



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:** July 2018







RSP

# 5.0 Illustrative Phasing

## 5.0 Illustrative Phasing & Delivery

### 5.01 Illustrative Phasing and Delivery Introduction

Given the submission date for the DCO application, the DCO may be granted in Q3 2019 and this timescale has been assumed when developing the construction/operational programme for the proposed development.

The forecasting of the air freight and passenger movements for the airport, as discussed further below, has been conducted across a 20-year period from the granting of the DCO. This section outlines the programme for construction and then operation of Manston Airport from over this 20-year period.

The main activities to be undertaken during year 1 would be the construction activities required to return the airport to full operational use. The full reopening of the airport would therefore take place in year 2, currently expected to be Q4 2020, which would also see the start of the air freight services. Passenger services are anticipated to start in year 4, currently 2022.

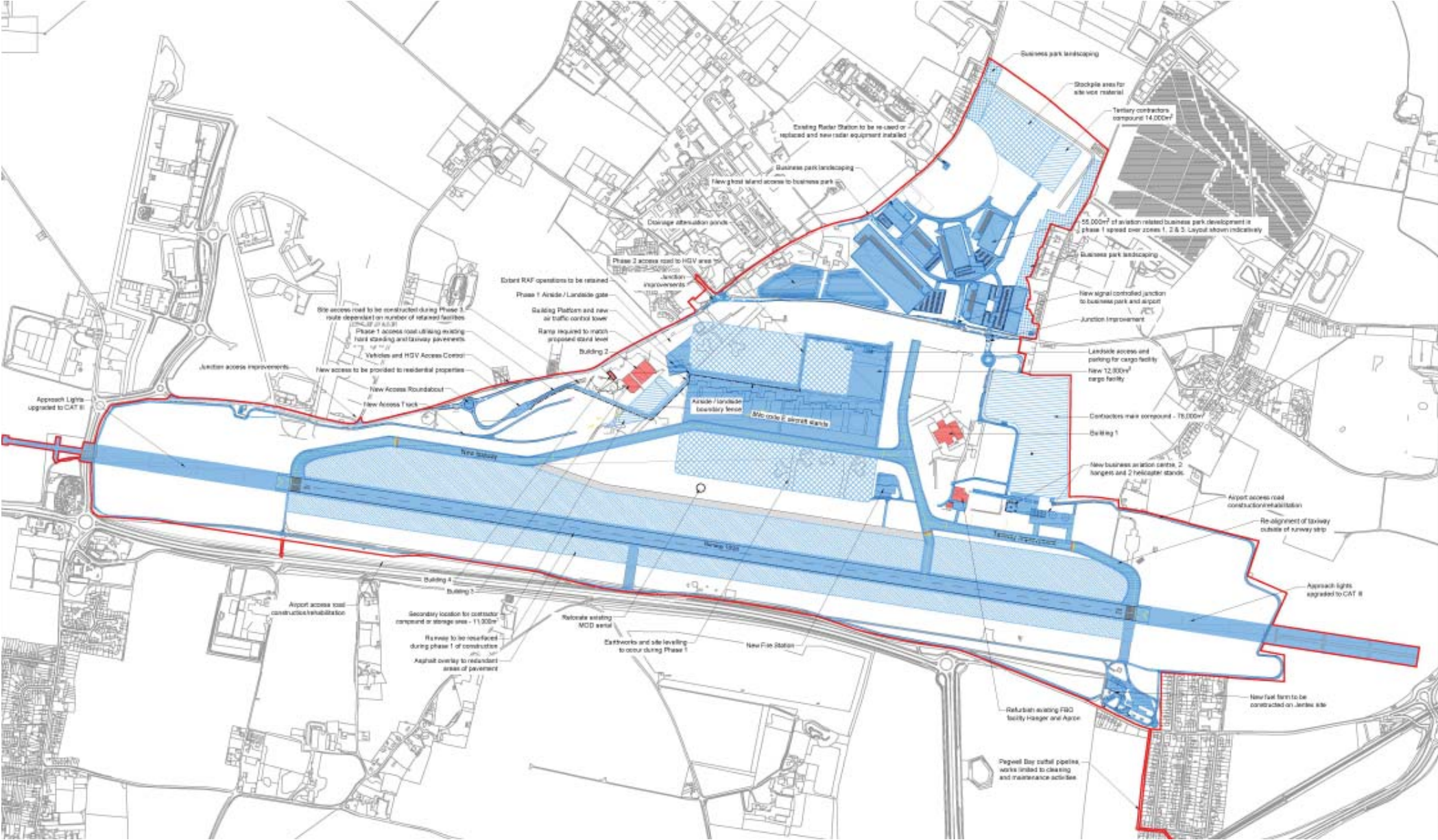
Three further phases of construction, as described in more detail below, would follow in years 2-5, 5-12 and 12-18. During these three phases of construction the airport would remain operational.

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



# 5.0 Illustrative Phasing & Delivery

## 5.02 Illustrative Phasing - Phase 1



**KEY**

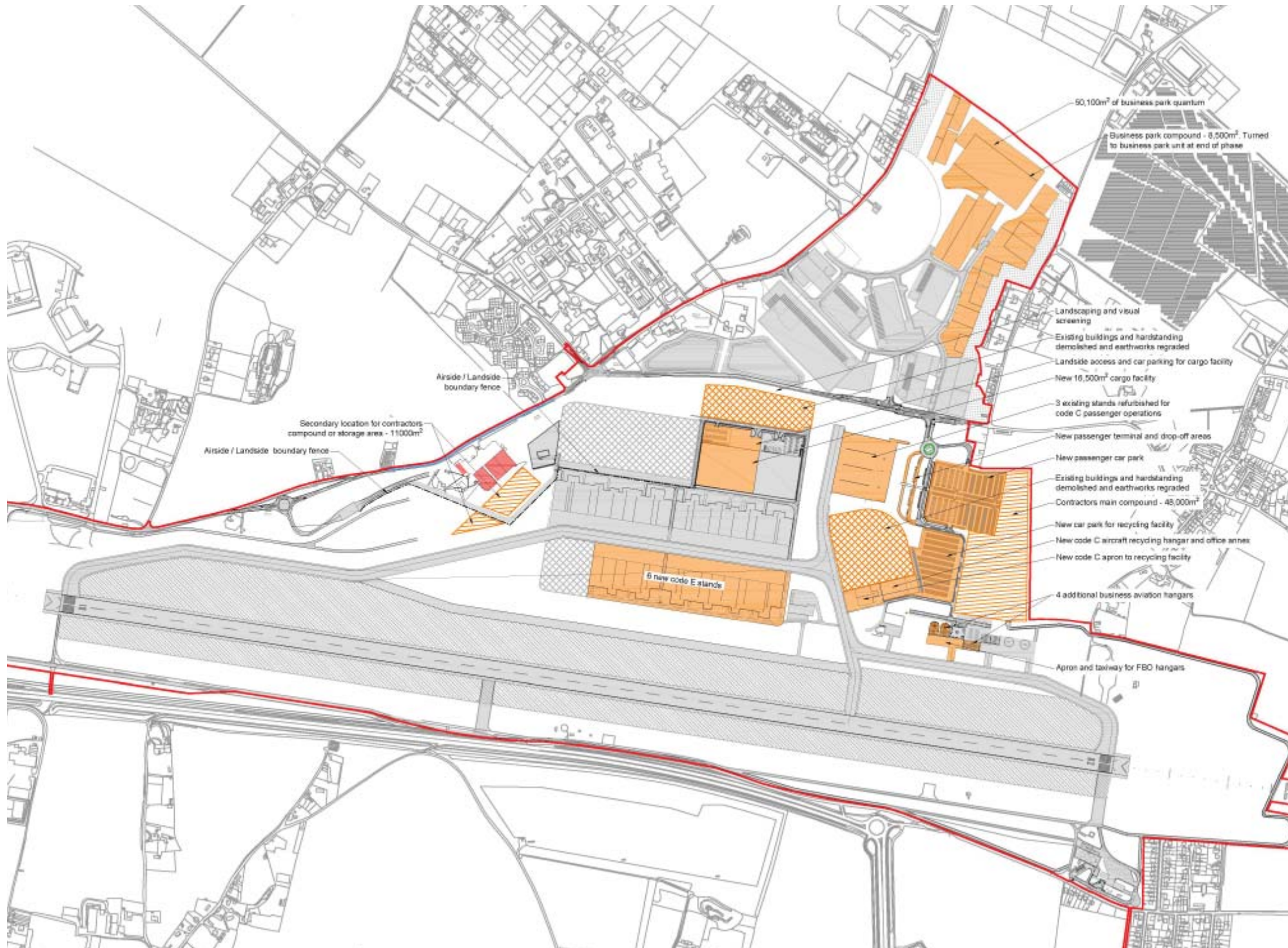
- Order Limits
- Phase 1 Compound(s)
- Phase 1 Construction
- Earthworks and site clearance
- Landscaping
- Asphalt overlay to redundant areas of existing pavement
- Existing building to be retained

PHASE 1		
	Constructed in Phase 1	Site Total
Code E Stands	8	8
Code C Passenger Stands	0	0
Cargo Facilities	12,000 m <sup>2</sup>	12,000 m <sup>2</sup>
Non Aircraft Pavement	758,000 m <sup>2</sup>	1,071,000 m <sup>2</sup>
Aircraft Pavement	393,622m <sup>2</sup>	393,622 m <sup>2</sup>
Landside Business Development	55,000m <sup>2</sup>	55,000m <sup>2</sup>
Business Aviation Hangars (Helipads)	2(2)	2(2)
Construction Compounds	4	-



# 5.0 Illustrative Phasing & Delivery

## 5.03 Illustrative Phasing - Phase 2



**KEY**

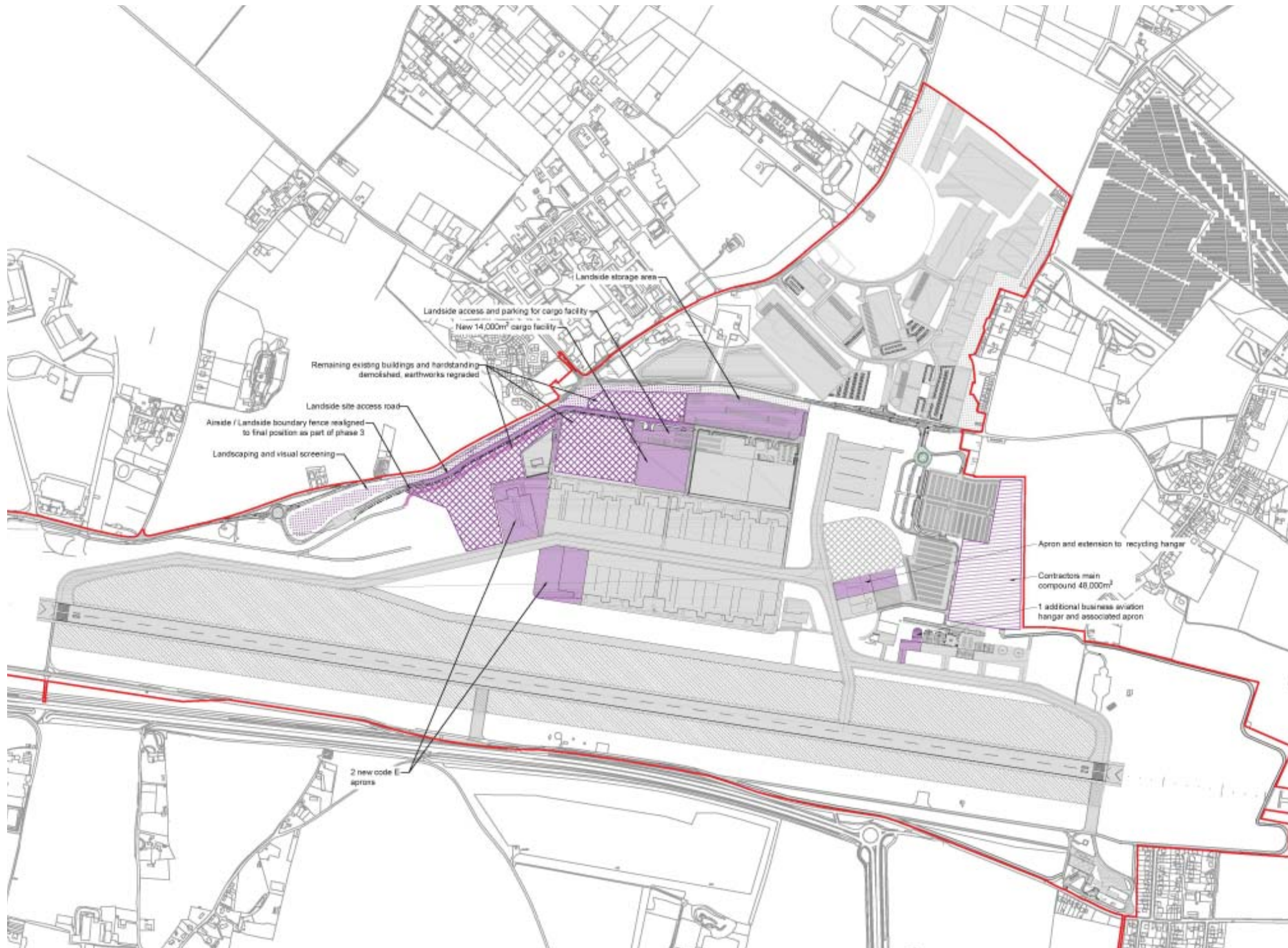
- Order Limits
- Phase 2 Compound(s)
- Phase 2 Construction
- Earthworks and Site Clearance
- Works completed in previous phase
- Area cleared and levelled in previous phase
- Existing buildings to be retained

PHASE 2		
	Constructed in Phase 2	Site Total
Code E Stands	6	14
Code C Passenger Stands	3 (Refurbished)	3
Cargo Facilities	16,500 m <sup>2</sup>	28,500 m <sup>2</sup>
Non Aircraft Pavement	95,000 m <sup>2</sup>	865,000 m <sup>2</sup>
Aircraft Pavement	102,825 m <sup>2</sup>	496,447 m <sup>2</sup>
Landside Business Development	50,100m <sup>2</sup>	105,100m <sup>2</sup>
Business Aviation Hangars (Helipads)	4	6(2)
Recycling Hangars and Aprons	1	1
Construction Compounds	3	-



