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US Customs and Border Protection (CBP) - Proposed Reconfiguration & Expansion & South Apron Support Centre (SASC) - Partial Demolition, Refurbishment & Upgrade Project

Environmental Impact Assessment Report – Volume 1 Non-Technical Summary

daa

May 2023

Notice

This document and its contents have been prepared and are intended solely as information for daa and use in relation to the US Customs and Border Protection (CBP) - Proposed Reconfiguration & Expansion & South Apron Support Centre (SASC) - Partial Demolition, Refurbishment & Upgrade Project.

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Document history

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Client signoff

Client	daa
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1. Introduction & Methodology

daa plc. (hereafter referred to as 'daa') are applying to Fingal County Council (FCC) for planning permission for a proposed development in Dublin Airport comprising the following two key elements and all associated works:

- **US Customs and Border Protection** (hereafter referred to as 'the CBP') proposed reconfiguration and expansion; and
- **South Apron Support Centre** (hereafter referred to as 'the SASC') partial demolition, refurbishment, and upgrade.

This non-technical summary presents a general overview of the proposed development and an assessment of all associated potential environmental impacts. Refer also to the Environmental Impact Assessment Report (EIAR) submitted as part of this planning application. The EIAR is presented in three volumes as follows;

- **Volume 1** - Non-Technical Summary (this document).
- **Volume 2**- EIAR; and
- **Volume 3**- EIAR Appendices

A copy of all planning and engineering drawings have been submitted as part of of this planning application.

The EIAR has been submitted on a voluntary basis, given the unique circumstances of this application, i.e. the building footprint incorporates an element of future proofed capability for potential passenger capacity increase which may be subject to a future planning application that requires EIA.

Background Information

There has been an aviation pre-clearance agreement between Ireland and the US since November 2008, with Dublin being the only European Capital that provides pre-clearance in Europe. The CBP has designated controlled access and is contained in a purpose-built facility located on the ground floor level of Terminal 2 (Pier 4).

The CBP is operated by US personnel and is performed to Transportation Security Administration (TSA) rather than European Union (EU) standards. This allows passengers to undertake all US Immigration, customs, and agriculture inspections at Dublin Airport prior to departure.

Upon US arrival, passengers are treated as domestic passengers and can bypass US CBP and TSA inspections and proceed directly to their connecting flight or destination. This allows for shorter transfer times for connecting onward flights.

The existing 2-storey purpose-built US CBP initially formed part of the Terminal 2 permission ((F06A/1248 (PL 06F.220670)) granted on the 29th of August 2007, and extended under F08A/0023, granted on 9th April 2008 and serves all outbound passengers, including transfer passengers, travelling directly to the US from Dublin Airport.

daa is now seeking permission for the reconfiguration and expansion of the existing 2-storey CBP pre clearance facility at Pier 4, Terminal 2, Dublin Airport and the partial demolition, refurbishment, and upgrade of the existing 2-storey SASC to the southeast of the Terminal 2 building at Dublin Airport. This will be used initially as a temporary construction compound for the proposed works to the CBP and SASC facility, and for the continued use as an Airport Operational Building for airside support/operations.

The US Customs and Border Protection (CBP) - Proposed Reconfiguration & Expansion & South Apron Support Centre (SASC) - Partial Demolition, Refurbishment & Upgrade Project are the subject of this planning appliation to Fingal County Council FCC and are hereafter also referred to as the 'proposed development'.

Proposed CBP Upgrade

The CBP upgrade is proposed to address existing passenger circulation challenges and inefficiencies in terms of catering for current capacity, upgrades to the existing equipment and better egress of screened passengers. The upgrade will also provide a separate channel for staff/aircrew, a training channel doubling up as additional contingency, better positioned podiums for CBP officers, a transit area, better retail facilities and other enhancements.

The site is generally bounded by airside infrastructure to the south and west and general airport facilities and car parks associated with landside airport operations to the north and east. The Cuckoo stream is located ca.

210m to the south of the proposed works. A copy of all planning and engineering drawings have been submitted as part of of this planning application.

The lands on which the development is proposed is entirely within daa land ownership and is zoned by Fingal County Council (FCC 2023) as "DA" Dublin– Airport, with the zoning objective being to *'ensure the efficient and effective operation and development of the airport in accordance with an approved Local Area Plan'*. The proposed development has been designed in accordance with the zoning requirements.

As part of the CBP expansion, two Pier 4 link bridges and minor parts of Pier 4 facade are to be demolished. The existing main terminal infrastructure, particularly Terminal 2 and Pier 4, are an integral part of the scheme and their context, connection and massing have been taken in to account when developing the CBP expansion. The new border pre-clearance project element is an extension of the current facility which is located on the North end of Pier 4. The only available extension is towards the East, minimizing the impact on the airfield. The necessary physical connections for passenger flows into Pier 4 and Terminal 2 are key in determining the volume and location of the building (refer to Figure 1-1)

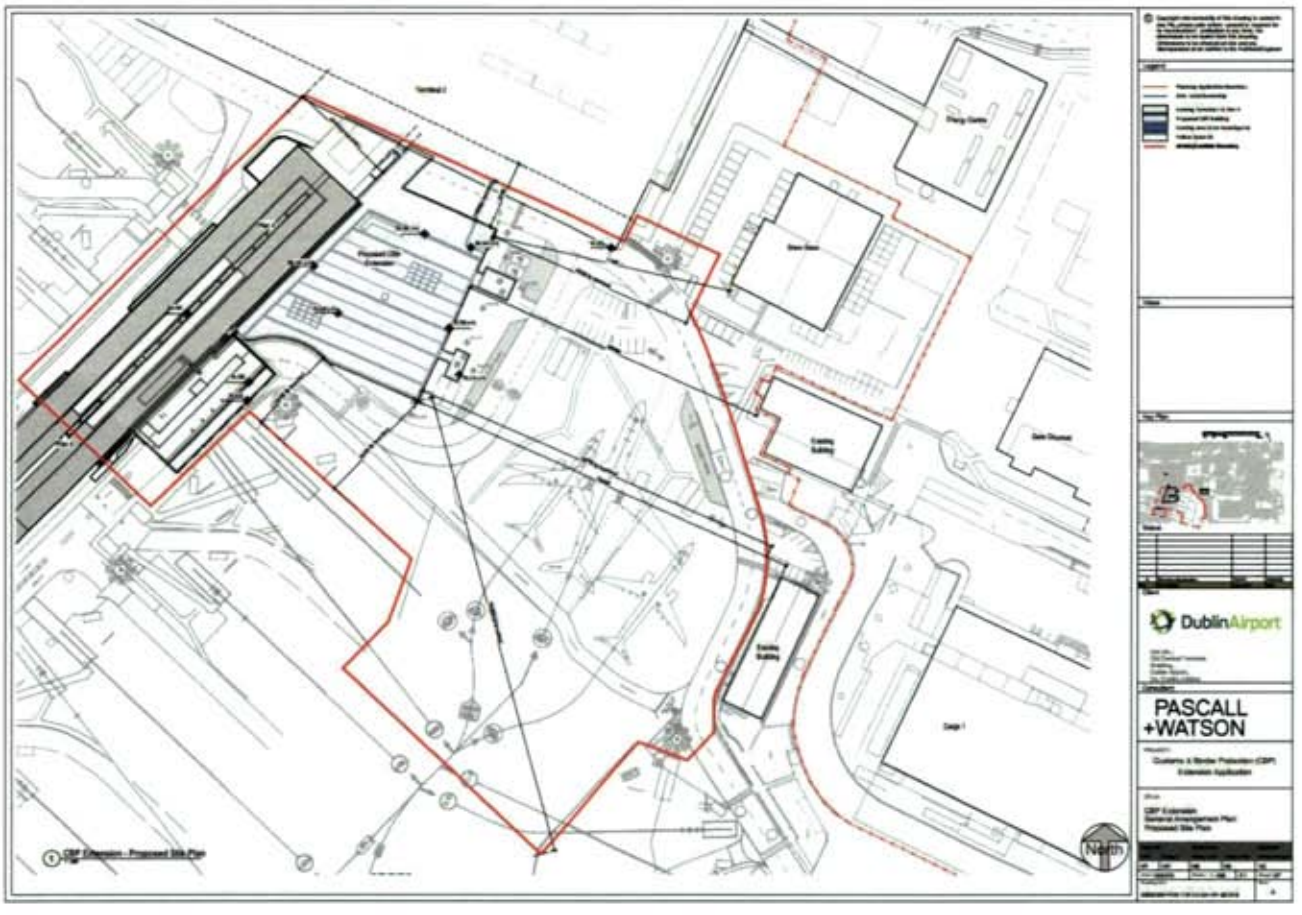

Figure 1-1 - Proposed Site Layout Plan for the US Customs and Border Protection

Proposed SASC Upgrade

The transformation of the existing SASC proposes to convert the existing building into offices and welfare facilities ancillary to airport operations. However, it is intended that for a period post completion of the proposed SASC refurbishment works, the building will be utilised for office and welfare facilities to support development works - it will effectively serve as a Construction Management and Logistics centre for development of the CBP facility.

The existing southern and western flanks of the building (refer to Figure 1-2) will be demolished along with the existing first floor link bridge to Shamrock House. A new enclosed walkway / courtyard area is to be provided on the west elevation with enclosed walkways to the north and south elevations (refer to Figure 1.2)

No additional aircraft stands are proposed as part of the Proposed Development and no additional aviation activity, such as additional air traffic movements (ATMs) or cargo activity, will arise as a consequence of the

proposed development, which is intended to add additional support to existing operations which currently take place in Dublin Airport.

The proposed development also does not propose any additional passenger capacity for the Airport, which will remain the subject of the cap of 32 million passengers per annum (mppa) (" the 32mppa Cap").

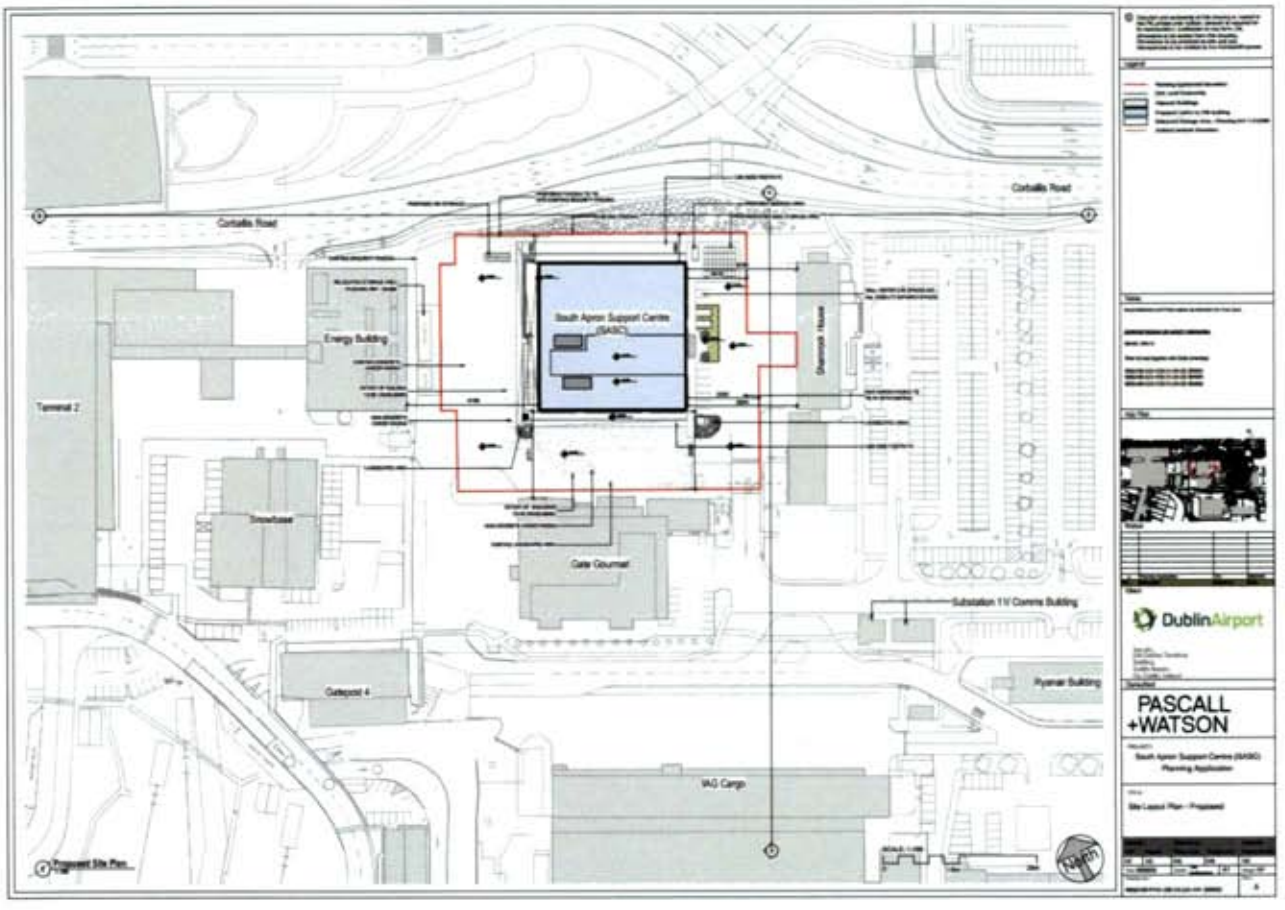

Figure 1-2 - Proposed Site Layout Plan for the South Apron Support Centre

Environmental Impact Assessment Report (EIAR)

This EIAR has been prepared in accordance with Planning and Development Regulations as amended 2001-2022, and with due regard to the following EIAR guidance.

- 'Guidelines on the information to be contained in Environmental Impact Assessment Reports' published in 2022 (EPA, 2022).
- Environmental Impact Assessment of Projects Guidance on Scoping (Directive 2011/92/EU as amended by 2014/52/EU); and,
- Environmental Impact Assessment of Projects Guidance on the preparation of the Environmental Impact Assessment Report (Directive 2011/92/EU as amended by 2014/52/EU), published by the European Commission.'

Additionally, discipline specific best practice guidance has been consulted by each specialist for each of the relevant topics (Population & Human Health; Biodiversity; Landscape and Visual; Air Quality; Climate; Noise & Vibration; Traffic; Land, Soils & Geology; Water; Cultural Heritage; and Material Assets) during the preparation of the EIAR.

The following environmental topics have been fully assessed within the EIAR document;

- Chapter 4 Population and Human Health;
- Chapter 5 Biodiversity;
- Chapter 6 Landscape & Visual;
- Chapter 7 Air Quality;
- Chapter 8 Climate;

- Chapter 9 Noise & Vibration;
- Chapter 10 Traffic;
- Chapter 11 Land, Soils & Geology;
- Chapter 12 Water;
- Chapter 13 Cultural Heritage; and,
- Chapter 14 Material Assets.

The EIAR has been prepared by competent experts. Consultation was undertaken with statutory organisations at various stages of the pre-planning process and subsequently informed the preparation of this EIAR document. All relevant comments and feedback received from the environmental consultees are addressed in full within the EIAR.

Culmulative Impacts for all relevant disciplines are addressed in Chapter 17 - Future Airport Developments and Chapter 18 – Cumulative Impacts (Volume 2 – EIAR). Interactions between disciplines are addressed in Chapter 1 (Volume 2 – EIAR). All mitigation and monitoring commitments detailed within the EIAR have been included in a separate compendium 'a schedule of environmental commitments' presented within the EIAR (refer to Chapter 16, Volume 2 – EIAR).

2. Project Description

Details of Proposed Development

The purpose of this application is to seek planning permission for the proposed US Customs and Border Protection (CBP) - Proposed Reconfiguration & Expansion & South Apron Support Centre (SASC) - Partial Demolition, Refurbishment & Upgrade Project located in Dublin Airport is here after referred to as 'the proposed development' or 'the site' (with the exception of individual references to the proposed CBP development or SASC development as required).

This section lays out the proposed development, including design, size and other relevant features of the proposed project, the physical characteristics, proposed use of materials and any emissions associated in relation to and during construction and operation phases. The chapter also sets out the likely construction programme, phasing and activities, including proposed mitigation methods for construction environmental impacts.

The proposed development will consist of:

(1) the reconfiguration and expansion of the existing 2-storey US Customs and Border Protection (CBP) pre-clearance facility, and,

(2) the partial demolition (ca. 3,320m^2), refurbishment and upgrade of the existing 2-storey former Flight Catering Building, to become the South Apron Support Centre (SASC), which, together with its existing external hardstanding area to the north-west of the SASC, is to be used initially as a temporary construction compound (office storage and a pre-screening/ logistics/ staff welfare facilities) for the proposed works to the CBP facility, and then for continued use as an Airport Operational Building for airside support/operations,

All associated works related to this two-phase project are discussed further in Chapter 2 Volume 2 Environmental Impact Assessment Report (EIAR). A full set of all planning and engineering drawings are presented are submitted as part of this planning application.

The proposed development at the existing CBP and SASC buildings will also require the diversion and extension of the existing watermain on site, and a new foul and surface water drainage system, including a proposed future clean only pipeline for future diversion of roof runoff from the CBP building.

The proposed development also includes all associated site development and landscaping works, and all ancillary airport infrastructure including additional apparatus/equipment, as well as High Mast Lighting (HML). The proposed development will not result in any increase in passenger or operational capacity at Dublin Airport. There will also be no increase in staff parking, either airside or landside, as a result of the proposed development.

The site is located within Fingal County Council (FCC) and entirely on land owned by daa, within the boundary of Dublin Airport. Dublin Airport is located approximately 10km north of Dublin City Centre and 2km south of the closest town of Swords. The general land use within the site boundary is hardstanding (both airside and landside).

The M1 motorway is located to the east, M50 motorway to the south and the N2 to the west which form a high-capacity road network to facilitate traffic. The primary access to the airport is located to the south east via the roundabout which junctions the M1 and Swords Road. (R132). Further information on Traffic and Transport is discussed in Chapter 10 of Volume 2 EIAR – Traffic.

The two-storey SASC, formerly known as the Flight Catering Building (FCB), is located to the southeast of the Terminal 2 Energy Centre and to the north west of Shamrock House. As part of phase 1 of the project, the reconfiguration and refurbishment of the building and facades will be repurposed to provide the necessary welfare facilities to enable the works for the CBP building. The interior of the building will be renovated to become offices, toilets and a canteen for the contractors working at the CBP expansion with works provisionally estimated to last ca. 12 months. The proposed development site and red-line boundary is presented in Figure 2.1.

The proposed development at the CBP is generally bounded by existing airport infrastructure. The CBP site is bound to the west and south by airside infrastructure including pier 4 and by landside infrastructure to the north by Terminal 2, to the east by Gate Post 4, an airside airport road, and an airside transportation service building.

The Cuckoo Stream is located to the south of the site by ca. 210m at the southern end of Pier 4. The stream is not located within the application site boundary and is culverted and emerges downstream and within the wider Airport Campus. Further details on drainage and the condition of the Cuckoo Stream can be found in Chapter 12 – Water.

It is understood that the proposed development will require the diversion and extension of the existing watermain on site and the installation of a new foul and surface water drainage system. It is proposed that a future clean only pipe for future diversion of runoff will be used in this instance, (the pipeline is inert and will form part of the future drainage network at Dublin Airport, in order to avoid repeat construction at the CBP building in the future) along with all other associated site development and landscaping works.

The anticipated project programme for the project is as follows:

- **SASC Refurbishment:**
  - Commence: Q1 2024
  - Complete: Q4 2024
- **Customs and Border Post Facility:**
  - Commence: Q1 2025
  - Complete: Q2 2027

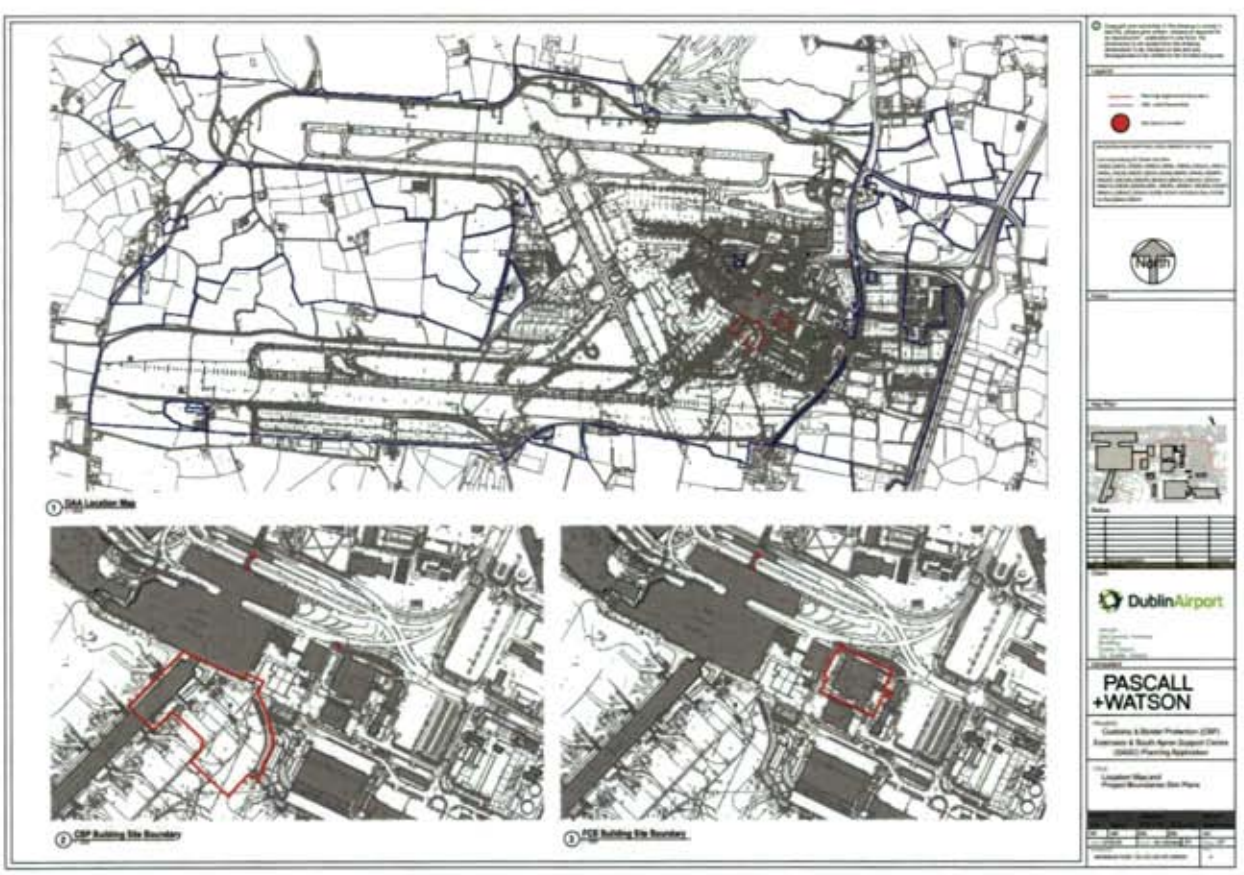

Figure 2-1 - Proposed Development Site

Customs Border Patrol

As part of the phasing of the proposed development, the CBP development comprises of the reconfiguration and expansion of the existing pre-clearance building to the south east.

The existing US Customs and Border Preclearance facility is located at Pier 4 adjacent to Terminal 2 in Dublin Airport.

The project scope requires the construction of the new extension to the CBP to be constructed while maintaining current CBP operations at all times. In order to achieve this, the works will be undertaken in phases

to demolish, construct, fit out, test and commission the new extension prior to refurbishing and integrating the existing CBP into the new scheme.

This will be achieved by constructing the new extension as a stand-alone structure which will be fitted out, commissioned and handed over prior to decommissioning the existing facility. The existing CBP area will be refurbished and fitted out to integrate with the new facility to complete the overall expansion project.

The construction works are anticipated to commence in Q1 2025 and be completed in Q2 2027.

Figure 2-2 - CBP - Final Design

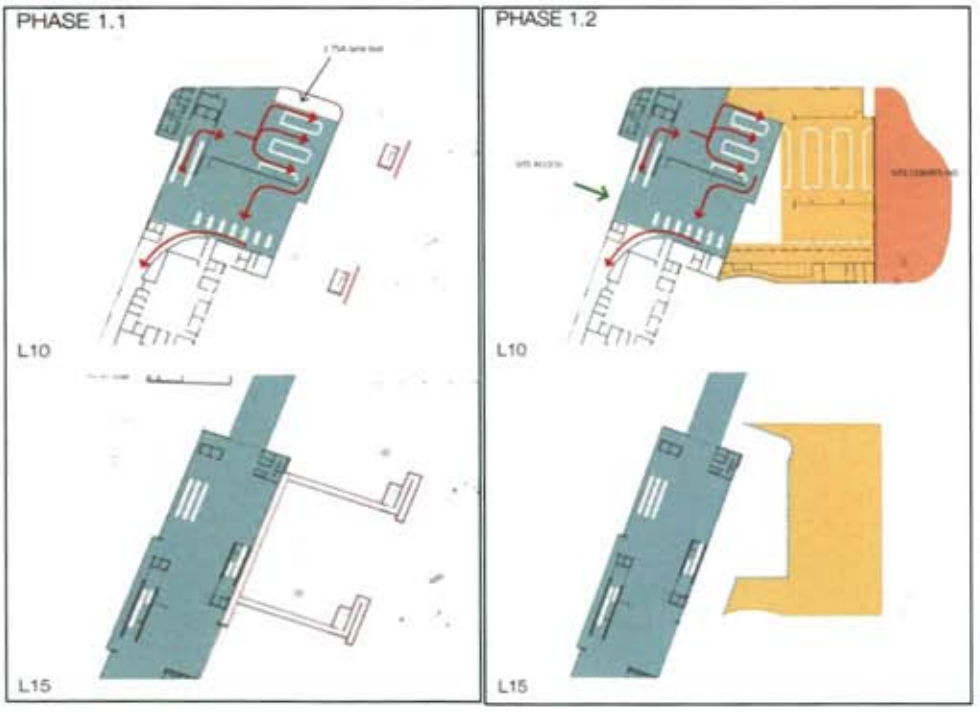

Figure 2-3 - Proposed CBP Phasing: Phase 1.1 and Phase 1.2

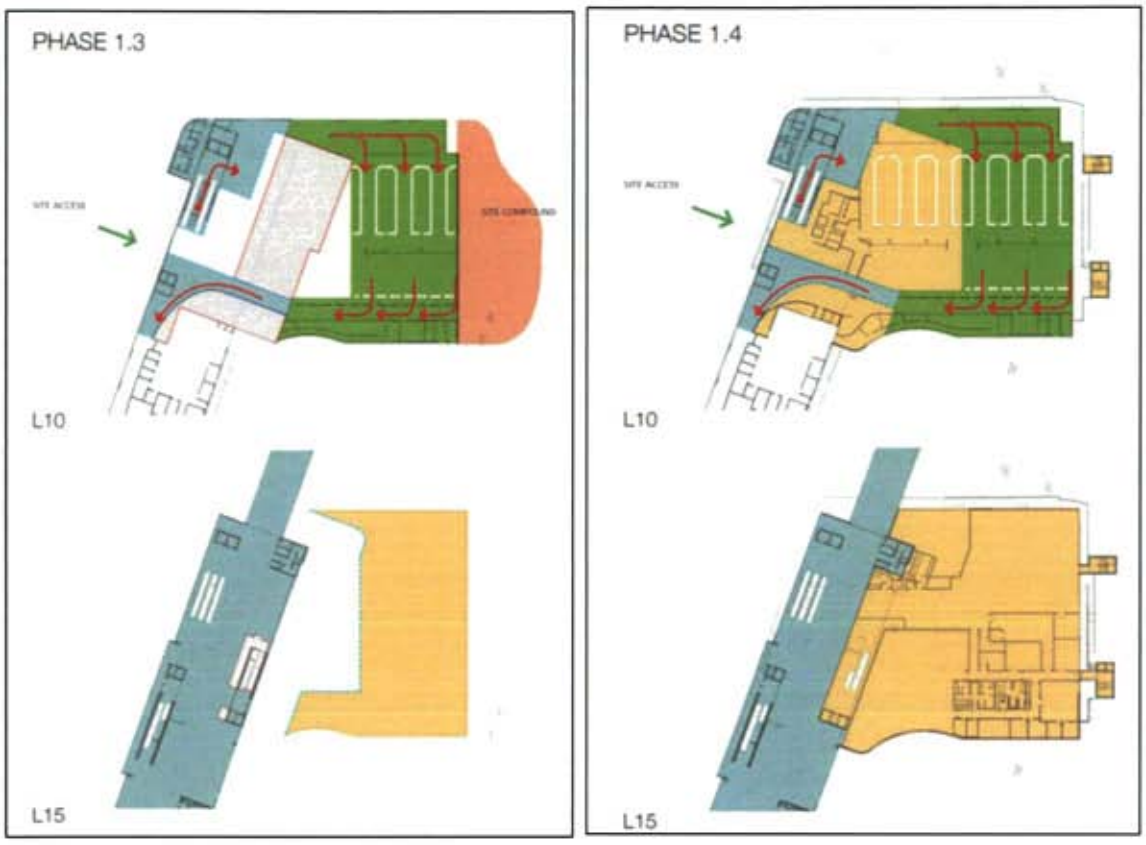

Figure 2-4 - Proposed CBP Phasing Strategy Phase 1.3 and Phase 1.4

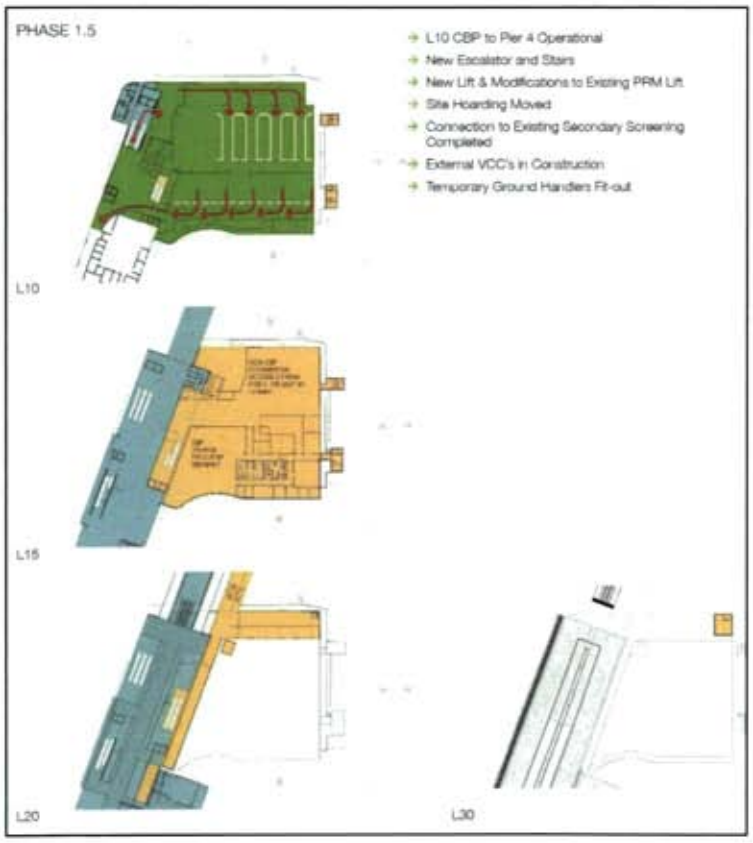

Figure 2-5 - Proposed CBP Layout – Levels 10 - 30

South Apron Support Centre

The proposed SASC development comprises of the partial demolition, refurbishment, and upgrade of the existing two-storey former Flight Catering Building (FCB) to the southeast of the Terminal 2 building to be utilised initially as a temporary construction compound for the proposed works to the CBP facility, and thereafter for continued use as an Airport Operational Building for airside support/operations as the SASC. The proposed development will include:

- The upgrade of the façade of the existing SASC building, to include partial demolition of the later attritions/extensions to the south and west flanks of the building; demolition of the existing pedestrian link bridge to Shamrock House to the east (making good the elevation of Shamrock House to match the existing), and demolition of an existing substation internal to the building;
- The refurbishment of the remaining SASC structure to provide offices, meeting rooms, staff welfare facilities, storage and plant rooms on the ground and first floors, including an external courtyard at ground floor; and refurbished rooftop plant enclosure and new rooftop balustrades;
- The temporary use of the upgraded and refurbished SASC building and its existing external hardstanding area to the north-west of the FCB building as office storage and a pre-screening/ logistics/ staff welfare facility, as well as 10no. parking spaces, 2no. PRM car parking spaces and 80 no. cycle storage racks during the construction of the proposed extension to the CBP facility.
- A revised external pedestrian and vehicular circulation arrangements; and
- A separate external smoking shelter and separate external bin storage.

The reconfiguration and refurbishment of the building and facades to the SASC will provide the necessary welfare facilities to enable the works for the CBP building.

The interior of the building will be renovated to become offices, toilets and a canteen for the contractors working at the CBP expansion with the works are estimated to last 12 months. To note, this period of time relates to the works on the SASC alone and not the time that it will be utilised as a support to the CBP extension.

CBP Construction Aspects

Construction of the new extension envelope to the CBP will be completed prior to the integration of the existing building and operation into the new scheme. This will require the construction of a new structural steel frame extension structure with composite roofing, Wall cladding and curtain wall glazing to match the existing Terminal 2 finishes.

SASC Construction Aspects

Working hours on the Dublin Airport campus will take place 24/7. Work will be carried out on day shifts as far as possible however a considerable part of the works is expected to be undertaken during night shifts to minimise disruption to airport operations. Sunday, Public holidays and night shift working are subject to acceptance in advance by the daa Project Owner and local authority.

Further details on both the CBP and SASC construction aspects are discussed in detail in Chapter 2 of Volume 2 (EIAR).

Description of Baseline Scenario

The baseline scenario including a description of the relevant aspects of the current receiving environment has been considered as part of this planning application and included in the EIAR through the collection and collation of baseline data including analytical data where relevant (air quality, noise levels, surface water quality). A detailed description of the current receiving environment is presented in relevant sections for each environmental topic. The predicted changing baseline (i.e., the likely future receiving environment) that could arise as a result of committed development within the vicinity has also been addressed, where relevant, and is presented under the cumulative impacts section of the accompanying EIAR.

Consideration of Alternatives

Potential alternatives to the proposed development have been considered at length within this submission and are summarised in Volume 2 – EIAR Chapter 3 of the submission.

Consideration of Cumulative Effects with other Projects

Consideration of cumulative effects with other projects was undertaken. All relevant developments in the immediate environs of the proposed development, which have been approved or operational, have been reviewed in terms of potential cumulative environmental impacts that may arise with the proposed development.

Cumulative impacts were identified by each specialist as part of their respective assessments (refer to Chapter 17 of Volume 2 - EIAR) and considered further as part of the EIAR. No significant cumulative effects arising from the proposed development are anticipated.

Risk of Major Accidents and/or Disasters

The potential risk posed by a major accident and/or disaster has been considered. Based on the low vulnerability of the proposal to such risk, and the unlikely potential occurrence of such an incident, the overall risk is considered to be low.

3. Alternatives

Need for the Proposed Development

The proposed U.S Costumes and Border Protection (CBP) development is needed to address challenges in terms of existing capacity, upgrades to the existing equipment and better egress of screened passengers. The proposed reconfiguration and refurbishment of the South Apron Support Centre (SASC) building and facades will provide welfare facilities to enable the works for the CBP building and subsequentially be used as offices and welfare facilities. Should permission be granted for the proposed development, the efficiency will be increased which will allow for a higher standard of customer service.

Hence the proposed development is needed. However alternatives have been considered as part of the iterative design and assessment process where relevant.

Optioneering and RIBA 1

Two options were presented during the optioneering stage:

- Option 1 (MTS) proposed the 1750m^2 secondary expansion area to be located south of the existing building envelope.
- Option 2 (MTS+) proposed a secondary screening area of 1795m^2 to be located east of the existing building envelope.

The preferred solution is Option 1, expanding the facility at its southern edge. The main drivers for this selection are:

- Minimal new build option, and accordingly less potential for impacts on the receiving environment;
- Phased approach, to emerge out of existing facility; and
- Pier 4 functionally retained as is.

Following the conclusion of the optioneering process, Option 1 (MTS) was selected, also referred to as RIBA 1.

RIBA 2

The preferred solution at RIBA 1 was developed to RIBA 2 following the same design principles. As part of the design development the following changes were applied:

- A new toilet block was introduced at lower level before the passengers go into level 15.
- In-transit lounge was included as a new requirement;
- The staff facilities were developed to the south of the volume;
- A new entrance for premium passengers was added to the north east corner; and
- New emergency doors were added as part of the fire strategy development.

These changes would improve the passenger experience and would result in a positive impact in terms of wellbeing for passengers and staff. The concept design of the expansion of the existing US Preclearance Facility was also developed for construction and operations. This includes the connection routes with Pier 4 and its associated commercial spaces

Iteration and Final Proposal

Iterations

daa design standards for toilet provision refers to BS6465. This design also follows the Dublin Airport Washroom Standard Guidelines. To comply with Building Regulations Part G clause 2.2 provisions is to be calculated in accordance with BS 6465 Sanitary Installations, Part 1; Part 2; Part 3 and Part 4

The toilet block developed at RIBA 2, has gone through 2 iterations.

Final Design

Following stakeholder consultation, the following additional functions were incorporated into the final proposed design:

- Additional commercial area post CBP including F+B and Lounge;
- Significantly reduced impact on Terminal 2; and

- Phase construction and operation.

A new level has been added to the CBP extension and new routes to connect the passengers to Terminal 2 added through new link bridge. At Level 15 (above CBP), departing passengers are routed from CBP to the gate lounges and the VCC taking them at Apron level from where they walk in /out of the aircrafts. Arriving passengers are directed to either existing transfers facility on Pier 4 or to the existing immigration hall in Terminal 2. A fallow space at L20 and a lift core extending to L30 of the CBP building are included to safeguard for future expansion.

South Apron Support Centre (SASC)

RIBA 1 (Feasibility)

The brief requirements have been developed with daa and its stakeholders and will provide office accommodation for daa staff. During RIBA 1 the feasibility of renovating the existing facility and changing its use was established.

Design for Planning Application

The internal layouts have been further developed to ensure that the toilet provision meets standards and codes and to meet daa's technical standards. A measured survey and condition survey have been carried out and the information presented in this design statement and the drawings are based on this.

Ground Floor

The main entrance to the building is to the East. Two glazed double swing doors provide access into the Reception/ Lobby a security office is located adjacent to the lobby. The existing vertical circulation core to the East is largely retained and will provide lift and stair access to first floor and stair access to roof level from the main reception. The stair within the core will be demolished and reconstructed within the retained walls of the core. The stair will be reconstructed to comply with regulation and code. The induction room will be positioned with access directly from the lobby. A second core to the West side of the building will be provided. This is located directly opposite the exit from the main lobby with clear line of site. The vertical circulation core to the West will consist of the existing lift shaft which is retained and a new stair core. At ground floor a large flexible open plan office is provided with small, medium and large sized meeting rooms located adjacent to this. Male and female shower, changing, locker and toilet facilities are provided. The canteen with kitchen facility is located to the North West side of the building with direct access out into the sunken courtyard area which will provide additional outdoor seating. Storage and plant areas are included.

First Floor

The first floor is accessed via the two cores one to the East and one to the West side of the building. Circulation is provided via corridors, one which connect directly between the two cores East/West and by two corridors providing connectivity North/ South. Open plan office spaces are provided one to the North and one to the South. Small, medium, and large meeting rooms will be provided. A canteen with kitchenette is provide to the West. Male and female changing, locker and toiler facilities are provided. Storage and plant areas are included.

Roof

Roof level is accessed via the stair core to the East side. An alternative means of escape will be provided via an opening hatch and ladder connecting to the West stair core. The roof will be for maintenance access only. Mechanical and electrical plant will be located within the existing and refurbished roof plant enclosure. The two areas of external plant will be located adjacent to the enclosure where plant is currently located. A replacement balustrade to the perimeter of the roof will provide fall restraint.

Do Nothing Scenario

The supporting rationale for the proposed CBP extension is provided in Chapter 3. The rationale of the refurbishment of the Flight Catering Building (FBP) building to the SASC building is to ensure continuous operation of the CBP during the construction stage.

Doing nothing has therefore been rejected as an alternative.

4. Population and Human Health

Introduction

This chapter assesses the likely significant effect of the proposed development on Population and Human Health in the general area of the proposed development. A more complete description of the proposed development is presented in Chapter 2 – Project Description.

This chapter considers demographics, economic activity, tourism and recreation, community and amenities and human health. In addition to population and human health, as discussed in this chapter, potential impacts on air, climate, noise emissions, soil, water, visual and traffic are addressed in relevant chapters of the EIAR.

Receiving Environment

The proposed development is located in Dublin Airport within the boundary of Fingal County Council (FCC). For the purpose of the population and human health chapter, the assessment of the receiving environment has been conducted with regard to the location of the site and has been assessed on a national, regional and local level.

The current receiving environment in terms of demographics, economic activity, tourism and recreation, community and amenities and human health have been considered within Chapter 4, while the future receiving environment is determined as being '*unlikely to change significantly from that outlined in the 'Receiving Environment' in the assessment period, most notably during the construction period.*' It is noted that population growth and '*an increase in tourism is expected to continually increase, which will necessitate the need for the development and the extension / reconfiguration of the airport.*'

Construction Population and Human Health Effects

The potential construction effects on human health are described further in Chapter 4 which identifies the potential source of the impact; potential impact pathways (route by which receptors can become impacted) and likely significant effects arising from the potential impact.

The construction phase of the development will lead to temporary traffic, noise and vibration, dust generation and visual impact within the site and the general vicinity. The proposed development complies with the statutory land use zoning. There will be no severance of land, loss of rights of way, or impacts to existing connections or amenities as a result of the construction works associated with the proposed development, provided the mitigation measures suggested in this EIAR are followed. The existing landscape is expected to be only slightly impacted, particularly as the modifications would be undertaken to already existing features. All impacts are predicted not to be significant and short term in nature, as determined by the assessments included in each of the EIAR chapters. As a result, the proposed development will result in temporary construction related Population and Human Health effects, but mitigation measures will be applied. There will be no likely significant effects on population and human health during construction of the proposed development.

Operational Human Health and Population Impacts

The potential operational impacts on human health are detailed in Chapter 4 which identifies the potential source of the impact; potential impact pathways (route by which receptors can become impacted) and potential effects arising from the potential impact.

The proposed development will modify the current local services and amenities of Dublin Airport, but, there will be no negative direct or indirect impacts on sensitive receptors. Due to the proposed development of the CBP / SASC reconfiguration, there is predicted to be slight positive permanent impact on mental health and wellbeing during the operational stage through the provision of a better travel experience (e.g. less congestion during border patrol) to airport users, and improved working conditions to airport staff. Taking into account the baseline environment and proposed mitigation during construction, no human health risks from contaminated soils or noise and vibration are expected during the operational phase. According to Chapter 6 – Landscape and Visual, there is predicted to be a slightly beneficial impact to the SASC building, and a neutral impact to the CBP. The visual amenity may be enhanced in the northern part of the site due to a more 'contemporary building, in place of older, less architecturally sensitive building'. There will be no likely significant effects on population and human health during operation.

Conclusion

The proposed development will not have a significant residual negative effect, but, is predicted to have a residual positive effect on population and human health during the operational phase.

5. Biodiversity

Introduction

This biodiversity chapter identifies, quantifies and evaluates potential effects of the proposed residential development project on protected sites, habitats, species and ecosystems. It considers impacts to ecological receptors and proposes mitigation and enhancement measures to offset or reduce the identified impacts. An Appropriate Assessment Screening Report has been composed and accompanies this report.

Methodology

A desk study was carried out to collate the available existing ecological information on the development site. Field surveys included consideration of semi-natural habitats, terrestrial mammals, birds and bats. Lands located within the proposed site boundary and immediately adjacent to the proposed development were surveyed.

Survey Results

There are no habitats within the development site of greater than local value. No ecological features of regional, national or European importance will be impacted by the proposed development. No invasive plant species were recorded within the site extents.

Potential impacts

Potential impacts on the ecological receptors within the zone of influence of the proposed 'US Customs and Border Protection (CBP)- US Customs and Border Protection (CBP) - Proposed Reconfiguration & Expansion & South Apron Support Centre (SASC) - Partial Demolition, Refurbishment & Upgrade Project during the construction and operation phases have been assessed. Potential impact through the construction and operation of the development include; Impacts on Water Quality.

Due to the location, nature, extent and duration of the proposed works at the development site and with the inclusion of mitigation measures, the development will not have an impact on any European site / Natura 2000 site. Similarly, the proposed development will not have an effect any nationally designated conservation areas such as National Heritage Areas / proposed National Heritage Areas. The proposed development site is comprised solely of existing buildings and built land and therefore, there will be no loss of habitat as a result of the proposed development. No ecological features of regional, national or European importance will be directly impacted by the proposed development.

As part of this assessment the potential pollution pathways were identified for the development including; surface-water run-off during construction; via groundwater during construction (hydrogeological pathway); environment via surface-water run-off (operational phase) and via discharge of treated foul effluent (operational phase). The proposed project has the potential to impact on a local surface waterbody; the Cuckoo Stream and ultimately the Mayne River, through the release sediment and contaminants from the construction and operational phases and that surface water run-off will discharge to the Cuckoo Stream. Given the lack of waterbodies onsite and provision of Sustainable Drainage Systems as well as measures incorporated into the projects Construction Environmental Management Plan and design elements (operational foul to be treated appropriately) the Cuckoo Stream will not experience a reduction in water quality as a result of proposed development.

Mitigation and enhancement measures

The inclusion of SuDS measures will reduce surface water run-off to greenfield rates. Although the risk of any significant impact on water quality of the Cuckoo Stream is considered to be extremely low given the lack of running water features on the site, best practice will be implemented at all times in relation to all construction activities to avoid any accidental pollution events occurring on site or polluting the groundwater table.

Residual impacts

This assessment has demonstrated that through iterative project design and assessment, and the identification of appropriate ecological mitigation measures, the residual ecological impacts of the development proposals are not expected to be significant, and are expected to be localised to the proposed development site and immediate environs.

6. Landscape and Visual

This section summarises the effects of the proposed development on landscape and visual receptors, and the significance of the effects identified. The extent of the study area is within ca.1km of the US CBP site and South Apron Support Centre site and is defined by the likely Visual Envelope of the proposals in combination with the site itself.

Landscape Effects

The study area is within the Low-Lying Character Type as described within Fingal County Council Landscape Character Assessment.

The site lies within the Dublin Airport complex, dominated by built form and infrastructure, concrete and tarmac surfaces and large moving vehicles including aircraft. Spatially, the study area comprises clusters of buildings set in large areas of open space. Aside from the built form, boundaries are comprised of high, secure see-through fencing. Vegetation is limited to lawns between runways, grass verges around airport roads and small areas of formal planting including grasses, clipped hedges and trees deployed around the entrance to the airport complex. The topography is generally flat, with minor artificial mounding associated with roadways. Surface water is limited to drainage ditches. Overall, the character may be described as functional and industrial on the runway side of the airport complex, modern and amenity led on the public side.

The site and study area do not coincide with any landscape designations. There are no protected views within the study area. The value attributed to landscape within the study area is likely to be low, in keeping with the 'modest' attribution given in the council's Landscape Character Assessment for the landscape type and of low susceptibility to the nature of change represented by the proposals.

The attributes of landscape character identified includes topography, vegetation, surface water, land-use, spatial pattern, materials, features and aesthetic qualities.

The effect on topography, vegetation, surface water is judged to be neutral, the proposals would not affect these attributes.

The effect on land-use is judged to be neutral, the proposals would not affect existing land-use patterns.

The effect on spatial pattern is judged to be neutral, as there would be no substantive change to pattern.

The effect on materials is judged to be neutral. The material palette within the study area is of low sensitivity to the type of change proposed. However, the proposals do not alter the overall balance of materials or introduce new materials within the study area.

The effect on features is judged to be neutral for the US CBP Building and slight positive for the South Apron Support Centre. The proposals would result in the removal of a small proportion of the built form within the study area including part of the frontage to the Pier 4 structure and the South Apron Support Centre building, replacing these with new structures in contemporary, architecturally simple style faced with materials commonly found within the existing complex.

The effect on aesthetic changes is judged to be neutral for the US CBP Building and slight positive for the South Apron Support Centre. The overall impression of character is unlikely to be substantively altered for people within the southern part of the study area addressing the runway side of the airport. For people within the northern part of the study area addressing the public frontage of the airport complex, the experience of character may be enhanced by the presence of a contemporary building in place of older, less architecturally sensitive buildings.

Landscape Character

The landscape character of the study area is judged be tolerant of the type of changes arising from the proposals and is therefore judged overall to be of low sensitivity to the nature of the changes proposed. The overall significance of effect upon character is judged to be slight beneficial in significance for the South Apron Support Centre building and neutral in significance for the US CBP extension. These categories of effects (slight beneficial and neutral respectively) would not be considered as significant.

Visual Effects

The Visual Envelope or areas of land from which the development may be potentially visible was estimated using a manual approach using map interpretation, and visual envelope mapping on site to establish the outer limit of land that may be visually connected with the proposals.

Custom Border Patrol

1The areas identified are predominately located within 1km from the site and includes the sections of the R132 Road and the eastern areas of the Old Airport Road which run adjacent to the airfield. There are also some distant views towards the US CBP site from elevated sections of the M50 and M1 junction, however given the distance from the proposals and low sensitivity of motorway users, any views from here would be of such distance that effects would not be significant. The CBP site is not visible from public accessible roads to the north and east, as it is screened by intervening buildings including Terminal 2. There may be some partial views to the upper parts of the US CBP extension from Castle Drive and Corbalis Park which is located south-east of the site.

South Apron Support Centre

The areas identified are predominately located within 500m from the site and includes at most the adjacent Terminal1 & 2 Road, theT2 Departures Road, Corballis Road South, Corballis Park Road, R132 Swords Road and the eastern end of Old Airport Road.

The visual receptors identified includes people using, roads, footpaths and cycle lanes. No other visual receptors were identified as having potentially significant changes to the view.

Following desktop and field survey, 10 viewpoints were selected to represent the experience of different types of visual receptor. The viewpoints chosen do not cover every view but have been selected to represent the different users from a range of directions and distances from the site.

The significance of the visual effect of the development when operational was judged as neutral from 5no. viewpoints on opening year. This means the proposed development would be difficult to distinguish and/or there would be barely perceptible change in view.

The significance of the visual effect of the development was judged as slight beneficial from 5no. viewpoints on opening year. This means the proposals would cause a limited improvement to the view.

The overall effects on visual amenity may be considered to be of slight beneficial significance for the SASC building and neutral in significance for the CBP extension. These categories of effects (slight beneficial and neutral respectively) would not be significant.

7. Air Quality

Existing Environment

Baseline air quality data and data available from similar environments indicate that levels of nitrogen dioxide, carbon monoxide, benzene and particulate matter less than 10 microns and less than 2.5 microns are generally well below the National and European Union (EU) ambient air quality standards.

Impact Assessment

Do Nothing

In the Do Nothing scenario, ambient air quality at the site will remain as per the baseline and will change in accordance with trends within the wider area (including influences from potential new developments in the surrounding area, changes in road traffic, etc). The Do-Nothing scenario is considered neutral in terms of air quality.

Construction Phase

The greatest impact to air quality during the construction phase of the proposed development is from dust emissions. There are a number of residential properties bordering the proposed site. The UK Institute of Air Quality Management guidance was used to assign a low level of sensitivity to dust soiling impacts to the area in the immediate vicinity of the proposed development. The local area is considered of low sensitivity to human health impacts from dust emissions.

The scale and nature of the construction works were reviewed, and it was determined that a medium level of dust control was required for the construction phase of the proposed development. Once the dust mitigation measures are implemented, dust emissions are predicted to be short-term, negative, localized 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 is likely to be short-term, localised, negative and imperceptible with respect to human health.

Construction stage impacts to air quality are considered short-term and imperceptible due to the scale and nature of the works.

Operational Phase

Potential impacts to air quality during the operational phase of the proposed development are as a result of increased traffic volumes on the local road network. The changes in traffic flows were assessed against the document Air Quality Assessment of Specified Infrastructure Projects – PE-ENV-01106 screening criteria for an air quality assessment. The changes in traffic did not meet the screening criteria for an air quality assessment. The changes in traffic did meet the scoping requirements for an air quality assessment for one affected road link. It can be determined that the operational phase of the proposed development will have an imperceptible, localized, negative and long-term impact on air quality.

Cumulative Impact

Cumulative construction phase impacts can occur if the construction phase overlaps with the construction phase of other developments within 350 m. This can result in cumulative dust impacts on nearby sensitive receptors. Provided the dust mitigation measures are implemented throughout the construction phase of the proposed development cumulative dust impacts are predicted to be direct, not significant, short-term, localised, negative and imperceptible at nearby receptors.

Cumulative impacts have been included as part of the traffic assessment for the operational phase. It was predicted that there will be an imperceptible impact to air quality during the operation of the proposed development.

Mitigation

Construction Phase

A detailed dust management plan will be incorporated into the overall Construction Environmental Management Plan for the site. The measures outlined in the plan will be in place for the duration of the construction phase to ensure no significant dust impacts occur.

