

Environmental Impact Assessment Report

**Proposed Housing Development
Moneyduff and Oranhill, Oranmore
Co. Galway**

**Non-Technical Summary, Environmental
Impact Assessment Report
& Appendices**



Planning & Environmental Consultants

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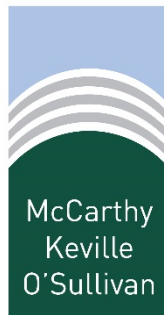
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NON-TECHNICAL SUMMARY

1. Introduction

This Environmental Impact Assessment Report (EIAR) has been prepared by McCarthy Keville O’Sullivan Ltd. (MKO) on behalf of Arlum Ltd., which intends to apply to An Bord Pleanála (ABP) under the Planning and Development Act 2000 (as amended by the Residential Tenancies Act 2016) for a strategic housing scheme located in the townlands of Moneyduff and Oranhill, Oranmore, Co. Galway.

The proposed site is located in the townlands of Moneyduff and Oranhill, approximately 590m south of the centre of Oranmore, Co. Galway.

The applicants, Arlum Ltd are the developers of the site and they have been involved in a number of similar developments in recent years. Arlum Ltd were established in 1999 and they were behind the development of the Palace Fields Development in Tuam (completed in 2006). They have also recently made a successful application for the development of 128 residential units at Ballygaddy Rd, Tuam. Arlum have employed an experienced Design Team to ensure that this development will be delivered to meet all the relevant planning, environmental and sustainability requirements.

Need for the Development

There is currently a significant shortage of housing units available for sale and occupancy in the area surrounding Galway City, and in particular in Oranmore. The rapidly increasing price of housing is a result of the shortage in supply, and many people will soon find themselves unable to afford a home. This problem is also aggravated by a lack of housing units available for the rental market also. The proposed development will contribute significantly to alleviating the shortage of housing supply in Galway and brings into use lands zoned specifically for that purpose.

In addition, the construction industry such as the subject development, make a significant contribution to economic development in Ireland. The recent upturn in the economy and thus the construction industry has led to an increase in demand for housing in the Oranmore area, which the proposed development will be able to provide for.

Purpose and Structure of this EIAR

The purpose of this EIAR is to document the current state of the environment in the vicinity of the proposed development site and to quantify the likely significant effects of the proposed development on the environment. The EIAR submitted by the applicant provides the relevant environmental information to enable the Environmental Impact Assessment (EIA) to be carried out by the competent authority.

The information to be contained in the EIAR is prescribed by statutory regulation. This EIAR has been prepared in accordance with the requirements of ‘Advice Notes on Current Practice in the Preparation of EIS’ (EPA, 2003) and the ‘Guidelines for Planning Authorities and An Bord Pleanála on Carrying out Environmental Impact Assessment’, published by the Department of the Environment, Community and Local Government (DECLG) in March 2013.

The Environmental Protection Agency (EPA) recently published its *'Draft Guidelines on the Information to be Contained in Environmental Impact Assessment Reports'* (EPA, August 2017), which are intended to guide practitioners during the transition to new Regulations transposing the updated Directive. These draft guidelines have also been used in the compiling of this EIA.

The EIA project team comprises a multidisciplinary team of experts with extensive experience in the assessment of similar developments and in their relevant area of expertise. Each chapter of this EIA has been prepared by a competent expert in the subject matter. The chapters of this EIA are as follows:

1. Introduction
2. Background to the Proposed Development
3. Description of the Proposed Development
4. Human Beings, Population & Human Health
5. Biodiversity, Flora & Fauna
6. Land, Soils and Geology
7. Hydrology and Hydrogeology
8. Air and Climate
9. Noise and Vibration
10. Landscape and Visual
11. Archaeology & Cultural Heritage
12. Material Assets (including Traffic and Transport)
13. Interactions of the Foregoing

A Natura Impact Statement has also been prepared in line with the requirements of the Habitats Directive, and will be submitted to the Planning Authority as part of the planning application documentation.

2. Background to the Proposed Development

The site of the development is located in the townland of Moneyduff and Oranhill, approximately 590m south of the centre of Oranmore, Co. Galway. *Where the 'site' is referred to in this Environmental Impact Assessment Report (EIA), this refers to the core Study Area for the assessments undertaken in order to prepare the EIA.*

The EIA study area measures approximately 8.7 hectares.

The development site is to be accessed from the existing roundabout constructed on the N67 road via the link road permitted on the land to the west of the application site.

