

Design Guide

TR020002/D8/DG

Examination Document

Project Name: Manston Airport Development Consent Order

Application Ref: TR020002

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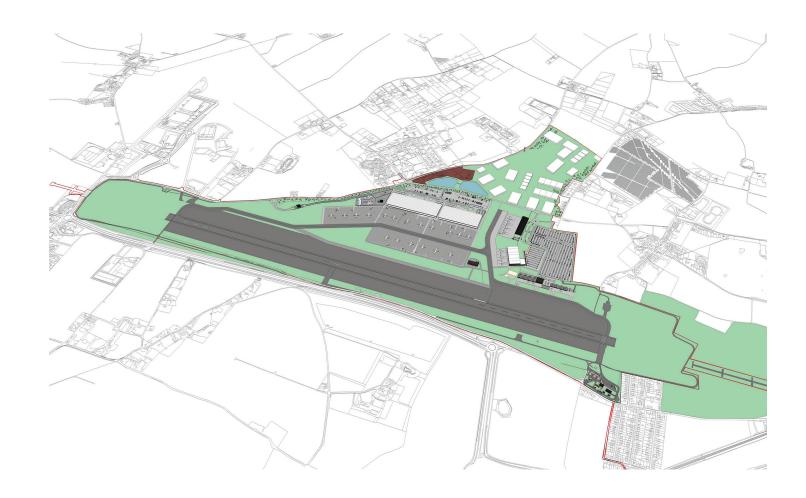




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P02 (08.03.2019) - BDB Comments 07.03.19 **P01** (05.03.2019) - First Issue for review





1.0 Introduction

1.1 Purpose of the Guide

This report establishes a Design Guide to be applied to the proposed development and has been informed by the NPPF (National Planning Policy Framework) and the NPPG (National Planning Practice Guidance). It describes the approach taken in the design of the proposals to the DCO (Development Consent Order) stage and defines the principles that will be followed in the further 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 and landscape strategies. This Design Guide has been set out as a response to the DCO Examiners' first written questions and continues on the work within the DCO (Development Consent Order) and DAS (Design and Access Statement) (TR020002/APP/7.3) which the Design Guide should be read in conjunction with.

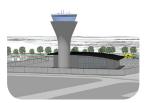
This version of the Design Guide is an initial outline for the airport for the DCO application stage. It sets out in further detail to the DAS, with reference to the 2018 Airport National Planning Statement, where the development will fulfil the characteristics of:

- Being sensitive to place and the site's historic context (Section 2 and 6)
- Designing sustainably and being efficient in the use of natural resources (Section 7)
- Building sustainably during construction (Section 7)
- The proposed aesthetic quality, including character and place making, of the future development (Section 3, 4 and 5)

It will also set out where and how the development seeks to preserve the historic character of the site, in particular with reference to Historic England's Historic Military Aviation Sites Conservation Guidance (2016) while securing its continued use as an airfield through durable and functional regeneration. This will make specific reference to retention of historic existing site features and building -e.g. Royal Observer Corps Listening Post, RAF Battle HQ and Runway.

A further detailed design level Design Guide will be progressed from this initial document after the outline design approval.



















1.0 Introduction

Introduction to Design Principle Main Groups 1.2

A. Respect for Context with reference to Historic England Guidance

B. Character and Identity to address NPS 2018, Para 4.29-35

C. Materiality & Landscape to address NPS 2018, Para 4,29-35

D. Sustainability to address NPS 2018, Para 4.30

A Vision for the Airport 1.3

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 Planning Act 2008 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.

Aims

- 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

Manston Airport Design - The Guiding Principles:

(A.) Context



Reflecting the historical context of Manston Airport as well as being sensitive to the surrounding area.

Principles

- · Reference, through contemporary design the historic significance of Manston Airport's past
- Mitigate the adverse impacts on the surrounding landscape of the proposals
- Retain significant existing historic structures at the airport

(B.) Identity



Promoting and maintaining a vision for Manston: Airport with a strong sense of place and distinct built environment

Principles

- · Foster a sense of place
- · Strive for a distinctive built environment and landscape to create character
- · Integrate and connect different airport uses
- Reflect the past character into Manston's new character as an airport

Landscape



Defining a palette of high quality materials and landscaping that relate to Manston and its history and unify the airport

Principles

- Produce a common 'airport design language' through materiality across the airport to unify the site
- Guide pedestrian movement and create a clear delineation of airport function through materiality and use of colour

C.) Materiality & D.) Sustainability



Creating a set of sustainable design principles in both construction and design of the built environment

Principles

- · Mitigate wherever possible the adverse environmental impacts of the airport
- Achieve a high standard of energy efficiency in line with most recent government guidance (BREEAM etc)
- · Make the best use of solar energy passive heating and cooling, natural light, natural ventilation and landscaping.





2.1 Site Location

The application site is on the existing site of Manston Airport, west of the village of Manston and north-east of the village of Minster, in Kent. The town of Margate lies approximately 5km to the north of the site and Ramsgate approximately 4km to the east. Sandwich Bay is located approximately 4-5km to the south-east. The northern part of the site is bisected by the B2050 (Manston Road), and the site is bounded by the A299 dual carriageway to the south and the B2190 (Spitfire Way) to the west. The existing site access is from the junction of the B2050 with the B2190.



Site Location Plan:



Drawing Reference: NK018417-RPS-MSE-XX-DR-C-2200 P07 (TR020002/APP/4.1)





2.2 Historical Context

Manston's history as an airfield dates back to 1914 and the beginning of the First World War. Initially used as a training school, then as a base for the newly formed Royal Flying Corps, fighter aircraft from here were instrumental in repelling German bomber attacks on Southern England.

At the onset of the Second World War, RAF Manston's role in the defence of England ensured it was heavily bombed during the Battle of Britain. At its' height in 1940, records show a steady stream of damage to both aircraft and buildings on the site.

RAF Manston was notable for several things during the war; Barnes Wallis used it as a base to test his bouncing bomb at nearby Reculver prior to the dambusters raid and Manston also was home to the first operational jet squadron in the Royal Air Force. The airfield was also used as a disembarkation point for operation "Market Garden", the allied airborne assault in Holland.

The airfield's location, having no approach obstructions and being close to mainland Europe, made it somewhat of a magnet for badly damaged aircraft returning from missions, a role that was to continue well into the post-war years.

Manston was also developed as one of the official emergency landing grounds for returning bomber crews, a role that was to be further expanded in the 1960's where it was designated as one of the UK's Military Emergency Diversion Airfields (MEDAs) for emergency and civilian landings. Uniquely in the UK it also had a 'foam carpet' crash landing system for aircraft with landing gear problems.