Operational Phase

There are no mitigation measures proposed for the operational phase of the development as it is predicted to have an imperceptible impact to air quality.

Residual Impact Assessment

Once the dust mitigation measures outlined are implemented dust related impacts during the construction phase are predicted to be short-term, adverse, not significant and imperceptible.

The impact to air quality as a result of increased traffic volumes during the operational phase of the proposed development is direct, neutral, long-term, not significant and imperceptible.

Monitoring

Monitoring is not recommended for the proposed development.

8. Climate

Existing Environment

Ireland declared a climate and biodiversity emergency in May 2019 and in November 2019 there was European Parliament approval of a resolution declaring a climate and environment emergency in Europe. This, in addition to Ireland's current failure to meet its EU binding targets under Regulation 2018/842 results in changes in GHG emissions either beneficial or adverse being of more significance than previously considered prior to these declarations.

Data published in 2022 predicts that Ireland exceeded (without the use of flexibilities) its 2021 annual limit set under EU's Effort Sharing Decision (ESD) (EU 2018/842) by 2.71 Mt CO_{2eq}. The sector with the highest emissions in 2021 was agriculture, at 35.3% of the total, followed by transport at 20.3%. Ireland's greenhouse gas emissions increased by 4.7% in 2021 compared to 2020. For 2021, the total national emissions (excluding LULUCF) were estimated to be 61,528 kt CO_{2eq} as shown in (EPA, 2022b).

The EPA's Critical Infrastructure Vulnerability to Climate Change report (EPA, 2021b) assesses the future performance of Irelands critical infrastructure when climate change is considered. Fluvial flooding and coastal inundation/coastal flooding are considered the key climate change risks, with respect to road infrastructure, with snowstorm and landslides being medium risks. Extreme winds and heatwaves/droughts are considered low risk to road infrastructure. One of the key outputs of the research was a framework that will provide quantitative risk-based decision support for climate change impacts and climate change adaptation analysis for infrastructure.

Impact Assessment

Do Nothing

Under the Do Nothing scenario the proposed development will not be constructed. In the Do-Nothing scenario, no construction works will take place and the site will remain as it currently is. The climate baseline will continue to develop in line with the identified trends. This scenario is considered neutral in relation to climate.

Construction Phase

The assessment set out in the TII guidance document PE-ENV-01104 (TII, 2022a) aims to quantify the difference in GHG emissions between the Proposed Development and the baseline scenario (the alternative project/solution in place of the Proposed Development). PE-ENV-01104 (TII, 2022a) recommends the calculation of the construction stage embodied carbon using the TII Online Carbon Tool (TII, 2022b). The TII Online Carbon Tool (TII, 2022b) has been commissioned by TII to assess GHG emissions associated with road or rail projects using Ireland-specific emission factors and data.

The proposed development is estimated to result in total GHG emissions of 4,176 tonnes embodied CO_2eq, equivalent to an annualised total of 0.0013% of Ireland's non-ETS 2030 target, 0.42% of the 2030 transport budget or 0.06% of the 2030 industry budget. Over the predicted 60-year lifespan the annualised emissions due to the initial construction phase of the proposed development is projected to reach, at most, 0.0002% of Ireland's non-ETS 2030 emissions target, 0.007% of the 2030 buildings (commercial and public) budget or 0.001% of the 2030 industry budget.

Operational Phase

There is no significant land use change associated with the proposed development as the land is currently developed. It can be concluded that operational greenhouse gas emissions will have a long-term, minor adverse and non-significant effect on climate.

The vulnerability of the proposed development to climate change and the sensitivity and exposure of the development to various climate hazards has been determined. The following climate hazards have been considered in the context of the proposed development: flooding (coastal, pluvial or fluvial); extreme heat; extreme cold; wildfire; drought; extreme wind; lightning, hail, landslides, fog, wildfire and landslides. The drainage design includes for 20% climate change factor so will have a low sensitivity to flooding. In relation to extreme temperatures, both extreme heat and extreme cold, these have the potential to impact the building materials and some related infrastructure. However, high quality, durable building materials will be selected

for the proposed development. The assessment concluded that the proposed development has a worst-case medium vulnerability but low risk.

Cumulative Impact

With respect to the requirement for a cumulative assessment PE-ENV-01104 (TII, 2022a) states that:

> *"for GHG Assessment is the global climate and impacts on the receptor from a project are not geographically constrained, the normal approach for cumulative assessment in EIA is not considered applicable."*

However, by presenting the GHG effect of a project in the context of its alignment to Ireland's trajectory of net zero and any sectoral carbon budgets, this assessment will demonstrate the potential for the project to affect Ireland's ability to meet its national carbon reduction target. Therefore, the assessment approach is considered to be inherently cumulative.

Mitigation

Construction Phase

Mitigation by way of monitoring of the embodied carbon in the construction and operational phases will be conducted. The aim of the monitoring will be to seek further ways to minimise climate effects. Monitoring will include; embodied carbon of construction materials, water usage, power and fuel usage and waste generation and management (including reuse and recycling rates). Where monitoring shows the proposed development is not meeting its targets, (set based on final design and current national and regional best practice) further mitigation will be put in place.

Embodied carbon of materials and the operational energy usage have been or will be incorporated into the detailed design to ensure the lifecycle carbon of the proposed development is minimised. During the construction phase best practice measures shall be implemented on site to prevent significant GHG emissions and reduce impacts to climate.

Operational Phase

A number of measures have been incorporated into the design of the development in order to mitigate against the effects of future climate change. For example, adequate attenuation and improved drainage have been incorporated into the design of the development to avoid potential flooding effects as a result of increased rainfall events in future years. These measures have been considered when assessing the vulnerability of the proposed development to climate change.

Residual Impact Assessment

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.

In relation to climate change vulnerability, it has been assessed that there are no significant risks to the proposed development as a result of climate change.

Monitoring

The assessment of effects on climate as a result of the construction, operation and maintenance and decommissioning phases of the proposed development are predicted to be not significant in EIA terms. Based on the predicted effects it is concluded that no specific monitoring is required.

9. Noise & Vibration

An assessment has been made of the noise and vibration effects relating to the proposed reconfiguration and partial demolition of US Customs and Border Protection, and South Apron Support Centre (SASC) at Dublin Airport. The assessment focused on the following elements:

- Baseline noise monitoring has been undertaken in accordance with ISO 1996-2:2017 *Acoustics - Description, Measurement and Assessment of Environmental Noise - Determination of Sound Pressure Levels* in the vicinity of the proposed project and sensitive receptors in order to characterise the existing noise environment;
- A review of the standards and guidelines has been conducted in order to set a range of acceptable noise and vibration criteria for the construction and operational phases of the proposed project, these are discussed in the relevant sections;
- Predictive calculations have been performed during the construction phase of the project at the nearest sensitive locations to the proposed construction site;
- A review of operational phase impacts has been undertaken;
- Determining significance criteria for impact assessment;
- A schedule of mitigation measures has been proposed to avoid, reduce or offset, where necessary, the identified potential outward impacts relating to noise and vibration from the proposed development.

The baseline noise environment has been established through an environmental noise survey conducted at sensitive receptor locations surrounding the site to quantify the existing noise environment. The survey was conducted in general accordance with ISO 1996: 2017: Acoustics – Description, measurement and assessment of environmental noise.

There is no published statutory Irish guidance relating to the maximum permissible noise level that may be generated during the construction phase of a project. Local Authorities typically control construction activities by imposing limits on the hours of operation and consider noise limits at their discretion.

Reference has been made to BS 5228 2009+A1 2014 Code of practice for noise and vibration control on construction and open sites. Part 1 to set appropriate construction noise thresholds for the development site.

A construction programme has been provided as part of the Construction Environment Management Plan. The programme provides details on items of construction plant, locations of work and hours of work, these details have been used to predict typical construction noise levels using guidance set out in BS 5228-1:2009+A1:2014.

A suite of mitigation measures have been proposed the construction stage in line with the guidance contained within BS5228: 2009 + A1 2014 Code of Practice for Noise and Vibration Control on Construction and Open Sites - Part 1 Noise. Various mitigation measures will be considered and applied during the construction of the proposed development to minimise the noise and vibration impacts where practicable.

Following mitigation implementation it is predicted that the effect will be negative, not significant to slight and temporary at residential receptors and negative, moderate to significant and temporary effect at the nearest commercial buildings within 70m of the project. Vibration effects at offsite residential receptors will be imperceptible. Vibration impacts at nearby commercial buildings will be a negative, brief, moderate impact.

No changes to operation will occur as a result of these works, hence there will be no additional noise and vibration effects due to the operational stage.

10. Traffic

Receiving Environment

This Report seeks to provide a description of the outline methodology and anticipated traffic impact of the proposed development on the surrounding transportation network. The site is located on the eastern side of the Dublin Airport complex and is situated to the southern side of Corballis Road in close proximity to the R132, M1 and M50.

The Proposed Development includes partial demolition and refurbishment of the South Apron Support Centre (SASC) to provide landside facilities for the expansion of the US Customs Border Preclearance (CBP) facility.

Strategically, the proposed development is of critical importance to airside operations at Dublin Airport. In this regard, it should be noted that the core function of the national road network, in particular the M1 and the M50, and its supporting road links, is to facilitate transport access to key international gateways such as Dublin Airport.

Construction Traffic Impact

From a Construction Traffic point of view, a worst-case scenario was considered in order to provide a robust assessment. It was assumed that the peak level of site operatives will coincide with the peak level of HGV movements. The likely level of arrivals and departures during the AM and PM Peak are presented in PCU (Passenger Car Unit), where the LGV factor corresponds to 1 and the HGV factor corresponds to 2:

AM – 105 PCU (96 staff arrivals and 4.5 HGV arrivals & 4.5 HGV departures),

PM – 105 PCU (96 staff departures and 4.5 HGV arrivals & 4.5 HGV departures).

It is assumed that all the staff traffic and Deliveries trips will be arriving and diverting via R132/Corballis Road/Red Car Park Access Junction, while 50% of traffic from north will be using Swords Road/Airport Roundabout and the remaining 50% will be using Old Airport Road/R132-Swords Road Junction. These volumes were then compared with existing trip volumes at surrounding junctions in order to determine whether further assessment of junction modelling was required. It was found that the percentage increase for all the junctions were well below the threshold of 5% for both AM and PM peak. A maximum percentage increase of 3.63% for AM peak and 3.49% for PM Peak has been observed found for R132/Corballis Road/Red Car Park Access Junction.

Hence, in accordance with the thresholds set out in TII's Traffic and Transport Guidelines, no junctions were required to be brought forward for detailed assessment and it is considered that the traffic impacts due to the proposed construction activity of proposed development are below the TII Guideline thresholds.

Operational Traffic Impact

From an Operational Traffic point of view, the proposed development is anticipated to replace existing services and, therefore, provide no increase in overall traffic. As a result, no further assessment was required.

Cumulative Traffic Impact

The traffic assessment includes two separate projects which are anticipated to be developed in conjunction with one another. The assessment can therefore be considered, by definition, as a cumulative impact assessment.

Conclusion

Overall, the proposed development is not anticipated to have a negative impact on the surrounding transportation network during either the operational or construction phases.

11. Land, Soils and Geology

Receiving Environment

This chapter describes the type of land, soils and geology likely to be encountered beneath the proposed development. It also addresses the potential effects of the proposed development on land, soils and geology together with the mitigation measures that will be employed to eliminate or reduce any potential effects. The proposed US Customs and Border Protection (CBP) - Proposed Reconfiguration & Expansion & South Apron Support Centre (SASC) - Partial Demolition, Refurbishment & Upgrade Project located in Dublin Airport (i.e. the red line boundary) is here after referred to as 'the proposed development' or 'the site'.

Land use at the Site has generally been transformed over the years from greenfield use (and the historic site of a castle) to airport infrastructure. The site has developed considerably since the late twentieth century.

The Site is generally bounded by existing airport infrastructure. The general topography of the Site is ca. 60m above ordnance datum (mOD) in the central part of the Site.

The site is generally underlain by made ground, glacial till, and sand/ gravel. No bedrock was encountered in boreholes drilled on the proposed development (up a maximum depth of ca. 10.5m bgl).

Construction Land, Soils & Geology Impacts

Activities during construction will primarily comprise of the partial demolition and reconfiguration of the existing facilities and construction of new facilities (to a maximum depth of 4m). No rock breaking will be required. Approximately 2,500m^3 of excess subsoil (native soil and made ground) will require offsite disposal in accordance with relevant waste management legislation. Soil compaction and dust generation may occur during the construction phase. There could be a potential impact on soils and geology, and associated human health (i.e. construction workers) from potential fuel leaks during site construction activity.

However, the employment of good construction management practices, and mitigation and monitoring measures (as set out in Chapter 11, Volume 2 – EIAR) will serve to minimise any risk of pollution to geology and soils, and associated human health, from construction activities.

Operational Land, Soils & Geology Impacts

There will be no effects on soils or geology during the operational phase of the proposed development.

Conclusion

The proposed development will not have a likely significant residual effect on land, soils and geology (and associated human health) given the mitigation measures proposed during the detailed design and construction phase of the development.

12. Water

Receiving Environment

This chapter describes the existing surface water and groundwater likely to be encountered beneath the proposed development. It also addresses the potential effects of the proposed development on hydrology (i.e. surface water) and hydrogeology (i.e. groundwater) together with the mitigation measures that will be employed to eliminate or reduce any potential effects. The proposed US Customs and Border Protection (CBP) - Proposed Reconfiguration & Expansion & South Apron Support Centre (SASC) - Partial Demolition, Refurbishment & Upgrade Project located in Dublin Airport (i.e. the red line boundary) is here after referred to as 'the proposed development' or 'the site'.

Land use at the Site has generally been transformed over the years from greenfield use (and the historic site of a castle) to airport infrastructure. The site has developed considerably since the late twentieth century. The Site is generally bounded by existing airport infrastructure. The general topography of the Site is ca. 60m above ordnance datum (mOD) in the central part of the Site. There are no surface water courses within the development. Two rivers are located nearby, the closest river is the Sluice Stream which is 1.4km north of the proposed development. The Cuckoo Stream is located immediately south, and downstream of the site. The proposed development is located ca. 8km from the Irish sea.

daa carry out monitoring along the Cuckoo Stream, and based on available information, no significant surface water quality issues have been identified (SW-C-7 and SW-C-9) along the Cuckoo stream, and downstream of the proposed development.

Groundwater vulnerability is an indication of how easily groundwater can become contaminated by human activity. Taking account of the nature of the proposed development and the location, the site is not considered to be particularly sensitive in relation to potential groundwater impacts. Regional groundwater quality is good for the main portion of the site, and is poor for a portion of the SASC site.

No flooding risks have been identified and the proposed development will not result in an increased flood risk in relation to the proposed CBP. Similarly for the proposed SASC, the risk of flooding is low. Climate factors have been considered as part of the design of the proposed drainage network.

Construction / Demolition Water Impacts

Activities during construction will primarily comprise of the partial demolition and reconfiguration of the existing facilities and construction of new facilities (to a maximum depth of 4m). No rock breaking will be required. Degradation to groundwater and/ or surface water could result from potential pollution events. General site activities during construction and demolition associated with cement handling etc. could result in effects. Temporary dewatering may be needed during excavation. Existing contamination if present could also pose a potential pollution and planning risk.

However, the employment of good construction management practices, and mitigation and monitoring measures (as set out in Chapter 12, Volume 2 – EIAR) will serve to minimise any risk of pollution Water, and associated human health, from construction activities.

Operational Water Impacts

There will be no effects on Water during the operational phase of the proposed development.

Conclusion

The proposed development will not have a likely significant residual effect on Water (and associated human health) given the mitigation measures proposed during the detailed design and construction phase of the development.

13. Cultural Heritage

This chapter of the EIAR, prepared by Enda O'Flaherty (BA, H-Dip, PhD) of Rubicon Heritage Services Ltd, details the archaeological, architectural and cultural heritage issues that need to be addressed in respect of the following proposed development at Dublin Airport.

This study assesses the baseline archaeological and cultural heritage environment, in order to evaluate the likely effects that the proposed development will have on this environment, and to provide mitigation measures to avoid, reduce or offset these effects in accordance with the policies of the Department of Housing, Local Government and Heritage (DHLGH), The Fingal County Council Development Plan (2023-2029), the National Monuments Acts 1930-2014, as amended, and best practise guidelines.

This study identified 10 cultural heritage receptors within the study area CH001–CH010. These comprised two protected structures, both of which were also registered on the NIAH, as well as one additional NIAH registered site. One RMP, two unregistered cultural heritage receptors, and four previous archaeological excavations were also identified.

No indirect effects on cultural heritage receptors are predicted. In the case of CH001 (Unclassified Castle (Site of); CH009 (Townland Boundary) and CH010 (Laneway marked on the First Edition 6-inch Ordnance Survey Sheet) there is potential for direct effects from the proposed development:

The proposed development is located immediately adjacent to, and within the Zone of Notification of, CH001 (DU014-011----Unclassified Castle (site of)). Whilst the construction phase of the proposed development will not affect directly the indicated location of this RMP, it is noted that this location is known only from historic mapping with limited accuracy. Furthermore, though the surrounding area comprises an industrialised airport setting; archaeological testing and monitoring of recent past developments in the vicinity of the current site (Dublin Airport Terminal 2 development - see 13.4.2) have uncovered sub-surface archaeological deposits, demonstrating the potential for the survival of sub-surface remains, even within the airport complex.

The proposed development is located on the marked location of a townland boundary (CH009) and a Laneway (CH010) marked on the First Edition 6-inch Ordnance Survey Sheet. As outlined above, previous excavations adjacent to the proposed development have demonstrated the potential for the survival of sub-surface remains, even within the airport complex.

To mitigate the effects of the proposed development, the following mitigation strategy shall be implemented.

A suitably qualified archaeological consultant will monitor groundworks under license to the National Monuments Service Section of the Department of Housing, Local Government and Heritage. Should any archaeological material be encountered mechanical excavation will cease and the Fingal County Archaeologist and National Monuments Service shall be notified. Further work will then only be carried out following consultations with the County Archaeologist and the National Monuments Service.

14. Material Assets

This assessment examines material assets serving the proposed development, in relation to existing and proposed built services (i.e., foul sewerage, surface water drainage, water supply, gas, electricity, and telecommunications utilities), and waste management.

Built Services

The Site of the proposed development is located entirely on land owned by daa, within Dublin Airport. Consultation with relevant bodies has been undertaken to determine existing utilities present in the vicinity of the Site. The current status of utilities serving the Site is summarised as follows;

- Surface water run-off from the CBP and SASC project sites are currently attenuated, with existing petrol interceptors in place along the drainage system to remove potential residual contaminants from storm water run-off across these areas.
- There is an existing foul water network along the northern and eastern boundaries of the CBP site and through the centre of the CBP site from the northern boundary to the south-eastern boundary and from the northern boundary to the southern boundary. The foul water network runs adjacent to the northern, eastern and southern boundary of the SASC site.
- There is an existing potable water supply running east to west through the northern portion of the CBP site and running north to south in the western portion of the CBP site. A potable water supply runs adjacent to the western and southern boundaries of the SASC site.
- There are no overhead ESB lines running through the CBP site, however, there are 4no. daa 10kV underground lines running north to south through the CBP site. There is also a daa 10kV underground line running through the eastern most corner of the northern CBP site boundary. There are no overhead lines running through the SASC site, however a daa 10kV line enters the site in the lower section of the eastern boundary.
- There are no existing gas utilities within the CBP site boundary. There are 2no. existing gas lines running along the western boundaries and southern boundaries of the SASC site.
- Dublin Airport is serviced by a mixture of copper and fibre networks served by 2no. public node operator points within the airport, operated by eir. There are a number of other telecom service providers, utilised by daa, who are granted access over eir's existing network within the airport. eir services enter the airport via the R132 Swords Road (FCC, 2020). There are 2no. communication lines running along the western and northern boundaries of the CBP site, with a third line running along the northern boundary. There are 2no. communication lines that enter the SASC site boundary, 1no. line at the northern boundary of the site and 1no. line on the eastern boundary.

There are a significant number of existing lighting structures and associated cable ducting within the CBP site boundary. There is an underground services tunnel, carrying lighting and associated cable ducting, that enters the SASC site at the midpoint of the eastern boundary and 1no. line of lighting structures adjacent to the southern boundary of the site

A complete set of all utility / service plans received is presented in the planning application.

Given the nature of the proposed development, along with proposed mitigation measures (set out in Chapter 14, Volume 2 – EIAR) no residual significant effects are anticipated with regards to existing or proposed utilities. There will no likely significant effects associated with built services.

Waste

Historically, the Site was greenfield before being developed as an airfield. Based on all available evidence, including soil analytical data and findings from the geotechnical investigation, and taking account of proposed mitigation measures, soils beneath the Site are not considered to pose an unacceptable risk to human health, building and services, or environmental receptors.

The proposed residential development will be designed, planned, constructed and operated to minimise waste generation at every stage.

The management of waste generated during the construction of the proposed development will be in accordance with the Construction Environmental Management Plan (CEMP) submitted as part of this planning application. The following waste streams will be generated during the construction phase: soils, concrete, mechanical, electrical containment, wood, glass, aluminium, iron and steel, insulation material, and

construction materials containing asbestos. However, all waste streams will be managed in accordance with statutory waste management and environmental requirements, regional waste related policy, best practice waste management guidance, and the CEMP. As with any construction project, there is potential for nuisance issues to arise during the construction phase, associated with mud or waste materials impacting roads and footpaths adjacent to the proposed development. Mitigation measures will be implemented to manage these potential impacts.

The Contractor will be responsible for monitoring waste documentation for the full duration of the construction phase. The Contractor will track and monitor all waste volumes to be transported offsite. All waste records will be maintained onsite throughout the project and will be made available for viewing by the Client, Employer's Representative and statutory consultees (FCC, EPA) as required.

Waste management during the operational phase of the development will be undertaken by private waste contractors (in accordance with statutory waste management and environmental requirements, regional waste related policy, and best practice waste management guidance), and regulated by Fingal County Council. All waste management procedures implemented onsite during the operational phase will be in accordance with the Operational WMP submitted as part of this planning application. Therefore, no further mitigation measures are required with regard to the transport and disposal or recovery of all waste streams which will be generated during the operational phase.

Given the nature and location of the proposed development, along with proposed mitigation and monitoring measures (set out in Chapter 14, Volume 2 - EIAR) no residual significant effects are anticipated with regards to waste management associated with the proposed development. There will no likely significant effects associated with waste management and / or generation.

15. Interactions

This section describes interactions between impacts on various environmental factors. A summary matrix showing interdependencies between these environmental attributes is presented below for the proposed development.

Table 15-1 – Summary Interactions Matrix

	Chapter 4 - Population & Human Health		Chapter 5 - Biodiversity		Chapter 6 - Landscape and Visual		Chapter 7 - Air Quality		Chapter 8 - Climate		Chapter 9 - Noise & Vibration		Chapter 10 - Traffic		Chapter 11 - Land, Soils & Geology		Chapter 12 - Water		Chapter 13 - Cultural Heritage		Chapter 14 - Material Assets	
	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.
Chapter 4 - Population & Human Health			×	×	×	×	✓	✓	✓	✓	✓	✓	×	×	✓	✓	✓	✓	×	×	×	×
Chapter 5 - Biodiversity	×	×			×	×	✓	✓	✓	✓	×	×	×	×	×	×	✓	✓	×	×	×	×
Chapter 6 - Landscape & Visual	×	×	×	×			×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Chapter 7 - Air Quality	✓	✓	×	×	×	×			✓	✓	×	×	✓	✓	✓	✓	×	×	×	×	×	×
Chapter 8 – Climate	×	×	×	×	×	×	×	×			×	×	✓	✓	✓	✓	✓	✓	×	×	✓	✓
Chapter 9 - Noise & Vibration	✓	✓	×	×	×	×	×	×	×	×			×	×	×	×	×	×	×	×	×	×
Chapter 10 - Traffic	×	×	×	×	×	×	✓	✓	✓	✓	✓	✓			×	×	×	×	×	×	×	×
Chapter 11 - Land, Soils & Geology	✓	✓	×	×	×	×	✓	✓	✓	✓	×	×	×	×			✓	✓	×	×	✓	✓
Chapter 12 - Water	✓	✓	✓	✓	×	×	×	×	×	×	×	×	×	×	✓	✓			×	×	×	×
Chapter 13 - Cultural Heritage	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×			×	×
Chapter 14 - Material Assets	×	×	×	×	×	×	×	×	✓	✓	×	×	×	×	✓	✓	✓	✓	×	×		

All potential interactions have been addressed as required throughout the EIAR. During each stage of the assessment contributors have liaised with each other (where relevant) to ensure that all such potential interactions have been addressed.

The various interactions between environmental topics considered within the EIAR are further discussed in Chapter 15, Volume 2 – EIAR.

16. Schedule of Environmental Commitments

A schedule of environmental commitments has been prepared, for ease of reference and clarity, and to facilitate enforcement of all environmental mitigation and monitoring measures specified within Chapters 4 to 14 of the EIAR.

All mitigation and monitoring commitments detailed within the EIAR have been included in a separate compendium and are presented in Chapter 16, Volume 2 - EIAR.

These commitments have been incorporated into the Construction Environmental Management Plan (CEMP) submitted as part of this planning application.

17. Future Airport Development

The proposed development is designed to ensure that Dublin Airport can cater more efficiently for the CBP, subject to planning permission being granted. It is considered appropriate that the competent authority assessing the proposed development would have an overview of long-term Dublin Airport plans, so that the proposed development can be viewed and assessed in the wider context.

For the purposes of clarity, it is noted that all relevant committed developments i.e. consented developments and planned projects currently pending a planning decision, are assessed in Chapter 18 – Cumulative Impacts. This chapter (Chapter 17 – Future Development), focuses on all relevant projects / schemes which warrant consideration with respect to potential environmental effects, but which have not yet been consented or lodged and are subject to change before final design is confirmed.

The proposed development is assessed, with regards to the potential for environmental effects to arise from other future projects.

Projects are broadly described under the following key categories:

- **Planned Upcoming Projects** – Projects with advanced design though not yet finalised and not lodged; and,
- **Planned Future Projects** – Future projects that are known but have not yet undertaken assessment or have been finalised.

Planned Upcoming Projects

Airfield Drainage Project (ADP)

The purpose of the Airfield Drainage Project will be:

- To provide a nett improvement in the degree of protection afforded to the receiving waters by the surface water management system;
- To optimise the performance of the surface water management system at Dublin Airport for improved efficiency, greater operational flexibility and resilience to a broad range of extreme weather events; and,
- To improve the hydraulic capacity of the surface water network and alleviate historic capacity issues.

At this point in time the ADP is at preliminary design stage. Further details are presented in Chapter 17, Volume 2 - EIAR.

The ADP in its current form has been assessed against the proposed development to consider the likely significant cumulative environmental effects. Based on the results of this assessment it is not likely that significant cumulative environmental effects will arise.

Planned Future Projects

Capital Investment Programme 2020+

Dublin Airport has been a regulated entity as of 2011, required periodically to submit its proposals for capital investment to the Commission for Aviation Regulation (CAR). In February 2019, the plans for investment to commence the next stage of Dublin Airport's development were submitted to CAR as the Capital Investment Programme (CIP 2020+)[1], with the objective of transforming the airport into a major European airport, welcoming 40 mppa and continuing as one of the top five European transatlantic hubs.

daa is undertaking the CIP with significant infrastructural investments that are intended to improve the built environment, from 2022-2026. This programme of incremental infrastructure replacement and upgrades will be delivered in a sustainable manner to enable Dublin Airport maintain existing and future operations subject to planning permission were relevant. The CIP inform the projects that should be considered in the Planned Future Projects section.

17.1.1.1. Infrastructure Application

The Infrastructure Application (IA) is a project to increase the passenger capacity of the airport to 40mppa and the infrastructure required to facilitate that growth, likely to be reached post 2030.

Currently at the design stage, in broad terms the IA would include:

[1] https://www.dublinairport.com/corporate/airport-development/cip-2020

- New Apron 7;
- South Apron Expansion;
- North Apron Development;
- Terminal 1 Central Search;
- Long Term Car Parking Red;
- New Staff Car Park North;
- Terminal 2 Multi-Storey Car Park;
- Underpass beneath Runway 16/34;
- Surface Access Infrastructure;
- Airfield Drainage Project; and,
- Construction Compounds.

Surveys for the IA are ongoing and no assessments have yet been completed. Further work is required on the assessment of effects.

The principal operational environmental impact of the IA is likely to be the increase in air and ground traffic movements from Dublin Airport, with associated aircraft / ground noise and greenhouse gas emissions. Construction waste will be generated during the construction phase and this will entail and increase in traffic volumes, including HGV traffic on the major roads around the airport. Assessment of Upcoming and Future Projects

The potential for the proposed development to result in likely significant cumulative environmental effects with respect to the Infrastructure Application has been reviewed.

Based on the findings of this assessment it is not likely that significant cumulative environmental effects will arise.

Other daa Projects

It is unlikely that any of the other daa projects will lead to significant environmental effects, although they may generate noise and some traffic on the surrounding roads during the construction phase. As these projects are 'business as usual' projects, it is reasonable to conclude that, as the works are of similar scale to current and previous works, the effects on noise and traffic are already part of the Current State of the Environment due to existing ongoing upgrade and maintenance projects. It is not likely that significant environmental effects would occur as a result of interaction due the nature of the proposed works and distance from sensitive receptors from the site and wider environs.

Summary

Given the information available at this time, an overview and broad assessment of the possible environmental effects of future development plans has been provided. Refer to Chapter 17, Volume 2, EIAR.

The future development plans discussed in this chapter do not form part of the proposed development and will be subject to requiring full consents and additional environmental assessments as deemed necessary before they can be implemented.

The above assessment does not give rise to any concern about the likely environmental effects of the proposed development.

18. Cumulative Impacts

This section assesses the potential for the proposed development to act in combination with committed developments within the vicinity to result in cumulative impacts on the environment.

A summary of all committed development in the immediate environs of the proposed development, which have been approved by Fingal County Council and an Bord Pleanála (ABP) within the last 5 years, and/ or which are in the planning system but where a planning decision is not expected to have been made by the time the Proposed Development is operational, have been reviewed as part of the preparation of this EIAR. The majority of these developments have already been constructed or are of small scale in nature (i.e. extension works or property retention works) or are considered to be a reasonable distance from the proposed development and do not warrant further consideration as part of this assessment.

Based on a review of planning records a list of committed developments has been compiled (and is presented in Chapter 18, Volume 2 EIAR) which require further consideration in relation to potential cumulative effects with the Proposed Development, as part of this assessment.

Cumulative effects consider the impacts of other schemes which have potential for cumulative effects with the Proposed Development.

These projects have been assessed, as follows:

- Cumulative Impacts Assessment for Consented Projects - daa developments; and,
- Cumulative Impacts Assessment for Consented Projects – wider environs.

A full table of all projects is presented in Chapter 18, Volume 2 - EIAR.

Population and Human Health

The proposed development will not have any significant negative effects on population and human health and it is considered that the mitigation measures and monitoring requirements outlined in regard to the other environmental topics will ensure that the proposed development is unlikely to result in any significant cumulative effects in relation to population and human health.

Biodiversity

The proposed development will not result in the loss of any habitats. The proposed development site is comprised of existing buildings within a built-up area of Dublin Airport and is of low ecological value. The site is generally bound by existing airport infrastructure. Provided ecological mitigation measures (including in relation to surface water run-off) are implemented no significant cumulative effects are expected as a result of the proposed development.

Landscape and Visual

There would be no additional cumulative landscape and visual effects arising from the proposed development to those already described in Chapter 6 – Landscape and Visual.

No significant cumulative effects are likely.

Air Quality

As noted in Chapter 7, there is potential for cumulative construction dust impacts. Permitted and existing developments under construction within 350m of the site have been reviewed in conjunction with the impacts of the proposed development to determine the potential for cumulative construction dust impacts.

There are currently no developments within 350m of the site that have the potential for cumulative construction dust impacts to air quality. Should the construction phases of any development coincide with that of the proposed development then there is the potential for cumulative construction dust impacts to nearby receptors.

However, provided the mitigation measures outlined in Chapter 7 – Air Quality are in place for the duration of the construction phase cumulative dust related effects to nearby sensitive receptors are not predicted to be significant. Cumulative effects to air quality will be direct, short-term, localised, negative and imperceptible.

Furthermore, the operational stage effects from the proposed development are predicted to be long-term, localised, direct, neutral and imperceptible in relation to air quality.

No significant cumulative effects are likely.

Climate

By presenting the GHG impact of a project in the context of its alignment to Ireland's trajectory of net zero and any sectoral carbon budgets, this assessment will demonstrate the potential for the project to affect Ireland's ability to meet its national carbon reduction target. Therefore, the assessment approach is considered to be inherently cumulative.

No significant cumulative effects are likely.

Noise and Vibration

There would be no additional cumulative noise and vibration effects arising from the proposed development to those already described in Chapter 9 – Noise and Vibration.

No significant cumulative effects are likely.

Traffic

The proposed development will occur in a phased manner over at least 3 years (Q1 2024 – Q2 2027). The most intense construction traffic phases were identified and analysed for assumed peak trips on key junctions. In accordance with the thresholds set out in TII's Traffic and Transport Guidelines, no junctions were required to be brought forward for detailed assessment and it is considered that the cumulative construction traffic impacts due to the construction activity for the proposed development is below the thresholds outlined in the TII guidelines.

No significant cumulative effects are likely.

Land, Soils and Geology

Provided the mitigation measures outlined in Chapter 11 – Land, Soils and Geology are in place for the duration of the construction phase, cumulative effects are not likely to be significant. There will be no effects with regards to land (including land take), soils or geology during the operational phase.

Therefore no significant cumulative effects are likely.

Water

Provided the mitigation measures outlined in Chapter 12 – Water are in place for the duration of the construction phase, anticipated effects on surface water or groundwater will be temporary and slight adverse during the Construction Phase. Taking account of proposed mitigation measures, effects on surface water or groundwater will be temporary and slight adverse during the Operational Phase of the proposed development.

Therefore no significant cumulative effects are likely.

Cultural Heritage

Subject to the implementation of the appropriate archaeological mitigation measures during the construction phase of the development, no significant cumulative effects on archaeological, architectural and cultural heritage are likely.

Therefore no significant cumulative effects are likely.

Material Assets f

Subject to the implementation of proposed mitigation measures during the construction and operational phases of the development, no significant cumulative effects on material assets are likely.

Therefore no significant cumulative effects are likely.

Summary

No likely significant effects have been identified as a result of potential cumulative effects between effects identified in the technical chapters of the EIAR and other committed developments.

Furthermore, in most cases such interactions are unlikely to occur.

No significant cumulative effects are likely to arise from the Proposed Development.

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US Customs and Border Protection (CBP) - Proposed Reconfiguration & Expansion & South Apron Support Centre (SASC) - Partial Demolition, Refurbishment & Upgrade Project

Environmental Impact Assessment Report – Volume 2 Main EIAR

daa

May 2023

ATKINS
Member of the SNC-Lavalin Group

Notice

This document and its contents have been prepared and are intended solely as information for daa and use in relation to US Customs and Border Protection (CBP) – Proposed Reconfiguration & Expansion & South Apron Support Centre (SASC) – Partial Demolition, Refurbishment & Upgrade project

WS Atkins Ireland Limited assumes no responsibility to any other party in respect of or arising out of or in connection with this document and/or its contents.

This document has 279 pages including the cover.

Document history

Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
Rev 0	Draft	RG	RG	DL	DL	21/04/23
Rev 1	Final	RG	RG	DL	DL	26/05/23

Client signoff

Client	daa plc.
Project	US Customs and Border Protection (CBP) - Proposed Reconfiguration & Expansion & South Apron Support Centre (SASC) - Partial Demolition, Refurbishment & Upgrade Project
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Client signature / date	

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1. Introduction and Methodology

This Environmental Impact Assessment Report (EIAR) has been prepared by Atkins Ireland Ltd. ('Atkins') on behalf of daa plc. (hereafter referred to as 'daa') to accompany the application for a Proposed Development at Dublin Airport ('the Airport') comprising the following two key elements and all associated works:

- **US Customs and Border Protection** (hereafter referred to as 'the CBP') proposed reconfiguration and expansion; and
- **South Apron Support Centre** (hereafter referred to as 'the SASC') partial demolition, refurbishment and upgrade.

1.1. Background Information

There has been an aviation pre-clearance agreement between Ireland and the US since November 2008, with Dublin being the only European Capital that provides pre-clearance in Europe. The CBP has designated controlled access and is contained in a purpose-built facility located on the ground floor level of Terminal 2 (Pier 4).

The CBP is operated by US personnel and is performed to Transportation Security Administration (TSA) rather than European Union (EU) standards. This allows passengers to undertake all US Immigration, customs and agriculture inspections at Dublin Airport prior to departure.

Upon US arrival, passengers are treated as domestic passengers and can bypass US CBP and TSA inspections and proceed directly to their connecting flight or destination. This allows for shorter transfer times for connecting onward flights.

The existing 2-storey purpose-built US CBP initially formed part of the Terminal 2 permission ((F06A/1248 (PL 06F.220670)) granted on the 29th August 2007, and extended under F08A/0023, granted on 9th April, 2008 and serves all outbound passengers, including transfer passengers, travelling directly to the US from Dublin Airport.

daa is now seeking permission for the reconfiguration and expansion of the existing 2-storey CBP pre clearance facility at Pier 4, Terminal 2, Dublin Airport and the partial demolition, refurbishment and upgrade of the existing 2-storey SASC to the southeast of the Terminal 2 building at Dublin Airport. This will be used initially as a temporary construction compound for the proposed works to the CBP and SASC facility, and for the continued use as an Airport Operational Building for airside support/operations.

The US Customs and Border Protection (CBP) - Proposed Reconfiguration & Expansion & South Apron Support Centre (SASC) - Partial Demolition, Refurbishment & Upgrade Project are the subject of this Environmental Impact Assessment Report (EIAR) appliation to Fingal County Council FCC and are hereafter also referred to as the 'proposed development'.

1.1.1. Proposed CBP Upgrade

The CBP upgrade is proposed to address existing passenger circulation challenges and inefficiencies in terms of catering for current capacity, upgrades to the existing equipment and better egress of screened passengers. The upgrade will also provide a separate channel for staff/aircrew, a training channel doubling up as additional contingency, better positioned podiums for CBP officers, a transit area, better retail facilities and other enhancements.

The site is generally bound by airside infrastructure to the south and west and general airport facilities and car parks associated with landside airport operations to the north and east. The Cuckoo stream is located ca.215m to the south of the proposed works. A copy of all planning and engineering drawings submitted in support of this planning application.

The lands on which the development is proposed is entirely within daa land ownership and is zoned by Fingal County Council (FCC 2017) as "DA" Dublin– Airport, with the zoning objective being to *'ensure the efficient and effective operation and development of the airport in accordance with an approved Local Area Plan'*. The proposed development has been designed in accordance with the zoning requirements.

As part of the CBP expansion, two Pier 4 link bridges and minor parts of Pier 4 facade are to be demolished. The existing main terminal infrastructure, particularly Terminal 2 and Pier 4, are an integral part of the scheme and their context, connection and massing have been taken in to account when developing the CBP expansion. The new border pre-clearance project element is an extension of the current facility which is located on the North end of Pier 4. The only available extension is towards the East, minimizing the impact on the airfield. The necessary physical connections for passenger flows into Pier 4 and Terminal 2 are key in determining the volume and location of the building (refer to Figure 1-1).

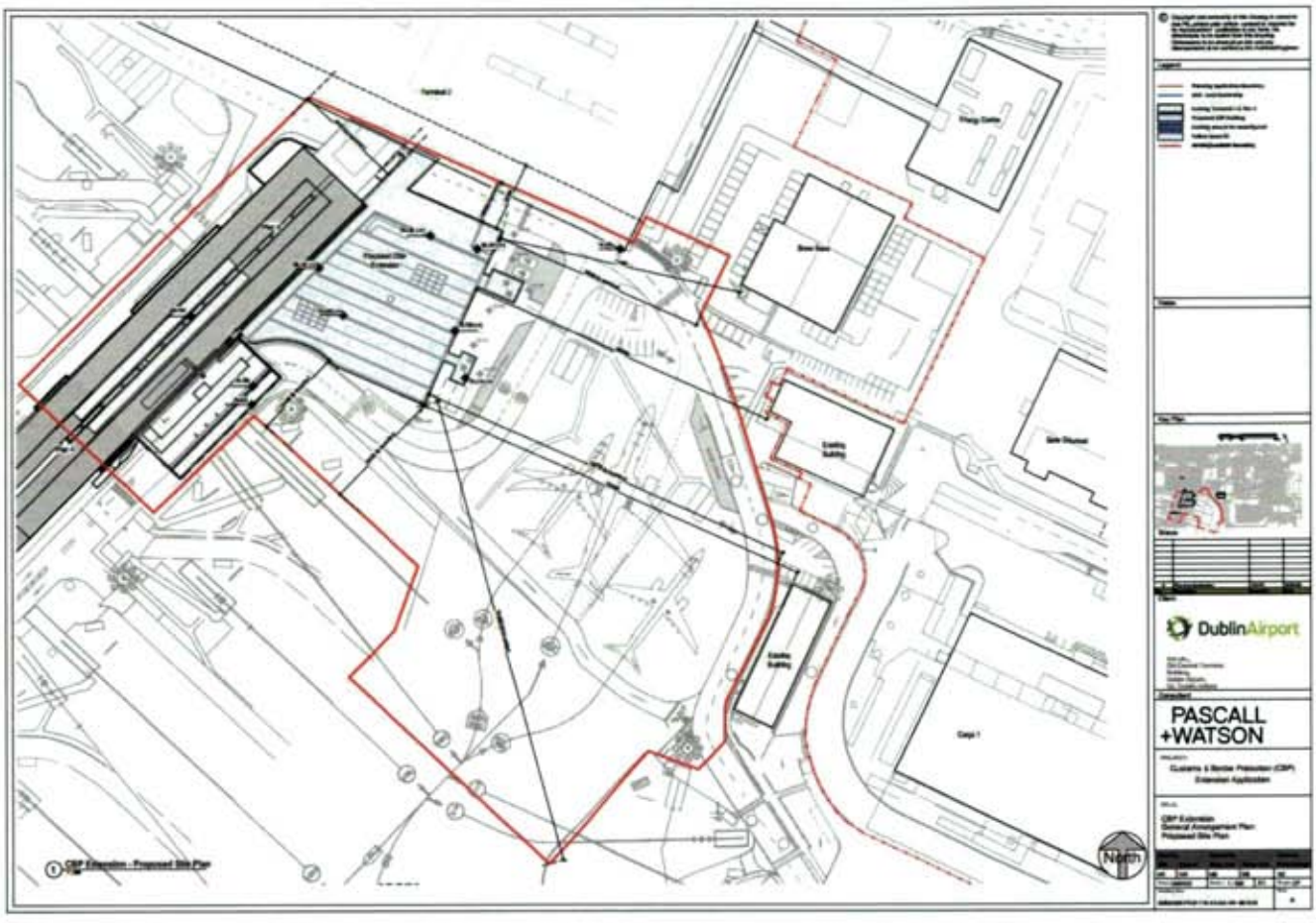

Figure 1-1 - Proposed Site Layout Plan for the US Customs and Border Protection

1.1.2. Proposed SASC Upgrade

The transformation of the existing SASC proposes to convert the existing building into offices and welfare facilities ancillary to airport operations However, it is intended that for a period post completion of the proposed SASC refurbishment works, the building will be utilised for office and welfare facilities to support development works - it will effectively serve as a Construction Management and Logistics centre for development of the CBP facility.

The existing southern and western flanks of the building will be demolished along with the existing first floor link bridge to Shamrock House. A new enclosed walkway / courtyard area is to be provided on the west elevation with enclosed walkways to the north and south elevations.

No additional aircraft stands are proposed as part of the Proposed Development and no additional aviation activity, such as additional air traffic movements (ATMs) or cargo activity, will arise as a consequence of the proposed development, which is intended to add additional support to existing operations which currently take place in Dublin Airport.

The proposed development also does not propose any additional passenger capacity for the Airport, which will remain the subject of the cap of 32 million passengers per annum (mppa) on the Terminals ("the 32mppa Cap").

The Project Description is described fully in Chapter 2 of this report.

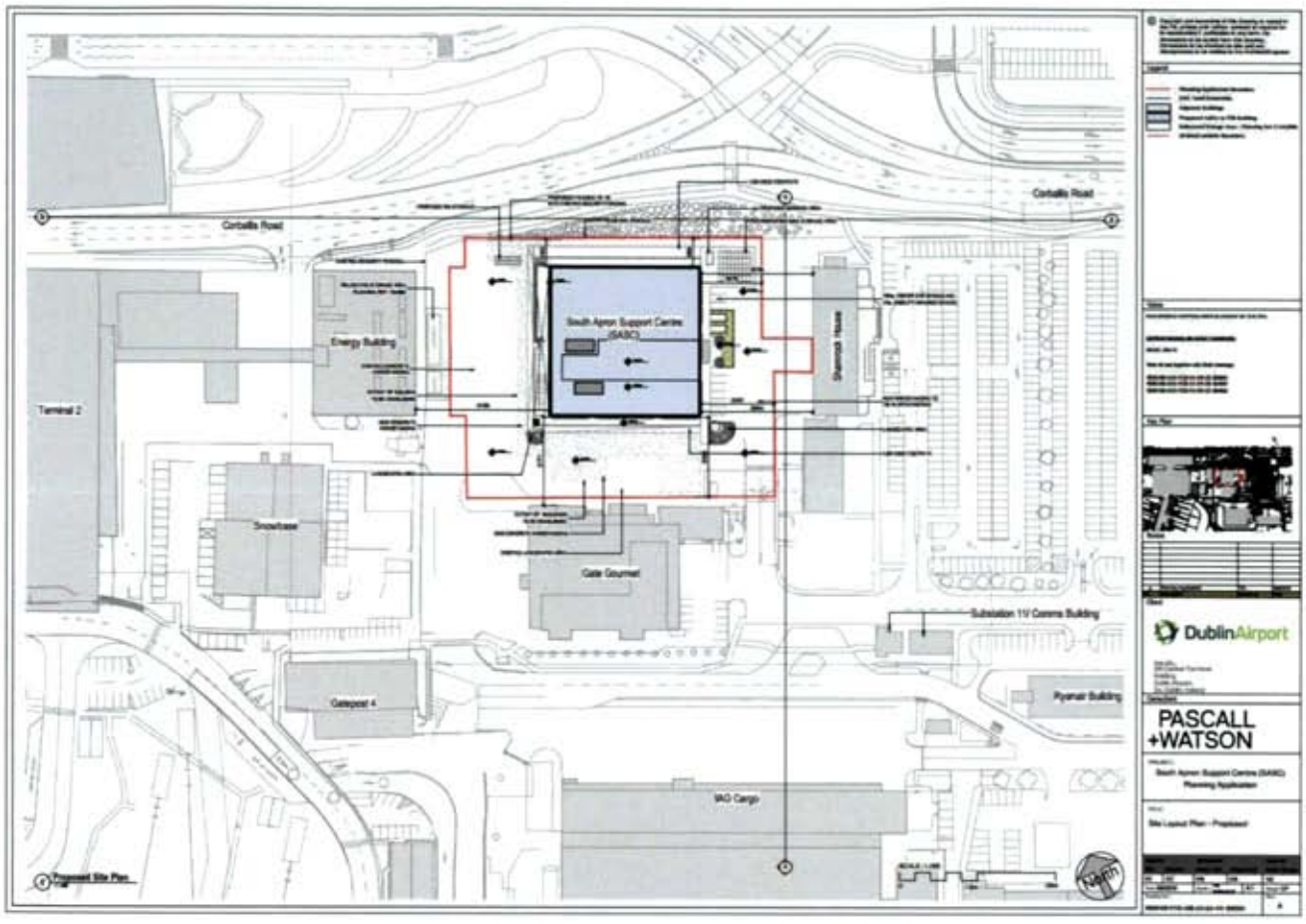

Figure 1-2 - Proposed Site Layout Plan for the South Apron Support Centre

The EIAR has been submitted on a voluntary basis, given the unique circumstances of this application, i.e. the building footprint incorporates an element of future proofed capability for potential passenger capacity increase which may be subject to a future planning application that requires EIA.

1.2. EIAR Contributors

This EIAR has been prepared by competent experts. The following table clearly sets out a list of the experts who have contributed to this EIAR, showing which parts of the EIAR they have worked on, their qualifications, experience and any other relevant credentials.

Name	Company	Area of Expertise	Relevant Chapter / Input	Relevant Qualifications / Professional Accreditation	Relevant Experience
Deirdre Larkin	Atkins	Geology, Hydrogeology, Hydrology, Human Health, Risk Assessment	EIAR co-ordinator Chapter 4 – Population and Human Health Chapter 11 – Land, Soils and Geology Chapter 12 – Water Chapter 14 – Material Assets	BSc. (Hons) Geology (2003) UCC MSc Applied Hydrogeology (2012) University of Newcastle. IGI PGeo No. 223 EurGeol No. 1064	19 years
Rebecca Griffith	Atkins	Population and Human Health, Environmental Assessment	Chapter 1 – Introduction Chapter 2 – Project Description Chapter 4 – Population and Human Health	BSc. (Hons) Environmental Science Trinity College Dublin	5 years
Claire Brosnan	Atkins	Soils & Geology	Chapter 11 – Land, Soils and Geology	BSc. (Hons) Earth Science (2003) NUIG PGDip GIS (2006) UCC MSc Applied Environmental Geology (2012) Cardiff University GSL FGS and Chartership No. 1020656 EurGeol No. 1599 RoGEP – Professional	17.5 years
Eli Knox	Atkins	Geology, Hydrogeology, Environmental Assessment	Chapter 3 – Alternatives (with extracts from Design Statements prepared by Pascal & Watson, (2023), Chapter 12 – Water Chapter 14 – Material Assets	BSc. Geology (Minor Hydrology) (2019) Master of Water Security (2021) IGI MiT No.175	3 years
Di Wang	Atkins	Soils & Geology	Chapter 11 – Land, soils and Geology Chapter 12 – Water	BSc. (Hons) Civil Engineering, Hebei University of Agriculture	3 years
Sinead Kinsella	Atkins	Biodiversity / Ecology	Chapter 5 – Biodiversity	BSc. (Hons) Applied Freshwater and Marine Biology, Atlantic Technical University (Galway)	1.5 years
Kevin McCaffrey	Atkins	Biodiversity / Ecology	Chapter 5 – Biodiversity	BSc. (Hons) Applied Freshwater and Marine Biology (2012) GMIT MSc. Environmental Sustainability (2017) UCD	11 years

Name	Company	Area of Expertise	Relevant Chapter / Input	Relevant Qualifications / Professional Accreditation	Relevant Experience
Eamonn Byrne	Eamonn Byrne Landscape Architects (EBLA)	Landscape and Visual Specialist	Chapter 6 – Landscape and Visual	MLI Chartered Member of the Landscape Institute (2006, UK) Professional Member of Institute of Horticulture (MCI Hort) Dip. Landscape Design (2003, University of Sheffield) Dip. Hort. Kew (1999, Royal Botanic Gardens Kew, London) HND Landscape Management (1996, Writtle University College, Essex) NCH Hort. (1993, Glasnevin, Dublin)	Over 20 years' experience in landscape design and 19 years specifically in LVIA
Dr. Jovanna Arndt	AWN	Air Quality and Climate EIAR Assessments and Licencing. Including dispersion modelling and source apportionment of particulate matter.	Chapter 7 – Air Quality Chapter 8 – Climate	BSc (Hons) in Environmental Science from University College Cork PhD in Atmospheric Chemistry from University College Cork Member of the Institute of Air Quality Management	7 years
Alistair Maclaurin	AWN	Noise	Chapter 9 – Noise and Vibration	BSc Creative Music and Sound Technology, PgDip Acoustics and Noise Control, Member of the Institute of Acoustics	9 years
Nicholas van den Berg	Atkins	Traffic and Transportation	Chapter 10 – Traffic	Chartered Engineer with the Institution of Engineers Ireland, BSc (Eng) from the University of Kwazulu-Natal (2013)	9 years
Dr Enda O'Flaherty	Rubicon Heritage Services Ltd	Archaeology and Cultural Heritage	Chapter 13. Cultural Heritage	BA, H-Dip, PhD	5 Years

1.3. EIAR Scoping

As part of the assessment process, an environmental scoping exercise was carried out. The purpose of the exercise was to define the scope of the EIAR. It was concluded that the demolition, construction and operational phases of the proposed development do not pose a risk with regard to potential radiation impacts. While on a regional scale the EPA (2023) predicts that *'About 1 in 20 homes in this area is likely to have high radon levels'* any risk is considered to be minor and will be addressed via. the installation of a radon barrier as per standard building regulation requirements. Potential radiation impacts are not considered further within this EIAR.

Consultation was undertaken with relevant statutory organisations as part of the assessment process, as detailed further in Section 2.

