

# ENVIRONMENTAL IMPACT ASSESSMENT REPORT

## VOLUME I NON-TECHNICAL SUMMARY



**PROPOSED RESIDENTIAL DEVELOPMENT**

**AT**

**Gorey, Co. Wexford**

**On behalf of**

**AMIL Properties Ltd.**

**Prepared by**



**Strutec Engineers/PES Ltd./IE Consulting/Roadplan/Murray Associates/Shanarc**

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## TABLE OF CONTENTS

<b>1.0</b>	<b>INTRODUCTION &amp; METHODOLOGY .....</b>	<b>1</b>
1.1	INTRODUCTION.....	1
1.2	REQUIREMENT FOR EIA (SCREENING) .....	2
1.3	PURPOSE OF THIS EIAR .....	2
1.4	INFORMATION TO BE CONTAINED IN A NON-TECHNICAL SUMMARY.....	2
1.5	EIA PROCESS OVERVIEW .....	2
1.6	FORMAT AND STRUCTURE OF THIS EIAR .....	3
1.7	STATEMENT OF DIFFICULTIES ENCOUNTERED .....	4
1.8	QUOTATIONS.....	4
1.9	ERRORS.....	4
1.10	EIAR STUDY TEAM.....	4
<b>2.0</b>	<b>PROJECT DESCRIPTION AND ALTERNATIVES EXAMINED.....</b>	<b>5</b>
2.1	INFORMATION ON THE SITE, DESIGN AND SIZE OF THE PROPOSED DEVELOPMENT.....	5
2.2	SITE CONTEXT .....	5
2.3	ACCESS.....	7
2.4	LANDSCAPING.....	8
2.5	SERVICES .....	9
2.6	CONSTRUCTION MANAGEMENT STRATEGY.....	9
2.7	CONSTRUCTION MANAGEMENT PLAN.....	10
2.8	CONSTRUCTION PHASING.....	10
2.9	DIRECT AND INDIRECT EFFECTS RESULTING FROM USE OF NATURAL RESOURCES.....	11
2.10	DIRECT AND INDIRECT EFFECTS RESULTING FROM EMISSION OF POLLUTANTS, CREATION OF NUISANCES AND ELIMINATION OF WASTE .....	11
2.11	FORECASTING METHODS USED FOR ENVIRONMENTAL EFFECTS.....	11
2.13	ALTERNATIVES CONSIDERED .....	11
<b>3.0</b>	<b>SUMMARY OF THE PREDICTED ENVIRONMENTAL IMPACTS OF THE PROPOSAL.....</b>	<b>11</b>
3.1	POPULATION AND HUMAN HEALTH.....	11
3.2	BIODIVERSITY .....	12
3.3	LAND AND SOILS.....	13
3.4	WATER .....	13
3.5	AIR QUALITY AND CLIMATE.....	14
3.6	NOISE AND VIBRATION.....	14
3.7	LANDSCAPE AND VISUAL.....	14
3.8	MATERIAL ASSETS – TRAFFIC.....	17
3.9	MATERIAL ASSETS – WASTE MANAGEMENT .....	19
3.10	MATERIAL ASSETS – UTILITIES .....	20
3.11	ARCHAEOLOGY, ARCHITECTURE AND CULTURAL HERITAGE.....	20

<b>4.0</b>	<b>CUMULATIVE IMPACTS</b>	<b>21</b>
<b>5.0</b>	<b>INTERACTIONS BETWEEN ENVIRONMENTAL FACTORS</b>	<b>21</b>
<b>6.0</b>	<b>SUMMARY OF EIA MITIGATION AND MONITORING MEASURES</b>	<b>21</b>

## LIST OF FIGURES

Figure 2.1 – Site Boundary including Foul Sewer Route	5
Figure 2.2 – Overall Site Layout	6

## LIST OF TABLES

Table 1.1 – Structure of this EIAR	3
Table 2.7 – Overall Residential Development Mix	7

## LIST OF ABBREVIATIONS

AA	Appropriate Assessment	IFI	Inland Fisheries Ireland
ABP	An Bord Pleanála	NHA/pNHA	Natural Heritage Area / proposed Natural Heritage Area
CDP	County Development Plan	NIAH	National Archive of Architectural Heritage
CMP	Construction Management Plan	NPWS	National Parks and Wildlife Service
CSO	Central Statistics Office	NRA	National Roads Authority
DAHG	Department of Arts, Heritage and the Gaeltacht	NPF	National Planning Framework
DCENR	Department of Communications, Energy and Natural Resources	OPW	Office of Public Works
DEHLG	Department of Housing, Planning and Local Government	PBSA	Purpose-Built Student Accommodation
EIA	Environmental Impact Assessment	RMP	Record of Monuments and Places
EIAR	Environmental Impact Assessment Report	RPG	Regional Planning Guidelines
EMP	Environmental Management Plan	RPS	Record of Protected Structures
EPA	Environmental Protection Agency	SAC	Special Area of Conservation
ESRI	Economic and Social Research Institute	SMR	Sites and Monuments Record
FMP	Forest Management Plan	SPA	Special Protection Area
GDP	Gross Domestic Product	SHD	Strategic Housing Development
GSI	Geology Survey Ireland	SUDS	Sustainable Drainage System
IAA	Irish Aviation Association	TMP	Traffic Management Plan
IEEM	Institute of Ecology and Environmental Management	WFD	Water Framework Directive
		WCC	Wexford County Council

## 1.0 INTRODUCTION & METHODOLOGY

### 1.1 INTRODUCTION

This 'Non-Technical Summary' (NTS) relates to a strategic housing application to An Bord Pleanála for a proposed residential development of 297 no. dwellings, a creche and open space.

The site is located on the north-west edge of Gorey town, approximately 1km from the town centre. It is accessed from the Fort Road, which runs along its western boundary. The other side of Fort Road is currently under residential development at the town end, with some single detached houses further north. To the north of the site is agricultural land, although it is zoned residential and forms part of the Creagh Key Development site, as defined in the Gorey Town & Environs Local Area Plan 2017-2023. Summary of Nature and Extent of DEvelopment

A full description of the proposed development lands together with a description of the proposed development is provided in Chapter 2 Volume 2 of the EIAR document.

The proposal relates to the construction of a residential development of 297 no. dwellings comprising 26 no. 2 bedroom terraced houses, 125 no. 3 bedroom houses; 77 no. 4 bedroom houses; 4 no. 5 bedroom houses, 36 no. 2 bedroom apartments and 29 no. 3 bedroom apartments, a crèche of c. 554 sq. m (with ancillary outdoor play area), as well as associated infrastructure works to include underground sewerage upgrade works (along public road between 'Ashwood Grove/Willow Park' and 'Cois Doire' as well as Ramsfort Park Avenue, Garden City) on the public road (for approximately 1.1km) connecting the subject site to the public sewerage infrastructure on the Arklow Road (R772).