During the Cold War, Manston was home to the Strategic Air Command of the US Air Force, operating both fighter and bomber aircraft as part of the defence of Europe; aircraft from Manston even having been sent to intercept a suspected UFO in 1957.

Manston finally reverted back to joint RAF and civilian use in 1960 where it became home to helicopter Search and Rescue (SAR) operations as well as commercial cargo and package tour flights. Manston went on to become known as Kent International Airport in 1989, eventually leading to the closure of RAF Manston in 1999.



Aerial Photo 01 (TR020002/APP/7.3)





2.3 Reflecting Historic Character

The design of the scheme will make reference to the historic character and identity of the area- particularly the RAF and wartime heritage of the airport. This will be secured through the use of building forms (aerofoil wing shaped building forms where practicable), through subtle references (use of historical RAF colour insignia across way-finding at the site) and public accessible memorials and public art and sculpture which will pay tribute to the military history of the site and the Manston area as a community.



Design Principles: A. Context

Historic Character Principle A-01:

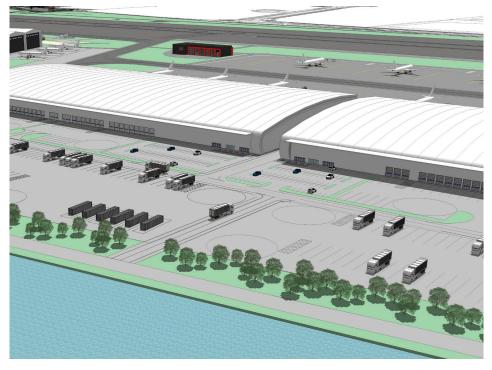
Reflecting the historic forms of vernacular aviation buildings at Manston.

Historic Character Principle A-02:

Evoking the design and materiality of aircraft relevant to Manston's past.

Historic Character Principle A-03:

Not simply replicating the exact form and materiality of past buildings - Manston will be a modern airport. Historical reinterpretation and inspiration from a place's past can reference its history without becoming a pastiche or copy.



Cargo Area Visualisation 02 (TR020002/APP/7.3)





2.4 Sensitivity to Place

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.



Design Principles: A. Context

Place Sensitivity Principle A-04:

Taking inspiration from local geography (materials and topology) to reinforce the Airport's connection to its surroundings and enhance the local environment.

Place Sensitivity Principle A-05:

Taking inspiration from the military history of Manston and making reference to both its WWI and WW2 past in public art, building motifs or street furniture.

Place Sensitivity Principle A-06:

Care will be taken not to produce bland or obtrusively bright colour buildings and instead produce buildings which blend into their surroundings as far as practicable.



Passenger Terminal Visualisation 03 (TR020002/APP/7.3)





2.5 Retention of Historic Site Features and Buildings

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.



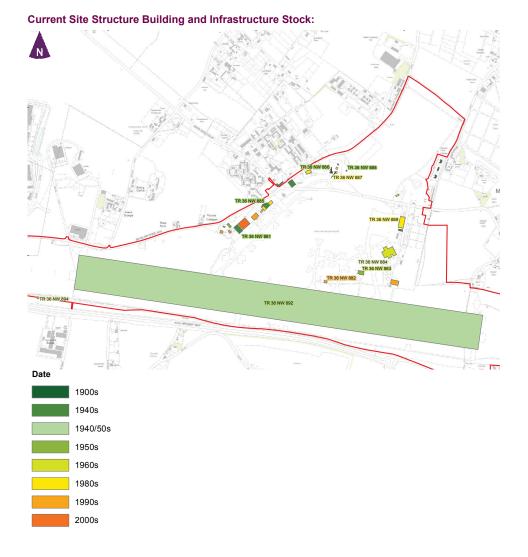
Design Principles: A. Context

Retention Principle A-07:

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.

Retention Principle A-08:

The Manston Airport redevelopment should endeavour, where practicable and economic, to maintain historically valuable assets on site. E.g. the Museums, Memorial Garden are all being safeguarded and the existing runway repaired and enhanced. Additionally the ROC Monitoring Post (TR 36 NW 894 on Figure 9.4) (TR020002/APP/5.4) to the south west of the western end of the runway and the Battle HQ (TR 36 NW 888 on Figure 9.4) (TR020002/APP/5.4) to the east of the RAF control tower are both being retained.



Drawing Reference: Figure 9.4 (TR020002/APP/5.4)



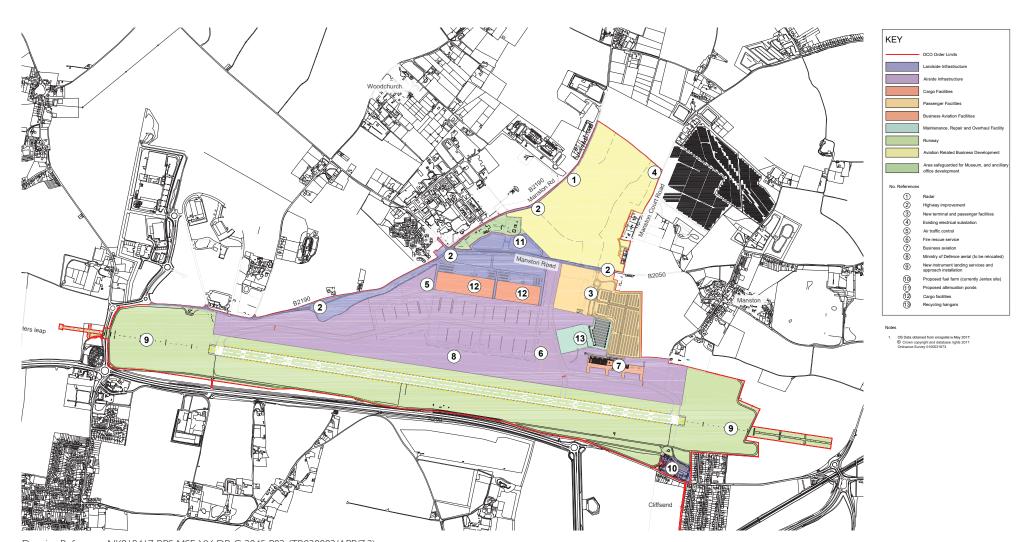


Design Principles: B. Identity

3.01Zones and Routes



3.1 Zones of Influence



Drawing Reference: NK018417-RPS-MSE-XX-DR-C-2045 P02 (TR020002/APP/7.3)



