Proposed Large Scale Residential Development at Rathgowan, Mullingar, Co. Westmeath

Applicant: Marina Quarter Ltd.

Volume II

Main Statement

CHAPTER 16

Significant Interaction of Impacts

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16 Significant Interaction of Impacts

16.1 Introduction

The construction, operational and cumulative impacts of the proposed residential development at Rathgowan, Mullingar, Co. Westmeath have been assessed within each chapter of the EIAR (Environmental Impact Assessment Reports). This chapter describes any interactions of impacts identified in the previous chapters and identifies where any of these are significant.

The potential cumulative effects of the proposed project in combination with other permitted developments in proximity has been considered in each chapter as relevant.

16.1.1 Expertise and Qualifications

This chapter of the EIAR has been prepared by Saoirse Kavanagh, Executive Planning Consultant of McCutcheon Halley Planning Consultancy. Saoirse holds a bachelor's degree in Arts (International), majoring in Geography, and a Master's in Planning and Sustainable Development. She has over 4 years' experience working with multi-disciplinary teams and has provided input into a variety of projects. In particular, she has co-ordinated the preparation of the following three Environmental Impact Assessment Reports (EIARs) including the completion of the Introduction, Alternatives, and Population and Human Health chapters.

- Cooldown Commons Strategic Housing Development, Citywest, Dublin.
- Parkside 5B Strategic Housing Development, Belmayne, Dublin.
- Clonattin Strategic Housing Development, Gorey, Co. Wexford.

16.1.2 Characteristics of the Proposed Development

Details on the proposed development are provided in Chapter 2. To summarise, the applicant seeks permission for development of 181 residential units at 'Rathgowan, Mullingar, Co. Westmeath. This development will comprise Phase 1 and 2 of development. Phase 3 was permitted by Westmeath County Council in January 2023 and will provide a further 213 no. residential units.

16.1.3 Assessment Methodology – Legislative Requirements

The EIAR has considered and assessed the interactive effects and cumulative impacts arising from the construction and operation of the proposed development based on best scientific knowledge. Interactive effects (or interactions), specifically refer to any direct or indirect effects caused by the interaction of environmental factors as outlined in Article 3 (1) of the amended EIA (Environmental Impact Assessment) Directive:

> *"The environmental impact assessment shall identify, describe, and assess in an appropriate manner, in the light of each individual case, the direct and indirect significant effects of a project on the following factors:*
>
> *(a) population and human health;*

(b) biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC;

(c) land, soil, water, air, and climate;

(d) material assets, cultural heritage, and the landscape;

(e) the interaction between the factors referred to in points (a) to (d).”

Annex IV of the amended Directive states that a description of impacts should include:

“…the direct effects and any indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative effects of the project”

EU (European Union) Guidance identifies that;

“Cumulative effects are changes to the environment that are caused by an action in combination with other actions. They can arise from:

the interaction between all of the different Projects in the same area;

the interaction between the various impacts within a single Project (while not expressly required by the EIA Directive, this has been clarified by the CJEU – see the box below).

The coexistence of impacts may increase or decrease their combined impact. Impacts that are considered to be insignificant, when assessed individually, may become significant when combined with other impacts.”

The relevant interactions and interdependencies between specific environmental aspects have been summarised in the matrix set out in Table 16.1.

16.2 Description of Potential Significant Interactions

16.2.1 Population and Human Health

Chapter 4 assesses the likely impacts to Population and Human Health arising from the proposed development. During the construction phase, the following aspects would interact with Population and Human Health and in the absence of mitigation may give rise to significant effects.

- Landscape and Visual Impact: Potential effects on visual amenity within the locality or the wider study area as a result of the visibility of construction activities such as site clearance, the construction of buildings, associated scaffolding, plant, site traffic and construction compounds.
- Soils and Geology: Site clearance has the potential to result in increased dust and particulate emissions to air as well as the potential to release contaminated soils to the local environment.
- Air and Climate: Construction activities may result in a decrease in local air quality which has the potential to negatively impact on human health.

- Noise and Vibration: increased levels of noise and vibration during construction activities may result in negative impacts to the amenity of local residents.
- Traffic and Transportation: Construction traffic has the potential to negatively impact local residents and businesses through increased delays and potential impacts on health and safety.

During the operational phase, the potential interactions are:

- Landscape and Visual Impact: Potential effects of the development on views and visual amenity such as the potential for the development to alter (beneficial or adverse) the composition of the view from a viewpoint.
- Traffic and Transportation: Increased traffic once the development is fully operational has the potential to negatively impact local residents and temporary receptors.

The potential significant impacts to Population and Human Health have been considered within the relevant discipline and mitigation measures outlined where required. With mitigation measures in place, no significant residual negative impacts are predicted.

