

Chapter 13:

Material Assets

13.0 MATERIAL ASSETS

13.1 INTRODUCTION

John Spain Associates, Chartered Planners and Development Consultants, undertook the preparation of this section of the Environmental Impact Assessment Report (EIAR), in association with Reddy Architecture + Urbanism, BMCE Consulting Engineers, HOBA Consulting Engineers and NRB Consulting Engineers. Paul Turley, BA, MRUP, Dip Environmental & Planning Law, MIPI, Executive Director with John Spain Associates, has prepared this chapter.

Resources that are valued and that are intrinsic to specific places are called ‘material assets’. They may be of either human or natural origin and the value may arise for either economic or cultural reasons. The assessment objectives vary considerably according to the type of assets, those for economic assets being concerned primarily with ensuring equitable and sustainable use of resources. Assessments of cultural assets are more typically concerned with securing the integrity and continuity of both the asset and its necessary context.

The EIA Directive requires that Archaeological and Cultural Heritage is assessed as part of Material Assets. However, such is the importance of this issue in Ireland, EIA best practice has established that it is important to address this issue separately and not as an adjunct to the Material Assets section in the EIAR document. Accordingly, Archaeology and Cultural Heritage, including architectural, is assessed in Chapter 4 of this EIAR document.

This chapter considers physical resources in the environment which may be of human origin, as those of a natural origin are addressed elsewhere in the EIAR. The objective of the assessment is to ensure that these assets are used in a sustainable manner, so that they will be available for future generations, after the delivery of the proposed development.

With regard to Material Assets, the August 2017 Draft EIAR Guidelines published by the EPA state:

“The meaning of this factor is less clear than others. In Directive 2011/92/EU it included architectural and archaeological heritage. Directive 2014/52/EU includes those heritage aspects as components of cultural heritage. Material assets can now be taken to mean built services and infrastructure. Traffic is included because in effect traffic consumes roads infrastructure. Sealing of agricultural land and effects on mining or quarrying potential come under the factors of land and soils.”

13.2 STUDY METHODOLOGY

This chapter of the EIAR document has been prepared with reference to the specific criteria set out in the Guidelines on Information to be Contained in an Environmental Impact Statement (EPA 2002) and the Advice Notes on Current Practice (in preparation of Environmental Impact Statements) (EPA 2003). This chapter also has regard to EIA Directive 2014/52/EU and the Draft EPA guidelines published thereon in 2017, which will be updated upon the enactment of the directive into national law, a step which is required due to Ireland’s dualist legal system.

These draft guidelines include information on the assessment of the effects of development on material assets, and advises on the nature of the material assets which should be examined as part of the preparation of an EIAR. The following Material Assets are assessed in this Chapter of the EIAR Document:

- Economic Assets of Natural Origin
- Economic Assets of Human Origin

Economic assets of natural origin, which include biodiversity, land & soil and water, are addressed elsewhere in this EIAR, in particular Chapter 5, 7 and 8 respectively. As noted in Section 12.1 above, Cultural Assets of a Physical Type and Cultural Heritage of a Social Type are addressed in Chapter 4 of this EIAR Document.

Economic assets of human origin are considered in this chapter. A desktop study was carried out on existing material assets of human origin associated with the site of the proposed development. Projections of resource use were undertaken for both the construction and operational phases of the proposed development, and the impacts assessed. Mitigation measures are proposed where appropriate.

13.3 THE EXISTING RECEIVING ENVIRONMENT (BASELINE SITUATION)

13.3.1 Introduction

In describing the receiving environment, the context, character, significance and sensitivity of the baseline receiving environment into which the proposed development will fit is assessed. This takes account of any other proposed developments that are also likely to proceed.

13.3.2 Economic Assets of a Human Origin

This sub-section considers the key aspects relating to material assets of the proposed development site and the surrounding area, namely urban settlements, ownership and access, traffic infrastructure, potable water supply, wastewater discharge, electricity supply, gas supply, telecoms and municipal waste.

