



RiverOak Strategic Partners

7.3

Design and Access Statement

TR020002/ APP/ 7.3

Project Name:

Manston Airport Development Consent Order

Regulation:

Regulation 5(2)(q) of the Infrastructure Planning
(Applications: Prescribed Forms and Procedure) Regulations 2009, as amended

Date:

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RSP

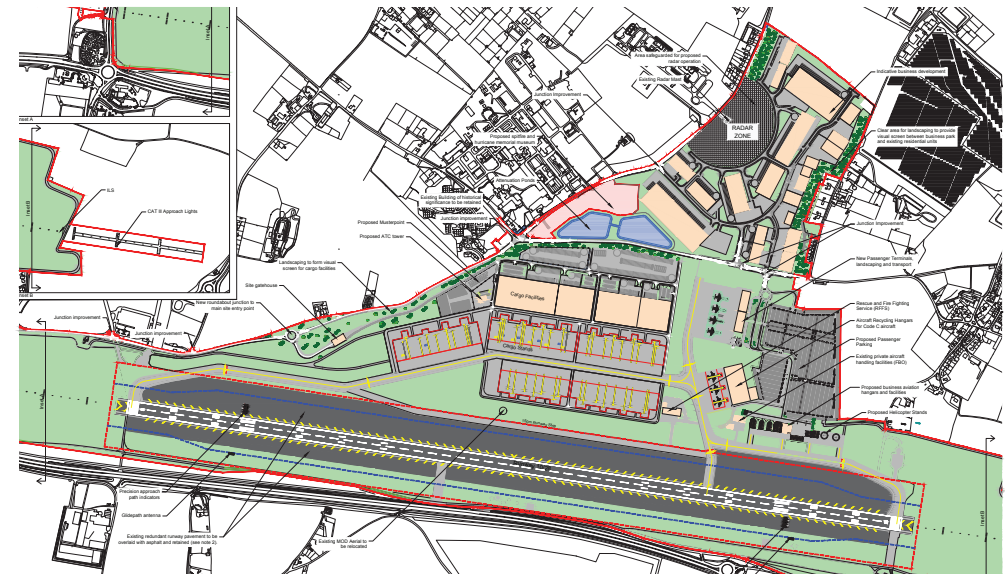
4.0 Masterplan

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4.01 Overview

The selected proposals represent a comprehensive development and achieve an efficient airport layout incorporating all of the features required within the client brief included. The airfield layout has been designed and is determined by operational regulations and functionality. This arrangement builds on the existing landscape strategy and retains significant natural landscape and ecological features whilst, where possible, creating links between them and new areas of landscaping.

This approach to the design of the masterplan has taken into account the environmental impact of the development, considering combined and cumulative effects on the local and national environment in line with planning policy from the respective authorities to deliver a scheme that is well rounded and a coherent layout.

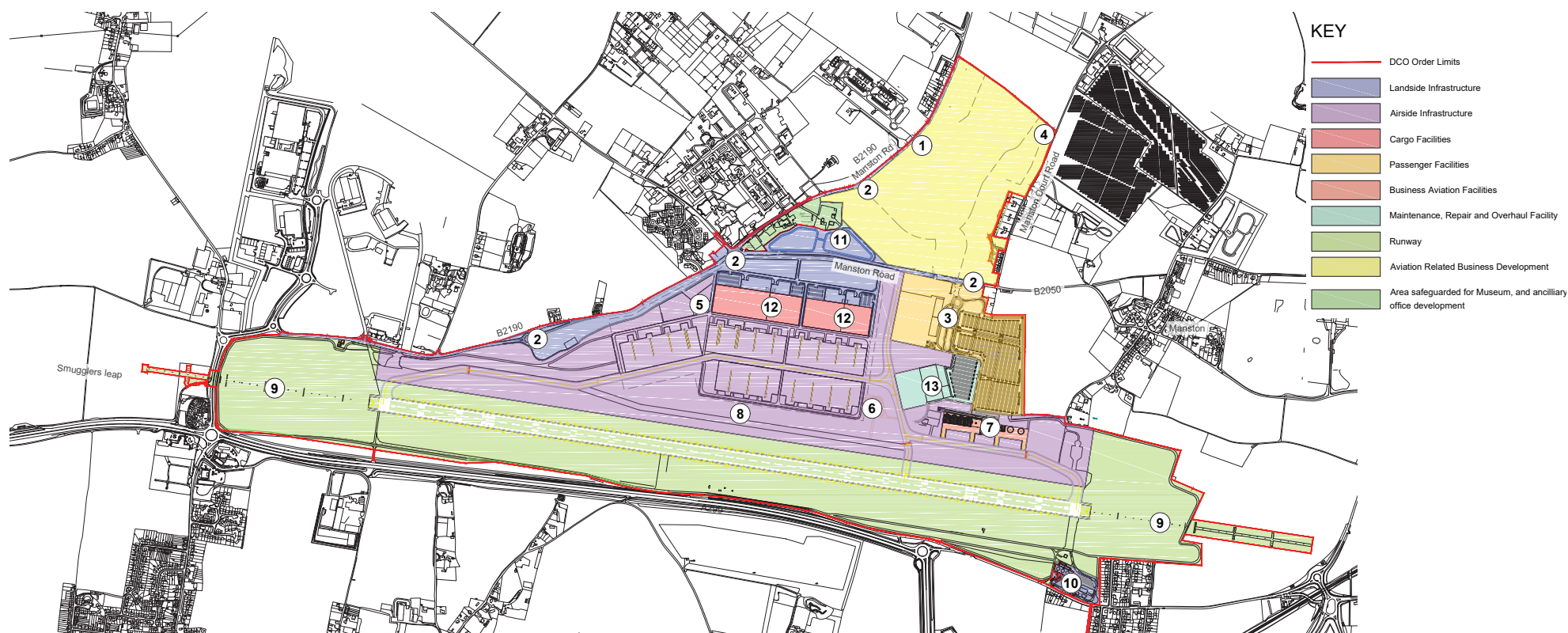


Illustrative Site Layout Plan (RPS-MSE-XX-DR-C-2000)

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4.02 Development Zones/Layout

- | | | | |
|---|--|----|--|
| 1 | -Radar | 8 | -Ministry of Defence aerial (to be relocated) |
| 2 | -Highway improvement | 9 | -New instrument landing services and approach installation |
| 3 | -New terminal and passenger facilities | 10 | -Proposed fuel farm (currently Jentex site) |
| 4 | -Existing electrical substation | 11 | -Proposed attenuation ponds |
| 5 | -Air traffic control | 12 | -Cargo facilities |
| 6 | -Fire rescue service | 13 | -Recycling hangars |
| 7 | -Business aviation | | |



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4.03 Existing Buildings

Building 1 – Existing aircraft maintenance and repair hangar.

