

EIAR Volume 1

Non Technical Summary

Proposed Residential Development

**Lands at Tinakilly,
Rathnew,
County Wicklow**

On behalf of

Keldrum Limited

August 2023

RECEIVED: 14/08/2023



Planning & Development Consultants

63 York Road,
Dun Laoghaire,
Co. Dublin

www.brockmcclure.ie

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RECEIVED: 14/08/2023

1 INTRODUCTION

Overview of Site

This section of the Environmental Impact Assessment Report has been prepared by Brock McClure Planning and Development Consultants on behalf of the applicant, Keldrum Limited, to accompany a planning application for a residential development at Tinakilly, Rathnew, Co. Wicklow, submitted to Wicklow County Council.

Keldrum Limited intend to apply to Wicklow County Council for a Large-Scale Residential Development at this site at Tinakilly, Rathnew, Co. Wicklow. The application site (comprising c. 16.8ha) is principally located at Tinakilly, Rathnew, Co. Wicklow (the site is bounded to the north by an existing stream and agricultural lands, to the east by Tinakilly County House Hotel (which is a protected structure RPS No. 25-15) to the immediate west by agricultural lands and residential development and to the south by Tinakilly Avenue and a site currently under development as granted by Wicklow County Council Reg Ref. 17/219 (ABP Ref.310261-18) and amended by WCC Reg Refs. 20/1000, 21/411 and 22/837) as shown on figure 1 below:



Figure 1 – Application Site Area

The development will consist of a residential development, public park and road infrastructure. 352 no. units are proposed, comprising 220 no. new residential houses and 132 no. new apartment/ duplex/ maisonette units, detailed in chapter 2 Development Description and the accompanying Non-Technical summary of same.

Content of Environmental Impact Assessment Report

This EIA report has been prepared in accordance with the most relevant guidance including but not limited to:

- EIA Directive (2011/92/EU) as amended by EIA Directive (2014/52/EU)
- Planning and Development Act 2000 (as amended)
- Planning and Development Regulations 2001 (as amended)
- Guidelines for Planning Authorities and An Bord Pleanala on carrying out Environmental Impact Assessment (Department of Housing, Planning and Local Government, 2018).
- Guidance on preparation of the Environmental Impact Assessment Report (European Union, 2017)

- Guidelines on the Information to be contained in Environmental Impact Assessment Reports (EPA, 2022).

Pursuant to EIA Directive, (Article (5) 1 of Directive 2014/52/EU), this EIAR specifically contains:

- A description of the project comprising information on the site, design, size and other relevant features of the project;
- A description of the likely significant effects of the project on the environment;
- A description of the features of the project and/or measures envisaged in order to avoid, prevent or reduce and if possible, offset likely significant adverse effects on the environment;
- A description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the project on the environment.
- A description of the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be effected or the use of natural resources;
- A non-technical summary of the information referred to in points (a) to (d); and
- Any additional information specified in Annex IV relevant to the specific characteristics of a particular project or type of project.

Impacts arising from the existence of the proposed development, the use of natural resources, the emission of pollutants, the creation of nuisances and the elimination of waste are described as direct, indirect, secondary, cumulative, short and long term, permanent and temporary, positive and negative, as appropriate.

Competency and Project Team

An Environmental Impact Assessment Report must be prepared by competent experts. The applicant, Keldrum Limited, approached Brock McClure Planning and Development Consultants to direct and co-ordinate the preparation of the EIAR. A team of qualified experts has prepared each individual chapter of the report. Contributing consultants to this EIAR are as follows:

- Brock McClure Planning and Development Consultants
- CS Consulting Group
- Scott Cawley Ltd
- AWN Consulting
- Macroworks
- IAC Archaeology

Structure of Environmental Impact Assessment Report

The EIAR is presented in 3 no. volumes as follows:

- Volume 1 – Non-Technical Summary
- Volume 2 – Environmental Impact Assessment Report
- Volume 3 – Appendices to Environmental Impact Assessment Report

2 DESCRIPTION OF DEVELOPMENT

This chapter provides a description of the site, receiving environment and the proposed development.

Description of the site

The application site is bounded to the north by an existing stream and agricultural lands, to the east by Tinakilly County House Hotel (which is a protected structure RPS No. 25-15) to the immediate west by agricultural lands and residential development and to the south by Tinakilly Avenue and a site currently under development as granted by Wicklow County Council Reg Ref. 17/219 (ABP Ref.310261-18) and amended by WCC Reg Refs. 20/1000, 21/411 and 22/837.

The site is on the northern periphery of Wicklow Town, with Wicklow town main street approximately 2 km to the south. It is also adjacent to Rathnew, a small village, approximately 350 metres to the west of the subject site.

The site is also located approximately 46km south of Dublin City Centre and 71 km from Dublin International Airport. The lands are proximate to the M11, which link Dublin with Wexford and Rosslare Harbour.

To the south, the site is bound by the existing Tinakilly Avenue, an access road, which leads to Tinakilly House. Tinakilly House is located immediately southeast of the site and currently operates as a country house hotel. A farm with agricultural land (predominantly arable) lies to the north-east of the site. To the north-east, the site is bound Knockrobin Glamping. Beyond the campsite, there is predominantly agricultural land further east. Further to the east (480m), there is a tidal Lough 'Broad Lough' which is separated from the Irish Sea (1.0km) by a spit of sandy land (the Murough). A number of industrial facilities and a wastewater treatment plant are located on the spit.

To the south, the site is bound by a mix of residential houses and apartments, which are currently under construction under Reg Ref. 17/219 (ABP Ref.310261-18) and amended by WCC Reg Refs. 20/1000, 21/411 and 22/837.

Further north of the site, there are agricultural lands (predominantly arable) and a farm. There is also greenfield land to the west of the site with a large residential development within Rathnew Village located approximately 120 metres to the west of the site further beyond such fields.

Proposed Development

Keldrum Limited intend to apply to Wicklow County Council for a for a Large- Scale Residential Development at this site of c. 16.8ha. The application site is bounded to the north by an existing stream and agricultural lands, to the east by Tinakilly County House Hotel (which is a protected structure RPS No. 25-15) to the immediate west by agricultural lands and residential development and to the south by Tinakilly Avenue and a site currently under development as granted by Wicklow County Council Reg Ref. 17/219 (ABP Ref.310261-18) as amended by WCC Reg Refs. 20/1000, 21/411 and 22/837. The site masterplan layout is shown on figure 2 below:



Figure 2 – Site Masterplan Layout

Construction of 352 no. residential units as follows:

220 no. 1-2.5 storey houses comprising 31 no. 2 bed houses, 114 no. 3 bed houses, 72 no. 4 bed houses and 3 no. 5 bed houses, ranging in size from c.82.33 sq.m to c.212.39 sq.m. Each house will have an associated rear/ side private garden.

132 no. apartment/ duplex/ maisonette units comprising the following: 56 no. 1 bed apartments and 48 no. 2 bed apartments in 3 no. 4 storey apartment block buildings. 8 no. 1 bed maisonette units in 2 no. 2 storey semi detached blocks. 14 no. 2 bed duplex ground floor apartment units and 14 no. 3 bed upper floors duplex apartment units arranged across 3 no. 3 storey terraced blocks, ranging in size from c.48.4 sq.m to c.109 sq.m. All apartment/ duplex/ maisonette units will be provided with private open space areas in the form of balconies/ terraces.

Communal open space associated with the proposed apartment units will be provided in the form of landscaped areas located in the vicinity of the apartment units (totalling 0.1788 ha).

All internal residential access roads and cyclist/pedestrian paths serving the proposed development.

Provision of 592 no. car parking spaces across the development site and 168 no. bicycle parking spaces for residents of the proposed 56 no. 1 bed and 48 no. 2 bed apartment units. 66 no. visitor bicycle parking spaces are provided throughout the development site. All terraced houses and duplex 2 and 3 bed apartments will be provided with associated secure in curtilage bicycle lock ups.

Proposed pedestrian connections and landscaping to a section of Tinakilly Avenue included in permitted application WCC Ref. 22/837.

The proposed development will connect to the Tinakilly Park residential development and Rathnew Village via a new section of the Rathnew Inner Relief Road. The proposed road will join the constructed/under construction elements permitted under WCC Ref. 17/219/ ABP Ref. PL27.301261 and amended under WCC Ref. 22/837 to the south with a section of the link road to the northwest of the site at the R761 roundabout in Rathnew granted under

WCC Ref. 21/1333. This includes all associated vehicular and pedestrian accesses, carriageways, paths and junctions.

No proposed works to Tinakilly Country House Hotel (a protected structure Reference No. 25-15) save for works to close the western portion of Tinakilly Avenue to vehicular traffic and the provision of a new vehicular entrance and gates along the eastern portion of Tinakilly Avenue off the Rathnew Inner Relief Road to facilitate access to Tinakilly House and other properties to the east of the site accessed from Tinakilly Avenue.

