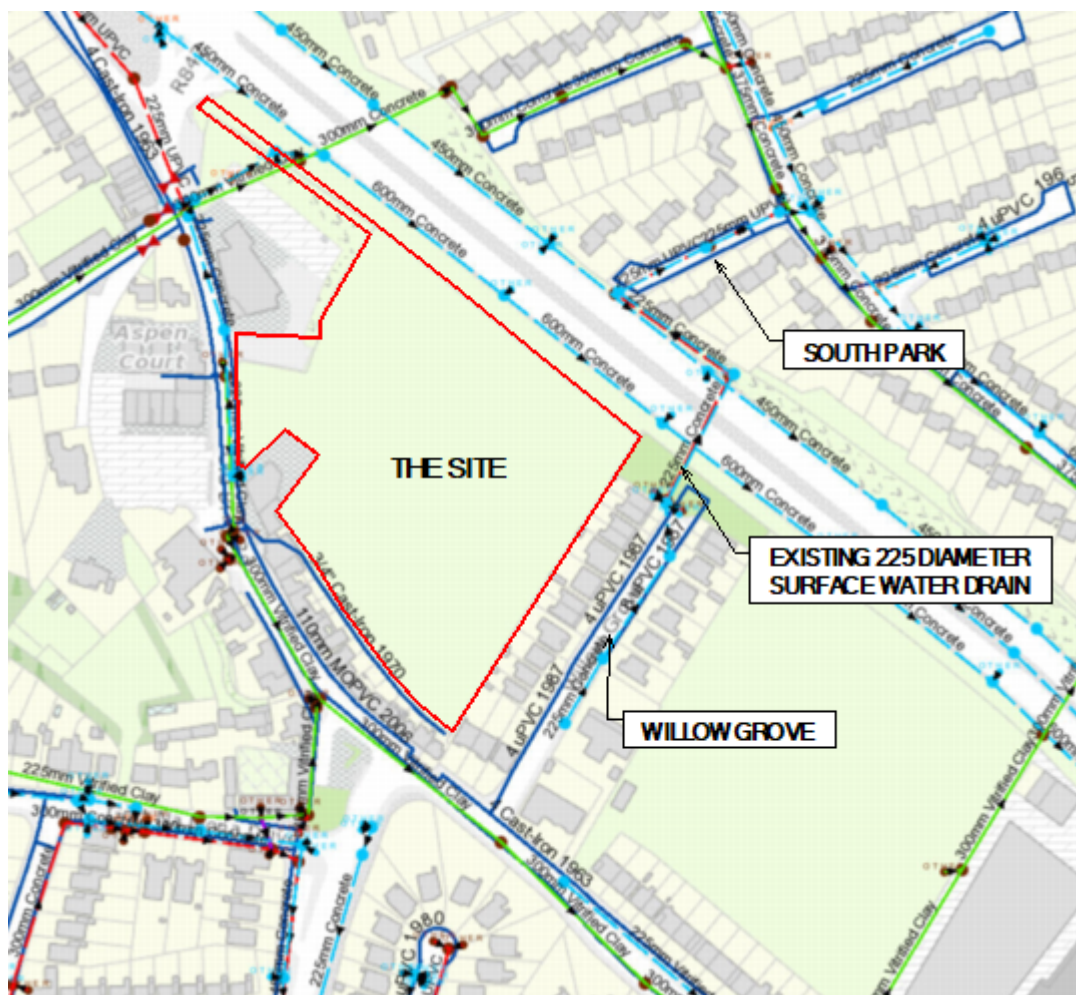


Figure 8.6 Extract from Irish Water Utility Plan

**Water Supply**

An existing 24” Cast Iron and 4” uPVC watermain are located along Old Bray Road (refer to Figure 8.7 and Appendix 8.1). The proposed development’s water supply is to be taken from this existing infrastructure.

As previously noted, Pre-Connection Feedback has been received from Irish Water advises that “Based upon the details that you have provided with your pre-connection enquiry and on the capacity currently available in the networks(s), as assessed by Irish Water, we wish to advise you that, subject to a valid connection agreement being put in place, your proposed connection to the Irish Water network(s) can be facilitated” Refer to Appendix 8.3 for Correspondence with Irish Water.