The development will consist of:-

- A) Removal of existing structures relating to former Walsh Mushroom development;
- B) Provision of 297 no. residential dwellings as follows:-
  - 232 no. houses comprising:-
    - 26 no. 2 bedroom – 2 storey terraced dwellings [Type H c. 85 sq. m];
    - 10 no. 3 bedroom – 3 storey terraced dwellings [Type F, c. 121 sq. m];
    - 22 no. 3 bedroom – 2 storey terraced dwellings [Type G, c. 118 sq. m]
    - 93 no. 3 bedroom – semi-detached 2 storey dwellings [Type D 112.8 sq. m; Type E, 107 sq. m];
    - 24 no. 4 bedroom – semi-detached 2.5-storey dwellings [Type C, c. 166 sq. m],
    - 31 no. 4 bedroom – 2 storey detached dwellings [(Type A, 147 sq. m (20 no.); Type A (end) 149 sq. m (11 no.)];
    - 22 no. 4-bedroom – 2.5-storey detached dwellings [Type B, c. 166 sq. m]
    - 4 no. 5 bedroom – 2.5 storey detached dwellings [(Type J, 181 sq. m (2 no.); Type J (end) 184 sq. m (2 no.)];
  - 65 no. apartments comprising 36 no. 2 bedroom apartments and 29 no. 3 bedroom apartments in a series of 27 no. apartment buildings [Type A - 3 storeys – 1 no. 2 bed apartment, 1 no. 3 bed duplex apartment, Type B - 3 storeys – 1 no. 3 bed apartment, 2 no. duplex apartments, Type C – 3 storeys – 1 no. 3 bed apartment, 1 no. 2 bed duplex apartment and 1 no. 3 bed duplex apartment, Type D 2.5 storeys 1 no. 2 bed apartment & 1 no. 3 bed duplex apartment, Type F – Part 2 & Part 3 storeys, 1 no. 2 bed apartment and 1 no. 3 bed duplex apartment], all apartments with either patio or balconies.
- C) 608 no. car parking spaces (including 9 no. for creche drop off) and 121 no. bicycle spaces as well as solar panels on roofs of houses/apartments);
- D) Approximately 1.41 hectares of open space (including playground areas), as well as ancillary landscape works with public lighting, planting and boundary treatments (internal and external); provision of communal open space for apartments; well as regrading/re-profiling of site where required as well as provision of cycle paths.
- E) Primary Vehicular Access to be provided from Fort Road, with provision for future vehicular and cycle access points to the north and south.
- F) 1 no. single storey ESB substation as well as bicycle/bin stores.
- G) Surface water attenuation measures and underground storm cell attenuation systems as well as all ancillary site development/construction works as well as connection to existing public water supply, drainage outfall (adjacent to the Fort Road at Willow Park) and provision of construction access from the Fort Road (from Walsh Mushrooms entrance).
- H) Underground sewerage upgrade works of c. 1.1km along the public road between the site and the Arklow Road (R772) and associated connections.

## 1.2 REQUIREMENT FOR EIA (SCREENING)

Screening is the term used to describe the process for determining whether a proposed development requires an EIA by reference to mandatory legislative threshold requirements or by reference to the type and scale of the proposed development and the significance or the environmental sensitivity of the receiving baseline environment.

Schedule 5 (Part 1) of the Planning & Development Regulations 2001 (as amended) transposes Annex 1 of the EIA Directive directly into Irish land use planning legislation. The Directive prescribes mandatory thresholds in respect to Annex 1 projects.

The proposed development falls within category 10(b)(iv) of Part 2 of Schedule 5 of the Planning and Development Regulations 2001-2015. Category 10(b)(i) refers to 'Construction of more than 500 dwellings'.

Category 10(b)(iv) refers to '*Urban development which would involve an area greater than 2 hectares in the case of business district, 10 hectares in the case of other parts of a built up area and 20 hectares elsewhere.*'

The subject lands comprise approximately 11.41 hectares. Having regard to the overall size of the site and to category 10(b)(iv) of Part 2 of Schedule 5 of the Planning and Development Regulations 2001 as amended a mandatory EIAR is required.

## 1.3 PURPOSE OF THIS EIAR

The objective of this EIAR is to identify and predict the likely environmental impacts of the proposed development; to describe the means and extent by which they can be reduced or ameliorated; to interpret and communicate information about the likely impacts; and to provide an input into the decision making and planning process.

The EIAR is the primary element of the Environmental Impact Assessment (EIA) process and is recognised as a key mechanism in promoting sustainable development, identifying environmental issues, and in ensuring that such issues are properly addressed within the capacity of the planning system.

## 1.4 INFORMATION TO BE CONTAINED IN A NON-TECHNICAL SUMMARY

This Non-Technical Summary (NTS) has been prepared in accordance with the requirements of the EU 2014 EIA Directive, Planning and Development Acts 2000-2018 and Planning and Development Regulations, 2018.

## 1.5 EIA PROCESS OVERVIEW

The main purpose of the EIA process is to identify the likely significant impacts on the human environment, the natural environment and on cultural heritage associated with the proposed development, and to determine how to eliminate or minimise these impacts. The EIAR summarises the environmental information collected during the impact assessment of the proposed development.

Several interacting steps typify the early stages of the EIA process and include:-

- Screening;
- Scoping;
- Assessing Alternatives; and
- Assessing and Evaluating.

**Screening:** Screening is the term used to describe the process for determining whether a proposed development requires an EIAR.

**Scoping:** This stage firstly identifies the extent of the proposed development and associated site, which will be assessed as part of the EIA process, and secondly, it identifies the environmental issues likely to be important during the course of completing the EIA process through consultation with statutory and non-statutory stakeholders. Scoping request letters were issued to a range of stakeholders at the commencement of this EIA process and the responses received have been considered as part of the compilation of the EIAR.

**Assessing Alternatives:** This stage outlines the possible alternative approaches to the proposed development. Consideration of alternative sites and layouts within the final chosen site are set out in Chapter 2 of this EIAR.

**Assessing and Evaluating:** The central steps of the EIA process include baseline assessment (desk study and field surveys) to determine the status of the existing environment, impact prediction and evaluation, and determining appropriate mitigation measures where necessary. This stage of the EIAR is presented in Chapters 6 to 17.

## 1.6 FORMAT AND STRUCTURE OF THIS EIAR

### 1.6.1 EIAR Structure

The structure of the EIAR is laid out in the preface of each volume for clarity. It consists of three volumes as follows:-

- Volume I: Non-Technical Summary (A non-technical summary of the information contained within Volume II).
- Volume II: Environmental Impact Assessment Report

This is the main volume of the EIAR. It provides information on the location and scale of the proposed development, details on design and impacts on the environment (both positive and negative) as a result of the proposed development.

Each of the environmental aspects as listed below are examined in terms of the existing or baseline environment, identification of potential construction and operational stage impacts and where necessary proposed mitigation measures are identified.

- Volume III: Technical Appendices (Volume III contains specialists’ technical data and other related reports).

### 1.6.2 EIAR Volume II Structure

The preparation of an EIAR document requires the assimilation, co-ordination and presentation of a wide range of relevant information in order to allow for the overall assessment of a proposed development. For clarity and to allow for ease of presentation and consistency when considering the various elements of the proposed development, a systematic structure is used for the main body of this EIAR document.

The structure used in this EIAR document is a Grouped Format structure. This structure examines each environmental topic<sup>1</sup> in a separate chapter of this EIAR document. The structure of the EIAR document is set out in Table 1.2 below.

**Table 1.1 – Structure of this EIAR**

Chapter	Title
1	Introduction and Methodology
2	Project Description and Alternatives Examined
3	Population and Human Health
4	Biodiversity
5	Land and Soils
6	Water
7	Air Quality and Climate
8	Noise and Vibration
9	Landscape & Visual Impact
10	Material Assets - Traffic
11	Material Assets – Waste Management
12	Material Assets – Utilities
13	Archaeology and Architectural and Cultural Heritage
14	Interactions of the Foregoing

<sup>1</sup> In some instances similar environmental topics are grouped.

Chapter	Title
15	Summary of Mitigation and Monitoring Measures
16	Reference List

## **1.7 STATEMENT OF DIFFICULTIES ENCOUNTERED**

No particular difficulties, such as technical deficiencies or lack of knowledge, were encountered in compiling any of the specified information contained in this statement, such that the prediction of impacts has not been possible. Where any specific difficulties were encountered these are outlined in the relevant chapter of the EIAR.