The site is located immediately east of the Galway Bay Complex Special Area of Conservation (SAC) and Proposed National Heritage Area (pNHA) (site code 000268) and approximately 500 metres to the east of lands designated under the Inner Galway Bay Special Protection Area (SPA) (site code 04031). Cregganna Marsh SPA (site code 004142) and NHA is located approximately 300 metres south of the proposed application site.

The proposed development site does not contain any mapped watercourses.

The 'Guidelines for Planning Authorities on Sustainable Residential Development in Urban Areas'¹ and the accompanying 'Urban Design Manual: A Best Practice Guide'² (2009) set out the criteria on planning for sustainable neighbourhoods under four main themes, namely, provision of community facilities, efficient use of resources, amenity or quality of life issues and conservation of the built and natural environment.

The Guidelines advocate an urban design and quality-led approach to creating urban densities will be promoted, where the focus will be on creating sustainable urban villages and neighbourhoods. A varied typology of residential units is promoted within neighbourhoods in order to encourage a diverse choice of housing options in terms of tenure, unit size, building design and to ensure demographic balance in residential communities.

A scoping letter providing details of the application site and the proposed development, was prepared by McCarthy Keville O'Sullivan Ltd. and circulated on 1st June 2018 to agencies, NGOs and other relevant parties.

3. Description of the Proposed Development

The proposed development will consist of the following:

- 1) Construction of 212 no. residential units comprising:
 - 34 no. House Type A (four-bed semi-detached unit)
 - 54 no. House Type B (three-bed semi-detached unit)
 - 16 no. House Type C (four-bed detached)
 - 16 no. House Type D (three-bed terraced unit)
 - 24 no. House Type E (three-bed semi-detached unit with attic conversion)
 - 50 no. House Type G (25 no. two-bed ground floor duplexes and 25 no. two-bed plus study first/second floor duplexes)
 - 6 no. House Type H (two-bed duplex apartments)
 - 12 no. house Type J (two-bed terrace)
- 2) Development of a crèche facility (374 sqm) and associated outdoor play areas and car parking.
- 3) Provision of new vehicular and pedestrian site access from the North-South Oranmore Distributor Road (the route of which was permitted under An Bord Pleanála Reference PL 07.237219, which was extended under Pl Ref 15/1334).
- 4) Provision of shared communal and private open space, site landscaping, car parking, site services and all associated site development works.

Provision of shared communal and private open space, site landscaping, car parking, site services and all associated site development works.

The development site is adjoined by lands also in the ownership of the applicant which are part of the Galway Bay Complex Proposed Natural Heritage Area and Special Area of Conservation (000268). To the north of the development site are existing housing developments, Beech Park and Coill Clocha. There are historic castle tower remains (GA 095-084) within the development site which are to be protected via an exclusion zone and will be incorporated within the public open space.

¹ Available on: <http://www.housing.gov.ie/sites/default/files/migrated-files/en/Publications/DevelopmentandHousing/Planning/FileDownload,19164,en.pdf>

² Available on: <http://www.housing.gov.ie/sites/default/files/migrated-files/en/Publications/DevelopmentandHousing/Planning/FileDownload,19216,en.pdf>

Views to the castle mound from the north west are also to be maintained. There are no existing buildings or structures on the development site other than these castle remains.

The development site is to be accessed from the existing roundabout constructed on the N67 road. To the west of the development site is the site of a proposed hotel and 161 dwelling housing development (granted 1st December 2010, planning ref. PL 07.237219 / P09/1925) which is not yet constructed. Included in the application is the provision of the access road from the existing roundabout on the N67 and the provision of the north - south road which straddles the boundary between the site of this application and the site to the east. Pedestrians and cyclists will also have access through the existing road which links the Coill Clocha Estate with Oranmore.

It is anticipated that the development will be completed over 4 separate phases, and the access and egress routes will change for the various phases. As some of the houses will be occupied during the later phases, Traffic Management procedures will be implemented to ensure the safety of the users of the access routes, for both the residential access and the construction access.

There are historic castle tower remains within the development site which are to be protected via a 20m exclusion zone.

In general, the hours in which vehicles will arrive and depart will coincide with the expected site working hours of 8.00am to 7.00pm in the evening from Monday to Friday, and 8:00am to 2:00pm on Saturday.