1.4. Appropriate Assessment

Natura 2000 Sites, which comprise Special Protection Areas (SPAs) and Special Areas of Conservation (SACs), are a network of Sites designated across Europe in order to protect biodiversity within the EU. SACs are designated under the EU Habitats Directive (92/43/EEC), as transcribed into Irish law by the European Communities (Birds & Natural Habitats) Regulations, 2011 [S.I. 477 of 2011], while SPAs are designated under the EU Birds Directive (79/4089/EEC and amendments as consolidated in 2009/147/EC).

Article 6(3) of the EU Habitats Directive states that: '*Any plan or project not directly connected with or necessary to the management of the [Natura 2000] Site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the Site in view of the Site's conservation objectives.*' Such an assessment is known as an Appropriate Assessment or a Habitats Directive Assessment. Further guidance on this process is provided by the European Commission (2000) and DEHLG (2009[1]).

[1] Note: DEHLG (2009) guidance was updated in 2010, by replacing the term "Statement for Appropriate Assessment" with "Natura Impact Statement" or "NIS.

An Appropriate Assessment Screening was undertaken by Atkins on behalf of daa plc. to consider in view of best scientific knowledge, if the proposed development, individually or in combination with another plan or project is likely to have a significant effect on European sites.

The Stage 1 AA Screening confirmed that an appropriate assessment is not required as it can be excluded, on the basis of objective information (and without the application of mitigation measures), that the proposed development, individually or in combination with other plans or projects, will have a significant effect on a European site.

These findings are discussed in greater detail in the AA Screening Report (Atkins, 2023) that accompanies this application.

1.5. Methodology & Structure of this Report

This EIAR has been prepared in accordance with Planning and Development Regulations as amended 2001-2023, and with due regard to the following EIAR guidance;

> *'Guidelines on the information to be contained in Environmental Impact Assessment Reports' published in 2022 (EPA, 2022);*
>
> *Environmental Impact Assessment of Projects Guidance on Scoping* (Directive 2011/92/EU as amended by 2014/52/EU); and,
>
> *Environmental Impact Assessment of Projects Guidance on the preparation of the Environmental Impact Assessment Report (Directive 2011/92/EU as amended by 2014/52/EU),* published by the European Commission.'

Additionally, discipline specific best practice guidance has been consulted by each specialist for each of the relevant topics (Population & Human Health; Biodiversity; Landscape and Visual; Air Quality; Climate; Noise & Vibration; Traffic; Land, Soils & Geology; Water; Cultural Heritage; and, Material Assets) during the preparation of the EIAR.

This EIAR includes all necessary technical studies to address the likely environmental effects of the construction, demolition and operation of the proposed development. The disciplines identified for inclusion in this EIAR, along with the technical content, were determined based on a site walkover survey, completion of an environmental scoping exercise (to inform the content and extent of matters covered in the environmental information) and consultation with statutory bodies.

The EIAR is presented in three volumes as follows;

- Volume 1 - Non-Technical Summary;
- Volume 2 - EIAR; and,
- Volume 3 - EIAR Appendices.

Within the main body of the EIAR (Volume 2), Chapter 1 sets out the introduction and methodology, Chapter 2 describes the project and identifies the information required in an EIAR, and Chapter 3 identifies the alternatives considered.

The environmental topics where there is potential for significant effects to arise are addressed in Chapters 4 to 18 as follows;

- Chapter 4 Population and Human Health;
- Chapter 5 Biodiversity;
- Chapter 6 Landscape & Visual;
- Chapter 7 Air Quality;
- Chapter 8 Climate;
- Chapter 9 Noise & Vibration;
- Chapter 10 Traffic;
- Chapter 11 Land, Soils & Geology;
- Chapter 12 Water;
- Chapter 13 Cultural Heritage;
- Chapter 14 Material Assets;
- Chapter 17 Future Airport Development; and,

- Chapter 18 Cumulative Impacts;

Interactions between disciplines are addressed in Chapter 15 and the Schedule of Environmental Commitments are presented in Chapter 16.

Where appropriate, each of the main sections of this report are structured in the same general format, as follows:

- An introduction describing the purpose of the section;
- A description of the methodology used in the section;
- A description of the aspects of the existing environment (and where relevant future receiving environment) relevant to the environmental topic under consideration;
- A description of the future receiving environment relevant to the location of the proposed development
- Characteristics of the proposed development under consideration;
- An assessment of the likely significant effects of the impacts of the proposed development on the environmental topic;
- Recommendations for mitigation measures to reduce or eliminate any impacts which may have potential to result in significant adverse effects identified; and,
- An assessment of the residual effects that will remain, assuming that recommended mitigation measures are fully and successfully implemented.

Further details of the methodology and discipline specific best practice and guidance are presented in the relevant Chapters included within this report. All required planning drawings are submitted as part of this planning application and have not been duplicated within the EIAR appendices.

Sources of information mentioned in the text are either i) listed in full in the bibliography (Chapter 19 – References) or ii) are referenced in full in the text.

The full planning application pack, including this EIAR will be available for public viewing at the Fingal County Council Office.

1.6. Need for Project

The CBP upgrade is proposed to address challenges in terms of existing available space, upgrades to the existing equipment and better egress of screened passengers.

The proposed development is urgently required, given the following operational context:

- There is a current deficit in space available at the existing queue space leading to overcrowding, congestion and over flow into Pier 4 circulation and gate space at current peak times;
- The staff/aircrew channel is currently operating as a single channel causing delays to flight time performance;
- Staff training is currently conducted in one of the six primary lanes resulting in reduced capacity airside;
- Current TSA screening equipment requires end-of-life replacement. The replacements are larger than existing and require additional space;
- The existing podiums for the CBP officer positions need to be standardised and replaced with the latest biometric access control technology, requiring additional space;
- The current passenger exit is sub optimal as passengers have to pass back through the CBP process hall;
- There are no existing facilities in the transit area for passengers experiencing luggage delay;
- The retail facilities and experience is 'sub-optimal' with small offers which is not meeting passenger expectations or catering for transfer passengers;
- Currently, there is no provision for VIP or Platinum passengers; and,
- At present, Pier 4 has limited segregated 3rd State arrival channels.

The reconfiguration and refurbishment of the South Apron Support Centre building and facades will enable the works for the CBP building in the short-term by serving as a Construction Management and Logistics centre for the CBP reconfiguration and expansion works before ultimately being repurposed and subsequentially used as offices and welfare facilities.

The Fingal County Development Plan 2023-2029 sets out the following objectives for Dublin Airport (non-exhaustive list):

DAP1 *- Continue to support Dublin Airport as a key national asset to Ireland's economic success by ensuring that all future development complies with the strategic aims and objectives contained within the Dublin Airport Local Area Plan, 2020 or any subsequent LAP or extension of same.*

DA05 *- Facilitate the on-going augmentation and improvement of terminal facilities at Dublin Airport.*

DA026 *- Ensure that all development within the Dublin Airport Local Area Plan lands will be of a high standard of design, to reflect the prestigious nature of an international gateway airport, and its location adjacent to Dublin City.*

Should permission be granted for the proposed development, the efficiency will be increased which will allow for a higher standard of passenger experience. The need for this Project is discussed in greater detail within the planning report submitted as part of this planning application.

2. Project Description

This Chapter of the EIAR describes the proposed development, including design, size and other relevant features of the proposed project, the physical characteristics, proposed use of materials and any emissions associated in relation to and during construction and operation phases. The chapter also sets out the likely construction programme, phasing and activities, including proposed mitigation methods for construction environmental impacts.

The proposed US Customs and Border Protection (CBP) - Proposed Reconfiguration & Expansion & South Apron Support Centre (SASC) - Partial Demolition, Refurbishment & Upgrade Project located in Dublin Airport is hereafter referred to as 'the proposed development' or 'the site' (with the exception of individual references to the proposed CBP development or SASC development as required).

The structure of this chapter divides the site into phases which incorporate:

- **The SASC phasing strategy** - the partial demolition, reconfiguration and refurbishment of the SASC building, and;
- **The CBP phasing strategy**- The reconfiguration and expansion of the existing building which will allow for:
  - Flow Deficit – Expanded queue space, to ensure no more Pier 4 overflow;
  - Sized to IATA optimal service level;
  - Staff/aircrew Channel – Dedicated staff/aircrew/PRM/Platinum X-Ray Lane provided;
  - Training & Contingency – Dedicated training X-Ray Lane provided to double as contingency;
  - TSA screening equipment – Existing 6no. primary lanes upgraded with latest screening equipment augmented by additional staff/aircrew lane and training/contingent lane (8no. lanes in total);
  - CBP Officer Positions – Existing 22 podiums replaced with 22 latest generation podiums in linear line with good line of sight and passenger way finding;
  - Passenger Exit – New fully segregated exist provided and sufficiently sized;
  - Transit Area – New transit lounge provided to hold bag delayed passengers post TSA but pre CBP process;
  - Retail & Lounge Experience – New walkthrough retail space added at CBP processing hall exit, providing all CBP passengers with retail opportunity;
  - Additional lounge space added at first floor level; and,
  - Platinum Service – New external VIP limousine space and dedicated entrance and exit with direct access to segregated x-ray screening lane.

Of note, alternatives considered and the preferred outcome and design for the proposed development is discussed further in Chapter 3 – Alternatives.

2.1. Nature and Extent of the Proposed Development

The proposed development will consist of:

(1) the reconfiguration and expansion of the existing 2-storey US Customs and Border Protection (CBP) pre-clearance facility, which will consist of:

(1a) the demolition of: 2no. existing Pier 4 link bridges; 2no. external vertical circulation cores (VCC) and 2no. airbridges; part of the north, east and south elevations of the existing CBP facility (c. 309m^2), including external footpaths, ramps and handrails; and part of the existing apron pavement (5,000m^2);

(1b) internal reconfiguration of part of Pier 4 and the existing CBP facility and the construction of an expanded 2-storey, part 3-storey CBP facility to the east of the existing CBP facility (c. 6,419m^2), to include:

(i) pre-clearance passenger processing facilities at Level 10 (ground floor), including 5no. entry E-gates, queuing areas, 8no. screening lanes (including 1no. for training/contingency and 1no. for staff access (no increase in the number of existing passenger screening lanes)), 22no. booths, transit lounge area, welfare facilities, and ancillary staff facilities;

(ii) lounge, retail/food and beverage area, swing gateroom, welfare facilities, airline lounge, staff facilities, including ancillary offices at Level 15 (first floor);

(iii) construction of 2no. external vertical circulation cores (VCC);
(iv) construction of a new link bridge at Level 20 (second floor) to the existing Terminal 2 building and all associated works;
(v) fallow space at Level 10 and Level 20 to allow for future CBP security facilities, and a lift core extending to Level 30 (third floor (part)) to safeguard for future expansion, to merge with the remaining parts of the existing facility at Pier 4;
(vi) ancillary external structures to the extended roof, including rooflights, external balustrade and handrail; fixed metal roof walkway; and fall protection anchorage system;
(vii) realignment of the existing airside road; the provision of new airside road; and the provision of pedestrian walkways and zebra crossings; and
(viii) the reorganisation of an existing airside operations car parking area to provide 15no. airside operations car parking spaces; the provision of 2no. PRM airside operations parking spaces, 2no. platinum passenger parking spaces, 2no. GIWA (goods vehicles) spaces, and 2no. bus set down areas.

(1c) decommissioning of existing operational aircraft stand 409 L/C/R, and the provision of temporary MARS operational aircraft stand 409T accommodating 2no. Code C or 1no. Code E aircraft, as well as the realignment of the existing apron by way of new paint markings on the apron pavement.

(2) the partial demolition (ca. 3,320m^2), refurbishment and upgrade of the existing 2-storey former Flight Catering Building, to become the South Apron Support Centre (SASC), which, together with its existing external hardstanding area to the north-west of the SASC, is to be used initially as a temporary construction compound (office storage and a pre-screening/ logistics/ staff welfare facilities) for the proposed works to the CBP facility, and then for continued use as an Airport Operational Building for airside support/operations, which will consist of:

(2a) upgrade of the façade of the existing SASC building, to include partial demolition of the later attritions/extensions to the south and west flanks of the building; demolition of the existing pedestrian link bridge to Shamrock House to the east (making good the elevation of Shamrock House to match the existing), and demolition of an existing substation internal to the building;
(2b) the refurbishment of the remaining SASC structure to provide offices, meeting rooms, staff welfare facilities, storage and plant rooms on the ground and first floors, and refurbished rooftop plant enclosure and new rooftop balustrades (c. 5,043m^2), as well as an external dining courtyard at ground floor;
(2c) the provision of 10no. visitor car parking spaces, 2no. PRM visitor car parking spaces and 80no. cycle storage racks;
(2d) revised external pedestrian and vehicular circulation arrangements; and
(2e) separate external smoking shelter and separate external bin storage.

The proposed development at the existing CBP and SASC buildings will also require the diversion and extension of the existing watermain on site, and a new foul and surface water drainage system, including a proposed future clean only pipeline for future diversion of roof runoff from the CBP building.

The proposed development also includes all associated site development and landscaping works, and all ancillary airport infrastructure including additional apparatus/equipment, as well as High Mast Lighting (HML). The proposed development will not result in any increase in passenger or operational capacity at Dublin Airport. There will also be no increase in staff parking, either airside or landside, as a result of the proposed development.

The site is located within Fingal County Council (FCC) and entirely on land owned by daa, within the boundary of Dublin Airport. Dublin Airport is located approximately 10km north of Dublin City Centre and 2km south of the closest town of Swords. The general land use within the site boundary is hardstanding (both airside and landside).

The M1 motorway is located to the east, M50 motorway to the south and the N2 to the west which form a high-capacity road network to facilitate traffic. The primary access to the airport is located to the south east via the roundabout which junctions the M1 and Swords Road. (R132). Further information on Traffic and Transport is discussed in Chapter 10 – Traffic.

The two-storey SASC, formerly known as the Flight Catering Building (FCB), is located to the southeast of the Terminal 2 Energy Centre and to the north west of Shamrock House. As part of the project, the reconfiguration and refurbishment of the building and facades will be repurposed to provide the necessary welfare facilities to enable the works for the CBP building. The interior of the building will be renovated to become offices, toilets and a canteen for the contractors working at the CBP expansion with works provisionally estimated to last ca. 12 months. The proposed development site and red-line boundary is presented in Figure 2.1.

The proposed development at the CBP is generally bounded by existing airport infrastructure. The CBP site is bound to the west and south by airside infrastructure including pier 4 and by landside infrastructure to the north by Terminal 2, to the east by Gate Post 4, an airside airport road, and an airside transportation service building.

The Cuckoo Stream is located to the south of the site by ca. 215m at the southern end of Pier 4. The stream is not located within the application site boundary and is culverted and emerges downstream and within the wider Airport Campus. Further details on drainage and the condition of the Cuckoo Stream can be found in Chapter 12 – Water.

It is understood that the proposed development will require the diversion and extension of the existing watermain on site and the installation of a new foul and surface water drainage system. It is proposed that a future clean only pipe for future diversion of runoff will be used in this instance (the pipeline is inert and will form part of the future drainage network at Dublin Airport, in order to avoid repeat construction at the CBP building in the future) along with all other associated site development.

The anticipated project programme for the project is as follows:

- **SASC Refurbishment:**
  - Commence: Q1 2024
  - Complete: Q4 2024
- **Customs and Border Post Facility**:
  - Commence: Q1 2025
  - Complete: Q2 2027

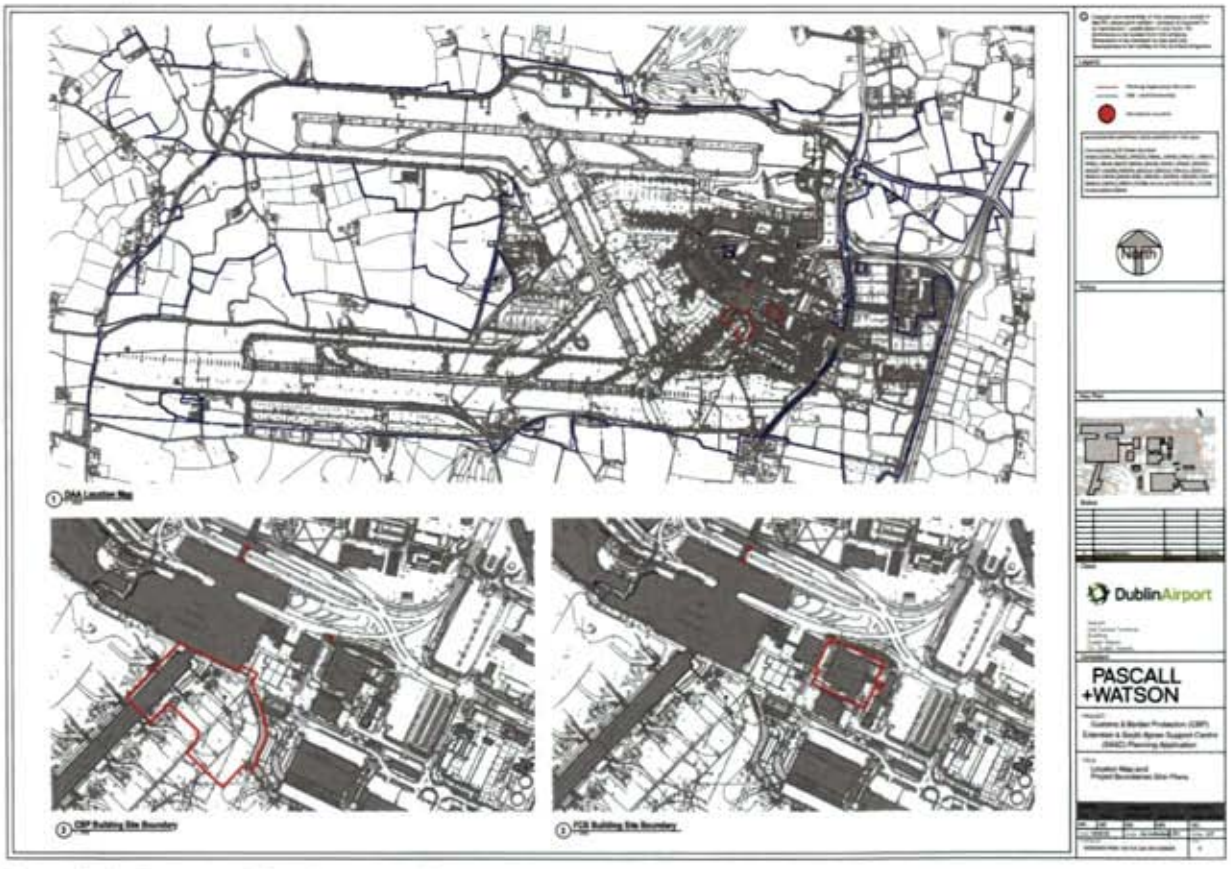

Figure 2-1 - Proposed Development Site

2.1.1. Customs Border Patrol

As part of the phasing of the proposed development, the CBP development comprises the reconfiguration and expansion of the existing pre-clearance building to the south east.

The existing US Customs and Border Preclearance facility is located at Pier 4 adjacent to Terminal 2 in Dublin Airport.

The project scope requires the construction of the new extension to the CBP to be constructed while maintaining current CBP operations at all times. In order to achieve this the works will be undertaken in phases to demolish, construct, fit out, test and commission the new extension prior to refurbishing and integrating the existing CBP into the new scheme.

This will be achieved by constructing the new extension as a stand-alone structure which will be fitted out, commissioned and handed over prior to decommissioning the existing facility. The existing CBP area will be refurbished and fitted out to integrate with the new facility to complete the overall expansion project.

The construction works are anticipated to commence in Q1 2025 and be completed in Q2 2027.

Figure 2-2 - CBP - Final Design

The CBP Phasing strategy is illustrated below. As the existing CBP will be kept live during the expansion, the works will be delivered in key phases to accommodate passengers.

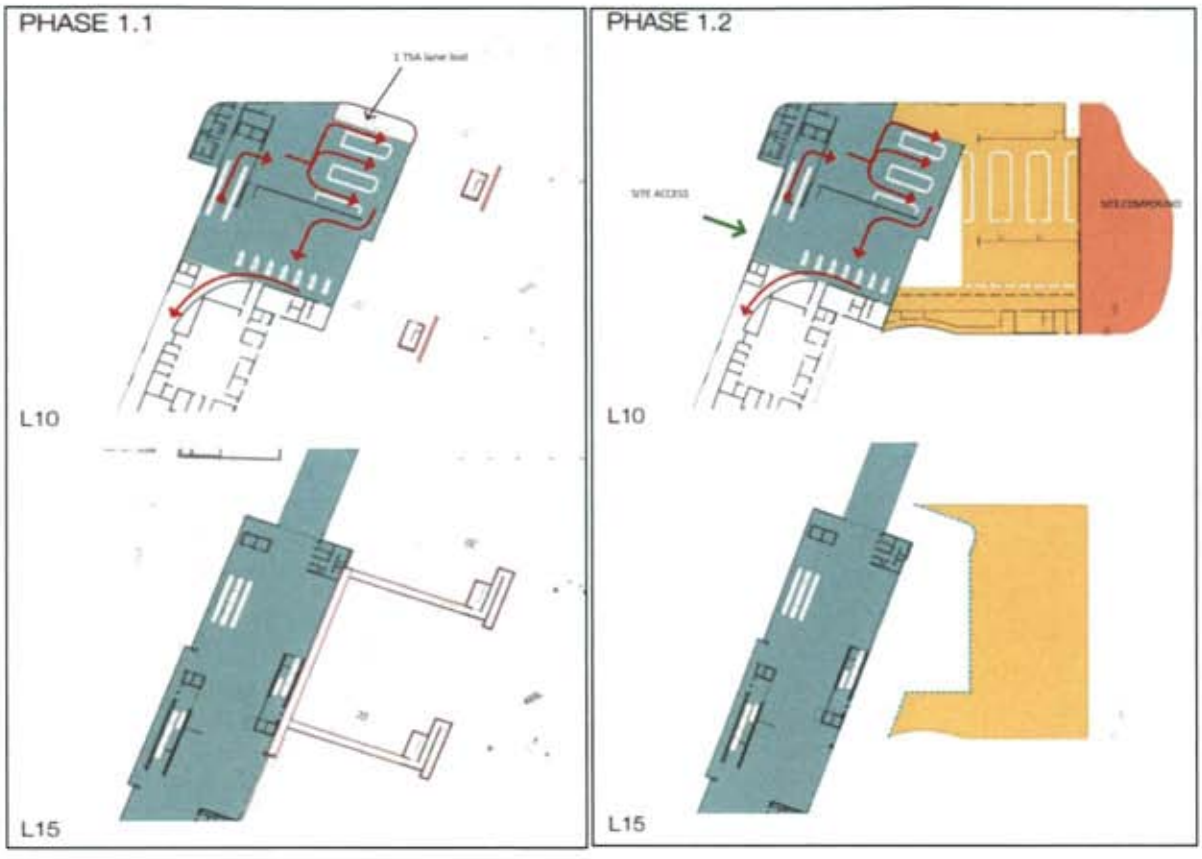

Figure 2-3 - CBP Phasing Strategy Phase 1.1 and Phase 1.2

Phases 1.1 and 1.2 include the internal demolition of one security lane and external demolition of the fixed lanes (L10, L15 and L20) and the construction of two new extensions to the existing building (L10 and L15).

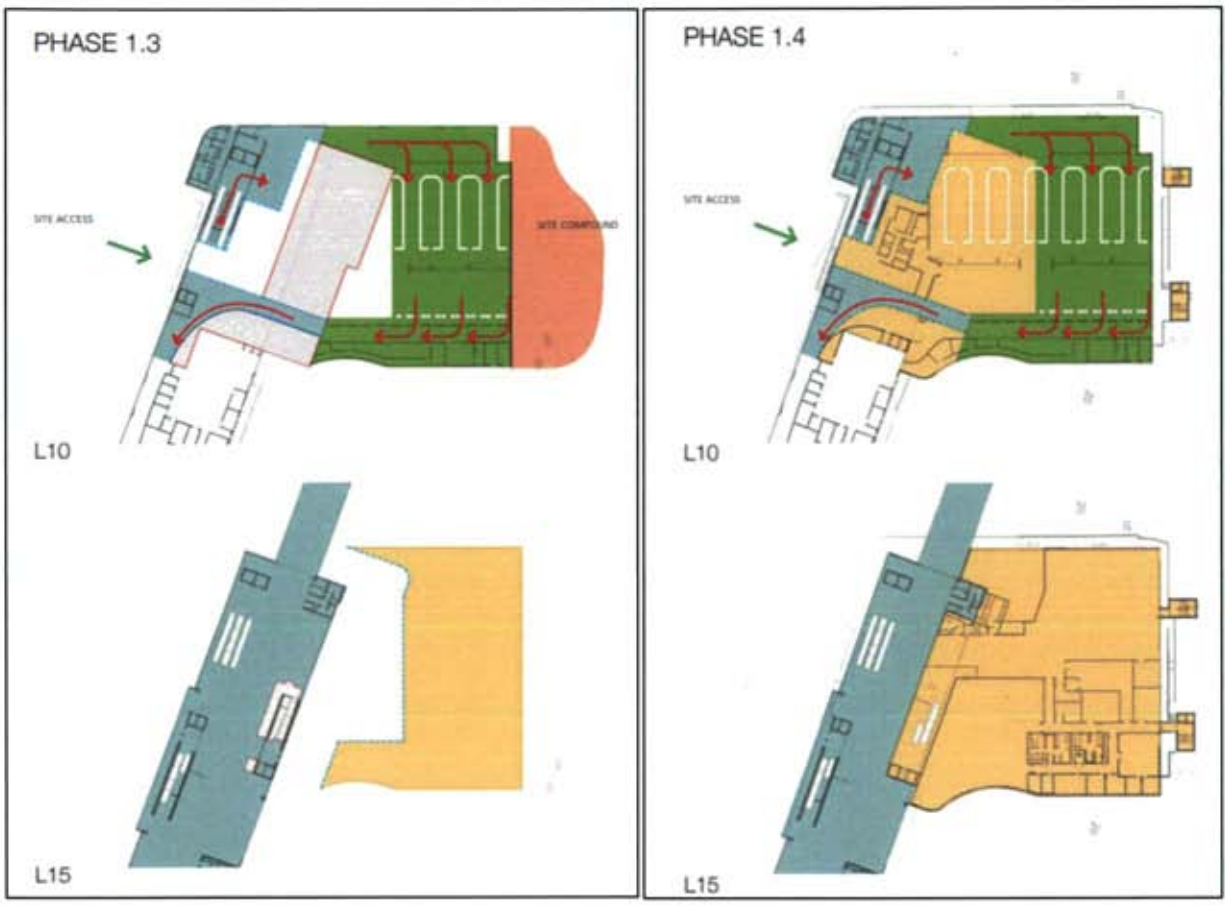

Figure 2-4 - CBP Phasing Strategy Phase 1.3 and Phase 1.4

Phases 1.3 and 1.4 will enable the use of the newly constructed facility and will include demolition of the existing security area and construction and fit-out of levels 15, 10 and 20.

Phase 1.5 will entail the opening of the CBP for full operation.

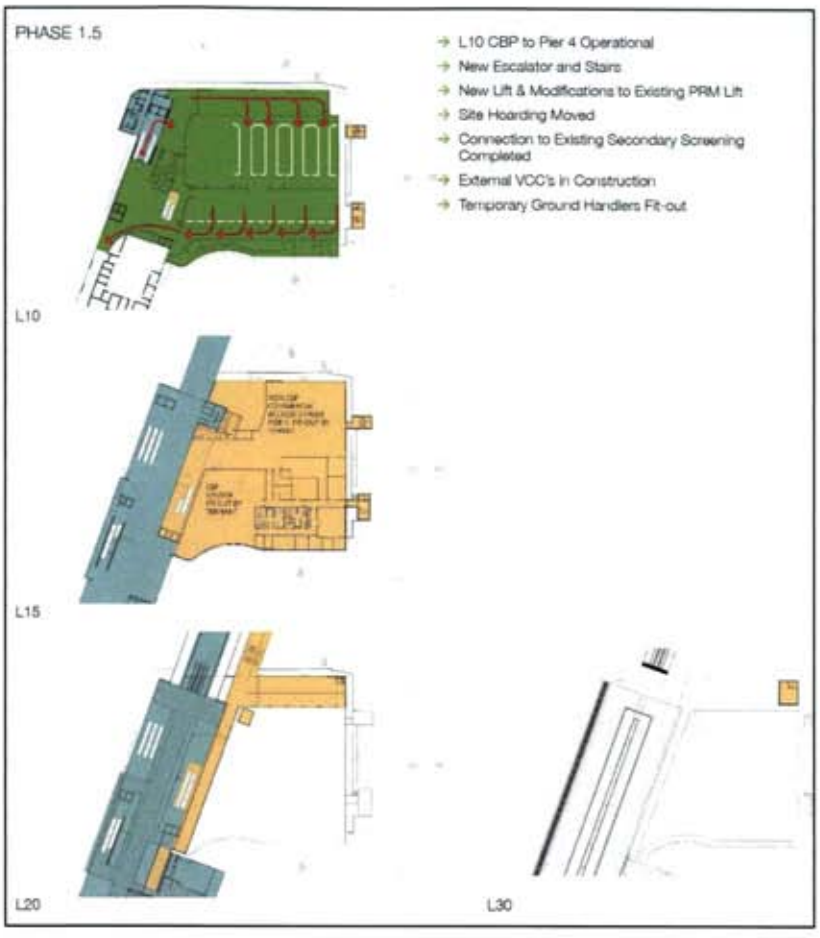

Figure 2-5 - CBP Phasing Strategy Phase 1.5

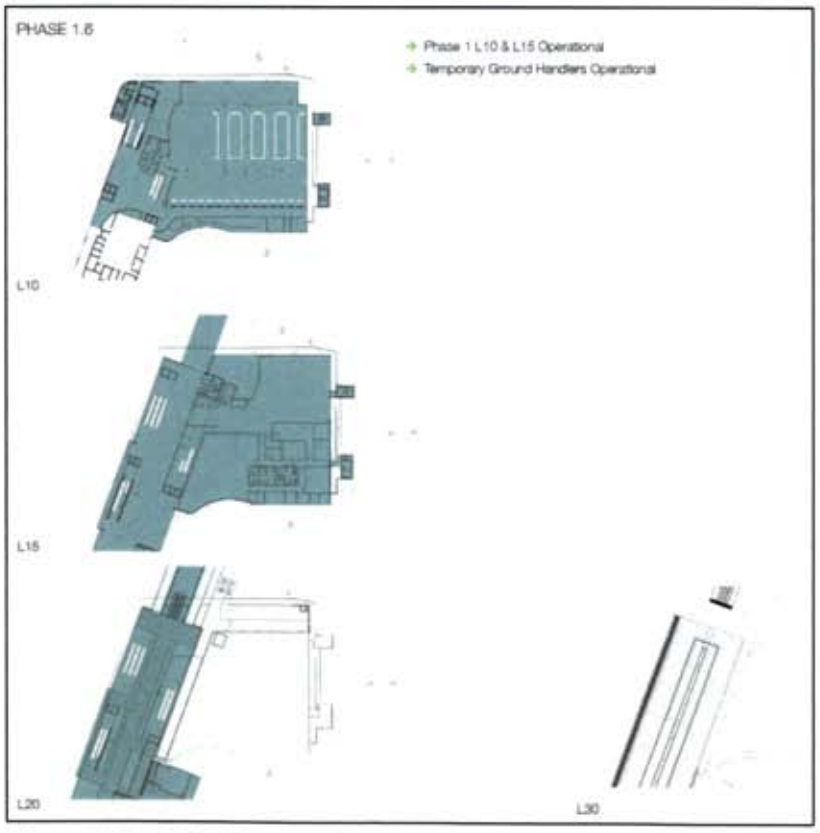

Figure 2-6 - CBP Phasing Strategy Phase 1.6

2.1.2. South Apron Support Centre

The proposed SASC development comprises of the partial demolition, refurbishment and upgrade of the existing two-storey former Flight Catering Building (FCB) to the southeast of the Terminal 2 building to be utilised initially as a temporary construction compound for the proposed works to the CBP facility, and thereafter for continued use as an Airport Operational Building for airside support/operations as the SASC. The proposed development will include:

- The upgrade of the façade of the existing SASC building, to include partial demolition of the later attritions/extensions to the south and west flanks of the building; demolition of the existing pedestrian link bridge to Shamrock House to the east (making good the elevation of Shamrock House to match the existing), and demolition of an existing substation internal to the building;
- The refurbishment of the remaining SASC structure to provide offices, meeting rooms, staff welfare facilities, storage and plant rooms on the ground and first floors, including an external courtyard at ground floor; and refurbished rooftop plant enclosure and new rooftop balustrades;
- The temporary use of the upgraded and refurbished SASC building and its existing external hardstanding area to the north-west of the FCB building as office storage and a pre-screening/ logistics/ staff welfare facility, as well as 10no. parking spaces, 2no. PRM car parking spaces and 80 no. cycle storage racks during the construction of the proposed extension to the CBP facility.
- A revised external pedestrian and vehicular circulation arrangements; and
- A separate external smoking shelter and separate external bin storage.

The reconfiguration and refurbishment of the building and facades to the SASC will provide the necessary welfare facilities to enable the works for the CBP building.

The interior of the building will be renovated to become offices, toilets and a canteen for the contractors working at the CBP expansion with the works are estimated to last 12 months. To note, this period of time relates to the works on the SASC alone and not the time that it will be utilised as a support to the CBP extension.

2.2. CBP Construction Aspects

Construction of the new extension envelope to the CBP will be completed prior to the integration of the existing building and operation into the new scheme. This will require the construction of a new structural steel frame extension structure with composite roofing, Wall cladding and curtain wall glazing to match the existing Terminal 2 finishes.

2.2.1. Pre Construction Enabling Works

Prior to any works commencing Stand 409 will be relocated to the east to maintain aircraft stand capacity for the duration of the CBP works. Works will include new paint markings, realignment of walkways and pedestrian crossings.

Site Clearance & Demolition

Prior to commencement of excavation and service diversions the site will be cleared of redundant plant and equipment including

- Demolition of existing Nodes, Fixed links and Airbridges
- High Mast Lighting
- Existing AVDGS
- Bollards
- Removal of existing paint markings

Existing Underground Services and Drainage Connections

Existing services have been identified and located. Wherever there are clashes with new structural elements of the building diversions and rerouting will take place prior to foundation construction and include diversion of the following:

- existing water mains and hydrants;
- existing drainage system;
- existing LV power distribution and light fittings; and,

- existing fuel line.

Local drainage will be surveyed and, where necessary, blocked off to prevent runoff of potentially contaminated surface water entering the surface water drainage system. The contractor will include a detailed surface water management plan in the Construction Environmental Management Plan to deal with treatment of surface water runoff prior to discharge to the site drainage system.

External Works / Apron and Road Realignments

In order to provide a secure working area for the construction of the new building envelope the existing apron road will require to be diverted around the proposed CBP extension and the proposed works compound. Road markings will be removed and repositioned to define the revised layout prior to setting up compound hoardings.

2.2.2. Envelope Construction

It is anticipated that the duration of works for the envelope construction will be approximately 7 months.

Foundations

The existing concrete slab will be saw cut and broken out in a method to be determined in compliance with the approved detailed Construction Environmental Management Plan.

All arisings will be transported by a licensed waste carrier to a waste transfer station for recycling.

Foundation pads and ground beams will excavated by mechanical excavator. Excavation arisings will be stockpiled within the site boundary and transported offsite periodically to prevent accumulation of excavated material.

Concrete and steel reinforcement for bases and ground beams will be delivered through Gatepost 4. Options to complete the prefabrication of reinforcement cages will be reviewed with the contractor prior to commencement of the works.

Concrete wash out will be to designated wash out skips or bunds. The location and management of these facilities will be included in the contractors detailed Construction Environmental Plan and task specific Risk Assessments and Method Statements.

On completion of the foundations excavations within the working area compound shall be made good with temporary or permanent reinstatement made to maintain safe site access and meet the programme requirements

All traffic movements will be coordinated with Gatepost 4 to minimise disruption and maximise construction productivity. It is anticipated that the traffic management plan will incorporate cabin & plant deliveries, removal of arisings, concrete and steel reinforcement deliveries.

Structural Steel Frame

The construction of the steel frame will be planned to ensure that all deliveries are scheduled to comply with the construction sequence and programme of works. It is anticipated that a crane will be positioned within the working compound on an engineered crane mat designed to meet the anticipated loading requirements to unload delivery vehicles and lift structural steel into position in a pre-planned sequence. The size and location of the crane will be determined by the contractor within his detailed method statement and lifting plan which will be developed prior to works commencing.

Delivery of structural steel will be by articulated delivery vehicle through Gatepost 4. Deliveries will be managed through a pre booking system to minimise impact of Gatepost 4 operations and surrounding traffic. The contractor will develop a detailed compound layout traffic management plan to ensure that the delivery vehicles can drive in and drive out of the compound safely through Gatepost 4.

The bolting and fixing of the steel frame and connection to the existing structure will be completed by a team of qualified steel erectors working from a number of Mobile Elevated Working Platforms. These platforms will be electrically powered and recharged daily within the working compound.

All plant will be demobilised on completion of the structural steel and installation of composite upper floor decking.

Floor Slabs

On completion of the erection of the structural steel frame composite floor decking will be lifted into position by the crane and access towers and edge protection will be erected prior to enable the installation of upper floor decking.

Following completion of the upper floors the underfloor ducts and services will be installed below the ground floor slab. The ground floor slab subbase will then be prepared and reinforcement fixed. Concrete for all floor slabs will be poured by appropriately sized concrete pump located in the working area. Concrete will be delivered by

6m3 or 8m3 concrete delivery trucks through Gatepost 4. Surface finish will be achieved through a mechanical power float finish.

Concrete wash out will be to designated wash out skips or bunds. The location and management of these facilities will be included in the contractors detailed Construction Plan, Construction, Environmental Plan and task specific Risk Assessments and Method Statements.

Roofing and External Wall Cladding

The roofing and external wall cladding will be constructed from composite panel systems and delivered in required sequence of construction.

Deliveries will be managed through a pre booking system under a "just in time" philosophy to minimise impact of Gatepost 4 operations and surrounding traffic and reduce the site storage requirements

Roofing materials will be delivered to site to a dedicated storage area within the site compound. The materials will be lifted by crane to the roof and immediately fixed as they are positioned to ensure that no loose materials are blown onto existing apron or Apron Roads.

The wall panels will be lifted into place by crane and fixed by operatives working from electric Mobile Elevated Working Platforms. These will be charged daily from charge points located within the site compound.

A detailed working at Height procedure will be developed by the Contractor and included in the Construction Management plan and task specific risk assessments and method statements.

External Glazing/ Curtain Walling & Doors

Curtain walling will be manufactured remotely and preformed units delivered in line with the planned sequence for installation. Deliveries will be managed through a pre booking system under a "just in time" philosophy to minimise impact of Gatepost 4 operations and surrounding traffic and reduce the site storage requirements

The units will be offloaded in the working area and positioned by crane or other mechanical means into prepared openings in the building envelope and immediately fixed securely.

The contractor will develop a detailed lifting and fixing method which will be included in the Construction Management Plan and task specific risk assessments and method statements.

External Works

On completion of the CBP building the external Apron shall be reinstated and new line marking/ lighting completed to reflect the new layouts.

It is envisaged that reinstatement of the apron will be local to the new building envelope within the working compound. All requirements for waste disposal and concrete wash out will comply with the Contractors CEMP and detailed Risk Assessments and Method Statements.

2.2.3. Internal Fit out and Integration of Options

It is anticipated that this phase of the works will take approximately 10 months. Following the phased completion of the new building envelope the internal fit out of the new CBP will commence followed by the strip out and refurbishment of the existing CBP facility. This will require the contractor to develop a detailed phasing plan to ensure minimum impact on the live CBP operations during the works.

The demolition and refurbishment works will require the erection of protective hoardings to segregate the construction works from CBP operations. These hoardings will be designed by the contractor as part of the temporary works design and be fully dust proof and provide noise suppression. The hoardings will be painted/ decorated to an agreed aesthetic finish on the live CBP elevation. It is anticipated that the hoardings will be subject to relocations as the phasing of the works and integration of the existing CBP progresses.

In order to integrate the new and existing facilities there are significant demolitions and major equipment removals required to complete the works including the following:

- Deconstructing of existing external walls;
- Removal of escalators;
- Removal of existing stairs;
- Removal of existing airbridges;
- Removal of existing floor finishes; and,
- Decommissioning and strip out of existing services.

Prior to the strip out commencing detailed investigations will be undertaken to determine the extent and duty of existing services. Where the services are required to be removed they will be checked and decommissioned prior to removal.

Where major items of plant and equipment are to be removed (stairs, escalators, air handling units) the contractor will identify these operations in the Construction Health and Safety Plan and include detailed task specific Risk Assessments and Method Statements to ensure these activities are undertaken in a safe and controlled manner.

Prior to installation of new partition walls and specialist equipment it is anticipated that the escalators/ stairs/ air handling units and main ductwork will be installed.

This will be followed by a phased programme of works to include:

- Demolition of existing walls and structure;
- Partition walls;
- Mechanical and electrical 1st fix;
- Installation of specialist equipment 1st fix;
- Installation of Mechanical and electrical 2nd fix;
- Installation of ceilings;
- Installation of specialist equipment;
- Floor wall and ceiling finishes;
- Door installation; and,
- Decoration.

These activities will be undertaken in line with the agreed phasing plan required to maintain CBP operations which will be developed within the contractors agreed detailed programme of works.

2.2.4. Testing and Commissioning

Following completion of the installation of mechanical and electrical systems, these will be tested and commissioned to ensure compliance with the specification and documentation included within the Site Health and Safety File.

2.2.5. Site Compound / Site Office

The contractors main construction office, storage yard and logistics operations will be accommodated in the SASC which will be refurbished and equipped to provide landside facilities for material deliveries, storage and pre-screening/ logistics for airside deliveries.

An airside compound will be set up to securely enclose the working area around the new building envelope providing a working area, limited site storage and temporary welfare facilities comprising

- Canteen;
- Serviced Toilet;
- Site office;
- Site storage container; and,
- Mixed Waste Skip.

See section 2.4.6 for further details on the site compound and site office facilities at the SASC site.

2.2.6. Environmental Management

The construction of the proposed development will be in accordance with the Construction Environmental Management Plan (CEMP) submitted as part of this planning application (which takes account of the Schedule of Environmental Commitments presented within this EIAR). This document will be further developed and added to within the Detailed CEMP which will be prepared by the Contractor in advance of the construction phase and will be fully implemented onsite for the duration of the construction phase of the project. Environmental monitoring will be carried out during the construction phase as detailed in Chapter 16 - Schedule of Environmental Commitments.

2.2.7. Traffic Management

The proposed transport routes of all machinery entering and egressing the site, for the full duration of the 25 month phased construction period shall be through the proposed entrance off the existing access route west of the main Site. All construction activities will be managed and informed by a Construction Traffic Management Plan (CTMP). The details of the CTMP will be agreed with the roads department of the Local Authority in advance of construction activities commencing on-site.

2.3. SASC Construction Aspects

Working hours on the Dublin Airport campus will take place 24/7. Work will be carried out on day shifts as far as possible however a considerable part of the works is expected to be undertaken during night shifts to minimise disruption to airport operations. Sunday, Public holidays and night shift working are subject to acceptance in advance by the daa Project Owner.

A Noise Management plan will be required for all night works including plant details and scheduling of works.

Contractors shall also abide by the Organisation of Working Act Time in relation to working hours

2.3.1. Demolition and Internal Strip Out (South & West Flanks)

It is proposed that this phase of the project commences in January 2024 with a duration of approximately 2 months. All internal fixtures and fittings, services, floor coverings, and partition walls shall be carefully removed and deposited in segregated skips prior to removal from site. Chiller units and mechanical plant shall be removed from the roof by crane to ground level prior to disposal.

The external cladding and canopy roofing shall be carefully removed by hand and disposed into segregated skips. It is anticipated that MEWPs will be utilised as means of access to these areas along with limited cranage to remove any substantial structural elements.

The existing link bridge to Aer Lingus building will be removed and the existing openings closed as part of the façade works. This element of the works will require a detailed Risk Assessment and Method Statement to be developed by the contractor to ensure that the works are coordinated safely with ongoing operations in the adjacent Aer Lingus building.

On completion of internal and external strip mechanical plant will be deployed to deconstruct the reinforced concrete superstructure followed by grubbing up of foundations. The arisings for these operations will be crushed on site to a size that can be readily disposed to recycling transfer centre. Works will also include the demolition of an existing substation internal to the building.

The contractor will ensure that dust and noise management is considered in the Construction Environmental Management Plan.

A detailed Traffic Management Plan will be developed by the contractor to minimise impacts of traffic movements on Gatepost 4 and the surrounding road network.

2.3.2. Façade Replacement

It is anticipated that this phase of the project will commence in March 2024 with a duration of approximately 6 months. The scope of the works to the external façade works involve complete reconstruction of the South and West elevations and partial reconstruction of the North and West Elevations.

The South and west elevations shall be reconstructed in insulated cavity wall (block) with new energy efficient metal frame windows and glazed doors. The blockwork will be rendered on completion to provide an aesthetic render finish.

The structure of the north and East elevations will be substantially retained to minimise waste. The existing structure will receive a render finish to match the other elevations. Windows and glazed doors will be replaced with new energy efficient units.

It is anticipated that a full scaffold will be required to provide access for the works to all elevations. Materials shall be lifted onto the scaffold by telehandler or other mechanical means. The programme for erection of these scaffolds will require to be carefully coordinated with the external yard construction and drainage to ensure safe working environment is maintained at all times.

During this phase the scaffold will be utilised as edge protection for the roofing works and also provide access for the installation of the sun shades and new handrailing.

2.3.3. Internal Refurbishment

It is anticipated that this phase of the project will commence in May 2024 with a duration of approximately 5 months.

Once the building is substantially watertight the internal fit out shall commence with the construction of the new internal partitions in line with the revised building layout. The wall construction will generally consist of stud and plasterboard.

The mechanical, electrical and ventilation first fix will commence concurrently with the wall construction to allow the conduits and pipework to be incorporated into the wall structures and above the ceilings where necessary. The wall plastering will be completed prior to installing the ceilings and mechanical and electrical 2nd fix followed by installation of doors and joinery, sanitary fittings, floor and wall finishes.

2.3.4. Testing and Commissioning

Following completion of installation the systems will be tested and commissioned to comply with the specification and documentation included within the Site Health and Safety File.

2.3.5. External Works

Drainage connections and new service installations will be completed early in the programme to allow reinstatement of excavations and completion of surface finishes prior to erection of scaffold to facilitate the façade works.

The yard will be finished to a temporary condition during the period of occupation for site storage works with final finishes deferred until completion of the site works.

2.3.6. Site Compound / Site Office

For the works relating to the demolition and refurbishment of the SASC, it is proposed that the site compound for the work operations will be incorporated within the footprint of the existing facility (refer to Figure 2-1).

The site compound will be set up to provide the following accommodation and facilities incorporating the following:

- Offices & meeting room;
- Welfare and canteen facilities;
- Toilet provision;
- Drying room; and,
- Storage containers.

There will be limited parking available during the demolition and strip out phase of the project. Remote parking will be made available for a limited number of vehicles on the main West Landside Compound.

The final layout for the site compound will be included in the contractors detailed Logistics and Traffic Management Plan. The compound will be established in line with agreed layout and provision of facilities to provide a secure working area which will be managed by the PSCS for each phase of the project. The facilities will be adequate to provide accommodation for the number of operatives identified in the tender documentation. The Site Security plan will be developed with the contractor.

2.3.7. Environmental Management

As noted previously the construction of the proposed development will be in accordance with the Construction Environmental Management Plan (CEMP) submitted as part of this planning application (which takes account of the Schedule of Environmental Commitments presented within this EIAR).

In addition to a CEMP and prior to mobilisation of the works to refurbish the SASC, the asbestos register will be checked and a full asbestos refurbishment survey undertaken to determine the presence of any asbestos containing materials.

Should the survey identify any asbestos within the existing building a strategy will be developed by daa to ensure all asbestos is removed by a licenced asbestos removal specialist prior to demolition commencing.

All services will be checked and a decommissioning programme developed to ensure that all live services have been isolated and any drain down or venting of mechanical plant has been completed. On completion of the

decommissioning programme a certificate will be issued by the appropriate party to confirm all services decommissioned and or disconnected.

2.3.8. Traffic Management

The proposed transport routes of all machinery entering and egressing the site, for the full duration of the 12 month construction period shall be through the proposed entrance off the existing access route west of the main Site. All construction activities will be managed and informed by a Construction Traffic Management Plan (CTMP). The details of the CTMP will be agreed with the roads department of the Local Authority in advance of construction activities commencing on-site.

A detailed Traffic Management Plan will be developed by the contractor to minimise impacts of traffic movements on Gatepost 4, Gatepost 9, and the surrounding road network.

2.3.9. Waste Management

The construction of the proposed development will be in accordance with the Construction and Demolition Waste Management Plan (C&D WMP) included within the CEMP submitted as part of this planning application. The Contractor will prepare a detailed C&D Resource and Waste Management Plan (RWMP) in accordance with the relevant following guidance '*Best Practice Guidelines for the preparation of resource & waste management plans for construction & demolition projects*' (EPA, 2021) which will take full account of the CEMP submitted as part of this planning application. The Construction RWMP will provide a mechanism for monitoring and auditing waste management performance and compliance for the duration of the project. The document will also provide a detailed overview of key waste management considerations for the project and will be fully implemented onsite for the duration of the construction phase of the project.

2.4. Description of Baseline Scenario

The baseline scenario including a description of the relevant aspects of the current receiving environment has been considered as part of this EIAR through the collection and collation of baseline data including analytical data where relevant (air quality, noise levels, surface water quality). A detailed description of the current receiving environment is presented in relevant sections for each environmental topic. The predicted changing baseline (i.e. the likely future receiving environment) that could arise as a result of committed development within the vicinity has also been addressed, where relevant, and is presented under the cumulative impacts section of this EIAR.

2.5. Consideration of Reasonable Alternatives and Cumulative Effects

The consideration of reasonable alternatives are discussed further in Chapter 3 – Alternatives. Cumulative effects in relation to airport cumulative impacts are addressed in Chapter 17 – Future Airport Development and Chapter 18 – Cumulative Impacts.

2.6. Consultation

As part of the EIAR assessment process, consultation was undertaken with statutory organisations at various stages of the pre-planning process for the current application. All environmental consultees were consulted by letter in January 2023 (during the Environmental Scoping phase of EIAR) regarding any environmental or planning interests that they may have in relation to the development. A full list of consultees consulted (2023) including date and method of correspondence is presented in Appendix 2.

A summary of all relevant feedback in relation to the proposed development is presented below. A copy of all pre-application consultation correspondence received from statutory organisations as part of the EIAR process is presented in Appendix 2.

All relevant comments from the various consultees have been fully addressed as required within this EIAR and the accompanying AA Screening Report.

2.6.1. Pre- Application Consultation

The following bodies/ interest groups have been consulted at pre-application stage as part of the preparation of this EIAR:

- Irish Aviation Authority (IAA);
- An Chomhairle Ealaion (The Arts Council);

- Aircraft Noise Competent Authority;
- An Taisce ;
- Birdwatch Ireland;
- Department of Agriculture, Food and the Marine;
- The Minister for Communications, Climate Action and Environment;
- The Minister for Housing, Planning, Community and Local Government;
- Dublin Bus;
- Dublin City Council (DCC) - Planning ;
- Environment Protection Agency (EPA) ;
- Failte Ireland ;
- Geological Survey of Ireland;
- Iarnród Éireann (Irish Rail) ;
- Inland Fisheries Ireland (IFI) ;
- Irish Wildlife trust;
- National Transport Authority (NTA) ;
- The Department of Culture, Heritage and the Gaeltacht;
- National Parks and Wildlife Service (NPWS) ;
- National Monuments / Archictecture;
- The Eastern & Midland Regional Assembly;
- The Health Services Executive, Environmental Health;
- The Heritage Council;
- Transport Infrastructure Ireland (TII) ;
- The Health and Safety Authority;
- Irish Water (Uisce Éireann) ;
- Department of Transport, Tourism and Sport ;and,
- Dublin Regional Authority.

A synopsis of the responses received as part of the EIAR consultation and scoping stage are presented as follows. Refer to Appendix 2 for a copy of all relevant responses.

In addition to the responses detailed below, a response was also received from Inland Fisheries Ireland (IFI) on 20th February via. a phone conversation. IFI noted that the proposed drainage design should be consistent with proposals within the ongoing drainage master plan for the Airport. These comments have been duly considered during the preparation of this EIAR.