## **1.8 QUOTATIONS**

EIAR documents by their very nature contain statements about the proposed development, some of which are positive, and some negative. Selective quotation or quotations out of context can give a very misleading impression of the findings of this EIAR.

The EIAR study team urge that quotations should, where reasonably possible be taken from the conclusions of specialists' chapters or from the non-technical summary and not selectively.

## **1.9 ERRORS**

While every effort has been made to ensure that the content of this EIAR document is error free and consistent there may be instances in this document where typographical errors and/or minor inconsistencies do occur. These typographical errors and/or minor inconsistencies are unlikely to have any material impact on the overall findings and assessment contained in this EIAR.

## **1.10 EIAR STUDY TEAM**

The EIAR was prepared by a study team led by John Spain Associates, who were responsible for the overall management and co-ordination of the document. The EIA team is set out in Chapter 1 of Volume II of the EIAR.

## 2.0 PROJECT DESCRIPTION AND ALTERNATIVES EXAMINED

### 2.1 INFORMATION ON THE SITE, DESIGN AND SIZE OF THE PROPOSED DEVELOPMENT

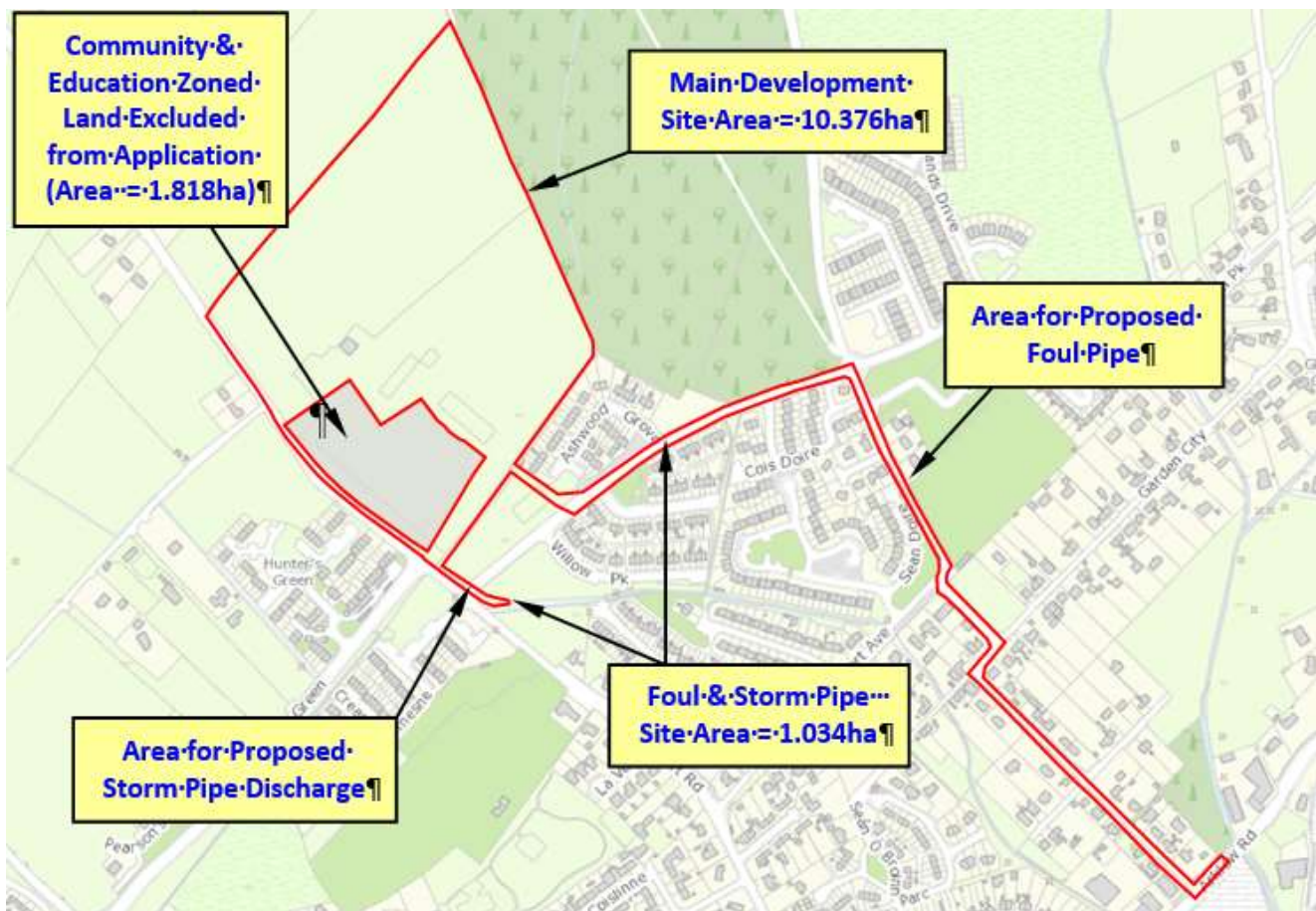
### 2.2 SITE CONTEXT

The site area of the SHD application is approximately 11.37 hectares (including foul sewer route from site to the Arklow Road). The EIAR also includes a cumulative assessment of the CE zoned lands under the control of the applicant, which are adjacent, to the west and also the residential zoned lands to the north. The Site Layout Plan prepared by Strutec Architects shows the overall layout in Figure 2.1. of the Housing Development.

The proposed development comprises 297 dwellings, consisting of 232 two, three, four and five bedroom houses and 65 two and three bedroom apartments and duplexes. The dwellings are arranged in a wide variety of units of both two and three storeys.

In addition it is proposed to provide a foul sewer connection from the subject site along the public road (c. 1.1km), to connect to the Arklow Road, to the south.

Figure 2.1 – Site Boundary including Foul Sewer Route



Source: IE Consulting

#### 2.2.1 Demolition

The proposal includes for the demolition of the existing steel structures storey building located which formed part of the previous use of a portion of the lands (Walsh Mushrooms).



Figure 2.2 – Overall Site Layout



Source: Strutec Architects

## 2.2.2 Proposed Residential Development

A wide variety of unit options are included in the proposal, ranging from 2 bedroom dwellings and apartments, to 5 bedroom dwellings. These are arranged in terraces, semi-detached and detached configurations, with small sets of apartments defining the key corner sites of the residential blocks.:-

**Table 2.1 – Overall Residential Development Mix**

	2 bedroom	3 bedroom	4 bedroom	5 bedroom	
Apartments	36	29			65
Houses	26	125	77	4	232
	62	154	77	4	297
	20.9%	51.9%	25.9%	1.3%	100.0%

Source: Strutec Architects Schedule of Areas

### Houses

The houses are designed as two and three storey family dwellings, in detached, semidetached or terraced configurations. Some of the houses are designed in 2.5 level format, with bedrooms partially occupying the roof space, apart from type F, which has been designed to give particular definition to the main avenue. Individual plot layouts provide good separation to ensure privacy and minimise overlooking. The end-row and end terrace house types have been used to turn corners, with front doors and windows giving activity and passive supervision to the sides and avoiding large blank gables.

### Apartments

The apartment buildings are small blocks of 2 or 3 units in 2.5 to 3 storeys on predominantly corner sites. They are in the format of ground floor single-storey units with duplex units above served by an external stairs to ambulant disabled criteria. Please refer to the Design statement and Access Statement prepared by Stutec Architects.