# 5.0 Illustrative Phasing & Delivery

## 5.04 Illustrative Phasing - Phase 3



**KEY**

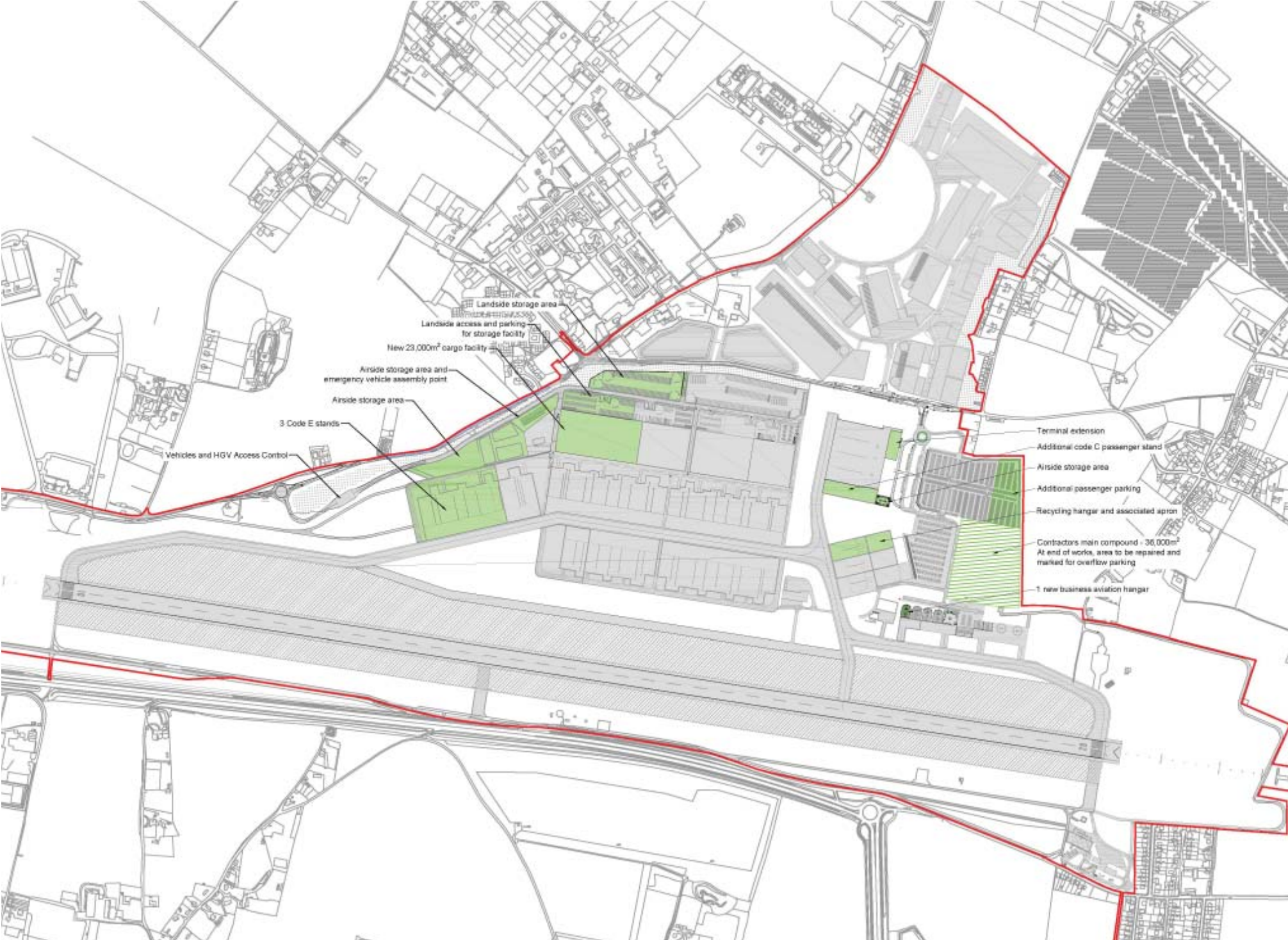
- Order Limits
- Phase 3 Compound(s)
- Phase 3 Construction
- Earthworks and Site Clearance
- Landscaping
- Works completed in previous phases
- Area cleared and levelled in previous phase

PHASE 3		
	Constructed in Phase 3	Site Total
Code E Stands	2	16
Code C Passenger Stands	0	3
Cargo Facilities	14,000 m <sup>2</sup>	42,500 m <sup>2</sup>
Non Aircraft Pavement	59,000 m <sup>2</sup>	924,000 m <sup>2</sup>
Aircraft Pavement	43,463 m <sup>2</sup>	539,910 m <sup>2</sup>
Landside Business Development	0m <sup>2</sup>	105,000m <sup>2</sup>
Business Aviation Hangars (Helipads)	1	7(2)
Recycling Hangars and Aprons	1	2
Construction Compounds	1	-



# 5.0 Illustrative Phasing & Delivery

## 5.05 Illustrative Phasing - Phase 4



KEY	
	Order Limits
	Phase 4 Compound(s)
	Phase 4 Construction
	Works completed in previous phases

PHASE 4		
	Constructed in Phase 4	Site Total
Code E Stands	3	19
Code C Passenger Stands	1	4
Cargo Facilities	23,000 m <sup>2</sup>	65,500 m <sup>2</sup>
Non Aircraft Pavement	72,500 m <sup>2</sup>	996,500 m <sup>2</sup>
Aircraft Pavement	33,900 m <sup>2</sup>	573,810 m <sup>2</sup>
Landside Business Development	0m <sup>2</sup>	105,100m <sup>2</sup>
Business Aviation Hangars (Helipads)	1	8(2)
Recycling Hangars and Aprons	1	3
Construction Compounds	1	-



# 6.0 Design Guide

# 6.0|Design Guide

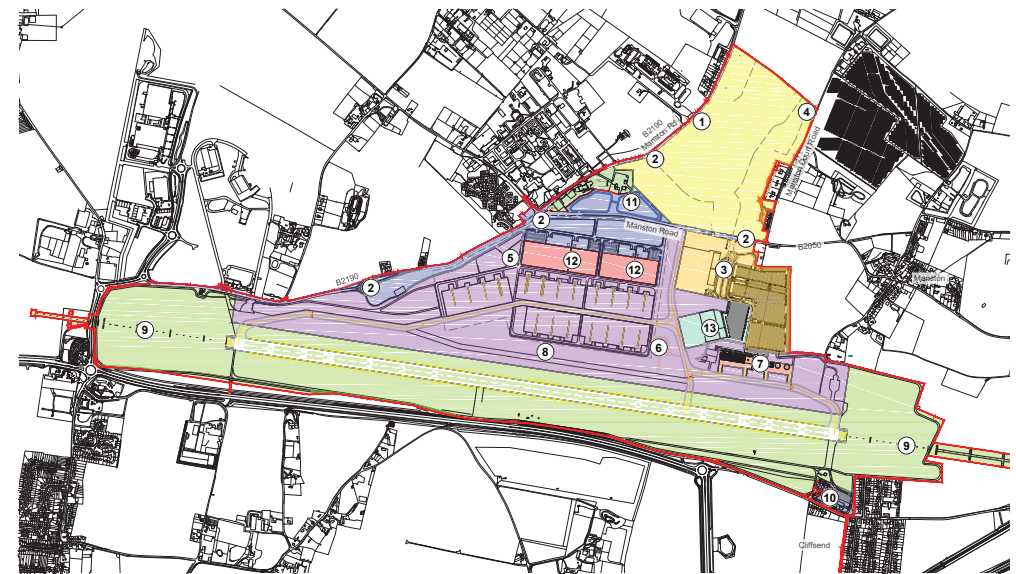
## 6.01 Purpose of the Guide

This section establishes a design guide to be applied to the Proposed Development. This has been informed by NPPF (National Planning Policy Framework) and NPPG (National Planning Practice Guidance). It describes the approach taken to the design of the proposals and discusses principles to support the development design. For each development zone, a consistent approach has been taken to the explanation and definition of the proposals. It will also outline masterplan design principles for building appearance, building scale/density, road typology, landscape strategy and lighting strategy.

## 6.02 Zones of Influence

No. References

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



### KEY

- DCO Order Limits
- Landside Infrastructure
- Airside Infrastructure
- Cargo Facilities
- Passenger Facilities
- Business Aviation Facilities
- Maintenance, Repair and Overhaul Facility
- Runway
- Aviation Related Business Development
- Area safeguarded for Museum, and ancillary office development

## 6.0|Design Guide

### 6.03 Road Typologies

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The roads in the vicinity of the Proposed Development Site, including B2050 (Manston Road), B2190 (Spitfire Way) and the Manston Road/Spitfire Way junction, have been identified as requiring improvement; Kent County Council (KCC) Highways Department has in place proposals to improve the public highway in this area as part of its Thanet Transport Strategy. The project will work with KCC to provide improvements, which are likely to include a signalised junction at the Manston Road/Spitfire Way junction, and other improvements to the local road network in the vicinity of the site.

It has been identified that a new airport access for the cargo/aircraft maintenance facility is required. This is proposed on the B2190 (Spitfire Way) to the west of the existing access and will be designed with sufficient capacity for the proposed airport operations and current proposals include a new roundabout to provide access to the airport. The detailed design of this and other highways and junction improvements will be undertaken following the completion of the Transport Assessment and in consultation with KCC Highway Department and Highways England.

A new network of internal roads for the air freight and cargo operations will also be constructed. These would include lorry and car parking areas for the air freight operations. These would allow the internal movement of all vehicles, ground service equipment and staff working in the air freight services, and minimise the number of movements on the public road network. Suitable security, customs and border check point facilities would be constructed at the site access points and at cargo building facilities.

A landscaping zone between the new internal access road and the public highway, and along the boundary with B2190 (Spitfire Way) and B2050 (Manston Road) will be provided. The landscaping scheme will be designed so that is acceptable within the constraints of the aviation environment.

An Airport Surface Access Strategy, Staff Travel Plan and Pedestrian and Cycle Access Strategy will be developed as part of the Traffic and Transport assessment these will identify suitable embedded measures which should be incorporated into the design of the scheme. The new elements to be considered as part of this are likely to include:

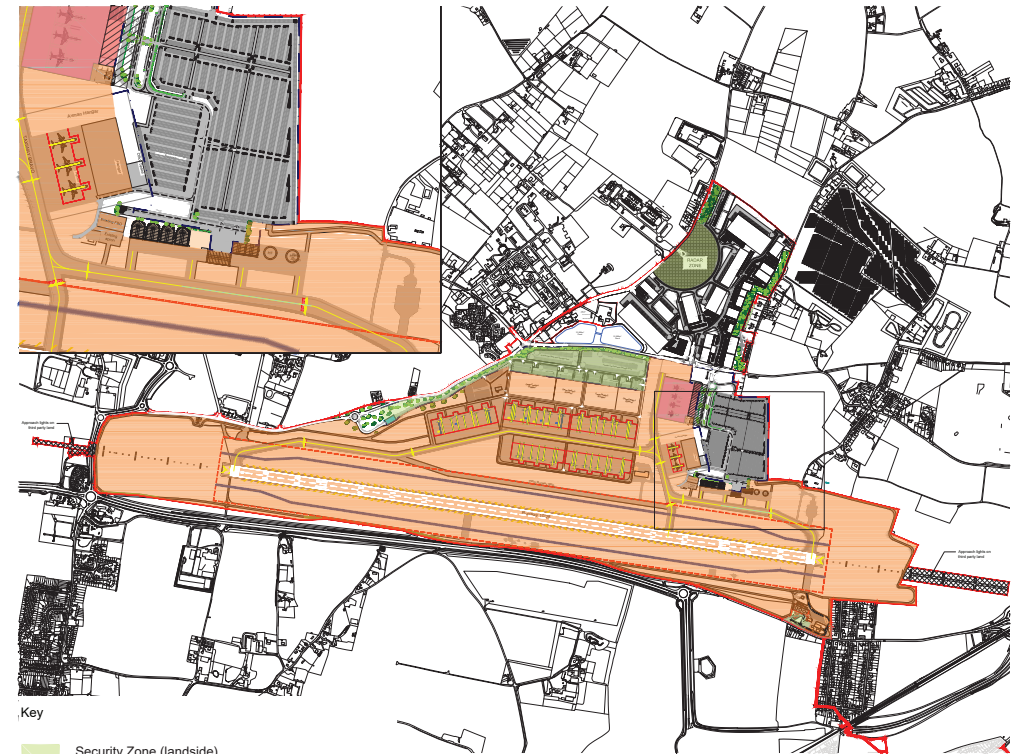
- Traffic calming on less desirable routes.
- Increased and enhanced facilities for taxis, buses and coaches for passengers and staff.
- A network of internal footpaths and cycle paths for staff use.
- Upgrade and/or enhancement of existing pedestrian and cycle provisions within the vicinity of the airport site.
- Additional public service bus stops, and public bus service frequency and route changes (to be agreed with the local authority and bus route operators).

# 6.0|Design Guide






## 6.04 Zone-Specific Parameters

The airport will be divided into several security zones.

- Security Zone (landside)
  - Private land with gated or controlled access.
  - No public access.
  - Limited security, no free access to airside or critical areas.
- Security Zone (airside)
  - Operational airfield area.
  - No access without relevant airside clearance.
  - Controlled movement and zoning.
  - X-ray and standard airfield security screening required to enter area.
- Security Zone (critical area)
  - Area used for embarkation of passenger aircraft.
  - Area can not be entered without security checks.
- Area protected against vehicle access as part of counter terrorism measures
- Third Party Land



Key

-  Security Zone (landside)
  - Private land with gated or controlled access.
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  - Limited security, no free access to airside or critical areas.
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  - X-ray and standard airfield security screening required to enter area.
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-  Third Party Land
  - Third Party Land



# 6.0|Design Guide

## 6.04 Zone-Specific Parameters

The Northern Grass area is proposed to be divided into distinct development zones.

Radar Zone - Area safeguarded for radar operation

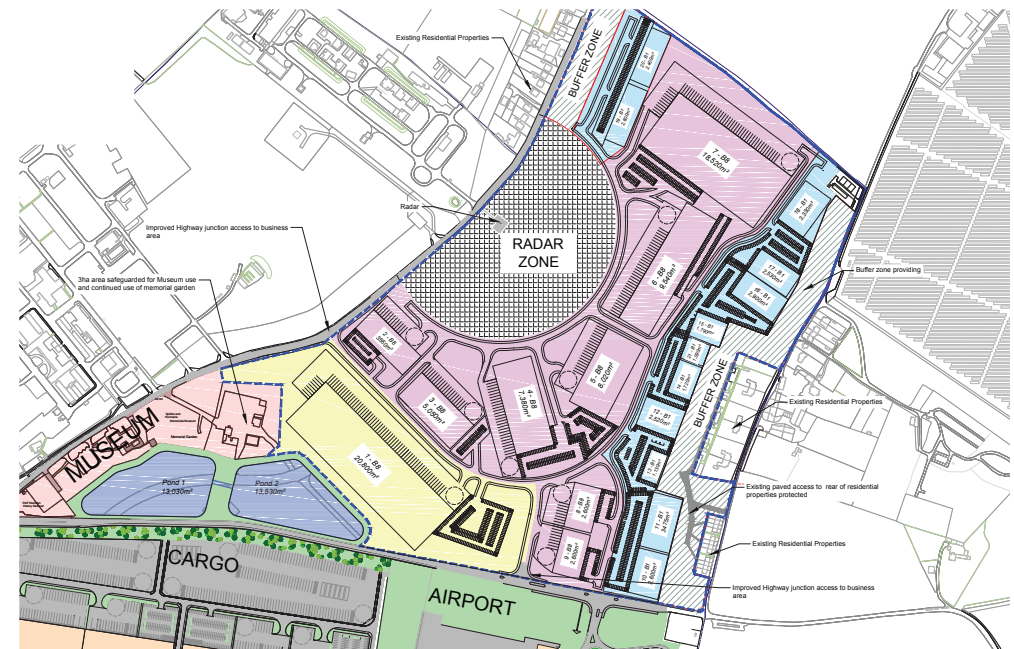
Zone 1 – This is the building zone considered to be of highest sensitivity to residential receptors. Buildings in this area will be limited in height to a maximum of 16m above finished ground level, which is comparable to a building height of approximately 2-3 storeys. Buildings will be limited to usage class B1.

