

17.0 MATERIAL ASSETS – SITE SERVICES, DRAINAGE AND WATER SUPPLY

17.1 Introduction

This chapter of the EIAR comprises an assessment of the likely impact of the proposed development on the drainage and water supply material assets, as well as identifying proposed mitigation measures to minimize any impacts.

The information contained within this chapter should be read in conjunction with the design drawings and suite of reports, which accompany this planning application.

The potential impacts associated with the proposed development, if any, are assessed with regards to the following proposed built services:

1. Potable Water Supply Infrastructure;
2. Waste Water Infrastructure;
3. Surface Water Drainage infrastructure

The flow impact from all of the above drainage infrastructure has been covered within Chapter 11 – Hydrology.

17.2 Methodology

The assessment of the potential impact of the activity on water and hydrology was carried out according to the methodology specified in the following guidance documents:

- Environmental Protection Agency (EPA) Guidelines on the Information to be Contained in Environmental Impact Statements (2017);

EPA Advice Notes on Current Practice (in the Preparation of EIS) (2003)

The following sources of information were consulted to establish the baseline environment:-

- Public Foul Drainage (Irish Water and DLRCC Records);
- Public Water Main Networks (Irish Water and DLRCC Records);
- Public Surface Water Drainage (Irish Water and DLRCC Records);
- Office of Public Works flood mapping data (www.floodmaps.ie);
- The Planning System and Flood Risk Management – Guidelines for Planning Authorities - Department of the Environment, Heritage and Local Government (DoEHLG) and the Office of Public Works (OPW);
- Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors (CIRIA 532, 2001);
- The Geological Survey of Ireland (GSI) well card and groundwater records for the area were inspected, with reference to hydrology and hydrogeology;
- Base maps – Ordnance Survey of Ireland.

In relation to wastewater and water supply, a pre-connection enquiry application has been submitted to Irish Water, and a confirmation of feasibility letter has been received from Irish Water. DLRCC have also been consulted with regard to the impact on surface water drainage.

17.3 Receiving Environment

The receiving environment comprises the existing services within the vicinity of the development. The following drainage and water supply services are present adjacent to the site.

Foul waste water:

- A 525 mm diameter public foul water sewer to the north-east of the site, along Blackthorn Drive,
- An 225mm diameter public foul water sewer to the south of the proposed development, on Carmanhall Road,
- A 600 mm diameter foul water sewer running along Blackthorn Drive on the western boundary of the site.

Surface Water:

- 600 mm diameter surface water sewer running west to east along Carmanhall Road.

Potable Water:

- An existing 350 mm diameter watermain bordering the site to the south-west, along Carmanhall Road.
- An existing 6" (150mm diameter) partly bordering the site to the south-west, along Carmanhall Road.

There are no existing water or surface water drainage connections from the proposed development. There is an existing foul sewer connection adjacent to the proposed development.

17.4 Characteristics of the Proposed Development

The development will consist of 2 no. residential blocks ranging in height from 5-14 storeys comprising a total of 428 no. apartments (including all balconies, terraces and roof gardens) arranged around two courtyards; communal and public open spaces including boulevards; 4 no. ground floor retail units; resident community uses and crèche with outdoor play area. The development will also include revisions to the existing basement levels including car and bicycle parking provision with new vehicular access from Carmanhall Road; apartment storage areas; waste storage areas; ESB substations and switch room and plant/service areas. The development will also include all piped infrastructure and ducting; green roofs; changes in level; internal roads and pathways; pedestrian access points; services provision; landscaping and boundary treatments and all associated site development and excavation works above and below ground.