Among the objectives were to provide a variety of types at a scale in keeping with the housing, and using the typology to finish the block corners, avoiding blank row terminations and allowing opportunities for small pockets of landscaped area benefitting from passive overlooking. The scale and corner strategy also allowed greater flexibility for solar access, view and all dual-aspect units.

## 2.2.3 Car Parking and Cycle Parking Provision

Overall there will be 608 car parking spaces. Parking for house types A – E and J is provided to the front of each house within its curtilage, and as such, is always close to the dwelling entrance and in view from the house.

Parking for the apartments/duplexes and house types F - H is on-street but well overlooked and immediately adjacent. On-street parking areas will be landscaped and designed to avoid long stretches of relentless parking. Secure and sheltered bicycle parking to serve the apartments/duplexes is also provided.

In compliance with the Wexford County Development Plan 2013-2019, parking for people with disabilities will be provided at the rate of at least one space in every 25 standard spaces up to the first 100 spaces plus one space per every 100 standard spaces or part thereof thereafter. The spaces will measure at least 6.0 x 3.7m including transfer hatching to the side and rear. Please refer to site layout drawings also.

## 2.3 ACCESS

The western edge of the site contains the main vehicular entrance, as well as pedestrian entrances from the Fort Road, leading to the town centre and schools established on Creagh Avenue. The southern boundary is shared with the existing Ashwood Grove/Willow Park development, linked through the landscape spaces and with pedestrian/cycle and vehicular access. The eastern boundary connects through the central landscape space into Ramsfortpark Forest, while the northern boundary includes pedestrian/cycle and vehicular links into the adjacent site. Gorey Town Park is situated immediately to the south of the site.

## 2.4 LANDSCAPING

Currently the southern portion of the site is taken up with the remnants of the previous industrial/agribusiness use on site. There are substantial areas of hardcore and rubble, with the shell of a demolished industrial unit still standing to the south. The northern portion of the site is currently in arable agricultural use. Pioneer species of Grey Willow and scrub vegetation has started to colonise this southern portion of the site.

The open space elements within the site consist of a larger neighbourhood park through the centre of the development, linking Fort Road with the existing Coillte lands of Ramsfortpark Forest. Two further areas of open space are provided, one to the north of the site and one to the south.

There are three areas of open space identified for passive recreation within the development, totalling 1.41 hectares.

The design intent is to create a high quality and appropriate landscape for future residents, which will meet their recreational needs and provide an attractive visual setting and social amenity space. The principles of inclusivity for all age groups, universal accessibility and sustainable development are applied to ensure an inclusive and environmentally responsible design solution.

Where feasible, native trees and plants are proposed to enhance local biodiversity, in accordance with the relevant policies of the Wexford County Council Development Plan 2013-2019 and the Green City Guidelines from the Urban Institute of 2008.

## **2.5 SERVICES**

### **2.5.1 Foul Sewer**

Gorey Town and surrounds is serviced by a public sewer, with treatment occurring at Courtown-Gorey Wastewater Treatment Plant (WWTP). Courtown-Gorey WWTP is operated by Irish Water and holds a Waste Water Discharge Licence with the EPA (D0046-01). The WWTP provides secondary treatment of wastewater with phosphorous removal. The WWTP has been designed for an agglomeration (population equivalent) size of 36,000 and currently services an agglomeration (population equivalent) of approximately 18,000.

It is proposed that foul water from the proposed development will be discharged to the mains sewer system. The impact on the public foul sewerage system will be to increase the loading on the Courtown Wastewater Treatment Works. The volume of foul water generated from the proposed development is calculated to be 224 m<sup>3</sup>/day.

### **2.5.2 Surface Water Drainage**

It is proposed to construct a gravity stormwater drainage system that discharges to the nearby Ballyowen Stream, which is located approximately 80m south-east of the main development site area. The proposed stormwater system shall include the main development site area of 10.376 hectares but shall also accommodate the runoff from the future development of the area zoned for 'Community and Education', which is an area of 1.818 hectares.

The proposed stormwater drainage network has been designed in accordance with the Greater Dublin Strategic Drainage Study (GDSDS) Regional Drainage Policies, Volume 2 New Development. The proposed stormwater network layout is shown on Drawing Numbers IE1505-001-C to IE1505-006-C, prepared by IE Consulting.

### **2.5.3 Attenuation**

The proposed stormwater drainage is divided into two catchments with separate attenuation systems proposed in each area. Infiltration was not considered as part of the attenuation design as infiltration rates in Gorey and the wider county are generally poor.

The two attenuation systems have been designed for no flooding up to the 1 in 100 year rainfall event including 10% climate change. A modular Storm Tech attenuation system is proposed for both catchments.

### **2.5.4 Water Supply**

It is proposed to obtain water from the mains supply. The total water usage for the development is calculated to be 168 m<sup>3</sup>/day. Water conservation measures such as the use of low flush toilets and low flow taps will be incorporated into dwellings to reduce volumes and associated abstraction and treatment costs for the proposed development.

### **2.5.5 ESB Supply**

There are two power line systems within the vicinity of Gorey town; a 220 kV line between Arklow and Crory and a 110 kV line between Arklow and Crane. A 220 kV station is located at Arklow, and 110 kV stations are located at Arklow, Banoge, Crory and Crane. Currently, there is no gas supply to the north County Wexford region.

### **2.5.6 Telecommunications**

Gorey town has a number of broadband, phone and television channel providers, including Eir, Sky, Virgin and Vodafone. Gorey town is included in SIRO's (a joint venture company between ESB and Vodafone) Phase 1 plan to deliver fibre broadband with speeds of up to 1,000 Mbps.

## **2.6 CONSTRUCTION MANAGEMENT STRATEGY**

It is envisaged that the development of the lands will occur over a 7 year period. Given the nature of the project and the need for flexibility to respond to market demand, the development phases are indicative. An outline Construction Environmental Management Plan which has been prepared by Strutec Engineers, has been reviewed by the relevant EIAR consultants and is included in the SHD application.

This EIAR presents proposed mitigation measures to ensure that the planned development of the lands does not generate significant adverse impacts for residential and working communities in the vicinity of the site.

The proposed development, as described, is detailed on the planning application drawings and particulars which accompany the application.

## **2.7 CONSTRUCTION MANAGEMENT PLAN**

A Construction Traffic Management Plan (CTMP) will be prepared by the main contractor and agreed with the Planning Authority prior to commencement of development in the event of a grant of permission. The main construction access route will be from Fort Road as required.

### **2.7.1.1 Traffic Management & Construction Access**

The following measures are envisaged:-

- No parking on access routes. No unloading or blockages of access routes. Such vehicles will be immediately requested to move to avoid impeding works;
- In accordance with the CMTP, the contractor must appoint a Traffic Management Coordinator responsible for the management of traffic management related activities on site

Contractors must adhere to the overall traffic management measures for the internal road network from the preferred construction traffic entrance road to their site. This shall include the following as a minimum:-

- Speed limits;
- Parking restrictions; and
- Safe access/egress to existing internal Hospital access roadway.

### **2.7.2 Hours of Working**

Working hours will be strictly in accordance with the granted planning conditions with no works on Sundays or Bank Holidays. If work is required outside of these hours, written approval will be sought by the contractor from the Local Authority.

It is anticipated that normal working hours may be 7am to 7pm Monday to Friday and 8am to 5pm on a Saturday. However, it may be necessary to work outside of these hours at night and at weekends during certain activities and stages of the development (e.g. concrete pouring) which will be subject to agreement with the Local Authority.

Deliveries of material to site will be planned to avoid high volume periods. There may be occasions where it is necessary to have deliveries within these times. The Contractor will develop, agree and submit a detailed Traffic Management Plan for the project prior to commencement.