All associated site development works, services provision, infrastructural and drainage works, provision of esb substations, bin stores, bicycle stores, car parking, public lighting, landscaping, open space, and boundary treatment works.

The planning application is accompanied by an Environmental Impact Assessment Report and Natura Impact Statement.

The planning application is available for public viewing at the following website: www.tinakillydemesnelrd.ie

Unit Breakdown

The proposed development offers a wide range of unit types across the site, with the residential scheme comprising 352 no. new dwelling units (220 no. houses, 28 no. duplex/apartment units and 104 no. apartment units). The unit mix will cater for a wide demographic, with 2, 3, 4 and 5 bed houses, 2 and 3 bed duplex/apartment units and 1 and 2 bed apartment units provided throughout the site. The general unit mix is provided below:

Houses:

- 31 no. 2 bedroom houses
- 114 no. 3 bedroom houses
- 72 no. 4 bedroom houses
- 3 no. 5 bedroom houses

Apartments:

- 56 no. 1 bed apartment units
- 48 no. 2 bed apartment units
- 14 no. 2 bed apartment units (duplex ground floor)
- 14 no. 3 bed apartments (duplex upper floors)

36 no. units across the development site will be provided as part V units. The breakdown of Part V typology is as follows:

- Unit type Dxa – 1 bed maisonette GF Unit – 4 no. units
- Unit type Dxa – 1 bed maisonette FF Unit – 4 no. units
- Unit type V21a – 2 bed duplex end of row – 3 no. units
- Unit type V21c – 2 bed duplex mid terrace – 8 no. units
- Unit type V21d – 2 bed duplex end of terrace – 2 no. units
- Unit type V21e- 2 bed duplex at Tinakilly Avenue – 1 no. unit
- Unit type V21a – 3 bed duplex end of row – 3 no. units
- Unit type V21c – 3 bed duplex mid terrace – 8 no. units
- Unit type V21d - 3 bed duplex end of terrace – 2 no. units
- Unit type V21e – 3 bed duplex at Tinakilly Avenue – 1 no. unit

3 PLANNING AND DEVELOPMENT CONTEXT

This chapter has been prepared to consider the relevant planning policies that relate to the development site, the wider Wicklow County and National development objectives. It considers strategic and local level plans relevant to the subject development and a review of the national and regional policy context inclusive of local statutory plans in place to govern the sustainable development of Wicklow.

The following relevant planning documents were considered by the project design team during the planning process:

- National Planning Framework – Project Ireland 2040
- Rebuilding Ireland: Action Plan for Housing and Homelessness
- Regional Spatial & Economic Strategy for the Eastern and Midland Region 2019-2031
- Regional Planning Guidelines for the Greater Dublin Area 2010–2022
- Design Manual for Urban Roads and Streets 2019
- Smarter Travel – A New Transport Policy for Ireland 2009-2020
- Transport Strategy for the Greater Dublin Area 2016-2035
- Sustainable Residential Development in Urban Areas (2009)
 - a. Urban Design Manual - Best Practice Guidelines
- Delivering Homes, Sustaining Communities (2008)
 - a. Best Practice Guidelines - Quality Housing for Sustainable Communities
- Guidelines for Planning Authorities on Childcare Facilities (2001)
- The Planning System and Flood Risk Management (2009)
- Sustainable Urban Housing - Design Standards for New Apartments (2018)
- Urban Development and Building Height Guidelines (2018)
- Housing for All – A New Housing Plan for Ireland (2021)

It is considered that the proposed development is consistent with the objectives and visions for sustainable development as set out in the above planning policy documents. The proposal offers a high-quality residential development of appropriate density proximate to services and facilities in Wicklow Town, providing 352 new dwellings which will contribute to the national housing supply.

Wicklow County Development Plan 2022-2028

It is also considered that the proposed development is consistent with the objectives of the Wicklow County Development Plan 2022-2028 as follows:

Wicklow-Rathnew is designated as Level 2 Key Town in the County Settlement Strategy as outlined in the Wicklow County Development Plan 2022-2028. It is worth highlighting that the population of Wicklow- Rathnew is targeted to increase from 14,114 in 2016 to 18,515 by Q2 2028.

It is further stated that, “Key towns are identified for growth rates of c. 35% having regard for their identification in the RSES as towns suitable for higher levels of growth.”

The following Housing Supply Growth Targets are listed within Chapter 3 Core Strategy for Wicklow/ Rathnew:

- Housing Growth Q3 2022 – Q2 2028 – **1,267 no. units**
- Housing Growth Q2 2028-2031 – **275 no. units**

It is noted that the subject proposal for 352 no. units contributes to the provision of 1,267 no. units by 2028 and overall unit requirements for the Wicklow Rathnew area by 2031. The Plan outlines the following in Chapter 4 'Housing'.

New housing development shall be generally required to locate on suitably zoned / designated land in towns and villages.

The priority for new residential development shall be in the designated town / village / neighbourhood centres, in the 'primary zone' or in the historic centre of large and small villages, through densification of the existing built-up area, re-use of derelict or brownfield sites, infill and backland development. In doing so, particular cognisance must be taken of the need to respect the existing built fabric and residential amenities enjoyed by existing residents and maintaining existing parks and other open areas within settlements. Where insufficient land is available in the centres of settlements, new housing development shall also be permitted on greenfield lands that are zoned / designated for housing'.

The zoning / designation of greenfield land for new housing shall adhere to the following principles:

- Application of the 'sequential approach' whereby zoning extends outwards from centres, contiguous to the existing built-up part of the settlement.
- Application of compact growth targets.
- Creation of 'walkable' neighbourhoods, whereby undeveloped lands within 10 minutes walking distance of the settlement centre and 5 minutes walking distance of any neighbourhood / village centres are prioritized.
- Promotion of a sustainable land use and transportation pattern, whereby undeveloped lands that are accessible to public transport routes are considered most suitable for development. In this regard, undeveloped land within 1 km of any rail or light rail stop or 500m of bus routes will be prioritized.
- Application of the tiered zoning approach in accordance with NPO 72 whereby land that is fully serviced is differentiated from land that can be serviced within the lifetime of the plan.
- Lands already or easily serviced by a gravity fed water supply system and wastewater collection system will be prioritized.
- Cognisance will be taken of the need to provide upmost protection to the environment and heritage, particularly of designated sites, features, and buildings.
- Prioritization of environmental and sustainability considerations for meeting sustainable development targets and climate action commitments in accordance with the National Adaptation Framework – examine environmental constraints including but not limited to biodiversity, flooding, and landscape.
- The need to maintain the rural greenbelt between towns.

The Planning Authority will note that the current proposal for a residential development is well founded in principle under the provisions of the above Plan. This is especially the case given the forecast housing and population increases and the required quantum of residential development for the Rathnew areas.

We also remind the Planning Authority of the significant requirements for housing supply nationally and the provisions of Rebuilding Ireland – An Action Plan for Housing and Homelessness, the National Planning Framework: Ireland 2040 Our Plan and Housing For All – A New Housing Plan for Ireland.

Wicklow – Rathnew Development Plan 2013-2019

The Wicklow - Rathnew Development Plan 2013-2019 is the relevant statutory planning context for the subject site. The Development Plan was prepared in 2013 and is the statutory plan for the site and its environs. The plan was due to be replaced in 2019 however no draft replacement plan has been published as of December 2021, and so the plan remains the most recent relevant statutory context in place for Wicklow and Rathnew, a detailed overview of the compliance of the proposed development with the policies and objectives of the Wicklow Rathnew Development Plan 2013 to 2019 is contained within Chapter 3 of Volume 2 of the EIAR.

Area Action Plan

We note that an Area Action Plan for lands included in the Tinakilly Action Area was submitted by Ardale property group to Wicklow County Council and approved on the 20th of September 2021.

The agreed Area Action Plan provides additional detail regarding how the wider lands in the Clermont – Tinakilly area can be developed. The approved plan does not contradict or preclude development occurring as outlined in the current Development Plan and allows for the subject lands to be developed in a phased and integrated manner.

The adjustments approved by Wicklow County Council contained within the submitted Area Action Plan are minor and provided for by the Development Plan. These changes relate to the zoning objectives governing the site, which have been slightly amended as part of the approved Area Action Plan for the lands, to improve connectivity and permeability of Passive and Active Open space areas.

The driving rationale behind the submission of the Area Action Plan was topography and other minor constraints on the site. The minor amendments to zoning make development more deliverable on the subject lands. While changes have been made to the zoning objectives, the individual quantum of each zoned area remains unchanged.

Any future development of the lands included in the approved Area Action Plan will implement the key development objectives and phasing outlined by the AAP.