The following aspects of the proposed development will affect material assets within the vicinity of the proposed development site:

- Urban Settlements;
- Ownership & Access;
- Transport Infrastructure (please refer to the Transportation Assessment Report submitted with this application);
- Foul Water Disposal (also see Chapter 8);
- Potable Water Supply (also see Chapter 8);
- Surface Water Disposal (also see Chapter 8);
- Natural Gas Supply;
- Electrical Supply;
- Telecoms; and,
- Municipal Waste.

Urban Settlements

The subject site is located on 'District Centre' zoned lands in Blackrock, on the western side of the village. The subject site is currently in use as a shopping centre, which provides for a significant improvement of the retail offer, the built environment and a reorganisation of the car parking layout on the site. The proposed development relates to alterations to the Phase 1 permission for 45 no. apartments (Reg. Ref.: D17A/0950 & ABP Ref.: 300745-18), from second to fourth floor level of the rejuvenated Frascati Centre. The proposed development also includes the provision of 57 no. additional apartments, as an extension of the Phase 1 permission, located above the permitted podium car park to the north west of the centre, as a Phase 2 residential development.

The subject site forms part of the designated district centre of Blackrock which is identified as being suitable for expansion of retail, retail services and restaurant / café floorspace and the incorporation of a mix of uses.

The site is accessed from Frascati Road which traverses the north/northeast boundary of the site. The Lisalea Apartment Complex lies on the northern boundary of the site and is accessed from Frascati Park. On the western boundary of the site lies Frascati Park, a residential road made up of predominately two storey terraced houses. On the southeast boundary lies George's Avenue, a residential road comprising of 2 storey terrace housing.

Ownership & Access

The lands the subject of this planning application form part of the larger Frascati Centre development and are in the ownership of the applicants, IMRF II Frascati Limited Partnership acting through its general partner Davy IMRF II GP Limited.

The rejuvenation project also included a section of Frascati Road, to provide for road improvement works, which have been delivered as part of the permitted development through agreement with Dun Laoghaire Rathdown County Council.

Vehicular and pedestrian access to the site is from Frascati Road which traverses the northeast boundary of the site.

Transport Infrastructure

This application for 102 no. residential units is accompanied by a Transportation Assessment Report prepared by NRB Consulting Engineers and is submitted as a standalone document with this application. The impact that the proposed development would have on the transportation infrastructure in the vicinity of the proposed development site has been fully assessed in the Report and demonstrated to not result in adverse impacts on the local road network. The application site is exceptionally well served by public transport infrastructure, being situated on the Frascati Road QBC and within 500 metre walking distance of Blackrock DART Station.

Foul and Surface Water

Foul and surface water drainage for the existing site and proposed development are dealt with comprehensively in Chapter 8 of the EIAR.

Water supply

Water supply serving the existing site and for the proposed development is discussed in detail in Chapter 8 of this EIAR.

Natural Gas Supply

The existing gas distribution network serving the Frascati Centre has been utilised to serve the rejuvenation project and will also serve the proposed extension to the rejuvenated Frascati Centre. Gas Networks Ireland shall extend the gas distribution up to the new meter locations for the proposed residential units, if they are to utilise gas, which will be a detailed design consideration. See Sustainability Report prepared by Homan O'Brien which accompanies this planning application.

Electrical Supply

It is the intention that the proposed residential extension to the rejuvenation project will be served by the Medium Voltage Sub-Stations located within the development. The final details will be subject to agreement with EBS Networks.

Information and Communications Technology (ICT)

The proposed residential extension will connect into the ducting / cable ways and chambers for utilities provided as part of the rejuvenation project, which are designed to cater for the different utility providers. Postal services to the area are provided by An Post.