Zone 2 – This area is considered of moderate sensitivity to residual receptors. Buildings will be either B1 or B8 usage class but limited in height to a maximum of 18m above finished ground level.

Zone 3 – This area is considered to have the least sensitivity to local residential receptors. B8 development will be prioritised in this area with a maximum building height of 18m above finished ground level.

Buffer Zone – This comprises a 45m strip along the east and northwest boundaries. No B1 or B8 buildings will be constructed within this strip and use will be limited to landscaping, visual screening, retention of existing accesses and ground level pavement. It is accepted that some services infrastructure may be required in this area such as substations and hydrants. The impacts of these are considered negligible. Some existing pavement infrastructure will also be retained to provide access to the rear of housing on Manston Road.

Internal Highways – The highways network will be a single carriageway estate road with a 30mph speed limit designed to accommodate both light vehicles and HGV traffic. Two accesses have been provided onto the local highways network. A pedestrian footpath will be provided and constructed in accordance with KCC standard details so that it can be adopted into the highway network.



**Key**

- Radar Zone  
Area safeguarded for radar operation.
- Buffer Zone  
45m clearance to first building from site boundary in sensitive areas
- Zone 1  
Area of most sensitivity
  - Building height limited to ≤16m above finished ground level height
  - Building use limited to offices
  - 2 Building GFA - ≤30,000m<sup>2</sup> of B1 development
- Zone 2  
Area of moderate sensitivity
  - Buildings limited to ≤18m above finished ground level height
  - 2 Building GFA - ≤60,000m<sup>2</sup> of B1/B8 development
- Zone 3  
Area of minimal sensitivity
  - Building limited to ≤18m above finished ground level height
  - 2 Building GFA - ≤28,000m<sup>2</sup> of B8 development
- Aviation related business development
  - 2 Building GFA - ≤105,100m<sup>2</sup> of development complying with zone requirement above

## 6.0|Design Guide

### 6.05 Typical Building Form and Appearance

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The materiality principles for the development will be to achieve a site wide consistent, contemporary and light industrial aesthetic. External wall finishes will be tailored to suit the end user requirements but a typical construction methodology would be for a steel portal framed building. Wall cladding could be vertically and/or horizontally laid composite panels with either a micro-rib or trapezoidal profile. Feature colours could be used to break up the exterior view and signify key areas, for example; office units or the division between facilities.

For the cargo facilities there is potential to achieve an aerofoil shaped building representing a plane's wing using a standing-seam roof. 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. A standing seam aluminium roof and composite wall cladding system could be used to create the required architectural building envelopes with polycarbonate panels providing internal natural lighting to warehouse spaces and glazing to office spaces.



# 6.0|Design Guide

## 6.06 Sustainable Building Design

Full consideration has been given to the use of realistic sustainable design options, and such measures will be incorporated into the development where practicable.

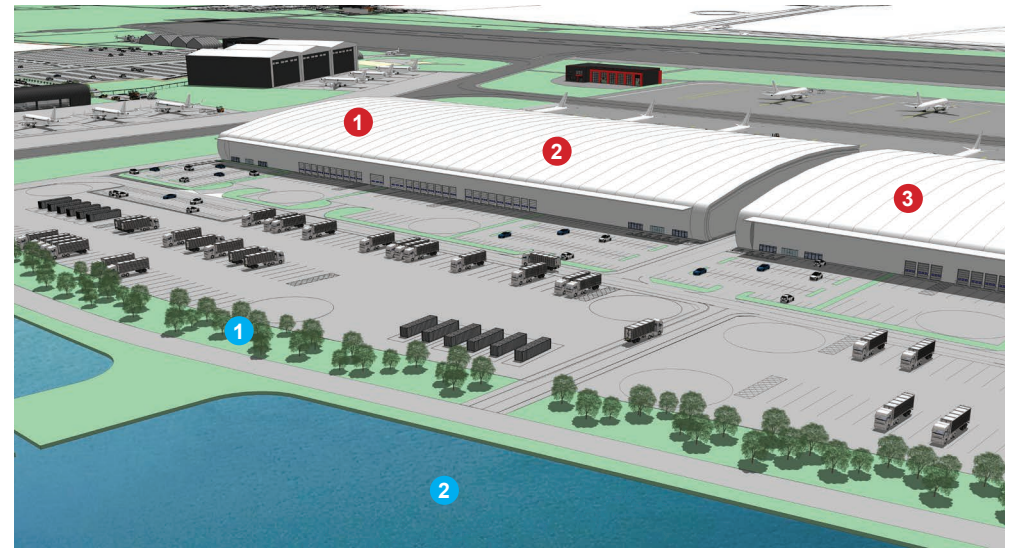
Potential Sustainable Design Considerations:

Site Features:

- 1 Local indigenous vegetation
- 2 Sustainable Drainage Systems (SuDS)

Warehouse Features:

- 1 Area for photovoltaic installations
- 2 Area for storm water recycling
- 3 Area for rooflights



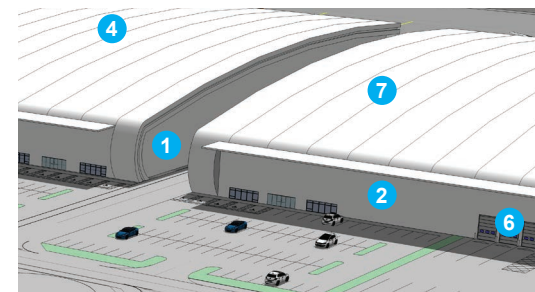
# 6.0|Design Guide

## 6.07 Proposed Building Materials

Below is a list of potential indicative building materials that would develop a light, industrial aesthetic while meeting operational requirements:

Key	Description
①	Micro-Rib Wall Cladding System - Horizontally Laid
②	Trapezoidal Wall Cladding System - Horizontally Laid
③	Trapezoidal Roof Cladding System
④	Standing Seam Curved Roof System
⑤	Insulated Personnel Door & Frame
⑥	Level Access Door
⑦	Polycarbonate Rooflights
⑧	Thermally Broken Aluminium Windows
⑨	Curtain Walling - Thermally Broken Aluminium Facade

Indicative Images:



# 6.0|Design Guide

## 6.08 Proposed External Materials

For the external areas of the site it is proposed to have a variety of materials depending on location and purpose. For areas such as the taxiways and aircraft stands it is proposed to have aircraft suitable composites such as asphalt and concrete. For the vehicular and pedestrian hardstanding concrete asphalt is proposed.

It is also proposed to have mixed planting in green areas with short mown grass to airfield areas, especially the runway. As shown in the landscaping plan, there are also attenuation ponds on site for surface water storage.





# 7.0 Design Principles

## 7.0|Design Principles

### 7.01 Section Introduction

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This section describes the design concepts and principles that have been applied to the Proposed Development. This has been informed by NPPF (National Planning Policy Framework) and NPPG (National Planning Practice Guidance). As well as the principles and criteria for good design for airports infrastructure as set out in Section 4 of the draft Airports NPS which advises on design as follows:

- Design as an integral consideration from the outset of a proposal.
- Visual appearance as an important factor in considering the scheme design, as well as functionality, fitness for purpose, sustainability and cost.
- Producing sustainable infrastructure sensitive to place, efficient in the use of natural resources and energy and matched by an appearance that demonstrates good aesthetics as far as possible.
- Eliminating or substantially mitigating the identified problems by improving operational conditions and simultaneously minimising adverse impacts.
- Mitigating any existing adverse impacts wherever possible, for example in relation to safety or the environment.
- Sustains the improvements to operational efficiency for as many years as is practicable, taking into account capital cost, economics and environmental impacts.

### 7.02 Airport Vision

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RiverOak's plans to redevelop and reopen Manston as a mixed-use airport are anchored by a significant and much-needed air freight hub able to handle in excess of 10,000 air freight movements a year. This capacity qualifies the development as a Nationally Significant Infrastructure Project under the terms of the 2008 Act and will provide additional air freight capacity to the UK as well as serving to relieve pressure from the other, already heavily congested, London and South East airports.

To achieve this target, RiverOak is proposing a multimillion-pound, four-phase construction and redevelopment plan which will be delivered across an estimated 15 years.

## 7.0|Design Principles

### 7.03 Introduction to Principles

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The vision for Manston airport was established by taking into account; the history of the site, environmental issues including surface water and flooding, current opportunities and constraints of the existing built environment on site and local and national design policy. In addition to this RiverOak also undertook a series of statutory and non-statutory consultations which invited comments from the general public, local authorities and key stakeholders. Full details are provided in the Consultation Report.

### 7.04 Aims:

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- 1) Economic: Economic case for development
- 2) Sustainable: Environmental Mitigation
- 3) Good Quality: Landscaping and Architectural Character
- 4) Flexible: Phased Development
- 5) Accessible: Provide access for cargo businesses, passengers and other uses

## 7.0|Design Principles

### 7.05 Principles

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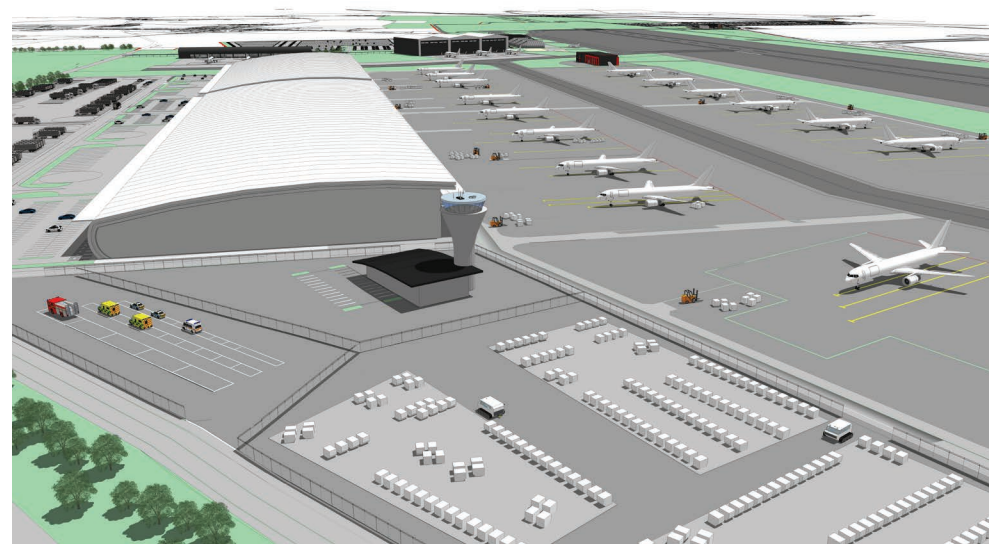
Together with RiverOak the project team created a series of design principles which are informed by the context of site, design policy and the economic and sustainability aims of the scheme. The key planning guidance context which informs these principles are the NPPF (National Planning Policy Framework) and NPPG (National Planning Practice Guidance).

### 7.06 Planning and Climate Change Principles

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All new buildings and conversions of existing buildings must be designed to reduce emissions of greenhouse gases and function in a changing climate. All developments will be required to:

- Achieve a high standard of energy efficiency in line with most recent government guidance.
- Make the best use of solar energy passive heating and cooling, natural light, natural ventilation and landscaping. All new buildings and conversions of existing buildings must be designed to use resources sustainably. This includes, but is not limited to:
  - 1) re-using existing buildings and vacant floors wherever possible.
  - 2) designing buildings flexibly from the outset to allow a wide variety of possible uses.
  - 3) using sustainable materials wherever possible and making the most sustainable use of other materials.
  - 4) minimising waste and promoting recycling, during both construction and occupation.



# 7.0|Design Principles

## 7.07 Urban Design Principles

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The following sections outline how the Manston proposals have responded to the design principles outlined in the NPPF (National Planning Policy Framework) and NPPG (National Planning Practice Guidance).

## 7.08 Character

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At present Manston Airport has its own unique character as an airport which operated from 1916 until 2014. Much of the airport infrastructure, including the runway, taxiways, aprons, cargo facilities and a passenger terminal still remain. A number of the buildings on site are still in use, including a helicopter pilot training centre and the Spitfire and Hurricane and RAF Manston Museums.

The proposal has also identified areas of the site where the current build quality is poor or in need of improvement in order to regenerate functions and uses of the site. Where improvements can be made to the existing built environment, the new developments on site will reference the existing site character and develop a modern industrial aesthetic unique to Manston Airport by referencing the aviation history of the site. The new Manston Airport design character will have an overarching consistency to establish a site identity. In addition to this each development zone will have its own unique architectural character within the overall scheme, through accent of materials, form and applicable scale, to create a legible character for each area of the airport.





# 7.0|Design Principles

## 7.09 Continuity and Enclosure

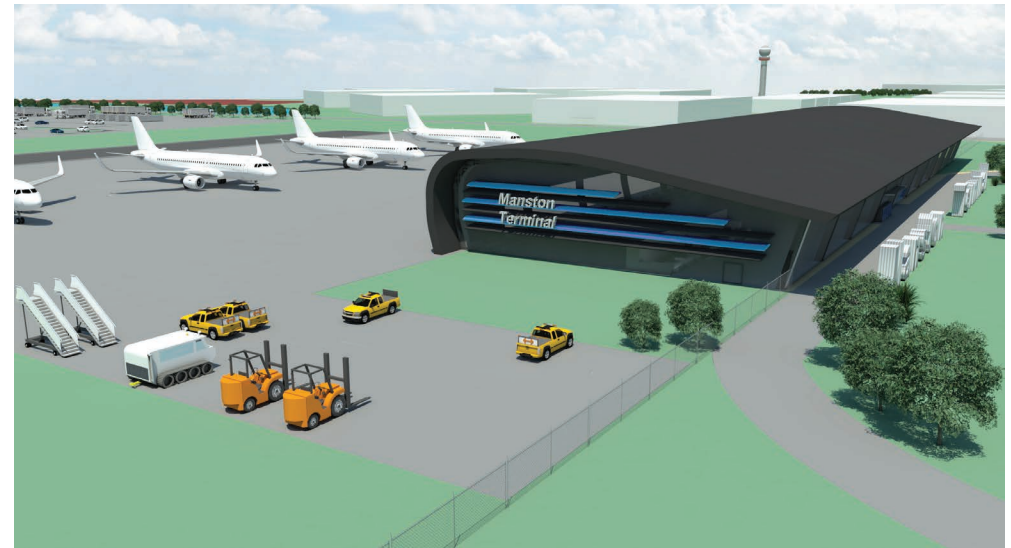
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The proposal will clearly define public and private space on the varied airport masterplan. This will be achieved by the clearly distinguishing public and non-public areas through layout, landscaping and appearance. Where applicable enclosure will be provided to demarcate non-public areas through airside/landside fencing and landscaping on a detailed scale as well as clear development zones established to both connect and distinguish each operational aspect of the airport at a masterplanning scale.

## 7.10 Quality of the Public Realm

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Public areas on site have been designed to be safe, inviting and accessible to all airport users. Special attention has been paid to the public realm surrounding the Terminal in terms of passenger safety and the quality of the space through selective landscaping. Other key public areas of the new airport will be the safeguarded Spitfire and Hurricane Museum.