Soil stripping and temporary stockpiling of soils and subsoils will be required around the site as the proposed development progresses. One temporary construction compound is proposed for the construction phase of the proposed development, located inside the development site entrance. The proposed temporary compound area incorporates temporary site offices, staff facilities and car-parking areas. Prior to completion of works on the development site, the landscaping works will be carried out. The finishes include areas of amenity grassland, footpaths and tree planting. This work will be carried out before the completion of each phase in order to ensure that the development will be aesthetically pleasing place for residents to live.

Detailed construction methodologies with mitigation measures are given in Section 3.5 of this EIAR for works including site roads, soil stripping, excavations and building. Details are also given to control invasive species.

4. Human Beings, Population & Human Health

One of the principle concerns in the development process is that people, as individuals or communities, should experience no diminution in their quality of life from the direct or indirect impacts arising from the construction and operation of a development. Ultimately, all the impacts of a development impinge on human beings, directly and indirectly, positively and negatively. The key issues examined in this section of the EIAR include population, human health, employment and economic activity, land-use, residential amenity, community facilities and services, tourism, property values, noise and health and safety.

Information used in this study was sourced from the Census of Ireland 2006, 2011 and 2016, which is the most recent census, the Census of Agriculture 2010 and from the CSO website, www.cso.ie. Census information is divided into Republic of Ireland,

Galway and Electoral Divisions (ED). The 2016 census data for the Republic of Ireland was consulted as part of the assessment process, and upon comparison with the relevant 2011 data, was found to be consistent. Although, as shown in Chapter 4; between 2006 and 2016 there has been a steep increase of approximately 3000 people, as represented in the census data.

The proposed development site is located in southeast Co. Galway, approximately 590m southeast of the village of Oranmore and 8km southeast of Galway City Centre. In order to make inferences about the population and other statistics in the vicinity of the proposed development site, the Study Area for the Human Beings & population section of this EIAR was defined in terms of the Electoral Divisions (EDs) within Galway. The proposed development lies within Clarinbridge ED and is adjacent to Oranmore ED. The total Study Area (for the purposes of the Human Beings assessment) has a combined population of 7,844 persons, and comprises of a total land area of 51.25 square kilometres.

The population density of the Study Area recorded during the 2016, 2011 and 2006 Census' was 315, 307 and 205 persons per square kilometre respectively. As noted previously there has been a substantial increase in population between 2006 and 2011.

The number of households in the Study Area are in line with that observed in the Republic and County Galway during the 2011 census period. The levels of employment within the Employers and Managers, Higher Professional, Lower Professional, Non-Manual, Skilled Manual, Semi-skilled and Own account in the Human Beings Study Area were higher than those recorded for the State, while those recorded within the Unskilled, Farmer, Agricultural Workers and Other categories were lower. In comparison to County Galway, results were similar except within for example, Higher Profession, Lower Professional and Non-manual where the biggest differences of 5%, 3.7% and 4.1% are evident respectively.

The total area of farmland within the Study Area for the Human Beings assessment measures approximately 3,002 hectares or 58.6% of the Study Area, according to the CSO Census of Agriculture in Ireland 2010. There are 119 farms located within the Study Area, with an average farm size of 25.2 hectares. This is just below the average farm size of 25.8 hectare for County Galway as a whole. Within the Study Area, farming employs 227 people, and the majority of farms are family-owned and run.

The nearest settlement to the site of the Proposed Development is Oranmore, located 590m from the proposed development site, in which the main services are located. The nearest primary school to the boundary of the site of the Proposed Development is Scoil Na Ngasur, Oranmore, located 380m to the northwest of the Proposed Development. The closest secondary school to the proposed site is Calasanctius College, which lies approximately 700 metres northwest of the site. The majority of amenities and community facilities, including GAA and other sports clubs, youth clubs and recreational areas available in the area are located in the surrounding area of Oranmore. Retail and personal services within the vicinity are provided here as well as in nearby Galway City Centre.

Ireland is divided into eight tourism regions. The West region, in which the proposed residential site is located, comprises Counties Galway, Mayo and Roscommon. This Region benefited from approximately 13% of the total number of overseas tourists to the country and approximately 12% of the associated tourism income generated in Ireland in 2016.

There are no other tourist attractions pertaining specifically to the site of the Proposed Development. The nearest tourist attractions within proximity of the proposed development is Oranmore Castle, which is located approximately 850m to the northwest of the site.

Impacts on human beings during the construction and operational phases of the proposed development are described in Chapter 4 of this EIAR in terms of health and safety, employment and investment, population, land-use, noise, dust, traffic and tourism. Where a negative impact was identified, the appropriate mitigation measure is also described in this section of the EIAR and will be put in place to ensure that there will be no adverse impacts on human beings within the Study Area. A cumulative impact assessment was also carried out. Following consideration of the residual effects (post-mitigation), the proposed development will not result in any significant effects on human beings, population and human health.