Building 2 – Used for previous cargo operations.

Building 3 – This is a single span steel frame and cladding building.

Building 4 – This is a single span steel frame building.

Building 5 – This is a single storey 'portacabin' type building.

Building 6 - This is a single storey 'portacabin' type building.

Building 7 – This building comprised vehicle maintenance workshop and offices.

Building 8 – This is a single storey building used for offices and storage.

Building 9 - This is a single span steel frame building with steel and brick cladding.

Building 10 – This building is similar to Building 9. A single span steel frame building with steel cladding.

Building 11 – This building comprises two 'Anderson type shelters' constructed with corrugated steel, each forming a single span structure.



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4.04 Demolition

Phase 1-

Buildings to be demolished:

- Building 5 - Single storey building
- Building 6 - Single storey building
- Building 7 - Vehicle maintenance and offices
- Building 8 - Single storey office building
- Building 9 - Single span steel frame building
- Building 10 - Single span steel frame building
- Building 11 - Corrugated steel structures

Buildings to be retained:

- Building 1 - Aircraft maintenance and repair hangar
- Building 2 - Cargo
- Building 3 - Single span steel frame building
- Building 4 - Single span steel frame building

Phase 2-

Buildings to be demolished:

- Building 1 - Aircraft maintenance and repair hangar
- Building 4 - Single span steel frame building

Buildings to be retained:

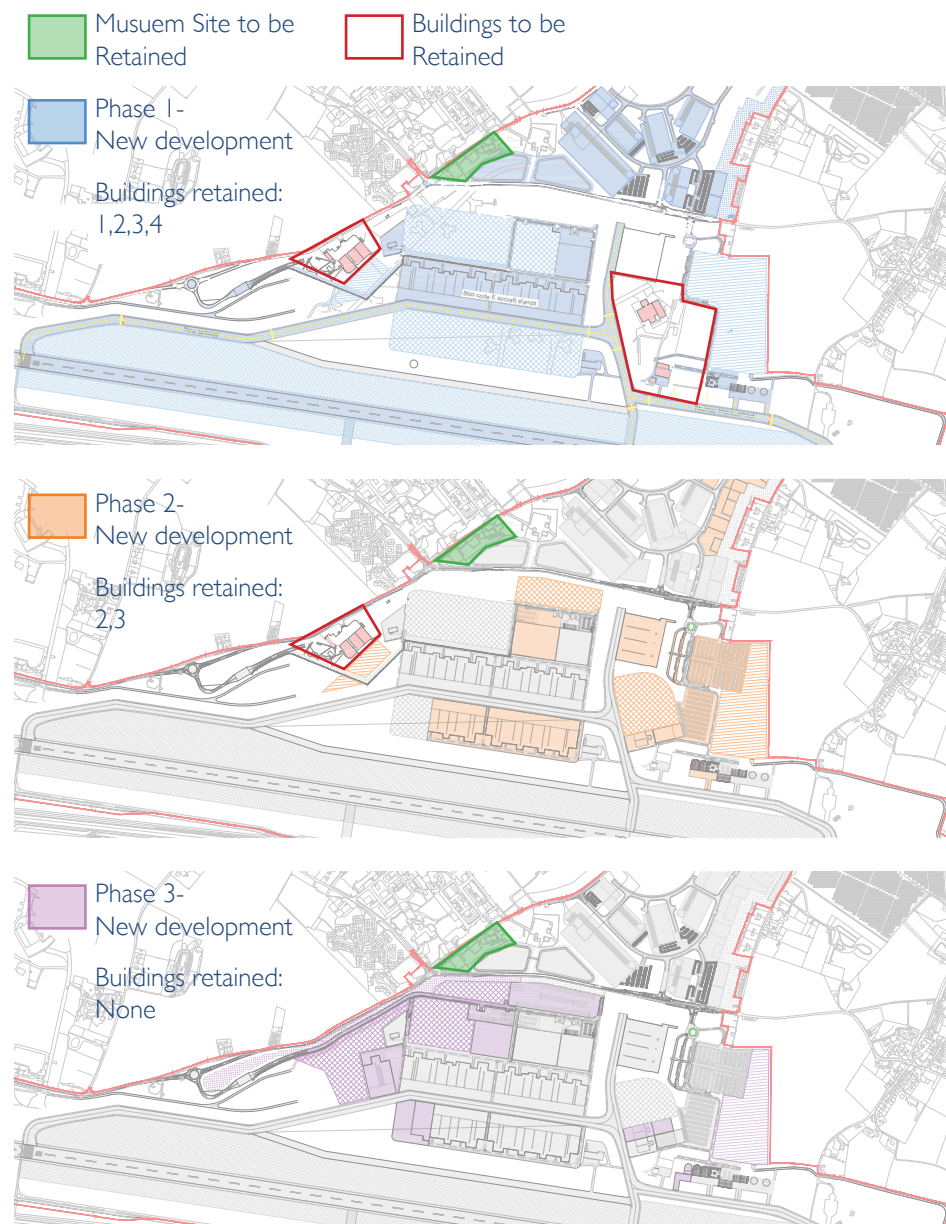
- Building 2 - Cargo
- Building 3 - Single span steel frame building

Phase 3-

Buildings to be demolished:

- Building 2 - Cargo
- Building 3 - Single span steel frame building

The museum site will be safeguarded and will remain through all 4 phases. The existing FBO will be refurbished in phase 1 of the development.



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4.05 Uses - Passenger Area

The primary focus of the airport would be on air freight and cargo operations, but as detailed below it is anticipated that there would be passenger services from Year 3 of the airport's operation.

The existing terminal building is in a poor state of repair, and it is therefore considered that a new passenger terminal and other facilities would be required and that the old building would be demolished during Construction Phase I. The new terminal would be located on the site of the existing terminal, and would be designed with sufficient capacity to meet the demands of the passenger forecast.

The initial terminal will provide airside/landside access and will be served by three refurbished Code C aircraft stands. A later expansion of the building will add a fourth passenger stand to accommodate the demands of the passenger forecast.