## **2.8 CONSTRUCTION PHASING**

The proposed order of construction of key elements is as follows, however this is subject to detailed review by the Contractors at construction stage and specifics may require adjustment once the contractor has been appointed.

- Phase 1 (approximately 72 dwellings)
  - Form site access
  - Connect incoming water supply, electrical & comms
  - Construct required foul sewer outfall outside the site
  - Partial construction of main avenue
  - Construction of crèche/childcare facility (required for 75 dwellings or more)
  - Construct main central landscape open space
- Phase 2 (approximately 77 dwellings)
- Phase 3 (approximately 43 dwellings)
- Phase 4 (approximately 38 dwellings)
  - Construct southwestern open space

- Phase 5 (approximately 67 dwellings)
- Complete main avenue

## **2.9 DIRECT AND INDIRECT EFFECTS RESULTING FROM USE OF NATURAL RESOURCES**

Details of significant direct and indirect effects arising from the proposed development are outlined in Chapters 3-15 which deal with '*Aspects of the Environment Considered*'. No significant adverse impact is predicted to arise from the use of natural resources.

## **2.10 DIRECT AND INDIRECT EFFECTS RESULTING FROM EMISSION OF POLLUTANTS, CREATION OF NUISANCES AND ELIMINATION OF WASTE**

Details of emissions arising from the development together with any direct and indirect effects resulting from same have been comprehensively assessed and are outlined in the relevant in Chapters 3-15 which deal with '*Aspects of the Environment Considered*'. There will be no significant direct or indirect effects arising from these sources.

## **2.11 FORECASTING METHODS USED FOR ENVIRONMENTAL EFFECTS**

The methods employed to forecast the effects on the various aspects of the environment are standard techniques used by each of the particular individual disciplines. The general format followed was to identify the receiving environment, to add to that a projection of the "*loading*" placed on the various aspects of the environment by the development, to put forward amelioration measures, to lessen or remove an impact and thereby arrive at net predicted impact.

## **2.13 ALTERNATIVES CONSIDERED**

This chapter also includes a summary of alternatives which were considered for the proposed development of the subject lands. These options were considered as the scheme progressed and the key considerations and amendments to the design having regard to the key environmental issues pertaining to the lands are summarised in this section of the EIAR.

In summary, the design of the proposed development takes into account all environmental issues raised with respect to previous design alternatives and within the Board's Opinion, and provides for a development that has been optimised to amplify positive environmental effects whilst reducing negative environmental impacts wherever possible.

## **3.0 SUMMARY OF THE PREDICTED ENVIRONMENTAL IMPACTS OF THE PROPOSAL**

### **3.1 POPULATION AND HUMAN HEALTH**

The 2014 EIA Directive (2014/52/EU) has updated the list of topics to be addressed in an EIAR and has replaced 'Human Beings' with 'Population and Human Health'. This chapter also meets the requirement for assessment of 'Human Beings', as set out in Schedule 6 of the Regulations.

Population (human beings) and Human Health is a broad ranging topic and addresses the existence, activities and wellbeing of people as groups or 'populations'. While most developments by people will affect other people, this EIAR document concentrates on those topics which are manifested in the environment, such as new land uses, more buildings or greater emissions.

- Economic Activity;
- Social Patterns;
- Land-Use & Settlement Patterns;
- Employment; and
- Health & Safety.

The implementation of the range of remedial and mitigation measures included throughout this EIAR document are likely to have the impact of limiting any likely adverse environmental impacts of the construction and operational phase of the proposed development on population and human health.

### 3.2 BIODIVERSITY

The subject site is not designated under any Regional, National or European Environmental Designation. It does not therefore require assessment under the Wildlife (Amendment) Act 2000 (S.I No. 38 of 2000) or the European Communities (Natural Habitats) Regulations, 2011 (S.I No. 477 of 2011).

No Special Protection Areas (SPAs), RAMSAR sites or Natural Heritage Areas (NHAs) occur within 15km of the proposed development.

The proposed development is located on the outskirts of Gorey town, at an approximate elevation of 50-60m above sea level. The proposed site is bordered to the south and east by housing estates, to the northeast by Ramsfort Park (a coniferous forest) and to the west by agricultural land comprising of pasture and tillage.

The proposed development site comprises of an area of agricultural grassland and an area of unused / disturbed ground (the previous site of the Walsh Mushrooms facility), bordered by hedgerows and mature trees. A small, man-made drainage ditch is located along the north-eastern site boundary, which joins with an existing drainage pipe and leaves the site at the eastern corner. During the site walkover, eight main habitats were identified.

Generally, the habitats identified during the onsite assessment are modified and are of low ecological value. No rare species were noted as present within the proposed development site.

During the walkover of the proposed foul sewer pipeline route, two habitats were identified. The majority of the proposed route was identified as buildings and artificial surfaces (BL3) habitat, consisting of roadways, paths and concrete and are generally modified and of low ecological value.

While no fauna were observed at the development site during the December and August assessments, burrows were noted along some areas of treeline and hedgerow habitats, identified as likely rabbit and rat burrows. No fauna or evidence of fauna was recorded during the walkover of the proposed pipeline route.

The site was found to support suitable foraging and commuting habitat for bats particularly associated with treelines/hedgerows along the north/north west of the site and along the woodland edge to the east of the proposed development site.

With regards the ecological value of bats at the site, bats are considered as Key Ecological Receptors (KERs). Although no bat roosts were identified during bat surveys, it has been established that the treelines/hedgerow to the north (hedgerow 2) and the woodland edge to the east provides a commuting and foraging corridor for common bat species. Although the hedgerow itself will be retained a number of the mature individual trees will be removed as part of the proposed development.

The proposed development and foul sewer pipeline route do not directly impinge on any part of a Natura 2000 site, and as such construction works would not be expected to impact upon a protected site through destruction or fragmentation of habitat, disturbance of habitat or direct reduction in species density during the construction phase. The proposed development site and proposed foul sewer pipeline route do not contain the habitats or species for which these two sites have been designated.

There would be no loss of any known bat roosts during the construction period. However, mitigation measures (see Section 4.7.1 of Volume II of EIAR) have been proposed to ensure trees assessed as having moderate bat roost potential are re-assessed prior to felling.

With mitigation, there are expected to be no residual negative effects to flora and fauna which can be considered to be significant.

### 3.3 LAND AND SOILS

The proposed development will alter the current land use from brownfield and agricultural to a residential development and associated public open space and landscape areas. The impact on land, soil, geology and hydrogeology from accidental spillages of fuel and lubricants used during the construction phase of the development is predicted to be minimal when stored and used in a responsible manner. After implementation of the mitigation measures recommended above for the construction phase, the proposed development will not give rise to any significant long term adverse impact. Moderate negative impacts during the construction phase will be short term only in duration.

No significant long-term impact on the soil resulting from the proposed operational phase of the development is predicted. Once the development is completed, risks to the land and soils will be from pollutants deriving from the use of the dwellings and/or from contaminated surface water run-off.

The only mitigating measures envisaged during the operational phase are to ensure regular maintenance of SuDS features.

Ensuring appropriately designed, constructed and maintained site services will protect the soils and geology from future contamination arising from operation of the developments.

The surface water run-off from the development should be collected by an appropriately designed system. This system should ensure that contaminants are removed prior to discharge e.g. via a light liquids separator or by an appropriate treatment train of Sustainable Urban Drainage Systems as outlined in the Greater Dublin Strategic Drainage Study (GSDSDS). Any separators and drainage systems should be maintained and operated by the facilities management company (prior to taking in charge by the Local Authority) in accordance with the manufacturers recommendations.