## 7.0|Design Principles

### 7.11 Ease of Movement

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It is essential that the airport has good accessibility for both operational and passenger uses. The passenger terminal will be provided with dedicated bus laybys and taxi drop off zones as well as suitable car parking provisions with room for flexibility. The cargo areas of the scheme will be designed with suitable access for HGVs and a gatehouse to allow for secure access. Each cargo unit's yard will also be designed to institutional standards.

### 7.12 Legibility

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A consistent design character for the whole site will create an identity for the development making its extents easy to read. The Manston masterplan also sets out distinctive zones of use and these will each have their own distinguished character and legible wayfinding within the site. The scale, materiality and road networks will help communicate these distinctive areas.

### 7.13 Adaptability

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Flexibility and adaptability have been integrated into the overall scheme from feasibility stage allowing the Manston Airport project to be developed in phases according to need and requirement. As the project will be completed over a long time scale there is provision for flexibility of layout so the airport can adapt to changing social, technological and economic conditions. This is a key element in the viability and sustainability of the airport.

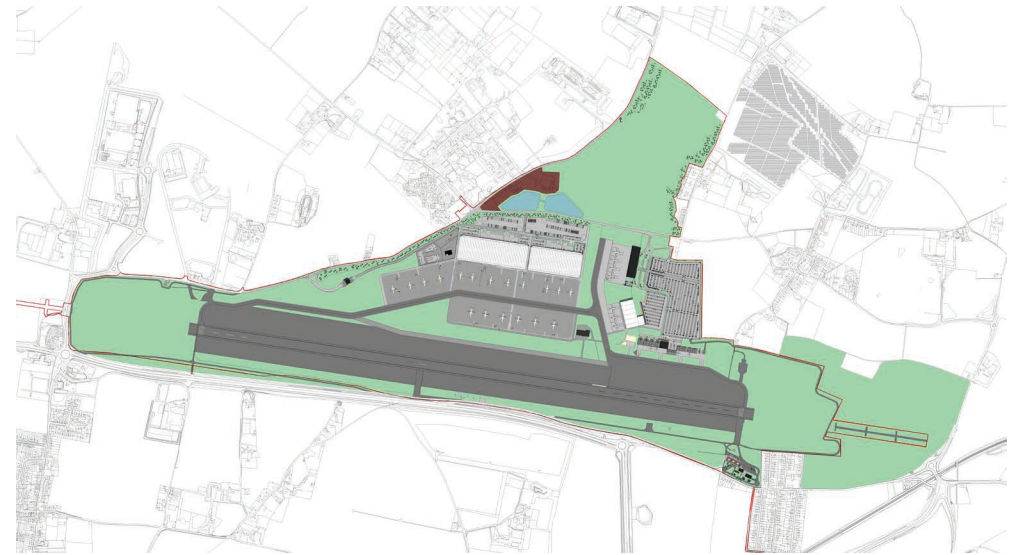


# 7.0|Design Principles

## 7.14 Diversity

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The redeveloped Manston Airport will have similar aviation uses to what has historically been on the site but will provide a broader, more viable and sustainable range of development offering diversity to achieve a flexible and economically resilient scheme through a range of building types and uses. Each development zone outlined in the masterplan will have an appropriate mix of developments which complement each other and provide a range of uses for airport users, freight operators, the local area and businesses.



## 7.0|Design Principles

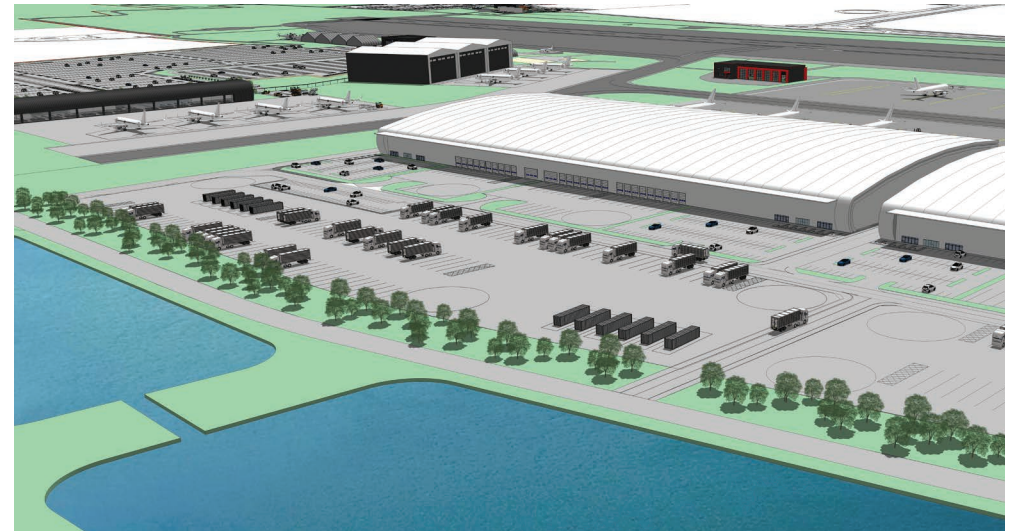
### 7.15 Architectural and Landscaping Design Principles

#### 7.15.1 Overview of Design Principles

The materiality principles for the development will be to achieve a site wide consistent contemporary and light industrial aesthetic. External wall finishes will 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. 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, for example, office units or the division between facilities.

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 would be through tower lights and wall mounted units typical of cargo and distribution facilities. Strategic tree planting would provide visual shielding to neighbouring areas.

Assets such as the attenuation ponds were identified early as having potential to provide a centrepiece for a public area and have therefore been located outside of the airfields security boundary.





# 7.0|Design Principles

## 7.15 Architectural and Landscaping Design Principles

### 7.15.2 Design Objectives

- Existing mature vegetation will be retained where possible and practical as part of the proposals to provide landscape maturity to the development and offer visual containment.
- Buffer planting is proposed along key boundaries to provide visual containment to the development and mitigate the impact on neighbouring properties.
- Specimen tree planting will be provided at key locations to aid legibility and hierarchy within the development.
- Avenues of single species trees will be provided to reinforce wayfinding and site layout within a formal setting.
- A variety of native species will be chosen to promote biodiversity and prevent monoculture which may allow wide spread loss of any one species in the event of a disease epidemic.
- Boundary planting will be managed to provide an informal and natural appearance without encouraging unwanted fauna species that may compromise the airfield.



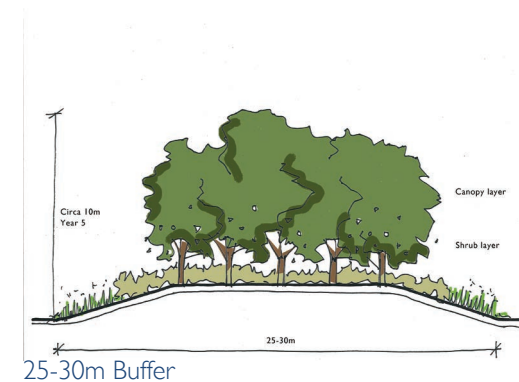
Mature Tree Planting



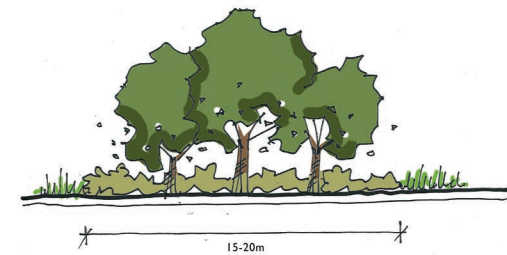
New Tree Planting



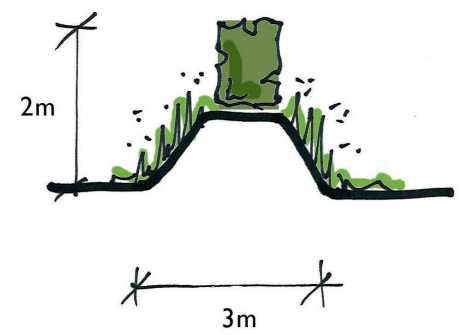
Hedgerows



25-30m Buffer



15-20m Buffer



3m Buffer



# 7.0 Design Principles

## 7.15 Architectural and Landscaping Design Principles

### 7.15.3 Example species appropriate to the development

Typical proposed species appropriate to the development are likely to include;

TREES

- Beech (*Fagus sylvatica*)
- Birch, downy (*Betula pubescens*)
- Common Alder (*Alnus glutinosa*)
- Elm wych (*Ulmus galbra*)
- Field maple (*Acer campestre*)
- Hornbeam (*Carpinus betulus*)
- Lime (*Tilia x europacea*)
- Oak, English (*Quercus robur*)
- Oak, Holm (*Quercus ilex*)
- Pine, Scotts (*Pinus sylvestris*)

HEDGEROWS

- Beech (*Fagus sylvatica*)
- Elaeagnus x ebbingei
- Field maple (*Acer campestre*)
- Hornbeam (*Carpinus betulus*)



Common Alder



Beech (Autumn)



Birch



Lime



Oak



Elm Wych



Hawthorn



Hornbeam



Field Maple

# 7.0|Design Principles

## 7.16 Masterplanning Design Principles

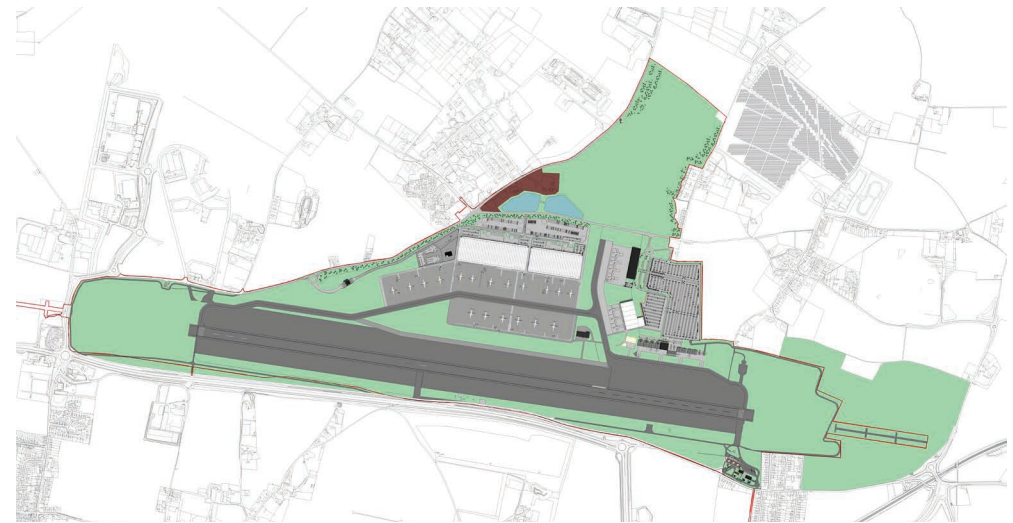
RiverOak's plans for the site aim to take advantage of the previous airfield assets that are available for development by rehabilitating and upgrading these commensurate with the airfields planned status as a major air freight hub.

The existing 10-28 2,748m Manston Airfield runway is an incredible engineering asset which will receive a structural overlay to prepare it for future use. Rehabilitation of this pavement represents a considerable environmental saving when compared to developing entirely new airfield infrastructure on a greenfield site.

Modern replacements for the airfields fire station and terminal buildings have been located in the same general area as their previous iterations to take advantage of existing connections. Hard structures such as the passenger aprons, taxiway Bravo and the passenger carparks will be resurfaced rather than abandoned providing further environmental savings.

An existing Fuel Farm facility which shares a boundary with the airport was identified early by the project team as having the potential to supply fuel to the site. Development of an existing established facility was considered highly preferable to reduce the airports impact on the local environment. Subsequent discussions with the Environment Agency have been positive and the project team expects this site to supply the airfield's aviation fuel needs in future.

An existing outfall surface water pipeline connects the airfield to Pegwell Bay. As part of the project RiverOak have commissioned exploratory surveys of this pipeline which have confirmed it's viability as a surface water discharge route. Through design development RiverOak have discovered that ownership of this pipeline is unclear, by taking ownership of the pipeline RiverOak are taking responsibility for maintenance and discharge of an otherwise uncontrolled asset.



# 7.0|Design Principles

## 7.17 Design Principles of Each Zone

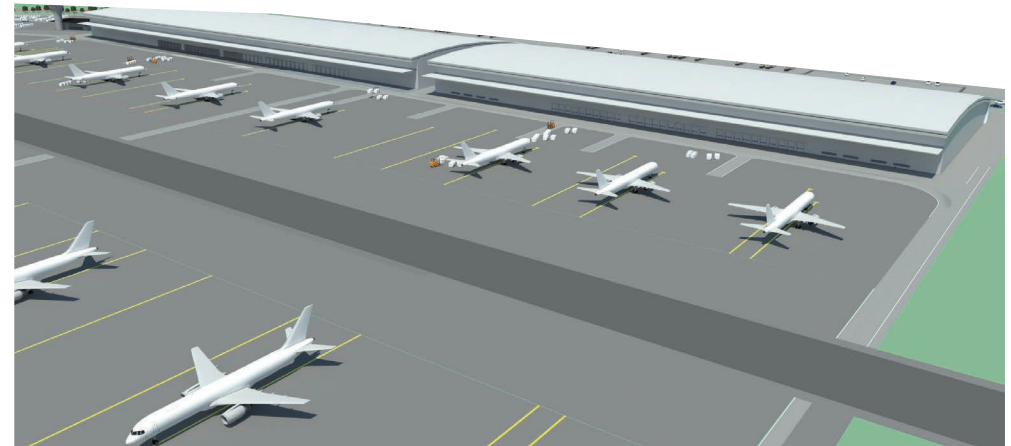
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### 7.17.1 Runway, Taxiway, Apron and Stands

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The runway represents a significant pre-existing airfield asset which has the potential for rehabilitation and re-use. The RiverOak team plan to make full use of this asset and the masterplan makes it clear that the runway will be repaired and retained.

Existing taxiway and apron pavements will be retained where possible as this represents significant environmental and cost saving. New pavements will be required to provide additional capacity in line with the proposed expansion into a major freight and cargo hub. The team is also aware that some areas of the airfield no longer comply with relevant EASA and industry guidelines, these will be rehabilitated and replaced where needed. All new and rehabilitated pavements will comply with relevant industry guidance. Currently this is represented by the European Aviation Safety Agency Certification Specifications and Guidance Material for Aerodromes Design CS-ADR-DSN Issue 3 8th December 2017.