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3.01Zones and Routes



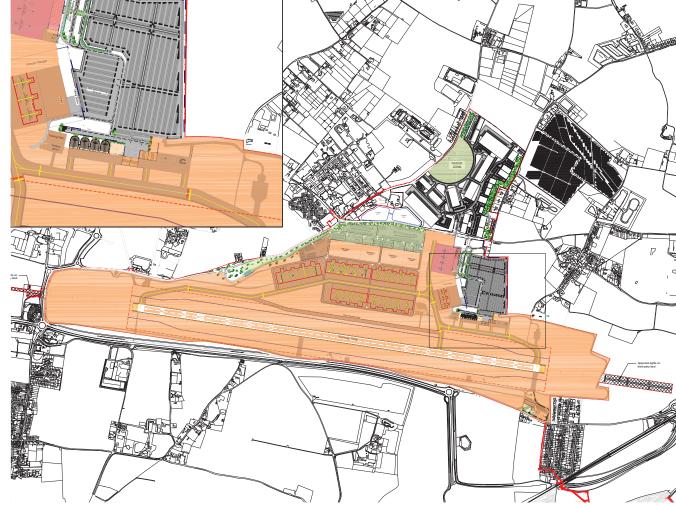
Design Principles: B. Identity

3.2 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





Drawing Reference: NK018417-RPS-B01-01-DR-S-2072 P02 (TR020002/APP/7.3)

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3.0 Zones and Routes

Design Principles: B. Identity

3.3 Zone Specific Parameters

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

Radar Zone - Area safeguarded for radar operation

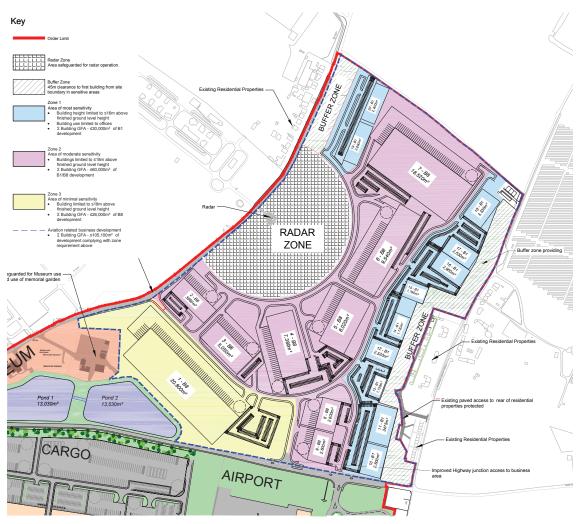
Zone I – This is the building zone considered to be of highest sensitivity to residential receptors. Buildings in this area will be limited in height to a maximum of 16m above finished ground level, which is comparable to a building height of approximately 2-3 storeys. Buildings will be limited to usage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



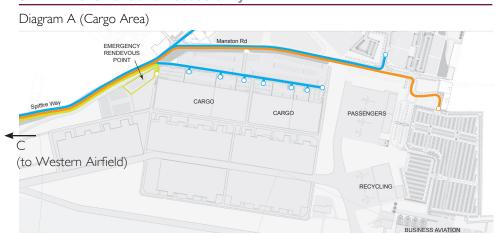
Drawing Reference: NK018417-RPS-MSE-XX-DR-C-2089 P10 (TR020002/APP/7.1)





3.01Zones and Routes

3.4 Movement and Accessibility



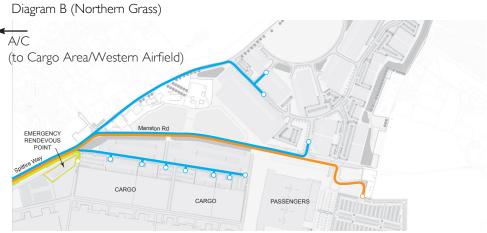
HGV traffic via Spitfire Way to the cargo terminals and via Manston Rd to the businesses in the Northern Grass area. Passenger access also via these routes to the main car park.

Diagram C (Western Airfield)



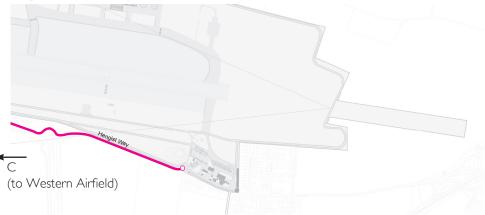
HGV/Passenger/Emergency traffic routed north around the airfield via Spitfire Way. Fuel tankers access via Hengist Way to the fuel farm on the south-west side of the site.

Emergency Vehicles Fuel Tankers Images taken from (TR020002/APP/7.3)



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

Diagram D (Fuel Farm)



Fuel farm access for tankers via Hengist Way.

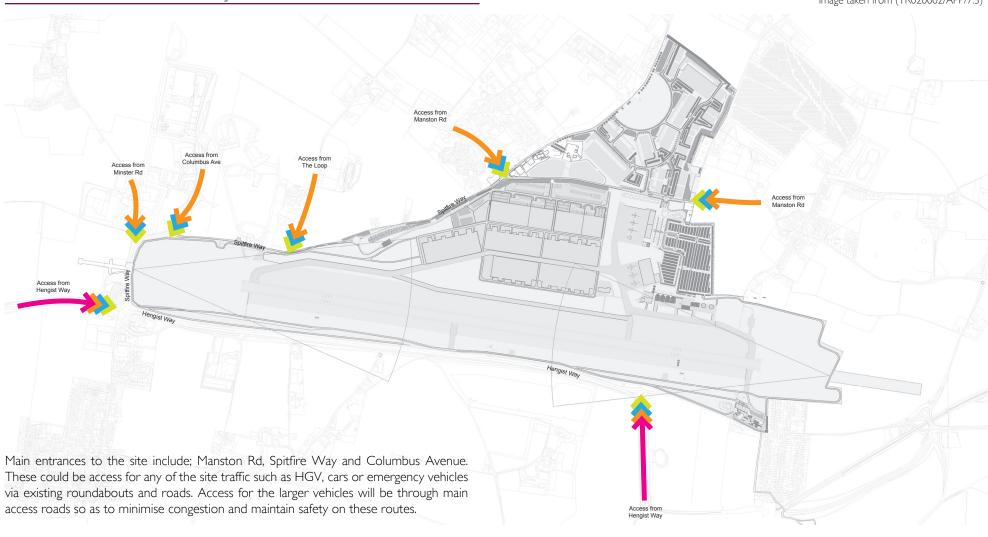




3.01Zones and Routes

3.4 Movement and Accessibility

Image taken from (TR020002/APP/7.3)







3.0 | Zones and Routes

3.5 Pedestrian Network

The creation and enhancement of safe and pleasant pedestrian routes, footpaths and trails, at and around Manston, is a key objective of the design guide.



Design Principles: B. Identity

Pedestrian Network Principle B-01:

User experience is a key design objective. Create direct, continuous and recognisable pedestrian linkages between all airport destinations.