Waste

Operational waste management for the 45 no. units Phase 1 development remains as per the permitted scheme under Reg. Ref.: D17A/0950 & ABP Ref.: 300745-18. The proposed alteration to Phase 1 of the proposed development will not result in a material alteration to the volumes of waste generated. The proposed alterations do not affect the proposed waste storage area, located at lower ground floor level, or

waste collection strategy for Phase 1, which is identified at the entrance to the basement, as indicated on RAU Dwg.100-8.

In respect to the 57 no. units proposed as Phase 2, residents have been allocated a shared waste storage area which is located within the basement car park area below the proposed Phase 2 development. The waste collection point is identified immediately adjacent to the carpark entrance, adjacent to the generator room to the rear of the site. We refer the Board to the Operational Waste Management Plan, prepared by AWN Consulting, which provides details of the proposed waste storage areas for the proposed development and how they meet with the relevant requirements.

This waste storage areas will be fully ventilated and fire enclosed. Residents will deposit waste into segregated recyclable and general waste bins in this area which will be managed by the management company including arrangement for collection by a regulated waste services collector on a weekly or more frequent basis.

13.4 CHARACTERISTICS OF THE PROPOSED DEVELOPMENT

Consideration of the Characteristics of the Proposed Development allows for a projection of the 'level of impact' on any particular aspect of the proposed environment that could arise. For this chapter the potential impact on Material Assets is discussed. A full description of the proposed development is provided in Chapter 2 of this EIAR document.

The proposal relates to alterations to the Phase 1 permission for 45 no. apartments (Reg. Ref.: D17A/0950 & ABP Ref.: 300745-18), from second to fourth floor level of the rejuvenated Frascati Centre. The proposed development also includes the provision of 57 no. additional apartments, as an extension of the Phase 1 permission, located above the existing / permitted podium car park to the north west of the centre, as a Phase 2 residential development. The subject application therefore relates to a total of 102 no. residential units.

The proposed alterations to the 45 no. apartments (Block A and B) and associated development, permitted under the Phase 1 residential development, includes the following:

- Internal rationalisation of the permitted units, including changes in overall unit size and internal layouts, and associated external alterations including the provision of winter gardens.
- Provision of an external walkway connection between the Phase 1 and Phase 2 residential blocks at second floor level.
- The refuse, car and cycle parking facilities permitted at lower ground floor level will be altered to cater for the additional residential units, including the introduction of a barrier control system.
- The main entrance to the Phase 1 residential scheme from Frascati Road will serve both the permitted and proposed units.
- A concierge facility room to serve the overall residential development is proposed at second floor level near the main core of Phase 1, with an associated minor reduction in the area of the permitted communal terrace at second floor level.
- The communal open space for Phase 1 and 2 will be accessible to all residents.
- Alterations to the cycle parking provision at lower ground floor / basement level and at the first-floor level podium car park.

The Phase 2 proposal consists of 20 no. studios, 22 no. 1 beds and 15 no. 2 beds (57 no. apartments) in three no. blocks (Block D, E & F), arranged around a central communal courtyard space, above the existing and permitted podium car park to the north west of the centre. Block D is a five storey block, Block E is a part two to part four storey block and Block F is a part two to part three storey block, all above three levels of podium / basement car park. Balconies / winter gardens are provided to all apartments (on the north western, north eastern, south western elevations and into the internal courtyard) and access to the blocks is via stair / lift cores and an external walkway fronting the communal courtyard. A roof terrace is also proposed at fifth floor level of Block E.

The proposal includes the allocation of 57 no. car parking spaces at lower ground floor level and 214 no. bicycle parking spaces at lower ground and surface level for the 102 no. residential units. The proposal includes alterations to existing surface car parking to provide additional landscaping and bicycle spaces,

a bin storage area and stair / lift cores are proposed within the existing / permitted basement / podium car parks below the Phase 2 residential units, and the proposal includes all associated ancillary site development works. The proposal also includes alterations to the location of 30 no. permitted cycle parking spaces associated with the rejuvenation of the Frascati Centre, Reg. Ref.: D14A/0134, as amended.