Passenger Facilities (RPS-MSE-X-DR-C-2000)

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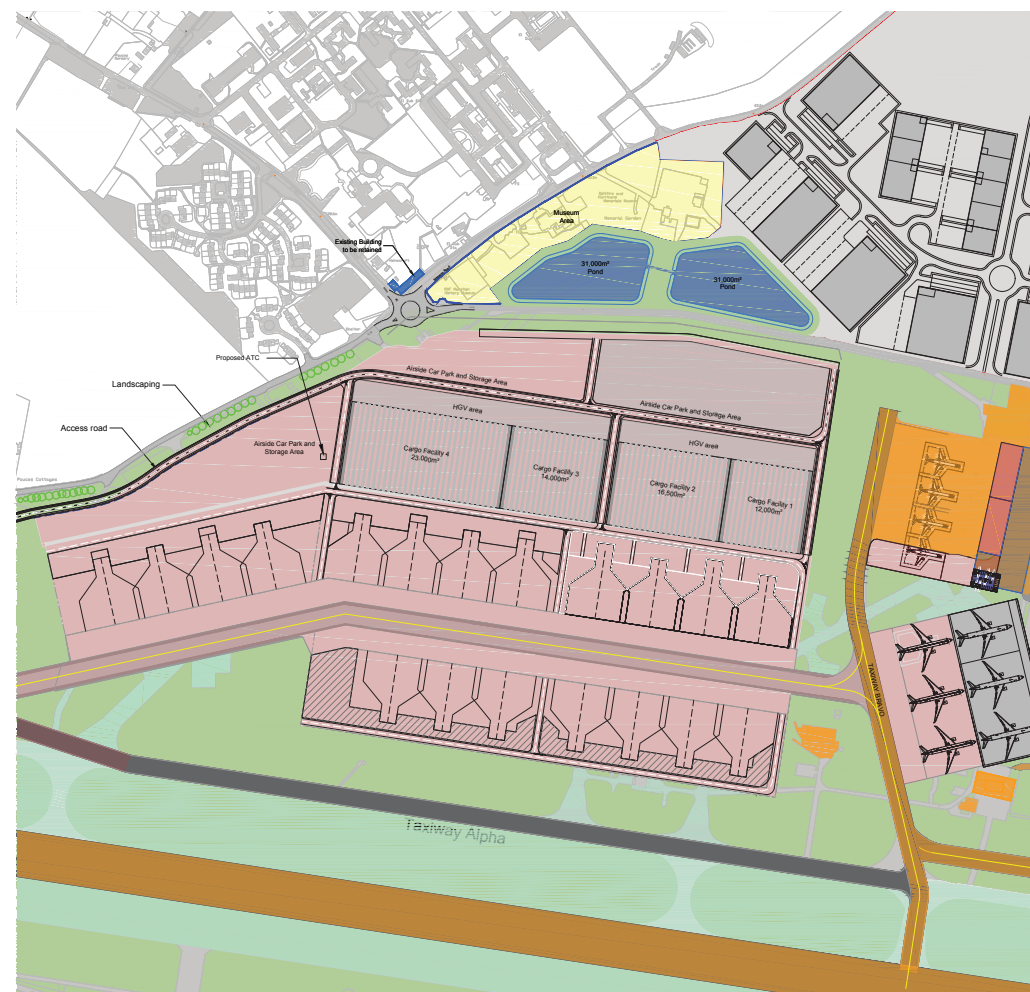
4.05 Uses - Cargo Area

The primary focus of the reopened airport would be airfreight, and in order to meet the anticipated demand from the airfreight forecast, new cargo facilities would be required.

The cargo facilities, which would be constructed on the new building platform to be created for the taxiways and stands, would be built in phases to meet the demand and requirements of the airfreight forecast.

The existing cargo facilities located in the north east of the site would be retained during Construction Phase 1 and used for airport operational buildings i.e. vehicle storage, as well as equipment storage, laydown and working areas during Construction Phase 1. These buildings would be demolished during Construction Phase 3 in order to accommodate the new cargo facilities that would be built during this phase.

A new maintenance and recycling facility will be constructed to the east of the site. The facility will consist of hangar buildings and associated offices. Aircraft access will be via the existing taxiway and new apron areas in front of the hangars. Aircraft recycling will take place within the enclosed hangar.



Cargo Area Layout Plan (RPS-MSE-XX-DR-C-1102)

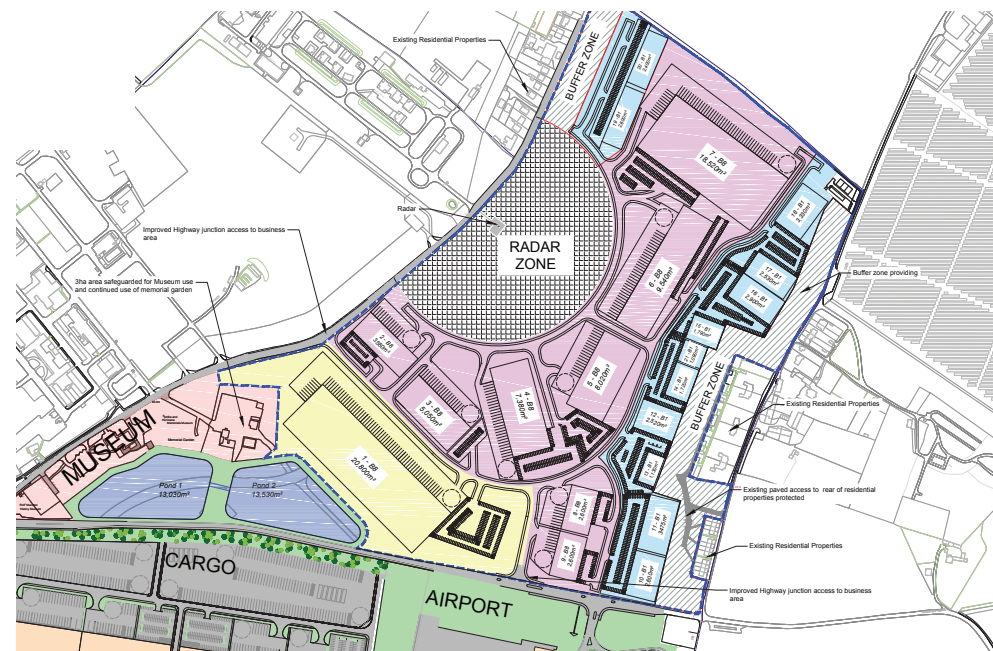
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4.05 Uses - Northern Grass Area

The Northern Grass area will provide accommodation for airport related businesses. Area will be safeguarded for the continued operation of the museums and retention of the memorial garden.

The area will comprise:

- Multiple business units of various sizes and layouts with a total floor space of 105,100m².
- Two new accesses would be provided from B2050 (Manston Road) to this 'Northern Grass' area, and a new internal highway network created.
- Loading and turning areas for HGVs.
- Sufficient staff and visitor parking, including disabled parking, to meet the relevant design standards, and associated pedestrian and cycle infrastructure will all be provided within the 'Northern Grass' area.
- A safeguarding zone around the airport radar installation will be provided. The size of this area will be dependent on the type and specifications of the radar.



Northern Grass (RPS-MSE-XX-DR-C-2089)

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4.06 Amount

Each cargo facility would have associated Heavy Goods Vehicle (HGV) parking, storage and car parking. The new cargo facilities would cover approximately 65,500m² in total and used for the airside/landside management of cargo. The units will have a landside and airside frontage. A total storage and parking area of approximately 120,000m² will be provided. This will include a yard area for goods access with HGV dock levellers and includes space for parking of goods vehicles. Office space will be accommodated within this frontage with associated staff parking.