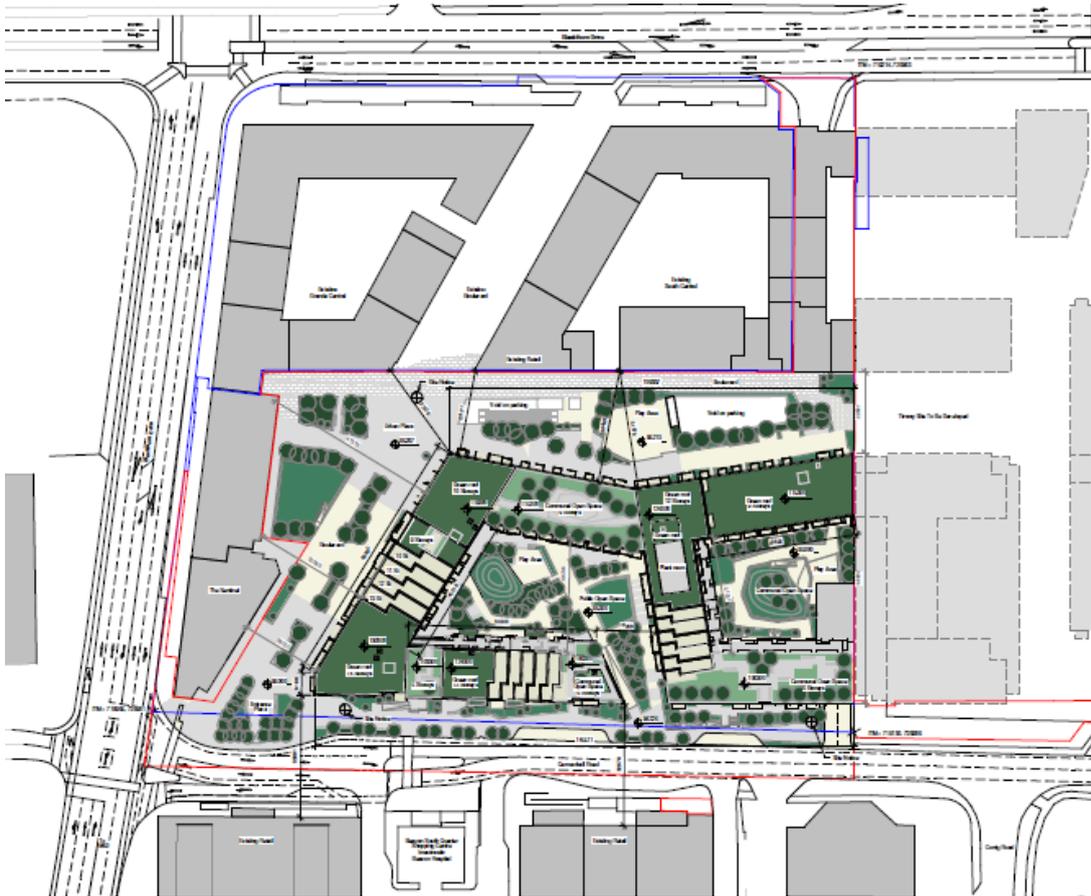


Figure 17.1 – Development Site Plan (Source: TOT Architects)

The following public drainage and water supply services works are proposed:

- A new 225mm diameter foul sewer to connect to the existing 375mm diameter foul sewer connection along Carmanhall Road;
- A new 225mm diameter surface water connection is proposed to connect to the existing 600mm diameter surface water pipeline on Carmanhall Road;
- A new 150mm diameter potable water service connection is proposed to connect to the 150mm diameter water main on Carmanhall Road;
- The existing 150mm diameter watermain on Carmanhall road is to be modified to provide space for the proposed attenuation tank;
- Redundant water, foul and surface sewer connections are to be disconnected.

The following private, on site drainage and water supply services works are proposed:

- An in ground attenuation tank with associated pipework and hydrobrake connecting from the proposed development, discharging to the downstream public surface water network.

- The retention of existing petrol interceptor prior to discharge to the public surface water network for basement car park drainage.
- SuDS measures including incorporation of green roofs, podium landscape, and a rainwater harvesting tank;
- New underslung basement drainage, reinstatement to inground basement drainage, and associated pumps.

The proposed infrastructure will need to meet the requirements of Irish Water and DLRC in terms of design, arrangement and clearances to other infrastructure.

There are various drainage and water supply services works proposed within the proposed building. These are not discussed in detail since there it is considered that there is no direct effect on the environment.

Refer to the engineering planning report and drainage drawings for further details regarding proposed drainage and water supply.

17.5 Potential Impact of the Proposed Development

17.5.1 Construction Phase

The construction of the proposed in ground services will require the excavation, removal and reinstatement of existing natural and man-made ground.

There is potential for existing infrastructure to conflict with proposed excavation, by existing infrastructure being quite close to the proposed works.

The proposed water main diversion and associated waster supply connection will require the existing watermain to be taken off line while disconnections and re-connection take place.

The new development requires new connections to public water supply, surface water drainage and waste water networks. This may result in temporary disruption of existing services in the vicinity of the development. This disruption if any, will be brief and not significant.

During construction, there will be a short period where the area of the proposed works cannot be used by the general public, due to construction operations being active.

17.5.2 Operational Phase

Irish Water has confirmed the feasibility of the proposed development in terms of water and wastewater capacity via a confirmation of feasibility letter. A statement of design acceptance has also been obtained from Irish water.

DLRCC have provided endorsement for the proposed surface water drainage infrastructure.