4 ALTERNATIVES CONSIDERED

This chapter provides an outline of the main alternatives examined during the design phase. It sets out the reasons for choosing the development as now proposed and considers the environmental impacts of the chosen option that have arisen as part of the evolving design process.

The requirement to consider alternatives within an EIAR is set out in Annex IV (2) of the EIA Directive (2014/52/EU) and in Schedule 6 of the Planning and Development Regulations, 2001, as amended, which state:

*“A description of the **reasonable alternatives** studied by the person or persons who prepared the EIAR, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the proposed development on the environment.”*

As such, the consideration and presentation of the reasonable alternatives as studied by the project design team is an important aspect of the EIA process. The alternatives examined throughout the design process are set out as follows:

Alternative Locations

Given the sites appropriate zoning for residential development, the applicants previous experience with developing successful residential schemes in the county and the physical site suitability, the subject site was considered an ideal location by the applicant for the development of a new residential scheme.

The development of the Tinakilly lands will provide much needed residential accommodation in Wicklow and as such, no alternative locations for the proposed development were considered.

Alternative Designs

It is noted that the design of the scheme evolved following pre planning meetings with Wicklow County Council as part of the LRD pre planning process.

- **Option 1** was presented to Wicklow County Council at the initial Section 247 pre planning meeting for the scheme. Comments from the Wicklow County Council Planners present at the section 247 meeting were considered and the design proposal was updated accordingly. A revised proposal to incorporate the comments received at the s.247 pre planning meeting was submitted to Wicklow County Council as part of the LRD meeting request pack.
- **Option 2** was presented to Wicklow County council at LRD meeting stage and incorporated the feedback received from Wicklow County Council planners at the initial Section 247 pre planning meeting. Comments from the Wicklow County Council Planners present at the LRD meeting were considered and the proposal was updated accordingly, giving rise to the proposal that is now submitted to the planning authority seeking permission.
- **Option 3** Option 3 represents the ‘Chosen Option’ now submitted to the planning authority for consideration. The project design team has endeavoured to incorporate all comments received from Wicklow County Council into the final design proposal.

It is considered that the above evolution of the scheme from option 1 through to option 2 and the chosen option 3 were not driven by environmental factors but rather by comments received from the Wicklow County Council Planning Department. The design team has

endeavoured to ensure that the proposal presents the most sustainable design option for the site from the initial outset of the design of the scheme.

Do Nothing Alternative

It is considered that the 'Do Nothing' Alternative of leaving the development site as greenfield lands would be contrary to Wicklow County Councils development objectives for the subject site.

Alternative Processes

Alternative processes are not considered relevant to this Environmental Impact Assessment Report given the nature of the proposed development.

RECEIVED: 24/08/2023

5 POPULATION AND HUMAN HEALTH

This chapter has been prepared to assess the likely impacts, if any, associated with Human Health and population that may arise from the proposed development. In Accordance with the Guidelines on the Information to be contained in Environmental Impact Assessment Reports (EPA 2022), Draft Advice Notes for Preparing Environmental Impact Statements (EPA 2015) and European Commission Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report (EU 2017). This chapter considers the “existence, activities and health of people”, with respect to “topics which are manifested in the environment such as employment and housing areas, amenities, extended infrastructure or resource utilisation and associated emissions”.

The chapter focuses on the human environment proximate to the proposed development in terms of population profile, employment, land use and social patterns, human health and traffic congestion.

Receiving Environment

The sensitivity of the surrounding area has been considered based off the details available from published data.

The Central Statistics Office (CSO) provides data on population and socio-economic aspects of the population at a State, County and local Electoral District level. The subject site falls within the ‘Wicklow Rural’ Electoral District (ED) and within the administrative area of Wicklow County Council.

It is noted that at the time of preparing this Environmental Impact Assessment Report, the Central Statistics Office have begun releasing data from Census 2022, which will supersede Census 2016. The Census 2022 data will be released throughout 2023, with the full census being available after the final profile publication on the 19th of December 2023.

The population in Wicklow County has changed as follows from Census 2016 to Census 2022:

	Census 2016	Census 2022
Wicklow Population Total:	142425	155851

Table 1- Population evolution in Wicklow County 2016-2022

From Census 2016 to Census 2022 the population of Wicklow County increased by 13426 total. This represents a 9% total population increase throughout the County in the period from 2016-2022.

This Population and Human Health chapter assesses the Wicklow Urban and Wicklow Rural Electoral Divisions. As no Census 2022 data has yet been published relating to these specific electoral divisions, it is assumed that the 9% population increase throughout the wider Wicklow County could be applied to the Wicklow Urban and Wicklow Rural Electoral Divisions to get an outline of population change in these areas from 2016 – 2022.

A review of the Wicklow Urban and Rural age profile confirmed that the communities surrounding the area have an age profile generally weighted towards an older population group, with an above average concentration of individuals over 65 years of age and a below average proportion of the population under 19 years of age. The area’s most prominent age cohort was revealed to be those in the working age group of between 35 and 39 years old.

Accommodation – Household Size

The average household size in Wicklow County was calculated as being 2.86, which is slightly above the national average figure. Nearly a third of the local community surrounding the subject site comprises 2 person households.

From a calculation of the total no. units proposed (352) by the average household size in Wicklow County as calculated (2.86 persons per household) it is predicted that the proposed development is likely to generate a population of c.1008 persons.

Employment

In accordance with Development Plan policy, there is an identified need to accommodate future generations within the Wicklow and the Greater Dublin Area through the proper planning and development of new neighbourhoods. It envisages that a certain level of local employment will arise from the increase in population and the associated increase in employment opportunities. It is considered that the proposed development will have an increasingly positive effect on employment in the local community.

Retail Provision

It is concluded that there is sufficient retail facilities in the area to cater for the proposed scheme. There is an array of supermarket and local shops in the vicinity of the proposed development that the future residents of the development will avail of.

The new resident population will provide an increased market for the local shops and services and may result in the creation of employment opportunities to cater for this increased demand for goods and services.

Potential Impacts of the Proposal at Construction and Operation Phase

It is considered that the proposed development will lead to inevitable short-term impacts throughout the construction phase. These can be summarised as:

- A temporary increase in vehicular traffic
- A temporary increase in noise, dirt and dust generation
- A temporary increase in the employment opportunities arising from the construction of the development

A proposal of this nature at the subject site would have the following potential impacts during its operational phase:

- Increase the population of the area
- Increase demand for local resources
- Increase support and demand for local businesses and services
- Increase level of local traffic
- Change the character and appearance of the subject site
- Increase critical mass capable of supporting increased public transport options

The resident community would experience these impacts in several ways. The growth in population of the neighbourhood may exert pressure on existing residential facilities ranging from public service facilities, community and commercial uses and schools. The existing local business community would be expected to receive increased patronage.

The community may experience a change in mobility consequent to increased congestion of the road network or actual physical development.

An alteration to the actual physical environment of the neighbourhood may affect the spatial perceptions of the community living in this area. However, it should also be noted that the increased population resultant from the proposed development will help underpin the viability of existing community, social and recreational facilities as the existing receiving community ages. The proposed development will provide new community, thus adding to the vitality of the existing community.

An increase in the residential and working population would ultimately increase the critical mass of the area and therefore provide a significant support base for the introduction of public transport systems over the longer term.

RECEIVED: 14/08/2023

6 LAND, SOILS AND GEOLOGY

Impacts Assessed

This chapter of the EIAR considers matters pertaining to soils & geology that may potentially affect the proposed development. Proposed mitigation measures pertaining to the development's construction and operational phases are identified.

Assessment Methodology

The analysis of the predicted impacts of the proposed development on soils, geology and groundwater during construction and operation is presented in the following sections. The assessment considered geological and hydrogeological features identified within the proposed development site and the surrounding vicinity in accordance with the methodology outlined below, to determine the significance of the effect. Where likely significant effects are highlighted, mitigation is proposed, and any residual effects assessed.

This impact assessment has been undertaken in accordance with *The EPA Guidelines on the Preparation of an EIAR* (EPA, 2022), *Guidelines on the Information to be contained in Environmental Impact Assessment Reports*, along with the IGI guidance (Institute of Geologists of Ireland, 2013. *Guidelines for the Preparation of Soil, Geology and Hydrogeology Chapters of Environmental Impact Statements.*) which outlines a 13-step methodology that is divided across four distinct elements:

- Initial Assessment;
- Direct and Indirect Site Investigation and Studies;
- Mitigation Measures, Residual Impacts and Final Impact Assessment; and
- Completion of the Soils, Geological & Hydrogeological Sections of the EIAR.

Baseline Environment

This site history in relation to potential contamination of soils, geology and hydrogeology and is based on a review of the publicly available data and historical environmental reports. Available desk study maps from the sources below have been developed for the site.