All new oil storage facilities will be designed and maintained in accordance with best practice and standards (BS 5410 and BS799-5). All waste storage areas will be designed to afford adequate containment for any liquid or solid waste. These measures combined with best practice will prevent any contamination of surrounding soil/bedrock.

A programme of inspection and maintenance of the foul sewer rising main pipeline will ensure that any damage, blockages etc. are identified and remedied.

### 3.4 WATER

In order to reduce the impacts on the water environment a number of mitigation measures will be adopted as part of the construction works on site. A Construction Management Plan will be prepared and will include measures to address the main potential impacts on surface water and groundwater.

During construction works, all excavated materials will be visually assessed for signs of contamination. Should material appear to be contaminated, soil samples will be analysed by an appropriate testing laboratory. All potentially contaminated material will be either left in situ and characterised through laboratory testing; or segregated and stockpiled in a contained manner and characterised through laboratory testing. Any contaminated material will be appropriately disposed of or treated using a licensed waste contractor and in accordance with the Waste Management Regulations, 1998.

A programme of inspection and maintenance of the foul sewer rising main pipeline will ensure that any damage, blockages etc. are identified and remedied.

In order to prevent fluvial flood waters from the Ballyowen Stream from flowing into the proposed 225mm foul pipe, the manholes in Flood Zones A & B along the foul water pipe route will be the manholes in these locations are constructed with sealed flood proof covers.

The proposed foul pipe will not result in any loss in flood plain storage as a result of its construction. There will be no local connections to the foul water pipeline downstream of the main development site area and therefore there is no flood risk posed to any existing or future residents as a result of the connection to the foul pipe.

The measures to protect the watercourses were discussed on site with Inland Fisheries Ireland and IE Consulting Engineers.



Implementation of the measures including the Site Specific Construction and Environmental Management Plan outlined in Section 6.6 of Volume II of the EIAR and Construction Management Plan will ensure that the potential impacts of the proposed development on water and the hydrogeological environment do not occur during the construction phase and that any residual impacts will be short term.

As surface water drainage design has been carried out in accordance with the GSDSDS, 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. Implementation of the measures outlined in Section 6.6 will ensure that the potential impacts of the proposed development on water and the hydrogeological environment do not occur during the operational phase and that any residual impacts will be short term and imperceptible.

### **3.5 AIR QUALITY AND CLIMATE**

The site of the proposed development is semi-rural in character. The site is bounded to the south by the Ashwood Grove residential development and to the west by the Fort Road. The existing air quality environment is therefore principally defined by traffic from the Fort road, other local networks and agricultural activities. Fuel combustion for home heating purposes also contributes to the ambient air quality.

There may be some short term impacts during the construction phase as the pipes are laid, particularly in respect of traffic management with regards to sensitive receptors. This may cause local short term inconvenience and disturbance to residents and business in the vicinity of the works. However the works would normally be undertaken in sections on a phased/rolling programme so that the number of persons experiencing local inconveniences at any one time is kept to a minimum. Overall, the impact on local air quality from the trucks and machinery exhausts during the construction phase would be temporary and slight with no significant impact.

In order to mitigate dust emissions during the construction phase, a *Dust Control Management Programme* will be prepared as part of the Environmental Management Plan and submitted to the Planning Authority.

Operational activities involved with the new development would be non-industrial. There are no proposed major stationary sources associated with the operational phase of the project that could emit significant quantities of pollutants. Following the completion of construction activities, operational air emissions associated with the residential units will be limited to minor stationary sources from on-site utilities (i.e. home heating systems) and mobile sources from traffic generated as a result of the development.

It is considered that the operational phase of the development will not have a significant negative impact on the local air quality. Nevertheless, mitigation measures in relation to traffic-derived pollutants have focused generally on improvements in both engine technology and fuel quality.

### **3.6 NOISE AND VIBRATION**

During the construction phase there is the potential for some minor impact on nearby noise sensitive properties due to noise generated by construction site activities. The implementation of the construction phase noise and vibration mitigation and monitoring programme will minimise the potential noise and vibration impact on the receiving environment.

It is recommended that monthly noise monitoring be carried out along the boundary of the proposed site in order to monitor the effectiveness of noise management for the duration of the construction phase. Noise levels at noise sensitive locations should not exceed 70 dB(A) during weekdays and 65 dB(A) during Saturdays as per NRA guidance. These levels should not be exceeded and any breach would require a review of operations. Noise mitigation measures should be put in place to ameliorate any exceedance which may be due to on-site construction work.

The operational phase of the proposed development would have no significant additional impact upon the existing noise environment of the area. In order to improve the amenity of the site for future residents.

### **3.7 LANDSCAPE AND VISUAL**

The landscape effects of the proposed development would overall be moderately negative, particularly considering the low sensitivity of the site being under 'Strong Urban influence', and the existing residential zoning designation within the Gorey Town and Environs Local Area Plan 2017-2023.

These predicted effects are further mitigated by the potential quality of the public realm, the cohesive land use and pattern that would result; and the new spaces, landscape features and distinctiveness introduced by the proposed development with its associated landscape spaces and planting interventions.

Screen planting is proposed to the southern boundary of the site to protect the privacy and visual amenity of the existing residents to the south. Boundary and native screen planting species mix, that includes trees and shrubs, and will be selected from the native local palette to encourage wildlife in the area and enhance biodiversity.

### **Hedgerows - Overall**

Overall, there will be an increase of approximately 316 metres of native hedgerow on the boundary with Ramsfort Park Forest, with a further 521 linear metres being rehabilitated and enhanced (both the western boundary with Fort Road and the northern boundary adjacent to the neighbouring development site). Therefore, there is a total of 837 linear metres of native hedgerow associated with the development.

Across the site there will also be approximately 340 no. new native and non-native trees planted.

#### *Hedgerows - Northern*

The existing hedgerow boundary in this location (387 linear metres) consists of a few unmanaged native species (Hawthorn, Holly and Gorse) with large areas overgrown with Bramble, Ivy and Bracken. Elsewhere, large gaps are present in the fabric of the hedge.

Proposals for the existing hedgerow allow for the rehabilitation of this boundary. The existing bramble and ivy will be cleared, with new native hedgerow species planted to fill in the gaps evident in the existing hedgerow.

Although the 7 no. trees are required to be removed, the existing hedgerow will remain intact. The 7no. existing trees along the northern boundary will be replaced by 26no. semi-mature native trees (Lime - *Tilia x europaea*, 30-35cm girth).

#### *Hedgerows – Eastern*

This portion of the site is adjacent to the existing Coille-owned Ramsfort Park Forest. The existing boundary vegetation of juvenile oak trees will not be effected by the proposed development. The boundary treatment proposed is a wire mesh fencing with steel pole supports.

#### *Hedgerows – Western*

Along the western boundary with Fort Road it is proposed to retain, where possible, the existing specimen trees (Ash, Oak and Beech). 15no. trees will be removed due to the development roadway and cycleway. Many of these existing trees are of fair to poor quality. This current hedgerow will be rehabilitated by removing the Bramble and Ivy and reinforcing the existing hedgerow planting of Hawthorn with mixed native hedgerow underplanting.

#### *Hedgerows – Southern*

The existing Leyland Cypress planting to the south of the site, adjacent to the north of Ashwood Grove, is proposed to be removed to allow for the development. There will be a solid boundary wall of 2 metres in height between the dwellings on Ashwood Grove and the proposed rear gardens of the development in this area.