The basement area, which will accommodate the car parking area for the residential units, has been constructed and the replacement car parking for the retail floorspace is permitted under the Phase 1 permission for an additional podium level.

13.5 POTENTIAL IMPACT OF THE PROPOSED DEVELOPMENT

13.5.1 Introduction

This section provides a description of the specific, direct and indirect, impacts that the proposed development may have during both the construction and operational phases of the proposed project. This is provided with reference to both the Characteristics of the Receiving Baseline Environment and Characteristics of the Proposed Development sections while also referring to the (i) magnitude and intensity, (ii) integrity, (iii) duration and (iv) probability of impacts. Impact assessment addresses direct, indirect, secondary, cumulative, short, medium and long-term permanent, temporary, positive and negative effects as well as impact interactions.

13.5.2 Urban Settlements

Construction Phase

The construction stage of the Phase 1 project has commenced and will take c. 18 months to complete (the alterations proposed under this application will be included subject to a grant of permission) and the construction of the Phase 2 residential proposals, and associated development, will take c. 18 months to complete, and will happen concurrently with Phase 1, subject to a grant of permission. Thus, an overall construction period of 18 months is envisaged for the proposals contained in this SHD application.

Collen's the current contractors on site have advised that for this development they would expect a maximum of 3 building material deliveries per working day and between 1-2 on Saturday mornings.

The construction phase of the proposed development is likely to have some temporary impacts on the existing urban settlement in the vicinity of the site. This would be due to disturbance during the construction phase and some additional minor and temporary additional local populations which may arise out of the construction activity. These localised impacts are addressed in the relevant Chapters of this EIA document.

Operational Phase

The proposed development will result in a Strategic Housing Development over the existing Rejuvenated Frascati Centre. The proposal will result in a small residential population being accommodated on the site in accordance with the District Centre zoning objective, and in close proximity to a range of local services.

13.5.3 Ownership & Access

Construction Phase

The subject lands are currently in use as a Shopping Centre, with the rejuvenation project for the Frascati Centre which will improve and extend the retail and commercial offer. It is expected that as a result of the proposed Strategic Housing Development there will be some minor temporary disturbance during construction to the surrounding area, however, this will be minimised as best as possible through appropriate mitigation measures to be incorporated by the contractor into a construction management plan. A construction period of approximately 18 months has been estimated thus the impact would be short term and the long-term positive impact of the proposed development would outweigh this short-term negative impact.

The proposed residential development does not result in any alterations to the access arrangements to the Frascati Centre, which have been delivered and enhanced as part of the rejuvenation project.

Operational Phase

The proposed residential extension does not result in any alterations to access arrangements to the Frascati Centre, which have been delivered under the rejuvenation project.

The proposed development is therefore likely to have a neutral impact on ownership and access.

13.5.4 Transport Infrastructure

Construction Phase

Collen's the current contractors on site have advised that for this development they would a maximum of 3 material deliveries per working day and between 1-2 on Saturday mornings. It is envisioned that traffic generated during the Construction Phase of the proposed development will not result in a material impact on the local road network. The potential impact of the proposed development on transportation infrastructure is likely to be short-term and low.

Operational Phase

Operational traffic numbers as provided in NRB Consulting's Transportation Assessment Report submitted with the application advises that the 102 no. residential units will add approximately 26 no. trips during the morning peak traffic hour and 29 no. trips during the evening peak traffic hour (conscious that planning was previously granted for 45 Apartment Units as part of the permitted redevelopment of Frascati Centre).

The professional guidance referenced in the Transportation Assessment Report sets out specific increases in traffic volume associated with new development, which, if breached, requires further detailed analysis to be undertaken. The recommendation is that, if the expected increase is greater than 5% for networks that are considered heavily trafficked or congested, then further analysis is warranted. In this case, given the location on the important Frascati Road, the 5% threshold has been applied.