Pedestrian Network Principle B-02:

Encourage sustainable and active travel by offering a continuous network of pedestrian routes.

Pedestrian Network Principle B-03:

Deliver attractive routes that blend well with their surroundings; incorporate natural elements to enhance amenity.

Pedestrian Network Principle B-04:

Variations in materials, patterns and landscaping is an effective way to delineate spaces, help pedestrian movement and create a strong sense of identity.

Pedestrian Network Principle B-05:

Seating along pedestrian routes offers the opportunity for people to linger and rest.

Pedestrian Network Principle B-06:

Where appropriate, pedestrians will be given priority over vehicle users.

Pedestrian Network Principle B-07:

Paths can be created within open spaces by using different types, colours, patterns or textures.

Pedestrian Network Principle B-08:

Streets connecting different areas should reflect commitment to sustainable transport.

Pedestrian Network Principle B-09:

Feature installations can be used as a method of improving links between open spaces.

Pedestrian Network Principle B-10:

Level changes can be landscaped to create attractive multi-use spaces.



Indicative Paving Example





3.0 | Zones and Routes

3.6 Vehicle Network

The linear features or approaching routes to the airport should be perceived as one clear, continuous journey and positive experience. These areas should be treated with similar design language and colour which will unify the whole area and create the overarching image of the airport.

The linear approach considered is multi-modal; vehicular, cycle or pedestrian. Any development at and around the airport should respond to the needs of the different multi-modal transport users. The provision of gateways is essential to conclude the experience and mark the destination.



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Design Principles: B. Identity

Gateways - Vehicle Network Principle B-II:

The creation of clear and strong gateway experiences is important in achieving a strong sense of arrival and identity and in improving the clarity and ease of movement in the airport as a whole.

Roads - Vehicle Network Principle B-12:

Providing a clear hierarchy of roads, incorporating space for a range of road users, and framing them accordingly, can help promote a more legible and pleasant airport environment.

Drop-Offs - Vehicle Network Principle B-13:

The design, directness and efficiency of drop-offs/pick-ups is paramount to supporting a high-quality passenger experience and fostering a real sense of place.

Passenger Terminal Visualisation 03 (TR020002/APP/7.3)



Vehicle Network Principle B-14:

Clear corridors for vehicles on approach routes can quicken the arrival to the airport and transition to other transport modes.

Vehicle Network Principle B-15:

Road networks need to provide resilient, convenient and efficient access to the various zones.



Vehicle Network Principle B-16: Gateways Framing a gateway with a bold, relevant sculpture can foster a strong sense of arrival. Vehicle Network Principle B-17: Drop-offs
Weather proof shelters should be provided on
key routes between transport modes and other
airport facilities.





3.01Zones and Routes

Cycle Network 3.7



Design Principles: B. Identity

Cycle Network Principle B-18:

Cycling is now a form of mass transport and should be treated as such. The main airport site and Northern Grass will both be cycle accessible.

Cycle Network Principle B-19:

Cycles must be treated as vehicles not as pedestrians, yet need space separated from volume motor traffic.

The six core design outcomes, which together describe what good design for cycling should achieve, are:

B-20: Safety Good infrastructure should help to make cycling sa	B-20: Safety	Good infrastructure should	help to make	cycling safer
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B-21: Directness Routes must be logical and continuous

B-22: Comfort Surfaces and transitions should be smooth and well maintained

B-23: Coherence Infrastructure should be legible, intuitive and consistent

B-24: Attractiveness Should not add unnecessary street clutter but enhance the

public realm

B-25: Adaptability Designed to accommodate all users and be scalable over time

Cycle Network Principle B-26:

Clear delineation and separation of movement and routes with clear priorities.

Cycle Network Principle B-27:

Smooth, well-maintained surfaces encourage cycle use and provide a safe, attractive route.

Cycle Network Principle B-28:

Integration of cycling provisions and facilities throughout the airport

Cycle Network Principle B-29:

Infrastructure to provide access to the wider National Cycle Network and Sustrans routes.

Indicative Cycle Lane Example







4.01Building Aesthetics and Character

4.1 Building Forms



Design Principles: B. Identity

Building Forms Principle B-30:

The building forms should evoke forms, shapes and materials associated with air travel. Including, but not limited to, giving the buildings an aerofoil wing shaped sectional profile and using contemporary lightweight cladding materials which evoke the tectonics of aircraft design (i.e standing seam cladding and steel frames)

Building Forms Principle **B-31**:

Articulating facades can help break up the monotony of a long elevation and generates dynamic spaces with a strong sense of place

Building Forms Principle B-32:

Taking influence from vernacular aviation building forms to inspire new modern cargo buildings

Building Forms Principle **B-33**:

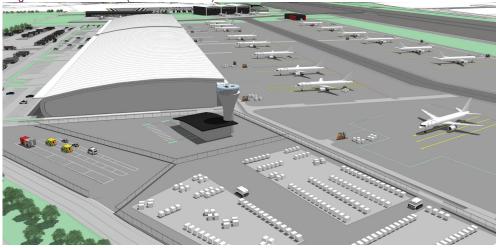
Where possible glass gives airport users a clear visual of where they are heading and should be used on public facing airport buildings to create permeable inviting buildings. This should also be matched with safety specifications including shatterproof glass and toughened glass.

Building Forms Principle **B-34**:

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Accentuating structural elements which express how the building is formed will enhance the identity of buildings and can reflect the aviation history of the airport and it's sense of place.

Cargo Area Visualisation 01 (TR020002/APP/7.3)



Passenger Terminal Visualisation 01 (TR020002/APP/7.3)







4.0 Building Aesthetics and Character

4.2 Building Heights: B-35

F

Design Principles: B. Identity

The masterplan design incorporates the use of mixed heights and levels along with landscape buffers to minimise impact on the surrounding environment. For example, maximum building heights have been defined within each zone of the Northern Grass as follows:

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

Zone 1:<16m (closest to the site boundary)

Zone 2 & Zone 3: <18m (Further into the Northern Grass area)

It is then proposed to have a mix of 25-30m width landscape buffers around the Northern Grass area to minimise the visual impact on the residential area nearby, I 5-20m around the Cargo area and 3m between these areas.

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.

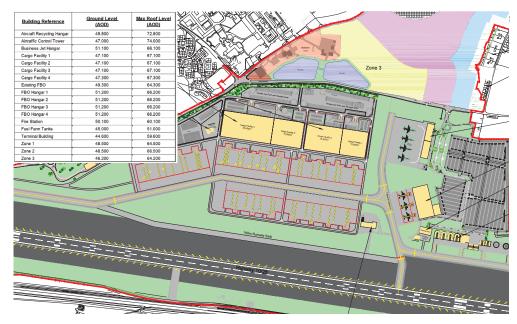
Terminal building:

• 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.