# 7.0|Design Principles

## 7.17 Design Principles of Each Zone

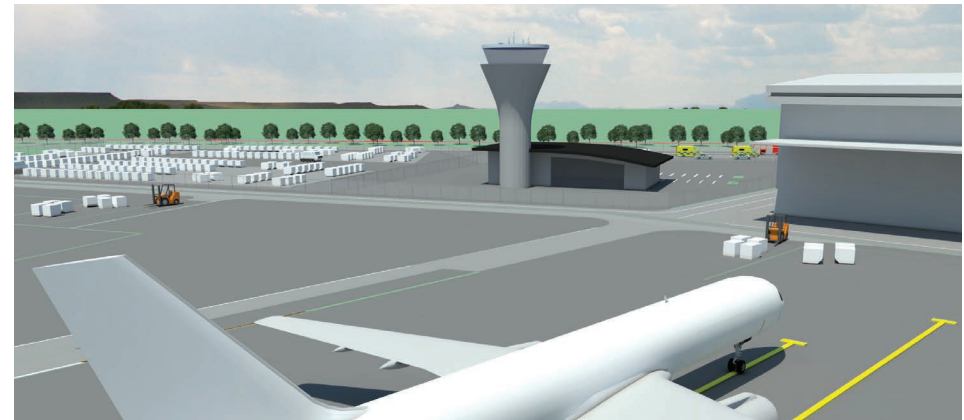
### 7.17.2 Air Traffic Control, Navigations Aids, Radar and Lighting

The existing ATC building, located immediately to the north of the runway, is not in a location that would allow the controllers to safely and easily operate the new configuration of the re-opened airport. It is also situated within the safeguarding area of the runway. Therefore a new ATC facility would be required. A study is currently being completed regarding the provision of an offsite ATC facility. This could result in the removal of the ATC building and its replacement with a series of CCTV cameras which are linked to a remote ATC service. Until this study has been completed and discussions held with the CAA the assumption is that a new ATC building will be required and new equipment installed.

The current proposal is for a new ATC facility to be located in the north west of the main airport site adjacent to the airfreight cargo stands. From here the air traffic controllers will have uninterrupted views of both runways, the taxiways, both runway thresholds, and cargo stands. The passenger stands would be obscured by the cargo facility and so, in order to minimise the height of the proposed structure, the management of aircraft movements on the passenger apron will be via a network of CCTV cameras linked backed to the new ATC.

An annex to the tower will provide space for the additional airfield operation equipment and departmental offices. This will be a two storey structure steel frame construction with suitable cladding and profiled roof. Aesthetically the building will be in keeping with the adjacent structures and the ATC tower.

ATC's can be designed in a variety of styles and the final tower design will suit the design aesthetic of the site.



A new radar would be required to replace the previous radar which was sold when the airport closed. The new radar will be installed using the existing radar tower located in the 'Northern Grass' area or a new tower and radar installed at the same location. An area around the radar has been safeguarded to allow safe operation.

The former approach lights within the airport boundary have been removed so will need to be replaced. Outside the airport boundary the approach lights remain and at this stage it is anticipated that these will not require replacing except that additional approach lights will be required to meet the requirements for CAT II/III operations, but existing lights will be reused where possible.

The existing airfield ground lighting (AGL), located within the runway and taxiway surface will be replaced and additional lights installed on the new taxiways to comply with appropriate requirements.

## 7.0|Design Principles

### 7.17 Design Principles of Each Zone

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#### 7.17.3 Air Freight and Cargo Facilities

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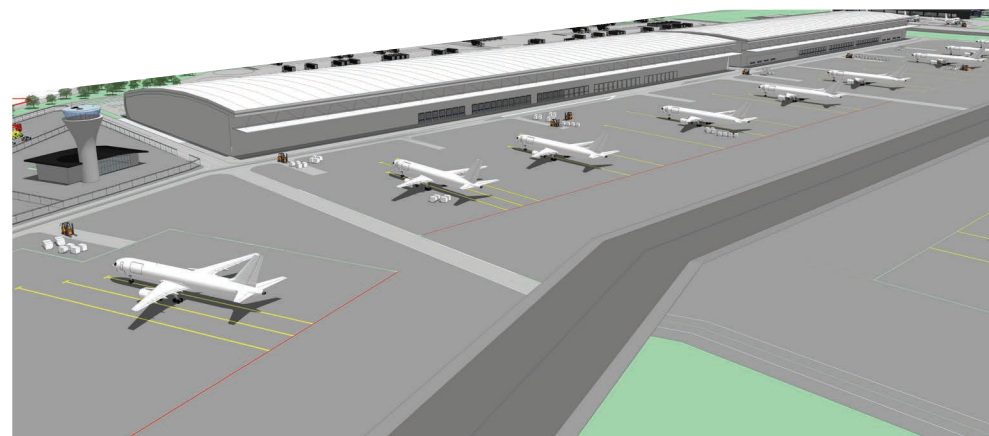
The primary focus of the reopened airport will be airfreight, and in order to meet the anticipated demand from the airfreight forecast, new cargo facilities will be required.

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

The airside elevation looks directly south onto an access road with adjacent aircraft stands. The airside frontage will have a mixture of industrial access doors and windows. This airside frontage is facing away from the nearest residential areas further reducing the noise and visual impact.

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 would be through tower lights and wall mounted units typical of cargo and distribution facilities. Strategic tree planting will provide visual shielding to neighbouring areas.

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 will be demolished during Construction Phase 3 in order to accommodate the new cargo facilities that would be built during this phase.



## 7.0|Design Principles

### 7.17 Design Principles of Each Zone

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#### 7.17.4 Passenger Terminal and Parking Facilities

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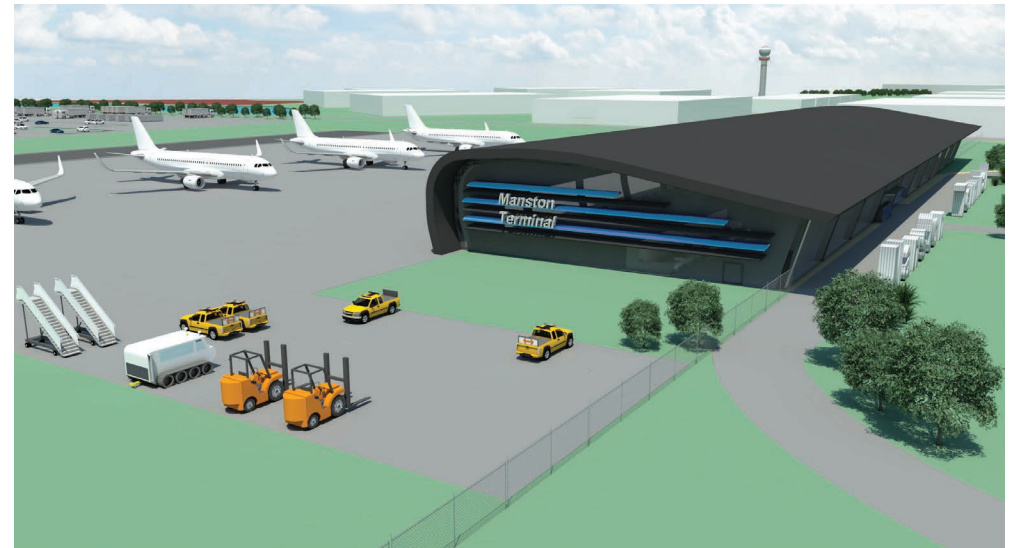
On the landside frontage, the existing surface car park will be extended. A new internal highway network, including a one way system, will be constructed to provide taxi, bus and pickup facilities for passengers. Strategic placement of bollards and hard areas will be provided to create a 30m clear area in front of the terminal building to comply with security regulations.

The terminal building will have a maximum elevation of 15m above ground level. The initial footprint will be 2,200m<sup>2</sup> with the ability to increase to 4,500m<sup>2</sup> to meet growth demands. The approximate dimensions of the initial footprint will be 75m x 30m.

Structurally, the building will comprise a steel frame with cladding and appropriate glazing. Architecturally the building will be consistent with the cargo buildings,

The existing terminal car park, which provides approximately 860 spaces, will be extended to provide parking for a total of 3,041 vehicles including 75 disabled parking bays. The carpark area will be divided up to include staff and long stay parking. Land is already available adjacent to the existing car park having been set aside for a previous airport masterplan proposal. Some general maintenance and new access/exit barriers will be needed to the existing car park. Parking facilities to the west of the site entrance from the B2050 (Manston Road) will provide staff parking.

The car park will also include new areas for taxi ranks, drop off/pick up, buses and coaches; the number of spaces for these modes of transport will be determined following the completion of the Transport Assessment.





# 7.0|Design Principles

## 7.17 Design Principles of Each Zone

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### 7.17.5 Northern Grass Area

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The Northern Grass Area design is to be confirmed in the detailed design stage of the development but will comprise B8 industrial warehouse and B1 office units that conform to a consistent, contemporary light industrial aesthetic that is in keeping with the rest of the development. External wall finishes will be tailored to suit the end user requirements but a typical construction methodology would be for a steel portal framed building. Wall cladding could be vertically and/or horizontally laid composite panels with either a micro-rib or trapezoidal profile. Feature colours could be used to break up the exterior view and signify key areas, for example; office units or the division between facilities.

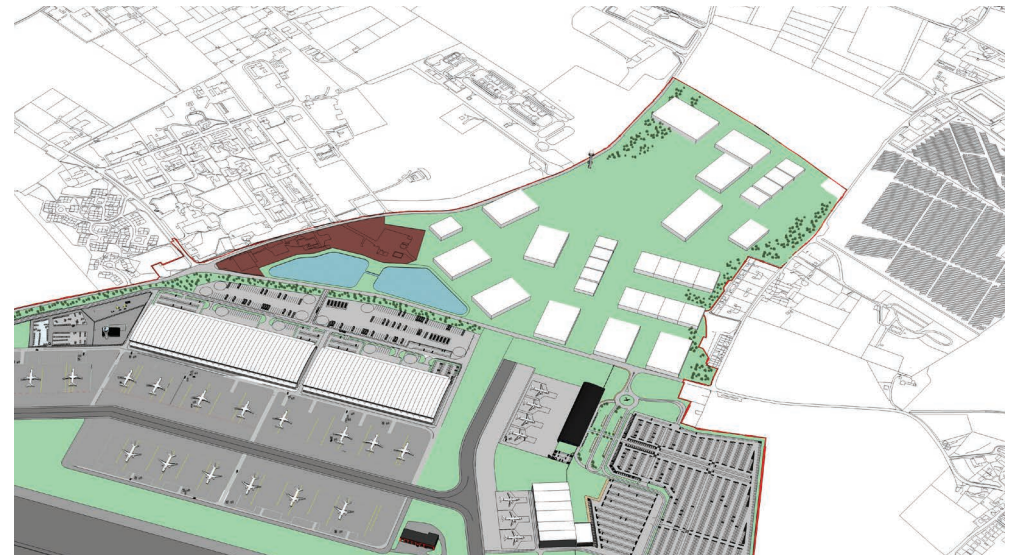
The Northern Grass area will have zoned areas with height constraints as below:

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.

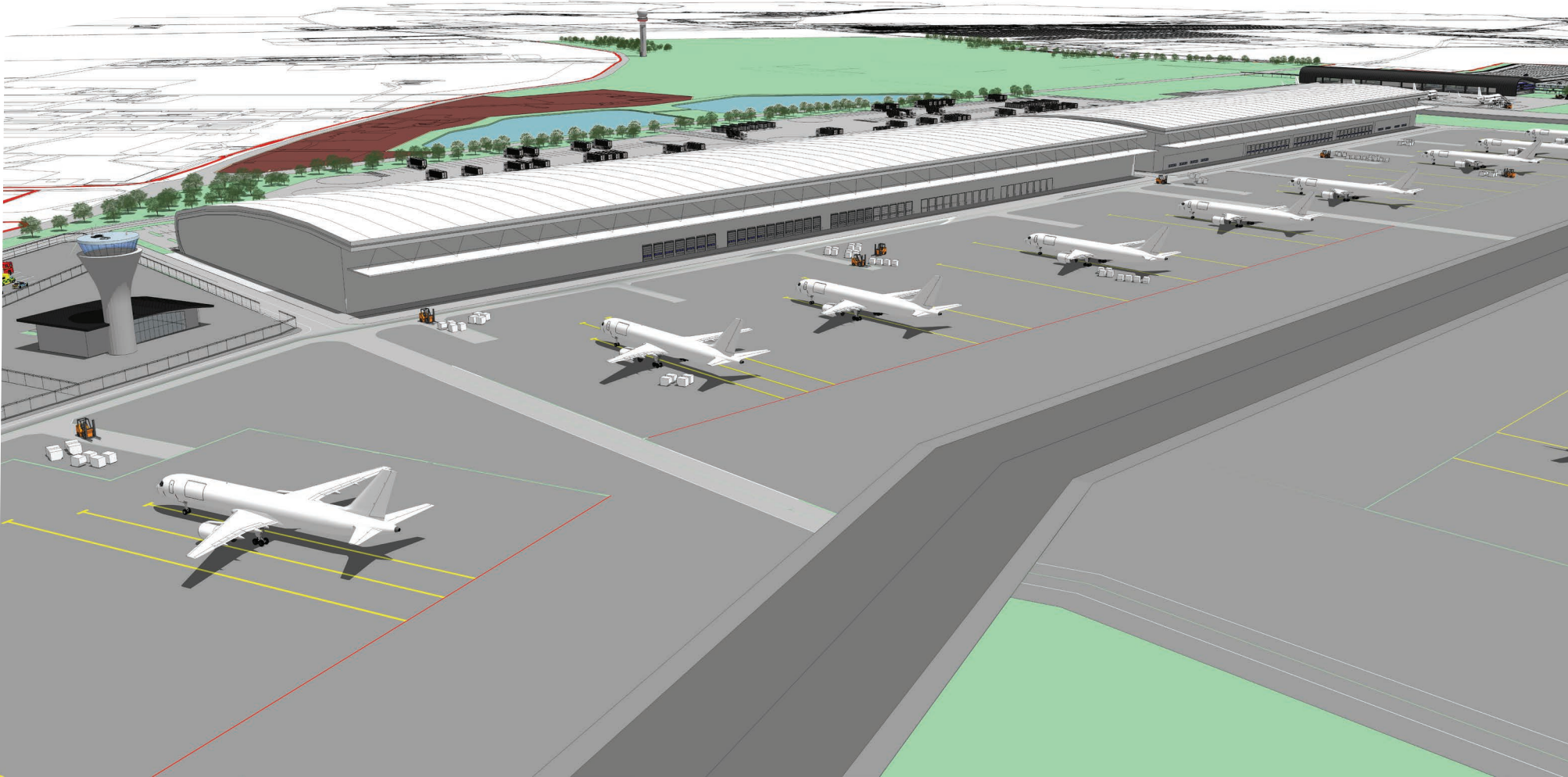
Area will also be safeguarded for the continued operation of the museums and retention of the memorial garden and an exclusion zone based around the Radar as per regulatory requirements.