Within the site there here will also be approximately 340 new trees planted within the residential development. However, approximately 120 metres of existing vegetation is proposed to be removed due to construction. This is on the western boundary with the existing Ashwood Grove development, and consists of large, overgrown Leylandii. The proposed removal of this low-value Leylandii and the inclusion of increased native tree cover throughout the site would substantially increase the tree resource and quality in the area overall and contribute towards a moderately positive effect on the landscape.

During construction there will be a change to the landscape and there will be negative visual effects for residents and visitors to the areas adjacent to the site associated with construction activity.

In the medium to long term, the landscape effects due to the completed development would overall be slightly negative, particularly considering the low sensitivity of the landscape and the existing residential zoning designation within the Gorey Town and Environs Local Area Plan 2017-2023.

In the longer term, the assessment concludes that there will be slight to moderate negative visual effects to houses immediately adjacent to the site, with not significant, or imperceptible visual effects to the remaining residential receptors.

Landscape works are proposed to reduce and offset any effects generated due to the proposed development, where possible. The planting of substantial numbers of new native trees (340 in number) and other planting will enhance the overall appearance of the new development.

## **3.8 MATERIAL ASSETS – TRAFFIC**

### **3.8.1 Mitigation Construction Phase**

A Construction Management Plan (an outline CMP accompanies the application) and the associated Construction Traffic Management Plan (CTMP) in addition to the application accompanying Construction and Waste Management Plan will be developed by the appointed contractor and submitted to Wexford County Council for approval prior to commencement of works.

The Construction Management Plan will incorporate a range of integrated control measures and associated management initiatives with the objective of mitigating the impact of the proposed developments on-site construction activities.

To minimise disruption to the surrounding environment, the following mitigation measures will be implemented:

- During the pre-construction phase, the site will be securely fenced off from adjacent properties, public footpaths and roads.
- All road works will be adequately signposted and enclosed to ensure the safety of all road users and construction personnel.
- A dedicated 'construction' site access / egress junction will be provided during all construction phases.
- Provision of sufficient on-site parking and compounding to ensure no potential overflow of construction generated traffic onto the local network.
- Site offices and compound will be located within the site boundary. The site will be able to accommodate employee and visitor parking throughout the construction period through the construction of temporary hardstanding areas.
- A material storage zone will also be provided in the compound area. This storage zone will include material recycling areas and facilities.
- A series of 'way finding' signage will be provided to route staff / deliveries into the site and to designated compound / construction areas.
- Dedicated construction haul routes will be identified and agreed with the local authority prior to the commencement of construction activities on-site.
- Truck wheel washes will be installed at construction entrances if deemed necessary and any specific recommendations with regard to construction traffic management made by the Local Authority will be adhered to.
- On completion of the works all construction materials, debris, temporary hardstands etc. from the site compound will be removed off site and the site compound area reinstated in full on completion of the works.
- The proposal includes the construction of an underground pipeline from the subject site to the Arklow Road. However the works would normally be undertaken in sections on a phased/rolling programme so that the number of persons experiencing local inconveniences at any one time is kept to a minimum.
- As part of the road opening licence, it is anticipated that a Construction Traffic Management Plan would be agreed with Wexford County Council, by the contractor. The objective of which is to minimise the short term disruption to local residents, and reduce the potential for accidents.

### **3.8.2 Mitigation Operational Phase**

#### **Road Safety**

The Wexford County Development Plan 2013 – 2019 sets out sightline requirements for proposed access / egress to public roads outside of a 50kph or 60 kph speed limit. The following are the indicative sightline requirements:

- National Road = 230m
- Regional Roads Class 1 = 220m
- Regional Roads Class 2 = 135m
- Local / Country Roads = 65m

The Fort Road would be considered as a Class 2 Regional Road due to the traffic volumes currently using Fort Road. Therefore, a sightline of 135m at a 3m set-back shall be achieved in both directions.

At the proposed access onto Fort Road a 135m sightline at a 3m set-back can be achieved in both directions. The visibility splay to the north and south of the proposed access is measured from a 3m set-back to the nearside kerb of the road.

### **Pedestrians**

2m wide footpaths will be provided internally to cater for pedestrian movement within the development. In addition, a 2m wide footpath will be provided along the boundary of the proposed development adjacent to Fort Road and connecting to the existing footpaths at Willow Park. Full details of footpaths provided are provided are shown on the architects drawings.

### **Cyclists**

A 2m wide cycle path will be provided within the proposed development which will cater for cyclist's movement within the development. A 2m wide cycle path will also be provided along the boundary of the development adjacent to Fort Road and will terminate at the existing junction to Willow Park. Full details of cycle paths provided are provided are shown on the architects drawings.

### **Internal Layout**

Within the development the spine road is 6m wide and all internal access roads are 4.8m wide.

The 4.8m wide internal access roads will act as a shared surface for pedestrians and vehicles. The Design Manual for Urban Roads and Streets indicates that the minimum width for local streets with a shared surface is 4.8m wide.

Parking is provided to the front and rear of each residential dwelling. In addition, on-street parking is provided within the development. The parking bays are 2.5m wide x 5m long. Disabled parking spaces are provided through out the development.

HGV access to the site will be via the proposed access onto the Fort Road. The types of HGV's accessing the site would be emergency vehicles and a bin lorry. The internal layout can facilitate HGV movement within the site.

Once the pipeline is constructed, there would be no significant impacts during the operation phase in respect of traffic. Ongoing maintenance would be undertaken in a manner to reduce the impact to local residents.

Provided the above mitigation measures and management procedures are incorporated during the construction phase, the residual impact upon the local receiving environment is predicted to be temporary in nature and slight in terms of effect.

The main conclusions of this study are summarised as follows:

- The development flows to and from the site have been predicted using the TRICS database.
- The existing Fort Road / Willow Park / Creagh Demesne crossroads junction will operate within capacity with small queues and delays when the proposed development is completed in 2021, year of opening, 2026, five years after completion and in 2036, fifteen years after completion.
- Sensitivity testing carried out on lands adjacent to the proposed development indicates that the existing Fort Road / Willow Park / Creagh Demesne crossroads junction will operate within capacity with small queues and delays when the proposed development is operational in 2036.
- The existing Fort Road / Pearse Street / Johns Street crossroads junction will operate within capacity with small queues and delays in 2021, year of opening, 2026, five years after completion and in 2036, fifteen years after completion.

- Sensitivity testing carried out on lands adjacent to the proposed development indicates that the existing Fort Road / Pearse Street / Johns Street crossroads junction will operate within capacity with small queues and delays when the proposed development is operational in 2036.
- The proposed Fort Road / Development Access priority junction will operate within capacity with no queues and minimal delays when the proposed development is completed in 2021, year of opening, 2026, five years after completion and in 2036, fifteen years after completion.
- Sensitivity testing carried out on lands adjacent to the proposed development indicates that the proposed Fort Road / Development Access priority junction will operate within capacity with no queues and minimal delays when the proposed development is operational in 2036.
- The development provides adequate car parking spaces when assessed in accordance with the development plan.
- Sightlines at the proposed access onto Fort Road are in compliance with the Wexford County Development Plan.
- Pedestrian and cycle facilities are provided within the proposed development and along Fort Road.
- The internal roads within the proposed development are in compliance with the Design Manual for Urban Roads & Streets.

### 3.8.3 Monitoring

#### Construction Phase

During the construction stage the following monitoring exercises are likely to be required. The specific compliance exercises to be undertaken in regard to the range of measures detailed in the final construction management plan will be agreed with the planning authority.

- Compliance with construction vehicle routing practices,
- Compliance with construction vehicle parking practices,
- Internal and external road conditions and
- Timings of construction activities.