2.6.1.1. Geological Survey Ireland (GSI)

In letter correspondence dated 8th of February 2023, the GSI noted:-

- **Geoheritage** *'Our records show that there are no CGSs in the vicinity of the proposed Dublin Airport Development'*
- **Groundwater** *'Proposed developments need to consider any potential on specific groundwater abstractions and on groundwater resources in general…'*
- **Geohazards** *'We recommend that geohazards and particularly flooding be taken into consideration, especially when developing areas where these risks are prevalent, and we encourage the use of our data when doing so;*
- **Geochemistry of soils, surface waters and sediments** *'Geological Survey Ireland has completed a geochemical characterization of the subsoil beneath large parts of Dublin, known colloquially as the Dublin Boulder Clay. The report documents the analysis completed on a third-party geochemical dataset obtained from the private sector and is accompanied by an excel spreadsheet containing the database of geochemical observations.'*

- **Natural Resources (Minerals/Aggregates)** *'We would recommend use of the Aggregate Potential Mapping viewer to identify areas of High to Very High source aggregate potential within the area. In keeping with a suitable approach we would recommend use of our data and mapping viewers to identify and ensure that natural resources used in the proposed . refurbishment and upgrade project are sustainably sources from properly recognised and licensed facilities, and that consideration of future resource sterilization is considered'';*

- **Other Comments** *'Should development go ahead, all other factors considered, Geological Survey Ireland would much appreciate a copy of reports detailing any site investigations carried out. The data would be added to Geological Survey Ireland's national database of site investigation boreholes, implement to provide a better service to the civil engineer sector'*

The above comments from GSI have been addressed where relevant to the Site within Chapter 11 – Land, Soils and Geology.

2.6.1.2. Transport Infrastructure Ireland (TII)

In email correspondence received on 14th of February 2023, TII provided recommendations in relation to the preparation of the EIAR, specifically the request that a '*Traffic and Transport Assessment (TTA) be carried out in accordance with relevant guidelines, noting traffic volumes attending the site and traffic routes to/from the site with reference to impacts on the national road network and junctions of lower category roads with national roads. TII's Traffic and Transport Assessment Guidelines (2014) should be referred to in relation to proposed development with potential impacts on the national road network. Having regard to the nature of the proposed development and location, the TTA should be undertaken in accordance with the TII TTA Guidelines (2014)*'. Full details are presented in Appendix 2. All relevant comments have been addressed within Chapter 10 – Traffic.

2.6.1.3. Fáilte Ireland

In email correspondence received on 8th of February 2023, Fáilte Ireland confirmed that they have no comments or queries at this time. A copy of this correspondence is presented in Appendix 2.

2.6.1.4. Fingal County Council (FCC)

In addition a Pre-Application Consultation Meeting was held with Fingal County Council by daa at an early stage in the design process, on 20th July 2022. The meeting was held in relation to the proposed CBP development.

All observations, where relevant, from the Fingal County Council pre-application consultation meeting have been addressed within this EIAR and the accompanying AA Screening Report.

2.7. Consideration of Cumulative Effects with other projects

Potential cumulative impacts, defined as '*the addition of many minor or insignificant effects, including effects of other projects, to create larger, more significant effects*' (EPA Guidelines on the information to be contained in Environmental Impact Assessment Reports, 2022) have been considered for each environmental topic within this EIAR. Refer to Chapter 17- Future Airport Development and Chapter 18 – Cumulative Impacts.

2.8. Risk of Major Accidents and / or Disasters

This section describes the risk of major accidents and disasters on the proposed development at Dublin Airport, and the risk of the Development in creating a new source of a major accident. This includes vulnerability of the Proposed Development to natural disasters or a major accident from on and off- site, existing and future sources of hazards taking account of existing assessments under other regimes where applicable, e.g., Seveso designations relevant to the Airport site. Further potential impacts on air, climate, noise emissions, soil, natural heritage, water, visual and traffic are addressed in relevant chapters of the EIAR.

A Construction Environmental Management Plan (CEMP) has been submitted as part of this planning application. This document will be added to by the Contractor and will list all environmental mitigation measures that will be implemented by all site personnel during the construction of this development, including the appointment of an Environmental Manager during the construction phase.

The Environmental Manager will be responsible for the preparation of an Environmental Incident Emergency Response Plan which should be made available to all relevant site staff. Typically, emergency procedures would include contact details of key personnel in local authorities and statutory authorities including the National Parks

and Wildlife Services (NPWS), Inland Fisheries Ireland (IFI), FCC and the Environmental Protection Agency (EPA).

2.8.1. Potential Sources of Offsite Hazards

Two main offsite (i.e. beyond the site boundary) hazards exist. These include aircraft movements (airside operations) (including taxiing, take-offs and landings), and a fuel farm facility, on Corballis Road South operated by Exolum. The fuel farm (established by CLH Aviation Ireland Ltd. and currently operated by Exolum) is located at Corballis Road South approximately 150m east of the proposed development. This is a Lower Tier Seveso site.

Therefore, the potential risk posed by a major accident and/or disaster has been considered further in accordance with the requirements of the relevant guidelines (EPA *'Guidelines on the information to be contained in Environmental Impact Assessment Reports'*, 2022).

2.8.2. Potential for Likely Significant Effects

The risk of aviation accidents was investigated recently as part of the North Runway Relevant Action application and this exercise concluded that the risk of aviation accidents was within the level that is considered acceptable. This is supported by the historical record as the Bureau of Aircraft Accident Archives lists only two crashes at Dublin Airport, both in the 1960s. Therefore significant effects in relation to major accidents and /or disasters associated with aircraft movements are not likely.

The fuel farm is a known hazard regulated by the Health and Safety Authority as a Lower Tier Seveso establishment. This requires the operator to operate the site in strict accordance with a major accident prevention policy and notify the regulator of any accidents that occur. Therefore significant effects in relation to major accidents and /or disasters associated with the fuel farm (established by CLH Aviation Ireland Ltd. and currently operated by Exolum) located 150m east of the proposed development, are not likely.

There are 23no. Upper and Lower Tier Seveso sites (in addition to the Exolum establishment discussed above) within, 15km of the site (see below). Based on the location of these Seveso sites (i.e. distance from the proposed development) significant effects in relation to major accidents and /or disasters are not likely.

Figure 2-7 - Seveso Establishments Within 15km of the Proposed Development

Facility	Tier	Location	Approx. Distance from Site
Barclay Chemicals Manufacturing Ltd.	Upper	Damastown Road, Damastown Industrial Park, Mulhuddart, Dublin 15	10.2km west
BOC Gases Ireland Ltd.	Upper	PO Box 201, Bluebell, Dublin 12	12.4km south west
Calor Teoranta	Upper	Tolka Quay Road, Dublin Port, Dublin 1	8.6km south
Contract & General Warehousing Ltd.	Upper	Westpoint Business Park, Navan Rd. Mulhuddart, Dublin 15	11km west
Fareplay Energy Ltd (under the Topaz Group)	Upper	Promenade Road, Dublin Port, Dublin 1	8.5km south
Indaver Ireland Ltd.	Upper	Tolka Quay Road, Dublin Port, Dublin 1	8.6km south
Tedcastles Oil Products	Upper	Yard 1, Promenade Road, Parish of St Thomas, Dublin 3	8.6km south

Tedcastles Oil Products	Upper	Yard 2, Tolka Quay Road, Parish of St. Thomas, Dublin Port, Dublin 1	8.7km south
The National Oil Reserves Agency Ltd.	Upper	Shellybanks Road (Off Pigeon House Road), Ringsend, Dublin 4	9km south west
The National Oil Reserves Agency Ltd.	Upper	National Oil Reserves Agency Poolbeg Tank Farm, Pigeon House Road, Dublin 4	9km south west
Valero Energy Ireland Ltd.	Upper	Alexandra Road, Dublin Port, Dublin 1	8.5km south
Astellas Ireland Co. Ltd.	Lower	Damastown Road, Damastown Industrial Park, Mulhuddart, Dublin 15	12km west
Clarochem Ireland Ltd.	Lower	Damastown, Mulhuddart, Dublin 15	12.4km west
Electricity Supply Board	Lower	North Wall Generating Station, Alexandra Road, Dublin Port, Dublin 1	8.5km south
ESB Dublin Bay Power	Lower	Pigeon House Road, Ringsend, Dublin 4	9.5km south west
Gensys Power Ltd	Lower	Huntstown Power Station, Huntstown Quarry, Dublin 11	6.3km south west
Iarnród Éireann	Lower	Iarnród Éireann Dublin Port, Alexandra Road, Dublin Port, Dublin 1	8.5km south
Iarnród Éireann	Lower	Iarnród Éireann Inchicore Works, Inchicore Parade, Dublin 8	11.4km
Irish Distillers Pernod Ricard	Lower	Robinhood Road, Fox & Geese, Clondalkin, Dublin 22	14.3km
Kayfoam Woolfson	Lower	Bluebell Industrial Estate, Bluebell Avenue, Naas Road, Dublin 12	13.3km
SK Biotek	Lower	Watery Lane, Swords, Co. Dublin	4.10km
Topaz Energy Group	Lower	Dublin Terminal T1, Alexandra Road, Dublin Port, Dublin 1	8km south
Topaz Energy Group	Lower	Yard 3, Alexandra Road, Dublin Port, Dublin 1	8.5km south

As the Proposed Development will not have any likely significant effects on the potential for Major Accidents & Disasters, there is no requirement for monitoring measures.

3. Alternatives

3.1. Introduction

This Chapter outlines the alternatives considered to meet the identified requirements outlined in Chapter 1 – Introduction and Methodology, of this EIAR.

The requirement to consider alternatives within an EIAR is set out in Annex IV (2) of the EIA Directive (2014/52/EU) which states:

"A description of the reasonable alternatives (for example in terms of project design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects."

3.2. Need for the Proposed Development

As discussed in Chapter 1 – Introduction and Methodology, the proposed CBP development is needed to address challenges in terms of existing capacity, upgrades to the existing equipment and better egress of screened passengers. The proposed reconfiguration and refurbishment of the South Apron Support Centre building and facades will provide welfare facilities to enable the works for the CBP building and subsequentially be used as offices and welfare facilities. Should permission be granted for the proposed development, the efficiency will be increased which will allow for a higher standard of customer service.

Hence the proposed development is needed. However alternatives have been considered as part of the iterative design and assessment process where relevant.

3.3. Assessment Methodology

3.3.1. Types of Alternatives

The EPA's 'Guidelines on the information to be contained in Environmental Impact Assessment Reports' (2022) (hereafter referred to as 'the EPA Guidelines') outlines different types of alternatives that should be considered in an EIAR. These include: do nothing scenario; alternative processes and alternative locations (where feasible); alternative layouts; alternative designs; and, alternative mitigation measures.

The approach adopted for this assessment was first to identify where there were reasonable alternatives to all elements of the Proposed Development, then to consider the impact of these alternatives (if any) on the environmental factors used in this EIAR. Where an impact was identified, this effect was compared with the assessed effect of the 'Proposed Development'.

An indication of the main reasons for the option chosen, taking into account the effects of the project on the environment and including a comparison of their environmental effects is what is required by the Directive. As the EPA notes: "It is generally sufficient to provide a broad description of each main alternative and the key issues associated with each option. A detailed assessment (or 'mini-EIA') of each alternative is not required."

3.3.2. Limitations and Assumptions

The degree to which it is possible to assess alternatives depends on the amount of information available for each alternative. Alternatives discarded at an early stage of the design process necessarily will not have the same level of information as is available for the Proposed Development.

3.4. Consideration of Reasonable Alternatives

3.4.1. Design Process

3.4.1.1. U.S. Customs and Border Protection (CBP)

The CBP is a purpose built facility serving all outbound passengers (including transfer passengers) traveling directly to the U.S. from Dublin Airport. The facility is part of the pre-clearance agreement with the U.S., allowing passengers to undertake all U.S. Immigration, customs and agriculture inspections at Dublin Airport prior to departure.

The rationale for the CBP Extension project is summarised as follows:

- An adequately resourced preclearance facility is critical to Dublin Airport's development as a secondary hub;
- Brings economic, societal and cultural benefits through increased investment, business and tourism;
- Leverages our westerly European position and unique connection with the USA to grow our transatlantic business;
- Provides an advantage over other international competitor airports for the U.S. bound traveller market – particularly for the transfer market;
- Increases U.S. Market Access – Airlines can establish new routes to desirable U.S. destinations;
- Enables development of direct routes to more than 160 U.S. airports regardless of whether they have a CBP port of entry;
- Allows for more effective aircraft utilisation at U.S. Airports;
- Airlines can access less expensive U.S. domestic gates and more flexible arrival times at airports in the United States; and,
- Inadmissible travellers are encountered at the CBP prior to boarding, alleviating much of the airline cost to return these individuals to the original embarkation point (lower ground handling and repatriation cost).

Optioneering and RIBA 1

Two options were presented during the optioneering stage:

- Option 1 (MTS) proposed the 1750m^2 secondary expansion area to be located south of the existing building envelope.
- Option 2 (MTS+) proposed a secondary screening area of 1795m^2 to be located east of the existing building envelope.

Layout schematics for Option 1 and Option 2 are presented in the figures below.

The preferred solution is Option 1, expanding the facility at its southern edge. The main drivers for this selection are:

- Minimal new build option, and accordingly less potential for impacts on the receiving environment;
- Phased approach, to emerge out of existing facility; and
- Pier 4 functionally retained as is.

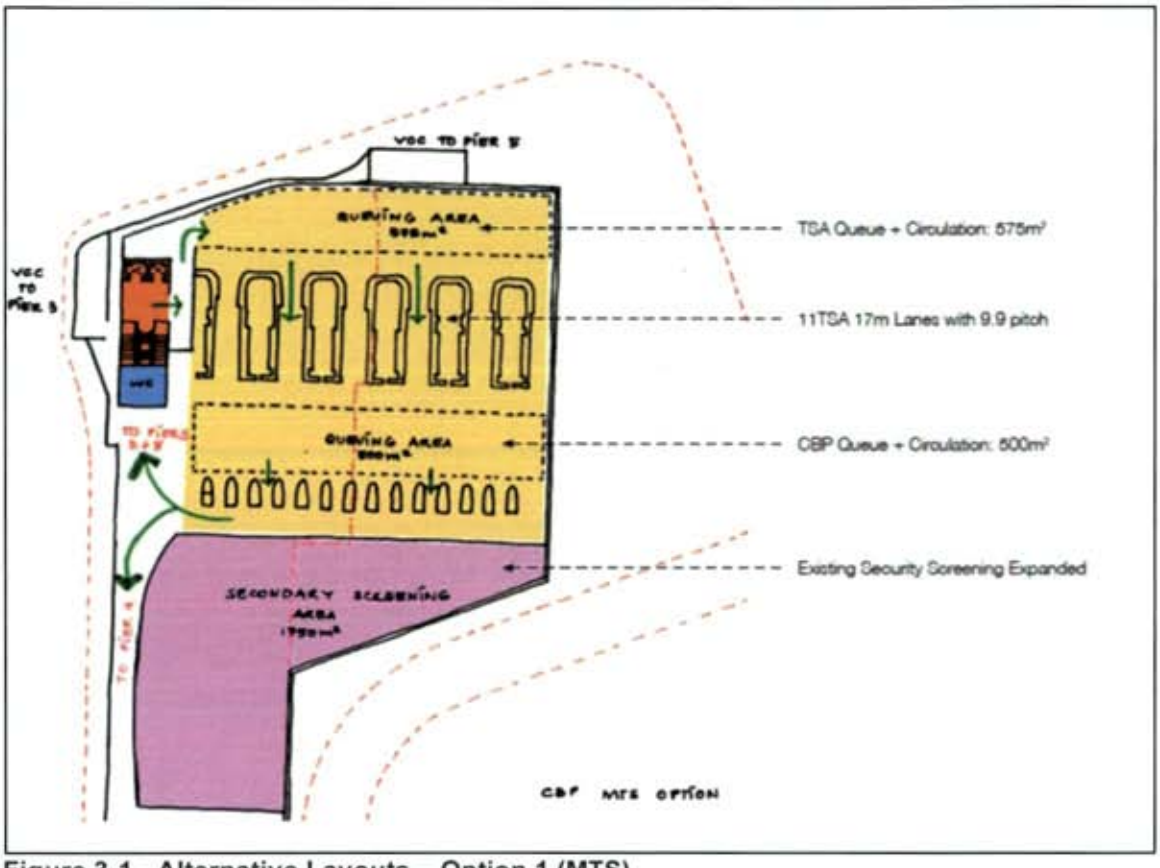

Figure 3-1 - Alternative Layouts – Option 1 (MTS)

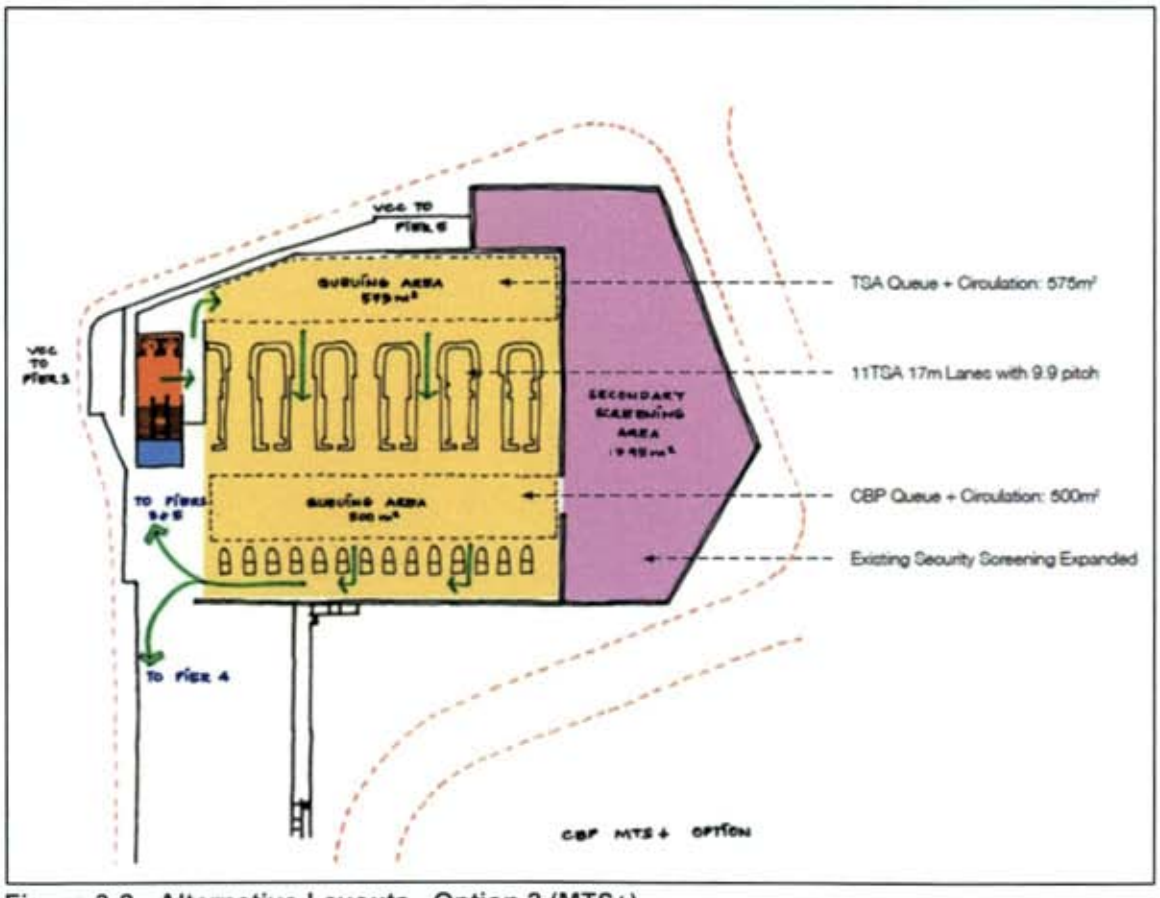

Figure 3-2 - Alternative Layouts –Option 2 (MTS+)

Following the conclusion of the optioneering process, Option 1 (MTS) was selected, also referred to as RIBA 1.

The layout of RIBA 1 (design stage) is presented in the figure below.

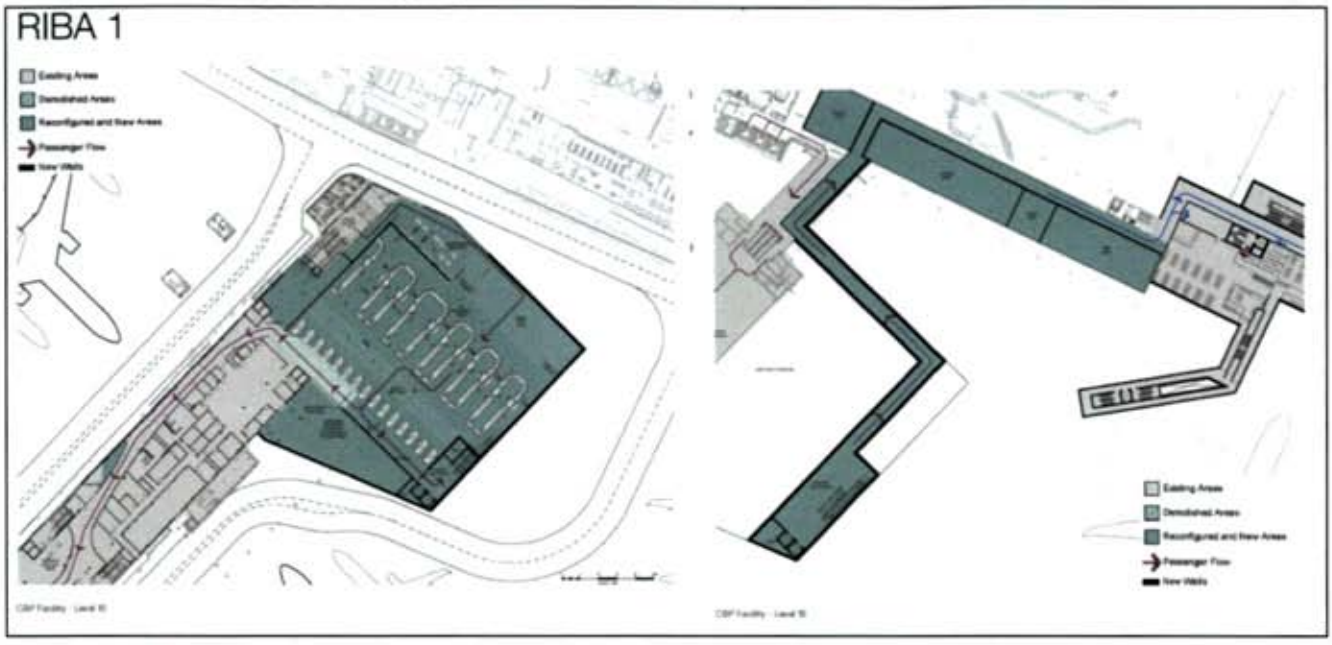

Figure 3-3 – RIBA 1 Design Layout

RIBA 2

The preferred solution at RIBA 1 was developed to RIBA 2 following the same design principles. As part of the design development the following changes were applied:

- A new toilet block was introduced at lower level before the passengers go into level 15;
- In-transit lounge was included as a new requirement;
- The staff facilities were developed to the south of the volume;
- A new entrance for premium passengers was added to the north east corner; and
- New emergency doors were added as part of the fire strategy development.

These changes would improve the passenger experience and would result in a positive impact in terms of wellbeing for passengers and staff. The concept design of the expansion of the existing US Preclearance Facility was also developed for construction and operations. This includes the connection routes with Pier 4 and its associated commercial spaces.

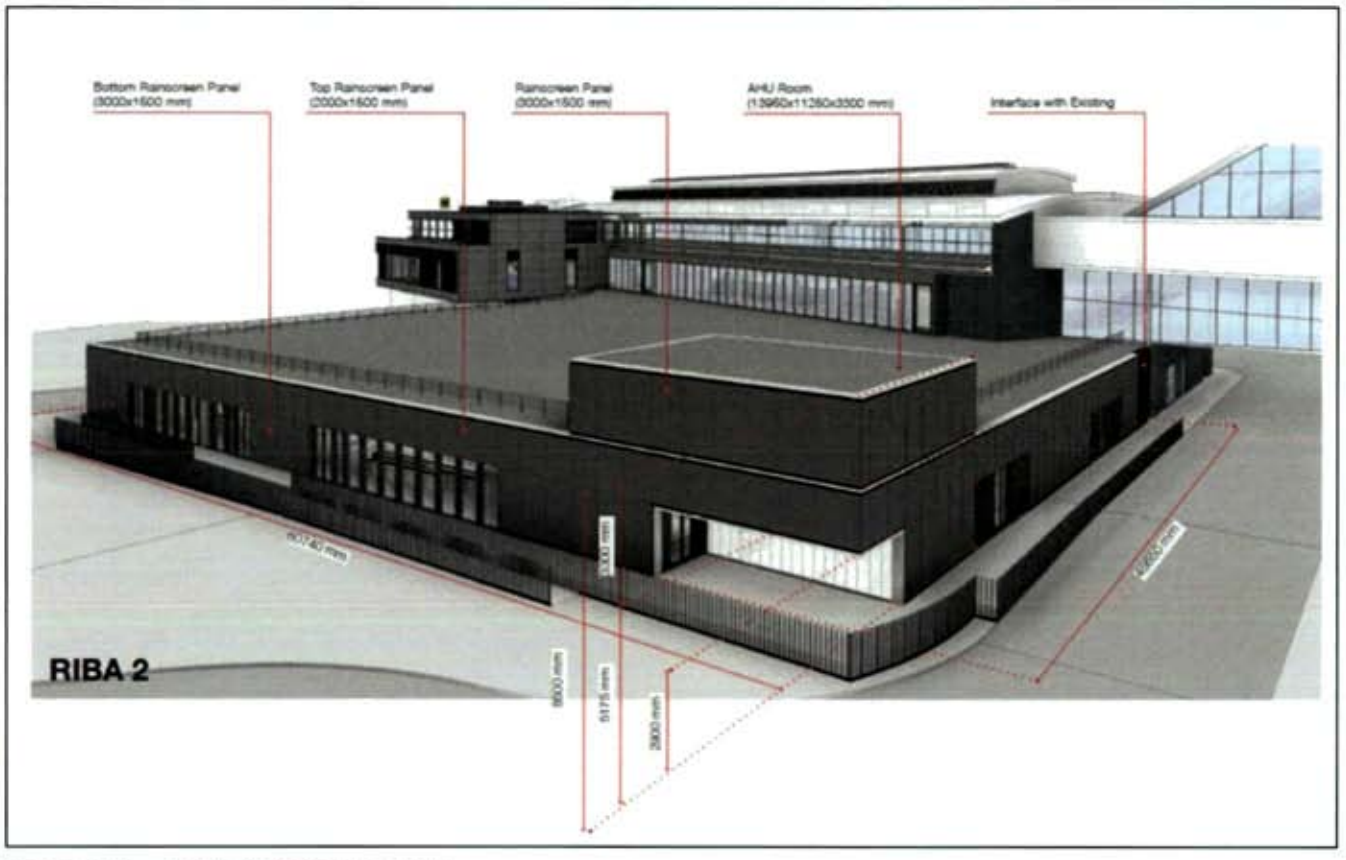

Figure 3-4 – RIBA 2 Design Layout

Iteration and Final Proposal

daa design standards for toilet provision refers to BS6465. This design also follows the Dublin Airport Washroom Standard Guidelines. To comply with Building Regulations Part G clause 2.2 provisions are to be calculated in accordance with BS 6465 Sanitary Installations, Part 1; Part 2; Part 3 and Part 4

The toilet block developed at RIBA 2, has gone through 2 iterations, the details of the changes are outlined in the figures below.

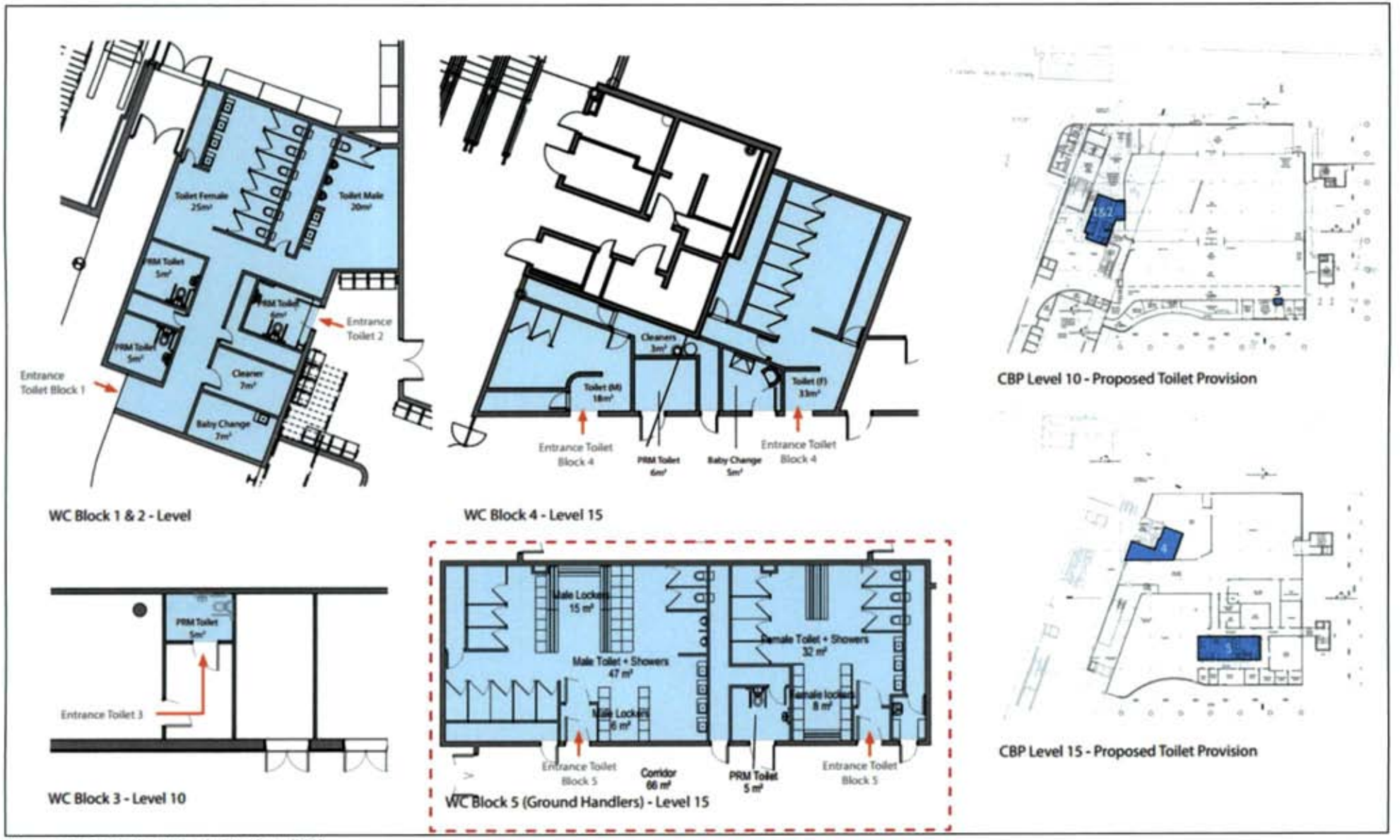

Figure 3-5 - Toilet Block Design (V1)

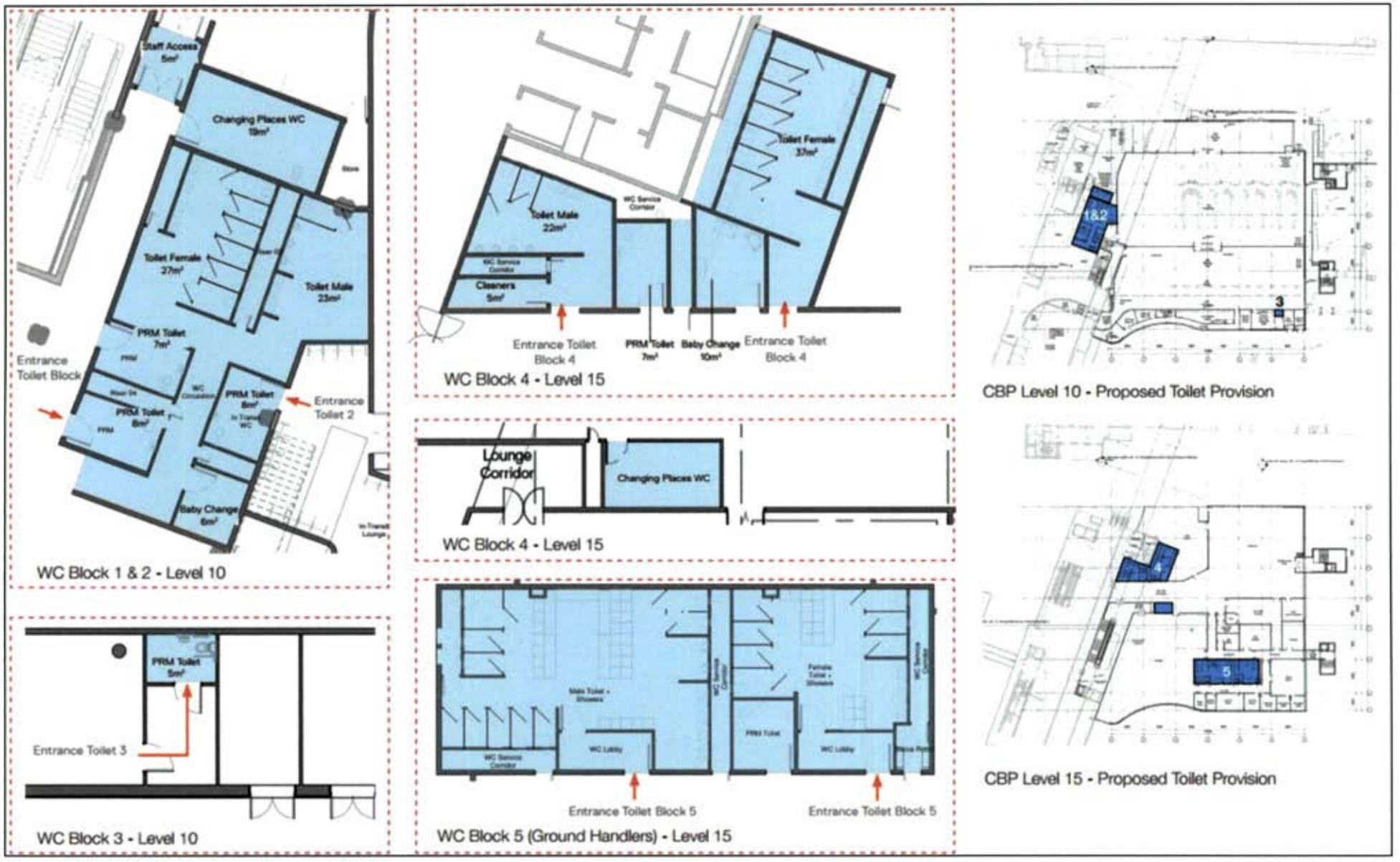

Figure 3-6 - Toilet Block Design Final (V3)

Following stakeholder consultation, the following additional functions were incorporated into the final proposed design:

- Additional commercial area post CBP including F+B and Lounge;
- Significantly reduced impact on Terminal 2; and
- Phase construction and operation.

A new level has been added to the CBP extension and new routes to connect the passengers to Terminal 2 added through new link bridge. At Level 15 (above CBP), departing passengers are routed from CBP to the gate lounges and the VCC taking them at Apron level from where they walk in /out of the aircrafts. Arriving passengers are directed to either existing transfers facility on Pier 4 or to the existing immigration hall in Terminal 2. A fallow space at L20 and a lift core extending to L30 of the CBP building are included to safeguard for future expansion.

Figure 3-7 – Final Proposal Visualisation

The final design layout of Ground and First floor are provided in the figures below.

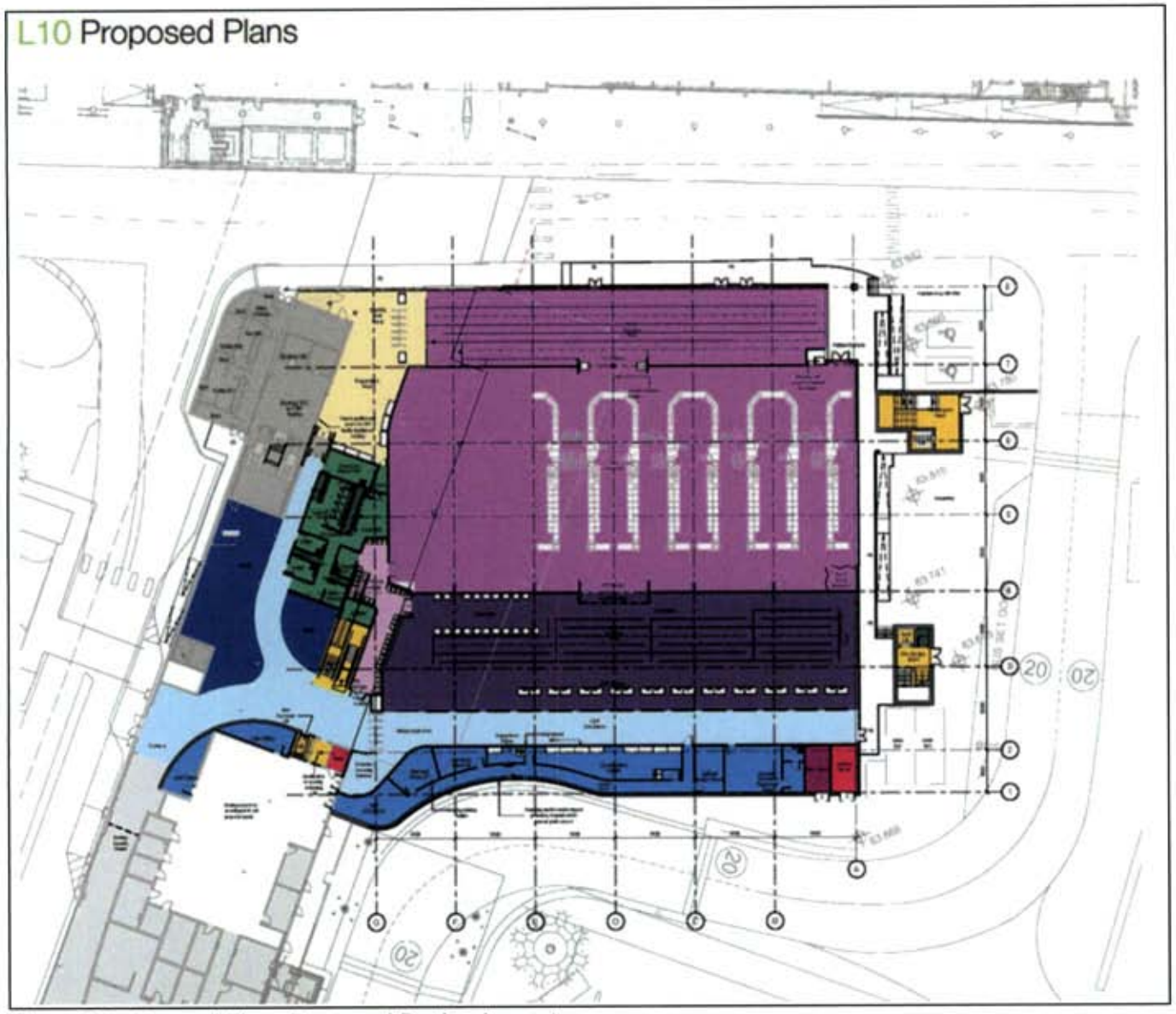

Figure 3-8 - Ground Floor Proposed Design Layout

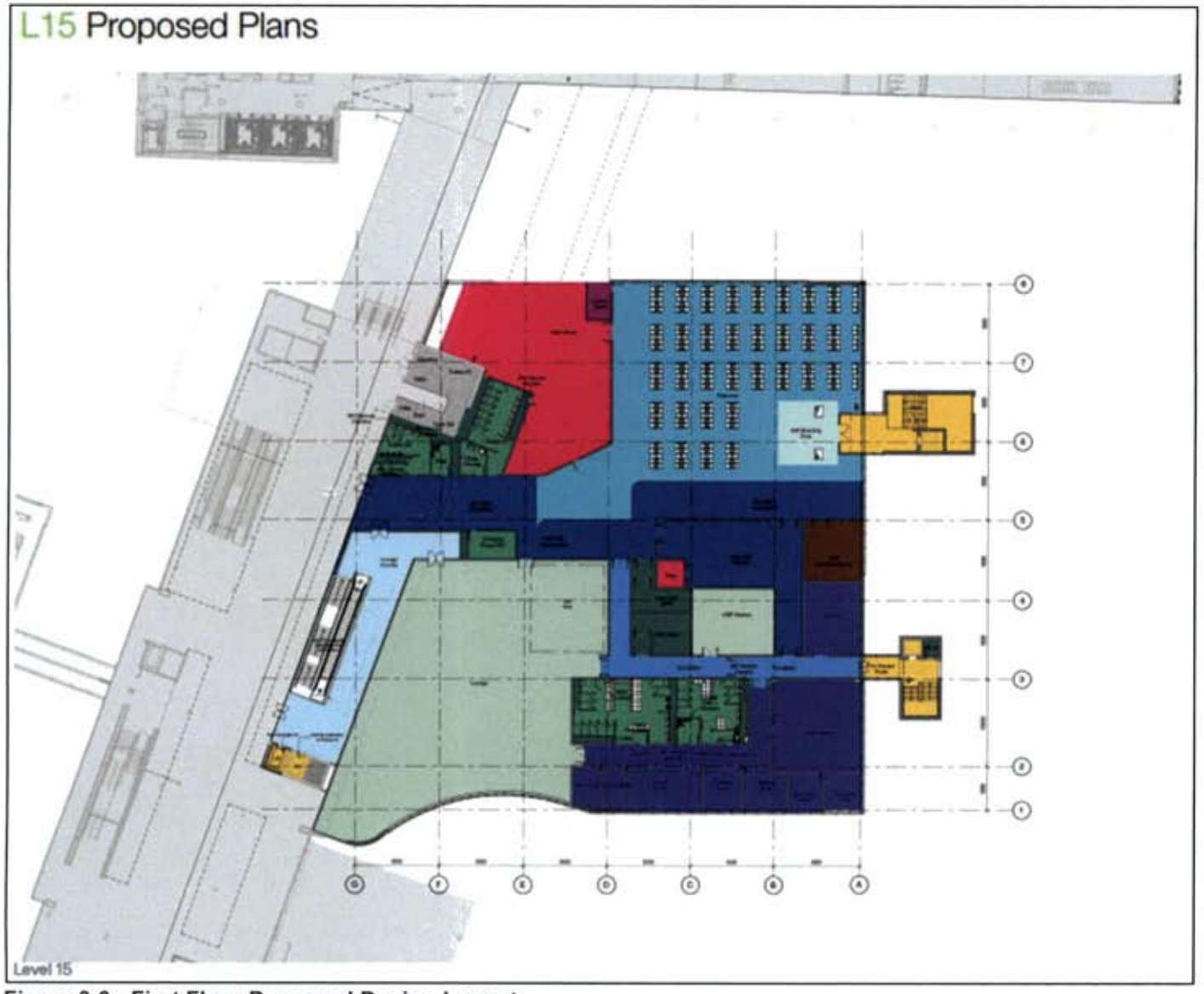

Figure 3-9 - First Floor Proposed Design Layout

3.4.1.2. South Apron Support Centre (SASC)

The proposed SASC (previously Flight Catering Building) comprises a two-storey building with a roof level plant room with a footprint of approx. 3,880 m^2. It dates from approximately the 1970s. The original building was later extended to the South and West. The repurposing of the Flight Catering Building at Dublin Airport has been designed to provide welfare facilities and offices to facilitate the delivery of the CBP extension. The project includes partial demolition and upgrading of the external envelope, reconfiguration of internal areas and all associated work.

The later extensions to the building will be removed to return the building to its original form. The exterior of the building will be replaced and upgraded to improve the visual appearance and environmental performance of the building. The existing language of bands of render and ribbon windows will be retained and refreshed. Where possible the existing façade will be retained to maximise the reuse of the existing construction and minimise waste generation. The building has two occupied floors and roof level plant room.

The ground floor is configured to provide a lobby with reception and security desk. A large open plan office with a mixture of meeting room sizes located adjacent, induction room, canteen with kitchen, male and female changing and shower/ toilet facilities. At first floor further open plan offices and meeting rooms of various sizes, canteen, staff changing/ shower/ toilet facilities are provided. Appropriate provision has been made for MEP plant areas and risers. Two stairs and lift cores are provided for vertical access and means of escape.

RIBA 1 (Feasibility)

The brief requirements have been developed with daa and its stakeholders and will provide office accommodation for daa staff. During RIBA 1 the feasibility of renovating the existing facility and changing its use was established.

Design for Planning Application

The internal layouts have been further developed to ensure that the toilet provision meets standards and codes and to meet daas technical standards. A measured survey and condition survey have been carried out and the information presented in this design statement and the drawings are based on this.

Ground Floor

The main entrance to the building is to the East. Two glazed double swing doors provide access into the Reception/ Lobby a security office is located adjacent to the lobby. The existing vertical circulation core to the East is largely retained and will provide lift and stair access to first floor and stair access to roof level from the main reception. The stair within the core will be demolished and reconstructed within the retained walls of the core. The stair will be reconstructed to comply with regulation and code. The induction room will be positioned with access directly from the lobby. A second core to the West side of the building will be provided. This is located directly opposite the exit from the main lobby with clear line of site. The vertical circulation core to the West will consist of the existing lift shaft which is retained and a new stair core. At ground floor a large flexible open plan office is provided with small, medium and large sized meeting rooms located adjacent to this. Male and female shower, changing, locker and toilet facilities are provided. The canteen with kitchen facility is located to the North West side of the building with direct access out into the sunken courtyard area which will provide additional outdoor seating. Storage and plant areas are included.

First Floor

The first floor is accessed via the two cores one to the East and one to the West side of the building. Circulation is provided via corridors, one which connect directly between the two cores East/West and by two corridors providing connectivity North/ South. Open plan office spaces are provided one to the North and one to the South. Small, medium, and large meeting rooms will be provided. A canteen with kitchenette is provide to the West. Male and female changing, locker and toiler facilities are provided. Storage and plant areas are included.

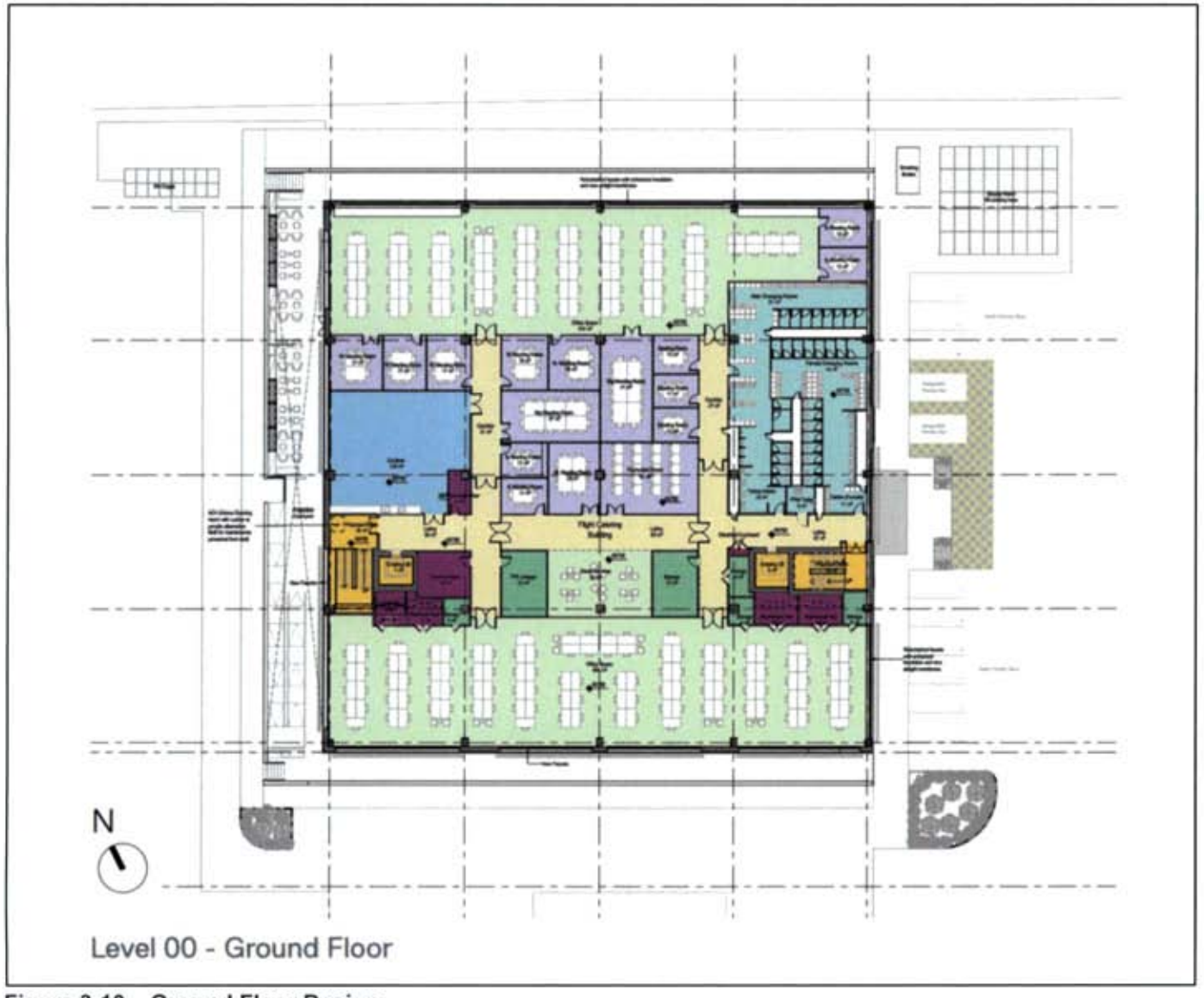

Figure 3-10 – Ground Floor Design

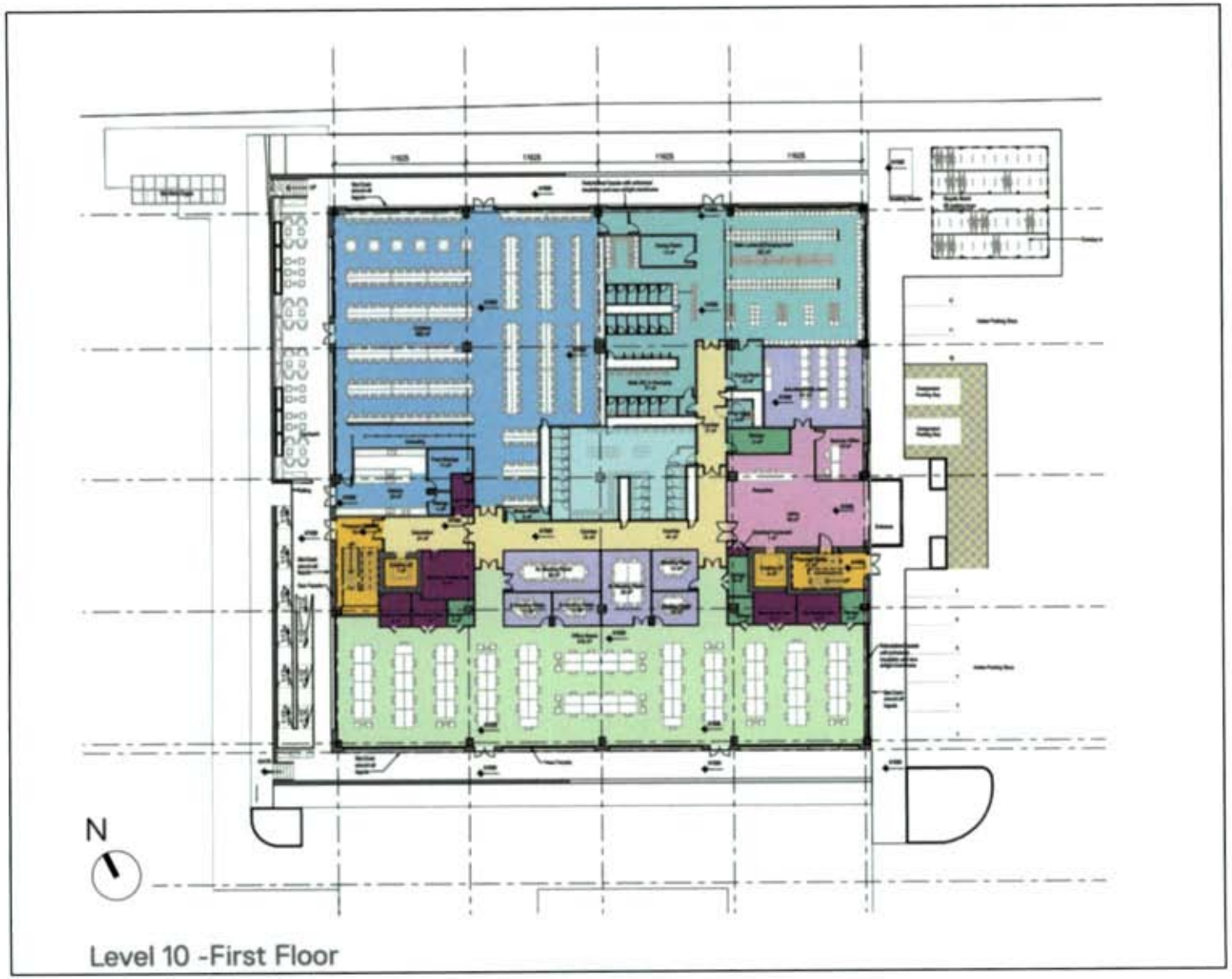

Figure 3-11 – First Floor Design

Roof

Roof level is accessed via the stair core to the East side. An alternative means of escape will be provided via an opening hatch and ladder connecting to the West stair core. The roof will be for maintenance access only. Mechanical and electrical plant will be located within the existing and refurbished roof plant enclosure. The two areas of external plant will be located adjacent to the enclosure where plant is currently located. A replacement balustrade to the perimeter of the roof will provide fall restraint.

