CHAPTER 14

INTERACTIONS OF THE FOREGOING

14.0 INTERACTIONS OF THE FOREGOING

14.1 INTRODUCTION

All environmental factors are interlinked to a degree such that interrelationships exist on numerous levels. Interactions within the study area can be one-way interactions, two-way interactions and multiple-phase interactions which can be influenced by the proposed development. As this EIAR has been prepared by a number of specialist consultants an important aspect of the EIA process is to ensure that interactions between the various disciplines have been taken into consideration.

As this EIAR document has been prepared by a number of specialist consultants, an important aspect of the EIA process is to ensure that interactions between the various disciplines have been taken into consideration. This chapter of the EIAR was prepared by Luke Wymer, BA, MRUP, Adv. Dip. Planning and Environmental Law, Dip. Project Management, Prof. Cert. Environmental Management, MIPI, Associate Director at JSA.

The purpose of this chapter of the EIAR is to draw attention to significant interaction and interrelationships in the existing environment. In preparing and co-ordinating this EIAR, John Spain Associates Planning and Development Consultants ensured that each of the specialist consultants liaised with each other and dealt with the likely interactions between effects predicted as a result of the proposed development, ensuring that appropriate mitigation measures were incorporated into the design process.

A specific section on interactions with other relevant factors is included in each of the environmental topic chapters of this EIAR. This approach is considered to meet with the requirements of applicable EU and Irish law. In this regard, the aspects of the environment likely to be significantly affected by the proposed development during both the construction and operational phases have been considered in detail in the relevant chapters of this EIAR, and, in addition, likely interactions between one topic and another have been discussed under each topic chapter by the relevant specialist consultant. In practice many impacts have slight or subtle interactions with other disciplines. This chapter highlights those interactions which are considered to potentially be of a significant nature. Discussions of the nature and effect of the impact is primarily undertaken within each of the relevant chapters, while this chapter identifies the most important potential interactions.

14.2 INTERACTIONS

The relevant consultants liaised with each other where necessary to review the proposed scheme and incorporate suitable mitigation measures wherever necessary. As demonstrated throughout this EIAR, most inter-relationships are neutral in impact when the mitigation measures proposed are incorporated into the design, construction or operation of the proposed development.

In addition to the above a series of standalone reports have been prepared to accompany the application and which have helped inform the above chapters of the EIAR where relevant. DBFL Consulting Engineers have prepared an Engineering Services Report, a Traffic Impact Assessment, a Site Specific Flood Risk Assessment, and a Construction Management Plan. AWN have prepared a Construction and Demolition Waste Management Plan and an Operational Waste Management Plan. JAK Consulting have prepared a Lighting Report, M&E Statement, Building Lifecycle Report, Glare and Artificial Light Reflectivity Analysis, and Energy and Sustainability Report. Scott Cawley have prepared an Appropriate Assessment Screening Report. A sunlight and daylight assessment was also prepared by JAK Consulting. These are all included as separate standalone reports with the application and have informed the relevant environmental assessments and are clearly referenced where relevant.

This section identifies the potential of unplanned but potential interactions that could occur during construction and operation of the proposed development. The following table identifies where it is predicated that interactions could occur.

Interaction	Population & Human Health	Archaeology and Cultural Heritage	Biodiversity	Landscape and Visual	Land and Soils	Water	Air Quality and Climate	Noise and Vibration	Wind	Material Assets	Transportation
Population & Human Health		✓	×	×	×	✓	✓	✓	×	✓	×
Archaeology & Cultural Heritage	✓		×	✓	×	×	×	×	×	×	×
Biodiversity	×	×		✓	×	✓	✓	✓	×	×	×
Landscape and Visual	×	✓	✓		✓	×	×	×	✓	×	×
Land and Soils	×	×	×	✓		✓	×	×	×	✓	×
Water	✓	×	✓	×	✓		×	×	×	✓	×
Air Quality and Climate	✓	×	✓	×	×	×		×	×	×	✓
Noise and Vibration	✓	×	✓	×	×	×	×		×	×	✓
Wind	×	×	×	✓	×	×	×	×		×	×
Material Assets	✓	×	×	×	✓	✓	×	×	×		✓
Transportation	×	×	×	×	×	×	✓	✓	×	✓	
	✓ Interaction	× No Interaction									