Aircraft recycling will take place within the enclosed hangar. The footprint of the buildings will be approximately 10,215m² including the offices.

The terminal building will have an initial footprint of 2,200m² with the ability to increase to 4,500m² to meet growth demands. The approximate dimensions of the initial footprint will be 75m x 30m.

The proposed fire fighting facility will comprise two distinct elements; an area for vehicle maintenance and storage plus welfare and offices for staff. The building footprint is expected to be approximately 1,550m².

There are two existing museums on the site; the RAF Manston Museum and the Spitfire and Hurricane Memorial Museum. It is intended that these museums will be retained and continue to operate on the site. In support of this, a substantial area (30,000m²) encompassing the existing building locations has been safeguarded within the masterplan.

On the Northern Grass area there will be a Business Park consisting of B1 and B8 units accommodating aviation related businesses. These will be zoned in accordance with DCO submission drawing NK018417 RPS-MSE-XXX-DR-2089. The sum of the new B1 and B8 building footprints within the Northern Grass area will not exceed 105,100m² with an approximate 25/75 split of B1 and B8 development.

The proposed Business Aviation Infrastructure could include eight light aircraft hangars of approximately 800m², two helipads and the Business Aviation building. Aircraft access will be provided via new taxiways links from the existing parallel taxiway.

The ATC facility will have a diameter of approximately 6m with an overall footprint of approximately 500m² inclusive of the adjacent building annex.

Description	Date	Year
DCO Grant	2019	Year 0
First Full Year of Freight Operations	2021	Year 2
First Full Year of Passenger Services	2022	Year 3
Exceed 10,000 Freight Movements	2025	Year 6
-	2039	Year 20

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4.07 Appearance

External wall finishes can be tailored to suit the end user requirements but a typical construction methodology would be for a steel portal framed building with CFA (Continuous Flight Auger) piled foundations. However, we will undertake an in-depth soil investigation and geotechnical assessment to determine whether ground bearing foundations can be used. Wall cladding could be vertically and/or horizontally laid with feature panels to break up the exterior view. Coloured cladding could be used to signify key areas i.e. office units or the division between facilities. The detailed design of the scheme will take account of the overall site aesthetic, for example a curved aerofoil profile has been shown in the indicative visualisations which ties the terminal and cargo facilities together, the final scheme could use this or another method.

Materials such as a standing seam aluminium roof and wall cladding system could be used to create the required architectural building envelopes, with polycarbonate sheets providing internal natural lighting. External lighting could be through tower lights and wall mounted units typical of cargo and distribution facilities. Strategic tree planting could provide visual shielding to neighbouring areas. These could also be zone specific thereby creating visually defined breaks between areas.



Cargo Area Visualisation

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4.08 Heights and Levels

Cargo:

- Maximum building heights of 20m above ground level (agl) and used for the airside/landside management of cargo.

Aircraft recycling:

- Typically be 20m to building eaves and 23m to peak. Preliminary design modelling for the site suggests the building heights would have a finished level of 73m AOD.

Terminal building:

- Maximum elevation of 15m above ground level.

The proposed fire fighting facility:

- A building height of approximately 10m. The estimated roof level will be approximately 60m AOD.

Business Aviation:

The maximum height of construction within this area is 15m due to proximity of the runway and the requirements of the Obstacle Limitation Surface (OLS).

Northern Grass Area:

Building heights above finished ground level have also been defined within each zone as follows:

- Zone 1: Up to 16m (closest to the site boundary)
- Zone 2 & Up to 18m (Further into the Northern Grass area)

ATC:

The tower will include an operational room with a viewing height of 23m above ground level with the roof of the tower at 27m above ground level.

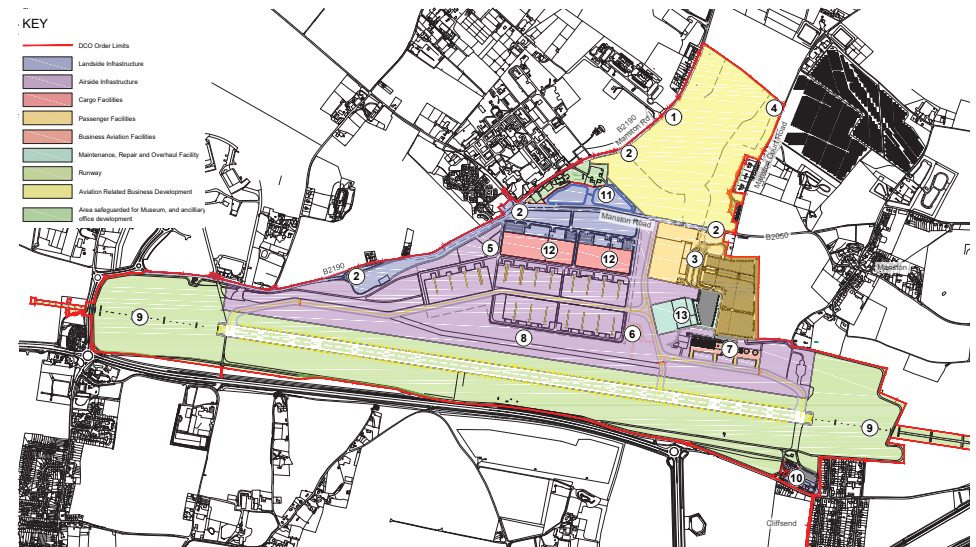


Proposed Contours (RPS-MSE-XX-DR-C-2062)

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4.09 Density

The masterplan has been split up into various zones as outlined in the key plan. The intensity of development is outlined by these zones, with zones on the perimeter of the development having shorter building heights and more landscape buffering to minimise the impact of the development and preserve existing site views as much as possible. The masterplan then incorporates denser aspects of the development into the center areas of the site to minimise visual impact.