Drawing Reference: NK018417-RPS-MSE-XX-DR-C-2060 P07 (TR020002/APP/4.13)



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).

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.





4.0 Building Aesthetics and Character



Design Principles: B. Identity

4.6 Public Spaces / Public Realm

The public space should be observably useful and visually pleasant. The provision of shade, shelter, resting points and natural surveillance make such places more attractive to use. In addition, they are equally accessible to people with a wide range of physical and mental abilities.

Public Realm Principle B-35:

Careful public realm design can contribute to ensuring a better, more pleasant, and less stressful passenger experience. Public areas on site will be designed to be attractive, safe and inviting and accessible to all airport users.

Public Realm Principle B-36:

Special attention should be paid to the public realm surrounding the Terminal in terms of passenger safety and the quality of the space through selective landscaping and materials.

Public Realm Principle B-37:

Green walls can be used to soften hard edges and screen less desirable sight lines and features.

Public Realm Principle B-38:

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Creative use of materials and forms can energise and articulate otherwise bland areas, forming focal points within the airport.



Public Realm Principle B-39:

Areas of public realm should prioritise the movement of people over vehicles to enhance the quality of the area.

Public Realm Principle B-40:

Lighting fixtures, external surface materials and furniture should help define zones for fast movement and rest zones



Public Realm Principle B-41:

Opportunities to tell Manston's story can be incorporated into seating and rest zones.

Public Realm Principle B-42:

Public art can be used to reflect the historic use of Manston throughout its' history.





4.01Building Aesthetics and Character

4.9 Character and Identity

4.9.1 Airport Operations Buildings



Design Principles: B. Identity

The Manston Airport masterplan includes the construction of several new airport operations assets including an Air Traffic Control Tower and Fire Rescue Service. Although these buildings are not customer facing they should still carry the consistent design character of the airport and deliver world class work environments for staff as well as contributing the character of the local area and community.

Airport Operations Buildings Principle B-43:

Although the airport buildings will not be customer facing they still contribute to the character of the airport site so temporary cheap solutions should be avoided.

Airport Operations Buildings Principle B-44:

Airport operations buildings can contribute landmark buildings to enhance the character of the airport

Airport Operations Buildings Principle B-45:

The unique functional forms of airport operation buildings are an opportunity to create characterful and interesting design solutions

Air Traffic Control Tower Visualisation (TR020002/APP/7.3)







4.0 Building Aesthetics and Character

4.9 Character and Identity

4.9.2 Cargo Facilities



Design Principles: B. Identity

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 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.

Cargo Facilities Principle B-46:

The cargo facilities' design and form will largely be defined by their functional and end user requirements to store cargo as efficiently as possible. This can create buildings which have a large mass. However, character and design can still be incorporated by having unique facade and colour treatments on the cargo facility office portions in the staff and customer facing areas.

Cargo Facilities Principle B-47:

Cargo facilities' large masses can be broken up using clever elevation treatments and more organic roof shapes and facade forms. Curved roof profiles and a variety of elevational treatments across long facades can break up large forms in order to reduce their visual mass on the landscape.



Cargo Facilities Principle B-46:

Adding character and interest in the office portions through glazing, colour and interesting facade treatments.



Cargo Facilities Principle B-47:

Breaking up the large mass of cargo facilities using curved roof profiles and a variety of cladding elevational treatments in order to reduce the landscape visual impact of the buildings.





4.0 Building Aesthetics and Character

4.9.3 Passenger Facilities



Design Principles: B. Identity

Although the main focus of the airport will be its cargo operations 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 1. 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 be served by three refurbished Code C aircraft stands. A later expansion of the building will add a fourth passenger stand will to accommodate the demands of the passenger forecast

Passenger Facilities Principle B-48:

Translucent or glass facades are ideal for passenger facility entrances as they give customer's a clear visual reading of the different spaces both internally and externally. This must also be matched with the safety requirements of the airport including the use of safety glass.

Passenger Facilities Principle B-49:

Passenger Facilities can create character in long open spaces by exposing the structure of the building. This can create a memorable passenger experience and link the airport design back to the aesthetics of aviation design.

Passenger Terminal Visualisation 03 (TR020002/APP/7.3)



Passenger Facilities Principle B-50:

Large letters or sculpture can create an interesting photo opportunity outside the terminal and add character while providing a structural safety detterant for car-ram attacks.

Passenger Facilities Principle B-51:

Passenger facilities should feature clear and attractive wayfinding to guide and add colour and character to the terminal external and interior area.





4.01Building Aesthetics and Character

4.9.4 MRO Facilities



Design Principles: B. Identity

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 proposed landscaping scheme, there are also attenuation ponds on site for surface water storage.

MRO Facilities Principle B-52:

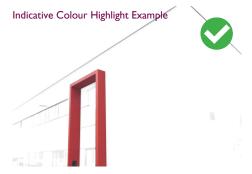
Corporate branding or colours should be reserved for motifs or flashes of colour only.

MRO Facilities Principle B-53:

The use of roof-lights to create bright spaces in the hangar using natural light can create pleasant places to work and reduce on energy use of artificial light.

MRO Facilities Principle B-54:

Although MRO hangar design is often defined by aircraft size and therefore commonly creating large forms. Their overall mass can be broken up using fluid roof designs or varied elevational treatment.



MRO Facilities Principle B-52

Corporate branding or colours should be reserved for motifs or flashes of colour only

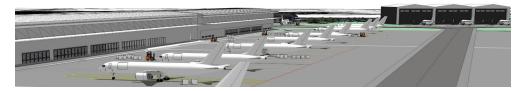


MRO Facilities Principle B-53

The use of roof-lights to create bright spaces in the hangar using natural light can create pleasant places to work and reduce on energy use of artificial light.

Cargo Apron Visualisation 02 (TR020002/APP/7.3)





MRO Facilities Principle B-54:

Although MRO hangar design is often defined by aircraft size and therefore commonly creating large forms. Their overall mass can be broken up using fluid roof designs or varied elevational treatment.





4.01Building Aesthetics and Character

4.9.5 Aviation and Related Business Development



Design Principles: B. Identity

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-XX-DR-2089 P10 (TR020002/APP/7.1). 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.

Aviation and Related Business Principle B-55:

Use of roof profiles or cladding treatments to reduce the visual impact of larger building forms,

Aviation and Related Business Principle B-56:

Use of poly-carbonate cladding or glazing to provide natural light and add feature corners to business park elevations.

Aviation and Related Business Principle B-57:

Use of graduated cladding to reduce the perceived mass of building forms.