The traffic generated by the 102 apartments equates to less than ~1% additional traffic on the Rockhill/Site Access/Frascati Rd Junction and the Mt Merrion Ave/Frascati Rd Junction during the busiest traffic periods and less than 0.6% additional traffic on the Frascati Rd/Southern Site Access and Frascati Rd/Georges Ave Junction during the busiest traffic periods. To set these increased levels of traffic in context; - the day-to-day variation in traffic volume (due to day of week or weather conditions) is accepted as 10%, so, in this context alone, increases of in all cases less than 1% in Traffic on the local roads will go entirely unnoticed. Thus, the Transport Statement concludes that the proposed development will not have an adverse impact on the surrounding network. The report states that the traffic associated with the occupation of 102 no. apartments will be unnoticeable locally.

In this regard, it is demonstrated herein that the proposed occupation of the entire residential development, with very low volumes of vehicular traffic added to a busy network, will not result in any significant level of new trips on the local roads, with all anticipated traffic increases (at and beyond the site accesses) expected to be well below the Industry-Standard levels above which further assessment is required. The Threshold assessment clearly confirms that, beyond the site access where the impact is ~1% or less, the worst case traffic increases are in all cases significantly below the IHT and TII recommended level of 5% above which further assessment is warranted

The analysis undertaken includes the effects of the existing traffic on the local roads and assesses the impact during the traditional peak commuter peaks periods in accordance with Traffic & Transportation Assessment Guidelines. The assessment also includes the effect of traffic associated with the Recent Grant of Planning Permission for Offices at Enterprise House opposite (D16A/0418) and the Recent Grant of Planning Permission for Residential Development on Zoned Lands at St Catherine's to the South (Ref ABP-303804-19).

The proposed development is appropriately located adjacent a High Quality Bus Corridor, is within a 6-7 minute walk of Blackrock DART & Train Station and is well served by pedestrian and cycle linkages. The site is ideally well placed to take advantage of non-car modes of travel. Reduced car parking numbers are proposed for the scheme in compliance with the requirements of the "Sustainable Urban Housing Design Standards for New Apartments".

The Transportation Assessment confirms that the road network and the proposed vehicular access junction arrangement is more than adequate to accommodate the worst case traffic associated with the facility. The assessment also confirms that the construction and full occupation of the 102-Unit residential apartment scheme will have a negligible & unnoticeable impact upon the operation of the adjacent road network.

13.5.5 Foul Water Disposal (also see Chapter 8)

Construction Phase

The proposal will involve providing new connections to the existing foul water network. There is potential for some short term impacts due to these works however the potential impact from the construction phase of the proposed development on the local surface water network is likely to be neutral.

Operational Phase

During the operational phase there will be an increase in the foul discharge from the proposed development therefore reducing the capacity of the public foul sewer. The public foul sewer however does have sufficient spare capacity to cater for the proposed development. These issues are discussed in detail in Chapter 8.

13.5.6 Potable Water Supply (also see Chapter 8)

Construction Phase

The proposal will involve providing new connections to the existing DLRCC potable water supply network. There is potential for some short-term impacts by way of disruption in water supply due to these works however it is likely that the potential impact from the construction phase of the proposed development on the local water network is likely to be neutral.

Operational Phase

As the proposed development will be predominantly retail the anticipated water usage is relatively low and is addressed in detail in Chapter 8. The potential impact from the operational phase on the water infrastructure is likely to be long term and moderate.

13.5.7 Surface Water Disposal (also see Chapter 8)

Construction Phase

The proposal includes SuDs measures and also involves providing new connections to the existing surface water network. There is potential for some short term impacts due to these works, however, it is likely that the potential impact from the construction phase of the proposed development on the local surface water network will be neutral.