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4.10 Scale & Massing

The masterplan design incorporates the use of mixed heights and levels along with landscape buffers to minimise impact on the surrounding environment. For example, the Northern Grass area will have zoned areas with height constraints as below:

Building heights above finished ground level have also been defined within each zone as follows:

- Zone 1: Up to 16m (closest to the site boundary)
- Zone 2 & Up to 18m (Further into the Northern Grass area)

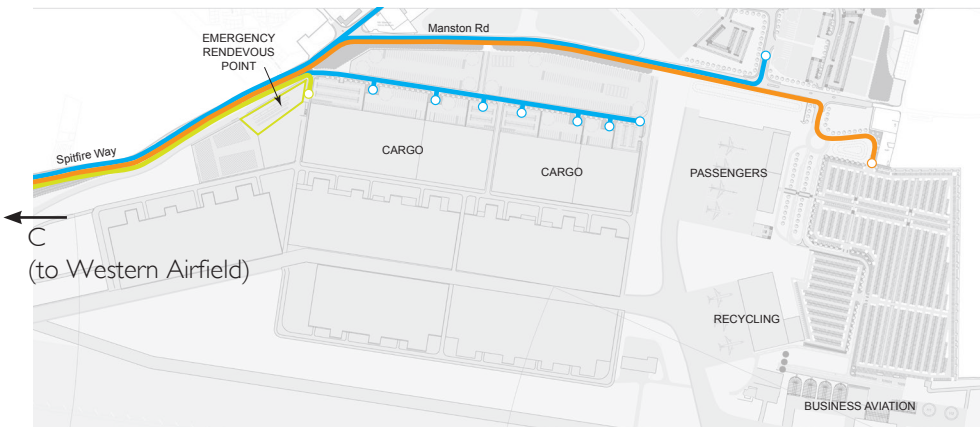
It is then proposed to have a mix of 25-30m around the Northern Grass area, 15-20m around the Cargo area and 3m intermediate landscape buffers between these areas to minimise the visual impact on the residential area nearby.



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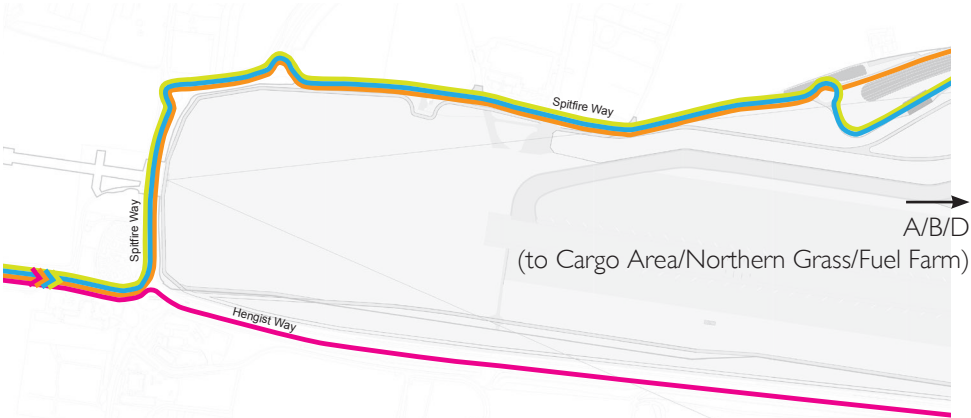
4.11 Movement

Diagram A (Cargo Area)



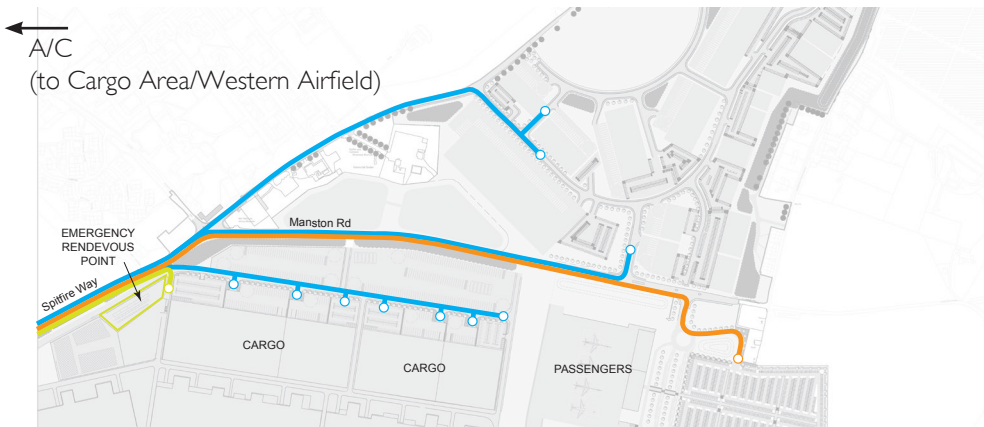
HGV traffic via Spitfire Way to the cargo terminals and via Manston Rd to the businesses in the Northern Grass area. Passenger access also via these routes to the main car park.

Diagram C (Western Airfield)



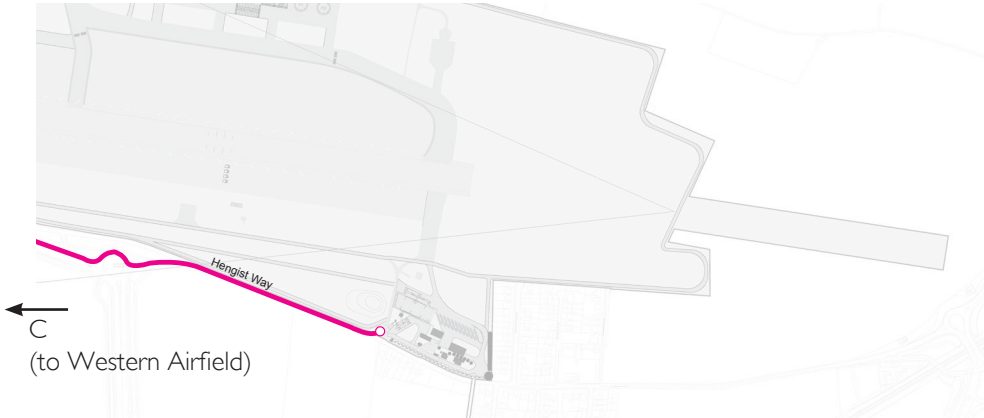
HGV/Passenger/Emergency traffic routed north around the airfield via Spitfire Way. Fuel tankers access via Hengist Way to the fuel farm on the south-west side of the site.

Diagram B (Northern Grass)



Emergency vehicles via Spitfire Way to the emergency rendezvous point for access onto the airfield.

Diagram D (Fuel Farm)



Fuel farm access for tankers via Hengist Way.