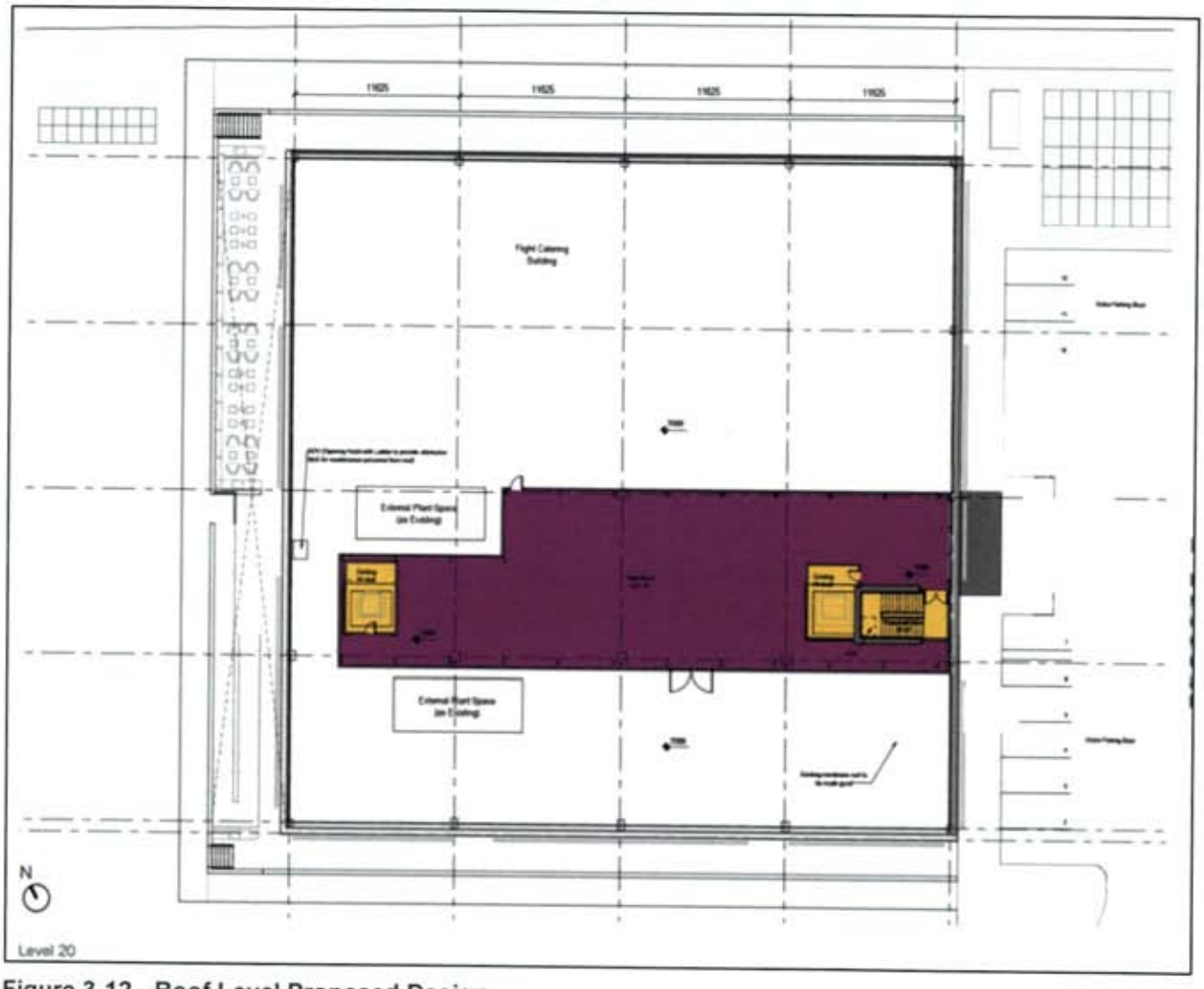

Figure 3-12 - Roof Level Proposed Design

3.4.2. CBP RIBA 1 Design

3.4.2.1. Option 2

A description of Option 1 and Option 2 at RIBA 1 design stage is presented above. The preferred solution was Option 1 (expanding the facility at its southern edge). The alternative, Option 2 (secondary screening area to be located east of the existing building envelope) has been considered as part of this EIAR and the outcome for environmental topics are summarised below.

Population and Human Health

This option would have a greater effect on the receiving human health environment, as this design would ultimately have involved more construction and associated materials use/ waste generation etc.

Landscape & Visual

This option would have had no likely significant effect on landscape character or visual amenity.

Noise & Vibration

This option would have a greater potential for noise and vibration effects, as this design would ultimately have involved more construction and associated materials use/ waste generation etc.

Land & Soils

This option would have a greater potential for waste soils generation, as this design would ultimately have involved more construction and associated materials use/ waste generation etc.

Cultural Heritage

There would have no difference in this scenario as the Proposed Development will not have any effect on cultural heritage.

Biodiversity

There would be no difference in this scenario as the proposed development site is comprised of existing buildings within a built-up area of Dublin Airport and is of low ecological value, with no notable difference between the options with regards to biodiversity effects.

Traffic & Transport

This option would have a greater effect on Traffic & Transport as this design would ultimately have involved more construction and associated traffic volumes.

Air Quality

This option would have a greater potential for air quality effects, as this design would ultimately have involved more construction and associated materials use/ waste generation etc.

Material Assets (Waste)

This option would have a greater potential for waste soils generation, as this design would ultimately have involved more construction and associated materials use/ waste generation etc.

Material Assets (Built Services)

This option would have a greater potential for built services impact, as this design would ultimately have involved more construction and associated potential impacts on built services.

Water

This option would have a greater potential for water quality impacts, as this design would ultimately have involved more construction and associated materials use/ waste generation etc.

Climate

There would be little difference in this scenario based on the findings of this assessment.

Major Accidents & Disasters

There would be little difference in this scenario based on the findings of this assessment.

3.4.3. Do Nothing Scenario

The supporting rationale for the proposed CBP extension is provided in Section 3.4.1.1. The rationale of the refurbishment of the FCB building to the SASC building is to ensure continuous operation of the CBP during the construction stage.

Doing nothing has therefore been rejected as an alternative. Notwithstanding this, the environmental effects of doing nothing have been assessed as part of this EIAR and the outcome for all environmental topics are summarised below.

Population and Human Health

The site is located within Dublin airport lands. The do-nothing scenario will have a long-term moderate adverse effect (with regards to Population and Human Health) on airport users and airport staff, as a result of ongoing regular passenger congestion within the current CBP building.

Landscape & Visual

There would be no difference in the 'do nothing' scenario, the facilities will remain as is and will not have any effect on landscape character or visual amenity.

Noise & Vibration

No construction related noise and vibration impacts would occur.

Land & Soils

The Site is located within Dublin airport lands. The do-nothing scenario will have a neutral and imperceptible effect on the Site with regards to land, soils and geology.

Cultural Heritage

There would be no difference in the 'do nothing' scenario as the Proposed Development will not have any effect on cultural heritage.

Biodiversity

There would be no difference in the 'do nothing' scenario as the proposed development site is comprised of existing buildings within a built-up area of Dublin Airport and is of low ecological value. The do nothing scenario would have a neutral and imperceptible effect.

Traffic & Transport

No construction traffic would be generated.

Air Quality

The negligible impact on air quality from construction traffic would not occur. This scenario would be neutral in terms of air quality.

Material Assets (Waste)

The disposal of excavation and other construction wastes associated with the Proposed Development would not occur.

Material Assets (Built Services)

There would be little difference in the 'do nothing' scenario as the Proposed Development only amends the layout of CBP and SASC facilities. The environmental effects of this are negligible.

Water

The minor potential risk of impacts to the Cuckoo stream during construction would not occur.

Climate

There would be little difference in the 'do nothing' scenario based on the findings of this assessment.

Major Accidents & Disasters

There would be no difference in the 'do nothing' scenario as the Proposed Development will not have any effect with regards to major accidents and disasters.

4. Population and Human Health

4.1. Introduction

This chapter assesses the likely significant effects of the proposed development on the Population and Human Health setting in the general area of the proposed US Customs Border Protection (CBP) – Proposed Reconfiguration & Expansion & South Apron Support Centre (SASC) Partial Demolition, Refurbishment & Upgrade Project at Dublin Airport, Co. Dublin. This assessment addresses the potential effects (both direct and indirect likely significant effects) of the construction and operation of the proposed development on Population and Human Health. A more complete description of the proposed development is presented in Chapter 2 – Project Description.

This chapter considers demographics, economic activity, tourism and recreation, community and amenities and human health.

4.2. Legislation, Policy, Guidance

The following legislation, policy and guidance are relevant to this chapter and were considered during the assessment process:

- Guidelines on the information to be contained in Environmental Impact Assessment Reports, Environmental Protection Agency (EPA), 2022 highlights the amendments to Article 3(1) of amended European Union (EU) Environmental Impact Assessment (EIA) Directive 2011/92/EU as amended by Directive 2014/52/EU (the "EIA Directive") which states that:

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

- The Guidelines on the information to be contained in Environmental Impact Assessment Reports, hereafter referred to as the EPA Guidelines 2022 state that: *'in an EIAR, the assessment of impacts on population and human health should refer to the assessments of those factors under which human health effects might occur, as addressed elsewhere in this EIAR e.g. under the environmental factors of air, water, soil etc'*

- Moreover, Annex IV, paragraph 5(d) of the Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (2018) requires an EIAR to contain:

  "A description of the likely significant effects of the project on the environment resulting from, inter alia, "the risks to human health"

  When outlining the scope of environmental factors covered by the EIA Directive within Guidance on the Preparation of the Environmental Impact Assessment Report (European Commission, 2017), "population and human health" is defined as follows:

  "*Human health is a very broad factor that would be highly Project dependent. The notion of human health should be considered in the context of the other factors in Article 3(1) of the EIA Directive and thus environmentally related health issues (such as health effects caused by the release of toxic substances to the environment, health risks arising from major hazards associated with the Project, effects caused by changes in disease vectors caused by the Project, changes in living conditions, effects on vulnerable groups, exposure to traffic noise or air pollutants) are obvious aspects to study. In addition, these would concern the commissioning, operation, and decommissioning of a Project in relation to workers on the Project and surrounding population.*"

- Planning and Development Regulations 2001-2023
- Planning and Development Act, 2000, as amended 2017 (S.I. No. 20 of 2017), 2018 (S.I. No. 16 of 2018), 2020 (S.I. No. 92 of 2020), 2021 (S.I. No. 18 of 2021) and 2022 (S.I. No. 75 of 2022).
- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (2018)

The following publications and data sources were consulted in the preparation of this Chapter:

- Central Statistics Office (CSO) data website (2011, 2016 data and 2022 preliminary results) (www.cso.ie);
- Department of Education data website (www.education.ie/en/find-a-school);
- Fingal County Development Plan (2023-2029);
- Dublin Airport Local Area Plan 2020;

- Eastern and Midlands Regional Assembly Regional Spatial and Economic Strategy (2019 -2031);
- Failte Ireland (www.failteireland.ie);
- Fingal Tourism Statement (2017-2022);
- Fingal Tourism Strategy (2017-2020)
- Google Street Mapping;
- Health Service Executive data website (www.hse.ie);
- Project Ireland 2040 - National Planning Framework; and
- Regional Spatial and Economic Strategy for the Eastern and Midland Region 2019 – 2031;

All data sources were consulted the week ending 3rd March 2023 except where otherwise stated.

4.3. Assessment Methodology

This Population and Human Health Assessment has been undertaken in accordance with relevant Environmental Protection Agency's (EPA) Guidance, as follows:

- Assessment of baseline, including identification and assessment of receiving environment of receiving environment and relevant receptors;
- Identification of environmental design and mitigation measures included in the construction methodology;
- Identification of the potential impacts, and assessment of the magnitude of potential effects, and their significance;
- Consideration of mitigation measures; and,
- Assessment of residual effects.

Where relevant, assessment findings have been incorporated from the following chapters:

- Air Quality (Chapter 7);
- Climate (Chapter 8);
- Noise and Vibration (Chapter 9);
- Traffic (Chapter 10);
- Land, Soils and Geology (Chapter 11); and
- Water (including Hydrology and Hydrogeology) (Chapter 12)

4.3.1. Limitation and Assumptions

There are no limitations to the assessment of potential effects on Population and Human Health presented in this chapter.

4.4. Receiving Environment

The proposed development is located in Dublin Airport within the boundary of Fingal County Council (FCC). For the purpose of this chapter, the assessment of the receiving environment has been conducted with regard to the location of the site and has been assessed on a national, regional and local level.

4.4.1. Demographic Profile

The most recent Census of Population was undertaken in April 2022, with previous data dating from 2016. At the time of the preparation of this report, a limited quantity of relevant data from the 2022 Census has been published, pertaining chiefly to overall population and housing in counties and Electoral Districts (EDs). Preliminary data indicates that the national population increased by ca. 11% since 2016 to 5,123,536. The main results from Census 2022 will be published over several months starting in April 2023 hence reference is made to Census 2016 in this assessment. The 2022 data has been utilised where available. Demographic trends are analysed at national, regional and local levels for the purposes of the EIAR. ED's which are wholly or partially included within the site were examined. In this regard the site falls within one Electoral Division, Airport (CSO Area Code: 04001) in County Fingal.

Given the nature of the proposed development it is considered the key areas associated with the site are the 'Local Area' (comprised of the Airport ED) and the County Area (consisting of Fingal). Population growth within the state, Counties Fingal, and Dublin and the Airport ED is shown in Table 4-1 for the 2011 – 2022 period.

Table 4-1 - Population Growth 2011-2022

Area	2011	2016	2022	% Change 2011 - 2022
State	4,581,269	4,761,865	5,123,536	+11%
County Dublin	1,273,069	1,347,359	1,450,701	+13%
County Fingal	273,991	296,214	329,218	+17%
Airport ED	4,032	5,018	6,139	+35%

Source: cso.ie

There has been a consistently high level of population growth within the state, County Fingal and within the Airport ED over this period, with this growth anticipated to continue in the future. There has also been significant population growth in County Dublin with a growth of 13%, higher than the overall national population growth of 11%.

4.4.2. Tourism and Amenities

Dublin Airport connects Ireland to the rest of the world and helps to "fulfil the role as an economic enabler of trade, tourism and social connectivity"[2], with around 8.5 million passengers in 2021, with 545,834 of those passengers comprising transatlantic travel. This is an increase of 5% from 2020 numbers. According to the Failte Ireland Tourism Barometer 2022[3], visitor volumes (in the accommodation sector) have surpassed pre-Covid norms, particularly benefitting from a strong US dollar. The latest CSO data for United States travellers to Ireland was 280,200 persons in 2020.

Within the wider context of Fingal County, stay-over visits in Fingal are largely concentrated around the Airport, where the demand is a mix of airport/aviation related travel and visitors to Dublin staying on the city periphery. For other overnighting visitors, the decision to choose Fingal is mainly for business meetings, social gatherings, staged festivals and events, and recreational pursuits[4].

4.4.3. Economic Profile

The 2016 Census of Population was examined to determine trends in relation to employment including the number of persons at work, unemployment levels and the sectoral composition of the population, based upon principal economic status.

Table 4-2 shows the overall unemployment rate as measured by the responses from the 2011 and 2016 Census. The unemployment rate is calculated by adding the number of persons unemployed to first time job seekers, and then dividing the total by the overall labour force (i.e., total amount of unemployed persons and employed persons).

Table 4-2: Principal Economic Status (Profile) 2011-2016

	State 2011	State 2016	Dublin 2011	Dublin 2016 (including DLR, South Dublin and Dublin City)	Fingal 2011	Fingal 2016
At work	1,807,360	2,006,641	540,729	480,805	119,276	133,971
Looking for First Regular Job	34,166	31,434	10,678	7,643	2,224	1,850
Unemployed or given up on Previous Job	390,677	265,962	100,771	57,538	20,416	13,565
Overall Unemployed	424,843	297,396	150,096	53,179	27,442	15,415
Labour Force	2,232,203	2,304,037	652,178	863,999	207,584	223,407

[2] daa Annual Report 2021 (flippingbook.com)

[3] //www.failteireland.ie/FailteIreland/media/WebsiteStructure/Documents/Publications/failte-ireland-tourism-barometer-december-2022.pdf?ext=.pdf

[4] 585-Fingal Socio-Economic Profile r9.2

Unemployment (%)	Rate	19.0%	11.5%	18%	13.1%	15.8%	10.3%

Source: cso.ie

The unemployment rate across the state, Dublin and Fingal has decreased significantly between 2011 and 2016, the largest decrease occurred in Fingal where the unemployment rate decreased from 15.8% in 2011 to 10.3% in 2016.

The industry is characterised by large numbers of Small to Medium-sized Enterprises (SME's), with almost two out of three enterprises employing less than 10 people, and only one in ten hospitality and tourism businesses in Fingal with more than 50 employees.

Dublin Airport is a key employment location for Fingal with more than 12,000 employees across some 200 companies. The Aviation cluster is the major employer with companies including daa, Aer Lingus, CityJet and Servisair having a combined workforce of approximately 7,500 people.

More recent data on employment is provided in the CSO Labour Force Survey published quarterly. This shows that in Q3-2022 the national unemployment rate was 4.5%[5].

The number of persons aged 15-74 years who were unemployed decreased by 30% in the year to Q3-2022, using standard International Labour Organisation (ILO) criteria. The unadjusted unemployment rate for persons aged 15-74 years decreased from 5.7% to 4.5%.

4.4.4. Community

Dublin Airport has a very strong focus on community engagement. The St. Margaret's Community Liaison Group (CLG) has been focusing on many areas of interest to the local community including airport operations and future plans since 2016. Where required, experts attend the meetings to provide an opportunity for a detailed discussion on a topic that is deemed to be of particular interest to the group. This is a beneficial forum that facilitates information exchange and provides a solid platform for bodies to communicate in an open and transparent manner.

The Dublin Airport Environmental Working Group (DAEWG) (formerly known as the Dublin Airport Stakeholder Forum) was established in 2004 and focuses on issues such as noise, air quality monitoring and the development of airport infrastructure. It is independently chaired and includes representatives from community groups across North Dublin including Portmarnock, Malahide, St. Margaret's, Swords and Santry, as well as representatives from Dublin Airport, Fingal County Council and the Irish Aviation Authority. The group was formed to ensure that all stakeholders could meet in a non-adversarial and information-exchanging format to focus on matters of business that were of ongoing concern to community representatives.[6]

4.4.5. Human Health

Overall life expectancy and self-assessed health statistics are included below.

The Department of Health's report 'Health in Ireland Key Trends 2022' provides statistical analysis on health in Ireland over the last ten years. Chapters 1 and 2 of the report deal specifically with life expectancy and health. According to this report the average life expectancy trends are as follows:

- Life expectancy for women (continual upward trend since 1996): 84.7 years
- Life expectancy for men (continual trend since 2006): 81 years

It is also noted in the report that the gap between male and female life expectancy has continued to narrow over the last decade. An upward trend is evident in the life expectancy of older age groups reflecting decreasing mortality rates from major diseases. Older Irish people's life expectancy (65 years of age) to be lived in good health, is higher for both men and women compared with the EU average.

The report also states that *"Ireland has the highest self-perceived status in the EU, with 82.1% of people rating their health as good or very good"*. Overall population health at the national level shows decreasing mortality and a rise in life expectancy over the last ten years. The health in Ireland report also goes on to state, "*age-standardised mortality rates have declined for all causes over the past decade by 15.8%.*"

[5] Key Findings - CSO - Central Statistics Office

[6] https://www.dublinairport.com/corporate/north-runway/engagement

According to the most recently published data from the CSO[7], the results of the Census in 2016 reported that the vast majority (ca. 83% and 89%) of people in Dublin and Fingal respectively reported that their health was good and very good. 3% of residents in the Airport ED reported themselves in 'bad' or 'very bad' health, with 97% reporting either 'good' or 'very good' health.

4.5. Future Receiving Environment

The aforementioned baseline for public health is unlikely to change significantly from that outlined in the 'Receiving Environment' in the assessment period, most notably during the construction period. This is considering the short length of time between the preparation of this EIAR and the proposed construction stage. The full description of the development is described in Chapter 2 – Project Description and anticipates works to commence in Q1 2024 and fully completed by Q2 2027.

The population growth (both in terms of demographic profile and employment) and an increase in tourism is expected to continually increase, which will necessitate the need for the development and the extension / reconfiguration of the airport.

4.6. Likely Significant Effects on Population and Human Health during the Construction Phase

The potential construction likely significant effects on human health are described in Table 4-3. It identifies the potential source of the impact; potential impact pathways (route by which receptors can become impacted) and potential effects arising from the potential impact. For each of the potential effects identified, the likelihood of an effect has been considered to determine whether an assessment should be undertaken.

Table 4-3 -Potential Likely Significant Effects to Human Health during Construction

Potential Likely Significant Impact	Potential Likely Significant Impact Pathway	Potential Likely Significant Effect	Significant Effect?
Noise from Construction Traffic	Noise impact on sensitive receptors	Indirect health effect on sensitive receptors	Discussed further in Chapter 9 – Noise and Vibration
Noise from Construction Works	Noise impact on sensitive receptors	Indirect health effect on sensitive receptors	Discussed further in Chapter 9 – Noise and Vibration
Noise on existing structures from Construction	Noise impact on sensitive receptors	Indirect health on sensitive receptors	Discussed further in Chapter 9 – Noise and Vibration
Vibration from Construction Works	Vibration impact on sensitive receptors	Indirect health effect on sensitive receptors	Discussed further in Chapter 9 – Noise and Vibration
Surface or Groundwater Impact during Construction Works	Contaminated water impact to sensitive receptors	Direct health effect on sensitive receptors	Discussed in Chapter 12 – Water
Soil Contamination during Construction Works	Soil contamination impact on sensitive receptors	Direct health effect to sensitive receptors due to direct contact, ingestion or inhalation of contaminated soils	Discussed further in Chapter 11 – Land, Soils and Geology
Employment from Construction Works	Economic impact on sensitive receptors	Increase in employment opportunities for sensitive receptors	Discussed further within this Chapter

[7] General Health - CSO - Central Statistics Office

Visual Impact from Construction Works	Visual impact on sensitive receptors	Temporary indirect health effect on sensitive receptors	Discussed further in Chapter 6 - Landscape and Visual
Dust generation from Construction Works	Air quality impact on sensitive receptors	Temporary direct health effect on sensitive receptors	Discussed further in Chapter 7 – Air Quality
Emissions from Construction Vehicles & Machinery	Air quality impact on sensitive receptors	Indirect health effect on sensitive receptors	Discussed Further in Chapter 7 -Air Quality, Chapter 8 - Climate

The construction phase of the development will lead to temporary traffic, noise and vibration, dust generation and visual impact within the site and the general vicinity. The proposed development complies with the statutory land use zoning. There will be no severance of land, loss of rights of way, or impacts to existing connections or amenities as a result of the construction works associated with the proposed development, provided the mitigation measures proposed in this EIAR are followed. The existing landscape is expected to be only slightly impacted, particularly as the modifications would be undertaken to already existing features. All impacts are predicted not to be significant and short term in nature, as determined by the assessments included in the aforementioned chapters. Further details of the construction phase are discussed in Chapter 6 – Landscape and Visual, Chapter 7: Air Quality, Chapter 8: Climate, Chapter 9: Noise and Vibration, Chapter 10: Traffic, Chapter 11: Land, Soils and Geology and Chapter 12 - Water. As a result, the proposed development will result in temporary construction related Population and Human Health effects (minor adverse), but mitigation measures will be applied.

4.7. Likely Significant Effects on Population and Human Health during Operational Phase

The potential likely significant operational effects on human health are described in Table 4-4. It identifies the potential source of the impact; potential impact pathways (route by which receptors can become impacted) and potential effects arising from the potential impact.

Table 4-4 -Likely Significant Effects on Population and Human Health during Operation

Likely Significant Impact	Likely Significant Impact Pathway	Potential Likely Significant Effect	Likely Significant Effect?
Modified Land Use	Visual impact on sensitive receptors	Indirect health effect on sensitive receptors	Increased landscape and visual amenity but no significant impacts
Increased Mental Health	Wellbeing Impact on sensitive receptors	Indirect health effect on sensitive receptors	Increased mental health of both airport users and staff due to a better travel experience

The proposed development will modify the current local services and amenities of Dublin Airport, but, there will be no adverse direct or indirect effects on sensitive receptors as the CBP will remain operational throughout the construction phase. Due to the proposed development of the CBP / SASC reconfiguration, there is predicted to be a slight positive permanent impact on mental health and wellbeing during the operational stage through the provision of a better travel experience (e.g. less congestion during border patrol) to airport users, and improved working conditions for airport staff. Taking into account the baseline environment and proposed mitigation during construction, no human health risks from contaminated soils or noise and vibration are expected during the operational phase. According to Chapter 6 – Landscape and Visual, there is predicted to be a slight beneficial impact to the SASC building, and a neutral impact to the CBP. The visual amenity may be enhanced in the northern part of the site due to a more 'contemporary building, in place of older, less architecturally sensitive building'.

4.8. Mitigation and Monitoring

The proposed development will have minor adverse effects during the construction phase on population and human health as stated above in Table 4-3. However mitigation measures as presented within the relevant technical chapters (Chapter 7 - Air Quality; Chapter 8 – Climate; Chapter 9 – Noise and Vibration; Chapter 11 –

Land, Soils and Geology; and Chapter 12 – Water) and Chapter 16 - Schedule of Commitments, will be implemented as part of the proposed development.

4.9. Residual Impacts

All construction phase activities are temporary in nature. No significant adverse residual effects are likely during the construction and demolition phases, and the operational phase of the proposed development.

There will be a permanent positive effect on mental health and wellbeing due to the provision of a better travel experience as a result of the proposed development. There will be a permanent positive effect on landscape and visual also due to the upgraded façade of the CBP.

4.10. 'Do Nothing Scenario'

The site is located within Dublin airport lands. Due to the nature and scale of the deployment, as stated above, there will be a positive effect in relation to population and human health. The do-nothing scenario will have a long-term moderate adverse effect (with regards to Population and Human Health) on airport users and airport staff, as a result of ongoing regular passenger congestion within the current CBP building.

5. Biodiversity

5.1. Introduction

This chapter describes the biodiversity setting in the general area of the proposed US Customs Border Protection (CBP) – Proposed Reconfiguration & Expansion & South Apron Support Centre (SASC) Partial Demolition, Refurbishment & Upgrade Project at Dublin Airport, Co. Dublin. This assessment addresses the potential effects (both direct and indirect impact) of the construction and operation of the proposed development on the biodiversity of the surrounding project. A more complete description of the proposed development is presented in Chapter 2 – Project Description. The proposed development site is comprised of existing buildings and built land. There are no suitable habitats for mammals or bird species within the proposed development site. There will be no direct habitat loss or impacts on habitats as a result of the proposed development.

5.2. Methodology

This assessment has been undertaken in accordance with and has regard to the following relevant guidelines, legislation, policies and plans: -

- EPA Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (EPA, 2022);
- Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment (European Commission, 2013);
- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (Department of Housing, Local Government and Heritage 2018);
- Guidelines for Assessment of Ecological Impacts of National Road Schemes (NRA, 2009);
- Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland: Terrestrial, Freshwater, Coastal and Marine (CIEEM, 2018; 2022 reprint);
- Guidelines for Preliminary Ecological Appraisal (CIEEM, 2017);
- A Guide to Habitats in Ireland. The Heritage Council. The Heritage Council (Fossitt, 2000);
- Best Practice Guidance for Habitat Survey and Mapping. The Heritage Council, Church Lane, Kilkenny, Ireland (Smith et al., 2011);
- European Commission (EC) Habitats Directive 92/43/EEC;
- European Commission (EC) Birds Directive 2009/147/EC;
- European Communities (Birds and Natural Habitats) Regulations, 2011-2021, as amended;
- Flora (Protection) Order, 2022;
- EIA Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014;
- European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (S.I. No. 296 of 2018);
- The Wildlife Act, 1976 (as amended);
- The Planning and Development Act, 2000 (as amended);
- Third National Biodiversity Action Plan 2017 – 2021 (Department of Culture, Heritage and the Gaeltacht, 2017);
- Fingal Development Plan 2023-2029-8
- Draft Final Biodiversity Action Plan 2022-20309;
- Dublin Airport Local Area Plan 202010;
- Planning for Watercourses in the Urban Environment. Inland Fisheries Ireland 2020; and,
- All-Ireland Pollinator Plan 2021-2025. National Biodiversity Data Centre.

[8] https://www.fingal.ie/development-plan-2023-2029

[9] https://consult.fingal.ie/en/consultation/draft-fingal-biodiversity-action-plan-2022-2030

[10] https://www.fingal.ie/sites/default/files/2020-01/dublin-airport-lap-2020.pdf

Consultation was undertaken with National Parks and Wildlife Service (NPWS) via the Development Applications Unit (DAU) of the Department of Housing, Local Government and Heritage.

The methodology used to evaluate the ecological value and baseline ecological environment, and to prepare this impact assessment is outlined as follows.

5.2.1. Desk Study

The locations of conservation sites, protected species occurrences and areas of ecological interest were reviewed in the context of the proposed development using online sources such as Google Earth, Google maps11 and Bing maps[12] (last accessed on 24/02/2023).

Sources of data including; published reports, records, datasets and on-line mapping, which were used to collate and compile information of ecological features of interest and importance within and around the proposed development include: -

- National Parks and Wildlife Service (NPWS) webpage / data;
  - Information on sites designated for nature conservation, including spatial data (NPWS);
  - Habitats and species data
  - Wildfowl Sanctuaries
  - Red List of Terrestrial Mammals (Marnell et al, 2019)
- National Biodiversity Data Centre (NBDC)
  - Protected species records
  - Invasive species records
- Environmental Protection Agency
  - Watercourses and lake spatial files
  - Water quality data
  - Corine land cover data
- Geological Survey of Ireland
  - Underlying geology, soils and hydrogeology
- Ordnance Survey Ireland (OSI) mapping and aerial photographs
- OSI Historic mapping
- Birdwatch Ireland
  - Bird count data from the Irish Wetland Bird Survey (I-WeBS)
  - Birds of Conservation Concern in Ireland (Gilbert et al. 2021)
- Bat Conservation Ireland
  - Bat monitoring data
- Wetland Survey Ireland
  - Information on identified wetland habitats within the study area
- Inland Fisheries Ireland (IFI) - Eastern River Basin District River Surveys[13]

Relevant planning information for the surrounding area was reviewed using the planning enquiry systems of Fingal County Council. Search criteria were implemented to determine whether such projects or plans would be relevant to this study and this information was used to determine potential cumulative impacts from other plans / projects with the proposed works.

5.2.2. Zone of Influence

The 'zone of influence' for a development is the area over which ecological features may be subject to significant effects because of the proposed development and associated activities. This is likely to extend beyond the proposed development site, for example where there are ecological or hydrological links beyond the proposed

[11] http://www.google.ie/maps

[12] http://www.bing.com/maps/

[13] http://wfdfish.ie/index.php/eastern-river-basin-district-river-surveys-2019/

development boundaries. The zone of influence will vary for different ecological features depending on their sensitivity to an environmental change (CIEEM, 2018).

It follows that given the nature of the proposed development works at Dublin Airport, the zone of influence will be limited to the proposed development site and immediate environs as well as areas connected via hydrological and hydrogeological pathways (surface or ground water) and landscape features such as hedgerows, treelines and watercourses.

Determining the potential for impacts and the zone of influence is based on the source-pathway-receptor chain principle and involves assessing likely significant effects on ecological receptors within the zone of influence in relation to three pathways:

- Surface water;
- Groundwater; and,
- Land & Air.

5.2.3. Evaluation of Ecological Receptors

Ecological features can be important for a variety of reasons. Importance may relate, for example, to the quality or extent of the site or habitats found within, or the rarity of the habitat and / or species, the extent to which such habitats and / or species are threatened throughout their range, or to their rate of decline.

The importance of an ecological feature was considered within a defined geographical context. The frame of reference used to determine ecological value relied on known and published accounts of the feature's ecological importance, rarity and distribution combined with professional judgement.

The following geographic frame of reference was used for evaluating the importance of ecological features within the proposed development: -

- International importance;
- National importance;
- County importance;
- Local importance (higher value); and,
- Local importance (lower value).

The geographical context for determining the value of ecological receptors followed recommendations as outlined in the Guidelines for Assessment of Ecological Impacts of National Roads Scheme (NRA, 2009). This methodology is consistent with the Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland: Terrestrial, Freshwater, Coastal and Marine (CIEEM, 2018, 2022 reprint).

5.2.4. Determining Ecological Significant Effects

CIEEM (2022) defines an ecologically significant impact as an impact (negative or positive) on the integrity of a defined site or ecosystem and/or the conservation status of habitats or species within a given geographic area.

The integrity of a site is the coherence of its ecological structure and function, across its whole area, which enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified (CIEEM 2018) The significance of predicted effects has been assessed in line with Guidelines for Assessment of Ecological Impacts of National Road Schemes (NRA, 2009) and best scientific knowledge in the field.

5.2.5. Mitigation & Overall Residual Ecological Impact

Where adverse significant impacts have been identified, the mitigation hierarchy has been considered, as per the 2018 CIEEM EcIA Guidelines and 2022 EPA Guidelines, which set out a sequential approach of avoidance of impacts where possible, application of mitigation measures to minimise unavoidable impacts and then compensation for any remaining impacts. Once avoidance and mitigation measures have been applied, along with any necessary compensation measures, and opportunities for enhancement incorporated, residual impacts have then been identified.

Overall residual, or mitigated, ecological effects are assessed by taking account of any expected beneficial ecological effects and those measures which have been integrated within the works proposals in order to avoid, eliminate or reduce the significance of ecological impacts (and any further recommended measures which attach a high probability of successful implementation). The following widely accepted strategy for mitigation (Chapter 6 of the CIEEM Guidelines) has been employed (see Table 5-1).

Table 5-1 - Approach to Mitigation

Avoidance	Where viable, the project has been re-designed to avoid adverse ecological effects.
Elimination	Where possible and feasible, measures which eliminate adverse ecological effects are employed.
Reduction	Measures intended to reduce the significance of adverse ecological effects are employed where options for avoidance or elimination have been exhausted or are deemed to be impractical.
Compensation	Where adverse ecological effects cannot be avoided or eliminated or reduced in significance to an acceptable level, consideration is given to compensating for residual adverse effects.
Remediation	Where adverse ecological effects are unavoidable, consideration is given to undertaking limiting remedial works.
Enhancement	Consideration is given to providing opportunities for ecological improvement, enhancement and the realisation of beneficial ecological effects.

5.2.6. Uncertainty in Assessment

In Impact Assessment, uncertainty is associated with both the prediction and assessment of environmental effects. The precautionary principle, a central feature of environmental legislation, planning policy and professional guidance, provides a mechanism for managing uncertainty in ecological assessment – the precautionary principle requires that where there is a lack of scientific certainty, the protection of the environment is prioritised.

Where confidence or uncertainty is expressed, an objectively defined scale, as detailed in Table 5-214 is employed. Decisions as to confidence in predictions are necessarily based primarily on expert judgement.

Table 5-2 - Confidence of Uncertainty

Confidence Level	Details
Certain	Probability estimated at 95% chance or higher.
Probable	Probability estimated at above 50% but below 95%.
Unlikely	Probability estimated at above 5% but below 50%.
Extremely Unlikely	Probability estimated at less than 5%.

5.2.7. Difficulties Encountered in Completion of this Chapter

No difficulties were encountered in completing this chapter that were not resolved.

5.3. Description of Existing Environment

5.3.1. General Description of Existing Environment

The proposed development is located within the built area of Dublin Airport. The proposed development location is displayed below in Figure 5-1 - Location of Proposed Development.

[14] The confidence levels employed were originally set out in an earlier (2006) version of the CIEEM guidelines, have been adapted and reproduced in several other guidance documents since then, and are widely applied and accepted in Ecological Impact Assessment.

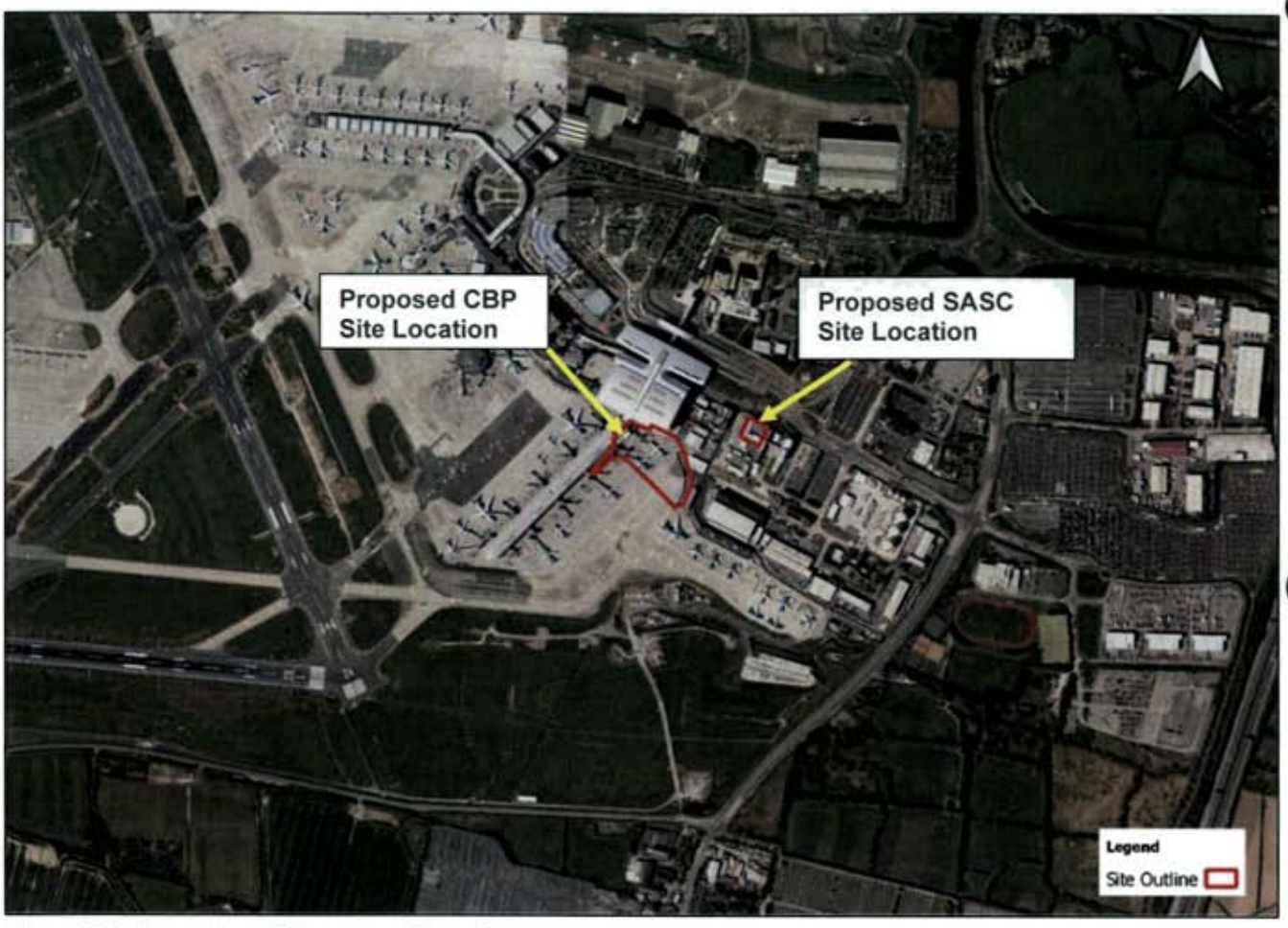

Figure 5-1 - Location of Proposed Development

5.3.2. Designated Conservation Areas

5.3.2.1. European Designated Sites

The potential for impacts on European sites within the 'zone of influence' (ZoI) of the proposed development was considered.

NPWS guidance15 advises that the zone of influence must be evaluated on a case-by-case basis with reference to the nature, size and location of the project, the sensitivities of the ecological receptors, and the potential for in-combination effects and this has been done in this case.

Thus, given the nature, scale and extent of the proposed development, the ZoI includes [two] European sites with regard to the location of a European site, the Qualifying Interests of the site and their potential mobility outside that European site, the Cause-Pathway-Effect model and potential environment effects of the project.

The proposed development site does not lie within any European sites.

There are 2 no. European sites within the ZoI of the proposed development; Baldoyle Bay SAC and SPA. Other European sites within the potential zone of influence of the proposed development site were not considered further and were screened out in the Appropriate Assessment Screening Report which accompanies this report.

Only two European sites could possibly be affected; Baldoyle Bay SAC and Baldoyle Bay SPA, There is no hydrological or ecological connectivity from the proposed development site to any other European sites. There is an indirect hydrological pathway from the proposed development to Baldoyle Bay SAC and Baldoyle Bay SPA (c. 6.2km downstream) via the Cuckoo Stream and the Mayne River. Surface water run-off from the proposed development will discharge to the Cuckoo Stream (see Figure 5-2 - Existing Catchments within Dublin Airport Lands and Location of the proposed development (red circles)) (c. 215m to the south of the CBP building and c.

[15] DoEHLG (2009, revised in 2010) *Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities.* Department of the Environment, Heritage and Local Government, Dublin,.

400m to the south of the SASC building), before joining with the Mayne River, the Mayne Estuary and ultimately Baldoyle Bay SAC/SPA and the Irish Sea.

The Appropriate Assessment Screening Report (Atkins, 2023) submitted as part of this planning application has examined the details of the proposed expansion of the US Customs and Border Protection (CBP) and the upgrade of South Apron Support Centre (SASC) and the Natura 2000 sites within its Zone of Influence. It has analysed the potential impacts of the proposed development on the receiving natural environment and evaluated their effects, both individually and in combination with other plans and projects, in view of the conservation objectives of the relevant Natura 2000 sites. The Appropriate Assessment Screening Report was prepared in line with the Habitats Directive, as transposed into Irish Law by the European Communities (Birds and Natural Habitats) Regulations, 2011 (as amended), relevant case law and guidance from the European Commission, the Department of the Environment, Heritage and Local Government and the Office of the Planning Regulator, on the basis of objective information and adhering to the precautionary principle. The report concludes that *'following the assessment detailed in this report, it can be concluded beyond reasonable scientific doubt that the proposed development will not, either individually or in combination with other plans or projects, give rise to any impacts which would constitute significant effects on any Natura 2000 site, in view of their conservation objectives.'*

As concluded in the AA Screening Report there is not likely to be a significant effect on any European sites, including Baldoyle Bay SAC and SPA, as the conservation objectives of the qualifying interests of the SAC and the SPA are not likely to be affected by the proposed development. Given that the proposed development site is comprised entirely of built land, within the Dublin Airport Complex, which is remote from any suitable areas used by the bird species are not at risk of disturbance from the proposed development. As mentioned in the AA Screening Report, there is a remote hydrological connection between the proposed development and Baldoyle Bay SAC; however, the qualifying interest of the SAC are 4 no. coastal habitats. As such, there is no potential for any ex-situ impacts on any of the qualifying interests of Baldoyle Bay SAC. None of these Natura 2000 sites were considered further for disturbance impacts to the qualifying interests.

Figure 5-3 and Figure 5-4 depict the locations of the European sites within the potential ZoI of the development.

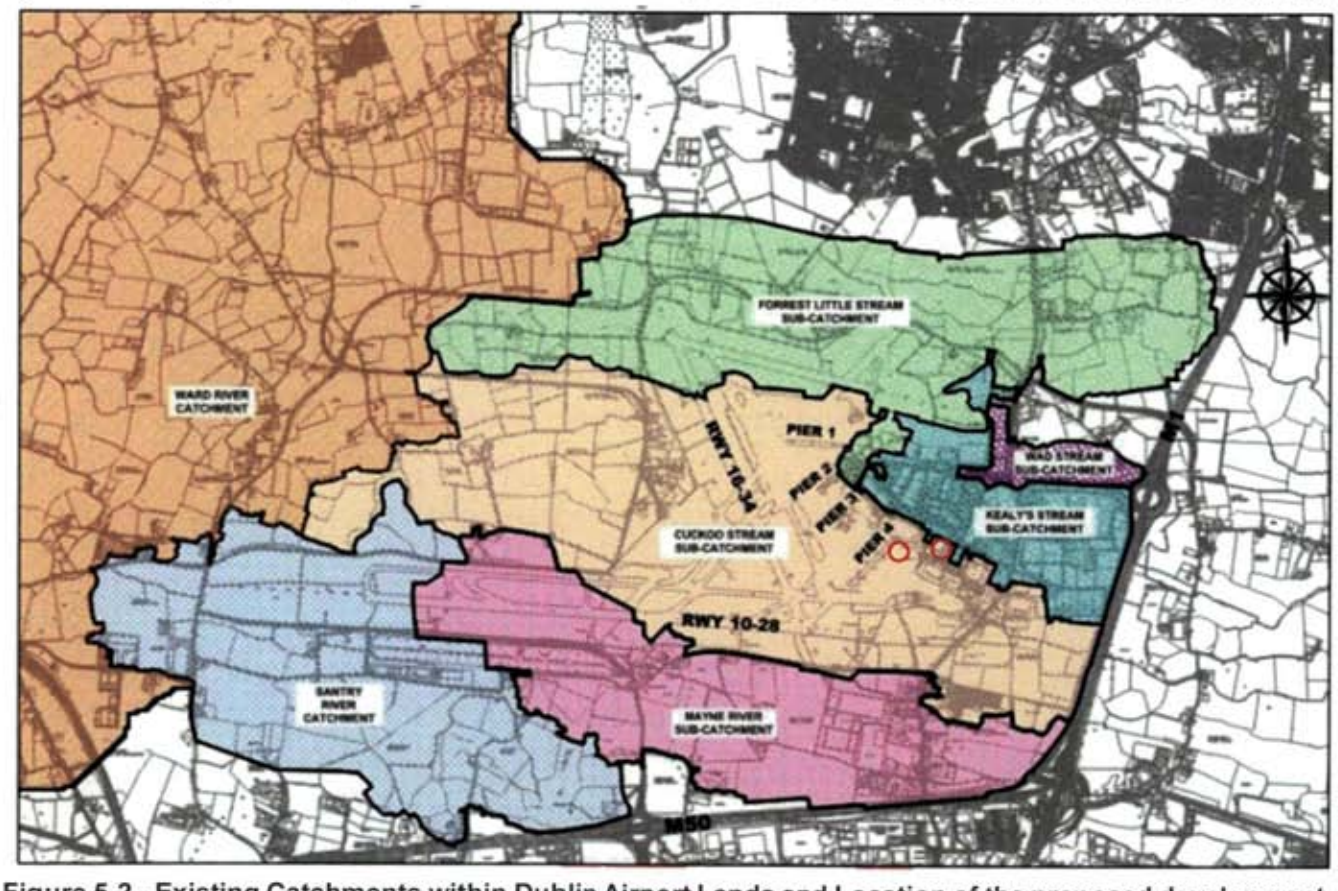

Figure 5-2 - Existing Catchments within Dublin Airport Lands and Location of the proposed development (red circles)

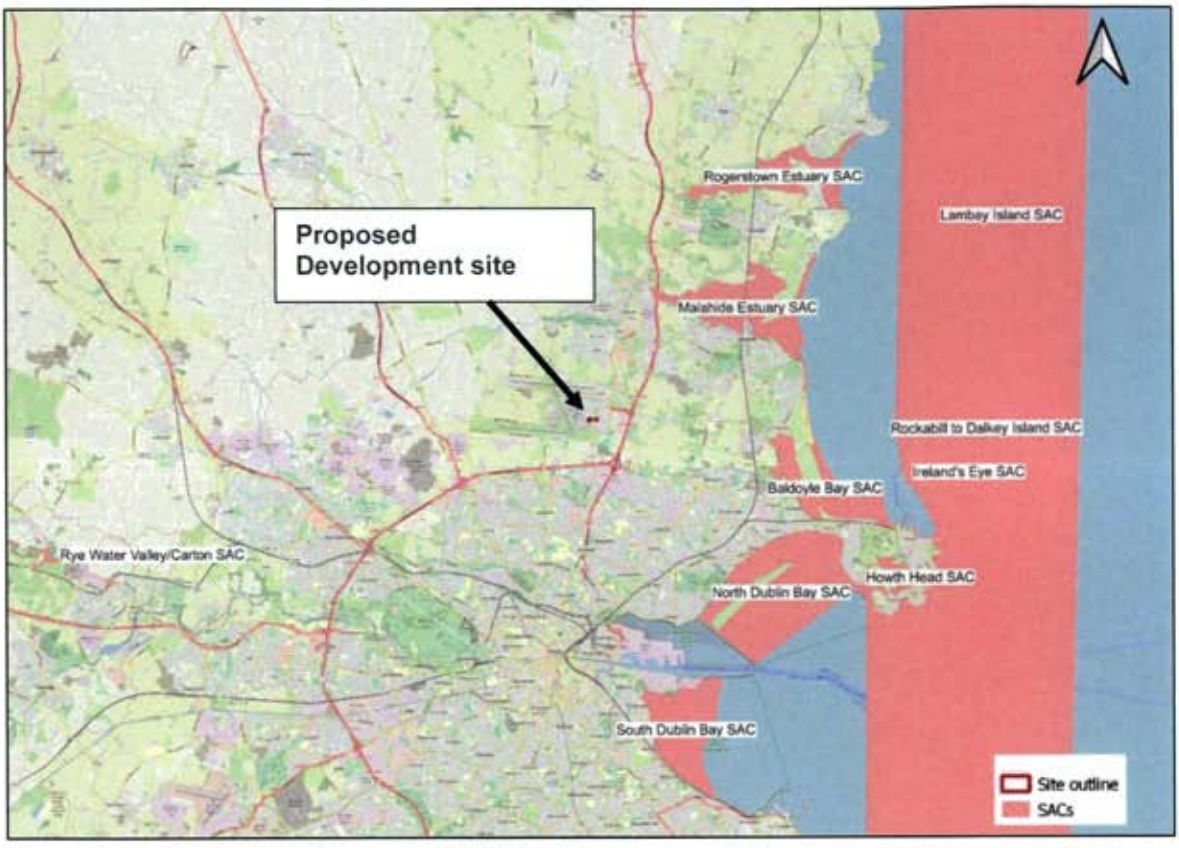

Figure 5-3 - SACs within the potential ZoI of the proposed development (Source: NPWS)

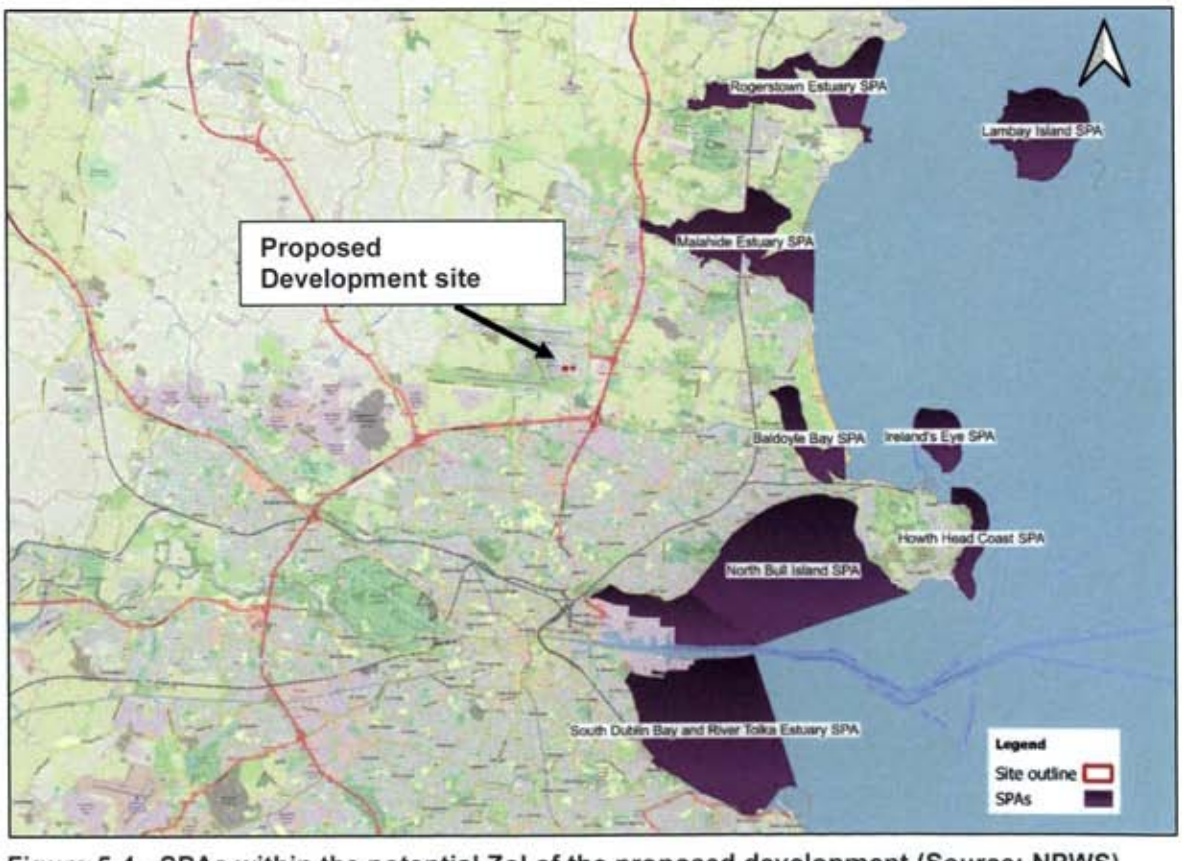

Figure 5-4 - SPAs within the potential ZoI of the proposed development (Source: NPWS)

5.3.2.2. Natural Heritage Areas

Natural Heritage Areas (NHAs) are nationally designated sites, which are considered important for the habitat, species or geological heritage. NHAs are legally protected under the Wildlife Act, 1976 (as amended). Proposed Natural Heritage Areas (pNHAs) are sites that are of significance for wildlife and habitats, but which have not (as yet) been statutorily designated; however, their ecological value is recognised by Planning and Licencing Authorities.