Table 13.1: Table of interactions between the environmental factors

14.2.1 POPULATION & HUMAN HEALTH

As referenced throughout the chapter, there are numerous inter-related environmental topics described in detail throughout this EIAR document which are of relevance to human health. This chapter of the EIAR has been instructed by updated guidance documents reflecting the changes within the 2014 EIA Directive. These documents include the EU and Irish guidelines for preparation of an EIAR and carrying out an EIA. Therefore, in line with the guidance documents referred to, this chapter of the EIAR focuses primarily on the potential likely and significant impact on Population and Human Health in relation to health effects/issues and environmental hazards from the other environmental factors and interactions that potentially may occur.

Where there are identified associated and inter-related potential likely and significant impacts which are more comprehensively addressed elsewhere in this EIAR document, these are referred to. However, the relevant environmental topic chapter of this EIAR document contains a more detailed assessment in respect of the interaction of each environmental topic with population and human health.

14.2.2 ARCHAEOLOGY AND CULTURAL HERITAGE

No interactions were identified in the Archaeology Chapter.

14.2.3 BIODIVERSITY

The main interaction relating to this EIAR Chapter on Biodiversity is with regards Water. Interactions exist between potential impacts on hydrology with respect to the potential impact of water pollution on local watercourses (e.g. the Golf Stream) and protected areas in downstream designated sites. Potential negative impacts on local watercourses could give rise to impacts on the aquatic environments and fauna that utilise these resources and are supported by these watercourses. With regards to potential for impacts to occur on downstream designated European sites, the Appropriate Assessment Screening report has determined that likely significant effects can be excluded. Furthermore, Section 5.7.2.1 has concluded that impacts on nationally designated sites located downstream of the proposed development site can also be excluded. In the context of the EIA to be conducted by the Board (but not the AA Screening), consideration should be given to the mitigation measures outlined in Sections 8.8.1.1 and 8.8.1.2 of Chapter 8: Water, and referred to in Section 5.10.3.1.5 and 5.10.3.1.6 of this Chapter aim to avoid/ minimise impacts on hydrology during the construction of the proposed development.

Interactions also exist with Landscape and Visual, Noise and Vibration and Air and Climate. Chapter 9: Air Quality and Climate concludes that no significant effects on climate are predicated as a result of either the construction or operation of the proposed development. Impacts on climate at both phases are described as imperceptible. Landscaping proposals are relevant to biodiversity in that such proposal may affect the habitats that will be found on site post-development, and could have effects on protected species which use the site for foraging and commuting purposes (e.g. bats). However, landscaping proposals could also have a positive effect on biodiversity on the site through the provision of wildflower meadows and native species.

Noise impacts as a result of the construction and operation of the proposed development are relevant to biodiversity in that they can result in disturbance impacts to sensitive fauna (e.g. breeding birds) as described in 5.7.8.1. Air quality impacts are relevant to biodiversity in that the generation of dust during construction can affect sensitive habitats in the vicinity of the proposed development site (e.g. the Golf Stream, and other watercourses). This potential impact is described in 5.7.3.1, and mitigation to reduce this impact is provided in Section 5.10.2.1.4

14.2.5 LANDSCAPE AND VISUAL IMPACT

<u>Biodiversity</u>

An enhanced riparian environment along the Ballyogan Stream will be complemented by grassland, trees and shrubs within the wider park to provide new and enhanced habitats for a broad range of wildlife. Opportunities for

observation and interpretation of wildlife serve as passive forms of recreation while the semi-natural aesthetics of the park will provide a pleasing contrast to the formal landscape and urban environment adjoining the park.

Green roofs to the buildings will serve as multi-function green infrastructure. In additional to reducing the visual impact of buildings from elevated vantage points such as in the Dublin Mountains, the green roofs will provide habitats for invertebrates and foraging/nesting birds.

Biodiversity and landscape objectives and outcomes are therefore mutually supportive and positive.

Archaeology and Cultural Heritage

No buildings or structures of heritage value have been identified as being present on or directly adjacent to the proposed development site. The site partially lies within the zone of notification for Carrickmines Castle and associated features (DU026-005), a National Monument in local authority ownership. No structures of architectural or cultural heritage merit will be impacted by the proposed development and no additional features of merit were identified during the field inspection or in the documentary, cartographic and aerial photographic sources. No properties or structures considered to be of architectural heritage merit will be directly, i.e. physically, impacted by the proposed development area.