KEY

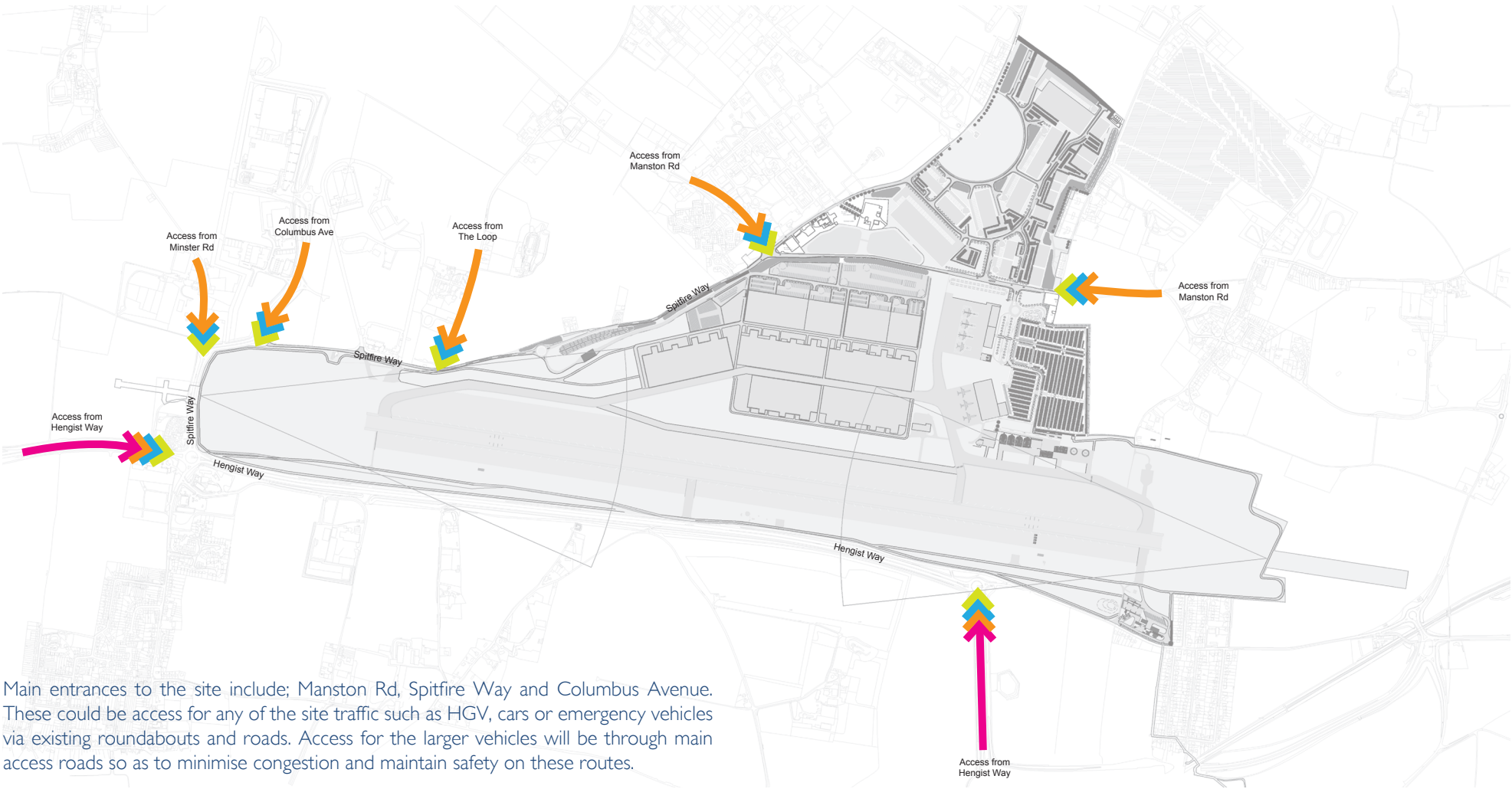
- HGV/Warehouse Staff
- Passengers
- Emergency Vehicles
- Fuel Tankers

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4.12 Accessibility

KEY

- HGV/Warehouse Staff
- Passengers
- Emergency Vehicles
- Fuel Tankers



Main entrances to the site include; Manston Rd, Spitfire Way and Columbus Avenue. These could be access for any of the site traffic such as HGV, cars or emergency vehicles via existing roundabouts and roads. Access for the larger vehicles will be through main access roads so as to minimise congestion and maintain safety on these routes.

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4.13 Landscape Strategy

The proposals for the site provide for new landscape planting where possible to screen views of the development, in particular to the northern half of the site. The proposed buildings are set within a generous landscape framework to provide visual enclosure from the surrounding area and reinforce the site layout and street hierarchy.

Localised bunding offers further visual and noise mitigation in key locations, by raising the ground level for planting, providing subtle variation in local topography on an otherwise flat site. The width of planted buffer zones on the perimeter of the site range between 25-30m with planting densities of 4m centres in-line with the recommendations set out by the Civil Aviation Authority as not to provide dense swathes of planting that may attract birds and mammals that could be detrimental to the safety of aircraft. Constraints within the airfield regarding the presence of vegetation types, restrict the proposals within the southern half of the site including keeping all grass short mown.



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4.13 Landscape Strategy

A variety of landscape types are proposed across the site with the following broad objectives in mind;

- To filter views into the development
- To provide relief to the built form
- To provide seasonal interest to the landscape
- To offer shelter from the weather, in particular filter prevailing winds
- To reduce surface water runoff and provide increased infiltration
- To filter noise and absorb air borne particulates
- To reinforce the site's structure and layout
- To reinforce the character of the area of the site and local landscape



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4.14 Ecology

Both during and after the construction phases it is planned to mitigate the effects of the development on the local ecology. For example, during the construction phase this would include maintaining buffer distances to sensitive receptors, use of the best technology, dampers on vibrating or noise emitting equipment and the timing of works.

Measures will include avoiding the use of diesel or petrol-powered generators and the use of electricity or battery powered equipment where practicable; ensuring all vehicles switch off engines when stationary (no idling vehicles). Planning of aircraft arrival and departure scheduling to avoid, where possible, over-long idling, taxiing and hold times. Airfield layout design to minimise times taxiing and holding.

It is also planned to compensate through habitat treatments on site (e.g. maintenance of a stressed vegetation community along runway edges by permitting short vegetation to grow on shallow substrate upon runway surface), and habitat creation on-site south of the current southern perimeter fence and within land parcel 1362. Created habitat will be specifically designed with diverse features to encourage invertebrates, including features typical of open mosaic habitat. Off-site habitat provision in the c.36ha land parcel 1362 for ground nesting farmland birds e.g. skylark and grey partridge. Created habitats, improving the quality of that lost on site, to have particular species-specific measures and managed for farmland birds.