The proposed development site does not lie within any NHA or pNHA site.

There are no NHAs and 13no. pNHAs located within 15km of the proposed development as outlined in Table 5-3 below.

Table 5-3 – proposed National Heritage Areas within 5km of the proposed development

proposed National Heritage Area (site code)	Distance from project
Santry Demesne pNHA	c. 2.1km
Feltrim Hill pNHA	c. 3.0km
Malahide Estuary pNHA	c. 5.1km
Sluice River Marsh pNHA	c. 5.6km
Baldoyle Bay pNHA	c. 6.3km
Royal Canal pNHA	c. 6.7km
Malahide Estuary pNHA	c. 7.5km
North Dublin Bay pNHA	c. 7.7km
Rogerstown Estuary pNHA	c. 8.6km
Dolphins, Dublin Docks	c. 9.5 km
South Dublin Bay pNHA	c. 9.9km
Ireland's Eye pNHA	c. 11.1km
Lambay Island pNHA	c.14.9km

There is no direct or indirect connectivity from the project site to any proposed Natural Heritage Area via physical means such as woodlands, treelines or hedgerows.

There is no direct or indirect connectivity from the proposed development site to any of the inland pNHA sites, namely; Santry Demesne pNHA, Feltrim Hill pNHA, Royal Canal pNHA and Sluice River Marsh pNHA.

Indirect hydrological connectivity exists from the Site to Baldoyle Bay pNHA via the surface water run off network. Surface water from the proposed development discharges to the Cuckoo Stream which conjoins with the Mayne River, the Mayne Estuary and ultimately Baldoyle Bay (pNHA) and the Irish Sea. Given the dilution and dispersal that would occur within the Irish Sea, this hydrological connectivity is not considered a viable pathway through which any of the other coastal pNHA sites could be impacted , namely; Ireland's Eye pNHA. Howth Head pNHA, North Dublin Bay pNHA, South Dublin Bay pNHA, Dolphins, Dublin Docks pNHA and Malahide Estuary pNHA. Given the distance, any pollutants that accidentally enters the Cuckoo Stream as a result of the proposed development would reach negligible levels in the watercourse prior to reaching any of these sites. It is considered that the only viable indirect connectivity through surface water features, drains or any other vectors from the proposed development site is to Baldoyle Bay pNHA as the Cuckoo Stream flows from the proposed development site and discharges to Baldoyle Bay pNHA. However, given the distance of the proposed development site to this pNHA and the scale of the proposed works, any possible effects on Baldoyle Bay pNHA can also be ruled out.

Figure 5-5 illustrates the locations of the pNHAs within the potential ZoI of the proposed development.

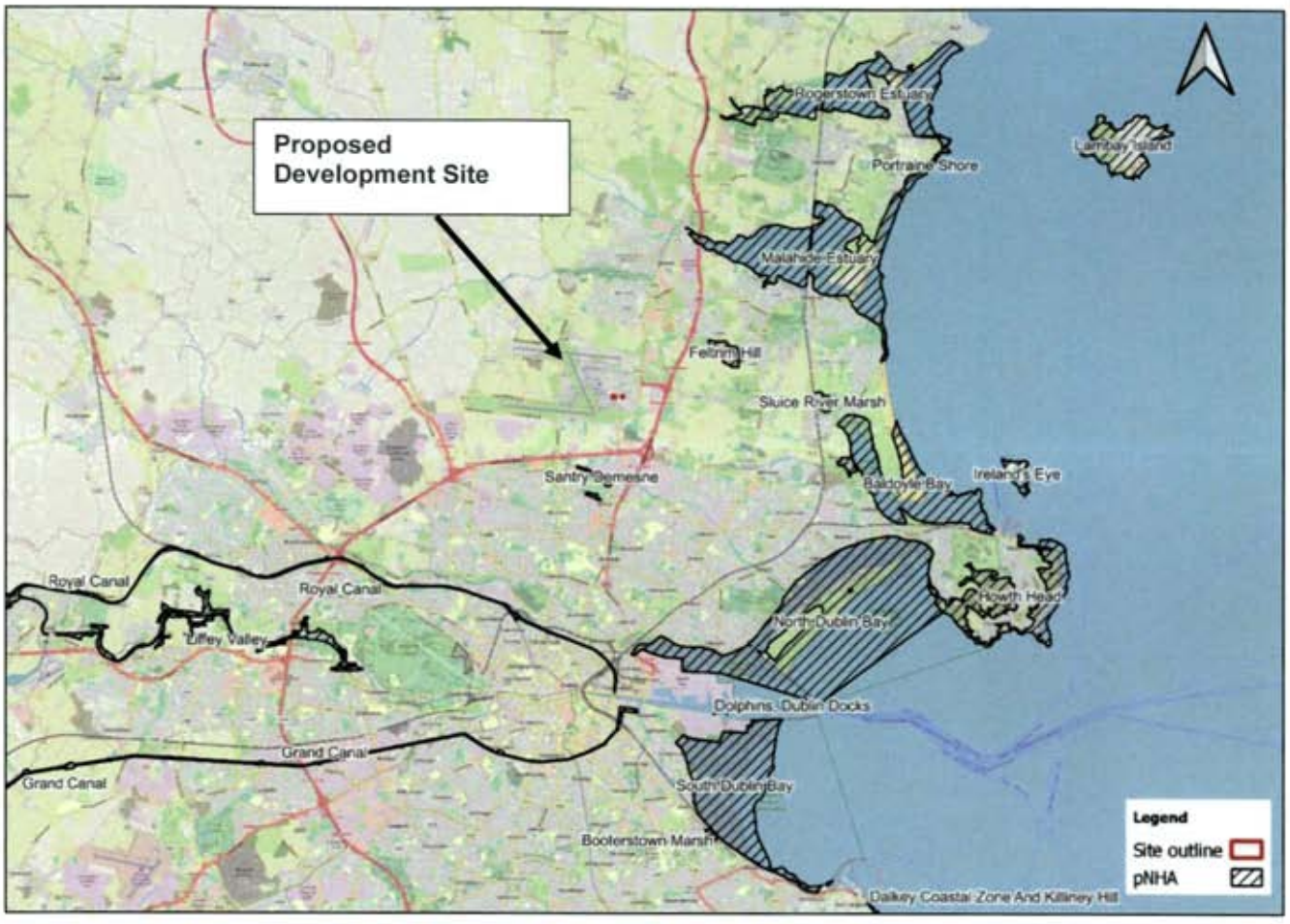

Figure 5-5 – Proposed Natural Heritage Areas within the potential ZoI of the proposed development (Source: QGIS)

5.3.2.3. Other known sites of ecological value

Habitats outside of Natura 2000 Sites but which conform to types listed on Annex I to the Habitats Directive were examined using the Article 1716 reports (2019) and spatial data from the NPWS. There are no annexed habitats within or in the vicinity of the proposed development.

A review of wetland sites, as provided by Wetland Survey Ireland datasets17, did not identify any wetlands within or adjacent to the proposed development site. There are no Ramsar Sites18 within the proposed development site. The nearest wetland habitat is Forest Little Golf Course Ponds, which is located ca. 1.4km to the north of the proposed development site. There is no hydrological connection from the proposed development site to this wetland habitat. St. Doolagh's Quarry is located ca. 3.8km to the east of the proposed development site. The Cuckoo Stream, the stream which surface water runoff will outfall to from the proposed development site flows in an easterly direction from the proposed development site and past St. Doolagh's Quarry, with a terrestrial buffer of c. 100m. However, the Cuckoo Stream does not connect to the Quarry.

A review of datasets for the Inventory of Long Established and Ancient Woodlands of Ireland19 and the National Survey of Native Woodlands20 did not identify any protected or long-established/ancient woodlands within or adjacent to the proposed development site.

[16] Under Article 17 of the Habitats Directive each member state is obliged to report to the EC every 6 years on the status of the natural habitats and species in the Annexes and on the implementation of the measures taken under the Directive.
[17] http://www.wetlandsurveysireland.com/wetlands/map-of-irish-wetlands---/map-of-irish-wetlands---map/index.html

[18] https://www.ramsar.org/wetland/ireland
[19] Perrin, P.M. & Daly, O.H. (2010) A provisional inventory of ancient and long-established woodland in Ireland. Irish Wildlife Manuals, No. 46. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin, Ireland.
[20] https://maps.biodiversityireland.ie/Map

Datasets were reviewed of the Irish Semi-natural Grassland Survey 2007-2012, published by Department of Culture, Heritage and the Gaeltacht21. There are no semi-natural grasslands within the proposed development site.

The Irish Wetland Bird Survey (I-WeBS) has two waterbird count sites located ca. 7km east of the proposed development site. I-WeBS count site – Kingfisher Green (site code: 0U486) and Baldoyle Bay (subsite codes: 0U480, 0U479, 0U478, 0U477, 0U476, 0U482). These sites are the closest waterbird count sites to the proposed development.

5.3.3. Desktop Research

5.3.3.1. Documented Rare and Protected Flora and Fauna

This section of the report outlines species that have been previously recorded within and around the proposed development site. NBDC datasets of rare and protected species records22 for the OSI 2km grid square; O14R, which covers/encompasses the entire proposed development site were examined to provide a detailed account of species previously recorded within the proposed development site within the last 10 years (2013-2023). Datasets of rare and protected species records were also sought and received from NPWS for OSI 10km × 10km grid square (hectad); O14.

Birds

The proposed development is in a functioning airport. Within the OSI 2km grid square O14R, there are no records of bird species listed on Annex I of the Bird Directive, the only record of bird species listed on Annex II to the Bird Directive recorded is; Common Wood Pigeon (*Columba palumbus*). Records of Red-listed bird species on the Birds of Conservation Concern Ireland (BOCCI4; Gilbert et al., 2021), other than that listed as Annex II species (above) include; Barn Swallow (*Hirundo rustica*), Common Linnet (*Carduelis cannabina*), Common Starling (*Sturnus vulgaris*), Herring Gull (Larus argentatus), House Martin (Delichon urbicum) and House Sparrow (*Passer domesticus*). Given the lack of suitable habitat for these species within the proposed development site and the surrounding area there will be no likely significant effects.

Baldoyle Bay (Subsite codes: 0U480, 0U479, 0U478, 0U477, 0U476 and 0U482) and Kingfisher Green (0U486) are included in the Irish Wetland Bird Survey (I-WeBS) and are located ca. 6.2km to the east of the proposed development. Given the distance (>6.2km) from the proposed development to these I-WeBS sites and that the proposed development site comprises mainly of built ground, it is not likely that any of the bird species recorded at these sites utilise the proposed development site for foraging or roosting. There will be no likely significant effect on these bird species as a result of the proposed development.

Mammals

Badger

Badger (*Meles meles*), is protected under the Wildlife Acts and although not recorded within the last 10 years within the 2km grid square within which the proposed development site lies, badger sightings have been reported within the general wider area of the Site; i.e. within 10km, the latest sighting of which was in 2015 according to NBDC datasets (2023). Given the lack of suitable habitat for badger in the vicinity of the proposed development site and that no badgers have been recorded within 2km in the last 10 years, there will be no likely significant effect on badger as a result of the proposed development.

Bats

All bat species in Ireland are protected under Wildlife Acts and all bats, and their breeding and resting places, are strictly protected under Section 51 of the Habitats Regulations (SI No. 477/2011, as amended), pursuant to Article 12 of the Habitats Directive. A review of NBDC (2023) datasets indicate that various bat species have been recorded within and around the proposed development site. It is reported that, within the 2km grid square within which the proposed development is located, Lesser Noctule (*Nyctalus leislen*) has been recorded 2 times in the last 15 years, with the last recording in 2008. A review of the 10km grid square surrounding the proposed development site indicates that historically the following species have been recorded within the wider area; Lesser Noctule (*Nyctalus leisleri*), Common Pipistrelle (*Pipistrellus sensu lato*), Brown Long-eared Bat (*Plecotus auritus*),

21 https://data.gov.ie/dataset/irish-semi-natural-grassland-survey-2007-2012
22 https://maps.biodiversityireland.ie/Map

Daubenton's Bat (*Myotis daubentonii*), Natterer's Bat (*Myotis nattereri*) and Soprano Pipistrelle (*Pipistrellus pygmaeus*). Given that the area is hard standing and does not support a suitable habitat for foraging or commuting routes for bats that would be interrupted or lost as a result of the proposed development, there will be no likely significant effect on bat species as a result of the proposed development.

Otter

Otter (*Lutra lutra*) is listed on Annex II and Annex IV to the Habitats Directive and is also protected under the Wildlife Acts. Otter feeds on aquatic prey (e.g. salmonids, eels and sticklebacks) and requires refugia (holts) along or near watercourses and associated riparian habitats. There are no records of otter within the 2km grid square surrounding the proposed development. However, records show that otters have been sighted within the wider 10km grid area, in 2014. Given the lack of suitable habitat for otter in the vicinity of the proposed development and that otter have not been recorded within 2km of the proposed development, there will be no likely significant effect on otter as a result of the proposed development.

Other mammals

Other mammal species listed on Annexes II and IV to the Habitats Directive and / or protected under the Wildlife Acts recorded within the proposed development site include Hedgehog (*Erinaceus europaeus*). European Rabbit (*Oryctolagus cuniculus*), which is an invasive species, has also been recorded within the 2km grid square of which the proposed development is within, in 2018. However, given the lack of suitable habitat for rabbit and hedgehog within the proposed development site, which is comprised of built land, any effects from the proposed development on these species will be temporary in nature and not significant.

The lands within the wider area of the proposed development have been reported to support various mammal species including Eurasian Badger (*Meles meles*), Eurasian Pygmy Shrew (*Sorex minutus*), Eurasian Red Squirrel (*Sciurus vulgaris*), European Otter (*Lutra lutra*), Pine Marten (*Martes martes*), and Red Fox (*Vulpes vulpes*). Invasive species which have been recorded within the 10km grid square of the proposed development include American Mink (*Mustela vison*), Brown Rat (*Rattus norvegicus*), Eastern Grey Squirrel (*Sciurus carolinensis*) and European Rabbit (*Oryctolagus cuniculus*).However, given that the proposed development site is comprised entirely of built land and there is a lack of suitable habitat for these species within the proposed development, any effects from the proposed development on these species will not be temporary in nature and not significant.

Flora

The NBDC database and NPWS datasets were consulted to determine the presence of rare plant species and species protected under the Flora Protection Order (2022). There have been no recordings of protected floral species within the immediate vicinity of the proposed development site. Butterfly-bush (*Buddleja davidii*) an invasive plant species has been recorded within the 2km grid square of which the proposed development is located within.

Blue Fleabane (*Erigeron acer*), Meadow Barley (*Hordeum secalinum*) and Smooth Brome (*Bromus racemosus*) are all threatened plant species which have been recorded within the wider 10km grid square. Given that there is no record of protected or invasive species in the vicinity of the proposed development site, there will be no likely significant effect on invasive or protected species.

There are a number of records of invasive plant species within the wider area of the proposed development as follows; Butterfly-bush (*Buddleja davidii*), Canadian Fleabane (*Conyza canadensis*), Cherry Laurel (*Prunus laurocerasus*), Common Cord-grass (*Spartina anglica*), Evergreen Oak (*Quercus ilex*), Giant Hogweed (*Heracleum mantegazzianum*), Himalayan Honeysuckle (*Leycesteria formosa*), Japanese Knotweed (*Fallopia japonica*), Russian-vine (*Fallopia baldschuanica*), Sycamore (*Acer pseudoplatanus*), Three-cornered Garlic (*Allium triquetrum*) and Wild Parsnip (*Pastinaca sativa*). Given that there is no record of protected or invasive species in the vicinity of the proposed development site, there will be no likely significant effect on invasive or protected species.

5.3.3.2. Hydrology/ Aquatic Ecology

There are no watercourses or surface water features within the proposed development site. The development site lies within the Liffey and Dublin Bay Catchment and the Mayne_SC_010 sub-catchment. The Cuckoo Stream is located ca. 215m and ca. 400m south of the CBP building and the SASC building respectively. Surface water from the proposed development, which will employ SuDS techniques, will outfall to Cuckoo Stream, which joins with the Mayne River and ultimately the Mayne Estuary (Baldoyle Bay) and the Irish Sea.

The Mayne River, c. 5.7km downstream of the proposed development surface water run-off outfall point, at the "Hole in the Wall Road Bridge' EPA sampling station, detail the watercourse as having a Biological Quality Rating (Q Value) of '3' in 2022. The Q Value '3' indicates a WFD Status of 'Poor' and a Condition of 'Unsatisfactory.' Which is an improvement on the 2019 survey where the Mayne River was assigned a Q Value of 2-3[23].

5.3.3.3. Hydrogeology

The proposed development of the CBP building lies within the Dublin Groundwater Body (IE_EA_G_008) and EPA records indicate this groundwater body is classified as 'Good' for the 2016 to 2021 monitoring period (EPA, 2023). The proposed development of the SASC building lies partly within this groundwater body and also within the 'Industrial Facility' Groundwater Body (IE_EA_G_086) (See Figure 5-6) and EPA records indicate this groundwater body is classified as 'Poor' for the 2016 to 2021 monitoring period (EPA, 2023). The risk of failing to meet the relevant WFD objectives for both the Dublin Groundwater Body and the 'Industrial Facility' Groundwater Body by 2027 (EPA, 2022) is under '*review.*' Given the nature and scale of the proposed development there will be no likely significant effect on the groundwater quality.

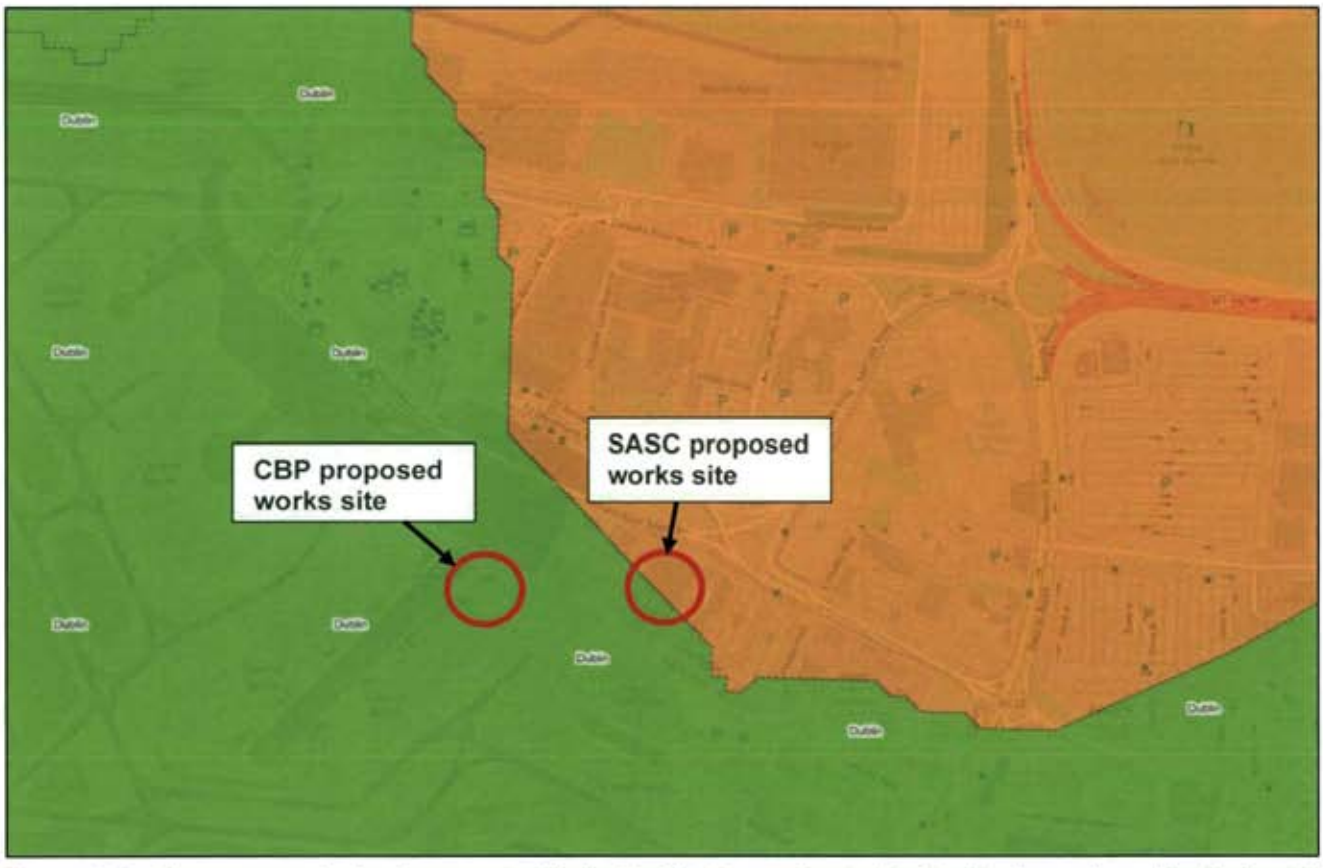

Figure 5-6 - The proposed development with the Dublin Groundwater Body site (green) and the 'Industrial Facility' Groundwater body site (orange) (EPA Maps 2023).

5.3.4. Overall Evaluation of the Proposed Works Site

In summary, the proposed development site does not lie within any area that has been designated for nature conservation at an international or national level. There are no habitats listed on Annex I of the Habitats Directive or records of rare or protected flora and fauna within the proposed development site. There are no plants which are listed as alien invasive species24. The proposed development site is comprised of solely of existing buildings and built land and therefore, there is no suitable habitat for protected fauna within the proposed development site, indicating that there is no protected fauna; including bats and birds, within the proposed development site.

[23] https://epawebapp.epa.ie/qvalue/webusers/PDFS/HA9.pdf?Submit=Get+Results

[24] As listed on the third schedule of the EC (Birds and Natural Habitats) Regulations 2011 S.I. No. 477/ 2011.

5.4. Predicted Impacts

The potential impacts arising from the construction and operation of the proposed development at Dublin Airport are discussed in the following sections.

5.4.1. Characteristics of Proposed Works

The overall project scope has been developed to include enabling works to complete the partial demolition and refurbishment of the South Apron Support Centre (SASC) to provide office storage and pre-screening/ logistics facilities for the future development and extension of the Customs and Border Post (CBP).

The proposed development will comprise the following:

(1) The reconfiguration and expansion of the existing two-storey US Customs and Border Protection (CBP) pre-clearance facility at Pier 4, Terminal 2, Dublin Airport, and;

(2) The partial demolition and redevelopment of the existing two-storey former Flight Catering Building to the southeast of the Terminal 2 building at Dublin Airport, to become the South Apron Support Centre (SASC), to be used initially as a temporary construction compound for the proposed works to the CBP facility, and then for continued use as an Airport Operational Building for airside support/operations.

5.4.2. Potential impacts assessed

In the absence of mitigation measures the proposed development could have a range of potential impacts on the ecological receptors within the zone of influence of the proposed development during the construction and operational phases. The categories below describe the possible impacts which may occur through development onsite.

5.4.2.1. Physical Damage/ Habitats Loss

Physical damage includes the degradation to, modification, fragmentation or loss of habitats. Given that the proposed development is located in the built land area of Dublin Airport and the proposed development is comprised solely of existing buildings and built land, there will be no physical damage to habitats or habitat loss as a result of the proposed development. There is no proposal for the removal of soils or organic matter as part of the proposed development. Therefore, there will be no likely significant effect on habitats as a result of the proposed development.

5.4.2.2. Disturbance

Examples of direct disturbance includes activities such as damage to a breeding or resting site of a protected species, e.g. a bat roost or badger sett. Indirect disturbance may result from the presence of works crews and personnel on site during construction, noise emanating from a construction site or artificial lighting of a bat foraging area, causing bats to avoid the area.

5.4.2.3. Changes in Water Quality

The release of pollutants to water can impact upon the relevant waterbodies and the species they support. This can result in impacts such as increased turbidity of the water column, a reduction in photosynthesis, contribution to eutrophication and changes to the species composition of the system as a result. The degree of impact depends on the type of pollutant released and the nature of the receiving receptor. For example, the release of fine sediments to a stream or river is likely to cause siltation of the riverbed and interrupt the functioning of species, from aquatic plants to macroinvertebrates to fish, and larger predators that depend on these biotic groups as a food supply, e.g. otter. Impacts to water quality could be temporary in the form of surface water runoff during construction, or permanent in the form of a continued discharge impacting negatively on the receiving environment during the operation of the development. In this case, surface water run-off will discharge to the Cuckoo Stream which conjoins with the Mayne River and ultimately the Mayne Estuary.

Sustainable Urban Drainage Systems (SuDS) will be incorporated into the design, which are not considered mitigation measures. These systems include an attenuation tank with a geotextile to infiltrate to the ground. The forward flow from the tank will be limited by means of a vortex flow control device in manhole S1-1. The attenuation tank has been designed to store run-off during a 1 in 100-year return period rainfall event and include an allowance of 20% for the impact of climate change. It is proposed to discharge attenuated flows to the existing airside drainage network, which is further attenuated prior to discharge to an existing water course. Further a Class 1 Bypass Petrol Interceptor will provide further treatment to surface water runoff. There is also a storage chamber system proposed for installation including a stone medium. Sediments are captured in the stone medium providing treatment by removing silts and hydrocarbons from the runoff. Silt trap (catchpit) manholes

incorporating 500mm deep sumps will also be provided as further silt removing treatment measure in both the upstream and downstream manholes of the attenuation tanks.

5.4.2.4. Dispersal of Invasive Services

No invasive species have been recorded on the site of the proposed development or in the immediate environs of the proposed development.

5.4.2.5. Do-Nothing Scenario

In the absence of the proposed development in the short-term it is assumed that the proposed development site will remain as the existing CBP building and also as the existing Flight Catering Building. The proposed development site is located within the lands of Dublin Airport and there have been few records of biodiversity within the proposed development site in recent years. The do-nothing scenario will have a neutral and imperceptible effect on the proposed development site with regards to biodiversity.

5.4.3. Project Design

5.4.3.1. CBP Drainage Design

CBP Existing Drainage Infrastructure

The area within the CBP Extension project boundary is an existing paved area, consisting of hardstand areas, aircraft stands and "head-of-stand" vehicular access roads, as well as the northern section of the Pier 4 building. These areas are currently served by the existing surface water drainage network shown in Figure 1-4. Further details of existing surface drainage works are provided within the planning drawings submitted as part of this planning application. The Flood Risk Assessment composed by Nicholas O'Dwyer for the CBP has been included in Appendix 12.

The proposed developments will have connections to existing surface water drainage and foul drainage networks, although some local reconfigurations and upgrades are proposed to the surface water network in order to facilitate the proposed CBP Extension, as discussed in the next sub-section. More information on the existing drainage network is given in Chapter 14 – Material Assets.

CBP Proposed Drainage Infrastructure

During the CBP Extension, the proposed upgrades in surface water drainage includes the diversion of an existing 750mm diameter surface water network pipeline which is currently located within the footprint of the proposed CBP building, which joins to the existing surface water network. The roof runoff from the proposed CBP building will be collected and conveyed by the diverted surface water network pipeline and it will be discharged to the existing 750mm pipeline at a location farther downstream. The drainage proposals include the construction of new slot drains to collect the excess runoff along the "head-of-stand" road, which runs inside the northern and eastern perimeter of the CBP Project Boundary. This slot drain will discharge to the existing downstream drainage network.

The CBP drainage proposals also include the construction of a new section of 600mm clean only surface water drainage pipeline (CW402- CW001), as a future-proofing measure. This pipeline is designed to future-proof for the potential future diversion of clean roof runoff to the Cuckoo Supply Channel, in a separate pipeline to the potentially contaminated runoff from the adjacent paved area.

All drainage proposals associated with the CBP Extension have been designed in accordance with the Dublin Airport Drainage Policy. Dublin Airport Drainage Policy, developed as part of the Dublin Airport Drainage Masterplan, provides guidance on the design of drainage infrastructure projects. It was developed in accordance with local, national, and international policy, legislation, and design standards.

Foul water from the proposed development will also discharge to the existing foul water pipelines.

5.4.3.2. SASC Drainage design

SASC Existing Drainage Infrastructure

There is an existing surface water drainage network within the site. Utility and GPR surveys have been undertaken to inform an understanding of the existing network. The flows are currently unattenuated. The drainage network discharges to the existing airside surface water drainage network.

SASC Proposed Drainage Infrastructure

As the overall impermeable area will remain substantially unchanged and it is proposed to attenuate surface water flows as described below, it is predicted that the receiving network has the capacity to receive this run-off.

For the purposes of clarity the proposed scheme will not increase the overall catchment capacity.

It is proposed to discharge attenuated surface water run-off from the proposed development by gravity via a new 225mm diameter surface water outfall discharging into the existing 500mm diameter surface water sewer running in an easterly direction towards Corballis Park Road.

The proposed surface water drainage network has been designed to comply with the Surface Water & Flood Risk Management Objectives set out in Fingal County Council (FCC) Development Plan (2023-2029). The following design standards and guidelines have been followed in the design of the surface water drainage network for the site:

- BS EN 752 – Drains and sewer systems outside buildings,
- Greater Dublin Strategic Drainage Study (GDSDS) Volume 2 – New Developments,
- BS EN 858-2 – Separator System for Light Liquids (e.g. oil and petrol),
- The pipe network has been designed to ensure no surcharging during a 1 in 5-year return period rainfall event,
- No pipe flooding during a 1 in 100-year return period rainfall event,
- An additional 20% has been allowed for climate change in relation to rainfall intensities,
- Proposed minimum and maximum velocities shall be as follows:
  - Carrier pipe network – 1.0 m/s to 3.0 m/s,
  - Colebrook White roughness value of 0.6 mm for all pipework,
  - Time of entry: 4 minutes,
  - Return Period: 1 in 5-year return period rainfall event,
  - Met Eireann rainfall data for site,
  - M5/60: 17.00 mm,
  - Ratio r: 0.3

It is proposed to provide an online arch chamber storage system with a capacity of 170m³. The attenuation tank will be wrapped with a geotextile to allow infiltration to ground. The forward flow from the tank will be limited by means of a vortex flow control device in manhole S1-1. The attenuation tank has been designed to store run-off during a 1 in 100-year return period rainfall event and include an allowance of 20% for the impact of climate change. It is proposed to discharge attenuated flows to the existing airside drainage network, which is further attenuated prior to discharge to an existing water course.

5.4.3.3. Sustainable Urban Drainage Systems

The proposed development has been assessed in relation to Sustainable Urban Drainage Systems (SuDS) in accordance with the guidelines of the GDSDS and the SuDS Manual CIRIA C753.

The aim of the proposed sustainable drainage systems is to replicate the natural characteristics of the greenfield runoff minimising the environmental impact using a number of SuDS in series – a SuDS Management Train.

The SuDS measures included within the proposals for the site are as follows:

- It is proposed that surface water runoff from the proposed development will outfall via a Class 1 Bypass Petrol Interceptor providing further treatment to the surface water runoff. Bypass Separators fully treat flow generated by rainfall events of up to 6.5mm/hr. Flows above this rate are allowed to bypass the separator as it is considered an acceptable risk not to provide full treatment. Bypass Separators are designed to treat 10% of the peak flow e.g. the oil separator has the capability of achieving a treatment of 10% of the petrol/oil present in the surface water runoff from the first flush of vehicle movement areas or where the risk of a large spillage and heavy rainfall occurring at the same time is small. Class 1 separators achieve a concentration of 5 mg/l of oil under standard test conditions.
- The storage chamber system proposed for installation include a stone medium (chambers are surrounded by stone to manufacturer specification). Sediments are captured in the stone medium providing treatment by removing silts and hydrocarbons from the runoff. Silt trap (catchpit) manholes incorporating 500mm deep sumps will also be provided as further silt removing treatment measure in both the upstream and downstream manholes of the attenuation tanks.

5.4.3.4. SASC Wastewater Drainage

Existing Wastewater Drainage

At present, there is a 150mm wastewater sewer that serves the SASC. Utility and GPR surveys have been undertaken to inform an understanding of the existing network.

Proposed Wastewater Drainage

It is proposed to discharge the wastewater effluent from the proposed development by gravity via a new 225 mm via a single point of connection to the existing network.

The following design standards and guidelines have been used in the design of the wastewater drainage network for the site:

- Irish Water Code of Practice for Wastewater Infrastructure - July 2020 (Revision 2)25,
- BS EN 752 – Drains and sewer systems outside buildings,
- MicroDrainage Design Software,
- 0.75 m/s self-cleansing velocity for sanitary drains,
- Part H Building Regulations,
- Minimum pipe diameter shall be 150 mm.

The Proposed Drainage Layout of the CBP Building is displayed in Figure 5-7 and the Proposed Drainage Layout of the SASC Building is displayed in Figure 5-8.

[25] https://www.water.ie/docs/connections/faqs/Wastewater-Code-of-Practice.pdf

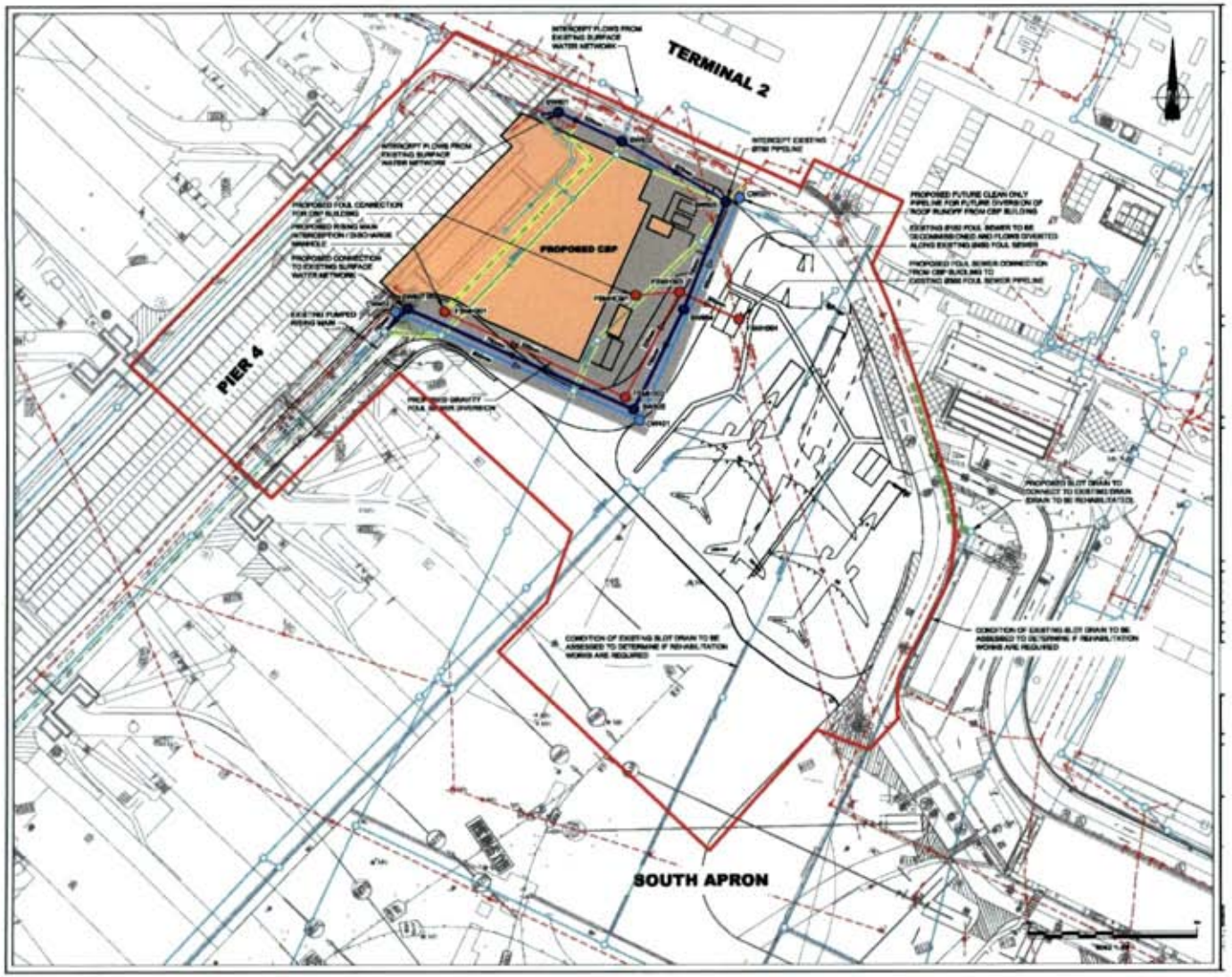

Figure 5-7 - Proposed Drainage Layout for the CBP building

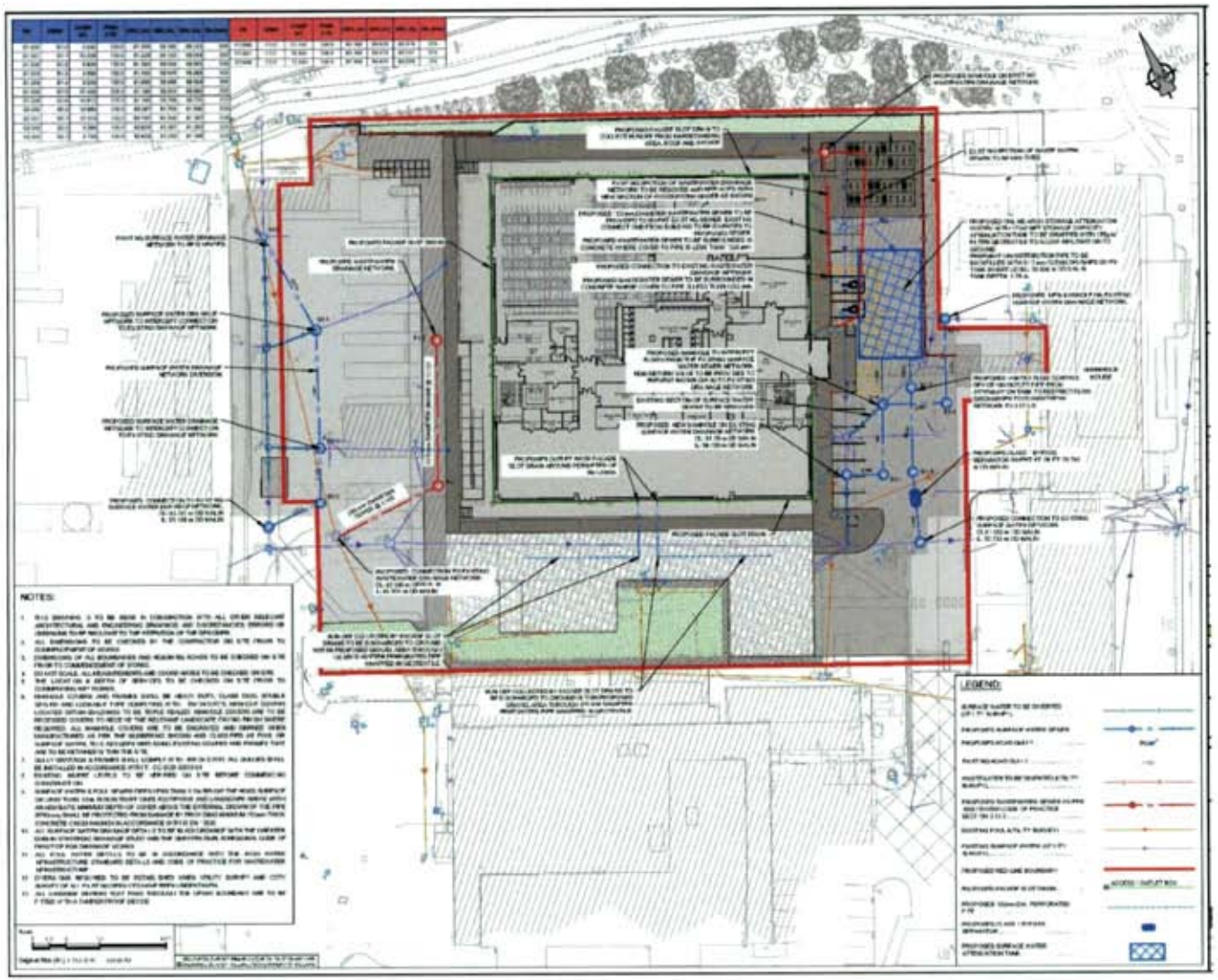

Figure 5-8 - Proposed Drainage Layout for the SASC building

5.4.4. Construction Phase

The potential impacts likely to arise during construction of the proposed development are discussed in the following sections.

5.4.4.1. Impact on Sites Designated for Nature Conservation

As noted, the proposed development site is not located within the boundaries of any European site. There will be no direct impacts to European sites.

Given that the Cuckoo Stream and Mayne River outfall to Baldoyle Bay SAC and SPA (ca. 6.2km downstream), hydrological connectivity exists from the proposed development site to these European sites. Any pollutants, silt laden run-off or dust that could possibly accidentally enter the surface water network during the construction phase of the works without mitigation measures will be localised to the immediate environs (the Cuckoo Stream, Mayne River and Baldoyle Bay SAC/SPA) and be dispersed and diluted within the Irish Sea prior to having any significant negative effects on any other European sites, such as effecting the water quality of these sites and potentially causing significant effects on the qualifying interests of these sites.

Potential impacts on SPAs have also been considered. The closest SPA to the proposed development site is Malahide Estuary SPA, ca. 5.2km away via straight line distance. The project is sufficiently remote that there is no risk of disturbance to waders and wildfowl within any SPA. The proposed development will not impact upon the migratory flight paths of SPA species nor restrict their mobility between wetland sites. The proposed development site is not a terrestrial site known for supporting roosting or foraging waterbirds. No effects on SPAs are likely as a result of the proposed development.

The Appropriate Assessment Screening Report (Atkins, 2023) concludes that *'following the assessment detailed in this report, it can be concluded beyond reasonable scientific doubt that the proposed development will not, either individually or in combination with other plans or projects, give rise to any impacts which would constitute significant effects on any Natura 2000 site, in view of their conservation objectives.'*

5.4.4.2. Impacts on Habitats

As previously mentioned, the proposed development site is comprised of existing buildings and built land. There are no suitable habitats for mammals or bird species within the proposed development site. There will be no direct habitat loss or impacts on habitats as a result of the proposed development.

Indirect habitat/species loss/damage via spread of invasive species

No high impact invasive plant species have been recorded within the proposed development site. Site biosecurity measures to reduce the introduction of invasive species, which can occur for example through the importation of soil materials, are included in the proposed development mitigation measures below.

5.4.4.3. Impacts on birds

Given that the nearest SPA, Malahide Estuary SPA, is ca. 5.2km away from the proposed development there will be no impact on bird species which are qualifying interests of this SPA. There is also a hydrological connection between the proposed development site and Baldoyle Bay SPA, via the surface water run-off network. Given this hydrological connection, in the case that pollutants or chemicals accidentally entered the surface water network from the proposed development, this unlikely effect if unmitigated, could have a negative effect on the water quality of the wetland habitat which qualifying interest, bird species of this SPA, rely on. The proposed development site is comprised solely of existing buildings and built land and therefore, there are no suitable habitats within the proposed development site for any bird species designated as a qualifying interest of Baldoyle Bay SPA, which is the only SPA in the zone of influence of the proposed development site. Dublin Airport is a busy operational airport with machinery and human presence occurring daily in the area of the proposed development. Noise disturbance from machinery during the construction phase will be localised to the immediate environs (ca. 500m). Some disturbance/displacement of birds may occur during construction due to increased noise and disturbance. The proposed development site is however, situated within an area of Dublin Airport where birds are deterred to avoid collisions with aircrafts. Further, there are no suitable foraging or roosting habitats for bird species within the proposed development site and therefore, no likely significant effect on any bird species are predicted as a result of the proposed development.

5.4.4.4. Impacts on water quality

Indirect impacts to watercourses via surface-water run-off

During wet conditions sediment can mobilise in the form of over-ground run-off during excavations and/or movement of heavy machinery through the proposed development. Sediment is of particular concern for aquatic species within receiving water bodies.

The Cuckoo Stream is located ca. 215m to the south of the proposed development. During the construction phase, demolition and construction of buildings will occur. During wet conditions it is possible for pollutants such as concrete and chemicals from machinery to enter the surface water run-off network. Surface water run-off from the proposed development will discharge to the existing surface water run-off network, the Cuckoo Stream which conjoins with the Mayne River and outfalls to the Mayne Estuary (Baldoyle Bay) which is ca. 6.2km downstream of the proposed development. The existing surface water-run off network within the Cuckoo Stream Sub-catchment which the proposed development is within, is comprised of attenuation tanks and a pollution control tank to ensure that the water quality of the Cuckoo Stream is protected.

Given the distance from the proposed development to the Mayne Estuary, any impacts as a result of accidental sediment input into the Cuckoo Stream will be imperceptible and temporary in nature at a local level and in turn the potential for sediment to reach the estuary is not likely. Further, given the SuDs measures which will be incorporated into the design, the surface water run-off from the proposed development will pass through a petrol interceptor and attenuation before being discharged to the Cuckoo Stream. Therefore, there will be no likely significant effect on the water quality of the Mayne Estuary as a result of the proposed development.

Construction compounds are not located within 100m of the Cuckoo Stream and as such there will be no storage of plant, machinery, equipment, fuels or chemicals near the watercourse. No impacts on surface water quality are likely from the proposed site compound activities.

In addition, standard measures to prevent any polluting matter entering any surface waters as set out in Chapter 11 - Land, Soils and Geology; and Chapter 12 - Water will be implemented during the Construction phase and also in Section 5.4.2.3 above.

Indirect impacts to watercourses via foul water

Foul water from the proposed development will discharge to the foul water network within the Cuckoo Stream Sub-catchment within the lands of Dublin Airport. Foul water will then be discharged to Ringsend Wastewater Treatment Plant (WwTP) where it will be treated prior to being discharged to Dublin Bay and the Irish Sea. Given that the foul water from the proposed development will be treated prior to being discharged and the dilution and dispersion which will occur, there will be no indirect impact from the proposed development on any European sites as a result of the foul water network. Consequently, there will be no significant effect on the environment or any protected site from foul water

Indirect impacts during construction phase via groundwater (hydrogeological pathway)

Chapter 12 - Water details the potential impacts on the water quality of the Cuckoo Stream via groundwater pathways and outlines mitigation factors and measures for the control of pollution and protection of surface water and groundwater quality. Taking account of the relevant mitigation measures, the residual impact to groundwater quality and surface water quality including receiving transitional waters (Mayne Estuary), resulting from potential pollution caused by the proposed development activities e.g. plant, fuel/ chemical spillage etc. or associated with cement handling and pouring during the construction phase is likely to be insignificant being slight adverse and temporary. The residual impact to surface water quality, including receiving transitional waters (Mayne Estuary), resulting from excess loadings of suspended solids, via. inadequate onsite soil / storm water management, during the construction phase is slight adverse and temporary, taking account of the relevant mitigation measures. Any dewatering as required during the construction phase, will be temporary and will be containerised and disposed of to a suitably licenced waste disposal / recovery facility; therefore, dewatering will have no residual adverse impact on groundwater quality or surface water quality including receiving transitional waters (Mayne Estuary). In summary, anticipated residual adverse effects on surface water or groundwater will be temporary and slight adverse during the Construction Phase of the proposed development, given the mitigation measures proposed.

No impacts to groundwater are likely from works associated with underground connections to local infrastructure; foul network connections and potable water connections.

5.4.4.5. Disturbance and/or displacement of faunal species

Terrestrial mammals

While there are no suitable habitats for mammals within the proposed development site (existing buildings and built land), mammal species listed on Annexes II and IV to the Habitats Directive and / or protected under the Wildlife Acts recorded within the proposed development site include Hedgehog (*Erinaceus europaeus*). European Rabbit (*Oryctolagus cuniculus*), which is an invasive species, has also been recorded within the 2km grid square of which the proposed development is within, in 2018. proposed development is located in a built up and busy area of Dublin Airport. The proposed development site is a suboptimal habitat for hedgehog and rabbit.

Therefore, there will be no likely significant effect on terrestrial mammals from the construction of the proposed development.

5.4.5. Operational Phase

5.4.5.1. Impact on Sites Designated for Nature Conservation

There is no direct connectivity from the proposed development site to any internationally or nationally designated sites and as such during the operational phase of the development there will be no direct impacts, and therefore no likely significant effect, on European sites or nationally designated conservation sites.

During the operational phase, storm water / surface water from the development will outfall to the Cuckoo Stream and ultimately the Mayne Estuary and as such there is potential indirect hydrological connectivity to Baldoyle Bay SAC and SPA which are ca. 6.2km downstream of the proposed development. The existing drainage infrastructure and the proposed improved drainage works being incorporated in to the development, which will include interceptors and settlement tanks, will mitigate any impacts occurring on the quality of water within the Cuckoo Stream and Mayne River from the proposed development. No significant impacts to aquatic species accommodated within the Cuckoo Stream, the Mayne River and ultimately the Mayne Estuary (Baldoyle Bay SAC and SPA) are likely during the operational phase of the development. Further, given distance from the proposed development to these European sites and the dilution and dispersal that would occur in the immediate environs (the Cuckoo Supply Channel and the Cuckoo Stream itself) this indirect hydrological connectivity is not considered a viable pathway through which any designated site, including Baldoyle Bay SAC/SPA , or habitats or species associated with any designated site, could be impacted.

During the operational phase, foul effluent from the proposed development will be discharged to Ringsend WwTP Following treatment, discharge from the plant is to Dublin Bay and the Irish Sea. Discharge from the WwTP is not likely to have any significant impact on any habitats or species associated with any designated conservation site given that it will be treated and given the dilution and dispersal that will occur within Dublin Bay or Irish Sea.

No direct or indirect impacts are likely on internationally or nationally designated conservation areas during the operational phase of the proposed development.

5.4.5.2. Impacts on Habitats

No significant impacts on terrestrial habitats are predicted during operation of the proposed development.

5.4.5.3. Impacts on water quality

Indirect damage to the aquatic environment via surface-water run-off

During the operational phase, surface-water run-off associated with the proposed works will be discharged to the existing surface water run-off network within the Cuckoo Stream Sub-catchment within Dublin Airport, which has been designed in accordance with the Greater Dublin Regional Code of Practice for Drainage Works and Sewers (GDSDS) (See Section 5.5.2.1 for further details on the drainage network within this Sub-catchment within Dublin Airport). Therefore no significant impacts to aquatic species accommodated within the Cuckoo Stream, the Mayne River and ultimately the Mayne Estuary (Baldoyle Bay SAC and SPA) are likely during the operational phase of the development.

Indirect damage to environment via discharge of treated foul effluent

Wastewater/Foul effluent from the constructed development, will be discharged to the existing sewer infrastructure. The foul sewer will discharge wastewater into existing/new public wastewater sewer network. This will ultimately be treated at Ringsend WwTP. No impacts to ecological features are likely as a result of foul water generated from the use of the proposed development given that it will be treated and given the dilution and dispersal that will occur within Dublin Bay with treated discharge from the WwTP. Ringsend WwTP has reached its design capacity[26]. However, the WwTP is currently being upgraded, which will enable it to treat the increasing volumes of wastewater arriving at the plant to the required standard, which will enable future developments such as this project[27]. When all the proposed works are complete in 2025, the Ringsend WwTP will be able to treat wastewater for up to 2.4 million population equivalent while meeting the required standards. Given, the size of this development, there will be no significant impact as a result of the foul effluent from the proposed development.

[26] https://epawebapp.epa.ie/licences/lic_eDMS/090151b2806f6f90.pdf

[27] https://www.water.ie/projects/local-projects/ringsend/

5.4.5.4. Impacts on birds

The proposed development site does not have any suitable habitats for bird species of the nearby European sites. The proposed development site is comprised of existing buildings in a built-up area of Dublin Airport. The closest SPA is Malahide Estuary SPA which is ca. 5.2km away. Baldoyle Bay SPA is located ca. 6.2km downstream of the proposed development. Given the distance to the nearest SPAs, there will no disturbance to birds during the operation phase of the proposed development.