As part of the desk study that was undertaken to establish the baseline conditions (i.e. soils, geological and groundwater environment), the following sources of information were reviewed:

- Ordnance Survey topographic base mapping, historical mapping and aerial photography;
- Designated Sites, including Geological Heritage Sites, County Geological Sites (as available), Natura 2000 Sites and proposed and candidate Special Areas of Conservation (SACs), Special Protection Areas (SPA) and National Heritage Areas (NHAs);
- Geological Survey of Ireland (GSI) (2021) data viewer for maps on Bedrock Geology, including all known outcrops, karst features, quarries and identified faults and formation boundaries;
- Overburden Geology, thicknesses and overburden types with depositional descriptions such as glacial, fluvial, marine etc. where this information is available;
- Soils, both natural and man-made;
- Groundwater Bodies and Surface Water Bodies, including current qualitative and quantitative status and related objectives and measures;
- Aquifers, showing groundwater abstractions and any related protection zones and discharges to groundwater;
- Groundwater Vulnerability;
- Environmental Protection Agency (EPA) maps (2021). Surface Water Drainage, including areas at risk of flooding (OPW);

- Sites with waste licences and permits, both current and historical;
- Sites where illegal dumping has been recorded/reported;
- Water Framework Directive mapping on Groundwater and River Waterbodies.
- Sites with recorded/reported contaminated land;
- Sites with recognised aggregate potential and/or which contain economic minerals.
- Previous site investigation reports, including desk-based studies, intrusive investigation reports and groundwater monitoring.

The site's former and current use were established. The site's topography, soils, geology, and regional and local hydrogeological characteristics were all categorized.

Potential Impacts of the Proposed Development

The proposed development was reviewed to establish what, if any the potential impacts on the soils, geology and groundwater flow regime would be both during and post construction. The assessment is aided by historical, publicly available data. Along with onsite intrusive data collected as part of the site investigation works for the development. Potential impacts identified during the construction phase included contamination of local groundwater features by spills or leaks of cementitious materials, fuels, or other construction-related contaminants.

Mitigation Measures

Items that were identified during the assessment for potential impacts were reviewed and mitigation measures proposed to reduce the potential impacts down to acceptable levels where proposed. The review looked at both the initial construction phase and the operational phase. Items identified covers the requirements for the excavation of material both for the installation of services and for the re-profiling of the site to allow roads etc to be constructed in accordance with the requirements of the Local Authority. The measures proposed to address the potential risks identified included the establishment of onsite best management protocols to ensure the physical & human environment is protected while the construction phase of the development is carried out. The correct management of excavated soil to ensure no hazards are caused by its excavation, temporary storage or ultimate disposal. In addition, best practice for the operation of the site while construction is taken place will be followed to minimise any potential risks to operatives working on site during the construction period. Once the excavation and reprofiling works are complete it is not envisioned that any mitigation measures will be required.

Residual Impacts

The impacts which will remain post construction and during the operational phase of the proposed development will be minor. All re-profiling works and excavation works will be completed during the construction phase as such during the operational phase there will be no residual impacts due to the completion of the development.

Monitoring

In accordance with best practice on site monitoring of the civil engineering works during the construction phase will be required to ensure best practices are followed for the duration of the works. Post construction monitoring of the site, from a soils & geological perspective, will not be required.

'Do-Nothing' Impact

Under a 'Do-Nothing' scenario, it is assumed that the subject site shall remain in its current greenfield state. There will therefore be no environmental impact in terms of land, soils, geology, or hydrogeology.

7 HYDROLOGY

Impacts Assessed

This chapter of the EIAR considers matters pertaining to hydrology and water services that may potentially affect the proposed development. In addition, this chapter looks at the potential for the proposed development to influence off-site flooding events. Proposed mitigation measures pertaining to the development's construction and operational phases are identified.

Assessment Methodology

In preparing this chapter, CS Consulting has conducted a desktop study of the development site, informed in particular by the following:

- Wicklow County Development Plan 2022–2028 Strategic Flood Risk Assessment
- Greater Dublin Regional Code of Practice for Drainage Works
- Environmental Protection Agency mapping
- Office of Public Works flood risk mapping and historical flooding records
- Department of the Environment Flooding Guidelines
- Geological Survey of Ireland mapping
- Local Authority and Irish Water drainage and water supply records

Baseline Environment

The development site topography is generally characterised by a consistent fall to the north and to the west. All stormwater runoff from the main body of the site currently drains to the following 2no. existing watercourses that run along the northern boundary and the western boundary of the proposed development site:

- The Rathnew Stream, which forms the northern boundary of the development site proper.
- The Rossana Lower stream, which forms the western boundary of the development site.

No existing public foul drainage infrastructure is present within or adjacent to the development site. As part of the adjacent development to the south (permitted under WCC reg. ref. 17/219 / ABP ref. 30126118), a new 225mm diameter foul sewer is however under construction within the permitted southern section of the Rathnew Inner Relief Road. This shall commence in proximity to the development site's southern boundary and shall outfall to the foul drain at the junction of the new Relief Road and the R750.

All effluent generated in Rathnew is conveyed to the Regional Wastewater Treatment Plant (Wicklow Wastewater Treatment Plant - EPA Licence Number D0012-01). This currently has a reserve organic capacity of approx. 15,000 PE (population equivalent).

Flood risk mapping shows that all residential areas of the proposed development are within the area at the lowest risk of flooding from either river sources or coastal sources. Records of previous flooding events do not indicate that the development site has been subject to any flooding.

Potential Impacts of the Proposed Development

During the development's construction phase, there is the potential for silt and other pollutants to be washed into the nearby public surface water network and receiving watercourse. Heavy rainfall or a high level of ground water could also produce ponding in open trenches; discharge of this rainfall pumped from excavations to existing watercourses could compromise their capacity and thereby cause flooding. Discharge of wash water from concrete trucks and discharge of vehicle wheel wash water may contaminate the groundwater.

During construction of the development, there is a risk of localised accidental pollution incidences from the following sources:

- Spillage or leakage of oils or fuels stored on site.
- Spillage or leakage of oils and fuels from construction machinery or site vehicles.

- The use of concrete and cement during foundation construction.

In its operational phase, the proposed development will give rise to increased demand both for waste water services and for potable water. The subject lands have been zoned for the proposed usage and as such the current zoning would have taken into consideration the predicted effluent volumes to be generated on site by residential development, as well as the predicted increase in potable water demand. There is a risk of surface water ingress into the foul water drainage system due to poor workmanship by the potential contractor. This would increase the loading in the estimated foul flow on the downstream network. There is also a possibility of leakage from the sewers and drains again due to poor workmanship. Any foul leakage could potentially result in local contamination of groundwater in the area.

The development will result in an increase in impermeable areas within the subject site. In the absence of mitigation measures, the development therefore has the potential to increase both:

- the risk of pluvial flooding within the site, and
- surface water runoff to the existing watercourse at the site's southern boundary, which could in turn increase the risk of fluvial flooding at locations further downstream.

The proposed development has the potential to alter surface water flows where the proposed Rathnew Inner Relief Road (RIRR) crosses the Rathnew Stream. Were these flows within the stream or across its associated flood plain to be obstructed, this could result in upstream flooding following severe rainfall events.

Mitigation Measures

During construction, the contractor shall ensure that all existing stormwater drainage infrastructure is maintained free from silt and other construction waste materials. Stormwater run-off from the site or any areas of exposed soil should be channelled and intercepted at regular intervals for discharge to silt traps or lagoons with over-flows directed to land rather than to a watercourse. Pouring of concrete shall be carried out in the dry; mixer washings and excess concrete shall not be discharged to surface water. Weather conditions and seasonal weather variations shall also be taken account of when planning stripping of topsoil and excavations, with an objective of minimising soil erosion. Hazardous construction materials shall be stored appropriately to prevent contamination of watercourses or groundwater. Spill kits should be kept in designated areas for re-fuelling of construction machinery. Dewatering measures should only be employed where necessary.

The sources of pollution that could potentially have an effect on surface or groundwater during the operational phase of the development will be oil and fuel leaks from parked cars, service vehicles, HGV deliveries, etc. Hydrocarbon interceptors such as permeable paving will be provided in the stormwater drainage network and petrol interceptors will be installed within the development to cater for these oil/fuel leaks as required.

The potable water and foul drainage systems have been designed to Irish Water standards and shall be vetted and approved by Irish Water prior to construction commencement. All sewers and drains will be tested and surveyed prior to completion of the works, to minimise the risk of uncontrolled groundwater penetration to the networks and leakage of foul water to ground water on site during the development's operational phase. Water meters will be installed at key locations in agreement with Irish Water and these meters will be linked to the Irish Water monitoring telemetry system. These meters will facilitate the early detection of unusual water usage in the network and identify potential leaks in the system. The subject development site is at negligible risk of flooding from fluvial or tidal sources, and OPW records do not indicate any past occurrences of flooding on the site. The proposed development shall not alter the site's topography to an extent capable of increasing these risk factors; as such, no specific measures are required to mitigate onsite fluvial or tidal flood risk.