Aviation Related Business Principle B-55:

Use of roof profiles or cladding treatments to reduce the visual impact of larger building forms,



Aviation Related Business Principle B-56: Use of poly-carbonate cladding or glazing to provide natural light and add feature corners to business park elevations.



Aviation Related Business Principle B-57: Use of graduated cladding to reduce the perceived mass of building forms.

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4.0 Building Aesthetics and Character

4.9.6 Business Aviation



Design Principles: B. Identity

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.

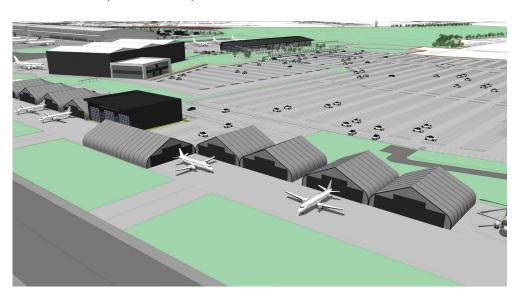
Business Aviation Principle **B-58**:

Business Aviation hangars and offices are often customer facing and should feature high specification cladding and elevation finishes.

Business Aviation Principle **B-59**:

Temporary tensioned fabric hangars will be permitted for the business aviation area to as they can be easily relocated to other areas as needed and ensure long term flexibility.

BAC Visualisation 01 (TR020002/APP/7.3)







4.01Building Aesthetics and Character

4.9.7 Wayfinding

Design P

Design Principles: B. Identity

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.

Wayfinding Principle B-60

Create a comprehensive, clear and consistent visual system with concise messaging.

Wayfinding Principle B-61

Show only information that is relevant to the space, location and / or navigation path.

Wayfinding Principle B-62

Utilise space and sight lines in the mobility process to help users understand where they are going and provide a sense of comfort.

Wayfinding Principle B-63

Build upon the colours and forms that inform the building design to create a single, homogeneous theme.

Indicative Wayfinding Examples:



























5.1 Building Materiality

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 steel portal framed buildings. 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.



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Design Principles: C. Materiality

Building Materiality Principle C-01: Consistency

Consistent means that a comprehensive high level design guide will be applied to buildings in the proposal to ensure that all buildings within the site relate to and complement each other. This is proposed to be achieved through methods such as agreed material palettes, zone specific height parameters in sensitive areas and a development wide design guide to promote future consistency

Building Materiality Principle C-02: Contemporary

Contemporary means that buildings will reflect modern design techniques and high quality modern design. Attention will still be paid to the historic context of the site through contemporary interpretation rather than replication. An example of this could be the proposed curved roof proposal of the cargo facility and terminal building which evokes the curved aerofoil profile of a plane's wing through high quality modern materials and construction techniques

Building Materiality Principle C-03: Light

Light means the buildings will be produced using contemporary materials which are high quality but still functional and cost effective. By light specifically it is meant that materials and forms will not be bulky or obtrusive in form and design will be as far as practicable elegant and attractive. Attention will also be paid to natural lighting within buildings including roof lights or polycarbonate panels.

Building Materiality Principle **C-04**: Industrial

An industrial aesthetic means that the design guide will promote building forms, material treatments and details which promote and evoke an aesthetic and form which follows the proposal's function as a modern cargo airport –i.e. the proposals will be related to and inspired by industrial and aviation design.

Cargo Area Visualisation 02 (TR020002/APP/7.3)







Design Principles: C. Materiality

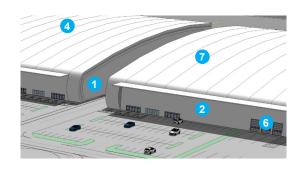
5.01Materiality

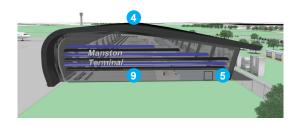
5.2 Material Key

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

Material Colour Sample 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:











5.3 Lighting



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Design Principles: C. Materiality

Airport Lighting Principles - Principle C-05

Lighting to the airport consists of both column mounted and building mounted luminaires at differing heights to suit the application:

- LED floodlights lighting roadways and access paths and service yards mounted on buildings between 8m and 10m above ground.
- LED roadway floodlights Lighting roadways and access paths and service yards mounted on lighting columns at 8m above ground.
- Directional floodlights lighting the airport aprons mounted on lighting columns at either 15m or 25m in height or fixed to the facades of buildings at 22m height.

Business Park Lighting Principles - Principle C-06

Lighting to the business park consists of both column mounted and building mounted luminaires at differing heights to suit the application:

- LED floodlights lighting roadways and access paths and service yards mounted on buildings between 8m and 10m above ground
- LED roadway floodlights Lighting roadways and access paths and service yards mounted on lighting columns at 8m above ground.

Abacus reference	Luminaire Type	lmage	Location Used
ARTE Series floodlight	Bracket mounted LED floodlight		Lighting roadways and access paths and service yards mounted on buildings between 8m and 10m above ground level with the light directed towards the service yard centre of the site.
AAA-LUX AL floodlights	Equipped with high- quality LED lamps and optics. The high-quality optics illuminate with excellent uniform- ity whilst producing minimal stray light.		Located at airport aprons directing light towards the apron on columns. Luminaires are provided with hoods to prevent obtrusive glare issues where required. Mounted on lighting columns at either 15m or 25m in height or fixed to the facades of buildings up to a height of 22m.
VELA Series floodlights	Pole mounted wide area distribution luminaire with low upward light ratio		Located at the perimeter of vehicle storage/parking areas, mounted on 15m height lighting columns.
AL62000 Series	Pole mounted LED road luminaire with selectable distribution optics to suit the required application area.		Lighting roadways and access paths and service yards mounted on lighting columns at 8m above ground. Luminaires are positioned away from buildings and with the light output directed back towards the centre of the site.





5.4 Use Of Colour



Design Principles: C. Materiality

Colour Principle C-07:

The bold use of colour not only serves to provide a contemporary, modern facade but can also be used to differentiate specific zones and areas within the airport. Coupled with contiguous wayfinding and signage features, colour creates a clear and ordered sense of place.

Colour Principle C-08:

Utilising colour as a key component of the design, as opposed to a finishing touch, will provide a more dramatic effect and can alter the perception of a building's form.