### 3.9 MATERIAL ASSETS – WASTE MANAGEMENT

The management of wastes generated during the construction of the proposed development will be in accordance with a Construction and Demolition Waste Management Plan (an outline of which is included with the SHD application). As long as the construction is completed in accordance with the plan it is envisaged that the impact of the construction (excavation and construction waste) phase will be temporary, slight and negative. There are several facilities with the necessary EPA licences and waste facility permits for soils recovery in the region. There is considered to be adequate capacity to receive the wastes likely to be generated by the construction of the proposed development, even in the 'worst-case' scenario, which is where excavated material cannot be reused in the proposed.

With the implementation of the proposed mitigation measures:-

The predicted impact of operational waste will be long term, moderate and negative.

There is likely to be significant available capacity within existing Irish waste management infrastructure to manage operational phase wastes from the proposed development.

The proposed development shall be constructed and developed to minimise the generation of construction waste. During the construction Phase, construction waste shall be stored and segregated in dedicated waste storage areas which shall optimise the potential for off-site reuse and recycling. All construction waste materials shall be exported off-site by an appropriately permitted waste contractor.

The development shall be designed to provide adequate domestic waste storage areas for common residential areas (apartments) and individual houses. This will promote the appropriate segregation at source of domestic generated

waste from all residential units at the development. Waste bin storage areas shall be designed in a manner to ensure that appropriate signage for the correct waste disposal and recycling is available for residents.

The retail units, gymnasium and cafe shall have designated commercial waste bins for both general and recyclable waste which shall be stored within the boundaries of the retail building areas. Waste shall be collected on a weekly basis by an appropriately permitted commercial waste contractor.

### **3.10 MATERIAL ASSETS – UTILITIES**

Implementation of the measures outlined in Section 12.6 of the EIAR Volume II will ensure that the potential impacts of the proposed development on the sites material assets do not occur during the construction phase and that any residual impacts will be short term.

The overall volume of foul water discharging for treatment and disposal will increase due to the development of the lands. The development of the lands will be constructed in phases, with the final phase being completed circa 2023.

The volume of potable water for treatment and use will increase due to the development of the lands. The development of the lands will be constructed in phases.

The demand on power supply, gas supply and telecommunications supply will all increase due to the development of the lands. The development of the lands will be constructed in phases, with the final phase being completed within 5 years of the grant of planning permission.

### **3.11 ARCHAEOLOGY, ARCHITECTURE AND CULTURAL HERITAGE**

The Record of Monuments and Places (RMP) is a list of archaeological monuments known to the National Monuments Service. There are no RMP sites within the proposed development site. There are in excess of fifty RMP sites within 3km of the development area; of these a total of five RMP sites are located within an 800m radius of the proposed development.

Each City and County Development Plan is compiled in accordance with the requirements of the Planning and Development Act 2000 (as amended) and contains a Record of Protected Structures. Only two structures are located within 700m of the development area. A house “*St. Anne’s*” (WCC0224) is situated 600m south/south-east, and Mayfield House (WCC0259) is situated 700m to the south of the development area.

The northern half of the proposed development is located on a greenfield site currently in use for agricultural purposes, while the southern half is located on a brownfield site previously the location of the now demolished ‘Walsh Mushrooms’ industrial complex.

Analysis of satellite imagery and aerial photography is valuable in identifying archaeological features by the presence of ‘cropmarks’, ‘shadow-marks’ or ‘soil-marks’ which may represent the presence of earlier structures.

While no archaeological features are identifiable in aerial images of the site, the images do show the modern use and development of the site.

Ground reductions associated with a development of this kind have the ability to uncover and disturb hitherto unrecorded sub-surface features, deposits, structures and finds of archaeological interest and potential.

The proposed residential development site is confined within existing field boundaries, and all known areas of archaeological potential are located a substantial distance outside these boundaries. In some instances a development may change the surroundings of a heritage asset, thus impacting on its significance; this typically occurs in the form of visual impacts. However in this instance all recorded Archaeological and Architectural Heritage sites are separated from the development area either by Ramsfortpark Forest or by existing developments, which in turn will not be effected or altered by the proposed development. Therefore the operation phase of this proposed site within its larger development area is not predicted to impact upon any areas of cultural heritage significance.

The requirement that an archaeologist be present during the programmes of topsoil stripping will ensure that in the event of archaeological features being uncovered or archaeological artefacts being recovered, appropriate measures can be implemented in consultation with the requisite authorities.

### **3.11.1 Direct and Indirect Effects Resulting from Use of Natural Resources**

Details of significant direct and indirect effects arising from the proposed development are outlined in Chapters 6-15 which deal with 'Aspects of the Environment Considered'. No significant adverse impact is predicted to arise from the use of natural resources.

### **3.11.2 Direct and Indirect Effects Resulting From Emission of Pollutants, Creation of Nuisances and Elimination of Waste**

Details of emissions arising from the development together with any direct and indirect effects resulting from same have been comprehensively assessed and are outlined in the relevant in Chapters 6-15 which deal with '*Aspects of the Environment Considered*'. There will be no significant direct or indirect effects arising from these sources.

### **3.11.3 Forecasting Methods Used for Environmental Effects**

The methods employed to forecast the effects on the various aspects of the environment are standard techniques used by each of the particular individual disciplines. The general format followed was to identify the receiving environment, to add to that a projection of the "loading" placed on the various aspects of the environment by the development, to put forward amelioration measures, to lessen or remove an impact and thereby arrive at net predicted impact.

### **3.11.4 Technical Difficulties Encountered in compiling any specified information**

No particular difficulties, such as technical deficiencies or lack of knowledge, were encountered in compiling any of the specified information contained in this report such as that a prediction of impact has not been possible.

### **3.11.5 Interactions of the Foregoing**

In addition to the individual assessments of impacts on human beings, fauna and flora, soil, water, air, climate factors, the landscape and material assets, including architectural, archaeological and cultural heritage, the inter-relationships between these factors was also taken into account as part of the EIAR scoping and impact assessment. Where the potential exists for interaction between two or more environmental topics, the relevant specialists have taken these potential interactions into account when making their assessment and, where possible, complementary mitigation measures have been proposed. These are set out in Chapter 15 of the EIAR (Volume II).

## **4.0 CUMULATIVE IMPACTS**

Where relevant the EIAR also takes account of other development within the area. Each of the relevant specialists has considered the potential for cumulative impact in preparing their assessments. While there is the potential for negative impacts to occur during the construction stage of the scheme, with the implementation of the appropriate mitigation outlined in the EIAR, the residual cumulative impact is not considered to be significant. During the operational phase, there is potential for negative impact in relation to traffic, noise, visual impact & architectural heritage. However, it is considered that the operation of the scheme gives rise to an overall cumulative impact that will be neutral.

## **5.0 INTERACTIONS BETWEEN ENVIRONMENTAL FACTORS**

The purpose of this chapter of the EIAR is to draw attention to significant interaction and interdependencies in the existing environment. John Spain Associates in preparing and co-ordinating this EIAR ensured that each of the specialist consultants liaised with each other and dealt with the likely interactions between effects predicted as a result of the proposed development during the preparation of the proposals for the subject site and this ensures that mitigation measures are incorporated into the design process. This approach is considered to meet with the requirements of Part X of the Planning and Development Act 2000, as amended, and Part 10, and schedules 5, 6 and 7 of the Planning and Development Regulations 2001-2018. The detail in relation to interactions between environmental factors is covered in each chapter of the EIAR.

## **6.0 SUMMARY OF EIA MITIGATION AND MONITORING MEASURES**

This chapter of the EIAR provides a summary of all the mitigation and monitoring measures proposed throughout the EIAR document for ease of reference for the consent authority and all other interested parties.