

## 14 Utilities

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## 14.1 Introduction

This chapter of the Environmental Impact Assessment Report (EIAR) considers & assesses the potential impacts on local utilities from the proposed scheme. Measures to mitigate any likely significant adverse impacts of the proposed scheme are reviewed and analyzed. This chapter has been prepared by John Considine, BE, MIStructE, MIEI, CEng, FConSEIM, Chartered Engineer of Barrett Mahony Consulting Engineers.

## 14.2 Study Methodology

The following section outlines the legislation and guidelines considered, and the adopted methodology for preparing this chapter.

### 14.2.1 Guidelines

The methodology followed for this section is in accordance with the EPA Guidelines on the Information to be contained in Environmental Impact Assessment Reports (Draft) 2017, Advice Notes for Preparing Environmental Impact Statements (Draft) 2015 and 2018 DHPLG Guidelines on Environmental Impact Assessment for Planning Authorities and An Bord Pleanála. The following section outlines the legislation and guidelines considered, and the adopted methodology for preparing this chapter.

The following legislation, standards and guidelines were consulted to inform the assessment:

- Guidelines on the information to be contained in Environmental Impact Statements, 2002, EPA;
- Advice Notes on Current Practice (in preparation of Environmental Impact Statements), 2003, EPA;
- EPA: Draft Revised Guidelines on The Information to be Contained in Environmental Impact Assessment Reports, August 2017;
- EPA: Advice Notes for Preparing Environmental Impact Statements, Draft, September 2015;
- Irish Waters Code of Practice for Water Infrastructure;
- Irish Waters Code of Practice for Wastewater Infrastructure;
- Greater Dublin Strategic Drainage Study, (DCC 2005);
- Regional Code of Practice for Drainage Works, (DCC 2005);
- The Planning System & Flood Risk Management – Guidelines for Planning Authorities, Dept. of Environment, Heritage & Local Government. (Government of Ireland 2009).
- The ESB Network Utility Existing Services maps.
- The Telecommunications existing network maps.

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);
- IS EN752, “Drain and Sewer Systems Outside Buildings”;
- Irish Water’s Code of Practice for Water and Wastewater Infrastructure;

## 14.3 The Existing Receiving Environment (Baseline)

The subject site is located on lands within the townland of St. Joseph’s House, (a protected structure) Leopardstown Road, Dublin 18.

The site is bounded by 2 no. access roads. Silver Pines leading to the N31 Brewery Road to the northeast and the R113 Leopardstown Road to the South. The Silver Pines residential development is located to the north and west of the proposed development. The overall site area totals 2.59ha. Part of the site is currently occupied by St. Joseph’s House for Adult Deaf and Deafblind and its grounds. Three domestic houses on the north-east and seven more on the south side make up the remainder of the site.

#### 14.3.1 Existing Surface Water Drainage

The lands/roads surrounding the site contain a number of surface water sewers and a combined sewer. In summary:

- 600mm diameter concrete surface water sewer along the edge of the park to the north of the site;
- 225mm diameter concrete surface water sewer along Leopardstown Road to the South of the site;
- The existing surface water connection for St. Joseph's House is via a 225mm concrete pipe to the surface water sewer serving the Silverpines development.

There are no existing SuDS measures on the site, any rainfall on the site is naturally attenuated by the soil and then infiltrates into the ground.

#### 14.3.2 Existing Foul Water Drainage

The site is served by a 225mm diameter foul sewer system along Leopardstown Road. There is a separate 225mm concrete foul sewer network serving the Silverpines development to the West of the proposed development. The houses fronting onto the Leopardstown Road & St. Joseph's House discharge to the foul sewer on Leopardstown Road.

#### 14.3.3 Existing Water Supply

There is an existing connection to the 160mm diameter MOPVC public watermain (1996) on the Leopardstown Road. This consists of a 100mm diameter pipe that supplies St. Joseph's House.

### 14.4 Characteristics of the Proposed Development

The development will consist of a new residential and mixed use scheme to include apartments, residential amenity space, a café and a childcare facility. A detailed description is now set out as follows:

The proposal provides for the demolition of 10 no. properties and associated outbuildings at 'Madona House' (single storey), 'Woodleigh' (2 storeys), 'Cloonagh' (2 storeys), 'Souk El Raab' (2 storeys), 'Wellbrook' (2 storeys), 'Calador' (2 storeys), 'Alhambra' (2 storeys), 'Dalwhinnie' (2 storeys), 'Annaghkeen' (1-2 storeys) and 'The Crossing' (single storey) (combined demolition approx. 2,291.3 sq m GFA).