14.2.6 LAND AND SOILS

The interactions of "Land and Soil" Aspects with other factors include:

- Water and Hydrology – Surface water run-off may have the limited potential to enter soil and groundwater. Implementation of appropriate mitigation measures as outlined in Chapter 8 (Water) will eliminate the potential for the influx of surface contaminants into the underlying geology and hydrogeology.
- Landscape - Visual aspects due to the proposed landscaping operation for reinstating the overland flood flow path between the Golf Stream and the M50 The design team has been in regular contact with each other throughout the design process to minimise the environmental impacts and that the landscape and land and soils elements have been fully co-ordinated.

14.2.7 WATER

There is an interaction between the provision of surface water for the proposed development drainage and the flood potential of the Golf Stream. Mitigation measures identified in the Site Specific Flood Risk Assessment (SSFRA) by DBFL Consulting Engineers will ensure there is no adverse effect from the proposed works. It should be noted that the SSFRA has been submitted to the Board as part of the planning application documentation.

The design team have liaised regularly during the iteration of the proposed development in order to minimise environmental impacts and to ensure a sustainable and integrated approach to the design of the proposed development

14.2.8 AIR QUALITY AND CLIMATE

Air quality does not have a significant number of interactions with other topics. The most significant interactions are between population and human health and air quality. An adverse impact due to air quality in either the demolition, construction or operational phase has the potential to cause health and dust nuisance issues. The mitigation measures that will be put in place at the proposed development will ensure that the impact of the proposed development complies with all ambient air quality legislative limits and therefore the predicted impact is long term and neutral with respect to human beings.

Interactions between air quality and traffic can be significant. With increased traffic movements and reduced engine efficiency, i.e. due to congestion, the emissions of vehicles increase. The impacts of the proposed development on air quality are assessed by reviewing the change in annual average daily traffic on roads close to the site. In this assessment, the impact of the interactions between traffic and air quality are considered to be imperceptible.

With the appropriate mitigation measures to prevent fugitive dust emissions, it is predicted that there will be no significant interactions between air quality and land and soils. No other significant interactions with air quality have been identified.

14.2.9 NOISE AND VIBRATION

In compiling this impact assessment, reference has been made to the project description provided by the project co-ordinators, project drawings provided by the project architects and traffic flow projections associated with the development provided by the traffic consultants. There is also an impact with Human Health, which has informed Chapter 3- Population and Human Health of this EIAR.

14.2.10 WIND

This chapter is likely to have interactions with the Landscape and Visual chapter, as part of the mitigation approach for wind impact entailed the incorporation and adjustment of proposed landscape features and layout. The mitigation measures introduced have been prepared and coordinated in consultation with the landscaping consultants of this project (Cameo Landscape Architects).

14.2.11 MATERIAL ASSETS

Interactions between Material Assets and other environmental topics are outlined throughout this EIAR document. The likely interactions between Material Assets and other environmental factors include interactions between the proposed drainage and wastewater arrangements and the water chapter of the EIAR. There is an interaction between Municipal Waste and Land and Soils in terms of the quantity of material to be removed from the site. There is also an interaction between Urban Settlements and Ownership and Access and Transportation. There is an interaction between the impacts on Urban Settlements and Population and Human Health in terms of the provision of a significant quantum of additional high quality residential units.

14.2.12 TRANSPORTATION

Noise and Vibration

The projected increase in heavy vehicle traffic during the construction stage (as quantified in Section 13.5) may lead to a slight increase in noise and vibration levels along the adopted construction haul route. However, such effects will be temporary and slight in nature.

The projected increase in vehicle traffic during the operational stage may potentially lead to a slight increase in noise levels during peak trip generation periods however, implementation of the mitigation measures described will prevent and minimise the potential impacts of this interaction.

Air Quality and Climate

Dust generation can also occur during extended dry weather periods as a result of construction traffic (as quantified in Section 13.5). However, such effects will be temporary and slight in nature.

During operational stage, there is predicted to be a slight increase in vehicle emissions as a result of increased vehicle movements on the surrounding road network. However, due to the predicted modest increase in vehicle trips, the effect of additional vehicle related emissions is predicted to be imperceptible.