Given the location and design of the buildings, the lack of likely waterbird and wildfowl passage across the proposed development site and the lack of suitable habitats within the proposed development site for other wild birds, significant impacts on any wild bird species are not likely

5.4.5.5. Disturbance and/or displacement of faunal species

Nesting Birds

The proposed development when operational will be sufficiently distant from any European site, with the closest being Malahide Estuary SAC/SPA (ca. 5.2km away via straight line distance) and Baldoyle Bay SAC/SPA ca. 6.2km downstream. Given that the lands within Dublin Airport are heavily utilised by humans and machinery already, bird species accommodated within nearby European sites are not likely to be disturbed by the operational phase of the proposed development. As significant disturbance related impacts on any bird species, including bird species which are not a QI of a European site, is not considered likely.

Terrestrial mammals

During the operational phase of the proposed development there will be no predicted impact to terrestrial mammals. The proposed development is located within an already busy and built up area of Dublin Airport and therefore there will be no additional disturbance to terrestrial mammals as a result of the proposed development.

5.4.6. Risk of Major Accidents and Disasters

The risk of a major accident onsite is low and would be included for both the construction and operational phase of the proposed development as the SASC will be used for storage of machinery and equipment to facilitate the CBP building refurbishment and also the South Apron Works construction activities. Events such as a large hydrocarbon spill or release of high volumes of contaminants during the construction or operational phase could potentially have a negative impact on high value sensitive sites such as the Cuckoo Stream and downstream Mayne Estuary (Baldoyle Bay SAC/SPA). However, given the location of the proposed development site relative to watercourses (ca. 210m away), and given the surface water mitigation measures as outlined in Chapter 12 - Water, it is unlikely that an accident of sufficient scale would occur that would negatively impact on surface water features or aquatic habitats. While impacts to local soil and groundwater could conceivably occur, the preventative measures and emergency response measures planned and documented for consistency will ensure that this impact is not likely to be significant (refer to Chapter 11 - Land, Soils & Geology and Chapter 12 - Water for mitigation measures). Thus, allowing for the above, the magnitude of a major accident on site is likely to be significant at a site level only and imperceptible in relation to ecologically important features such as the Cuckoo Stream and the Mayne River.

5.5. Mitigation Measures

5.5.1. Construction Phase Mitigation

Construction phase ecological mitigation measures shall be developed and undertaken in relation to sensitive receptors (e.g. the Cuckoo Stream) in close proximity to the proposed development site.

5.5.1.1. Protection of Sites Designated for Nature Conservation

Protection of sites designated for conservation, and the features of interests associated with designated sites, is through prevention of potential impacts to the aquatic environment during the construction phase.

Mitigation measures as set out in Chapter 11 – Land, Soils and Geology; and Chapter 12 – Water will be implemented during the Construction phase, ensuring water quality of the Cuckoo Stream is not negatively affected during the construction phase of the proposed development. These mitigation measures will ensure that surface water run-off quality is appropriately treated and ensured before it discharges to the stream.

Works will follow best practice guidance as outlined in *Guidelines on the Protection of Fisheries during Construction Works in and Adjacent to Waters* (IFI, 2016).

5.5.1.2. Prevention of pollution to surface waters

Mitigation measures as set out in Chapter 11 – Land, Soils and Geology; and Chapter 12 – Water will be implemented during the Construction phase.

Works will follow best practice guidance as outlined in Guidelines on the Protection of Fisheries during Construction Works in and Adjacent to Waters (IFI, 2016) to prevent water pollution.

The following measures for the protection of the Cuckoo Stream are outlined in the CEMP for the SASC and CBP:

- No discharge to existing infrastructure/watercourses/ground are permitted to take place without the appropriate consents or approvals.
- The Contractor will identify, and risk assess existing drainage systems and put in place measures to prevent possible contamination from surface run-off emanating from the works.
- All plant and equipment brought to site is to be in good working order with no leaks and maintained as such during the course of the Works.
- Fuelling of plant and equipment is to be carried out within compound and material storage areas only (unless agreed otherwise with the Client – may be necessary in the case of mobile task lighting or generators) by a trained operative using double skinned bowsers with a designated fuelling area and bunded fuel storage.
- Drip trays to be used during all fuelling operations and a fully maintained spill kit located within the designated fuelling area.
- All fuels, chemicals or liquids will be stored in a lockable cabinet that will be located within a bunded area.
- The Contractor is to comply with all national laws and regulations controlling pollution of the environment. Necessary precautions to prevent pollution of streams, lakes, ponds, and reservoirs with fuels, oils, bitumens, chemicals, or other harmful materials will be taken.
- Ditches and water streams will be clearly identified on site and shown on method statements and site plans.
- Storage of materials will be located at least 4 metres away from water bodies, within designated and bunded areas.
- All discharged water from pumping will be treated and tested as required to prevent any pollutants entering groundwater. Such water will be disposed of as construction site run off having first passed through a settlement tank or filtration system where appropriate.

5.5.1.3. Invasive species prevention

No legally restricted invasive species, such as Japanese knotweed, have been recorded within the proposed development site. Strict bio-security protocols will be implemented during the construction phase so as to ensure no imported materials potentially contaminated with invasive plant species are brought to site.

5.5.1.4. Additional Construction Phase Ecological Mitigation Measures

With regard to potential impacts on ecological features the following mitigation measures are proposed:

- The Contractor shall employ good practice environmental and pollution control measures with regard to current best practice guidance such as Environmental Good Practice On-site Guide (CIRIA, 2018 revised with errata 2019, 2020);
- The construction management of the site will take account of the recommendations of the Construction Industry Research and Information Association (CIRIA) guides 'Control of Water Pollution from Construction Sites' and 'Groundwater control - design and practice' to minimise as far as possible the risk of pollution;
- The Contractor shall take all necessary precautions to prevent potential impact upon aquatic species of the Cuckoo Stream from construction activities. The mitigation measures for prevention of potential surface water impacts as detailed in Chapter 12 - Water shall be implemented;
- The Contractor shall take all necessary precautions to prevent potential impact upon aquatic species of the Cuckoo Stream via the local groundwater body. All groundwater mitigation measures as outlined in Chapter 12 - Water shall be implemented; and,
- The Contractor shall take all necessary precautions to prevent potential impact upon habitats and species from dust generated during the construction phase. All air quality mitigation measures as outlined in Chapter 7- Air Quality and Chapter 8 - Climate shall be implemented.

The above mitigation measures will form part of the Construction Environmental Management Plan (CEMP) submitted as part of this planning application, and which will be further added to by the Contractor within the project-specific Detailed CEMP which will be in operation during the construction phase.

5.5.2. Operational Phase Mitigation

5.5.2.1. Surface Water Drainage

With regard to groundwater and surface water quality effects the following mitigation measures which are mentioned in Chapter 12 are proposed;

- All of the mitigation measures (for the protection of soils and geology) listed in Chapter 11-Land Soil and Geology will be implemented onsite during the Detailed Design Stage and Construction. The Contractor, in consultation with the Client and the design team, will be responsible for ensuring that these measures are fully implemented.
- All plant and equipment utilised onsite during maintenance works should be checked and in good working condition. Any equipment not meeting the required standard will not be permitted for use within the Site. Relevant maintenance contractors will be responsible for ensuring that these measures are fully implemented;
- Any minor volumes of fuel, oil or chemicals required during routine maintenance works will be brought to and from Site by the maintenance contractor. While temporarily onsite all chemicals will be kept in secure and bunded areas, with relevant Material Safety Data Sheets available onsite. Any fuel / oil tanks temporarily stored on Site will be located in a suitably bunded area and all tanks will be double skinned, with oil / chemical absorbent materials held onsite in close proximity to the tanks. Relevant maintenance contractors will be responsible for ensuring that these measures are fully implemented;
- In the unlikely event of a fuel / oil or chemical spill / leak during routine maintenance works, emergency spill response measures will be implemented with the aim of limiting the volume spilled and recovering as much of the lost product as possible (relevant maintenance contractors will be responsible for ensuring that these measures are fully implemented); and,
- A maintenance programme for the proposed surface water drainage system should be implemented. The Contractor, in consultation with the Client and the design team, will be responsible for ensuring that these measures are fully implemented.

5.5.2.2. Foul Disposal

Foul water from the proposed development will discharge to the existing foul sewer network. Foul water from the proposed development will be discharged to Ringsend WwTP.

5.6. Monitoring

Given that the proposed development site is made up entirely of existing buildings and built land there is no suitable habitat for mammals such as badgers. Therefore, there is no need for the site to be assessed by an ecologist prior to the proposed works commencing. Given that the proposed development site is within a busy area within Dublin Airport and that the proposed development site and surrounding area is well lit, it is not likely that bats would be found roosting in the existing buildings. Therefore, no monitoring or survey is required for bat species.

Operational phase monitoring shall be undertaken by those in charge of the maintenance and management of the development.

5.7. Residual Impacts

The proposed development will not result in the loss of any habitats. The proposed development site is comprised of existing buildings within a built-up area of Dublin Airport and is of low ecological value. The site is generally bound by existing airport infrastructure. This assessment has demonstrated that through iterative project design and assessment, and the identification of appropriate ecological mitigation measures, the residual ecological impacts of the development proposals are not likely to be significant and are likely to be localised to the proposed works site and immediate environs. Provided ecological mitigation measures and monitoring, especially in relation to surface water run-off, are implemented correctly no cumulative impacts are expected as a result of the proposed development.

6. Landscape & Visual

6.1. Introduction

This Landscape and Visual Impact Assessment (LVIA) has been prepared by Eamonn Byrne a Chartered Landscape Architect with 19 years' experience of undertaking LVIA and an employee of Eamonn Byrne Landscape Architects Ltd (EBLA), a Registered Practice of the Landscape Institute. It relates to the proposals for the reconfiguration and expansion of the existing 2-storey US Customs and Border Protection (CBP) pre-clearance facility at Pier 4, Terminal 2, Dublin Airport; and the partial demolition, refurbishment and upgrade of the existing 2-storey South Apron Support Centre (SASC) formerly the Flight Catering Building (FCB) to the southeast of the Terminal 2 building, initially as a temporary construction compound for the proposed CBP building works, then for continued use as an Airport Operational Building (AOB) for airside support and operations. Refer also to Chapter 2 for the project description.

6.2. Methodology

LVIA is used to identify and assess the likely significance of the effects of change resulting from a development. The two components of LVIA are:

- Assessment of landscape effects: assessing effects on the landscape as a resource in its own right;
- Assessment of visual effects: assessing effects on specific views and on the general visual amenity experienced by people.

The assessment was carried out with reference to the following:

- Guidelines for Landscape and Visual Impact Assessment (3rd Edition, 2013),
- EPA Guidelines on the information to be contained in Environmental Impact Assessment Reports 2022,
- Fingal Development Plan 2023-2029,
- Dublin Airport Local Area Plan 2020.

The study was carried out in February 2023 through a combination of desk studies and field surveys within and around the study area. The methodology for undertaking the assessment is detailed below.

6.2.1. Study Area

The extent of the study area is within ca.1km of the CBP site and SASC site and is defined by the likely Visual Envelope of the proposals in combination with the proposed site itself. Refer also to Methodology within this section 6.2 below and to the Visibility drawing in Appendix 6.

6.2.2. Study Constraints

There were no study constraints. The field study was undertaken in February 2023 before deciduous vegetation was in leaf, hence providing maximum visibility.

6.2.3. Project description/ specification

The proposals are summarised in terms of their physical appearance at Chapter 2 of the Environmental Impact Assessment Report. Please also refer to the drawing pack for drawings. The project description adequately sets out the essential aspects of the development from a landscape and visual impact assessment perspective . These aspects include:

- The proposed CBP extension building will be lower in height than the existing Terminal 2 building and include material finishes in keeping with the adjacent existing Terminal 2 and Pier 4.
- The proposed height to the SASC building will be similar to the existing building and will include a mix of material finishes to either match the adjacent Shamrock House or Terminal 2 building.
- Existing screen planting next to the north-eastern boundary of the SASC site will be retained where feasible.

6.2.4. Baseline studies

The baseline landscape and visual conditions were established through a combination of desk study and surveys in February 2023.

6.2.5. Landscape Baseline

The aim of the landscape baseline is 'to provide an understanding of the landscape in the area that may be affected, its constituent elements, its character and way it varies spatially, its geographic extent, its history, its condition and the way the landscape is experienced, and the value attached to it' (Landscape Institute and Institute of Environmental Management and Assessment, 2013). The baseline study was undertaken by a mix of desktop study and fieldwork to identify and record the attributes contributing to the character of the landscape, including physical and aesthetic characteristics; their condition, the likely value of these attributes and their susceptibility to the type of change represented by the proposals. Sources of information included for the desktop study included ordnance survey maps, aerial maps of the site and surrounding area, existing landscape character assessments and relevant planning policy.

6.2.6. Visual Baseline

The aim of the visual baseline is 'to establish the area in which the development may be visible, the different groups of people who may experience views of the development, the places where they will be affected and the nature of the views and visual amenity at those points' (Landscape Institute and Institute of Environmental Management and Assessment, 2013). The baseline study was undertaken by desktop study followed by a field survey to establish the 'Visual Envelope' of the proposals and to identify a number of viewpoints representative of views experienced by people, or 'visual receptors'. The Visual Envelope was estimated using a manual approach using map interpretation, and visual envelope mapping on site to establish the outer limit of land that may be visually connected with the proposal. There are areas within the Visual Envelope which do not have views of the scheme due to local variations in vegetation, topography and built development. The Visual Envelope is not always precise and is an indication only of the area within which the most significant visual effects may be expected.

6.2.7. Landscape Assessment Criteria

The overall significance of effects is established by combining the separate judgements about sensitivity and magnitude of effects. This involves identifying which if any 'landscape receptors' – i.e., attributes and features contributing to landscape character – are likely to be affected by the proposal. Sensitivity includes an assessment of landscape receptors' susceptibility to change and their value. Magnitude includes an assessment of the impact on landscape receptors in terms of size or scale, geographical extent of the area influenced. The criteria for assessing sensitivity of landscape effects are described in Table 6.1 below, whilst Table 6.2 sets out the criteria for assessing the magnitude of impact. The separate assessments of sensitivity and magnitude are then combined to determine the significance of effect on each receptor, using Table 6.3 as a guide. These levels of significance can either be beneficial or adverse and are described in Table 6.4.

These criteria have been adapted in house by EBLA based upon criteria by Highways Agency (HA) (2010), Landscape and Visual Effects Assessment, Interim Advice Note 135/10.

6.2.8. Visual Assessment Criteria

The overall significance of effects is established by combining the separate judgements about sensitivity and magnitude of effects. Sensitivity includes an assessment of the visual receptors susceptibility to change and the value attached to views. Magnitude includes an evaluation of the visual impact identified in terms of size or scale and geographical extent of the area influenced. The criteria for assessing sensitivity of visual effects are shown at Table 6-1 below. The criteria for assessing the magnitude of impact are shown at Table 6-2 below. The separate assessments of sensitivity and magnitude are then combined to determine the significance of effect on each receptor, using Table 6-3 as a guide. These levels of significance can either be beneficial or adverse and are described in Table 6-4. Significance of effects levels that are categorised as neutral or slight would not be judged as significant.

These criteria have been adapted in house by EBLA based upon criteria by Highways Agency (HA) (2010), Landscape and Visual Effects Assessment, Interim Advice Note 135/10.

Table 6-1 - Criteria for assessing sensitivity of landscape and visual receptors

Sensitivity	Landscape	Visual
High	Key features and characteristics of landscape of distinctive character, susceptible to relatively small changes. Likely to be designated such as National Parks.	-Residential properties with views towards the proposals from ground floor and first floor windows, -Public footpaths or other recreational trails (e.g. national trails, footpaths, bridleways, etc.) with open views of the scheme proposals, -Users of recreational facilities where the purpose of that recreation is enjoyment of the countryside (e.g., National Parks or other access land etc.). Highly valued views (e.g., from heritage assets, views featured in art and literature).
Moderate	Moderately significant features and characteristics in a distinctive landscape *or* a landscape of moderately distinctive character reasonably tolerant of changes.	-Residential properties with limited views due to partial obstruction towards the proposed scheme, -Public footpaths or other recreational trails (e.g., national trails, footpaths, etc.) with restricted views of the scheme proposals, -Outdoor workers, -Users of lower speed passenger railways, -Users of scenic roads, railways or waterways or users of designated tourist routes, -Schools and other institutional buildings, and their outdoor areas.
Low	Unimportant features or characteristics *or* indistinct landscape character types potentially tolerant of substantial change	-Indoor workers, -Users of main roads (e.g., motorway or national routes) or passengers in public transport on main arterial routes, -Users of higher speed passenger or freight railways, -Users of recreational facilities where the purpose of the recreation is not related to the view (e.g., sports facilities).

Table 6-2 - Magnitude of Impact Criteria

Magnitude	Landscape	Visual
Major	Total loss or large-scale damage to existing character or distinctive features and elements, and/ or the addition of new but uncharacteristic conspicuous features and elements. Large scale improvement of character by the restoration of features and elements, and/or the removal of uncharacteristic and conspicuous features and elements, or by the addition of new distinctive features.	The project, or a part of it, would become the dominant feature or focal point of the view. Majority of viewers affected. Major alteration of baseline view.
Moderate	Partial loss or noticeable damage to existing character or distinctive features and elements, and/ or the addition of new but uncharacteristic noticeable features and elements. Partial or noticeable improvement of character by the restoration of existing features and elements, and/ or the removal of uncharacteristic and noticeable features and elements, or by the additional of new characteristic features.	The project, or a part of it, would form a noticeable feature or element of the view which is readily apparent to the receptor. Many/some viewers affected. Partial alteration of baseline view.

Minor	Slight loss or damage to existing character or features and elements, and/or the addition of new but uncharacteristic features and elements. Slight improvement of character by the restoration of existing features and elements, and/or the removal of uncharacteristic features and elements, or by the addition of new characteristic elements.	The project, or a part of it, would be perceptible but not alter the overall balance of features and elements that comprise the existing view. Few viewers affected. Minor alteration of baseline view.
Negligible	Barely noticeable loss or damage to existing character or features and elements, and/or the addition of new but uncharacteristic features and elements. Barely noticeable improvement of character by the restoration of existing features and elements, and/or the removal of uncharacteristic features and elements, or by the addition of new characteristic elements.	Only a very small part of the project would be discernible, or it is at such a distance that it would form a barely noticeable feature or element of the view. Few viewers affected. Very minor alteration of baseline view.
No Change	No noticeable loss, damage or alternation to character or features or elements.	No part of the project, or work or activity associated with it, is discernible. No viewers affected.

Table 6-3 - Significance of effect categories

Landscape/ Visual Sensitivity	**Magnitude of impact**				
	No change	Negligible	Minor	Moderate	Major
High	Neutral	Slight	Slight or Moderate	Moderate or Large	Large or Very Large
Moderate	Neutral	Neutral or Slight	Slight	Moderate	Moderate or Large
Low	Neutral	Neutral or Slight	Neutral or Slight	Slight	Slight or Moderate

Table 6-4 - Typical descriptions of significance of effect categories

Category	Landscape	Visual
Very Large Beneficial Effect	The project would greatly enhance the character (including quality and value) of the landscape; create an iconic high-quality feature and/or series of elements; enable a sense of place to be created or greatly enhanced.	The project would create an iconic new feature that would greatly enhance the view.
Large Beneficial Effect	The project would enhance the character (including quality and value) of the landscape; enable the restoration of characteristic features and elements lost as a result of changes from inappropriate management or development; enable a sense of place to be enhanced.	The project would lead to a major improvement in a view from a highly sensitive receptor.
Moderate Beneficial Effect	The project would improve the character (including quality and value) of the landscape; enable the restoration of characteristic features and elements partially lost or diminished as a result of changes from inappropriate management or development; enable a sense of place to be restored.	The proposals would cause obvious improvement to a view from a moderately sensitive receptor, or perceptible improvement to a view from a more sensitive receptor.
Slight Beneficial Effect	The project would complement the character (including quality and value) of the landscape; maintain or enhance characteristic features and	The project would cause limited improvement to a view from a receptor of medium sensitivity or would cause greater improvement

	elements; enable some sense of place to be restored.	to a view from a receptor of low sensitivity.
Neutral Effect	The project would maintain the character (including quality and value) of the landscape; blend in with characteristic features and elements; enable a sense of place to be retained.	Difficult to distinguish. Barely perceptible change in view. No perceptible change in view
Slight Adverse Effect	The project would not quite fit the character (including quality and value) of the landscape; be at variance with characteristic features and elements; detract from a sense of place.	The project would cause limited deterioration to a view from a receptor of medium sensitivity or cause greater deterioration to a view from a receptor of high sensitivity.
Moderate Adverse Effect	The project would conflict with the character (including quality and value) of the landscape; have an adverse impact on characteristic features or elements; diminish a sense of place	The project would cause obvious deterioration to a view from a moderately sensitive receptor, perceptible damage to a view from a more sensitive receptor.
Large Adverse Effect	The project would be at considerable variance with the character (including quality and value) of the landscape; degrade or diminish the integrity of a range of characteristic features and elements; damage a sense of place.	The project would cause major deterioration to a view from a highly sensitive receptor and would constitute a major discordant element in the view.
Very Large Adverse Effect	The project would be at complete variance with the character (including quality and value) of the landscape; cause the integrity of characteristic features, elements and sense of place to be lost.	The project would cause the loss of views from a highly sensitive receptor and would constitute a dominant discordant feature in the view.

6.3. Planning Context

This section summarises relevant local landscape planning policy. Information on landscape character and landscape designations is described under the landscape baseline at Section 6.4 below. The Fingal Development Plan 2023 - 2029 contains the policies current at the time of the assessment. The following refers to policies and objectives from the plan relevant to landscape and visual amenity interacting with the proposals.

Section 8.5.9 Promoting Quality Design

The single policy and objective within this section relate to the quality of design applied to Dublin Airport as a 'National Gateway', in which 'exemplar design [should provide] a visual coherence to deliver an attractive high-quality environment which enriches visitor experiences'.

Policy DAP10 – Design requires compliance with the Dublin Airport Local Area Plan 2020 and successors; whilst the accompanying **Objective DAO26** states:

...all development within the Dublin Airport Local Area Plan lands will be of a high standard of design, to reflect the prestigious nature of an international gateway airport, and its location adjacent to Dublin City.

The **Dublin Airport Local Area Plan** discusses standards of design at its Section 7.7:

Key design considerations for airport infrastructure include:

- *creating a 'sense of place', many people see the Airport as defining a Country's character and identity not only in terminal architecture but in other parts of the infrastructure;*
- *creating an environment that can be used by all people...*
- *a commitment to designing facilities with long-term environmental benefits*

It lists a set of design principles, amongst which is 'high quality public realm' and in the context of a 'Design Framework', restates that 'all development at Dublin Airport will be of high quality design and finishes to reflect Dublin Airport's status as an international gateway airport'.

Of relevance to this assessment is the contribution of built infrastructure to landscape character and visual amenity; specifically any potential effect upon the perception of the 'sense of place' and identity. Since the proposals essentially represent extensions to and modernisations of existing built infrastructure in similar style to

the existing buildings they extend or replace, it is unlikely that there would be a negative perception of their contribution to sense of place or identity.

Policy GINHP3 – Greening of Developments

Includes reference to the following.

Encourage measures for the "greening" of new developments including the use of green roofs, brown roofs, green walls and water harvesting.

Existing screen planting adjacent to the SASC will be retained and protected during the works where feasible. Due to the proximity of the proposed development to the airfield, planting has been considered as part of the design process but security and airside restrictions have informed the final design.

Objective GINHO15 – SuDs

Includes reference to the following.

Limit surface water run-off from new developments through the use of appropriate Sustainable Urban Drainage Systems (SuDS) using nature-based solutions and ensure that SuDS is integrated into all new development in the County.

Flood storage will be provided primarily in the form of an attenuation tank with a 170m3 net storage capacity, to be located on site to the east of the SASC building (Please refer to Drawing No. 60592409-ACM-FCB-XX-DR-CE-000501 "Proposed Drainage Layout".

Policy GINHP25 – Preservation of Landscape Types

Includes reference to the following.

Ensure the preservation of the uniqueness of a landscape character type by having regard to the character, value and sensitivity of a landscape when determining a planning application.

As noted below, the site and Study Area are atypical of the character type identified by the local Landscape Character Assessment. Hence, whilst the policy requires preservation of the characteristics contributing to character within the type, in effect the proposals do not reduce those characteristics and this policy should not determine the suitability of the proposals.

Objective GINH057 – Development and Landscape

Includes reference to the following.

Ensure development reflects and, where possible, reinforces the distinctiveness and sense of place of the landscape character types, including the retention of important features or characteristics, taking into account the various elements which contribute to their distinctiveness such as geology and landform, habitats, scenic quality, settlement pattern, historic heritage, local vernacular heritage, land-use and tranquillity.

Similar to GINHP25: the proposals do not alter any of the listed characteristics; hence the policy should not be considered a material determinant of the proposals' suitability.

6.4. Receiving Environment - Landscape

The aim of the landscape baseline is 'to provide an understanding of the landscape in the area that may be affected, its constituent elements, it's character and way it varies spatially, its geographic extent, its history, its condition and the way the landscape is experienced, and the value attached it' (Landscape Institute and Institute of Environmental Management and Assessment, 2013).

6.4.1. Local Landscape Character Assessment

The study area is within the Fingal County Council Landscape Character Assessment described at Section 9.6.14 of the Fingal Development Plan 2023-2029 . The study area includes land within the 'Low Lying Character Type', described as:

...an area characterised by a mix of pasture and arable farming on low lying land with a few protected views or prospects. The Low Lying Character Type has an open character combined with large field patterns, few tree belts and low roadside hedges... Dublin Airport is located in this area.

This low lying area is dominated by agriculture and a number of settlements. The area is categorised as having a modest value and low sensitivity.

It was noted during the site survey that the Study Area is atypical of this character type, containing few of the cited defining characteristics.

6.4.2. Landscape Designations

The site and Study Area do not coincide with any landscape designations. There are no protected views within the study area.

6.4.3. Study Area Description

Table 6.5 sets out the attributes contributing to character within the Study Area, together with their likely value and susceptibility to change of the type proposed and is summarised below.

The site lies within the Dublin Airport complex, dominated by built form and infrastructure, concrete and tarmac surfaces and large moving vehicles including aircraft. Spatially, the Study Area comprises clusters of buildings set in large areas of open space. Aside from the built form, boundaries are comprised of high, secure see-through fencing. Vegetation is limited to lawns between runways, grass verges around airport roads and small areas of formal planting including grasses, clipped hedges and trees deployed around the entrance to the airport complex. The topography is generally flat, with minor artificial mounding associated with roadways. Surface water is limited to drainage ditches. Overall, the character may be described as functional and industrial on the runway side of the airport complex, modern and amenity led on the public side.

Table 6.5 – Attributes of landscape character

Attribute	Description	Condition	Value	Susceptibility
Topography	Mostly flat area (as suited to an airfield), with some artificial mounding around entrance roads	n/a	low	low
Vegetation	Lawns between runways, grass verges and small areas of formal planting including groundcover and small trees	good	moderate	low
Surface water	Drainage ditches only	good	low	low
Land-use	Airport, road infrastructure and some commercial uses	good	moderate	none
Spatial pattern	Simple spatial pattern centred on clusters of buildings served by linear infrastructure	n/a	low	none
Materials	Concrete, glass, metal and tarmac dominate	good	low	low
Features	Airport buildings, ornamental planting, aircraft	good	moderate	low
Aesthetic qualities	Industrial, modernist and contemporary architecture set within a plain, weakly structured landscape	poor	low	low

6.4.4. Landscape Value and Susceptibility

The value attributed to landscape within the Study Area is likely to be *low*, in keeping with the 'modest' attribution given in the council's Landscape Character Assessment for the landscape type - and of *low* susceptibility to the nature of change represented by the proposals. The combination of low value and low susceptibility mean that the sensitivity of landscape is judged to be low.

6.5. Receiving Environment - Visual

The aim of the visual baseline is 'to establish the area in which the development may be visible, the different groups of people who may experience views of the development, the places where they will be affected and the nature of the views and visual amenity at those points' (Landscape Institute and Institute of Environmental Management and Assessment, 2013).

6.5.1. Visual Envelope

The Visual Envelope or areas of land from which the development may be potentially visible was estimated using a manual approach using map interpretation, and visual envelope mapping on site to establish the outer limit of

land that may be visually connected with the proposals. The proposals do not involve an increase in the height or spread in comparison to the existing airport complex, or the introduction of new or contrasting materials within their context. The extent to which changes would be discernible in views towards the airport complex when compared with existing views was identified during survey as including:

CBP

The areas identified are predominately located within 1km from the site and includes the sections of the R132 Road and the eastern areas of the Old Airport Road which run adjacent to the airfield. There are also some distant views towards the CBP site from elevated sections of the M50 and M1 junction, however given the distance from the proposals and low sensitivity of motorway users, any views from here would be of such distance that effects would not be significant. The CBP site is not visible from public accessible roads to the north and east, as it is screened by intervening buildings including Terminal 2. There may be some partial views to the upper parts of the CBP extension from Castle Drive and Corbalis Park which is located south-east of the site.

SASC

The areas identified are predominately located within 500m from the site and includes at most the adjacent Terminal 1 & 2 Road, the T 2 Departures Road, Corballis Road South, Corballis Park Road, R132 Swords Road and the eastern end of Old Airport Road.

6.5.2. Visual Receptors

6.5.2.1. Roads including footpaths/ cycle lanes.

CBP

The CBP site is not visible from roads to the north and east due to intervening built development. There may be some partial views to the upper parts of the CBP extension from Corballis Park Road which is located south-east of the site. There are distant views to the site from areas of the R132 Swords Road and the eastern end of Old Airport Road (including from an informal roadside viewing points located at Old Airport Road) where the routes run adjacent to the airfield.

SASC

The SASC site is partially visible (as it is partially screened by vegetation adjacent to its north east boundary) from the adjacent T1 and T2 Departures Road and Corballis Road South. The site is also partially screened by intervening tree planting from Corballis Park Road. The upper parts of the existing building on the site are barely perceptible to not visible from the R132 Swords Road and the eastern end of Old Airport Road.

6.5.2.2. Other receptors

No other visual receptors were identified as having potentially significant changes to the view.

6.5.3. Representative Viewpoints

Ten viewpoint locations were selected based on professional judgement to represent the experience of visual receptors. The viewpoints chosen, do not cover every view but have been selected to represent the different users from a range of directions and distances from the site. The viewpoint locations are illustrated on the Visibility drawing, in Appendix 6. The viewpoint images are illustrated in Appendix 6:

- Viewpoint 1. From the set down area at Terminal 2 located 106m from the proposed South Apron Support Centre site. Views (partially screened by intervening vegetation and topography) of the existing former Flight Catering Building are available. The Customs and Border Protection extension site is not visible from this location as it is screened by intervening buildings.
- Viewpoint 2. From the footpath at T1 & T2 Departures Road, north of the road gantry sign, 260m from the South Apron Support Centre site. Views (partially screened by intervening vegetation) of the existing former Flight Catering Building on this site are available. The Customs and Border Protection extension site is not visible from this location as it is screened by intervening vegetation and buildings.
- Viewpoint 3. From the footpath at T1 & T2 Departures Road, south of the road gantry sign, 180m from the South Apron Support Centre site. Views (partially screened by intervening vegetation) of the existing former Flight Catering Building are available. The Customs and Border Protection extension site is not visible from this location as it is screened by intervening buildings.
- Viewpoint 4. From the footpath at Corballis Road South, 132m from the South Apron Support Centre site. Views (partially screened by intervening vegetation) of the existing former Flight Catering Building are available. The Customs and Border Protection extension site is not visible from this location as it is screened by intervening buildings.

- Viewpoint 5. From the footpath at Corballis Road South near it's junction with the R132 Swords Road, 390m from the South Apron Support Centre site. Views (partially screened by intervening vegetation, buildings and the effect of distance) of the north east elevation of the existing former Flight Catering Building are barely perceptible. The Customs and Border Protection extension site is not visible from this location as it is screened by intervening buildings.
- Viewpoint 6. From the entrance road to the Radisson Blu Hotel, 272m from the South Apron Support Centre site. Views (partially screened by intervening vegetation) of the existing former Flight Catering Building are available. The Customs and Border Protection extension site is not visible from this location as it is screened by intervening buildings.
- Viewpoint 7. From Corballis Park, 172m from the South Apron Support Centre site and 432m from the Customs and Border Protection extension building site. Filtered views (mostly screened by intervening vegetation) of the existing former Flight Catering Building are available. Partial views to the upper parts only of Pier 4 are available.
- Viewpoint 8. Location on the west side of the R132 Swords Road immediately north of the junction with Old Airport Road where the footway and cycleway combine (located 782m from the Customs and Border Protection extension site); this may also have filtered and partially obscured views of the Customs and Border Protection site. The upper parts of the existing former Flight Catering Building are barely perceptible.
- Viewpoint 9. From an embankment by a field entrance on the south side of the Old Airport Road, 955m from the CBP site, from which filtered and partially obscured views of the Customs and Border Protection site may be available. The existing former Flight Catering Building is not visible/ barely perceptible to distance.
- Viewpoint 10. From the informal viewing embankment by a layby on the south side of the Old Airport Road, views of the Customs and Border Protection building site are mostly obscured by the existing Pier 4 building. The existing former Flight Catering Building is not visible/ barely perceptible due to distance.

6.5.4. Value and Susceptibility of views

The context of views towards the proposals is one in which views may already be considered to be substantially dominated by detracting features. Further, the visual receptors likely to experience views in this direction are people using busy roads alongside and entrance roads into the airport; hence both accustomed to viewing airport buildings and infrastructure within the view and less likely to be susceptible to a reordering of the features composing those views. Nonetheless it is possible that the iconic nature of a capital city airport is such that views towards it even from roads and approach roads are valued more highly than views towards buildings of a more general nature in a similar context. For the purposes of this assessment, views from each viewpoint are considered to be of the following value and susceptibility to change of the type proposed:

- **Viewpoint 1:** low value, of low susceptibility.
- **Viewpoint 2:** low value, of low susceptibility.
- **Viewpoint 3**: low value, of low susceptibility.
- **Viewpoint 4:** low value, of low susceptibility.
- **Viewpoint 5:** low value, of low susceptibility.
- **Viewpoint 6:** low value, of low susceptibility.
- **Viewpoint 7:** low value, of low susceptibility.
- **Viewpoint 8:** low value, of low susceptibility.
- **Viewpoint 9:** moderate value, low susceptibility.
- **Viewpoint 10:** moderate value, of low susceptibility.

6.6. Potential Landscape Effects during Construction Phase

During construction, the principal impacts upon landscape character will be:

- the presence of demolition machinery, partially demolished structures, waste materials in-situ and being conveyed from the site, representing a temporary weakening of landscape characteristics; and,
- the presence of construction compounds, representing a feature at odds with the overall character and pattern of the landscape.

In the context of a working airport complex, in which infrastructure and moving vehicles are already dominant features, this assessment considers the existing landscape to be of at most *low* sensitivity to these changes, which are of *minor* magnitude. The significance of these effects would be **neutral**. This category of effect would

not be considered as significant as the project would maintain the character (including quality and value) of the landscape; blend in with characteristic features and elements; enable a sense of place to be retained.

6.7. Potential Landscape Effects during Operational Phase

This section describes the effects of the proposed development on landscape receptors and assesses the significance of the effects identified.

Topography

Topography is not considered to be sensitive to change of the type proposed. Further, the proposals would not affect existing ground levels – hence an impact of no change magnitude and neutral significance. This category of effect (i.e. neutral) would not be considered as significant.

Vegetation

Vegetation is considered to have low sensitivity to change of the type proposed. However, the proposals would not affect existing vegetation – hence an impact of no change magnitude and neutral significance. This category of effect (i.e. neutral) would not be considered as significant.

Surface water

Surface water features are not considered to be sensitive to change of the type proposed. Further, the proposals would not affect existing surface water features hence an impact of no change magnitude and neutral significance. This category of effect (i.e. neutral) would not be considered as significant.

Land-use

Land use is not sensitive to the type of change proposed. Further, the proposals would not affect existing land-use patterns - hence an impact of no change magnitude and neutral significance. This category of effect (i.e. neutral) would not be considered as significant.

Spatial pattern

The spatial pattern of the Study Area is not sensitive to the type of change represented by the proposals and there would be no substantive change to pattern – hence an impact of no change magnitude and neutral significance. This category of effect (i.e. neutral) would not be considered as significant.

Materials

The material palette within the Study Area is of low sensitivity to the type of change proposed. However, the proposals do not alter the overall balance of materials or introduce new materials within the Study Area – hence an impact of no change magnitude and neutral significance. This category of effect (i.e. neutral) would not be considered as significant.

Features

The proposals would result in the removal of a small proportion of the built form within the Study Area including part of the frontage to the Pier 4 structure and the SASC building, replacing these with new structures in contemporary, architecturally simple style faced with materials commonly found within the existing complex. Architectural elements within the Study Area are of *low* sensitivity to change of the nature proposed. The magnitude of impacts is considered to be *minor positive* and the significance of this effect would be **neutral** for the CBP extension and **slight beneficial** for the SASC building. These categories (neutral and slight beneficial respectively) of effects would not be considered as significant.

Aesthetic changes

The overall impression of character is unlikely to be substantively altered for people within the southern part of the Study Area addressing the runway side of the airport. For people within the northern part of the Study Area addressing the public frontage of the airport complex, the experience of character may be enhanced by the presence of a contemporary building in place of older, less architecturally sensitive buildings. The aesthetic properties of the Study Area are not considered to be sensitive to changes of the nature proposed. The magnitude of impacts is considered to be *minor positive* and the significance of this effect would be **neutral** for the CBP extension and **slight beneficial** for the SASC building. These categories (neutral and slight beneficial respectively) of effects would not be considered as significant.

Summary effects on landscape character

The landscape character of the study area is judged to be tolerant of the type of changes arising from the proposals and is therefore judged overall to be of *low* sensitivity to the nature of the changes proposed. The magnitude of impacts is *minor* and the overall significance of effect upon character is judged to be **slight beneficial** in significance for the SASC building and **neutral** in significance for the CBP extension. These categories of effects (slight beneficial and neutral respectively) would not be considered as significant.

6.8. Potential Visual Effects during Construction Phase

During construction, impacts upon visual receptors include the appearance of demolition machinery, partially demolished structures, waste materials in-situ and being conveyed from the site and construction compounds. Together these would represent a temporary change to the composition of views as follows:

- **Viewpoint 1** is of low sensitivity to changes of the nature proposed. The impacts of construction activities on views from this location are considered to be moderate in magnitude and potentially negative; hence the resulting effects on views would be of slight adverse significance during this limited period. This category of effect (i.e. slight adverse) would not be considered as significant.
- **Viewpoint 2** is of low sensitivity to changes of the nature proposed. The impacts of construction activities on views from this location are considered to be moderate in magnitude and potentially negative; hence the resulting effects on views would be of slight adverse significance during this limited period. This category of effect (i.e. slight adverse) would not be considered as significant.
- **Viewpoint 3** is of low sensitivity to changes of the nature proposed. The impacts of construction activities on views from this location are considered to be moderate in magnitude and potentially negative; hence the resulting effects on views would be of slight adverse significance during this limited period. This category of effect (i.e. slight adverse) would not be considered as significant.
- **Viewpoint 4** is of low sensitivity to changes of the nature proposed. The impacts of construction activities on views from this location are considered to be moderate in magnitude and potentially negative; hence the resulting effects on views would be of slight adverse significance during this limited period. This category of effect (i.e. slight adverse) would not be considered as significant.
- **Viewpoint 5** is of low sensitivity to changes of the nature proposed. There may be restricted views of tall construction equipment and vehicles carrying construction waste from the site: an impact minor in magnitude and resulting in effects of slight adverse significance during this limited period. This category of effect (i.e. slight adverse) would not be considered as significant.
- **Viewpoint 6** is of low sensitivity to changes of the nature proposed. The impacts of construction activities on views from this location are considered to be minor in magnitude and potentially negative; hence the resulting effects on views would be of slight adverse significance during this limited period. This category of effect (i.e. slight adverse) would not be considered as significant.
- **Viewpoint 7** is of low sensitivity to changes of the nature proposed. The impacts of construction activities on views from this location are considered to be minor in magnitude and potentially negative; hence the resulting effects on views would be of slight adverse significance during this limited period. This category of effect (i.e. slight adverse) would not be considered as significant.
- **Viewpoint 8** is of low sensitivity to changes of the nature proposed; hence whilst there may be distant views of tall construction equipment from this location, the significance of this effect is neutral. This category of effect (i.e. neutral) would not be considered as significant.
- **Viewpoint 9** is of low sensitivity to changes of the nature proposed. Potential distant views of cranes or other tall construction equipment. In the context of an airfield this does not represent a qualitative deterioration or improvement; hence whilst of minor magnitude, the significance of this effect is neutral. This category of effect (i.e. neutral) would not be considered as significant.
- **Viewpoint 10** is of low sensitivity to changes of the nature proposed. Potential distant views of cranes or other tall construction equipment. In the context of an airfield this does not represent a qualitative deterioration or improvement; hence whilst of minor magnitude, the significance of this effect is neutral. This category of effect (i.e. neutral) would not be considered as significant.

6.9. Potential Visual Effects during Operational Phase

Once complete, in terms of scale, massing and materiality the resulting structures would be very similar in nature to the existing as viewed from the representative locations selected. Specific impacts on each viewpoint would be:

- **Viewpoint 1** (low sensitivity). The proposed CBP development would not be visible from this viewpoint. Views of new SASC building partially filtered by existing vegetation, very similar in scale, material composition and colouring to the existing façades within the view –an impact of minor magnitude. The new material finishes would lead to an improvement to the building façade; hence the significance of effects upon views from this location is judged to be **slight beneficial**. This category of effect (i.e. slight beneficial) would not be considered as significant.
- **Viewpoint 2** (low sensitivity). The proposed CBP development would not be visible from this viewpoint. Views of new SASC building partially filtered by existing vegetation, very similar in scale, material composition and colouring to the existing façades within the view –an impact of minor magnitude. The new material finishes would lead to an improvement to the building façade; hence the significance of effects upon views from this location is judged to be **slight beneficial**. This category of effect (i.e. slight beneficial) would not be considered as significant.
- **Viewpoint 3** (low sensitivity). The proposed CBP development would not be visible from this viewpoint. Views of new SASC building partially filtered by existing vegetation, very similar in scale, material composition and colouring to the existing façades within the view –an impact of minor magnitude. The new material finishes would lead to an improvement to the building façade; hence the significance of effects upon views from this location is judged to be **slight beneficial**. This category of effect (i.e. slight beneficial) would not be considered as significant.
- **Viewpoint 4** (low sensitivity). The proposed CBP development would not be visible from this viewpoint. Views of new SASC building partially filtered by existing vegetation, very similar in scale, material composition and colouring to the existing façades within the view –an impact of minor magnitude. The new material finishes would lead to an improvement to the building façade; hence the significance of effects upon views from this location is judged to be **slight beneficial**. This category of effect (i.e. slight beneficial) would not be considered as significant.
- **Viewpoint 5** (low sensitivity). The proposed CBP development would not be visible from this viewpoint. Restricted views of new SASC building, very similar in scale, material composition and colouring to the existing façades visible from this location. Negligible magnitude leading to an effect of **neutral** significance. This category of effect (i.e. neutral) would not be considered as significant.
- **Viewpoint 6** (low sensitivity). The proposed CBP development would not be visible from this viewpoint. Views of new SASC building partially filtered by existing vegetation, very similar in scale, material composition and colouring to the existing façades –an impact of minor magnitude. The new material finishes would lead to an improvement to the building façade; hence the significance of effects upon views from this location is judged to be **slight beneficial**. This category of effect (i.e. slight beneficial) would not be considered as significant.
- **Viewpoint 7** (low sensitivity). Only a very small part of the upper part of the proposed CBP extension building would not be visible from this viewpoint and would include material finishes similar to existing facades. Restricted views of new SASC building, very similar in scale, material composition and colouring to the existing façades visible from this location. Negligible magnitude leading to an effect of **neutral** significance. This category of effect (i.e. neutral) would not be considered as significant.
- **Viewpoint 8** (low sensitivity). Potential distant views of new CBP structure, very similar in scale, material composition and colouring to the existing façade visible from this location. Significance of effect is **neutral**. This category of effect (i.e. neutral) would not be considered as significant.
- **Viewpoint 9** (low sensitivity). Potential distant views of new CBP structure, very similar in scale, material composition and colouring to the existing façade visible from this location. Negligible magnitude leading to an effect of **neutral** significance. This category of effect (i.e. neutral) would not be considered as significant.
- **Viewpoint 10** (low sensitivity). Potential distant views of new CBP structure (albeit mostly screened by Pier 4), very similar in scale, material composition and colouring to the existing façade visible from this location. Negligible magnitude leading to an effect of **neutral** significance. This category of effect (i.e. neutral) would not be considered as significant.

6.10. Mitigation Measures

There would be no significant landscape and visual effects as a result the proposed development. Therefore no further mitigation measures are recommended to avoid, reduce or offset significant effects.

6.11. Residual Impacts

6.11.1. Landscape Effects

The overall effect on landscape character may be considered to be **slight beneficial** in significance for the SASC building and **neutral** in significance for the CBP extension. These categories of effects (slight beneficial and neutral respectively) would not be significant.

6.11.2. Visual Effects

The overall effects on visual amenity may be considered to be of **slight beneficial** significance for the SASC building and **neutral** in significance for the CBP extension. These categories of effects (slight beneficial and neutral respectively) would not be significant.

6.12. Interaction with other Environmental Attributes

Refer also to Section 5 Biodiversity for further information on the effects of the development on vegetation.

6.13. Cumulative Impacts

There would be no additional cumulative landscape and visual effects arising from all elements of the proposed development to those already described in this chapter.

7. Air Quality

7.1. Introduction

This Chapter assesses the likely significant effects on air quality associated with the proposed development at Dublin Airport, Co. Dublin. A description of the development can be found in Chapter 2 – Project Description.

This chapter was completed by Dr. Jovanna Arndt , an Environmental Consultant in the Air Quality section of AWN Consulting. She holds a BSc (Hons) in Environmental Science from University College Cork and completed a PhD in Atmospheric Chemistry at University College Cork in 2016. She is a Member of the Institute of Air Quality Management and specialises in assessing transportation impacts on air quality using dispersion modelling and source apportionment of particulate matter. Jovanna has been involved in assessing air quality impacts from major Highways England road schemes, Clean Air Zones and major rail infrastructure in the form of HS2. She has also provided Air Quality Action Plan (AQAP) and Air Quality Management Area (AQMA) support to several UK councils.

7.2. Methodology

7.2.1. Criteria for Rating of Effects

7.2.1.1. Ambient Air Quality Standards

In order to reduce the risk to health from poor air quality, National and European statutory bodies have set limit values in ambient air for a range of air pollutants. These limit values or "Air Quality Standards" are health or environmental-based levels for which additional factors may be considered. For example, natural background levels, environmental conditions and socio-economic factors may all play a part in the limit value which is set.

Air quality significance criteria are assessed on the basis of compliance with the appropriate standards or limit values. The applicable standards in Ireland include the Air Quality Standards Regulations 2022 (S.I. No. 739 of 2022), which incorporate European Commission Directive 2008/50/EC. This has set limit values for a number of pollutants with the limit values for NO_2, PM_{10} and $PM_{2.5}$ being relevant to this assessment (see Table 7-1). Council Directive 2008/50/EC combines the previous Air Quality Framework Directive (96/62/EC) and its subsequent daughter directives (including 1999/30/EC and 2000/69/EC).

Table 7-1 – Ambient Air Quality Standards & TA Luft

Pollutant	Regulation Note [1]	Limit Type	Value
Nitrogen Dioxide	2008/50/EC	Hourly limit for protection of human health – not to be exceeded more than 18 times/year	200 µg/m^3
		Annual limit for protection of human health	40 µg/m^3
Particulate Matter (as PM_{10})	2008/50/EC	24-hour limit for protection of human health – not to be exceeded more than 35 times/year	50 µg/m^3 PM_{10}
		Annual limit for protection of human health	40 µg/m^3 PM_{10}
Particulate Matter (as $PM_{2.5}$)	2008/50/EC	Annual limit for protection of human health	25 µg/m^3 $PM_{2.5}$

Note 1 EU 2008/50/EC – Clean Air For Europe (CAFÉ) Directive replaces the previous Air Framework Directive (1996/62/EC) and daughter directives 1999/30/EC and 2000/69/EC

7.2.1.2. Dust Deposition Guidelines

The concern from a health perspective is focused on particles of dust which are less than 10 microns and the EU ambient air quality standards outlined in Section 7.2.1.1 have set ambient air quality limit values for PM_{10} and $PM_{2.5}$.

With regard to larger dust particles that can give rise to nuisance dust, there are no statutory guidelines regarding the maximum dust deposition levels that may be generated during the construction phase of a development in Ireland.

However, guidelines for dust deposition, the German TA-Luft standard for dust deposition (non-hazardous dust) (German VDI, 2002) sets a maximum permissible emission level for dust deposition of 350 mg/m²/day averaged over a one-year period at any receptors outside the site boundary. The TA-Luft standard has been applied for the purpose of this assessment based on recommendations from the EPA in Ireland in the document titled 'Environmental Management Guidelines - Environmental Management in the Extractive Industry (Non-Scheduled Minerals) (EPA, 2006). The document recommends that the TA Luft limit of 350 mg/m²/day be applied to the site boundary of quarries. This limit value can be implemented with regard to dust effects from construction of the proposed development, as it is considered the accepted approach and best practice.

7.2.2. Construction Phase

The Institute of Air Quality Management in the UK (IAQM) guidance document '*Guidance on the Assessment of Dust from Demolition and Construction*' (2014) outlines an assessment method for predicting the effect of dust emissions from demolition, earthworks, construction and haulage activities based on the scale and nature of the works and the sensitivity of the area to dust effects. The IAQM methodology has been applied to the construction phase of this development in order to predict the likely risk of dust effects in the absence of mitigation measures and to determine the level of site-specific mitigation required. The UK guidance is recommended for use in the Transport Infrastructure Ireland (TII) guidance document *PE-ENV-01106 'Air Quality Assessment of Specified Infrastructure Projects'* (2022).

Construction phase traffic also has the potential to effects air quality. The TII guidance document *PE-ENV-01106 'Air Quality Assessment of Specified Infrastructure Projects'* (2022), states that road links meeting one or more of the following criteria can be defined as being 'affected' by a proposed development and should be included in the local air quality assessment. This approach is considered best practice and can be applied to any development that causes a change in traffic.

- Annual average daily traffic (AADT) changes by 1,000 or more;
- Heavy duty vehicle (HDV) AADT changes by 200 or more;
- Daily average speed change by 10 kph or more;
- Peak hour speed change by 20 kph or more;
- A change in road alignment by 5m or greater.

The construction stage traffic has been reviewed against the above criteria to determine whether a detailed air quality assessment is required for the construction phase. It was determined that as the construction stage traffic does not meet any of the above criteria a detailed air quality assessment is not required as there is no potential for significant effects to air quality from traffic emissions.

7.2.3. Operational Phase

Operational phase traffic has the potential to effect air quality. The air quality assessment has been carried out following procedures described in the publications by the EPA (2015; 2022) and using the methodology outlined in the guidance documents published by TII (2022). This approach is considered best practice and can be applied to any development that causes a change in traffic.

The TII PE-ENV-01106 (2022) scoping criteria outlined in Section 7.2.2 was used to determine the road links required for inclusion in the modelling assessment. As none of the road links impacted by the proposed development met the scoping criteria a detailed assessment was scoped out as there is no potential for significant effects to air quality from traffic emissions.

7.3. Receiving Environment

7.3.1. Meteorological Data

A key factor in assessing temporal and spatial variations in air quality is the prevailing meteorological conditions. Depending on wind speed and direction, individual receptors may experience very significant variations in pollutant levels under the same source strength (i.e. traffic levels) (WHO, 2021). Wind is of key importance in dispersing air pollutants and for ground level sources, such as traffic emissions, pollutant concentrations are generally inversely related to wind speed. Thus, concentrations of pollutants derived from traffic sources will generally be greatest under very calm conditions and low wind speeds when the movement of air is restricted.

In relation to PM_{10}, the situation is more complex due to the range of sources of this pollutant. Smaller particles (less than $PM_{2.5}$) from traffic sources will be dispersed more rapidly at higher wind speeds. However, fugitive emissions of coarse particles ($PM_{2.5}$ - PM_{10}) will actually increase at higher wind speeds. Thus, measured levels of PM_{10} will be a non-linear function of wind speed.

The nearest representative weather station collating detailed weather records is Dublin Airport meteorological station. Dublin Airport met data has been examined to identify the prevailing wind direction and average wind speeds over a five-year period (see Figure 7-1). For data collated during five representative years (2018 - 2022, the predominant wind direction is westerly to south-westerly with a mean wind speed of 5.3 m/s over the period 1981 - 2010 (Met Eireann, 2023).