The new development will provide for (a) the refurbishment, separation and material change of use of Saint Joseph's House (a Protected Structure, RPS No. 1548) from residential care facility to residential use and a childcare facility; and (b) the construction of a new build element to provide for an overall total of 463 no. residential units, residential amenity space and a café.

The overall development proposal shall provide for the following:

- Block A ( 5 storeys) comprising 49 no. apartments (13 no. 1 bed units, 33 no. 2 bed units and 3 no. 3 bed units);
- Block B (4 - 7 storeys) comprising 88 no. apartments (28 no. 1 bed units, 57 no. 2 bed units and 3 no. 3 bed units);
- Block C (5 - 7 storeys) comprising 115 no. apartments (26 no. studio units, 26 no. 1 bed units and 57 no. 2 bed units and 6 no. 3 bed units);
- Block D (5 - 10 storeys) comprising 157 no. apartments (36 no. studio unit, 40 no. 1 bed units and 81 no. 2 bed units), residential amenity areas of approx. 636 sq m and a café of approx. 49 sq m;
- Block E (Saint Joseph's House) (2 storeys) comprising 9 no. apartments (8 no. 2 bed units and 1 no. 3 bed units) and a childcare facility of 282 sq m with associated outdoor play areas of approx. 130 sq m;
- Block F (3 - 6 storeys) comprising 45 no. apartments (23 no. studio units, 10 no. 1 bed units; and 12 no. 2 bed units);

Each new build residential unit (in Blocks A, B, C, D and F) has an associated area of private open space in the form of a terrace/balcony. Open Space proposals for Saint Joseph's House (Block E) include a mixture of private terrace/balcony areas and communal open space areas.

The extent of works proposed to Saint Joseph's House (a Protected Structure) include:

- The demolition of a single storey office, conservatory, glazed link, external store, external enclosed escape stairs with associated canopies, toilet extension and 3 no. associated outbuildings to the west of Saint Joseph's House (demolition total approx. 173.4 sq m GFA);
- The removal of external steel gates, all external steel escape stairs, canopies, existing disabled access ramps, concrete steps, an external wall and associated roof area;
- Relocation of external granite steps and the provision of a new raised entrance terrace, concrete steps and ramp areas;
- Replacement of existing rooflights, the addition of roof lights, part new roof / new zinc roof, new external wall and roof to the east of the structure;
- The provision of new door and window openings;
- Modifications to internal layout including the removal of walls and partitions and the addition of new dividing walls.

The Residential Amenity Areas of approx. 636 sq m proposed in Block D comprise a residential club house/multi purpose room, library/reading room, lounge area, concierge area, office area, post room, fitness club, all at ground floor level of Block D. A terrace lounge area is proposed at fifth floor level of Block D. 2 no. roof garden areas are also proposed at fifth floor level of Blocks C and D (approx. 400 sq m and 408 sq m respectively).

Open Space (approx. 9,885 sq m) is proposed in the form of (a) public open space areas (approx. 6,680 sq m) which include a public plaza/court area, a main area of public open space (including a play area and outdoor gym area) and woodland trail; and (b) all communal open space areas (approx. 3,205 sq m) which include areas adjacent to Saint Joseph's House (Block E), Block D and Block F, a courtyard and play area located between Blocks A and B and roof terraces at fifth floor level of Blocks C and D. Visual amenity open space areas (approx. 1,000 sq m) are also proposed at various locations throughout the development.

Basement Level (approx. 9,445 sq m) is proposed with residential access from Blocks A, B, C, D and F. Bin storage areas, water storage areas, and part attenuation are located at this level. 2 no. ESB Substations, 1 no. ESB Kiosk, 2 no. Switch Rooms, waste storage areas for Block E (Saint Joseph's House) and bicycle storage areas are proposed at surface level.

A total of 259 no. car parking spaces (232 no. at basement level and 27 no. at surface level) are proposed. At basement level, a total of 30 no. electric vehicles and 202 no. standard parking spaces are provided for. A total of 968 no. bicycle spaces (816 no. at basement level and 152 no. at surface level), dedicated cycle lift and 10 no. motorcycle spaces (all at basement level) are also proposed.

Proposals for vehicular access comprise 1 no. existing vehicular access point via Silver Pines (an existing all movement junction onto Brewery Road) and 1 no. new vehicular access point at the general location of 'Annaghkeen' at Leopardstown Road (a new Left In / Left Out junction arrangement). The new access point along Leopardstown Road will replace 9 no. existing access points at 'Woodleigh', 'Cloonagh', 'Souk El Raab', 'Wellbrook', 'Calador', 'Alhambra', 'Dalwhinnie', 'Annaghkeen' and 'The Crossing'. The internal permeability proposed will provide linkages for pedestrians and cyclists to Leopardstown Road and adjoining Greenway. Proposals also provide for the relocation of an existing bus stop along Leopardstown Road.