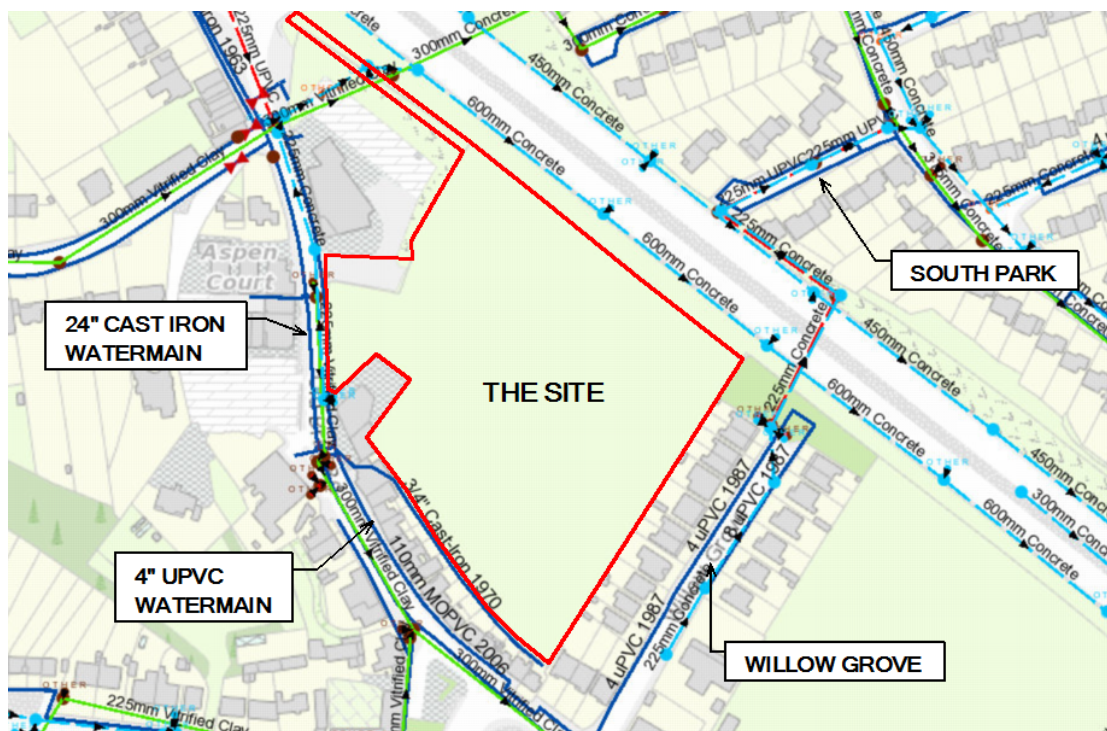


Figure 8.7 Extract from Irish Water Utility Plan

## 8.4 Characteristics of the Proposed Development

The current proposal provides for a Build to Rent development consisting:

- 468 residential units (452 apartments and 16 houses) as follow:
  - 41 no. studio apartment units,
  - 257 no. 1 bed apartment units,
  - 136 no. 2 bed apartment units;
  - 18 no. 3 bed apartment units;
  - 10 no. 3 bed semi-detached house units; and
  - 6 no. 1 bed bungalow units.
- A café / restaurant of c. 140 sq m; office space of 149 sq m; concierge of c. 149 sq m; and a residential tenant amenity space of c. 458 sq m is also proposed.
- 274 Car Parking Spaces (273 at basement level and 1 at surface level)
- 12 Motor Cycle Spaces
- 616 Bicycle Parking Spaces
- Public Open Space
- Vehicular Access
- Basement Areas
- Sub Stations and 3 Switch Rooms
- All Associated Site Development Works

### **Hydrology**

The proposed development is located approx. 650m from the primary hydrological features in the vicinity of the site (Deansgrange Stream).

No adverse effects on surrounding hydrology is anticipated as surface water flows are attenuated to greenfield runoff rates in conjunction with implementation of SUDS strategies such as permeable paving, green roofs and installation of a Class 1 full retention fuel / oil separator. Refer to DBFL's Infrastructure Design Report (180208-rep-001) for full details of the proposed SUDS methodologies.