Operational Phase

Surface water runoff from the site will be restricted to the existing runoff and the quality of the water will be improved through the implementation of a sustainable urban drainage system. This is discussed in detail in Chapter 8 and the Civil Engineering Report which accompanies this application. The potential impact from the construction phase of the proposed development in terms of surface water is likely to be neutral.

13.5.8 Natural Gas Supply

Construction Phase

The supply of gas to the proposed development site will be provided by way of a metered connection to each unit from the existing Gas Networks Irelands national gas supply network. The potential impact from the construction phase of the proposed development on the local gas supply network is likely to be neutral.

Operational Phase

The development will be connected to the Gas Networks Ireland national gas supply network subject to detailed design considerations (see Sustainability Statement accompanying the application). The impact of the operational phase of the proposed development on the gas supply network is likely to slightly increase the demand on the existing supply. The potential impact from the operational phase on the gas supply network is likely to be long term and low.

13.5.9 Electrical Supply

Construction Phase

Construction related activities will require temporary connection to the local electrical supply network. The potential impact from the construction phase of the proposed development on the local electrical supply network is likely to be short-term and low.

Operational Phase

The impact of the operational phase of the proposed development on the electricity supply network is likely to be a marginal increase in the demand on the existing supply. The potential impact from the operational phase on the electricity supply network is likely to be long term and moderate.

13.5.10 Telecoms

Construction Phase

Fixed telecoms will not be operational during the construction phase. The construction phase is likely to give rise to the requirement to divert existing fixed telecom lines. If not undertaken in accordance with best practice procedure, this has the potential to impact on local telecoms connectivity. The potential impact from the construction phase of the proposed development on the local telecoms network is likely to be short-term and low.

Operational Phase

The impact of the operational phase of the proposed development on the telecoms network is likely to be a marginal increase in demand. The potential impact from the operational phase on the telecoms network is likely to be long term and low.

13.5.11 Municipal Waste

Construction Phase

The construction phase of the proposed development will give rise to the requirement to remove or to bring on to the site quantities of material. Construction related waste will also be created on the proposed development site. This has the potential to impact on the local municipal waste disposal network. The potential impact from the construction phase on municipal waste disposal is likely to be short-term and moderate and will be required to be undertaken in accordance with best practice.

Operational Phase

The impact of the operational phase of the proposed development on municipal waste disposal is likely to be a marginal increase in demand. The potential impact from the operational phase on municipal waste disposal is likely to be long term and moderate.

13.6 POTENTIAL CUMULATIVE IMPACTS

The cumulative effects of development on material assets have been assessed taking other planned, existing and permitted developments in the surrounding area into account, as set out in Chapter 2, each chapter of the EIAR and accompanying reports, particularly the Traffic and Transportation Assessment which is of relevance to this chapter. Much of the area surrounding the proposed development site accommodates existing residential development, in particular the lands to the west, north and south.

The permitted development on the application site and the adjacent permitted developments in the area, coupled with the proposed development are not considered to contribute significantly to any impact on material assets when considered cumulatively.

Cumulatively with other surrounding, permitted, planned and existing development, it is predicted that the proposed development will contribute to the improvement of the overall urban structure, and will have positive cumulative effects on urban settlements, access and transport infrastructure by delivering an enhanced mix of uses in the Frascati Centre, providing an improved urban edge and passive surveillance of Frascati Road.

The cumulative effects of development on foul and surface water disposal, potable water supply, natural gas supply, electrical supply, telecoms and municipal waste, will be considered by the relevant utility providers, and are anticipated to be negligible.

13.7 DO NOTHING IMPACT

In order to provide a qualitative and equitable assessment of the proposed development, this section considers the proposed development in the context of the likely impacts upon the receiving environment should the proposed development not take place.

If the proposed development does not proceed there would be no additional demand or loading on material assets of natural or human origin.