5. Biodiversity

Dedicated ecological surveys of the proposed development were undertaken on the 8th of September 2016 and the 16th of August 2017. Habitats within the site were classified according to the guidelines set out in 'A Guide to Habitats in Ireland' (Fossitt, 2000), which classifies habitats based on the vegetation present and management history. The presence or signs of birds, mammals, amphibians and reptiles were noted during the visit. Detailed winter bird usage surveys were undertaken both within the site red line boundary and surrounding area. Surveys were undertaken at the site over six dates; 23rd of October 2018, 30th of November 2018, 16th of December 2018 and 30th of January 2019, 22nd of February and 21st of March. In addition, dedicated otter and bat surveys were completed over the 8th and 9th of April 2019. Surveys of the adjacent fen were undertaken on the 13th of December 2018, and on the 9th of April 2019.

The site was found to be recently grazed by horses. However, no animals were present at the site on the day of either survey. This fields appear to have been subject to some reclamation in recent years and is heavily grazed, supporting a short sward with some areas of bramble and blackthorn scrub. The larger eastern section of the site was found to be predominantly overgrown by scrub species including blackthorn, bramble and bracken with some ash, willow, whitebeam and alder trees becoming established across the site. The survey found that the site supports discontinuous sections of EU Habitats Directive Annex I habitat – Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco – Brometalia). These were dispersed throughout the site, primarily within fields to the east, northeast and southeast of the development boundary. The total combined area of Annex I habitat covers a small proportion of the site, 0.89 hectares or 10.3% of the development area (8.7ha). These areas occur in disjointed patches which are threatened by scrub encroachment. Given the nature and extent of scrub encroachment surrounding the smaller areas, these areas are not considered to be 'viable areas' of Annex I habitat.

A Landscape Master Plan has been prepared for the site in consultation with the project ecologist to best facilitate positive habitat and biodiversity enhancement measures. The Landscape Master Plan includes the sowing of a native wildflower seed mix around the western periphery of the site and within the archaeological protection zone green space around Moneyduff Castle to create a semi-natural meadow habitat. The native wildflower meadow will result in the creation of 0.7 hectares of semi-natural meadow habitat during the lifetime of the development and

will create a natural buffer between the development and the Special Area of Conservation to the west of the site. The loss of calcareous semi-natural dry grasslands will be mitigated by the creation of the wildflower meadow areas Habitats that support higher biodiversity value i.e., hedgerows and treelines will be retained where possible and replaced where not possible. The tree line along the western boundary of the site will be retained and enhanced. In addition, the Landscape Master Plan for the site provides for the replacement of the hedge along the eastern boundary along with supplementary planting of native tree and shrub species that will create and enhance hedgerows and treelines. This will ensure that connectivity is maintained for commuting and feeding faunal species including birds, bats and invertebrates.

The field surveys found no evidence of protected faunal species or other species of conservation concern within the site boundary. Based on the findings of the desk study and site visits, the species recorded within the site and the habitat composition, the development boundary does not provide significant suitable habitat for protected species. It is likely that mammals including fox and other species such as pygmy shrew utilise the site on occasion. These species have widespread and favourable ranges in Ireland and alternative suitable habitats are widespread in the area. The proposed housing development will not result in any significant residual impacts in terms of disturbance to fauna. Following detailed winter bird surveys of the site and surrounding area (including Cregganna Marsh SPA and Inner Galway Bay SPA), the site of the proposed development was shown to not provide suitable supporting habitat for SCI species for which nearby SPAs have been designated. In addition, no SCI species were recorded feeding or roosting within the proposed development site boundary during winter bird surveys undertaken between October and March 2019.

No significant effects on surface water quality, groundwater quality or the hydrological/hydrogeological regime were identified during either construction nor operation.

Provided that the proposed development is constructed and operated in accordance with the design, best practice and mitigation that is described within this application, significant impacts on ecology are not anticipated.

6. Land, Soils and Geology

The geology of the proposed development site has been characterised using desk study and walkover survey data. Ground conditions beneath the site comprise outcropping rock and a variable thickness of peat in the southwest of the site. The overall local topography generally slopes from east to west with the mounds of deposited fill creating artificial high points around the site.