### **Hydrogeology**

Adjacent to the site's western boundary (the high side of the site), groundwater was observed at approx. 1.0m below existing ground level. Adjacent to the site's eastern boundary (the low side of the site), groundwater was observed at approx. 2.3m below existing ground level. Also refer to EIAR Chapter 7 (Lands and Soils).

Due to relatively high level of groundwater encountered in the boreholes there may be a need to dewater excavations during construction.

In general, the designed basement level, ground floor levels and external pavement levels have been designed to follow the natural topography of the site, therefore minimising the need for excavation to enable development. As such, the deepest excavations are expected to be required for installation of the attenuation tanks (up to approximately 3.0m below existing ground level).

It is not envisaged that the proposed development works will have any direct impact on the underlying hydrogeology.



### **Flood Risk**

A Site-Specific Flood Risk Assessment for proposed development was undertaken in accordance with the requirements of “The Planning System and Flood Risk Management, Guidelines for Planning Authorities” and its Technical Appendices.

Following the Flood Risk Assessment, it was determined that the site is located in Flood Zone C as defined by the Guidelines. It concluded that the;

- The proposed development is appropriate for the site’s flood zone category.
- The sequential approach outlined in the Guidelines has been adhered to and that the ‘Avoid’ principal has been achieved.

The proposed development is considered to have the required level of flood protection up to and including the 1% AEP flood event. Overland flow paths have been identified for pluvial flooding exceeding the capacity of the surface water drainage network.

### **Foul Drainage**

Existing public foul drainage infrastructure is located adjacent to the eastern corner of the site (refer to Figure 8.5 and Appendix 8.1. As the site falls from its western corner toward its eastern corner, this existing infrastructure will facilitate a gravity foul drainage connection.

The proposed foul drainage network comprises of a network of 225mm diameter pipes. Individual dwellings located along the site’s south-western and south-eastern boundaries are being serviced by individual 100mm diameter connections.

The foul drainage network for the proposed development has been designed in accordance with the Department of the Environment’s Recommendations for Site Development Works for Housing Areas, the Department of the Environment’s Building Regulations “Technical Guidance Document Part H Drainage and Waste Water Disposal”, BS EN 752: 2008 Drain and Sewer Systems Outside Buildings, IS EN 12056: Part 2 (2000) Gravity Drainage Systems Inside Buildings and BS 8301:1985 Building Drainage.

A daily foul discharge volume of 209m<sup>3</sup> has been calculated as outlined in Irish Water’s Pre-Connection Enquiry Application Form.

### **Surface Water Drainage**

Existing public surface water drainage infrastructure is located adjacent to the eastern corner of the site (refer to Figure 8.6 and Appendix 8.1). This pipeline outfalls to the east via a crossing under the N11, South Park and Clonkeen College. As the site falls from its western corner toward its eastern corner, this existing infrastructure will facilitate a surface water drainage connection for the proposed development.

Surface water runoff from the site’s street network are directed to tree pits via conventional road gullies (with high level overflow to the piped surface water network) while surface water runoff from on street parking areas will be captured by permeable paving.

Surface water runoff from the roofs of houses along the eastern boundary will be routed to the proposed surface water pipe network via bio-swale filter drains (infiltration trenches) located in their rear gardens (providing an additional element of attenuation and treatment).

Surface water runoff from apartment roofs will be captured by green roofs (sedum blanket) prior to being routed to the piped surface water drainage network. While a drainage reservoir (drainage board) is to be provided on the podium slab over basement.

While the site does represent a single surface water catchment, for internal management of the surface water, it has been split into three sub catchments. Each sub catchment has been assessed

separately in relation to surface water attenuation. Surface water discharge rates from the proposed surface water drainage network will be controlled by a Hydrobrake type flow control device and associated underground attenuation tanks.

Surface water discharge will also pass via a full retention fuel / oil separator (sized in accordance with permitted discharge from the site) before leaving the site. Refer to DBFL's Infrastructure Design Report (180208-rep-001) for full details of the proposed SUDS methodologies. Surface water calculations are based on an allowable outflow / greenfield runoff rate of 4.2 l/sec/ha resulting in a total attenuation volume of 655 m<sup>3</sup>.