# 8.0 Visualisations

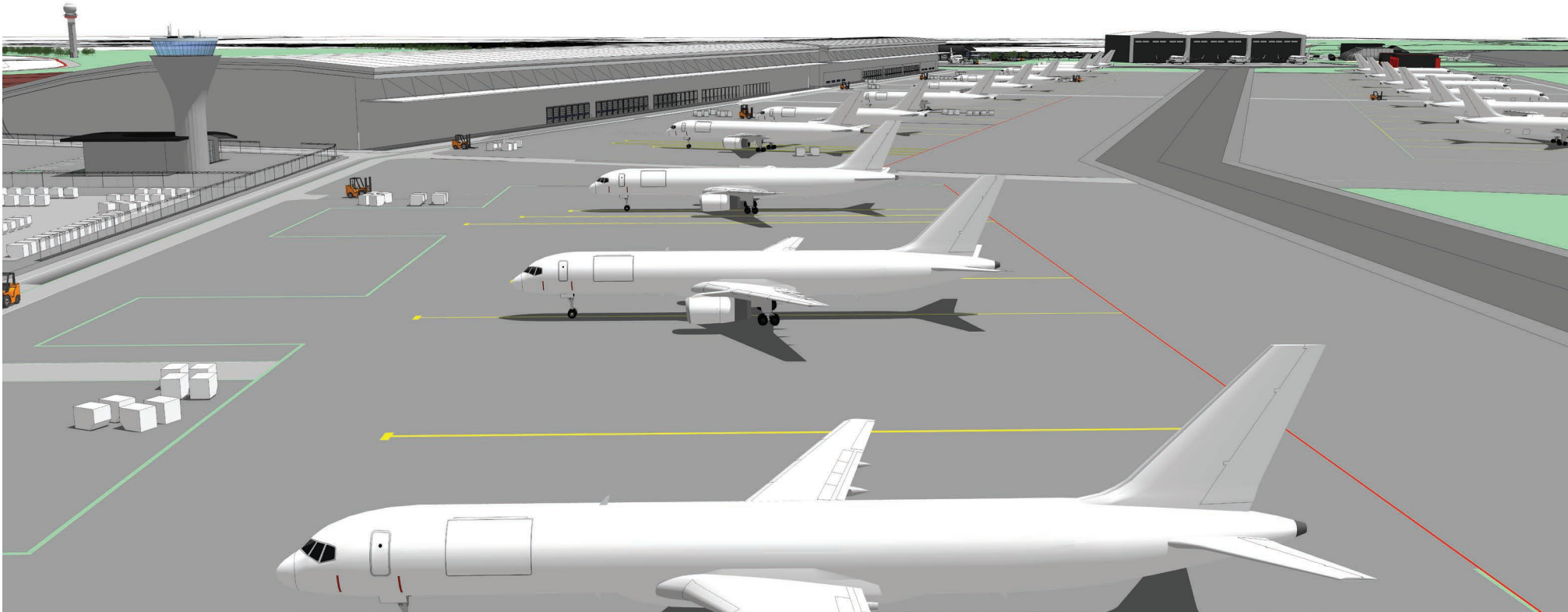


8.01 Cargo Apron Visualisation 01





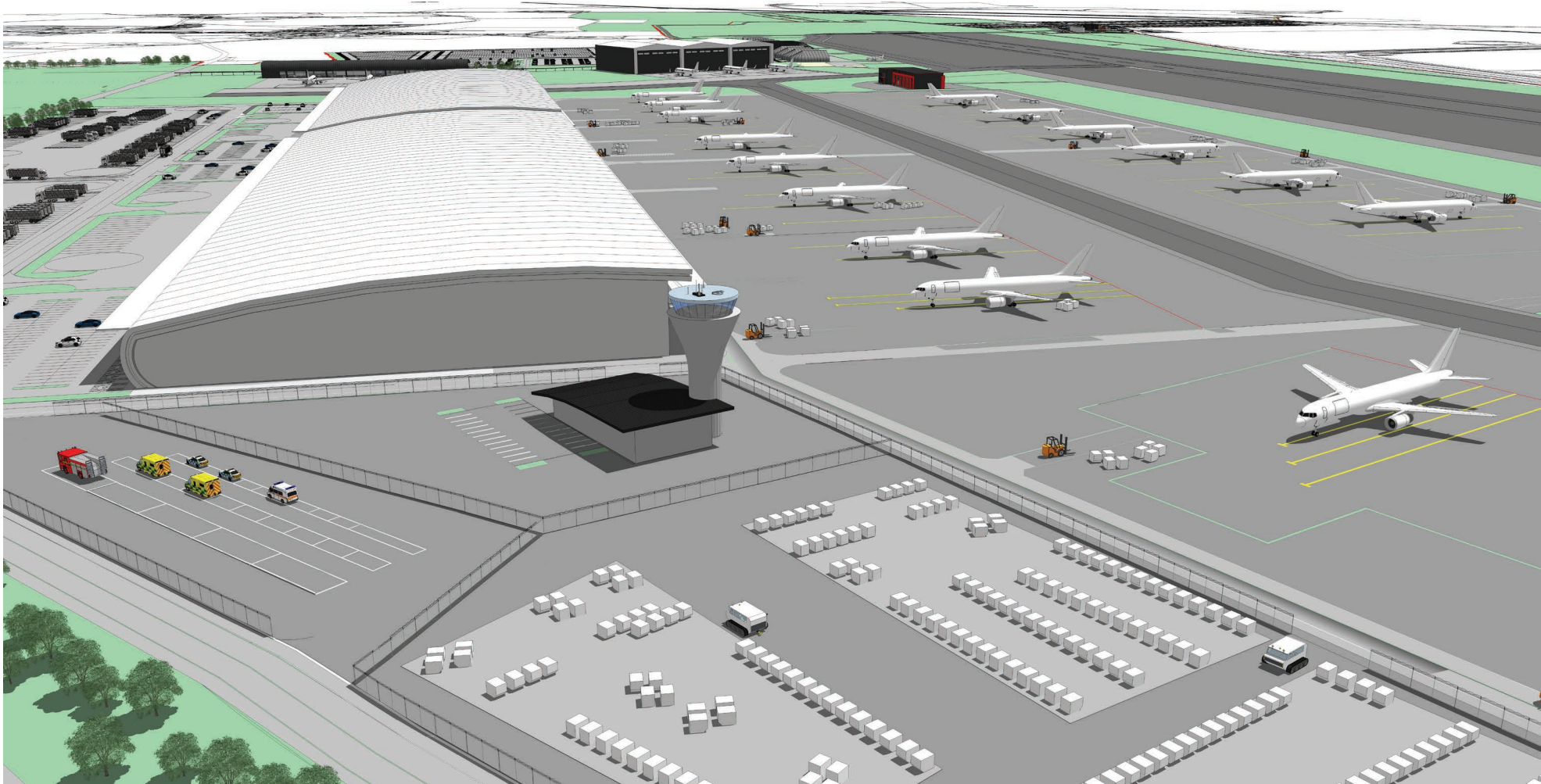
8.02 Cargo Apron Visualisation 02



8.03 Cargo Apron Visualisation 03

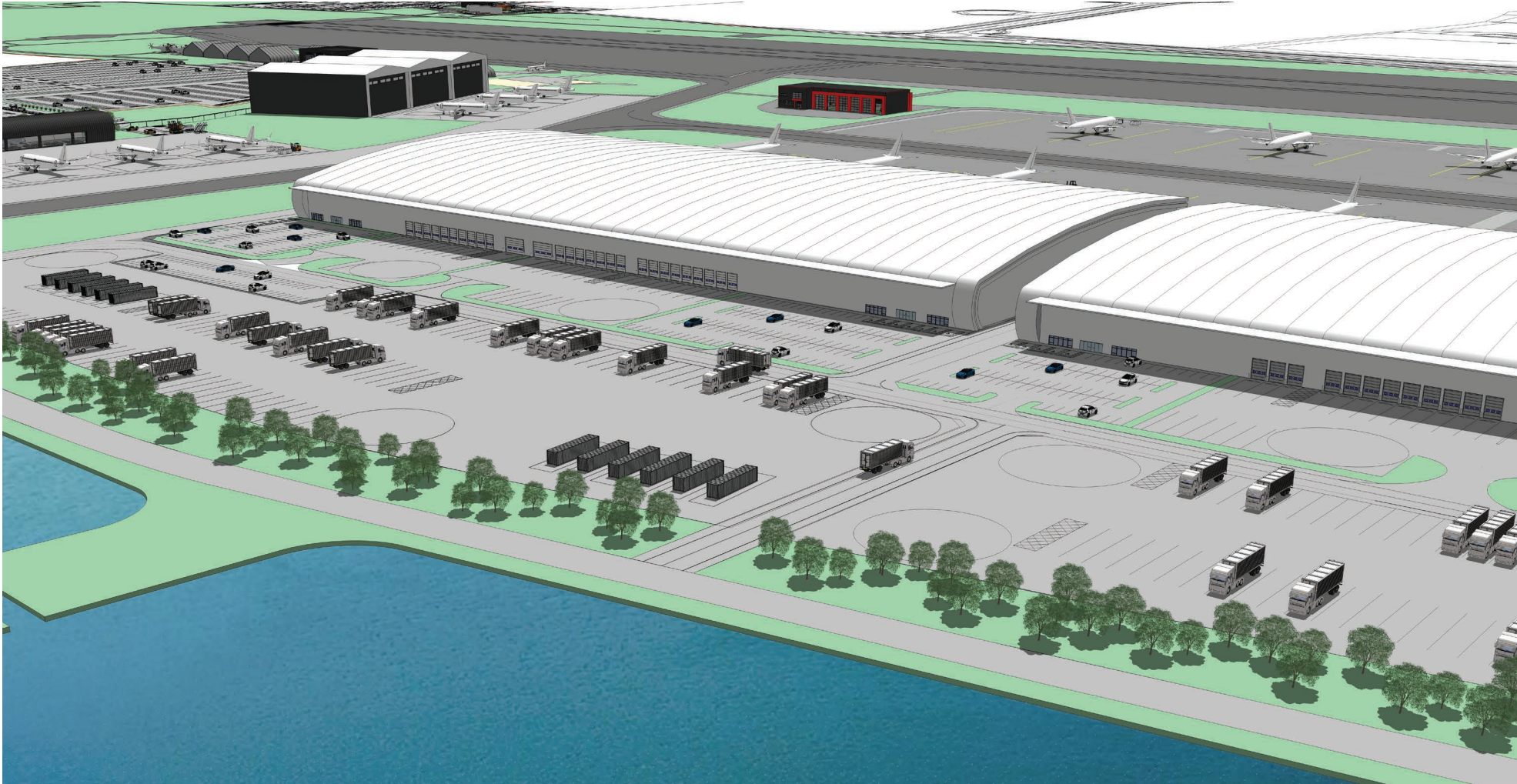


8.04 Cargo Area Visualisation 01



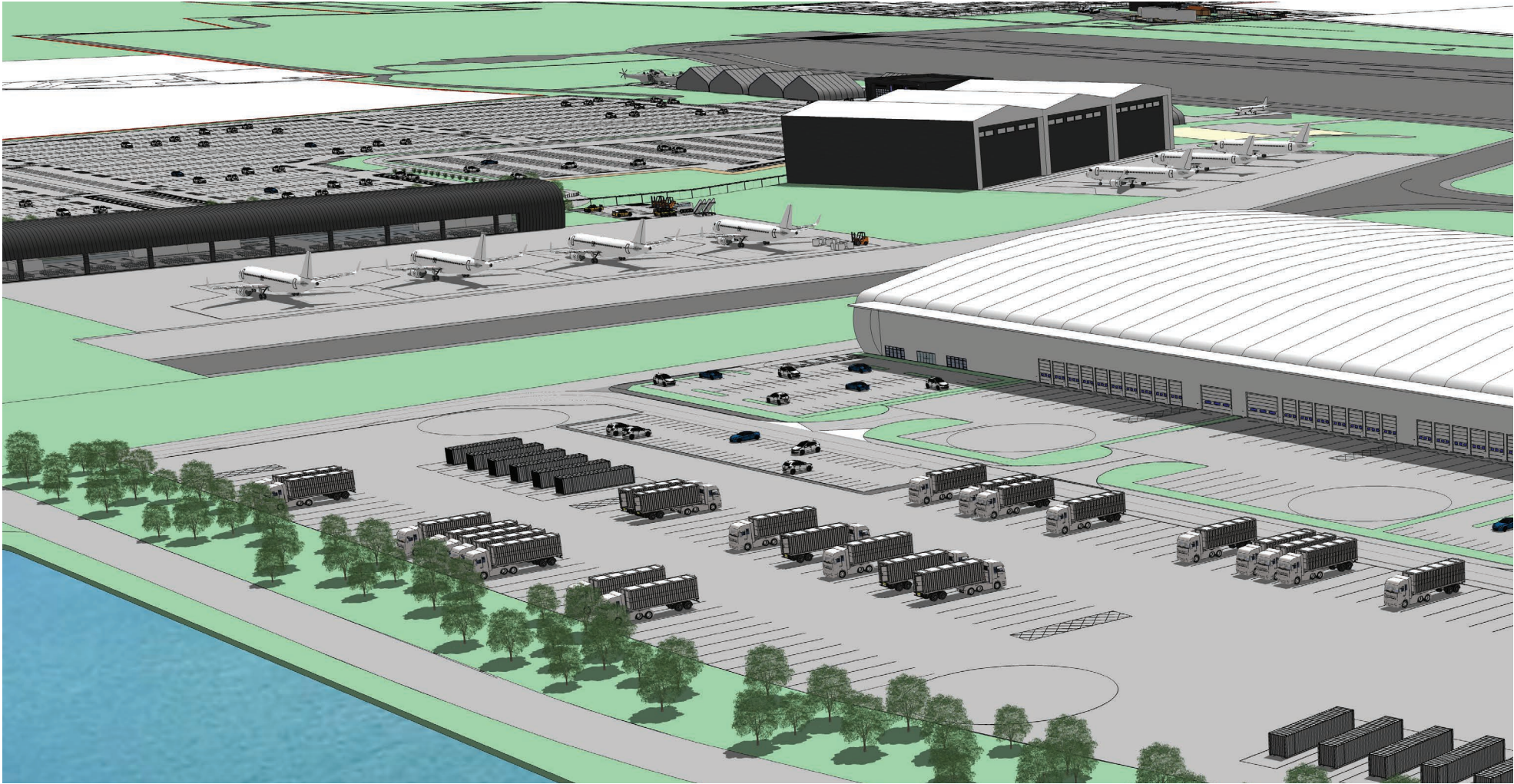


8.05 Cargo Area Visualisation 02

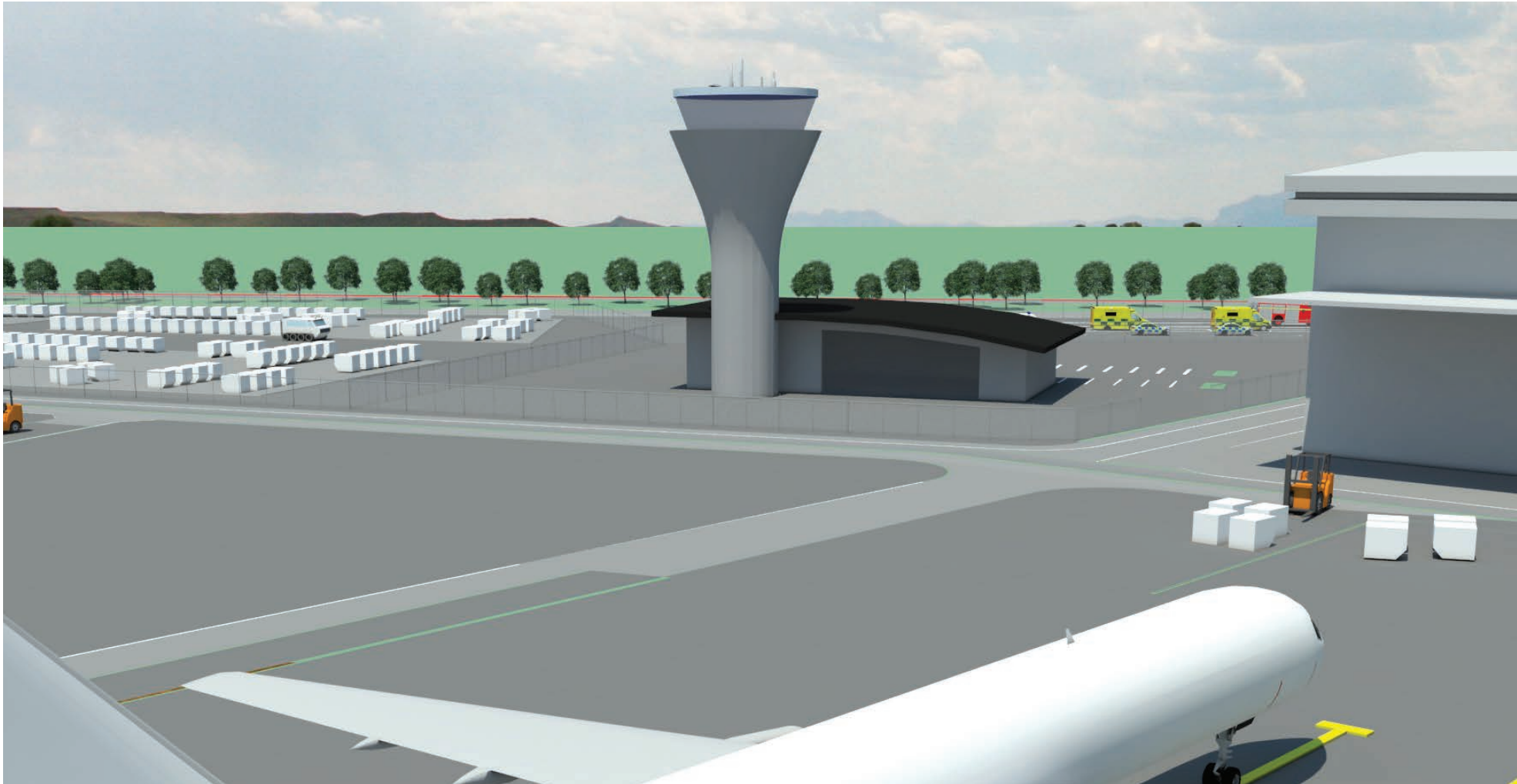




8.06 Cargo Area Visualisation 03

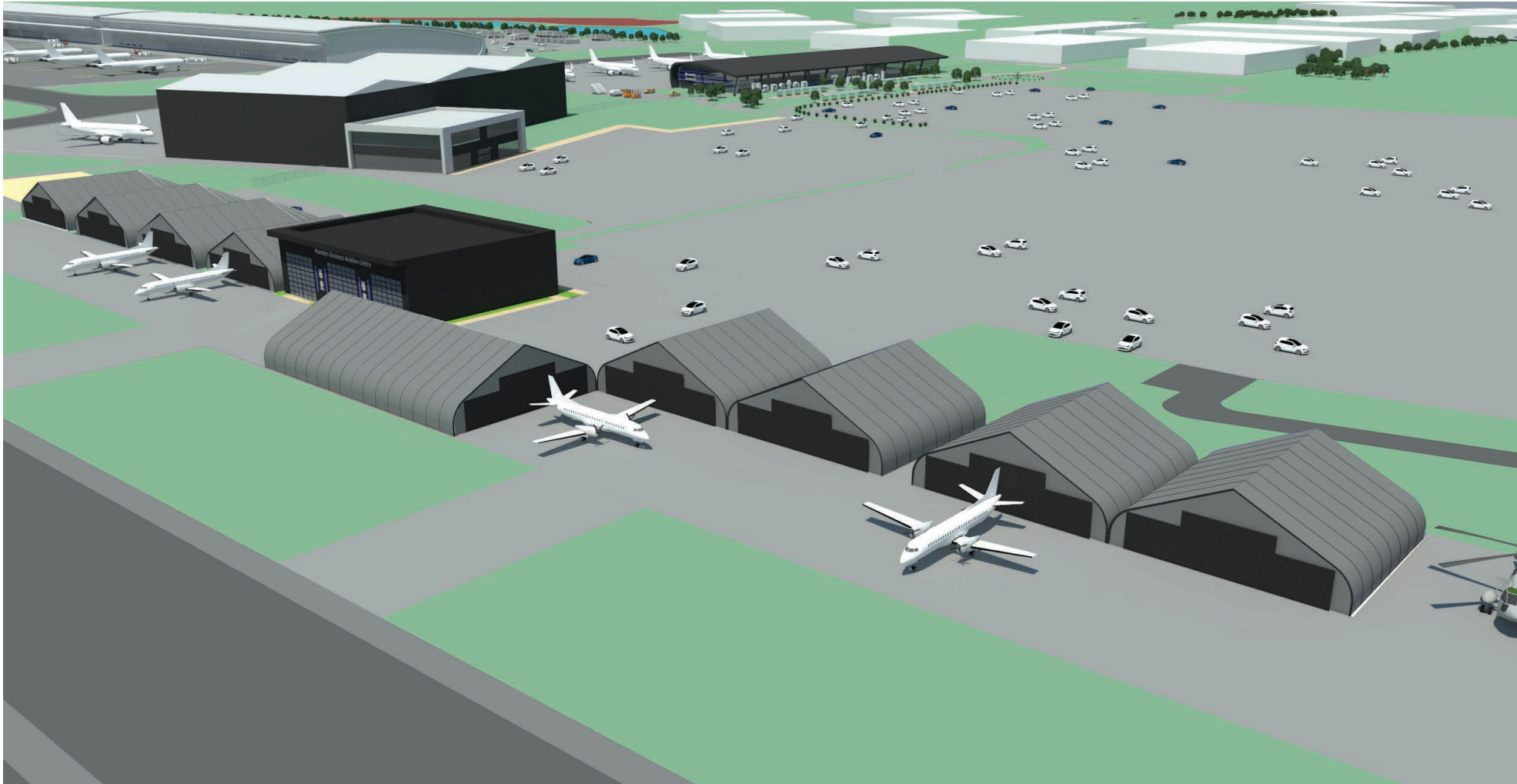


8.07 Air Traffic Control Tower Visualisation





8.08 BAC Visualisation 01



8.09 BAC Visualisation 02

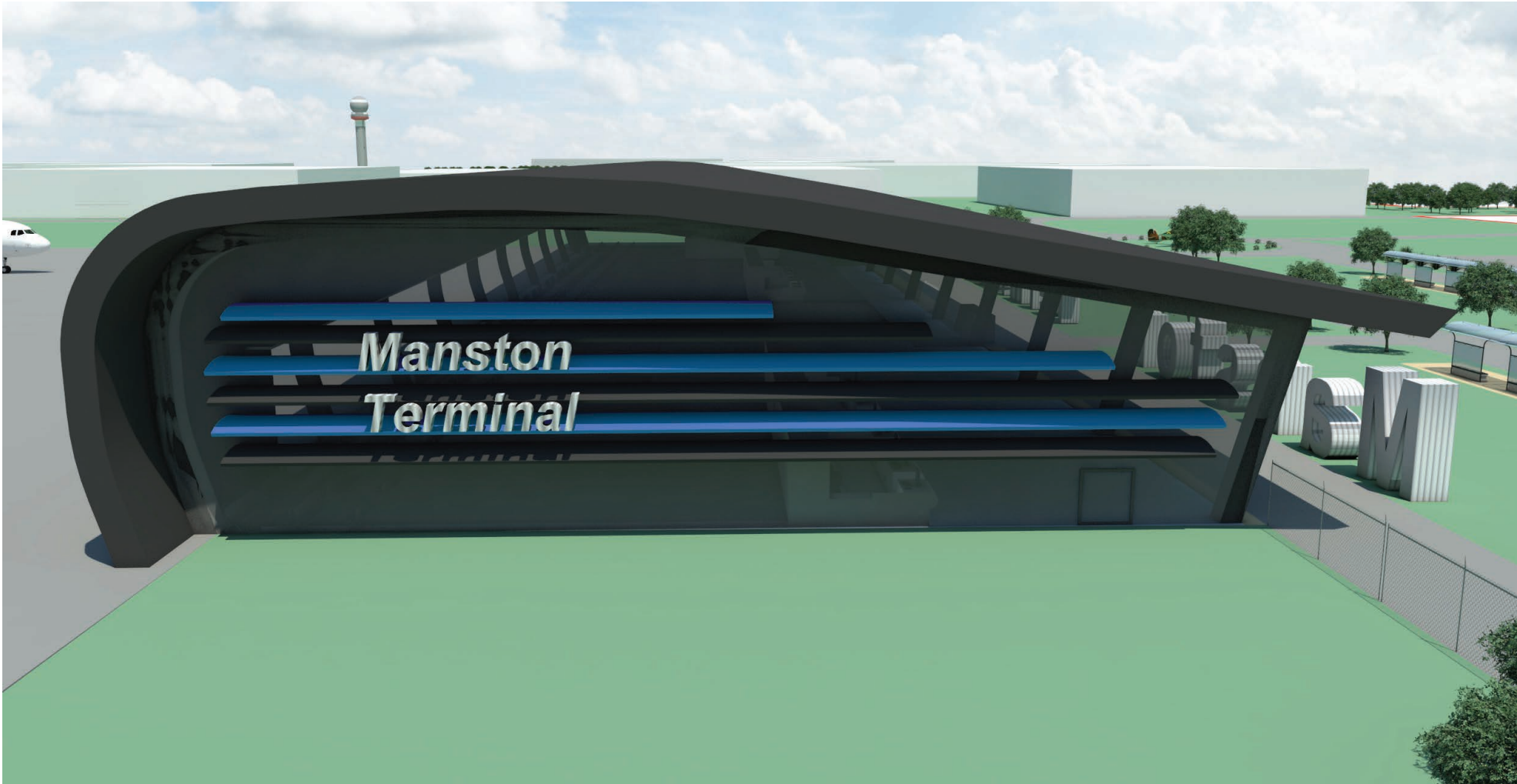


8.10 Fire Station Visualisation

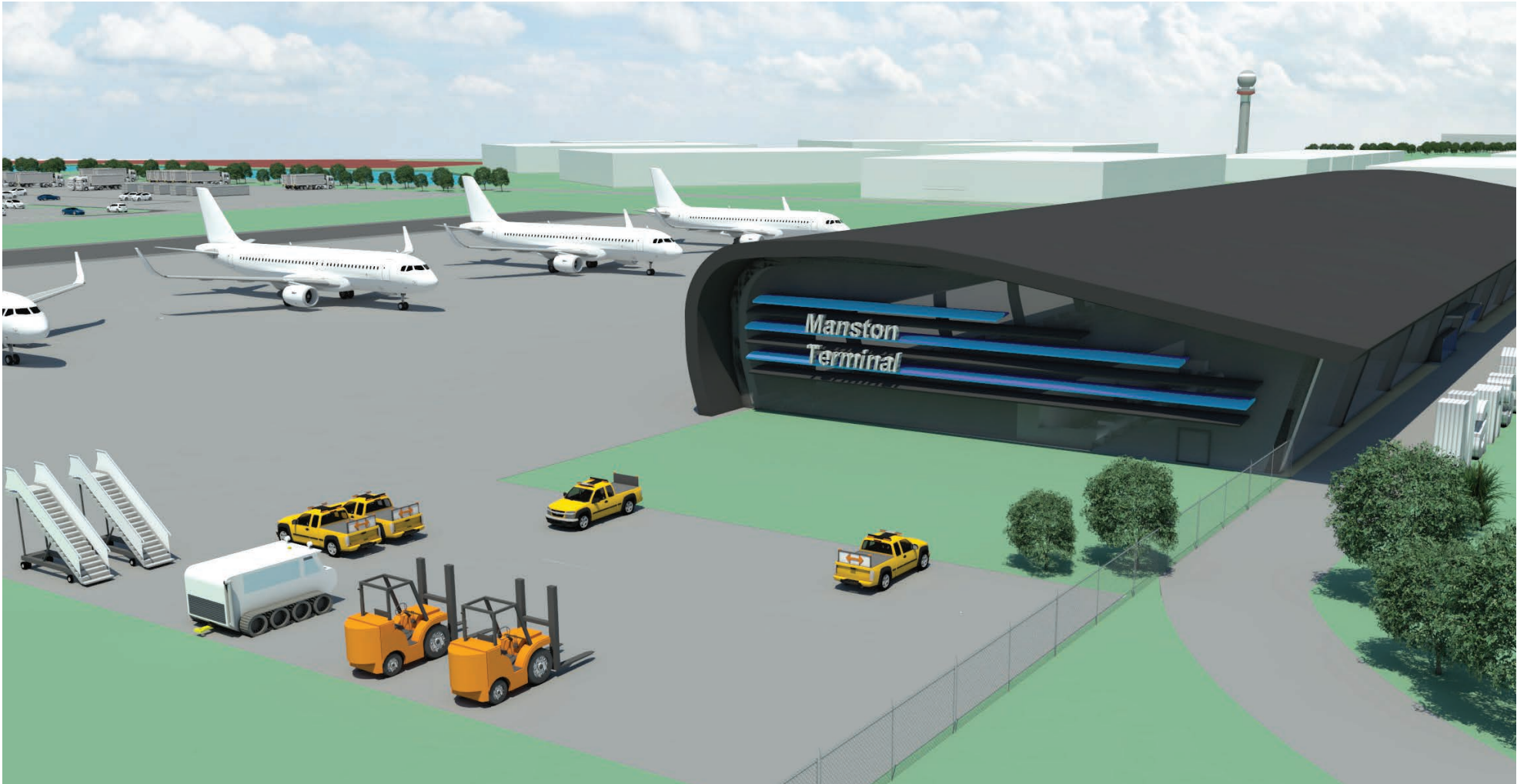




8.11 Passenger Terminal Visualisation 01

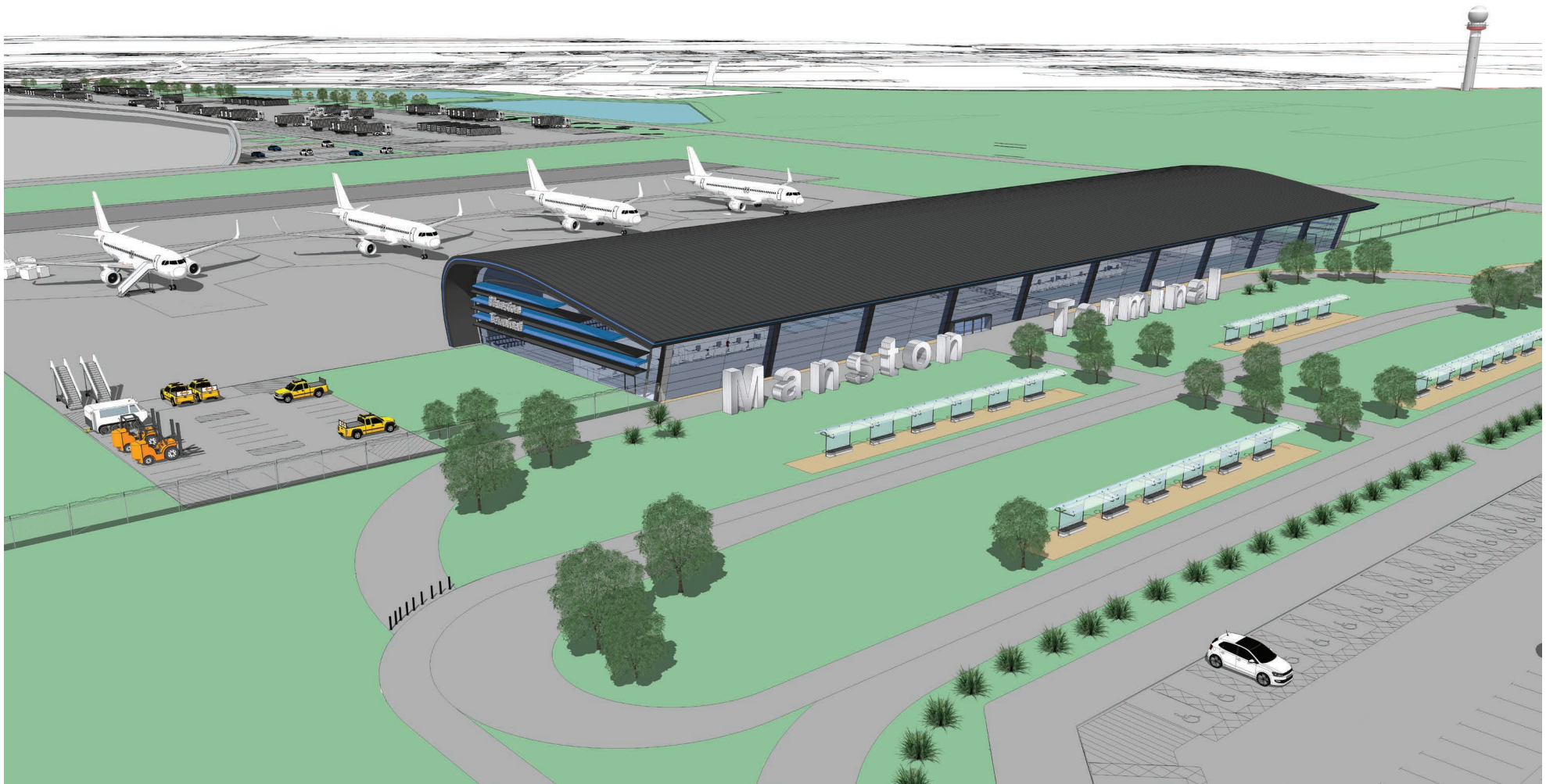


8.12 Passenger Terminal Visualisation 02



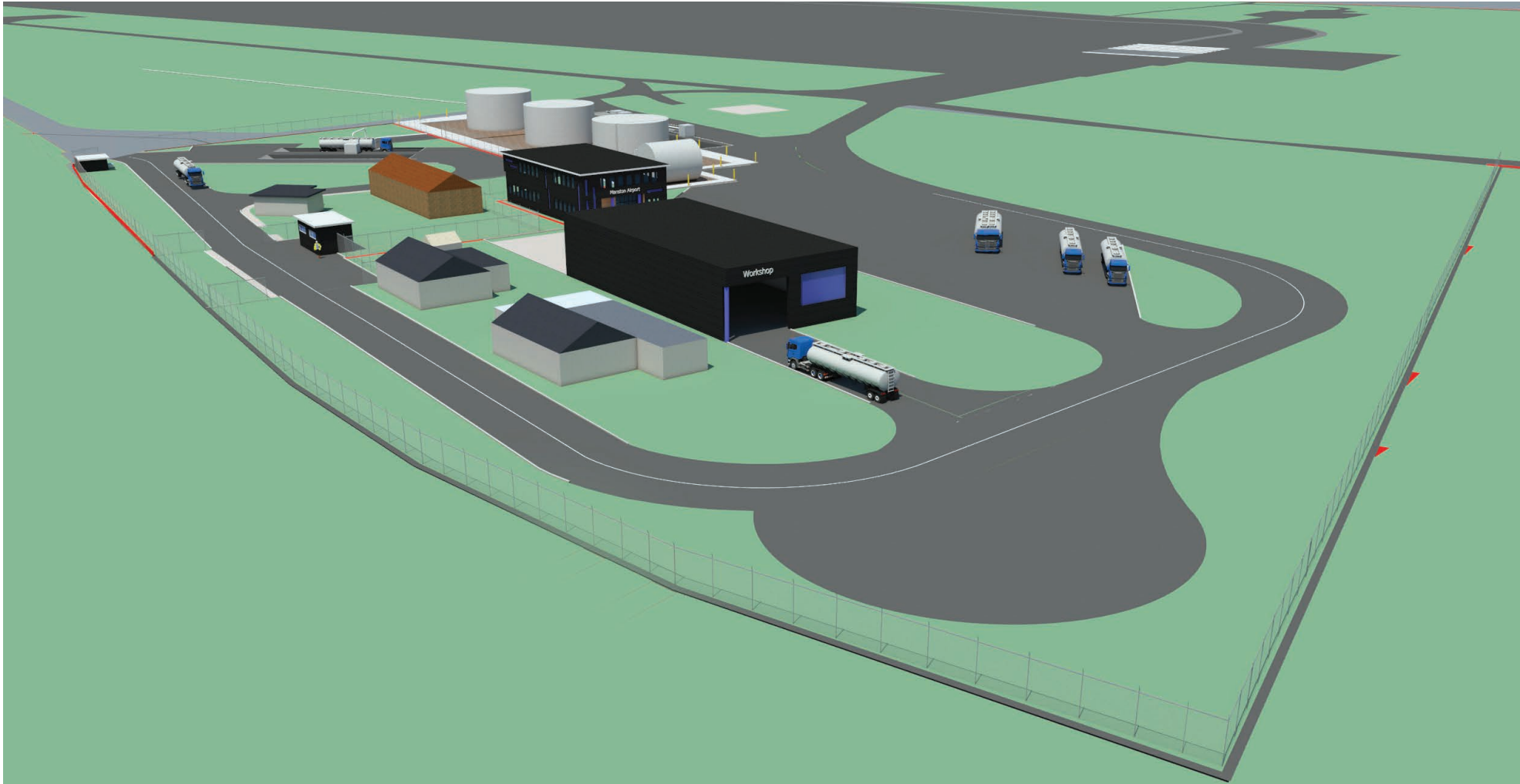


8.13 Passenger Terminal Visualisation 03





8.14 Fuel Farm Visualisation



8.15 Gatehouse Visualisation



# A

# Appendix



# A | Glossary

Abbreviation	Term
AA	Appropriate Assessment
AAI	Area of Archaeological Importance
AC	The Airports Commission
AHLV	Area of High Landscape Value
Air freight	The carriage of goods by aircraft
ALC	Agricultural Land Classification
AMIE	Archives Monuments Information England
AOD	Above Ordnance Datum
AONB	Area of Outstanding Natural Beauty
AOS	Area of Search
APF	Aviation Policy Framework
AQMA	Air Quality Management Area
ATM	Air Traffic Movement
ATS	Air traffic services
ATZ	Aerodrome Traffic Zone
BAA	British Airports Authority
Backload	The transportation of cargo on a return trip to the originating airport
BAP	Biodiversity Action Plan: A strategy for conserving and enhancing wild species and wildlife habitats in the UK
BBS	Breeding Birds Survey
Belly freight	Cargo stowed under the main deck of a passenger aircraft
BFI	Baseflow Index
BGS	British Geological Survey
BMS	Biodiversity Mitigation Strategy
BMV	Best and Most Versatile
bn	Billion
BOA	Biodiversity Opportunity Area
BoCC	Birds of Conservation Concern
BoR	Book of Reference
BRES	Business Registration and Employment Survey
BS	British Standard
CAA	Civil Aviation Authority
CAP 168	Civil Aviation Publication 168 on licensing of aerodromes
CAP 670	Civil Aviation Publication 670 on air traffic services safety requirements
CAP 725	Civil Aviation Publication 725 on airspace change
CAP 772	Wildlife Hazard Management at Aerodromes
Cargo	The term cargo and freight are used interchangeably and refer to goods carried by road, sea or air
CBA	Cost Benefit Analysis
CCC	Canterbury City Council
CCS	Considerate Contractor's Scheme
CCTV	Closed Circuit Television
CDM Regulations	Construction (Design and Management) Regulations 2007
CEMP	Construction Environmental Management Plan
CFMP	Catchment Flood Management Plan
CIEEM	Chartered Institute of Ecology and Environmental Management
CO	Conservation Objective

CoCP	Code of Construction Practice	FRA	Flood Risk Assessment
Consolidator	A person or company who combines small volumes of commodities from different originators so they can be shipped together and who usually owns the aircraft used for transport	Freight	The term freight and cargo are used interchangeably and refer to goods carried by road, sea or air