The development site is underlain by the Burren Formation which, at the proposed development site, comprises Dinantian Pure Bedded Limestones (DPBL). The bedrock at the site could be classified as “Low” importance. The bedrock could be used on a “sub-economic” local scale for construction purposes.

There are no known areas of soil contamination on the site. During the site walkovers, no areas of particular contamination concern were identified. There are no recorded Geological Heritage sites within the proposed development area.

The excavated soil and bedrock material will be used for landscaping and infill at the site. Aggregate will also be imported during the construction phase.

An assessment of the construction and operational phases of the development have been completed, along with a cumulative assessment for the development. An assessment of the potential health effects in relation to soils and geology has also been undertaken. Based on the above, and with implementation of the outlined mitigation measures, no significant impacts on human health and the soils and geology environment are predicted to occur.

7. Hydrology and Hydrogeology

The hydrology and hydrogeology aspects of the site has been characterised using desk study information and detailed site walkover completed in January 2018.

On a regional scale, the site is located within Hydrometric Area 29. The site is located in the Galway Bay South East catchment.

The Millplot Stream flows west from the land to the west of the proposed site, and continues west, discharging into Oranmore Bay ~295m downstream. The Proposed Development site does not contain any mapped watercourses.

There will be no discharge of surface water from the site during construction or operation and all water will be discharged to ground within the site boundary. All discharge to ground will pass via silt traps and a hydrocarbon interceptor.

A detailed flood risk assessment has been completed for the development. House floor levels have been set using local flood data and combined CFRAM and tidal modelling data. All floor levels are above 5.1mOD. All houses within the development are located in Flood Zone C.

The bedrock, which underlie the site are classified as a Regionally Important Aquifer (Rkc). The vulnerability of the aquifer underlying the site is classified as predominately “Extreme”. This suggests that the bedrock is at or close to the surface, which is consistent with site surveys.

The Clarinbridge Groundwater Body which underlies the proposed site has an assigned ‘At Risk’ status, which applies to both quantitative status and chemical status.

There are no groundwater protection zones mapped within the proposed development site or study area. There are no mapped private well locations within 2km. No groundwater wells would be expected in the area, given the proximity to the sea.

Due to the nature of residential developments, being near surface construction activities, impacts on groundwater are generally negligible and surface water is generally the main sensitive receptor assessed during impact assessments.

The primary risk to groundwater at the site would be from cementitious materials, hydrocarbon spillage and leakages. These are common potential impacts on all construction sites (such as road works and industrial sites). All potential contamination sources are to be carefully managed at the site during the construction and operational phases of the development and mitigation measures are proposed below to deal with these potential minor impacts.

Surface water drainage measures, pollution control and other preventative measures have been incorporated into the project design to minimise significant adverse impacts on water quality and downstream designated sites.

The surface water drainage plan will focus on silt management using silt fences, and silt bags, and to control runoff rates. The key surface water control measure is that there will be no direct discharge of development runoff into local watercourses. This will be achieved by avoidance methods and design methods (i.e. surface water drainage to soakaways).

Preventative measures during construction include fuel and concrete management and a waste management plan which will all be incorporated into the Construction and Environmental Management Plan for the development.

An assessment of the construction and operational phases of the development have been completed, along with a cumulative assessment for the development. An assessment of the potential health effects in relation to water and hydrology has also been undertaken. Based on the above, and with implementation of the outlined mitigation measures, no significant impacts on human health and the water environment are predicted to occur. There will be no net impact on the local hydrological regime, groundwater levels, or groundwater flowpaths during the construction and operational phase of the proposed development. There will be no direct or indirect hydrological impacts on the fens (which form part of the Galway Bay SAC) east of the N18. There will be no direct or indirect hydrological impacts on the Cregganna Marsh NHA. No significant cumulative impacts on groundwater or designated sites are anticipated.

8. Air and Climate

The Proposed Moneyduff residential Development site, which is approximately 8.7 hectares, is located just outside Oranmore (approximately 590m from the town). Due to the nature of the development, the general character of the surrounding environment and publicly available information on air quality, air quality sampling, was deemed to be unnecessary for this Environmental Impact Assessment Report (EIA).

The Environmental Protection Agency (EPA) has designated four Air Quality Zones for Ireland:

- Zone A: Dublin City and environs
- Zone B: Cork City and environs
- Zone C: 16 urban areas with population greater than 15,000
- Zone D: Remainder of the country.

These zones were defined to meet the criteria for air quality monitoring, assessment and management described in the Framework Directive and Daughter Directives. The site of the proposed development lies within Zone D, which represents rural areas located away from large population centres.