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4.15 Sustainability

To take a sustainable approach, the following techniques could be incorporated into the masterplan:

- A travel plan, to promote sustainable access where applicable.
- CEMP (Construction Environmental Management Plan), will be put in place which will set out how construction workers travel to site, including the use of sustainable transport modes.
- Earthworks construction waste could be minimised by balancing the cut and fill operations for the new aircraft cargo stands and warehousing plus utilising any low areas on the grassed area including the Northern Grass area for disposal. At this stage there is not sufficient information to determine the existing earthwork materials' suitability as an engineering fill material underneath the aircraft pavements.
- SuDS
- Public Transport Accessibility
- Proximity to Amenities
- Cyclist facilities
- Maximum Car Parking Capacity
- Recycled aggregates



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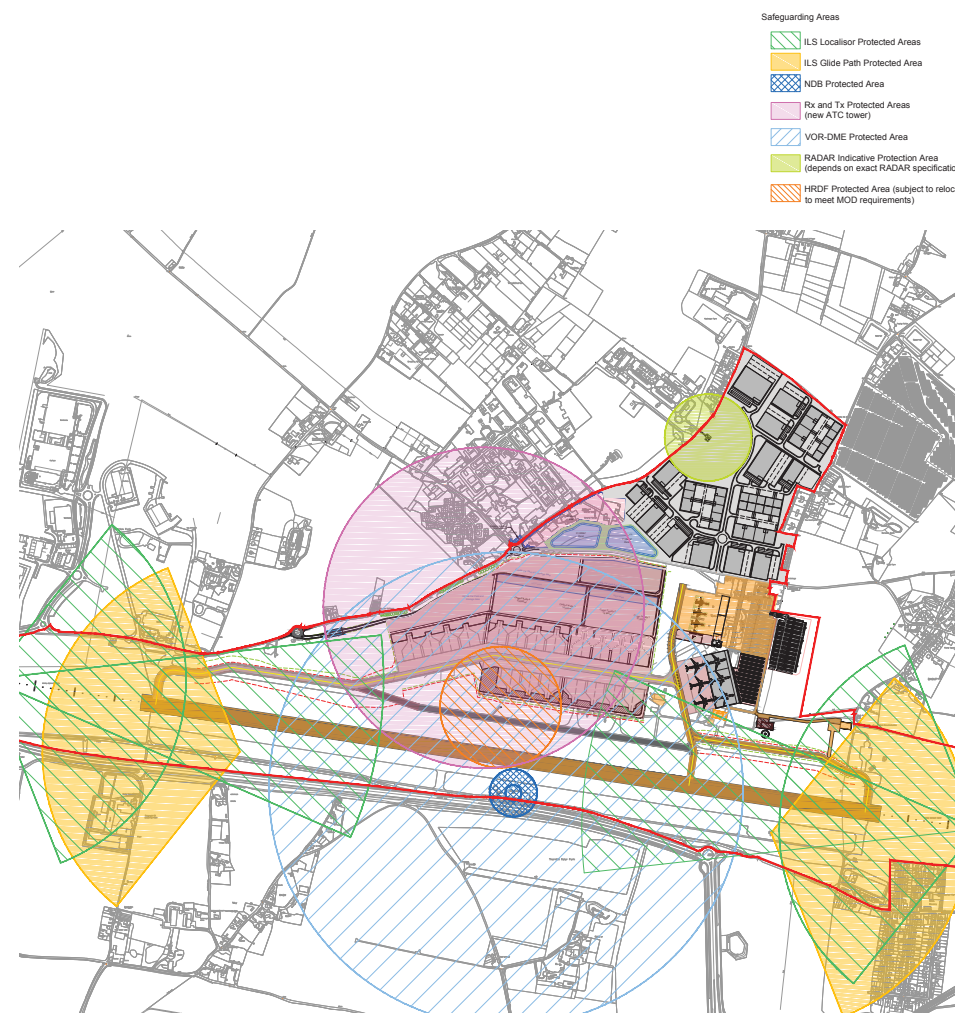
4.16 Safety

The airport will require the provision of suitable firefighting facilities in order to meet its operational, safety and regulatory needs. The detailed design will consider the specific regulatory and end user requirements, but the preliminary design has identified the following areas that need to be considered:

- Airside fire facilities.
- Public firefighting team requirements.
- Internal building fire suppression systems.

The following safety regulations and guidelines have been considered in the design:

- Environmental Impact Assessment of Projects, Guidance on the Preparation of the Environmental Impact Assessment Report, European Commission, 2017.
- Guidelines in Environmental Management for Facilities Storing Bulk Quantities of Petroleum Products and Other Fuels, Energy Institute 2015.
- Chemicals and Downstream Oil Industry Forum (CDOIF) – Environmental Risk Tolerability for COMAH Establishments V2.
- Guide to Predicting Environmental Recovery Durations for Major Accidents Energy Institute 2017.
- Guidance on the Interpretation of Major Accidents to the Environment for the Purposes of COMAH Regulations, 1999, Department of the Environment, Transport and the Regions, 1999.
- All Measures Necessary – Environmental Aspects Guidance to the Competent Authority Inspectors and Officers, 2016. Health and Safety Executive (HSE)/Environment Agency (EA)/Scottish Environment Protection Agency (SEPA)/Natural Resources Wales, Office of Nuclear Regulation (ONR).
- Safety and Environmental Standards for Fuel Storage Sites Process Safety Leadership Group, HSE 2009.
- Guidelines for Environmental Risk Assessment and Management Green Leaves III, 2011. Dept of Environment, Food and Rural Affairs.



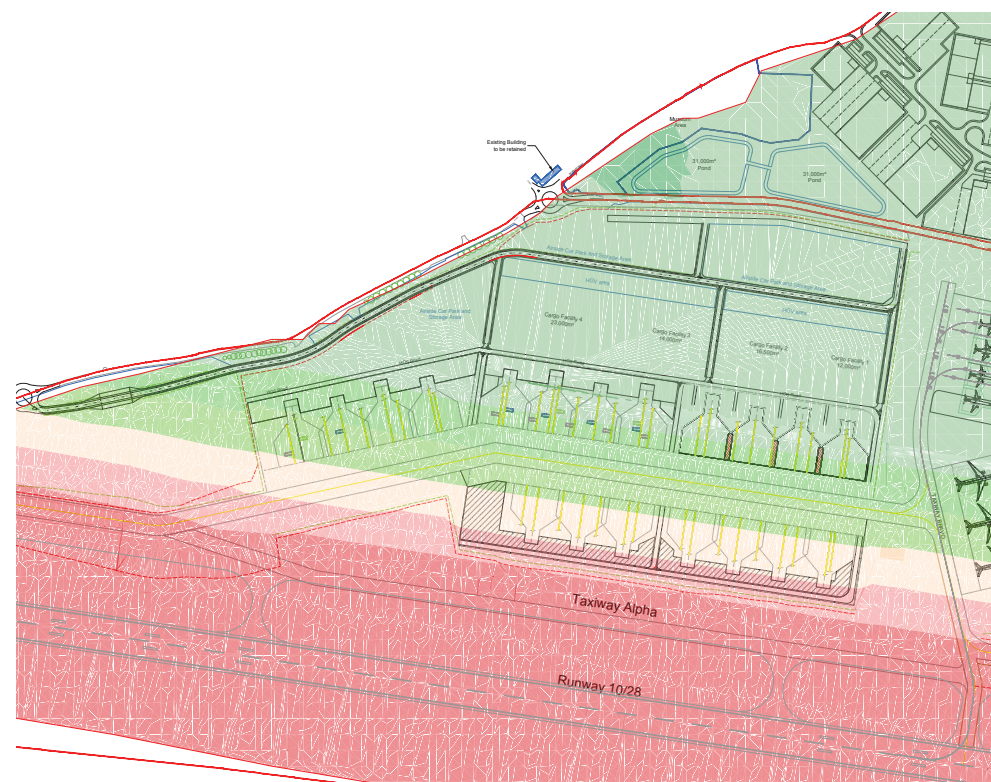
Technical Safeguarding Plan for Proposed Layout (RPS-MSE-X-DR-C-1911)