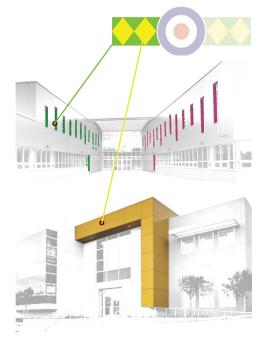
Colour Principle C-09:

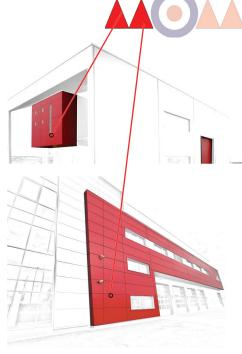
Using colour in building facades is a way of generating a visual comfort and also drawing the attention of the visitor at the same time. The colours of facades and features not only highlight the buildings and increase interest for the viewers; in fact, using colour visually activates an area.

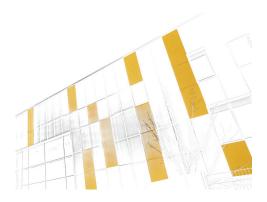
Colour Principle C-10:

As a further reference to the historic nature of the site, both colour and shape could be influenced by traditional crests and motifs of the military units that used Manston as their base of operations.

Indicative Potential RAF Colour Reference Diagrams:









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5.5 Surfaces and External Materials



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Design Principles: C. Materiality

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 proposed landscaping scheme, there are also attenuation ponds on site for surface water storage.

Surfaces and Materials Principle C-II:

Materials for footpaths need to be chosen carefully according to the type of space. High quality paving such as granite block paving is recommended for main streets and public spaces.

Surfaces and Materials Principle C-12:

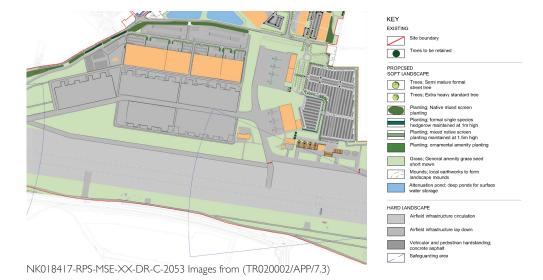
Appropriate use of colours and materials can create recognisable routes and enhance the identity and character of a place.

Surfaces and Materials Principle C-13:

Edges can be screened with art and planting to improve the quality of an enclosed space; These can be enhanced with spaces to rest and enjoy.

Surfaces and Materials Principle C-14:

The range of materials must be chosen to be sympathetic with the environment in which they will be situated.



Surfaces and Materials Principle C-15

Depending on the location, use of character footpaths and creative planting/lighting could be implemented.

Surfaces and Materials Principle C-16:

Security bollards can be integrated with seating or planting to create a softer look to functional elements.

Surfaces and Materials Principle C-17:

Plank paving adds a strong contemporary feel with its linear outline. The direction of how it is laid also creates different effects.

Surfaces and Materials Principle C-18:

Availability of seating is important around public spaces, the use of natural materials and planting will also soften the environment.





6.01Landscape

6.1 Landscape Character and Context

The Airport falls wholly within the area as characterised by A1: the Manston Chalk Plateau.

This landscape comprises an elevated plateau of farmland with arable and horticultural crops, interspersed with settlement at Manston and Woodchurch. The lack of defining features and field boundaries results in a disjointed pattern of large scale fields with an open character.

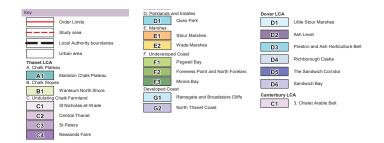
The landform is generally flat with minor undulations characterising the area around the airport including Telegraph Hill close to the junction at Mount Pleasant. The plateau marks the highest point within Thanet and this elevated position allows for long distance views over the surrounding landscape including sea views to Pegwell Bay and to the north.

The landscape lacks any considerable areas of valued habitat apart from a small area of deciduous woodland and occasional orchards within the villages. There are no natural designations, although these areas of inland arable farmland are likely to provide roosting sites for birds associated with the coast, including golden plover.

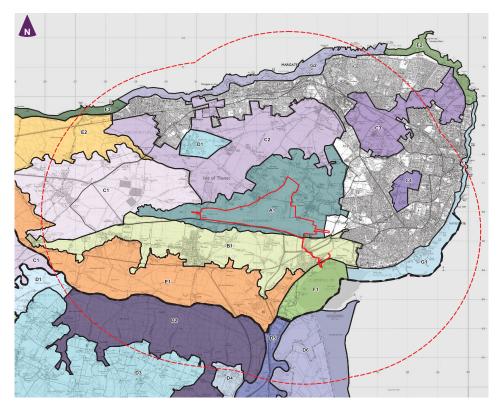
Key Sensitivities and Qualities

- High quality agricultural land and value for crops, and potential value for farmland birds.
- District sense of place as an island surrounded by sea.
- The low density and scattered settlement pattern of villages and isolated buildings mostly well- integrated by trees on the elevated and flat landform.
- The role of the southern edge of the plateau as the skyline and backdrop to the marshes (Wantsum Channel) and in views from other lower areas of Thanet and beyond including the coast.
- Tree belts provide enclosure around small villages of Manston and Woodchurch as well as scattered rural buildings.
- Some rural lanes with no verge or street lighting contribute to rural character before connecting with a
 wider road network of main roads including the A299.
- The RAF Manston, Spitfire and Hurricane Museum provide sense of history and time depth.
- Historic character of Manston village.
- Open elevated aspect and long distance panoramic views over Minster Marshes and across Pegwell Bay.
- A299 crossing the area and main route into Thanet and the Ramsgate/Broadstairs urban area and its
 potential role in creating a sense of place and arrival.

(Thanet District Council Landscape Character Assessment 2017)



Drawing Reference: Figure 11.37 (TR020002/APP/5.4)







6.01Landscape

6.2 Reflection of Historic Landscape Character

Campus Planting Examples



Design Principles: C. Materiality & Landscape

The Historic England guide to "Historic Military Aviation Sites - conservation guidance" (2003) makes reference to the "campus" character of many airfield sites "derived from the open layout of the buildings, the consistent use of materials and the generous provision of trees and grassed areas".

Manston was opened as an airfield in 1916. It is set within an open plateau top landscape albeit that a characteristic of the built-up area to the immediate north of the airport is its tree/ woodland planting with areas of grassland. It reflects the 'campus' character of airfields (such as Duxford, Cambridgeshire and others), whereby the support buildings, i.e. accommodation blocks, officer's mess, are separated from the airside buildings and are set within areas of grassland interspersed with trees and other ornamental planting types. The proposed development would reflect this character with a similar, more formal, but contemporary landscape within the north of the site, which would also serve to integrate it with the existing commercial and residential developments to the north, whilst the runway and cargo areas are of a more open character.