The ambient air quality monitoring carried out closest to the subject site is at Bohermore in Galway City. This monitoring location lies within Zone C however, which comprises urban areas with populations greater than 15,000. The air quality in the vicinity of the proposed development site is typical of that of rural areas in the west of Ireland, i.e. Zone D. Within Zone D, the monitoring station located closest to the development site is the Mace Head Atmospheric Research Station, which lies near Carna, approximately 65km west of the site. Lower measurement values for all air

quality parameters would be expected for the proposed development site as it lies in a rural location, within Zone D.

County Galway has a temperate oceanic climate, resulting in mild winters and cool summers. The prevailing wind direction is between south and west which bring moist air and frequent rain. According to Met Éireann, the average number of wet days per year in the west of Ireland is 225. The wettest months are December and January and April is usually the driest. July is the warmest month with an average temperature of 15.7° Celsius.

9. Noise and Vibration

The proposed development site directly adjoins Beech Park and Coill Clocha residential estates. Approximately 15 dwellings here back onto the northern end of the site, and the dwellings thus lie within 10 m of the boundary. At two locations, the site boundary approaches within 100 m of Orancourt receptors. Apart from these, no other receptors of significance are located in the vicinity of the site. No particularly vulnerable receptors such as nursing homes are located in proximity.

The soundscape in the vicinity of receptors surrounding the proposed development site was characterized through an ambient noise survey undertaken Thursday 31.05.18. As proposed construction activities will be undertaken during daytime only, the survey was confined to daytime hours. Recorded data indicate that local and distant road traffic dominates the soundscape. Data were applied in the determination of a 65 dB LAeq 1 h construction phase noise criterion.

There will be no onsite noise sources following commissioning of the proposed development, other than those typically arising from a residential estate. The assessment focuses on noise sources arising during the construction phase.

Predictive modeling indicates that noise levels at the nearest receptors attributable to construction operations will not exceed the 65 dB LAeq 1 h criterion, subject to mitigation requirements identified in the report.

10. Landscape and Visual

Chapter 10 of the EIAR assesses the likely significant landscape and visual effects of the proposed development. It assesses these effects on both the site itself and the wider landscape within 2km of the proposed development site.

The proposed residential development is within a green field previously used for agricultural. There is evidence of previous site clearance and levelling apparent. The surrounding area is residential in nature immediately to the north and south of the proposed development site, while lands adjoining the site to the east and west are green field sites.

In order to carry out this assessment, a desk study was undertaken which identified relevant policies and guidelines, both at national and local level. This includes policies on urban and rural development, landscape and landscape character, designated landscapes and protected views, for County Galway and within 2km of the site. Site visits were undertaken to assess the nature and character of the receiving landscape.

In summary, the proposed development is located in a green field of previous agricultural use. The site is identified as an area that is zoned for residential development. The surrounding area is residential in nature immediately to the north

and south of the proposed development site, while lands adjoining the site to the east and west are green field sites. The local topography of the study area is predominantly flat with some slight local variation to the west of the site and sloping from the centre of the site to the west periphery. The site was generally dominated by rough grassland, with evidence of scrub and bare ground in places. Hedgerows line the boundaries of the site and are evident in patches throughout the site also. Some single standing trees were also seen while on site. Overburden onsite has revegetated naturally with grasses. In the vicinity of the site, landcover is similar, with surrounding agricultural greenfield sites being evident to the east and west of the proposed site. The site is not in active use and represents a green field, which was previously used for agriculture. Historic site clearance and levelling is apparent. Land-use in the wider landscape is a combination of medium-density residential development and green field sites, where residential developments are visible in all directions from the surrounding site.

As part of the assessment, 7 viewpoint photos were taken to so as to represent a variety of views within 2 kilometres of the site. The choice of viewpoint locations is influenced by both the views available and the type of viewer. These include viewpoint locations from or close to local settlements, such as VPs 1, 2 and 5 as well as locations on regional and local roads at varying distances from the site. Care was taken to provide a range of views from various elevations, distances and orientations.

The Landscape Master Plan, prepared by Cunnane Stratton Reynolds, has been well designed and will provide an attractive setting for the housing development. Existing trees and hedges are to be retained along the western site boundary and complemented by a wide strip of open informal public space running the length of the western boundary. This will provide significant screening to this side of the development and soften the transition from the urban character of the housing development to the adjacent SAC to the west. All residential roads have been designed with street trees and there are more formal ornamental open spaces away from the western boundary.