Proposed surface water drains have been designed in accordance with the Greater Dublin Strategic Drainage Study (GSDSDS), the Department of the Environment's Recommendations for Site Development Works for Housing Areas, the Department of the Environment's Building Regulations "Technical Guidance Document Part H Drainage and Waste Water Disposal" and BS EN 752: 2008 Drain and Sewer Systems Outside Buildings.

### **Water Supply**

An existing 24" Cast Iron and 4" uPVC watermains are located along Old Bray Road (refer to Figure 8.7 and Appendix 8.1. The proposed development's water supply is to be taken from this existing infrastructure.

All connections, valves, hydrants, meters etc. have been design and are to be installed in accordance with Irish Water's Code of Practice / Standard Details and the Department of the Environment's Building Regulations "Technical Guidance Document Part B Fire Safety".

A post development average hour water demand of 2.8 l/sec and a post development peak hour water demand of 14.0 l/sec has been calculated as outlined in Irish Water's Pre-Connection Enquiry Application Form.

## **8.5 Potential Impacts of the Proposed Development**

### **Construction Stage**

Potential impacts that may arise during the construction phase are noted below:

- Surface water runoff during the construction phase may contain increased silt levels (e.g. runoff across areas stripped of topsoil) or become polluted by construction activities.
- Discharge of rainwater pumped from excavations may also contain increased silt levels (potential impact on existing hydrology e.g. discharge to existing open drain).
- Accidental spills and leaks associated with storage of oils and fuels, leaks from construction machinery and spillage during refuelling and maintenance.
- Concrete runoff, particularly discharge of wash water from concrete trucks. (potential impact on existing hydrology e.g. infiltration to ground).
- Discharge of vehicle wheel wash water (potential impact on existing hydrology e.g. discharge to existing surface water drainage infrastructure).
- Improper discharge of foul drainage from contractor's compound (impact on existing hydrology e.g. cross-contamination of existing surface water drainage.).
- Cross contamination of potable water supply to construction compound.

### **Operational Stage**

Potential operational phase impacts are noted below:

- Increased impermeable surface area will reduce local ground water recharge and potentially increase surface water runoff (if not attenuated to greenfield runoff rate).
- Accidental hydrocarbon leaks and subsequent discharge into piped surface water drainage network (e.g. along roads and in driveway areas).
- Increased discharge to foul drainage network (daily foul discharge volume of 209m<sup>3</sup>).
- Increased potable water consumption (post development average hour water demand of 2.8 l/sec).

## 8.6 Potential Cumulative Impacts

The proposed surface water drainage infrastructure has been designed in accordance with the relevant guidelines. Any other future development in the vicinity of the site would have to be similarly designed in relation to permitted surface water discharge, surface water attenuation and SuDS, therefore, no potential cumulative impacts are anticipated in relation to surface water drainage and flooding.

No potential cumulative impacts are anticipated in relation to foul drainage and water supply. As noted previously, Irish Water have advised that *“Based upon the details that you have provided with your pre-connection enquiry and on the capacity currently available in the networks(s), as assessed by Irish Water, we wish to advise you that, subject to a valid connection agreement being put in place, your proposed connection to the Irish Water network(s) can be facilitated”*.

## 8.7 Do Nothing Scenario

There are no predicted impacts should the proposed development not proceed.

## 8.8 Risks to Human Health

The following risk to human health can occur during construction:

- Cross contamination of potable water supply to construction compound.

With the implementation of the aforementioned mitigation measures, the likelihood of such events occurring would be local and not significant.

Risks to Human Health associated with works during the construction phase associated with Water and Hydrology include:

- Work which puts persons at risk of burial under earthfall e.g. risk of injury to personnel from trench collapse.
- Contact with existing underground services e.g. gas leaks or electrocution.
- Works adjacent to live traffic and pedestrian cycle movements e.g. risk to public in terms of working on public road and footpath associated with provision of a water connection.
- Access and egress from the site and interface with site staff and / or the public e.g. Risk of slips, trips and falls.
- Work in confined spaces e.g. asphyxiation.
- Use of machinery and plant e.g. risk of injury to personnel and damage to plant and machinery due to improper use.



## 8.9 Mitigation Measures

### Construction Stage

The following measures are proposed during the construction phase to mitigate against risks to the surrounding hydrological environment.