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4.16 Safety

- CIRIA C736 Containment Systems for the Prevention of Pollution: Secondary, Tertiary and Other Means for Industrial and Commercial Premises.
- Reducing Risks Protecting People (R2P2).
- EASA Certification Specifications and Guidance Material for Aerodromes Design CS-ADR-DSN.
- CAP 168 Licensing of Aerodromes.
- CAP 393 The Air Navigation Order 2016 and Regulations.
- CAP 642 Airside Safety Management.
- CAP 700 Operational Safety Competencies.
- CAP 736 Operation of Directed Light, Fireworks, Toy Balloons and Sky Lanterns within UK Airspace.
- CAP 760 Guidance on the Conduct of Hazard Identification, Risk Assessment and the Production of a Safety Case.
- CAP 772 Wildlife Hazard Management at Aerodromes.
- CAP 795 Civil Aviation authority. Safety Management Systems Guidance for organisations 2015.
- CAP 1616 Airspace Design: Guidance on the regulatory process for changing airspace design including community engagement requirements.
- EASA Acceptable Means of Compliance (AMC) and Guidance Material (GM) to Authority, Organisation and Operations Requirements for Aerodromes.

SURFACE LEVEL DATA			
NUMBER	MINIMUM LEVEL	MAXIMUM LEVEL	COLOUR
1	0.00	10.00	Red
2	10.00	20.00	Orange
3	20.00	30.00	Yellow
4	30.00	40.00	Light Green
5	40.00	50.00	Medium Green
6	50.00	60.00	Dark Green
7	60.00	70.00	Very Dark Green



Obstacle limitation surface (OLS) requirements (Cargo Area) (RPS-MSE-XX-DR-C-1921)

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4.17 Lighting

Airport Lighting

The scheme has been designed to achieve compliance with the International Commission on Illumination (CIE) Guide:

CIE 150:2003 Guide on the Limitation of the Effects of Obtrusive Light from Outdoor Lighting Installations for Environmental Zone E2:

Rural Low district brightness - Village or relatively dark outer suburban locations.

Luminaires use high efficiency, low energy LED lamps and the luminaires are designed to shine their light down, and by carefully controlling cut off angles the luminaires minimise any upward light pollution to less than 2.5% of luminaire flux for the total installation that goes directly into the sky.

Lighting levels are minimised with higher lighting levels only used where they are needed to comply with the minimum recommend lighting standards such as for the airport aprons.

Business Park Lighting

The scheme has been designed to achieve compliance with the International Commission on Illumination (CIE) Guide:

CIE 150:2003 Guide on the Limitation of the Effects of Obtrusive Light from Outdoor Lighting Installations for Environmental Zone E2:

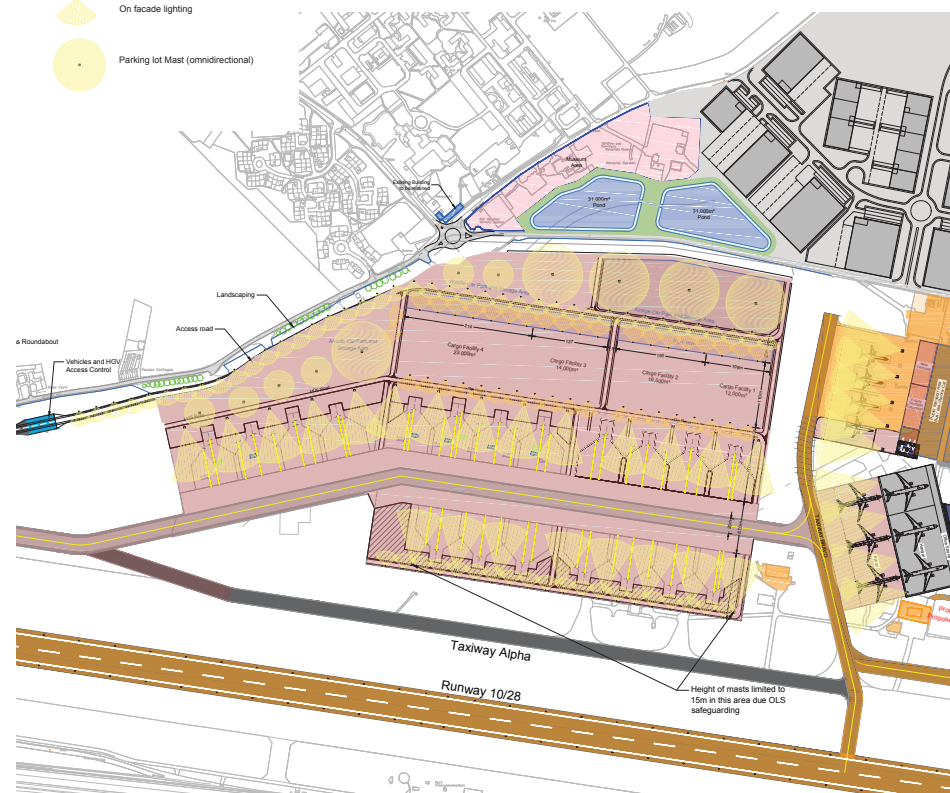
Rural Low district brightness - Village or relatively dark outer suburban locations.

Luminaires use high efficiency, low energy LED lamps and the luminaires are designed to shine their light down, and by carefully controlling cut off angles the luminaires minimise any upward light pollution to less than 2.5% of luminaire flux for the total installation that goes directly into the sky.

The lighting design will meet a boundary condition of a maximum of 1 Lux in order to avoid any obtrusive light into adjoining properties.

Key

Lighting with direction show indicatively



Lighting Plan for Proposed Layout (RPS-MSE-X-DR-C-1702)

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4.18 Design Related Mitigation

Throughout the design stage of the development, there have been many factors that have influenced the design and been mitigated to suit regulations/recommendations or to benefit the design in some other way. These measures will guide both the construction phase of the development as well as the future running of the site. Some of the mitigation measures include consideration of the following:

- Biodiversity
- Ground and Surface water
- Drainage
- Air Quality
- Historic environment
- Land Quality
- Landscape and Visual impact
- Noise
- Major accidents and Disasters

For a more detailed analysis of design related mitigation please refer to the document; Register of Environmental Actions and Commitments (Ref: TR20002/APP/2.5)