The proposed development shall increase the proportion of impermeable area within the subject site, which in turn has the potential to increase the risk of on site and offsite flooding due to surface water runoff during high-intensity rainfall events. This risk shall be

mitigated by the provision of attenuation storage systems as part of the development's surface water drainage system, as well as through the implementation of additional Sustainable Drainage Systems (SuDS) measures.

As previously noted, the development does have the potential to alter surface water flows where the proposed RIRR crosses the Rathnew Stream. The bridge and culvert arrangement proposed at this location have been sized to ensure that flows within the stream and across its associated flood plain shall not be obstructed to a degree that would significantly increase the risk of upstream flooding following severe rainfall events.

Residual Impacts

The implementation of mitigation measures will significantly reduce the likelihood and magnitude of the potential impacts on surface water and groundwater during the construction phase. This residual impact is therefore considered to be low with a short duration and therefore considered to be not significant.

The likely effect on both the local wastewater system and the local water supply system is a reduction in spare capacity. However, the subject development has been designed to follow the planning objectives for these lands.

The subject site is at negligible risk of flooding from fluvial and tidal sources. Implementation of the previously described mitigation measures (stormwater attenuation storage, SuDS features, and bridge design) will substantially reduce the risk of onsite pluvial flooding, as well as that of offsite flooding due to runoff from the subject site. The development's residual impacts in respect of flooding may therefore be characterised as long-term in duration, adverse in nature, but not significant.

Monitoring

The surface water drainage network will need regular maintenance post completion of the development and where required be cleaned out or repaired. Following the completion of the development there are no additional monitoring requirements envisaged other than normal monitoring and maintenance of the foul drainage network by Irish Water.

Water usage and potential leakage will be monitored by Irish Water through the use of water meters installed at key locations across the site. These locations will be agreed with Irish Water and will be linked to the Irish Water monitoring system via telemetry.

'Do-Nothing' Impact

Under a 'Do-Nothing' scenario, it is assumed that the subject site shall remain in its current greenfield state. There will therefore be no environmental impact in terms of drainage, flooding, or water supply.

8 BIODIVERSITY

The assessment considered the potential direct, indirect and cumulative impacts on biodiversity within the zone of influence of the proposed development. The assessment was undertaken in line with a number of guidance documents including the *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine* (CIEEM, 2018).

Baseline ecological surveys were undertaken at the proposed development site between January and July 2022, and included habitat and flora surveys, mammal surveys, bat surveys, breeding and wintering bird surveys, as well as habitat assessments for amphibians, reptiles and invertebrates. The following key ecological receptors were identified within or occurring within the zone of influence of the proposed development; Depositing lowland rivers (FW2), scrub (WS1), treelines (WL2), hedgerows (WL1), wet grassland (GS4) badger, otter, bats, non-volant terrestrial mammals, marine mammals, birds, common frog, common lizard, fish and invertebrates.

In addition, European and Nationally designated sites were identified as key ecological receptors. The proposed development lies adjacent to The Murrough Wetlands Special Area of Conservation (SAC), The Murrough Special Protection Area (SPA) and The Murrough proposed Natural Heritage Area (pNHA) and at its closest point the redline boundary is c. 4400m east of the SAC/SPA/pNHA boundary. These designated sites are located at Broadlough, which is a transitional waterbody connected to the Irish Sea. In addition to The Murrough Wetlands SAC, The Murrough SPA and The Murrough pNHA, additional designated sites located downstream along the coastal fringe or offshore of the proposed development include Wicklow Head pNHA, Wicklow Reef SAC, Magherabeg Dunes SAC, Buckronev-Brittias Dunes and Fen SAC and their corresponding pNHA designations Wicklow Head pNHA, Magherabeg Dunes pNHA and Buckronev-Brittias Dunes and Fen pNHA. Wicklow Mountains SAC's QI otter was also identified as a key ecological receptor given the interconnectivity of the surrounding watercourses and the distance to this European site.

Potential impacts of the proposed development are considered to be; habitat loss, an accidental pollution event affecting surface water in the receiving environment during construction or operation, introduction of non-native invasive species resulting in habitat degradation, reduction in water quality with direct and/or indirect impacts on otter, marine mammals, birds, fish and aquatic invertebrates and disturbance/mortality impacts to mammal or birds during construction or operation.

A comprehensive suite of mitigation measures is proposed, in addition to the extensive and stringent environmental control measures that have been incorporated into the design of the proposed development. All of the mitigation measures will be implemented in full and are best practice, and tried and tested, effective control measures to protect biodiversity and the receiving environment.

No residual effects on habitats, flora and most fauna are expected. However, a residual effect is considered likely on local badger populations from cumulative disturbance and displacement. Considering the elements included within the design of the proposed development, the full implementation of the mitigation measures and the associated planning application documents, to avoid or minimise the effects of the proposed development on the receiving environment, no likely significant residual effects on biodiversity are predicted.

9 AIR QUALITY AND CLIMATE

AWN Consulting Limited has been commissioned to conduct an assessment of the likely impact on air quality and climate associated with the proposed development at Tinakilly, Rathnew, Co. Wicklow.

Air Quality

In terms of the existing air quality environment, baseline monitoring data available from similar environments indicates that levels of nitrogen dioxide (NO₂), particulate matter less than 10 microns (PM₁₀) and less than 2.5 microns (PM_{2.5}) are generally well below the National and European Union (EU) ambient air quality standards.

Impacts to air quality can occur during both the construction and operational phases of the proposed development. With regard to the construction stage the greatest potential for air quality impacts is from fugitive dust emissions impacting nearby sensitive receptors. In terms of the operational stage air quality impacts will predominantly occur as a result of the change in traffic flows in the local areas associated with the proposed development.

In terms of construction phase dust emissions, it has been assessed that there is at most a medium risk of dust impacts to nearby sensitive receptors. Provided the dust mitigation measures outlined in Chapter 10 are implemented, dust emissions are predicted to be short-term, negative, and imperceptible and will not cause a nuisance at nearby sensitive receptors.

The best practice dust mitigation measures that will be put in place during construction of the proposed development will ensure that the impact of the development complies with all EU ambient air quality legislative limit values which are based on the protection of human health. Therefore, the impact of construction of the proposed development will be short-term, localised, negative and imperceptible with respect to human health.

Potential impacts to air quality during the operational phase of the proposed development are as a result of a change in traffic flows and volumes on the local road network. The changes in traffic flows were assessed against the TII screening criteria for an air quality assessment. The local air quality modelling assessment concluded that levels of traffic-derived air pollutants resulting from the development will not exceed the ambient air quality standards either with or without the proposed development in place. Using the assessment criteria outlined in Transport Infrastructure Ireland's 2022 guidance document 'Air Quality Assessment of Specified Infrastructure Projects – PE-ENV-01106' the impact of the development in terms of NO₂, PM₁₀ and PM_{2.5} emissions is long-term, direct, neutral, localised and imperceptible.

As the National and EU standards for air quality are based on the protection of human health, and concentrations of pollutants in the operational stage of the proposed development are predicted to be significantly below these standards, the impact to human health is predicted to be imperceptible, neutral and long term.

Climate

The existing climate baseline can be determined by reference to data from the EPA on Ireland's total greenhouse gas (GHG) emissions and compliance with European Union's Effort Sharing Decision "EU 2020 Strategy" (Decision 406/2009/EC). The EPA state that Ireland had total GHG emissions of 60.76 Mt CO₂eq in 2022. This is 3.72 Mt CO₂eq higher than Ireland's annual target for emissions in 2022. Full implementation of the Climate Action Plan and compliance with the sectoral emissions ceilings will be required to ensure Ireland is on target to meet the goal of net-zero by 2050.

Impacts to climate can occur as a result of vehicle and machinery emissions and embodied carbon within building materials. In terms of the operational stage climate impacts can occur as a result of vehicle exhaust emissions due to the change in traffic flows in the local areas associated with the proposed development. The vulnerability of the proposed development to future climate change is also assessed.

There is the potential for release of a number of greenhouse gas emissions to atmosphere during the full lifecycle of the proposed development including construction and operation. GHG emissions associated with the proposed development were calculated in order to

highlight areas where potential mitigation could be considered. GHG emissions are not predicted to be significant.

The changes in traffic volumes associated with the operational phase of the development were substantial enough to meet the assessment criteria requiring a detailed climate modelling assessment, as per Transport Infrastructure Ireland (TII) 2022 guidance “PE-ENV-01104: *Climate Guidance for National Roads, Light Rail and Rural Cycleways (Offline & Greenways) – Overarching Technical Document*”. The proposed development is not predicted to significantly impact climate during the operational stage. Increases in traffic derived levels of CO₂ have been assessed against Ireland’s obligations under the EU 2030 non-ETS target and Ireland’s carbon emission ceilings. Impacts to climate are deemed imperceptible and long-term with regard to CO₂ emissions.