Landscape Effects

The landscape effects of the proposed development are described in relation to both effects on the wider landscape character and effects on the landscape of the site. In summary, the proposed development is located in a green field of previous agricultural use. The site is identified as an area that is zoned for residential development. The proposed development site is located within the Galway County Development Plan's designation; LCA 13 - East Galway Bay (Oranmore to Kinvarra Bay and inland to N18). This area is characterised as having an 'intimate and sinuous' coastline with the landscape adjacent to the coast comprising pastureland in large fields bordered by mature hedgerows. The subject site is also classified in the Galway County Development Plan as being located within an area of Medium landscape sensitivity.

However, the site is within 700m of an extensive area classed as of Low value, which is located on the eastern side of the N67.

In Viewpoint 3 significant landscape elements, such as boundary trees and hedges seen to the right of this viewpoint are to be retained and the new elements that are being introduced such as a new footpath leading into a public open space with grass and groups of specimen trees to the left of the path and native woodland understory trees and shrubs to the right are in keeping with the character of the existing landscape character. Changes to the landscape will be minor in Viewpoints 4, 6 and 7. Due to the landscape degradation seen in Viewpoint 5 the proposed as part of the development are seen as improving the landscape. The rural nature of the landscape

will change slightly in Viewpoints 1 and 2, due to the introduction of more urban elements within these views.

The overall likely landscape effect of the proposed development is considered to have a Permanent, Negative and Not Significant to Moderate Impact.

Visual Effects

The site of the proposed development is in most places well screened from the surrounding areas in general. While the proposed development will be visible from some views in the immediate vicinity, particularly from the south-west, as seen in Viewpoint 3, it is not visible over a significant area. The subject site will be visible intermittently from roadways to the west. Extensive planting of trees and shrubs as part of the proposed landscape masterplan will help to visually integrate and partially screen the proposed buildings.

The views will be slightly modified, but on a localised level.

Overall the visual impact is deemed Permanent, Negative and Not Significant to Moderate. The proposed development is in keeping with its zoning status and the emerging trends of development proposed in the vicinity.

11. Archaeological & Cultural Heritage

The proposed development site is located in Moneyduff townland, on the southern outskirts of Oranmore, Co. Galway. This impact assessment was compiled by Richard Crumlish, Consultant Archaeologist, B.A., M.I.A.I. and consisted of the necessary research/desktop study, a walkover survey of the site on 2nd November 2017 and subsequent pre-development testing of the proposed development site between 26th and 29th March 2018.

The consultation of the Record of Protected Structures (RPS) for County Galway has shown that there are no protected structures within or in the immediate area of the development site area with the two nearest (RPS Nos. 920 and 923) located c. 300m away. Consultation of the Record of Monuments and Places (RMP) for County Galway and the National Monuments Service web-site (www.archaeology.ie) has shown 29 recorded monuments located within 1km of the development with one monument (RMP No. GA095-084), the site of Moneyduff Castle, located within the proposed development site. The next nearest recorded monuments, a holy well (RMP No. GA095-083) and a house (RMP No. GA095-105), are both located c. 140m away. Pre-development testing of the proposed development site in March 2018 (Excavation Licence No. 18E0132) revealed two features of potential archaeological significance. Two further licensed excavations in the vicinity revealed nothing of archaeological significance. There are no entries in the Topographical Files of the National Museum of Ireland for Moneyduff townland. Consultation of the relevant cartographic sources and available aerial photographs complimented the information contained within the RPS and the RMP for Co. Galway. No further features of cultural heritage significance were uncovered during research of the cartographic sources and aerial photos. The walkover survey of the site area revealed no further archaeological features with approximately 50% of the site area subject to field clearance with levels clearly reduced.

In terms of potential direct effects, the pre-development testing (Excavation Licence No. 18E0132) suggests that the undisturbed half of the proposed development site may contain potential sub-surface archaeological features, deposits and/or artefacts, possibly associated with the nearby site of Moneyduff Castle (RMP No. GA095-084),

however, the proposed development should pose no adverse effects on the Cultural Heritage of the wider area given the distance to the nearest recorded monuments and protected structures.

In terms of potential indirect effects, the proposed development will adversely impact on the monument setting rather than the actual monument (RMP No. GA095-084). The proposed development should have no adverse visual effect on the Cultural Heritage of the wider area given the distances to the nearest recorded monuments and protected structures.