The associated site and infrastructural works include provision for water services; foul and surface water drainage and connections; waste water pumping station; attenuation proposals; permeable paving; all landscaping works including tree protection, tree removal and new tree planting; green roofs; boundary treatment; internal roads and footpaths; and electrical services.

## **14.5 Potential Impact of the Proposed Development**

### **Construction Phase**

Power and water would be required during construction activities and servicing of the temporary site compound. The development site would be connected to the local electricity grid network system and mains water supply. Given the scale and transient nature of construction works, the power and water demand on the local electricity and mains water systems would not be considered significant and would not be anticipated to impact upon local power or water supply.

Telecommunications requirements during the construction phase would be provided using mobile phones / broadband. There would be no anticipated impacts to the local telecommunications system.

Foul water from staff welfare facilities generated during the construction phase would be collected on site in designated waste holding containers / port-a-loo units and emptied on a regular basis by a licenced waste contractor.

The construction works contractor would liaise with the relevant utilities provider prior to works commencing, with ongoing consultation throughout the proposed development. Where new services are required, the construction works contractor would apply to the relevant utility provider and adhere to the requirements outlined in the connection permit / licence.

It is not anticipated that there will be surface water discharge from the site during the construction stage other than the continued discharge from St. Joseph's House.

### **Operational Phase**

#### **14.5.1 Surface Water**

During the operational phase of the works, the surface water drainage has been designed to maintain the groundwater flows from the site at the greenfield run-off rates.

#### **14.5.2 Foul Water**

The impact of the operational phase of the proposed development on the foul drainage network would be the increased flows to the foul network. Irish Water have confirmed in the Confirmation of Feasibility Letter response to the Pre-Connection Enquiry to them and in their Design Acceptance Letter that the network has capacity for the proposed development.

A new system will serve the development. It is proposed to provide one connection point which will accommodate the whole site and will connect into the sewer network in Silverpines road. The foul effluent produced by the site will all fall by gravity to the foul Wastewater Pumping Station, from there it will be pumped to a new rising main discharge manhole which will be constructed on-line with the existing manhole on Silverpines road.

#### **14.5.3 Watermain**

The impact of the operational phase of the proposed development on the water supply network would be the increased demand on the local system. Irish Water have confirmed in the Confirmation of Feasibility Letter response to the Pre-Connection Enquiry to them and in their Design Acceptance Letter that the network has capacity for the proposed development.

## **14.6 Potential Cumulative Impacts**

Cumulative phase looks at the increased overall implications the proposed development may have on the environment in cumulation with existing and permitted development in the area.

Appendix 2.1, submitted as part of this application, has highlighted 25no. applications in the local area. Per the map below, Figure 14:1, there are several permitted and proposed planning applications that may have a cumulative effect on the water, when combined with the proposed development.



Figure 14:1 – Planning Applications within 1km of the site.

#### 14.6.1 Surface Water

The site proposals to treat surface water will aim to replicate greenfield flow rates via a suite of SuDS measures in accordance with DLRCC requirements and therefore it is not likely to give rise to any significant effects cumulatively or, in combination with, other developments in the area. Which would also be required to implement such SuDS measures as required by DLRCC.

#### 14.6.2 Foul Water Drainage

The developments in the area will increase the total demand on the existing foul supply in the area. By issuing their “Confirmation of Feasibility” letter, Irish Water have confirmed that the surrounding network will have the capacity to serve the development. Any sizeable developments would require upgrades to the sewer network.

#### 14.6.3 Watermain

The developments in the area will increase the total demand on the existing water supply in the area. By issuing their “Confirmation of Feasibility” letter, they have confirmed that the surrounding network will have the capacity to serve the development.

### 14.7 Do Nothing Scenario

In the absence of the proposed development being constructed, the permitted development (D17A/0337/PL06D.249248) would likely be implemented. The seven large, detached houses on large plots fronting Leopardstown Road (i.e. the part of the site added subsequent to the granting of the above permission) would remain in use as individual dwellings. The extra demand on utilities would be less in this scenario than if the full development proceeded.

### 14.8 Risks to Human Health

#### 14.8.1 Construction Phase

Due to the nature of the construction process, there is a potential for the groundwater system to be contaminated during the construction works. There is a non-exhaustive list of mitigation measures included in this chapter and in the Water chapter of this EIAR, as well as local and national guidelines

which should be implemented by the contractor during the construction phase. With these implemented, the risk to human health is considered low, long term and negative.