The proposed development has been designed to reduce the impact on climate where possible during operation. The proposed development will comply with the NZEB standards and has aims to achieve an energy efficient design. Once mitigation measures are put in place, the effect of the proposed development in relation to GHG emissions is considered long-term, minor adverse and not significant in EIA terms.

An assessment was conducted to determine the vulnerability of the proposed development to climate change once operational, as per the TII 2022 guidance. This involves an analysis of the sensitivity and exposure of the development to future climate hazards which together provide a measure of vulnerability. Overall the proposed development has a worst-case low vulnerability to the various climate hazards and therefore no significant risk was identified.

No significant impacts to either air quality or climate are predicted during the construction or operational phases of the proposed development.

10 NOISE AND VIBRATION

Chapter 10 of the EIAR provides information on the assessment of noise and vibration impacts on the surrounding environment during both the construction and operational phases of the development.

When considering the potential impacts, the key sources will relate to the short-term construction phase and the long-term impacts associated with the development, once operational.

The study has been undertaken using the following methodology:

- Environmental noise surveys have been conducted at locations representative of the closest noise sensitive locations to the site. In addition, a review of published noise data has been undertaken to assess the existing baseline noise environment across the development site itself.
- A review of the most applicable standards and guidelines has been carried out in order to set a range of acceptable noise and vibration criteria for the construction and operational phases of the proposed development.
- Predictive calculations have been performed to determine the noise and vibration impact on the nearest sensitive locations during the construction phase.
- Predictive calculations have been performed to determine the noise impact on the nearest noise-sensitive locations during the operational phase.
- A schedule of mitigation measures has been proposed for both the construction and operational phases to reduce, where necessary, the outward noise and vibration from the development.

Baseline Noise Environment

The baseline noise environment at the closest noise sensitive locations to the proposed development and across the development site is influenced by road traffic along the surrounding road network, background noise from construction activities and general environmental noise sources.

Operational Phase – Vibration

The development is residential in nature and there are no vibration sources associated with the proposed development. Therefore, there will be no outward impacts associated with vibration for the operational phase, and accordingly such impacts have been scoped out.

Construction Phase

Construction noise calculations have been performed representing typical noise levels associated with the construction of the various phases of work on site. The results of the assessment have determined that construction works can operate within the construction noise limits adopted for the project at distances beyond 100m in the absence of noise mitigation. This indicates that additional mitigation measures may be required to prevent exceedances at closer properties in proximity to the site perimeter.

A range of noise mitigation measures have been included to reduce construction noise levels at the closest site boundaries including the inclusion of a solid construction site hoarding along noise sensitive boundaries. The application of binding noise limits and hours of operation, along with implementation of appropriate noise control measures, will ensure that the noise impact is controlled to within the construction significance thresholds.

Operational Phase

The main potential sources of outward noise from the development during the operational phase relate to traffic flows to and from the development via public roads and any mechanical and electrical plant used to service the buildings. The primary sources of outward noise in the operational context are deemed to be long term in nature. There are no vibration sources associated with the operational phase.

The assessment has determined that the above sources will not generate any significant noise impact at existing noise sensitive locations in the surrounding environment. Residential properties within the development itself are the closest noise sensitive locations to any noise sources generated within the site.

A range of noise mitigation and best practice control measures have been included within the assessment to control noise levels at the closest noise sensitive properties within the development once operational.

11 LANDSCAPE VISUAL IMPACT ASSESSMENT

This chapter of the Environmental Impact Assessment Report contains a Townscape and Visual impact Assessment (TVIA) in respect of Phase 2 of a residential development on lands at Tinakilly, Rathnew, County Wicklow. Its purpose is to identify and determine the likely impacts of the scheme on the receiving environment, in terms of both townscape character and visual amenity.

It has been prepared by Mark Salisbury, Associate Director at Macro Works Ltd of Cherrywood Business Park, Loughlinstown, Dublin 18; a consultancy firm specialising in Landscape/Townscape and Visual Assessment and associated maps and graphics. Mark is a Chartered Member of the Landscape Institute, and has over 15 years experience in LVIA/TVIA work. Macro Works' relevant experience includes a broad range of infrastructural, industrial and commercial projects since 1999, including numerous urban, residential, and mixed use development projects.

The methodology for this TVIA is based on the primary best practice document, the Guidelines for Landscape and Visual Impact Assessment, Third Edition (GLVIA3) (LI/IEMA, 2013). In accordance with this published guidance, townscape and visual impacts are assessed separately, although the procedure for assessing each of these is closely linked.

A clear distinction has been drawn between townscape and visual impacts as described below:

- Townscape impacts relate to the influence of the proposals on the physical and perceptual characteristics of the townscape and its resulting character and quality;
- Visual impacts relate to the influence of the proposals on specific views experienced by visual receptors and on visual amenity more generally.

The TVIA should be read in conjunction with the verified photomontages and Computer Generated Images (CGI) produced by 3D Design Bureau, which is included at Appendix 11A. These illustrate how the proposed development would appear from a variety of locations in the surrounding townscape.

During the construction stage there will be construction-related activity within and around the site, and nearby approach roads. This will include, but is not limited to:

- Site preparation works and groundwork operations;
- Intrusive foundation work including the installation of foundations and services;
- HGVs transporting materials to and from the site;
- Movement of heavy machinery on-site;
- Temporary storage of demolition debris / construction materials on-site;
- Security fencing/hoarding and site lighting.

Whilst the physical impacts to the site's land cover will be permanent, and not readily reversible, the site is closely associated with the large area of adjacent land that is under construction, and which has been cleared and prepared for construction works. There will be impacts on the character of the study area as a result of the intensity of movement and clutter of temporary structures associated with the construction works, but these are likely to be minor in relation to the adjacent, and more visible site, and of a familiar scale and nature within an expanding townscape setting such as this. Construction stage effects on townscape character will be localised within the immediate setting and approach roads to the site.

Construction stage impacts on landscape/townscape character will be 'short-term' (i.e. lasting 1-7 years), in accordance with the EPA definitions of impact duration.

Significance of townscape effects (construction stage)

On the basis of the reasons outlined above, the magnitude of change is deemed to be **Medium-Low**. When combined with the **Medium-Low** sensitivity of the receiving townscape, the overall significance of effect is considered to be **Moderate-Slight / Negative**.

Following the completion of the proposed works, townscape impacts will relate entirely to the development's impact on the character of the receiving townscape and whether this is positive or negative.

The most notable impacts will result from the permanent presence of new dwelling houses and associated infrastructure and landscaping. This will add considerable intensity of built development to this peri urban area, when considered against its former agricultural use. However, the intensity of built development is consistent with the emerging residential development being undertaken on the adjacent site, to which it forms a northwards extension, and its scale and form is considered appropriate to both its adjoining urban setting and the underlying zoning objectives. It is a low rise development of two storey dwelling houses that follows the profile of the site terrain, is of a high quality of design and finish, and is further integrated into its landscape setting through a considered landscape design that integrates open space around the northern and western boundaries of the site. Existing vegetation within and bounding the site has been afforded substantive retention, and has been enhanced with plentiful new planting, and incorporated into areas of open space. These considered measures will have a positive influence in terms of assimilating the development into its wider context, and affording the development an advanced level of maturity.

The proposals represent a nature and scale of development that is appropriate to the urban edge location, and is planned for through zoning objectives. It is not overly ambitious in terms of scale or site coverage and together with the adjacent development (under construction), will integrate well in this setting.

Significance of townscape effects (post construction / operational phase)

On the basis of the reasons outlined above, the magnitude of change is deemed to be **Medium to Low**. When combined with the **Medium-Low** sensitivity of the receiving townscape, the overall significance of effect is considered to be **Moderate-Slight / Positive**.

The land between Wicklow Town and Rathnew has accommodated a number of housing and office / commercial development projects, that have gradually blurred the separation between the two settlements, and the site forms part of a wider action area, that is recognised in the development plan as being a strategic site to accommodate residential development.

The proposed development of this site is not considered to have the potential to generate any operational adverse townscape or visual effects greater than slight, and no effects that are considered to have the potential to be significant. Townscape and visual effects of the proposed development relate to a geographically restricted area, with negligible influence beyond approximately 500m.

Together with the adjacent site under construction, it is considered to have the potential to form a positive addition to the urban edge in this direction.

12 ARCHITECTURAL, ARCHAEOLOGICAL AND CULTURAL HERITAGE

IAC Archaeology has prepared this chapter to assess the impact, if any, on the archaeological, architectural and cultural heritage resource of the proposed development at Tinakilly, Rathnew, County Wicklow.