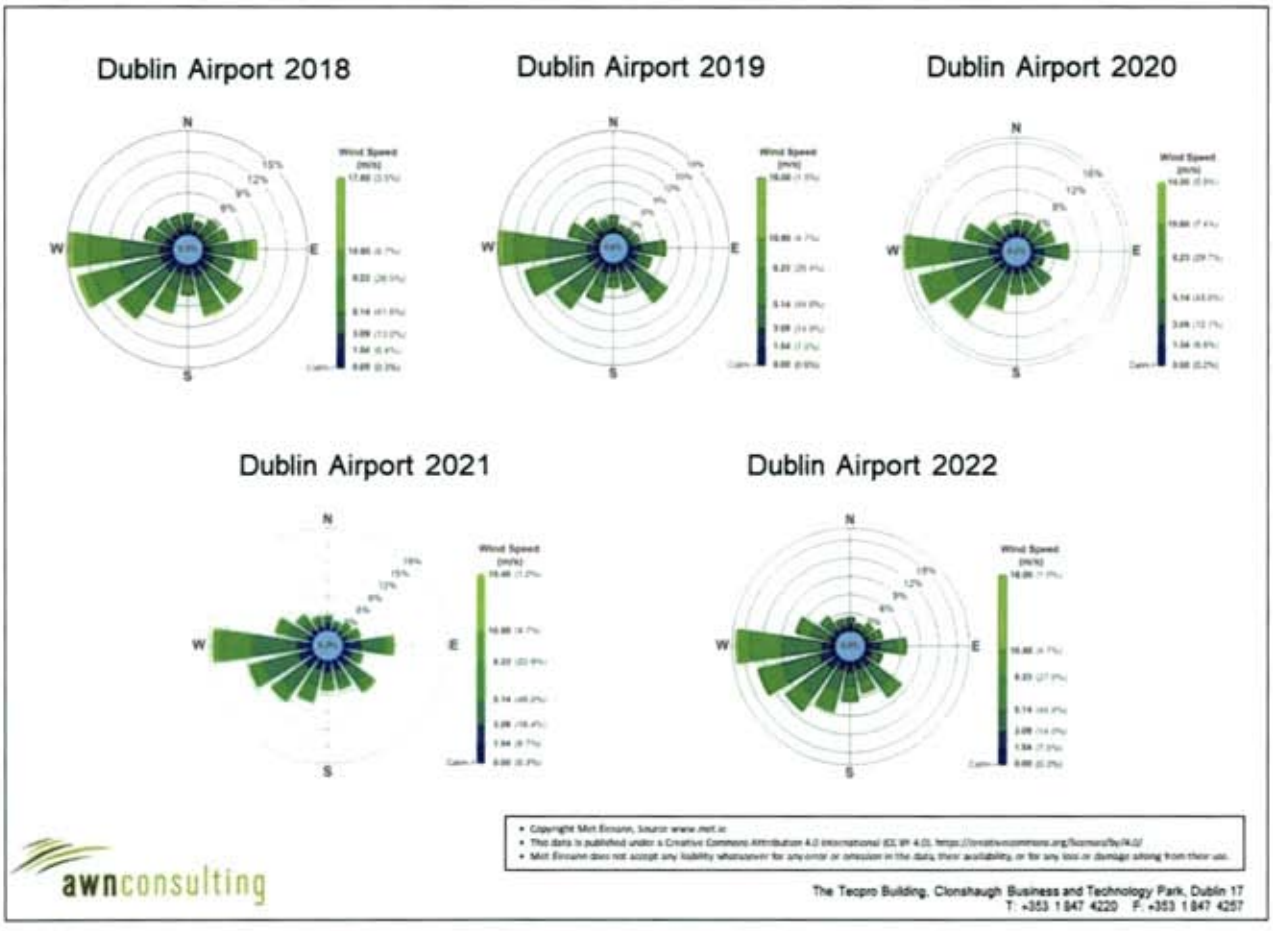

Figure 7-1 – Dublin Airport Windrose 2018 – 2022 (Met Éireann, 2023)

7.3.2. Baseline Air Quality

Air quality monitoring programs have been undertaken in recent years by the EPA. The most recent annual report on air quality in Ireland is "*Air Quality In Ireland 2021*" (EPA, 2022a). The EPA website details the range and scope of monitoring undertaken throughout Ireland and provides both monitoring data and the results of previous air quality assessments (EPA, 2023).

As part of the implementation of the Air Quality Standards Regulations 2022 (S.I. No. 739 of 2022) four air quality zones have been defined in Ireland for air quality management and assessment purposes (EPA, 2023). Dublin is defined as Zone A and Cork as Zone B. Zone C is composed of 23 towns with a population of greater than 15,000. The remainder of the country, which represents rural Ireland but also includes all towns with a population of less than 15,000, is defined as Zone D.

In terms of air monitoring and assessment, the proposed development site is within Zone A (EPA, 2023). The long-term monitoring data has been used to determine background concentrations for the key pollutants in the region of the proposed development. The background concentration accounts for all non-traffic derived emissions (e.g. natural sources, industry, home heating etc.).

In 2020 the EPA reported (EPA, 2022a) that Ireland was compliant with EU legal air quality limits at all locations, however this was largely due to the reduction in traffic due to Covid-19 restrictions. The EPA *Air Quality in Ireland 2020* report details the effect that the Covid-19 restrictions had on air monitoring stations, which included

reductions of up to 50% at some monitoring stations which have traffic as a dominant source. 2020 concentrations are therefore predicted to be an exceptional year and not consistent with long-term trends. The EPA *Air Quality in Ireland 2021* report details a return to pre-COVID-19 traffic levels where monitoring stations had traffic as a dominant source and as such, once again can be used to determine baseline levels of pollutants in the vicinity of the proposed development.

NO_2

With regard to NO_2, continuous monitoring data from the EPA (EPA, 2022a), at suburban Zone A background locations in Rathmines, Dun Laoghaire, Swords and Ballyfermot show that current levels of NO_2 are below both the annual and 1-hour limit values, with annual average levels ranging from 11 – 22 µg/m³ over the period 2017 – 2021 (see Table 7-2). Swords is the closest representative monitoring station to the proposed development. Based on these results, an estimate of the current background NO_2 concentration in the region of the proposed development is 16 µg/m³.

Table 7-2 – Trends In Zone A Air Quality – Nitrogen Dioxide (µg/m³)

Station	Averaging Period	Year				
		2017	2018	2019	2020	2021
Rathmines	Annual Mean NO_2 (µg/m³)	17	20	22	13	14
	99.8th%ile 1-hr NO_2 (µg/m³)	86	87	102	81	69
Ballyfermot	Annual Mean NO_2 (µg/m³)	17	17	20	12	13
	99.8th%ile 1-hr NO_2 (µg/m³)	112	101	101	83	73
Dún Laoghaire	Annual Mean NO_2 (µg/m³)	17	19	15	14	16
	99.8th%ile 1-hr NO_2 (µg/m³)	101	91	91	78	73
Swords	Annual Mean NO_2 (µg/m³)	14	16	15	11	11
	99.8th%ile 1-hr NO_2 (µg/m³)	79	85	80	65	63

Note 1: Annual average limit value of 40 µg/m³ and hourly limit value of 200 µg/m³ (EU Council Directive 2008/50/EC & S.I. No. 739 of 2022).
Note 2: Data for 2020 shown for representative purposes only, not used in determining background concentrations

PM_{10}

Long-term PM_{10} monitoring was carried out at the suburban Zone A locations of Rathmines, Dún Laoghaire, Tallaght, Phoenix Park and Ballyfermot. Concentrations over the 2017 – 2021 period are in compliance with both the annual and daily limit values (EPA, 2022a). The average annual mean concentrations range from 9 – 16 µg/m³ over the period 2017– 2021 (see Table 7-3). In addition, there were at most 9 exceedances (in Rathmines in 2019) of the daily limit value of 50 µg/m³, albeit 35 exceedances are permitted per year. Based on the above information an estimated background concentration of 14 µg/m³ has been used in this assessment.

Table 7-3 – Trends in Zone A Air Quality – PM_{10} (µg/m³)

Station	Averaging Period	Year				
		2017	2018	2019	2020	2021
Ballyfermot	Annual Mean PM_{10} (µg/m³)	12	16	14	12	12
	24-hr Mean > 50 µg/m³ (days)	1	0	7	2	0
Dún Laoghaire	Annual Mean PM_{10} (µg/m³)	12	13	12	12	11
	24-hr Mean > 50 µg/m³ (days)	2	0	2	0	0

Tallaght	Annual Mean PM_{10} (µg/m³)	12	15	12	10	10
	24-hr Mean > 50 µg/m³ (days)	2	1	3	0	0
Rathmines	Annual Mean PM_{10} (µg/m³)	13	15	15	11	12
	24-hr Mean > 50 µg/m³ (days)	5	2	9	2	0
Phoenix Park	Annual Mean PM_{10} (µg/m³)	9	11	11	10	10
	24-hr Mean > 50 µg/m³ (days)	1	0	2	0	0

Note 1: Data for 2020 shown for representative purposes only, not used in determining background concentrations

$PM_{2.5}$

Annual mean concentrations of $PM_{2.5}$ monitoring at the Zone A location of Rathmines over the period 2017 – 2021 (EPA, 2022a) ranged from 8 - 10 µg/m³ and indicated an average $PM_{2.5}/PM_{10}$ ratio ranging from 0.60 – 0.75. Based on this information, a conservative ratio of 0.8 was used to generate a background $PM_{2.5}$ concentration of 11.2 µg/m³.

Based on the above information the air quality in the Dublin area is generally good, with concentrations of the key pollutants generally well below the relevant limit values. However, the EPA have indicated that road transport emissions are contributing to increased levels of NO_2, with the potential for breaches in the annual NO_2 limit value in future years at locations within urban centres and roadside locations. In addition, burning of solid fuels for home heating is contributing to increased levels of particulate matter (PM_{10} and $PM_{2.5}$). The EPA predict that exceedances in the particulate matter limit values are likely in future years if burning of solid fuels for residential heating continues (EPA, 2022a).

7.3.3. Sensitivity of the Receiving Environment

In line with the UK Institute of Air Quality Management (IAQM) guidance document 'Guidance on the Assessment of Dust from Demolition and Construction' (2014) prior to assessing the effect of dust from a proposed development the sensitivity of the area must first be assessed as outlined below. Both receptor sensitivity and proximity to proposed works areas are taken into consideration. For the purposes of this assessment, high sensitivity receptors are regarded as residential properties where people are likely to spend the majority of their time. Commercial properties and places of work are regarded as medium sensitivity while low sensitivity receptors are places where people are present for short periods or do not expect a high level of amenity.

In terms of receptor sensitivity to dust soiling as per IAQM Guidance (IAQM 214), Dublin Airport is the only medium sensitivity property within 20m of the main works area of the proposed development site. Based on the IAQM criteria outlined in Table 7-4, the worst case sensitivity of the area to dust soiling is considered **medium**.

Table 7-4 – Sensitivity of the Area to Dust Soiling Effects on People and Property

Receptor Sensitivity	Number Of Receptors	Distance from source (m)			
		<20	<50	<100	<350
High	>100	High	High	Medium	Low
	10-100	High	Medium	Low	Low
	1-10	Medium	Low	Low	Low
Medium	>1	**Medium**	Low	Low	Low
Low	>1	Low	Low	Low	Low

In addition to sensitivity to dust soiling, the IAQM guidelines also outline the assessment criteria for determining the sensitivity of the area to human health effects. The criteria take into consideration the current annual mean PM_{10} concentration, receptor sensitivity based on type (residential receptors are classified as high sensitivity) and the number of receptors affected within various distance bands from the construction works. In terms of receptor sensitivity to human health effects, the IAQM guidance defines high sensitivity receptors as "*locations where members of the public are exposed over a time period relevant to the air quality objective for PM_{10} (in the case of the 24-hour objectives, a relevant location would be one where individuals may be exposed for eight hours or more in a day)*" (IAQM, 2014). Examples include residential properties, schools and hospitals. Office

and shop workers are considered of medium sensitivity. Low sensitivity receptors are areas where exposure is transient such as public footpaths and shopping streets.

A conservative estimate of the current annual mean PM_{10} concentration in the vicinity of the proposed development is 14 µg/m^3 and Dublin Airport is the only medium sensitivity receptor located within 20m of the proposed development site. Based on the IAQM criteria outlined in Table 7-5, the worst case sensitivity of the area to human health effects is considered **low**.

Table 7-5 – Sensitivity of the Area to Human Health Effects

Receptor Sensitivity	Annual Mean PM_{10} Concentration	Number Of Receptors	Distance from source (m)				
			<20	<50	<100	<200	<350
High	< 24 µg/m^3	>100	Medium	Low	Low	Low	Low
		10-100	Low	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
Medium	< 24 µg/m^3	>10	Low	Low	Low	Low	Low
		1-10	**Low**	Low	Low	Low	Low
Low	< 24 µg/m^3	>1	Low	Low	Low	Low	Low

Ecological sites within 50 m of the proposed development site need to be considered in relation to dust effects (IAQM, 2014). There are no designated ecological sites within 50m of the boundary of the site and as such the sensitivity of the area to dust related ecological effects is not applicable

7.4. Potential Effects on Air Quality during Construction Phase

7.4.1. Air Quality

The construction phase has the potential to effect air quality through construction dust emissions. The following determines the potential dust effects as a result of the proposed development. Section 7.11 determines the cumulative construction dust effects as a result of the overlapping construction phases of the proposed development and other proposed and permitted developments within 350m of the site (IAQM 214).

While construction dust tends to be deposited within 350m of a construction site, the majority of the deposition occurs within the first 50m. After 350m the potential for dust impact is considered to be neutral. The extent of any dust generation depends on the nature of the dust (soils, peat, sands, gravels, silts etc.) and the nature of the construction activity. In addition, the potential for dust dispersion and deposition depends on local meteorological factors such as rainfall, wind speed and wind direction. A review of Dublin Airport meteorological data (see Section 7.3.1) indicates that the prevailing wind direction is westerly to south-westerly and wind speeds are generally moderate in nature. In addition, dust generation is considered negligible on days where rainfall is greater than 0.2 mm. A review of historical 30 year average data for Dublin Airport indicates that on average 191 days per year have rainfall over 0.2 mm (Met Éireann, 2023) and therefore it can be determined that over 50% of the time dust generation will be reduced.

In order to determine the level of dust mitigation required during the proposed works, the potential dust emission magnitude for each dust generating activity needs to be taken into account, in conjunction with the previously established sensitivity of the area (see Section 7.3.3). The major dust generating activities are divided into four types within the IAQM guidance to reflect their different potential effects.

These are:

- Demolition;
- Earthworks;
- Construction; and
- Trackout (movement of heavy vehicles).

Demolition

Demolition primarily involves the removal of buildings or structures currently on the site in a potentially dusty manner. This may also involve dust generation at heights. Dust emission magnitude from demolition can be classified as small, medium and large and are described below.

- **Large**: Total building volume >50,000 m^3, potentially dusty construction material (e.g. concrete), on-site crushing and screening, demolition activities >20 m above ground level;
- **Medium**: Total building volume 20,000 m^3 – 50,000 m^3, potentially dusty construction material, demolition activities 10-20 m above ground level; and
- **Small**: Total building volume less than 20,000 m^3.

As per the outline above, the dust emission magnitude for the proposed demolition activities can be classified as 'medium' due to the volume of demolition proposed. As the overall sensitivity of the area to dust soiling effects is medium there is a medium risk of dust soiling effects from the proposed demolition activities according to the IAQM guidance (see Table 7-6). There is an overall low risk of human health effects as a result of the demolition activities as the overall sensitivity of the area to human health effects is low (Section 7.3.3).

Table 7-6 – Risk of Dust Effects - Demolition

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Medium Risk
Medium	High Risk	Medium Risk	Low Risk
Low	Medium Risk	Low Risk	Negligible

Earthworks

Earthworks primarily involve excavating material, loading and unloading of materials, tipping and stockpiling activities. Activities such as levelling the site and landscaping works are also considered under this category. The dust emission magnitude from earthworks can be classified as small, medium or large based on the definitions from the IAQM guidance as transcribed below:

- **Large:** Total site area > 10,000 m^2, potentially dusty soil type (e.g. clay which will be prone to suspension when dry due to small particle size), >10 heavy earth moving vehicles active at any one time, formation of bunds > 8 m in height, total material moved >100,000 tonnes;
- **Medium:** Total site area 2,500 m^2 – 10,000 m^2, moderately dusty soil type (e.g. silt), 5 - 10 heavy earth moving vehicles active at any one time, formation of bunds 4 – 8 m in height, total material moved 20,000 – 100,000 tonnes;
- **Small:** Total site area < 2,500 m^2, soil type with large grain size (e.g. sand), < 5 heavy earth moving vehicles active at any one time, formation of bunds < 4 m in height, total material moved < 20,000 tonnes, earthworks during wetter months.

Following the IAQM guidance (2014), the proposed earthworks can be classified as 'large' as a worst case due to the total site area. When combining this with the previously established sensitivity of the area (Section 7.3.3) this results in an overall medium risk of dust soiling effects and a low risk of human health effects as a result of earthworks activities (see Table 7-7) (IAQM 2014).

Table 7-7 – Risk of Dust Effects - Earthworks

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible

Construction

Dust emission magnitude from construction can be classified as small, medium or large based on the definitions from the IAQM guidance as transcribed below:

- **Large**: Total building volume > 100,000 m3, on-site concrete batching, sandblasting;
- **Medium:** Total building volume 25,000 m3 – 100,000 m3, potentially dusty construction material (e.g. concrete), on-site concrete batching;

- **Small:** Total building volume < 25,000 m3, construction material with low potential for dust release (e.g. metal cladding or timber).

The dust emission magnitude from construction associated with the proposed works can be classified as 'large', as a worst case estimate of the construction volumes. Therefore, there is an overall medium risk of dust soiling effects and a low risk of human health effects as a result of the proposed construction activities (Table 7-8) (IAQM 2014).

Table 7-8 – Risk of Dust Effects – Construction

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible

Trackout

Factors which determine the dust emission magnitude are vehicle size, vehicle speed, number of vehicles, road surface material and duration of movement. Dust emission magnitude from trackout can be classified as small, medium or large based on the definitions from the IAQM guidance as transcribed below:

- **Large:** > 50 HGV (> 3.5 t) outward movements in any one day, potentially dusty surface material (e.g. high clay content), unpaved road length > 100 m;
- **Medium**: 10 - 50 HGV (> 3.5 t) outward movements in any one day, moderately dusty surface material (e.g. high clay content), unpaved road length 50 - 100 m;
- **Small:** < 10 HGV (> 3.5 t) outward movements in any one day, surface material with low potential for dust release, unpaved road length < 50 m.

The dust emission magnitude for the proposed trackout can be classified as 'medium as worst-case. There will be greater than 10 but less than 50 outward HGV movements per day at peak times. As outlined in Table 7-9, combining this with a medium sensitivity to dust soiling results in an overall medium risk of effects as a result of the proposed trackout activities in the absence of mitigation. There is an overall low risk of human health effects as a result of trackout activities as the overall sensitivity of the area to human health effects is low (Section 7.3.3).

Table 7-9 – Risk of Dust Effects – Trackout

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible

Summary of Dust Emission Risk

The risk of dust effects as a result of the proposed development are summarised in Table 7-10 for each activity. The magnitude of risk determined is used to prescribe the level of site specific mitigation required for each activity in order to prevent significant effects occurring.

There is at most a high risk of dust effects as a result of the proposed construction phase. Therefore, in order to ensure that no dust nuisance occurs during the demolition, earthworks, construction and trackout activities, dust mitigation measures associated with high risk effects will be implemented. When the dust mitigation measures detailed in the mitigation section of this chapter (Section 7.6) are implemented, fugitive emissions of dust from the site will be insignificant and pose no nuisance at nearby receptors. In the absence of mitigation, there is the potential for short-term, localised, slight dust related effects to air quality as a result of the proposed development.

Table 7-10 – Summary of Dust Effect Risk used to Define Site-Specific Mitigation

Potential Effect	Dust Emission Magnitude			
	Demolition	Earthworks	Construction	Trackout

Dust Soiling	Medium Risk	Medium Risk	Medium Risk	Medium Risk
Human Health	Low Risk	Low Risk	Low Risk	Low Risk

There is also the potential for traffic emissions to effect air quality in the short-term over the construction phase. Particularly due to the increase in HGVs accessing the site. The construction stage traffic has been reviewed and a detailed air quality assessment has been scoped out as none of the road links effected by the proposed development satisfy the TII assessment criteria in Section 7.2.2.

It can therefore be determined that the construction stage traffic will have an imperceptible, direct, neutral and short-term effect on air quality.

7.4.2. Human Health

Dust emissions from the construction phase of the proposed development have the potential to impact human health through the release of PM_{10} and $PM_{2.5}$ emissions. As per Section 7.3.3 the surrounding area is of low sensitivity to dust related human health impacts. It was determined that there is an overall medium risk of dust impacts from demolition works and a low risk of dust related human health effects as a result of the construction phase of the proposed development. Therefore, in the absence of mitigation there is the potential for slight, direct, adverse, short-term effects to human health as a result of the proposed development.

7.5. Potential Effects on Air Quality & Climate during Operational Phase

7.5.1. Air Quality

There is the potential for a number of emissions to the atmosphere during the operational phase of the development. In particular, the traffic-related air emissions may generate quantities of air pollutants such as NO_2, PM_{10} and $PM_{2.5}$.

Traffic flow information obtained from the consulting engineers on this project, was reviewed prior to assessing the effect of the proposed development. It was concluded that further assessment of effects from the aforementioned pollutant emissions can be screened out using the TII PE-ENV-01106 (2022) guidance.

The proposed development will not increase traffic levels, therefore, an assessment of the effect of traffic emissions during the operational phase on ambient air quality is not necessary as no significant effects are likely. There is the potential for maintenance vehicles accessing the site to result in emissions of NO_2, PM_{10}/$PM_{2.5}$ and CO_2. However, due to the infrequent nature of maintenance activities and the low number of vehicles involved emissions are not predicted to be significant. It can be concluded that the effect of the proposed development in terms of air quality is long-term, localised, direct, neutral and imperceptible.

7.5.2. Human Health

Traffic related air emissions have the potential to effect air quality which can affect human health. However, there is no change in operational traffic associated with the proposed development is not of the magnitude to result in significant effects. Levels of all pollutants are predicted to be below the ambient air quality standards set for the protection of human health (Table 7-1) once the proposed development is operational. It can be determined that the effect to human health during the operational stage is long-term, direct, neutral and imperceptible.

7.6. Mitigation Measures

7.6.1. Construction Stage

The objective of dust control at the site is to ensure that no significant nuisance occurs at nearby sensitive receptors. In order to develop a workable and transparent dust control strategy, the following mitigation measures have been recommended by drawing on best practice guidance from Ireland, the UK (IAQM (2014), BRE (2003), The Scottish Office (1996), UK ODPM (2002)) and the USA (USEPA, 1997). These measures will be incorporated into the Construction Environmental Management Plan (CEMP) prepared for the site.

Site Management

The aim is to ensure good site management by avoiding dust becoming airborne at source. This will be done through good design and effective control strategies.

At the construction planning stage, the siting of activities and storage piles will take note of the location of sensitive receptors and prevailing wind directions in order to minimise the potential for significant dust nuisance (see Figure 7-1 for the windrose for Dublin Airport). As the prevailing wind is predominantly westerly to south-westerly, locating construction compounds and storage piles downwind of sensitive receptors will minimise the potential for dust nuisance to occur at sensitive receptors.

Good site management will include the ability to respond to adverse weather conditions by either restricting operations on-site or quickly implementing effective control measures before the potential for nuisance occurs. When rainfall is greater than 0.2mm/day, dust generation is generally suppressed (IAQM, 2014; UK ODPM, 2002). The potential for significant dust generation is also reliant on threshold wind speeds of greater than 10 m/s (19.4 knots) (at 7m above ground) to release loose material from storage piles and other exposed materials (USEPA, 1986). Particular care should be taken during periods of high winds (gales) as these are periods where the potential for significant dust emissions are highest. The prevailing meteorological conditions in the vicinity of the site are favourable in general for the suppression of dust for a significant period of the year. Nevertheless, there will be infrequent periods where care will be needed to ensure that dust nuisance does not occur. The following measures shall be taken in order to avoid dust nuisance occurring under unfavourable meteorological conditions:

- The Principal Contractor or equivalent must monitor the contractors' performance to ensure that the proposed mitigation measures are implemented and that dust effects and nuisance are minimised;
- During working hours, dust control methods will be monitored as appropriate, depending on the prevailing meteorological conditions;
- The name and contact details of a person to contact regarding air quality and dust issues shall be displayed on the site boundary, this notice board should also include head/regional office contact details;
- A complaints register will be kept on site detailing all telephone calls and letters of complaint received in connection with dust nuisance or air quality concerns, together with details of any remedial actions carried out;
- It is the responsibility of the contractor at all times to demonstrate full compliance with the dust control conditions herein;
- At all times, the procedures put in place will be strictly monitored and assessed.

The dust minimisation measures shall be reviewed at regular intervals during the works to ensure the effectiveness of the procedures in place and to maintain the goal of minimisation of dust through the use of best practice and procedures. In the event of dust nuisance occurring outside the site boundary, site activities will be reviewed and satisfactory procedures implemented to rectify the problem. Specific dust control measures to be employed are described below.

Preparing and Maintaining the Site

- Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.
- Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.
- Fully enclose specific operations where there is a high potential for dust production and the site is active for an extensive period.
- Avoid site runoff of water or mud.
- Keep site fencing, barriers and scaffolding clean using wet methods.
- Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below.
- Cover, seed or fence stockpiles to prevent wind whipping.

Operating Vehicles / Machinery and Sustainable Travel

- Ensure all vehicles switch off engines when stationary – no idling vehicles.
- Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable.

- Impose and signpost a maximum-speed-limit of 20 kph haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker, where appropriate).

Operations

- Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.
- Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.
- Use enclosed chutes and conveyors and covered skips.
- Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.
- Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.

Waste Management

- Avoid bonfires and burning of waste materials.

Measures Specific to Demolition

- Prior to demolition blocks should be soft striped inside buildings (retaining walls and windows in the rest of the building where possible, to provide a screen against dust).
- During the demolition process, water suppression should be used, preferably with a hand-held spray. Only the use of cutting, grinding or sawing equipment fitted or used in conjunction with a suitable dust suppression technique such as water sprays/local extraction should be used.
- Drop heights from conveyors, loading shovels, hoppers and other loading equipment should be minimised, if necessary fine water sprays should be employed.

Measures Specific to Earthworks

- Re-vegetate earthworks and exposed areas/soil stockpiles to 107inimizat surfaces as soon as practicable.
- Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable.
- Only remove the cover in small areas during work and not all at once.
- During dry and windy periods, and when there is a likelihood of dust nuisance, a bowser will operate to ensure moisture content is high enough to increase the stability of the soil and thus suppress dust.

Measures Specific to Construction

- Avoid scabbling (roughening of concrete surfaces) if possible.
- Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.
- Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.
- For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust.

Measures Specific to Trackout

Site roads (particularly unpaved) can be a significant source of fugitive dust from construction sites if control measures are not in place. The most effective means of suppressing dust emissions from unpaved roads is to apply speed restrictions. Studies show that these measures can have a control efficiency ranging from 25 to 80% (UK ODPM, 2002).

- A speed restriction of 20 km/hr will be applied as an effective control measure for dust for on-site vehicles.
- Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use. If sweeping using a road sweeper is not possible due to the nature of the surrounding area then a suitable smaller scale street cleaning vacuum will be used.
- Avoid dry sweeping of large areas.

- Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.
- Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.
- Record all inspections of haul routes and any subsequent action in a site log book.
- Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned.
- Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).
- Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits.
- Access gates to be located at least 10 m from receptors where possible.

Summary of Dust Mitigation Measures

The pro-active control of fugitive dust will ensure that the prevention of significant emissions, rather than an inefficient attempt to control them once they have been released, will contribute towards the satisfactory performance of the contractor. The key features with respect to control of dust will be:

- The specification of a site policy on dust and the identification of the site management responsibilities for dust issues;
- The development of a documented system for managing site practices with regard to dust control;
- The development of a means by which the performance of the dust minimisation measures can be regularly monitored and assessed; and
- The specification of effective measures to deal with any complaints received.

7.6.2. Operational Stage

There are no mitigation measures proposed for the operational phase of the proposed development as effects are predicted to be imperceptible.

7.7. Residual Effects

7.7.1. Construction Stage

7.7.1.1. Air Quality

In order to minimise dust emissions during construction, a series of mitigation measures have been prepared (Section 7.6.1). Provided the dust minimisation measures outlined are adhered to, the predicted residual air quality effects during the construction phase are direct, short-term, adverse, localised, not significant and imperceptible.

7.7.1.2. Human Health

The measures outlined in Section 7.6.1 are mitigation measures for high risk sites. They will focus on the proactive control of dust and other air pollutants to minimise generation of emissions at source. The mitigation measures that will be put in place during construction of the proposed development will ensure that the development complies with all EU ambient air quality legislative limit values which are based on the protection of human health (see Table 7-1). Therefore, the predicted residual impact of construction of the proposed development is direct, adverse, not significant, short-term and imperceptible with respect to human health.

7.7.2. Operational Stage

7.7.2.1. Air Quality

As the traffic generated by the proposed development does not meet the criteria detailed in Section 7.2.2 for requiring a detailed air quality assessment, the residual effect to air quality from traffic emissions during the operational stage is predicted to be direct, neutral, long-term, not significant and imperceptible.

7.7.2.2. Human Health

Emissions of air pollutants are predicted to be significantly below the ambient air quality standards which are based on the protection of human health (Table 7-1). Effects to human health are long-term, direct, not significant, neutral and imperceptible.

7.7.3. Worst Case Effect

Worst case estimates have been used as part of this assessment. As a result Section 7.4 details the worst case effect for the proposed development.

7.7.4. Do-Noting Effect

In the Do Nothing scenario, ambient air quality at the site will remain as per the baseline and will change in accordance with trends within the wider area (including influences from potential new developments in the surrounding area, changes in road traffic, etc). The Do Nothing scenario is considered neutral in terms of air quality.

7.8. Monitoring Requirements

There is no monitoring recommended for the construction and operational phases of the proposed development.

7.9. Difficulties Encountered

No difficulties were encountered when compiling this chapter.

7.10. Cumulative Effects

7.10.1. Construction Phase

According to the IAQM guidance (2014) should the construction phase of the proposed development coincide with the construction phase of any other development within 350m then there is the potential for cumulative construction dust effects. Permitted and existing developments under construction within 350m of the site have been reviewed in conjunction with the effects of the proposed development to determine the potential for cumulative construction dust effects.

There are currently no developments within 350m of the site that have the potential for cumulative construction dust effects to air quality. Should the construction phases of any development coincide with that of the proposed development then there is the potential for cumulative construction dust effects to nearby receptors.

However, provided the mitigation measures outlined in Section 7-6 are in place for the duration of the construction phase cumulative dust related effects to nearby sensitive receptors are not predicted to be significant. Cumulative effects to air quality will be direct, not significant, short-term, localised, negative and imperceptible.

7.10.2. Operational Phase

The traffic data provided for the operational stage effects to air quality included the cumulative traffic associated with other existing and permitted developments in the local area where such information was available. Therefore, the cumulative effect is included within the operational stage effect for the proposed development (see Section 7.5). The effect is predicted to be long-term, localised, direct, not significant, neutral and imperceptible in relation to air quality.

8. Climate

8.1. Introduction

This Chapter assesses the likely significant climate effects associated with the proposed development at Dublin Airport, Co. Dublin. A description of the development can be found in Chapter 2 – Project Description.

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8.2. Methodology

8.2.1. Criteria for Rating of Effects

8.2.1.1. Climate Agreements and Policies

In 2015, the Climate Action and Low Carbon Development Act 2015 (No. 46 of 2015) (Government of Ireland, 2015) was enacted (the Act). The purpose of the Act was to enable Ireland '*to pursue, and achieve, the transition to a low carbon, climate resilient and environmentally sustainable economy by the end of the year 2050*' (s.3.(1) of No. 46 of 2015). This is referred to in the Act as the 'national transition objective'. The Act made provision for a national mitigation plan, and a national adaptation framework. In addition, the Act provided for the establishment of the Climate Change Advisory Council with the function to advise and make recommendations on the preparation of the national mitigation and adaptation plans and compliance with existing climate obligations.

The first Climate Action Plan (CAP) was published by the Irish Government in June 2019 (Government of Ireland, 2019). The Climate Action Plan 2019 outlined the current status across key sectors including Electricity, Transport, Built Environment, Industry and Agriculture and outlined the various broadscale measures required for each sector to achieve ambitious decarbonisation targets. The 2019 CAP also detailed the required governance arrangements for implementation including carbon-proofing of policies, establishment of carbon budgets, a strengthened Climate Change Advisory Council and greater accountability to the Oireachtas. The Government published the second Climate Action Plan in November 2021 (Government of Ireland, 2021a) and a third update in December 2022 (Government of Ireland, 2022) (hereafter referred to as CAP23).

Following on from Ireland declaring a climate and biodiversity emergency in May 2019, and the European Parliament approving a resolution declaring a climate and environment emergency in Europe in November 2019, the Government approved the publication of the General Scheme for the Climate Action (Amendment) Bill 2019 in December 2019, followed by the publication of the Climate Action and Low Carbon Development (Amendment) Bill 2021 (hereafter referred to as the 2021 Climate Bill) in March 2021. The Climate Action and Low Carbon Development (Amendment) Act 2021 (hereafter referred to as the 2021 Climate Act) was signed into Law on the 23rd July 2021, giving statutory effect to the core objectives stated within the CAP.

The purpose of the 2021 Climate Act (Government of Ireland, 2021b) is to provide for the approval of plans "for the purpose of pursuing the transition to a climate resilient, biodiversity rich and climate neutral economy by no later than the end of the year 2050". The 2021 Climate Act will also "provide for carbon budgets and a decarbonisation target range for certain sectors of the economy". The 2021 Climate Act defines the carbon budget as "the total amount of greenhouse gas emissions that are permitted during the budget period".

In relation to carbon budgets, the Climate Action and Low Carbon Development (Amendment) Act 2021 states '*A carbon budget, consistent with furthering the achievement of the national climate objective, shall be proposed by the Climate Change Advisory Council, finalised by the Minister and approved by the Government for the period of 5 years commencing on the 1 January 2021 and ending on 31 December 2025 and for each subsequent period of 5 years (in this Act referred to as a 'budget period')*'. The carbon budget is to be produced for 3 sequential budget periods, as shown in Table 8-1. The carbon budget can be revised where new obligations are imposed under the law of the European Union or international agreements or where there are significant developments in scientific knowledge in relation to climate change. In relation to the sectoral emissions ceiling, the Minister for the Environment, Climate and Communications (the Minister for the Environment) shall prepare and submit to government the maximum amount of GHG emissions that are permitted in different sectors of the economy during

a budget period and different ceilings may apply to different sectors. The sectorial emission ceilings for 2030 were published in July 2022 and are shown in Table 8-2. Buildings (Commercial Public) have a 45% reduction requirement and a 2030 emission ceiling of 1 $MtCO_{2eq}$[28].

Table 8-1 – 5-Year Carbon Budgets 2021-2025, 2026-2030 and 2031-2025

Sector	Reduction Required	2018 Emissions ($MtCO_2eq$)
2021-2025	295 Mt CO_2eq	Reduction in emissions of 4.8% per annum for the first budget period.
2026-2030	200 Mt CO_2eq	Reduction in emissions of 8.3% per annum for the second budget period.
2031-2035	151 Mt CO_2eq	Reduction in emissions of 3.5% per annum for the third provisional budget.

Table 8-2 – Sectoral Emission Ceilings 2030

Sector	Reduction Required	2018 Emissions ($MtCO_2eq$)	2030 Emission Ceiling ($MtCO_2eq$)
Electricity	75%	10.5	3
Transport	50%	12	6
Buildings (Commercial and Public)	45%	2	1
Buildings (Residential)	40%	7	4
Industry	35%	7	4
Agriculture	25%	23	17.25
Other (F-Gases, Waste & Petroleum refining)	50%	2	1

In December 2022, CAP23 was published (Government of Ireland 2022). This is the first CAP since the publication of the carbon budgets and sectoral emissions ceilings, and it aims to implement the required changes to achieve a 51% reduction in carbon emissions by 2030. The CAP has six vital high effect sectors where the biggest savings can be made: renewable energy, energy efficiency of buildings, transport, sustainable farming, sustainable business and change of land-use. CAP23 states that the decarbonisation of Ireland's manufacturing industry is key for Ireland's economy and future competitiveness. There is a target to reduce the embodied carbon in construction materials by 10% for materials produced and used in Ireland by 2025 and by at least 30% for materials produced and used in Ireland by 2030. CAP23 states that these reductions can be brought about by product substitution for construction materials and reduction of clinker content in cement. Cement and other high embodied carbon construction elements can be reduced by the adoption of the methods set out in the Construction Industry Federation 2021 report Modern Methods of Construction. In order to ensure economic growth can continue alongside a reduction in emissions, IDA Ireland will also seek to attract businesses to invest in decarbonisation technologies.

The Fingal County Council Climate Change Action Plan 2023 - 2029 (Fingal County Council) outlines a number of goals and plans to prepare for and adapt to climate change. There are five key action areas within the plan: energy and buildings, transport, flood resilience, nature-based solutions and resource management. Some of the measures promoted within the Action Plan under the 5 key areas involve building retrofits, energy master-planning, development of segregated cycle routes, the promotion of bike share schemes, development of flood resilient designs, promotion of the use of green infrastructure and water conservation initiatives. The implementation of these measures will enable the Fingal County Council area to adapt to climate change and will assist in bringing Ireland closer to achieving its climate related targets in future years. New developments need to be cognisant of the Action Plan and incorporate climate friendly designs and measures where possible.

[28] Mt CO_{2eq} denotes million tonnes carbon dioxide equivalent.

8.2.1.2. Climate Assessment Significance Criteria

The climate assessment is divided into two distinct sections – a greenhouse gas assessment (GHGA) and a climate change risk assessment (CCRA).

- Greenhouse Gas Emissions Assessment (GHGA) – Quantifies the GHG emissions from a project over its lifetime. The assessment compares these emissions to relevant carbon budgets, targets and policy to contextualise magnitude.
- Climate Change Risk Assessment (CCRA) – Identifies the effect of a changing climate on a project and receiving environment. The assessment considers a projects vulnerability to climate change and identifies adaptation measures to increase project resilience.

The significance criteria for each assessment are described below.

Significance Criteria for GHGA

The Transport Infrastructure Ireland (TII) guidance document entitled *PE-ENV-01104 Climate Guidance for National Rods, Light Rail and Rural Cycleways (Offline & Greenways) – Overarching Technical Document* (TII, 2022a) outlines a recommended approach for determining the significance of both the construction and operational phases of a development. The approach is based on comparing the '*Do Something*' scenario and the net project GHG emissions (i.e. *Do Something – Do Minimum*) to the relevant carbon budgets (Department of the Taoiseach 2022). With the publication of the Climate Action Act in 2021, sectoral carbon budgets have been published for comparison with the Net CO_2 project GHG emissions from the proposed development. The Residential Buildings sector emitted approximately 7 $MtCO_{2eq}$ in 2018 and has a ceiling of 4 $MtCO_{2eq}$ in 2030 which is a 45% reduction over this period (see Table 8-2).

The significance of GHG effects set out in PE-ENV-01104 (TII, 2022a) is based on Institute of Environmental Management and Assessment guidance (IEMA, 2022) which is consistent with the terminology contained within Figure 3.4 of the EPA's (2022a) 'Guidelines on the information to be contained in Environmental Effect Assessment Reports'.

The 2022 IEMA Guidance (IEMA, 2022) sets out the following principles for significance:

- When evaluating significance, all new GHG emissions contribute to a negative environmental impact; however, some projects will replace existing development or baseline activity that has a higher GHG profile. The significance of a project's emissions should therefore be based on its net impact over its lifetime, which may be positive, negative or negligible;
- Where GHG emissions cannot be avoided, the goal of the EIA process should be to reduce the project's residual emissions at all stages; and
- Where GHG emissions remain significant, but cannot be further reduced, approaches to compensate the project's remaining emissions should be considered.

TII (TII, 2022a) states that professional judgement must be taken into account when contextualising and assessing the significance of a project's GHG effect. In line with IEMA Guidance (IEMA, 2022), TII state that the crux of assessing significance is "*not whether a project emits GHG emissions, nor even the magnitude of GHG emissions alone, but whether it contributes to reducing GHG emissions relative to a comparable baseline consistent with a trajectory towards net zero by 2050*".

Significance is determined using the criteria outlined in Table 8-3 (derived from Table 6.7 of PE-ENV-01104 (TII, 2022a)) along with consideration of the following two factors:

- The extent to which the trajectory of GHG emissions from the project aligns with Ireland's GHG trajectory to net zero by 2050; and
- The level of mitigation taking place.

Table 8-3 – GHGA Significance Criteria

Effects	Significance Level Description	Description
Significant adverse	Major adverse	• The project's GHG effects are not mitigated. • The project has not complied with do-minimum standards set through regulation, nor provided reductions required by local or national policies; and • No meaningful absolute contribution to Ireland's trajectory towards net zero.
	Moderate adverse	• The project's GHG effects are partially mitigated. • The project has partially complied with do-minimum standards set through regulation, and have not fully complied with local or national policies; and • Falls short of full contribution to Ireland's trajectory towards net zero.
Not significant	Minor adverse	• The project's GHG effects are mitigated through 'good practice' measures. • The project has complied with existing and emerging policy requirements; and • Fully in line to achieve Ireland's trajectory towards net zero.
	Negligible	• The project's GHG effects are mitigated beyond design standards. • The project has gone well beyond existing and emerging policy requirements; and • Well 'ahead of the curve' for Ireland's trajectory towards net zero.
Beneficial	Beneficial	• The project's net GHG effects are below zero and it causes a reduction in atmosphere GHG concentration. • The project has gone well beyond existing and emerging policy requirements; and • Well 'ahead of the curve' for Ireland's trajectory towards net zero, provides a positive climate effect.

Significance Criteria for CCRA

The CCRA involves an initial screening assessment to determine the vulnerability of the proposed development to various climate hazards. The vulnerability is determined by combining the sensitivity and the exposure of the proposed development to various climate hazards.

Vulnerability = Sensitivity x Exposure

The vulnerability assessment takes any proposed mitigation into account. Table 8-4 details the vulnerability matrix; vulnerabilities are scored on a high, medium and low scale. Where residual medium or high vulnerabilities exist the assessment may need to be progressed to a detailed climate change risk assessment and further mitigation implemented to reduce risks.

Table 8-4 – Vulnerability Matrix

		Exposure		
		High (3)	Medium (2)	Low (1)
Sensitivity	High (3)	9 - High	6 – High	3 - Medium
	Medium (2)	6 - High	4 - Medium	2 - Low
	Low (1)	3 - Medium	2 – Low	1 - Low

8.2.2. Construction Phase

As per the EU guidance document *Guidance on Integrating Climate Change and Biodiversity into Environmental Effect Assessment* (European Commission, 2013) the climate baseline is first established with reference to EPA data on annual GHG emissions (see Section 8.3). The effect of the proposed development on climate is determined in relation to this baseline. As per the IEMA guidance (2022) where expected emissions will not increase by over 1% compared with the baseline scenario then no further assessment is required as there is no potential for significant effects to climate. The construction stage activities and potential for GHG emissions have been reviewed as part of the construction stage climate assessment and a quantitative assessment conducted.

The Transport Infrastructure Ireland (TII) guidance document entitled PE-ENV-01104 Climate Guidance for National Roads, Light Rail and Rural Cycleways (Offline & Greenways) – Overarching Technical Document (TII, 2022a) outlines a recommended approach for determining the significance of both the construction and operational phases of a development. GE-ENV-01106: TII Carbon Assessment Tool for Road and Light Rail Projects and User Guidance Document (TII, 2022b) provides guidance on the use of the TII Carbon Tool for assessing lifecycle carbon emissions for National Road and light rail infrastructure projects in Ireland. The tool aligns with Section 7 of PAS 2080, which was published by the British Standards Institution (BSI), the Construction Leadership Council and the Green Construction Board in 2016 (BSI, 2016).

Construction stage embodied carbon of the proposed development was quantified using the TII Online Carbon Tool (TII, 2022c). Embodied carbon refers to the sum of the carbon needed to produce a good or service. It incorporates the energy needed in the mining or processing of raw materials, the manufacturing of products and the delivery of these products to site. Information on the material quantities, waste materials and construction traffic were input into the TII carbon tool by the project engineers. The TII Online Carbon Tool (TII, 2022c) uses emission factors from recognized sources including the Civil Engineering Standard Method of Measurement (CESSM) Carbon and Price Book database (CESSM, 2013), UK National Highways Carbon Tool v2.4 and UK Government 2021 Greenhouse Gas Reporting Conversion Factors. The carbon emissions are calculated by multiplying the emission factor by the quantity of the material that will be used over the entire construction / maintenance phase. The TII Online Carbon Tool (TII, 2022c) has been commissioned by TII to assess GHG emissions associated with infrastructure projects using Ireland-specific emission factors and data. While specific to TII infrastructure projects it can be applied to other non-infrastructure projects in the absence of other easily accessible Ireland-specific carbon tools. The calculator also considers personnel travel, site energy and waste management and the associated embodied carbon.

8.2.3. Operational Phase

8.2.3.1. Climate Change Vulnerability Assessment

The operational phase assessment involves determining the vulnerability of the proposed development to climate change. This involves an analysis of the sensitivity and exposure of the development to climate hazards which together provide a measure of vulnerability.

PE-ENV-01104 (TII, 2022a) states that the CCRA is guided by the principles set out in the overarching best practice guidance documents:

- EU (2021) Technical guidance on the climate proofing of infrastructure in the Period 2021-2027 (European Commission, 2021a); and
- The Institute of Environmental Management and Assessment, Environmental Effect Assessment Guide to: Climate Change Resilience and Adaptation (2nd Edition) (IEMA, 2020).

The baseline environment information provided in Section 8.3, future climate change modelling and input from other experts working on the proposed development (i.e. hydrologists) should be used in order to assess the likelihood of a climate risk.

The initial stage of an assessment is to establish a scope and boundary for the assessment taking into account the following criteria:

- Spatial boundary: As per PE-ENV-01104 (TII, 2022a), the study area with respect to the GHGA is Ireland's Climate budget. The study area with respect to the CCRA can be considered the project boundary and its assets. The study area will be influenced by current and future baselines (Section 8.3). This study area is influenced by the input of other experts within the EIAR team;
- Climate hazards: The outcomes of the climate screening i.e. vulnerability assessment and baseline assessment; and
- Project receptors: TII state that the project receptors are the asset categories considered in the climate screening. In addition, any critical connecting infrastructure and significant parts of the surrounding environment e.g. water bodies that should be considered as a part of the indirect, cumulative and in combination effect assessment should also be considered project receptors.

Technical guidance on the climate proofing of infrastructure in the period 2021-2027 (European Commission, 2021a) outlines an approach for undertaking a climate change risk assessment where there is a potentially significant effect on the proposed development due to climate change. The risk assessment assesses the likelihood and consequence of the effect occurring, leading to the evaluation of the significance of the effect. The role of the climate consultant in assessing the likelihood and effect is often to facilitate the climate change risk assessment process with input from the design team or specific specialists such as hydrology.

The climate screening risk assessment or vulnerability assessment is carried out by determining the sensitivity and exposure of the project to climate change. Firstly the project asset categories must be assigned a level of sensitivity to climate hazards irrespective of the project location (example: Sea level rise will affect seaport projects regardless of specific location). PE-ENV-01104 (TII, 2022a) provide the below list of asset categories and climate hazards to be considered. The asset categories will vary for project type and need to be determined on a project by project basis.

- **Asset categories** - Pavements; drainage; structures; utilities; landscaping; signs, light posts, buildings, and fences.
- **Climate hazards** - Flooding (coastal, pluvial, fluvial); extreme heat; extreme cold; wildfire; drought; extreme wind; lightning and hail; landslides; fog.

The sensitivity is based on a High, Medium or Low rating with a score of 1 to 3 assigned as per the criteria below.

- **High sensitivity**: The climate hazard will or is likely to have a major effect on the asset category. This is a sensitivity score of 3.
- **Medium sensitivity**: It is possible or likely the climate hazard will have a moderate effect on the asset category. This is a sensitivity score of 2.
- **Low sensitivity**: It is possible the climate hazard will have a low or negligible effect on the asset category. This is a sensitivity score of 1.

Once the sensitivities have been identified the exposure analysis is undertaken. The exposure analysis involves determining the level of exposure of each climate hazard at the project location irrespective of the project type for example: flooding could be a risk if the project location is next to a river in a floodplain. Exposure is assigned a level of High, Medium or Low as per the below criteria.

- **High exposure**: It is almost certain or likely this climate hazard will occur at the project location i.e. might arise once to several times per year. This is an exposure score of 3.
- **Medium exposure**: It is possible this climate hazard will occur at the project location i.e. might arise a number of times in a decade. This is an exposure score of 2.
- **Low exposure**: It is unlikely or rare this climate hazard will occur at the project location i.e. might arise a number of times in a generation or in a lifetime. This is an exposure score of 1.

Once the sensitivity and exposure are categorised, a vulnerability analysis is conducted by multiplying the sensitivity and exposure to calculate the vulnerability, as shown in Table 8-4.

8.2.3.2. Traffic Emissions

Emissions from road traffic associated with the proposed development have the potential to emit carbon dioxide (CO_2) which will effect climate.

The UK Highways Agency DMRB guidance document in relation to climate effect assessments *LA 114 Climate* (UK Highways Agency, 2019) contains the following scoping criteria to determine whether a detailed climate assessment is required for a proposed project during the operational stage. If any of the road links effected by the proposed development meet or exceed the below criteria, then further assessment is required.

- A change of more than 10% in AADT;
- A change of more than 10% to the number of heavy duty vehicles; and
- A change in daily average speed of more than 20 km/hr.

PE-ENV-01104 (TII, 2022a) states that road traffic related emissions information should be obtained from an Air Quality Practitioner to show future user emissions during operation without the development in place. The Air Quality Practitioner calculated the traffic related emissions through the use of the TII REM tool (TII, 2022b) which includes detailed fleet predictions for age, fuel technology, engine size and weight based on available national forecasts.

There are no road links that will experience a change of over 10% in the AADT or that are deemed to require an air quality assessment, which can be used within the climate assessment, as a result of the proposed development. As a result a detailed assessment of traffic related carbon dioxide (CO_2) emissions was scoped out.

8.3. Receiving Environment

PE-ENV-01104 (TII, 2022a) states that a baseline climate scenario should identify, consistent with the study area for the project, GHG emissions without the project for both the current and future baseline.

Ireland declared a climate and biodiversity emergency in May 2019 and in November 2019 there was European Parliament approval of a resolution declaring a climate and environment emergency in Europe. This, in addition to Ireland's current failure to meet its EU binding targets under Regulation 2018/842 results in changes in GHG emissions either beneficial or adverse being of more significance than previously considered prior to these declarations.

Data published in 2022 (EPA, 2022b) predicts that Ireland exceeded (without the use of flexibilities) its 2021 annual limit set under EU's Effort Sharing Decision (ESD) (EU 2018/842) by 2.71 Mt CO_{2eq} as shown in Table 8-5. The sector with the highest emissions in 2021 was agriculture at 35.3% of the total, followed by transport at 20.3%. Ireland's greenhouse gas emissions increased by 4.7% in 2021 compared to 2020. For 2021 total national emissions (excluding LULUCF) were estimated to be 61,528 kt CO_{2eq} as shown in Table 8-5 (EPA, 2022b).

The future baseline with respect to the GHGA can be considered in relation to the future climate targets which the assessment results will be compared against. In line with TII (TII, 2022a) and IEMA Guidance (IEMA, 2022) the future baseline is a trajectory towards net zero by 2050, "*whether it* [the project] *contributes to reducing GHG emissions relative to a comparable baseline consistent with a trajectory towards net zero by 2050*".

The future baseline will be determined by Ireland meeting its targets set out in the CAP23, and future CAPs, alongside binding 2030 EU targets. In order to meet the commitments under the Paris Agreement, the European Union (EU) enacted '*Regulation (EU) 2018/842 on binding annual GHG emission reductions by Member States from 2021 to 2030 contributing to climate action to meet commitments under the Paris Agreement and amending Regulation (EU) No. 525/2013*' (hereafter referred to as the Regulation). The Regulation aims to deliver, collectively by the EU in the most cost-effective manner possible, reductions in GHG emissions from the Emission Trading Scheme (ETS) and non-ETS sectors amounting to 43% and 30%, respectively, by 2030 compared to 2005. The ETS is an EU-wide scheme which regulates the GHG emissions of larger industrial emitters including electricity generation, cement manufacturing and heavy industry. The non-ETS sector includes all domestic GHG emitters which do not fall under the ETS scheme and thus includes GHG emissions from transport, residential and commercial buildings and agriculture.

Table 8-5 – Total National GHG Emissions in 2021

Category	2021 Kilotonnes CO_2eq	% of Total GHG emissions
Waste	937	1.5%
Energy Industries	10,272	16.7%
Residential	7,040	11.4%
Manufacturing Combustion	4,593	7.5%
Commercial Services	817	1.3%
Public Services	663	1.1%
Transport	10,912	17.7%
Industrial Processes	2,460	4.0%