CPO	Compulsory Purchase Order	Freight forwarder	A person or company that organises the shipment of commodities from an originator (manufacturer, producer etc.) to a destination (customer etc.) but who generally does not own the aircraft used in the transport
DAS	Design and Access Statement	GCR	Geological Conservation Review Site
dB	decibel	GEP	Good Ecological Potential
DCLG	Department for Communities and Local Government	GES	Good Ecological Status
DCO	Development Consent Order	GLVIA	Guidelines for Landscape and Visual Appraisal
DDC	Dover District Council	GPLC	Guideline Principals of Land Contamination
Dedicated carrier	An aircraft which transports only freight (not passengers)	GPS	Global positioning system
DEFRA	Department for the Environment, Food and Rural Affairs	GW	Gigawatt (1000 million Watts)
DfT	Department for Transport	GWTDE	Ground water dependant terrestrial ecosystem
DMP	Drainage Management Plan	HA	Highways Agency (as formerly known)
DMRB	Design Manual for Roads and Bridges	Ha	Hectare
EA	Environment Agency	HE	Highways England
EASA	European Aviation Safety Agency, who certify airports	HER	Historic Environment Record
EC	European Commission	HGV	Heavy Goods Vehicle
EclA	Ecological Impact Assessment	HIA	Health Impact Assessment
EH	English Heritage	HLC	Historic Landscape Characterisation
EHO	Environmental Health Officer	HMWB	Heavily Modified Waterbody
EIA	Environmental Impact Assessment	HRA	Habitats Regulations Assessment
EIA Regulations	Infrastructure Planning (Environmental Impact Assessment) Regulations 2009	Hz	Hertz
ELF	Extremely low frequency	IAQM	Institute of Air Quality Management
EM	Explanatory Memorandum	ICAO	International Civil Aviation Organization
ES	Environmental Statement	ICNIRP	International Commission on Non-Ionising Radiation Protection
ESA	Environmentally Sensitive Area	ICT	Information and communications technology
EU	European Union	IDB	Internal Drainage Board
EUROCONTROL	European Organisation for the Safety of Air Navigation	IEA	Institute of Environmental Assessment
FAA	Federal Aviation Administration		

HEMA	Institute of Environmental Management and Assessment	LVIA	Landscape and Visual Impact Assessment
ILS	Instrument Landing System	LWS	Local Wildlife Site
IMD	Index of Multiple Deprivation	m	Metre
IPC	Infrastructure Planning Commission (as formerly known, now replaced by PINS)	MAGIC	Multi-Agency Geographic Information for the Countryside
IPCC	Intergovernmental Panel on Climate Change	MSA	Mineral Safeguarding Area
JNCC	Joint Nature Conservation Committee	MW	Megawatt (1 Million Watts)
KCC	Kent County Council	NAQS	National Air Quality Strategy
km	Kilometre	NCA	National Character Area
kV	Kilovolt (1000 Volts)	NE	Natural England
KWT	Kent Wildlife Trust	NGR	National Grid Reference
LA	Local Authority	NLCA	National Landscape Character Area
LAeq	Equivalent Continuous Level	NNR	National Nature Reserve
LAQM	Local Air Quality Management	NPPF	National Planning Policy Framework
LBAP	Local Biodiversity Action Plan	NPS	National Policy Statement
LCA	Landscape Character Assessment	NPSE	Noise Policy Statement for England
LCC	Low cost carrier	NSIP	Nationally Significant Infrastructure Project
LDF	Local Development Framework	NT	National Trust
LGP	Long Grass Policy	NVC	National Vegetation Classification
Listed Building	A building of special architectural or historic interest which has been included on a list approved by the Secretary of State under the Planning (Listed Buildings and Conservation Areas) Act 1990 (known as the “Statutory List of Buildings of Special Architectural or Historic Interest”)	OS	Ordnance Survey