16.2.2 Soils and Geology

Chapter 5 assesses the likely impacts on Soils and Geology arising from the proposed development. The potential for Significant Interaction with the Soils and Geology (Geology) attribute arises mainly due to the removal of the topsoil and shallow subsoils (archaeology) across some of the site area and risk of dust (air quality), changes to drainage patterns (hydrology) and suspended sediments impacting local water ways, (biodiversity) arising during the construction phase. The Hydrogeology (aquifer) could be potentially impacted if large losses/spills of hydrocarbons occurred, although the thick layer of glacial till offers a natural protection to the underlying water table from surface activities. While local changes to the permeability will occur, they are not at a scale which would affect the recharge of the aquifer in the locality. Ultimately cut and fill activities will be kept to a minimum and there will be limited change to the topography and landscape setting of the locality. No waste soil material is anticipated to arise.

Overall, the potential significant impacts to Soils and Geology have been considered within the relevant discipline and mitigation measures outlined where required. With mitigation measures in place, no significant residual negative impacts are predicted.

16.2.3 Hydrology and Hydrogeology

Chapter 6 assesses the likely potential impacts on Hydrology and Hydrogeology arising from the proposed development. Hydrology and Hydrogeology attributes interact with other environmental attributes are summarised as follows:

- Population & Human Health - Potential impacts on the receiving hydrology and hydrogeology environment could also impact on human health. However, the mitigation measures described in Chapter 6 – Hydrology & Hydrogeology will ensure that this will not occur.
- Biodiversity - Potential impacts on the receiving hydrology and hydrogeology environment could also impact on biodiversity conditions present. However, the mitigation measures

described in Chapter 6 – Hydrology & Hydrogeology, and those relevant in Chapter 14 – Biodiversity will ensure that this will not occur.

- Soils & Geology - Potential impacts on the receiving hydrology and hydrogeology environment could also impact on soils and geology conditions present. However, the mitigation measures described in Chapter 6 – Hydrology & Hydrogeology, and those relevant in Chapter 5 – Soils and Geology will ensure that this will not occur.

The potential significant impacts to Hydrology and Hydrogeology have been considered within the relevant discipline and mitigation measures outlined where required. With mitigation measures in place, no significant residual negative impacts are predicted.

16.2.4 Air Quality

Chapter 7 assesses the likely potential impacts on Air Quality arising from the proposed development. During the construction phase, the following aspects would interact with Air Quality and in the absence of mitigation may give rise to significant effects.

- Traffic and Transportation: Emissions from construction traffic may result in a decrease in local air quality. Increased greenhouse gas emissions from construction traffic may contribute to climate change.

During operation, the potential interactions are;

- Traffic and Transportation: Emissions from operational traffic may result in a decrease in local air quality. Increased greenhouse gas emissions from traffic may contribute to climate change.

No other potential operational interactions were identified, and no other potential significant interactions have been identified other than those already described. The potential significant impacts to Air Quality and Climate have been considered within the relevant discipline and mitigation measures outlined where required. With mitigation measures in place, no significant residual negative impacts are predicted.

16.2.5 Climate

Chapter 8 assesses the likely potential impacts on the climate arising from the proposed development. Climate interacts with the following environmental aspects:

- Hydrology and Hydrogeology: The impact of flood risk has been assessed and the surface water drainage network will be designed to cater for run-off from the building and the surrounding hardscaped areas in accordance with a minimum 1 in 100-year event plus 20% climate change allowance.
- Waste: Waste management measures will be put in place to minimise the amount of waste entering landfill, which has higher associated embodied carbon emissions than other waste management such as recycling
- Air Quality: Air quality and climate have interactions due to the emissions from the burning of fossil fuels during the construction and operational phases generating both air quality and climate impacts.

16.2.6 Noise and Vibration

Chapter 9 assesses the likely potential impacts on Noise and Vibration arising from the proposed development. During the construction phase, the following aspects would interact with Noise and Vibration and in the absence of mitigation may give rise to significant effects.

- Traffic and Transportation: Construction traffic may give rise to local noise and vibration which may have an impact on the amenity of local residents;

During operation, the potential interactions are;

- Traffic and Transportation: Additional construction traffic may give rise to increased local noise and vibration which may have an impact on the amenity of local residents;
- Vibration: The development is residential and educational in nature; therefore, it is not anticipated that there will be any outward impact associated with vibration for the operational phase.

No other potential significant interactions have been identified other than those already described. The potential significant impacts of Noise and Vibration have been considered within the relevant discipline and mitigation measures outlined where required. With mitigation measures in place, no significant residual negative impacts are predicted.

16.2.7 Landscape and Visual Impact

Chapter 10 assesses the likely potential impacts on Landscape and any visual impacts arising from the proposed development. During the construction phase, the following aspects would interact with Landscape and visual amenity and in the absence of mitigation may give rise to significant effects;

- Material Assets: Service infrastructure and Utilities: excavations to provide site services during construction will result in changes to the existing landscape, and result in short term visual impacts.

No other potential significant interactions have been identified other than those already described. The potential significant impacts of Landscape and any visual impacts have been considered within the relevant discipline and mitigation measures outlined where required. With mitigation measures in place, no significant residual negative impacts are predicted.