- A site-specific Construction and Environment Management Plan will be developed and implemented during the construction phase. Site inductions will include reference to the procedures and best practice as outlined in the Construction and Environment Management Plan.
- Surface water runoff from areas stripped of topsoil and surface water collected in excavations will be directed to on-site settlement ponds where measures will be implemented to capture and treat sediment laden runoff prior to discharge of surface water at a controlled rate.
- Weather conditions and typical seasonal weather variations will also be taken account of when planning stripping of topsoil and excavations with an objective of minimizing soil erosion.
- In order to mitigate against spillages contaminating the surrounding surface water and hydrogeological environments, all oils, fuels, paints and other chemicals should be stored in a secure bunded hardstand area. Refuelling and servicing of construction machinery will take place in a designated hardstand area which is also remote from any surface water inlets (where not possible to carry out such activities off site).
- Concrete batching will take place off site and wash down and wash out of concrete trucks will take place off site (at authorized concrete batching plant in full compliance with relevant planning and environmental consents).
- Discharge from any vehicle wheel wash areas is to be directed to on-site settlement ponds.
- The construction compound will include adequate staff welfare facilities including foul drainage and potable water supply. Foul drainage discharge from the construction compound will be tankered off site to a licensed facility until a connection to the public foul drainage network has been established.
- The construction compound's potable water supply shall be protected from contamination by any construction activities or materials.

The following measures are proposed during the construction phase to mitigate against risks to human health.

- Contractor to prepare Method Statement, method statement to be agreed with PSDP.
- Contractor/PSCS to implement safe systems of construction including but not limited to battering the sides of trench excavations and installation of excavation shoring systems.
- Full precautions to be taken when working in vicinity of boundary structures for protection of same. Method and sequence of construction to be agreed with design team prior to commencement of work. Contractor's Temporary Works Designer to prepare Method Statement and Temporary Works Cert to ensure stability of excavations and adjacent structures.
- As noted in Chapter 7 Land and Soils (Section 7.9.1.2), the Contractor is to provide a Method Statement (to be agreed prior to commencing any works on site) for works in the vicinity of areas impacted by hydrocarbons including but not limited to details of their proposed specialist sub-contractors, proposals for containment of contamination, proposal for removal of hydrocarbons from dewatered groundwater prior to discharge, co-ordination of contamination removal with other site works, proposed licenced waste receiving facility and compliance with relevant legislation including HSA publications and the Waste Management Act.
- Contractor to obtain utility company network plans and arrange observation as required.

- Contractor to locate and record all services on site prior to commencement of excavations.
- Contractor to prepare and implement a Construction Traffic Management Plan that will be agreed with the Design Team and local authority and which will ensure the safety of the public during construction.
- Contractor must supervise vehicle movements to and from the site during construction in order to ensure that this traffic management plan is fully implemented. Plan to include deliveries to the site, staff parking, works outside the defined site such as utility connections.
- Public pedestrian routes to be established at site entrance as required.
- All personnel using machinery/plant to have undergone training on the use of said machinery/plant. Ongoing site supervision to be undertaken to ensure all use of machinery/plant is in accordance with the training undertaken.
- Contractor's employees to be provided with all required PPE in accordance with Safety, Health and Welfare at Work Act, 2005.

### **Operational Stage**

Following the Site Specific Flood Risk Assessment, it has been determined that the proposed development is located in Flood Zone C as defined by the Guidelines i.e. proposed development is considered to have the required level of flood protection up to and including the 1% AEP flood event.

Surface water runoff from the site will be attenuated to the greenfield runoff rate as outlined in the Greater Dublin Strategic Drainage Study (GSDSDS). Surface water discharge rates will be controlled by a Hydrobrake type vortex control device in conjunction with below ground attenuation storage.

The following methodologies are being implemented as part of a SuDS surface water treatment train approach:

- Surface water runoff from the site's street network are directed to tree pits via conventional road gullies (with high level overflow to the piped surface water network) while surface water runoff from on street parking areas will be captured by permeable paving.
- Surface water runoff from the roofs of houses along the eastern boundary will be routed to the proposed surface water pipe network via bio-swale filter drains (infiltration trenches) located in their rear gardens (providing an additional element of attenuation and treatment).
- Surface water runoff from apartment roofs will be captured by green roofs (sedum blanket) prior to being routed to the piped surface water drainage network. While a drainage reservoir (drainage board) is to be provided on the podium slab over basement.
- Attenuation of the 30 and 100 year return period storms
- Installation of a Hydrobrake (limiting surface water discharge from the site to 4.2 l/sec/ha)
- Surface water discharge will also pass via a fuel / oil separator (sized in accordance with permitted discharge from the site)

A contract will be entered into with a suitably qualified contractor from maintenance of the attenuation system, Hydrobrake and full retention fuel / oil separator noted above.