The proposed development area is located within the townland of Tinakelly and Newrath, in the parish of Rathnew and the barony of Newcastle. The townland boundary between Newrath to the north and Tinakelly to the south also forms the north-western boundary of demesne lands originally established as part of Tinakelly Upper (no longer extant). Approximately half the development area occupies these former demesne lands.

There is one recorded monument within the proposed development area. This site was first identified by geophysical survey (Dowling 2022) and confirmed by archaeological testing in 2022 (McIlreavy 2022), but was added to the SMR in July 2023. It is scheduled for inclusion in the next revision of the RMP as an enclosure; however, archaeological investigation has confirmed that the feature is likely a barrow of Bronze Age date. There are a further six archaeological sites within the 500m study area of the proposed development, all of which are scheduled for inclusion in the next revision of the RMP.

A review of the Excavations Bulletin (1970-2023) and the available excavation reports has indicated that a large number of archaeological features were discovered at the site immediately south of the proposed development area. These included substantial archaeology which dated from the prehistoric period to the post-medieval period, with particularly evident Bronze Age activity.

Examination of the historic mapping confirmed that the proposed development area formerly formed parts of the Tinakelly and Clermont demesne landscapes, both of which are depicted in the cartographic sources as early as 1760. While the principal structures of these estates are located outside the proposed development area boundary, portions of the associated former parklands are included within the development area.

The available aerial imagery was examined as part of this assessment and confirmed that a sub-circular crop-mark is visible within the proposed development area (Field 2), in the Google Earth imagery of 2021. While this feature has proven on investigation to be a Bronze Age barrow feature (McIlreavy 2022, Licence No. 22E0213), based on the aerial imagery, it was classified as an enclosure and added to the SMR under WI025-113, in July 2023.

Archaeological testing has identified seven archaeological areas within the proposed development area. Ground disturbances associated with the development will result in a direct, negative and permanent impact on the remains, which is considered to be very significant. Impacts upon the features could not be avoided due to the density requirements for the residential scheme and the fact that set back landscaped areas are required adjacent to the watercourses that border the site to the west and north. In addition c. 230m of the mature townland and demesne boundary is being retained as part of the development, which further constrains the layout, along with phase 2 of the access road.

The construction of the bridge across the watercourse that borders the site to the north may have a direct, negative and permanent impact on archaeological artefacts or deposits that have the potential to survive within the channel itself. Dependant on the nature, extent and significance of any such remains, impacts may range from moderate to very significant.

Ground disturbances associated with the construction on the development may have a direct, negative and permanent impact on small or isolated archaeological features or deposits that have the potential to survive beneath the current ground level, outside of the footprint of the excavated test trenches. Dependant on the nature, extent and significance of any such remains, impacts may range from moderate to very significant.

During the operation of the development, the access road will cross the main access avenue to Tinakelly House, resulting in a permanent impact on the setting and use of the feature. Access and use will be maintained to the avenue, so the impact is considered to be slight negative.

The townland boundary within the proposed development area will be maintained as part of the scheme and represents a direct, permanent moderate positive impact with regards to the cultural heritage resource.

No impacts are predicted upon Tinakelly House during the operation of the scheme, as the development will not affect the setting of the house, being heavily screened from the site with mature demesne planting.

No cumulative impacts during operation are predicted upon the archaeological and cultural heritage resource.

13 TRAFFIC AND TRANSPORTATION

Impacts Assessed

This chapter of the EIAR assesses and evaluates the likely impact of the proposed development on the surrounding road network, with a particular focus on the operation of the 2no. junctions at either end of the Rathnew Inner Relief Road. Proposed mitigation measures pertaining to the development's construction and operational phases are identified.

Assessment Methodology

The methodology employed for assessing the development's impact on the surrounding road network comprises the following:

- Traffic surveys at 6no. existing junctions on the surrounding road network.
- The application of growth factors to scale surveyed flows up to future year levels.
- Calculation of the proposed development's operational phase vehicle trip generation (as well as that of the adjacent committed development), using a database of past traffic surveys, and of its construction phase vehicle trip generation.
- Redistribution of existing mainline traffic flows to account for completion of the RIRR.
- Distribution of additional vehicle trips across the local road network in accordance with existing and future traffic patterns, and route restrictions during the construction phase.
- Computer modelling of nearby junctions to determine their operational performance under existing and future traffic conditions.

Baseline Scenario

Assessment of the 2no. junctions at either end of the Rathnew Inner Relief Road shows that these currently both operate at or within effective capacity on all approaches during both the AM and PM weekday peak hour periods.

Future (Design Year) Do-Nothing Scenario

This Do-Nothing scenario relates to the design year 2043 (15 years after the proposed development's intended completion) and assumes that the proposed development is not constructed and the RIRR is not completed. This allows for general increases in background vehicle traffic over this period, as well as the additional vehicle traffic that will be generated by the adjacent committed development.

Under these conditions, assessment shows that the Merrymeeting Interchange junction on the R750 (at the southern end of the RIRR) will exceed effective capacity during the PM peak hour, though it remains within ultimate capacity.

Construction Phase Mitigation Measures

The site-specific Construction Traffic Management Plan (CTMP) to be prepared by the lead contractor appointed for the construction of the development shall include a number of measures for minimising construction traffic and mitigating its effects. These include:

- Restricting all heavy construction traffic to designated routes to and from the M11 motorway.
- Conducting all loading and unloading operations within the site.
- Optimising the scheduling of construction traffic.
- Consolidating deliveries.
- Minimising construction material quantities and reusing material generated by the construction works.
- Installation of a wheel wash at exit from the site and deployment of a road sweeper as necessary to keep roads around the site clean.

Operational Phase Mitigation Measures

The development shall incorporate several design and management elements intended to mitigate the impact of the development on the surrounding road network during its operational phase. These include:

- A conservative car parking provision, which shall discourage higher vehicle ownership rates and excessive vehicular trips to the development (by residents and visitors).
- A high provision of secure bicycle parking, which shall serve to encourage bicycle journeys by both development occupants and visitors.

Cumulative Construction Phase Impacts

In the year 2026, approximately mid-way through the development's construction, the addition of the proposed development's construction phase traffic, in conjunction with the completion of the RIRR, is predicted to result in slight increases in vehicle queues and delays at the Merrymeeting Interchange junction on the R750 (at the southern end of the RIRR).

During its construction stage, the proposed development is therefore predicted to result overall in a short-term slight adverse impact on the operation of the surrounding road network.

Cumulative Operational Impacts

In the design year of 2043, the addition of the proposed development's operational phase traffic, in conjunction with the completion of the RIRR, is predicted to result in slight increases in vehicle queues and delays at the Merrymeeting Interchange junction on the R750 (at the southern end of the RIRR).

The redistribution of traffic via the RIRR however results in a more balanced operation of this junction. While some increases in vehicle queue lengths and delays are experienced on certain junction approaches in the peak hours, these are accompanied by reductions in queues and delays on other approaches. The overall effect is to bring all junction approaches back within effective capacity.

During its operational stage, the proposed development (including completion of the RIRR) is therefore predicted to result overall in a long-term moderate positive impact on the operation of the surrounding road network.

Residual Impacts

The residual traffic-related impact of the proposed development during its operational phase will be that described under 'Cumulative Operational Impacts'; such residual effects are considered to be adverse in nature, long-term in duration, but slight in significance.

Monitoring

In the development's construction phase, the site-specific Construction Traffic Management Plan (CTMP) to be prepared by the lead contractor appointed for the construction of the development shall outline measures for monitoring the impact of construction traffic on the operation and condition of the surrounding road network, including remedial actions to be taken in the event of construction traffic causing damage to road infrastructure.

Post-development monitoring of the surrounding road network's performance is not required or proposed in this case.

14 WASTE MANAGEMENT

Impacts Assessed

This chapter considers matters pertaining to waste management that may potentially affect the proposed development in both its construction phase and its operational phase.

Baseline Environment

Several facilities within 5 kilometres of the development site are capable of accepting waste that will be generated during the proposed development's construction and operational phases:

- Ballynagran residual landfill, approximately 4.8km south-west of the development site, is a large-scale landfill facility that accepts residual non-hazardous, commercial, and industrial waste.
- The Greenking composting facility, approximately 4.6km south-south-west of the development site, has the capacity to accept and process 40,000 tonnes of green waste per annum.
- A WCC Recycling Centre, located c. 2.5km to the east of the site, which can accept a wide variety of waste streams.
- A bring centre (bottle bank) located c. 2.2km to the south-east, adjacent the WCC buildings in Wicklow Town, which has receptacles for clear, green and brown glass, as well as aluminium cans.