The mitigatory measures include an exclusion zone of 20m which is to be established around the site of Moneyduff Castle (RMP No. GA095-084), within which no development shall take place. The proposed exclusion zone should help mitigate any adverse visual impact with views of the monument maintained as much as is practical within the proposed development at the site. A conservation and management plan for the monument (RMP No. GA095-084), which is included as Appendix 11.3, has recommended conservation of the castle site. The remaining mitigatory measures are that the stripping of topsoil in advance of the proposed development within a radius of 30m of the exclusion zone around the recorded monument (RMP No. GA095-084) be monitored by a suitably qualified archaeologist and that the two features of possible archaeological significance, uncovered during pre-development testing of the proposed development site, be fully excavated.

12. Material Assets

Introduction

The purpose of this section is to provide an analysis of the expected volumes of traffic that will be generated by the proposed development and assess the impact of the operational capacity of the road network in the vicinity of the development. Extensive scoping discussions have been held with Galway County Council on the traffic implications of the proposed development, site layout and subsequently, aspects of the site layout have been altered as required to ultimately provide a high quality, safe and attractive housing development for the Oranmore area.

Existing Environment

The development site is a greenfield site located in Moneyduff, Oranmore in Co. Galway. The site is bounded to the East and West by existing greenfield sites. The site is also bounded by existing residential housing estates, Coill Clocha to the North and Orancourt/ Oranhill to the South.

To the east of the site is the N67 National Route (formerly the N18). An existing roundabout junction, known as the Rocklands junction, has previously been constructed to facilitate access to zoned lands. To the west, the Maree Road (local Road) serves access to the Orancourt/ Oranhill housing development. To the north, the L-4103 (Local Road) serves access from the N67 National Route, to Oranmore town centre and the Coill Clocha Housing Estate.

Access to the proposed development is to be facilitated via the road infrastructure proposed as part of an adjoining committed development, as already permitted. The development, including the road network infrastructure, has previously been granted planning permission under Galway County Council (GCC) Planning Reference 09/1925 and as extended under GCC PR 15/1334.

Proposed Development

The proposed development is suitably located close to a number of amenities located in the town of Oranmore including, schools, shops, sports facilities etc. The majority of these amenities are within a 10 min walk of the proposed development. The area of Oranmore also offers an excellent variety of public transport option with the nearest bus stop 10 min walk and has connections to Galway city. Additionally, the Oranmore rail station is approximately 7 min drive or 33 min walk from the proposed Development.

It should be noted that due to the significant reduction in traffic volumes on the N67 since September 2017, as a result of the opening of the new M18 motorway, any increase in volumes on the N67 as a result of the proposed development will not have a significant impact.

Mitigation Measures

The proposed development has integrated a number of measures in line with the relevant standards and guidelines, such as DMURS 2013 and the National cycle Manual, which promotes the use of sustainable travel to and from the site. The Road safety audit carried out for the site allowed the design team to address any concerns initially flagged in the road safety audit. A continued and collaborative approach with the road safety auditors meant that a desirable and safe site layout could be achieved without negatively impacting the overall quality of the development.

13. Interaction of the Foregoing

Chapters 4 to 12 of this EIAR identify the potential significant environmental effects that may occur in terms of Human Beings, Population and Human Health, Biodiversity, Flora and Fauna, Land, Geology and Soils, Hydrology and Hydrogeology, Air and Climate, Noise and Vibration, Landscape and Visual, Archaeological and Cultural Heritage and Traffic and Transportation, as a result of the proposed development. All of the potential significant effects of the Proposed Development and the measures proposed to mitigate them have been outlined in the preceding sections of this EIAR. However, for any development with the potential for significant environmental effects there is also the potential for interaction between these potential significant effects. The result of interactive effects may exacerbate the magnitude of the effects or ameliorate them, or have a neutral effect.

A matrix is included in Section 13 of the EIAR to identify interactions between the various aspects of the environment already assessed in the EIAR. The matrix highlights the occurrence of potential positive or negative effects during both the operational phases of the Proposed Development. Interactions have been identified between effects on Population and Human Health and effects on Noise and Vibration, Air and Climate, Hydrology and Hydrogeology and Landscape. Interactions have been identified between effects on Biodiversity, Flora and Fauna with effects on Soils and Geology, Hydrology and Hydrogeology, Noise and Vibration, and Landscape. Interactions have been identified between effects on Soils and Geology with effects on Hydrology and Hydrogeology. Interactions have been identified between effects on Air and Climate with effects on Material Assets.

Where any potential interactive effects have been identified, appropriate mitigation is included in the relevant sections (Sections 4-12) of the EIAR.