No specific mitigation measures are proposed in relation to foul drainage however, all new foul drainage lines will be pressure tested and be subject to a CCTV survey in order to identify any possible defects prior to being made operational.

No specific mitigation measures are proposed in relation to water supply, however, water conservation measures such as dual flush water cisterns and low flow taps will be included in the design.

The potential impact of climate change has been allowed for as follows;

- Pluvial flood risk - attenuation storage design allows for a 10% increase in rainfall intensities.

- Pluvial flood risk - drainage system design allows for a 10% increase in flows, as recommended by the GSDS.
- Provision of min. freeboard (500mm) from 1% AEP as required by GSDS (mitigation against impact of climate change).

## 8.10 Predicted Impacts of the Proposed Development

### Construction Stage

Implementation of the measures outlined in Section 8.9.1 will ensure that the potential impacts of the proposed development on water and the hydrogeological environment do not occur during the construction phase.

### Operational Stage

As surface water drainage design has been carried out in accordance with the GSDS and SuDS methodologies are being implemented as part of a treatment train approach, there are no predicted impacts on the water and hydrogeological environment arising from the operational phase.

## 8.11 Monitoring

### Construction Stage

Proposed monitoring during the construction phase in relation to the water and hydrogeological environment are as follows:

- Adherence to Outline Construction Management Plan
- Inspection of fuel / oil storage areas.
- Monitoring cleanliness of adjacent road network, implementation of dust suppression and vehicle wheel wash facilities.
- Monitoring sediment control measures (sediment retention ponds, surface water inlet protection etc.)
- Monitoring of discharge from sediment retention ponds (e.g. pH, sediment content)

### Operational Stage

During the operational phase an inspection and maintenance contract is to be implemented in relation to the proposed Class 1 full retention fuel / oil separators.

## 8.12 Reinstatement

Oil, fuel etc. storage areas are to be decommissioned on completion of the construction phase. Any remaining liquids are to be removed from site and disposed of at an appropriate licenced facility. Dún Laoghaire-Rathdown County Council's Environmental Control Section is to be notified of the proposed destination for disposal of any liquid fuels.

All sediment control measures (e.g. sediment retention ponds) are to be decommissioned on completion of the construction phase. Such areas are to be reinstated in accordance with the landscape architects plan and engineer's drawings.

## 8.13 Interactions

### Land and Soils

Surface water runoff during the construction phase may lead to erosion and contain increased silt levels (e.g. runoff across areas stripped of topsoil) or become polluted by construction activities.

Increased impermeable surface area will reduce local ground water recharge and potentially increase surface water runoff (if not attenuated to greenfield runoff rate).

As noted in Chapter 7 Land and Soils (Section 7.3.1, Section 7.4 and Section 7.5.1.2) an area of the site adjacent to the neighbouring filling station has been impacted by hydrocarbons. It is proposed to remove subsoil impacted by hydrocarbons which are affected by the proposed development (refer to Table 7.3).

The Contractor is to provide a Method Statement (to be agreed prior to commencing any works on site) for works in the vicinity of areas impacted by hydrocarbons including but not limited to details of proposals for containment of contamination, proposal for removal of hydrocarbons from dewatered groundwater prior to discharge and compliance with relevant legislation including HSA publications and the Waste Management Act.

Refer to Chapter 7 (Land and Soils) for proposed mitigation measures.

#### **8.14 Difficulties Encountered**

No particular difficulties were encountered during preparation of this chapter. The analysis reported within this chapter is based upon site specific discussions with Dún Laoghaire-Rathdown County Council's Water services Department and Irish Water as well as publicly available information from the Office of Public Works and Geological Survey of Ireland.

#### **8.15 References**

Irish Water Record Drawings

Flood Hazard Information

Correspondence with Irish Water