LNR	Local Nature Reserve	PC	Parish Council
LoD	Limits of Deviation	PCH	Potential collision height
Long haul	No generally agreed definition as ‘long’ or ‘short’ is subjective. In Europe as a flight taking more than four hours to complete and/or originating/destined outside Europe is considered long haul	PEIR	Preliminary Environmental Information Report
LPA	Local Planning Authority	PFRA	Preliminary Flood Risk Assessment
LSOA	Lower Super Output Area	PILs	Persons with an interest in land
		PINS	Planning Inspectorate
		Planning Act	Planning Act 2008
		PPA	Planning Performance Agreement
		PPG	Pollution Prevention Guidance
		PPS	Planning Policy Statement
		Project	Manston Airport Project
		PRoW	Public Rights of Way



Ramsar	Sites designated under the Ramsar Convention. Designation covers all aspects of wetland conservation and wise use, recognising wetlands as ecosystems that are extremely important for biodiversity conservation in general and for the well-being of human communities	TMZ	Transponder Mandatory Zone, where aircraft must use transponders at lower heights than usual
RBMP	River basin Management Plan	TP	Travel Plan
RF	Radio Frequency	TPO	Tree Preservation Order
RIGS	Regionally Important Geological Site	UG	Underground
RSPB	Royal Society for the Protection of Birds	UK	United Kingdom
SAC	Special Area of Conservation	UKBAP	UK Biodiversity Action Plan
SCI	Site of Community Importance	USA	United States of America
SFRA	Strategic Flood Risk Assessment	WCA	Wildlife and Country Act 1981
Short haul	No generally agreed definition as 'long' or 'short' is subjective. In Europe, short haul generally indicates a flight within Europe so taking four hours or less to complete	WFD	Water Framework Directive
SLA	Special Landscape Area	WHO	World Health Organisation
SM	Scheduled Monument	WHS	World Heritage Site
SMP	Soil Management Plan	WMP	Waste Management Plan
SoCC	Statement of Community Consultation	WTO	World Trade Organisation
SoCG	Statement of Common Ground	ZOI	Zone of Influence
SoS	Secretary of State	ZTV	Zone of Theoretical Visibility
SOR	Strategic Optioneering Report	ZVI	Zone of Visual Influence
SPA	Special Protection Area		
SPI	Species of Principle Importance		
SRN	Strategic Road Network		
SSSI	Site of Special Scientific Interest		
SWMP	Site Waste Management Plan		
TA	Transport Assessment		
TCF	Technical Construction File		
TDC	Thanet District Council		
TEP	The Environment Partnership		
TfL	Transport for Londont		



An aerial site plan of an airport terminal and parking areas. The terminal building is centrally located, with several parking lots and taxi stands. A road runs horizontally across the middle of the plan. The entire plan is rendered in white lines on a dark blue background. Some sections of the terminal and parking areas are highlighted with a lighter blue color.

RSP

# B

## Appendix



# B | Appendix B

B Site Photos

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Existing Terminal



Existing Museum



# B | Appendix B

B Site Photos

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Existing Cargo Facility



Manston Road

# B | Appendix B

B Site Photos

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Existing Terminal



Jentex Oil Storage Depot



# Manston Airport DCO

RSP

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