13.8 AVOIDANCE, REMEDIAL & MITIGATION MEASURES

Remedial, mitigation and avoidance measures describe any corrective or mitigative measures that are either practicable or reasonable, having regard to the potential impacts. This includes avoidance, reduction and remedy measures as set out in Section 4.7 of the Development Management Guidelines 2007 to reduce or eliminate any significant adverse impacts identified. It should be noted that a number of mitigation measures proposed in the other EIAR Chapters are also of relevance to material assets but will not be repeated here.

Design Phase

Prevention of adverse environmental effects by anticipation and avoidance is a key component of the design stage and best practice EIA. The project design considered a range of options to ensure an energy and thermal efficient design and layout which takes into account topography, orientation and surrounding features.

Construction Phase

The following mitigation measures are proposed for the construction phase of the proposed development with reference to Material Assets:

MA CONST 1: A construction, including traffic, management plan should be implemented during the construction phase to protect local amenities and the integrity and operation of the local road network.

MA CONST 2: Provision of utilities should be carried out in accordance with the recommendations of the relevant statutory bodies (ESB, Gas Networks Ireland, Irish Water, EIR, DLRCC etc.)

Operational Phase

No mitigation measures are considered necessary during the operational phase.

13.9 PREDICTED IMPACTS OF THE PROPOSED DEVELOPMENT

This section allows for a qualitative description of the resultant specific direct, indirect, secondary, cumulative, short, medium and long-term permanent, temporary, positive and negative effects as well as impact interactions which the proposed development may have, assuming all mitigation measures are fully and successfully applied. It should be noted that in addition to remedial and mitigation measures, impact avoidance measures have also been built in to the EIAR and project design processes through the assessment of alternatives described in Chapter 2 of this EIAR document.

Construction Phase

If unregulated, predicted impacts associated with the construction phase of the proposed development would be expected to include potential disruption to local natural and human material assets resulting in both short-term and long-term impacts. The implementation of the mitigation measures set out in this Chapter and other Chapters of the EIAR document would ensure that there is unlikely to be any significant residual impact during the construction phase. Therefore, impacts are likely to be temporary and neutral.

Operation Phase

The proposed development will have a positive impact on the existing urban environment by delivering quality residential units within a District Centre zoned site and deliver a mixed-use development at the Frascati Centre. The proposal will complement the permitted uses on the site, currently being delivered, and other emerging development proposals in the area.

As set out in the Traffic and Transportation Assessment prepared by NRB, Traffic movements associated with the proposed development are likely to have a long-term and neutral impact on the operation of the local road network.

The predicted waste water generation of the proposed development will be adequately accommodated in the local foul sewer network. Residual predicted impacts on this infrastructure are likely to be long-term and neutral.

The proposed development will be designed to comply with the provision of SUDS and is therefore unlikely to have any residual impacts in terms of the impact on surface water drainage.

The proposed development is unlikely to have any significant impact on the local water, electricity or gas supply networks and the overall impact with respect to these utilities can be described as long-term and neutral.

'Worst Case' Impacts

The EPA Guidelines (2002) provide that the "Worst Case" impacts should be described only where the failure of the project, or its mitigation measures, could lead directly to profound, irreversible or life-threatening consequences. Systematic risk assessments are only employed only where the "worst case" impacts pose significant threats to the environment and/or human health. It is important to note that this is not applicable in the case of the proposed development and the likelihood of such a scenario occurring in respect of the proposed development is negligible.

13.10 MONITORING

Monitoring measures will be in accordance with provisions outlined elsewhere in this EIAR document. Smart metering should be installed to allow future occupants to measure energy use, potable water use and waste water discharge.

13.11 REINSTATEMENT

No reinstatement measures are applicable.

13.12 INTERACTIONS

Interactions between Material Assets and other environmental topics are outlined throughout this EIAR document. The key interactions relate to traffic and transport, construction and foul and surface water.

13.13 DIFFICULTIES ENCOUNTERED IN COMPILING

No significant difficulties were encountered in completing this section.

13.14 REFERENCES

N/A