All potable water supply will be obtained from public water supply networks, all surface water drainage will discharge to public surface water drainage networks, and all foul sewerage will discharge to public wastewater networks. The maintenance of this infrastructure is managed by the local authority.

Further discussion regarding the proposed flows and associated impacts from potable water, waste water and surface water is provided in Chapter 11 – Hydrology.

17.5.3 Do Nothing Scenario

If the proposed works are not implemented, then the existing ground and services will remain in place.

17.6 Ameliorative, Remedial, or Reductive Measures

17.6.1 Design Phase

All new-build service infrastructure is to be designed in accordance with the relevant service provider and asset owner's code of practice, which require due cognisance of the receiving environment.

Design depths of proposed infrastructure are to be optimised so that excessive excavations are avoided where possible, and by association a reduction in resultant waste and machinery operation time. It will be suggested that products and materials are supplied locally, where practicable and available; in order to reduce carbon footprint of travel and production.

Adequate surveys will be undertaken to ascertain the exact location of all infrastructure to mitigate any expected conflict.

17.6.2 Construction Phase

The following mitigation measures are recommended for the construction phase

- The contractor is to conduct the works in accordance with all relevant local authority requirements, and health and safety legislation.
- Relevant services providers are to be consulted in advance of works to ensure works are carried out to relevant standards and specifications including procedures to ensure safe working practices are implemented for works in the vicinity of services, such as live gas mains, works in the vicinity of overhead electricity lines and live electricity lines and works to distribution watermains.
- Neighbouring sites are to be advised of construction methodologies in advance of works, in situations which may affect them.
- All retained underground services are to be protected.
- All decommissioned infrastructure will have to be sent to an accepting landfill for disposal.

- A construction methodology will be required by the contractor to be tailored to reduce, where possible, dust noise and air pollution; to minimise interference with the environment and the neighbouring areas.
- Any spoil or waste material generated from the construction process is to be temporarily stored at an approved location on site, before being removed to an accepting licensed waste disposal facility.
- All infrastructure is to be appropriately tested by an approved method during the construction phase, all in accordance with Irish Water / DLRCC Requirements.
- Connections to the service providers are to be carried out to the approval and / or under the supervision of the Local Authority or relevant utility service provider, prior to commissioning.
- All new sewers are to be inspected by CCTV survey post construction; to identify any possible physical defects for rectification prior to operational phase.
- Prior to the commencement of excavations in public areas, all utilities and public services are to be identified and checked; to ensure that adequate protection measures are implemented to minimise the risk of service disruption.
- All excavations within the public area are to be back-filled in a controlled manner and surface re-instated to the satisfaction of the Local Authority.

With the implementation of these mitigation measures, the severity of the impact of the proposed development on the built services will be minimised, with tie-ins to existing services and installation of new services completed in a satisfactory manner for the relevant service providers.

17.6.3 Operational Phase

The material assets are to be constructed in accordance with all relevant local authority standards.

17.6.4 Do Nothing Scenario

If the proposed ameliorative, remedial, or reductive measures are not implemented, then the risks of impact are not reduced.

17.7 Predicted Impact of the Proposed Development

17.7.1 Construction Phase

The predicted impact of the development is that, during construction, there will be a short period where the area at the proposed works cannot be used by the general public.

17.7.2 Operational Phase

The predicted operational impact would be the additional permanent infrastructure being provided in ground to service the proposed development. This is a benefit to the development.

17.7.3 Do Nothing Scenario

If the development is implemented without the proposed mitigation measures, the potential impacts would not be managed.

17.8 Monitoring

The construction of works should be monitored to ensure compliance with relevant local authority requirements, and health and safety legislation.

The operational phase of public works should be monitored by the local authority responsible for the respective asset.

The operational phase of private assets should be monitored by the management company for the building.

17.9 Reinstatement

After construction, all assets are to be backfilled and reinstated in accordance with the design and relevant local authority requirements.

17.10 Interactions and Potential Cumulative Impacts

17.10.1 Interactions

17.10.1.1 Hydrology and Material Assets – Site Services, Drainage And Water Supply

The Drainage and Water Supply requirement of the development is primarily prescribed by the hydrological requirement for the development. The flows associated with the development are described within Chapter 11 – Hydrology.

There is no anticipated cumulative effect.

17.10.1.1.1 Material Assets – Site Services, Communications, Electrical and Gas, and Material Assets – Site Services, Drainage And Water Supply

Drainage and water supply material assets should be co-ordinated with communications, electrical and gas material assets to ensure that there are no physical conflicts and that all necessary clearances are provided.

There is no anticipated cumulative effect.

17.10.2 Potential Cumulative Impacts

There are no anticipated cumulative effects.