Potential Impacts of the Proposed Development

Construction waste shall be generated during the proposed development's construction phase. Waste generated during construction at a typical site includes the following:

- Concrete, bricks, tiles, and cement
- Wood
- Glass
- Plastics
- Bituminous mixtures, coal tar, and tarred products
- Metals (including their alloys)
- Soil and stones
- Insulation materials (possibly including asbestos-containing materials)
- Gypsum-based construction material
- Materials containing mercury
- PCB-containing materials (e.g. sealants, resin-based floorings, capacitors, etc.)
- Waste electrical and electronic equipment
- Oil wastes and waste of liquid fuels
- Batteries and accumulators
- Packaging (paper/cardboard, plastic, wood, metal, glass, textile, etc.)

In the absence of any mitigation measures, construction of the proposed development may potentially have very significant long-term adverse effects on the receiving environment. In particular, the improper disposal of hazardous waste materials generated during construction could result in threats to human health, contamination of local soils and water bodies, and degradation of local flora and fauna. For this reason, the mitigation measures described hereafter will be strictly adhered to throughout the development's construction phase. Compliance with these measures will be monitored, and comprehensive records kept of all construction waste materials.

The typical non-hazardous and hazardous wastes that will be generated at the proposed development in its operational phase will include the following:

- Dry Mixed Recyclables (DMR) - includes waste paper (including newspapers, magazines, brochures, catalogues, leaflets), cardboard and plastic packaging, metal cans, plastic bottles, aluminium cans, tins and Tetra Pak cartons;

- Organic waste – food waste and green waste generated from plants/flowers;
- Glass; and
- Mixed Non-Recyclable (MNR) / General Waste.

In addition to the typical waste materials that will be generated at the development on a daily basis, there will be some additional waste types generated in small quantities which will need to be managed separately including:

- Green/garden waste may be generated from gardens, internal plants and external landscaping;
- Batteries (both hazardous and non-hazardous);
- Waste electrical and electronic equipment (WEEE) (both hazardous and non-hazardous);
- Printer cartridges/toners;
- Chemicals (paints, adhesives, resins, detergents, etc.);
- Light bulbs;
- Textiles (rags);
- Waste cooking oil (if any generated by the residents);
- Furniture (and from time to time other bulky wastes); and
- Abandoned bicycles.

In the absence of mitigation measures (in the form of a waste management strategy), the proposed development may potentially have significant long-term adverse effects on the receiving environment in its operational phase. The improper disposal of operational waste materials (and in particular those containing hazardous materials) could result in threats to human health, contamination of local soils and water bodies, and degradation of local flora and fauna.

Mitigation Measures

All construction waste materials will be segregated on site into appropriate categories, including:

- top-soil, sub-soil, bedrock
- concrete, bricks, tiles, ceramics, plasterboard
- asphalt, tar, and tar products
- metals
- dry recyclables (e.g. cardboard, plastic, timber)

All construction waste material will be stored in skips or other suitable receptacles in a designated waste storage area on the site. Wherever possible, left-over material shall be reused on or off site. Uncontaminated excavated material will be reused on site in preference to the importation of clean fill, as soil to be reused or removed from site must be tested to confirm its contamination status and subsequent management requirements. All construction waste leaving the site will be transported by a suitably licensed/permitted contractor and taken to a licensed/permitted facility. All waste leaving the site will be recorded and copies of relevant documentation retained.

Operational phase measures for the mitigation of waste impacts take the form of a waste management strategy that complies with all legal requirements, waste policies, and best practice guidelines. In particular, it is ensured that the required waste storage areas have been incorporated into the design of the development and that the development's layout facilitates the efficient collection of waste materials. Implementation of the OWMP will ensure a high level of recycling, reuse and recovery at the development.

Waste will be presented for collection in a manner that will not endanger health, create a risk to traffic, harm the environment or create a nuisance through odours or litter. The development shall be serviced only by waste contractors holding a valid waste collection permit for the specific waste types collected, and all waste collected shall be transported to registered/permitted/licensed facilities only.

Residual Impacts

Waste materials will be generated during the construction of the proposed development, including the initial site clearance and excavation. Careful management of these, including segregation at source, will help to ensure maximum recycling, reuse and recovery is achieved. It is expected, however, that a certain amount of waste will still need to be disposed of at landfill.

Given the provision of appropriate facilities, environmental impacts from waste storage are expected to be minimal. Particular attention will be given to the appropriate management of any construction waste containing contaminated or hazardous materials. The use of suitably licensed waste contractors will ensure compliance with relevant legal requirements and appropriate off-site management of waste.

With a high level of due diligence carried out on site and with the implementation of the proposed mitigation measures, the proposed development's construction phase is not expected to have a significant environmental impact with respect to waste management. Any such environmental impact shall be limited to the period during which construction works take place on site.

Waste materials will be generated on an ongoing basis during the proposed development's operational phase; these will for the most part consist of municipal waste and recyclable materials. Careful management of these, including segregation at source, will help to ensure a high level of waste recycling, reuse, and recovery at the development. A certain proportion of operational waste will nevertheless need to be disposed of at landfill.

Given the provision of appropriate facilities, and their correct use by residents, environmental impacts (e.g. litter, contamination of soil or water, etc.) arising from operational waste storage and removal are expected to be minimal. The use of suitably licensed waste contractors will ensure compliance with relevant legal requirements and appropriate off-site management of waste.

With the implementation of the proposed operational waste management measures, the proposed development is not expected to have a significant environmental impact with respect to operational waste.

Monitoring

A suitably competent and experienced representative of either the client or the lead contractor will be nominated as Construction & Demolition (C&D) Waste Manager for the project. Site Inspections will be carried out on a weekly basis and will incorporate inspection and monitoring of the requirements of the Waste Management Plan.

Records will be kept for all waste material which leaves the site, either for reuse on another site, recycling, recovery, or disposal. A recording system will be put in place to record the C&D waste arisings on site. For each movement of waste off-site, a signed docket will be obtained by the Waste Manager from the waste contractor, detailing the weight and type of the material and the source and destination of the material. This will be carried out for each material type removed from site.

No operational phase monitoring of waste generation, storage, or removal is required or proposed.

'Do-Nothing' Impact

Under a 'Do-Nothing' scenario, it is assumed that the subject site shall remain in its current greenfield state. There will therefore be no environmental impact in terms of waste generation and disposal.

15 MATERIAL ASSETS

This chapter prepared evaluates the protentional impacts, from the proposed development of Material Assets as defined in the EPA Guidelines 'Guidelines on the Information to be contained in Environmental Impact Assessment Reports (EPA, 2022), Advice Notes Draft Advice Notes for preparing Environmental Impact Statements (EPA, 2015), and European Commission Guidance on Environmental Impact Assessment of Projects: Guidance on the Preparation of the Environmental Impact Assessment Report (2017)'. RECEIVED: 7/10/2023

As the nature of the potential for impact on material assets is derived from the cumulative impact of both the residential development, this chapter assesses the potential impacts of the development on site.

This chapter provides an evaluation of the following economic assets of the subject site and its surroundings:

Materials Assets of Natural Origin

- Agriculture
- Natural resources

Material Assets of Human Origin

- Local Settlement
- Property Prices
- Gas Supply
- Electricity supply
- Telecommunications
- Transport
- Water supply and sewerage
- Municipal Waste
- Tourism

It is considered that the proposed development will not have any significant impact on material assets including, most notably, public utilities and natural resources. The overall predicted impact of the proposed developments can be classed as long term and negligible with respect to material assets. The proposed development has been designed for, and the infrastructure constructed for, a residential development of this nature.

16 CUMULATIVE IMPACTS

This chapter has been prepared to consider the potential for cumulative impacts that may arise as a result of the proposed development in combination with any future development, as far as is practically possible, on the site and the cumulative impacts with both planned and permitted developments in the immediate surrounding area.

Cumulative impacts are the impacts that relate to the incremental/ additive impacts of the planned development to historical, present, or foreseeable future actions within reason. Cumulative impacts generally arise through the following:

- Persistent additions or losses of the same material or resource,
- Compounding effects due to the coming together of two or more effects.

The potential for cumulative impacts is assessed within this chapter for each relevant environmental factor, and the predicted impact is described. With proper implementation of mitigation measures where appropriate, it is predicted that there will be no long term significant cumulative impacts.

17 INTERRELATIONSHIPS BETWEEN THE ASPECTS

This chapter has been prepared to examine the potential interactions and interrelationships between the environmental factors as discussed in the preceding chapters.

All environmental topics are interlinked to a degree such that interrelationships exist on numerous levels. The relationships between each of the environmental topics covered within the Environmental Impact Assessment Report have been compared against each other to ensure that no negative impacts will arise from interrelationships between each individual aspect considered in combination.

In summary, it is concluded that the proposed development will not result in any significant synergistic effects on the environment.

RECEIVED: 14/08/2023