#### **14.8.2 Operational Phase**

The water services (Surface water, Foul Water and Water supply) systems will all be installed as per the latest relevant guidelines. These guidelines have been developed over time and aim to reduce and minimize the possibility of failures of the system and also to ensure that there are no or limited risks to Human Health. In the unlikely event that one of these systems to fail, there would be limited exposure to the general public to the sources of the failure, with trained professionals carrying out any repairs. Therefore, the risk to Human Health is considered low, short-term and negative.

### **14.9 Mitigation Measures**

#### **Construction Phase**

The construction works contractor shall liaise with the relevant utilities provider prior to works commencing, with on-going consultation throughout the proposed development. Where new services are required, the construction works contractor shall apply to the relevant utility provider and adhere to the requirements outlined in the connection permit / licence.

The Contractor will be obliged to put measures in place to ensure that there are no interruptions to existing services unless this has been agreed in advance with the relevant service provider. Please refer to section 8.10.1 of the water chapter for further mitigation measures.

All works in the vicinity of utilities apparatus will be carried out in ongoing consultation with the relevant utility company or local authority and will be in compliance with any requirements or guidelines they may have.

Where new services or diversions to existing services are proposed, the Contractor will apply to the relevant utility company for a connection permit where appropriate and will adhere to their requirements.

Mitigation measures proposed in relation to the drainage and water infrastructure comprise the following:

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.

In the event of groundwater being encountered during the construction phase, mitigation measures will include dewatering by pumping to an appropriate treatment facility prior to discharge. Other measures would include excluding contaminating materials such as fuels and hydrocarbons from sensitive parts of the site i.e., highly vulnerable groundwater areas.

In order to reduce the risk of defective or leaking sewers, all new sewers should be laid in accordance with Irish Water standards, pressure tested, and CCTV surveyed to ascertain any possible defects.

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 removed 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.

Where possible backup network supply to any services will be provided should the need for relocation or diversion or existing services be required otherwise relocation or diversion works will be planned to incur minimal impact, with users notified in advance of any works.

Connections to the existing gas and telecommunications networks will be coordinated with the relevant utility provider and carried out by approved contractors.

Road sweeping and/or wheel wash facilities will be provided as required.

#### **Operational Phase**

Please refer to Chapter 8 of the EIAR – ‘Water’, for mitigation measures associated with the surface water drainage. All new drainage lines (foul and surface water) will be pressure tested and will be subject to a CCTV survey to identify any possible defects prior to being made operational.

Sustainable Urban Drainage Systems (SuDS) will be incorporated fully into the development, in order to improve the quality of the surface water discharging from site and reduce the runoff volume and rate. The surface water drainage design, for this development, was designed in accordance with the Local Authority requirements. All SuDS measures will be provided in accordance with the Greater Dublin Strategic Drainage Study Regional Drainage Policy Volume 2 - New Development (GSDSDS-RDP Volume 2). Specific design requirements for SuDS systems are established by the Construction Industry Research and Information Association’s publication CIRIA C753 – The SuDS Manual.

Following best practice, the potential for the storm water to become polluted via oil spills will be reduced as far as is practical (e.g., using a Klargester Bypass Interceptor for basement drainage) or similar approved to take run off from carparking areas and passing through same prior to disposal to the on-site surface water system.

Water conservation methods such as the use of low flush toilets and low flow taps should be incorporated into dwellings to reduce water volumes and related treatment and abstraction costs of the development.

Similarly, water conservation methods would reduce the demand on the public water supply network and the loading on the foul sewer network.

### **14.10 Monitoring**

#### **Construction Phase**

The contractor will adhere to the Construction and Environmental Management Plan. The contractor will monitor the status of the surrounding network of services during the course of the works, to ensure that there are no negative consequences as a result of the construction works.

#### **Operational Phase**

All internal potable water & drainage services within the proposed building will be (monitored by the management firm) & their maintenance personnel will routinely inspect and carry out maintenance as required. The external potable water and foul connections to the public system will be maintained by Irish Water and connection to the surface water system will be maintained by Irish Water.

### **14.11 Reinstatement**

Minor reinstatement works would be required in respect of pipe laying.

### **14.12 Interactions**

There are interactions between utilities and lands and soils, with the construction of drainage and utilities impacting the quantity of soil and subsoil as these materials will be removed to facilitate construction. The likely impact will be permanent slight, permanent and adverse.

### **14.13 Difficulties Encountered**

No difficulties were encountered while developing this report, the range and scope of desk top data.