16.2.8 Material Assets: Waste

Chapter 8 assesses the likely potential impacts on waste arising from the proposed development. Waste interacts with the following environmental aspects:

- Population and Human Health: In the absence of mitigation, the improper removal, handling, and storage of waste could negatively impact on the health of construction workers.
- Biodiversity: The improper handling and storage of waste during the Construction and Operational Phases could negatively impact on biodiversity.
- Hydrology and Hydrogeology: All connections to the public water network (water supply or foul sewer), abstractions from water supply and discharges to the foul sewer during the Construction and Operational Phases will be under consent from Irish Water.

- Traffic: Waste collection activities at the Proposed Development have the potential to impact upon traffic movements in the local areas.

16.2.9 Material Assets: Traffic & Transport

Chapter 12 assesses the likely impacts on Traffic and Transport arising from the proposed development. Traffic and Transportation interacts with other environmental attributes as follows;

- Air Quality: Particulates and gaseous emissions from traffic (both on and off-site) and residual dust dispersal associated with traffic movements have been addressed in the Air Quality chapter (Chapter 7).
- Climate: Increased emissions due to the burning of fossil fuels generates impacts on the climate and is addressed in Chapter 8 Climate.
- Noise: The impacts from traffic and transport in terms of noise generation is addressed in the Noise & Vibration chapter (Chapter 9).

The potential significant impacts of Traffic and Transport have been considered within the relevant discipline and mitigation measures outlined where required. No other significant interactions have been identified, other than those discussed above. With mitigation measures in place, no significant residual negative impacts are predicted.

16.2.10 Material Assets: Services Infrastructure and Utilities

Chapter 13 assesses the likely impacts on Services and Infrastructure arising from the proposed development. During the construction phase, the following aspects would interact with Services and Utilities, and in the absence of mitigation may give rise to significant effects.

- Biodiversity: Site clearance and earth works may result in disturbance or displacement of fauna and birds. Construction lighting within the footprint of the proposed development has the potential to cause increased light pollution of adjacent areas and could potentially impact on fauna (bats, mammals, or birds) foraging in adjacent habitats. Any negative impacts on water quality as a result of excavations and discharge of silt, sediment or pollutants to surface waters may result in impacts to biodiversity downstream of the site. This is deemed minimal due to the location of the subject site away from major water bodies and water ways.
- Cultural Heritage and Archaeology: There may be an impact to Cultural Heritage and Archaeology if previously undiscovered sub-surface remains are damaged or destroyed during excavations to provide utilities. Chapter 15 deems that there is no anticipated interaction for the construction phase.

During operation, the potential interactions are;

- Biodiversity: disturbance to fauna (bats, mammals, or birds) arising from artificial light spillage into the environment from the associated lighting scheme.

The potential significant impacts to Services Infrastructure and Utilities have been considered within the relevant discipline and mitigation measures outlined where required. With mitigation measures in place, no significant residual negative impacts are predicted.

16.2.11 Biodiversity

Chapter 14 assesses the likely impacts on Biodiversity arising from the proposed development. No other potential significant interactions have been identified other than those already described. The potential significant impacts to Biodiversity have been considered within the relevant discipline and mitigation measures outlined where required. With mitigation measures in place, no significant residual negative impacts are predicted.

16.2.12 Cultural Heritage and Archaeology

Chapter 13 assesses the likely impacts to Cultural Heritage and Archaeology arising from the proposed development. No other significant interactions have been identified, other than those discussed above. The potential significant impacts to Cultural Heritage and Archaeology have been considered within the relevant discipline and mitigation measures outlined where required. With mitigation measures in place, no significant residual negative impacts are predicted

Table 16.1 Potential Interaction of Effects Matrix (Con = Construction, Op = Operations. X = interaction noted. If no potential effect the box is left blank)

Interaction	Population & Human Health		Land, Soils & Geology		Hydrology & Hydrogeology		Air Quality		Climate		Noise & Vibration		Landscape & Visual Impact		MA: Waste		MA: Traffic & Transport		MA: Service Infrastructure & Utilities		Biodiversity		Cultural Heritage & Archaeology	
	Con	Op	Con	Op	Con	Op	Con	Op	Con	Op	Con	Op	Con	Op	Con	Op	Con	Op	Con	Op	Con	Op	Con	Op
Population & Human Health					X																			
Land, Soils & Geology	X				X																			
Hydrology & Hydrogeology			X	X					X	X														
Air Quality	X		X				X																	
Climate					X	X	X	X																
Noise & Vibration	X																X							
Landscape & Visual Impact	X	X																						
Material Assets: Waste	X				X				X	X							X	X			X	X		
Material Assets: Traffic & Transport	X	X				X	X	X	X	X	X													
Material Assets: Service Infrastructure & Utilities	X																							
Biodiversity			X		X														X	X				
Cultural Heritage & Archaeology			X																X					