6.01Landscape

6.3 Landscape Design



Design Principles: C. Materiality & Landcape

The site is within Local Character Area A1: Manston Chalk Plateau, as defined within the Thanet District Landscape Character Assessment (2007). In response to the specific 'key sensitivities and qualities' of this local character area, the landscape design proposals seek to respond as follows:

Landscape Principle C-19:

To reflect the well-integrated character of villages and isolated buildings by retaining existing vegetation where possible and practical to do so, together with new woodland plantings within buffer zones and specimen tree planting within the spaces between buildings;

Landscape Principle C-20:

Reflect the sense of enclosure to the villages of Manston and Woodchurch, with new woodland planting providing enclosure to new buildings along Spitfire Way, Manston Road and Manston Court Road, and with the open agricultural landscape to the north east.

The new plantings (with associated earth mounding) would also seek to mitigate potential effects upon views from local residential visual receptors, including properties on Alland Grange Lane, Manston Road and Manston Court Road, amongst others. They would include a range of native species to promote local biodiversity. However, final species selection would necessarily be informed by the recommendations within CAP 772: 'Wildlife Hazard Management at Aerodromes' (2017); they would seek to avoid and/or minimise use of fruiting and nut bearing species.

New plantings and grasslands would be managed to establish an informal and natural appearance, whilst seeking to avoid unwanted species of fauna which may compromise the use of the airport.

Hedgerow and Shelterbelt Examples











6.01Landscape

6.4 Legibility and Place Making Avenue Examples



Design Principles: C. Materiality & Landcape

Landscape design proposals would clearly define public and private space by distinguishing between these areas through layout and hard and soft landscape design. Where appropriate and necessary, separation would be provided by airside/ landside fencing or some other form of boundary feature. Other landscape design features to improve legibility and placemaking would include:

Landscape Principle C-21:

Specimen tree planting will be provided at key locations to aid legibility and hierarchy within the development.

Landscape Principle C-22:

Avenues of single species trees will be provided to reinforce wayfinding and site layout within a formal setting.

Landscape Principle C-23:

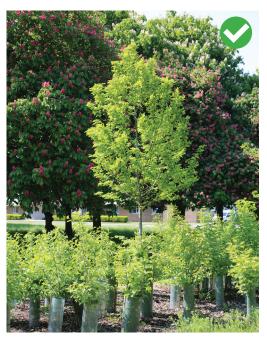
Existing boundary vegetation will be retained and reinforced as appropriate to provide enclosure to the development and provide a mature landscape setting

Landscape Principle C-24:

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.

The landscape design would seek a contemporary hard and soft landscape design as an appropriate context to the architecture of the new buildings within the proposed development whilst, in similar fashion to the form of the new buildings, seek inspiration from the historic landscape of this former Battle of Britain airfield, and others alike.













6.0 | Landscape

6.5 Landscape Buffer Zones



Design Principles: C. Materiality & Landcape

Landscape Principle C-25:

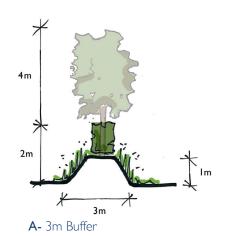
Existing mature vegetation will be retained where possible and practical as part of the proposals to provide landscape maturity to the development and offer visual containment.

Landscape Principle C-26:

Buffer planting is proposed along key boundaries to provide visual containment to the development and mitigate the impact on neighbouring properties.

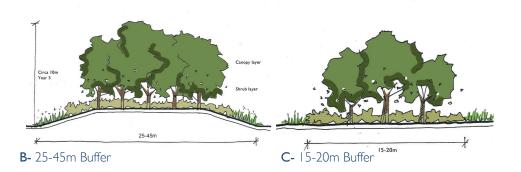
Landscape Principle C-27:

Boundary planting will be managed to provide an informal and natural appearance without encouraging unwanted fauna species that may compromise the airfield.





Drawing Reference: NK018417-RPS-MSE-XX-DR-C-2051 (TR020002/APP/7.3)







7.01Sustainability

7.1 Climate Change Design Principles

7.1.1 Designing Sustainably



Design Principles: D. Sustainability

Sustainable Design: Principle S-01

The layout of the masterplan positions stands closer to the runway than the cargo facility; this avoids impact on the Runway Obstacle Limitation Surface mitigating adverse impacts on safety.

Sustainable Design: Principle S-02

The site fuel farm is located on an existing fuel site. This maintains the fuel farms extant use and avoids creating a new fuel farm on the site. The sites location with airside access also increases operational efficiency.

Sustainable Design: Principle S-03

The attenuation ponds are located at the site's natural low point. This allows for maximum use of gravity feeds to the pond storage and minimises reliance on pumping to remove water from critical infrastructure areas. This improves operational efficiency of the network and provides increased safety from the impacts of failure in the pumping network.

Sustainable Design: Principle S-04

The passenger car parking has been centralised to the east of the site with its own site access. This separates passenger and cargo movements. This mitigates safety concerns related to HGV and Passenger movements and also provides operational efficiency in the location of services and controls.

Sustainable Design: Principle S-05

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The use of sustainable urban drainage systems (SUDs) to mitigate impact of development on surface water (see the proposed attenuation ponds) mitigates environmental impact of the scheme.

Sustainable Design: Principle S-06

Airfield layout design to minimise times taxiing and holding providing additional operational efficiency.

Sustainable Design: Principle S-07

Habitat creation on-site south of the current southern perimeter fence and within land parcel 1362 (Referred to in TR020002/APP/2.5) - Created habitat will be specifically designed with diverse features to encourage invertebrates, including features typical of open mosaic habitat. This mitigates the adverse environmental impact of the scheme.

Sustainable Design: Principle S-08

Off-site habitat provision in the c.36ha land parcel 1362 (Referred to in TR020002/APP/2.5) 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. This mitigates the adverse environmental impact of the scheme.

Sustainable Design: Principle S-09

The use of, where practicable, renewable energy on site – (i.e solar panels PVs, roof lights, storm water recycling etc.) This mitigates the adverse environmental impact of the scheme.

Sustainable Design: Principle S-10

The use of planting within the development as shown by the proposed landscaping scheme which filters views into the development, provides relief to the built form, reduces surface water runoff, filters noise and absorbs air borne particulates. This mitigates the adverse environmental impact of the scheme.

Sustainable Design: Principle S-II

The application of landscaping boundaries to sensitive visual areas of the development to reduce the visual impact of the development– i.e. 45m buffer to the Northern Grass areas This mitigates the adverse environmental impact of the scheme.





7.0 | Sustainability

7.1 Climate Change Design Principles

7.1.2 Building Sustainably



Design Principles: D. Sustainability

Sustainable Design: Principle S-12

The concept design of Taxiways and Runway have avoided use of maximum gradients, this provides flexibility for detailed design to accommodate varying site levels. This substantially mitigates the adverse impact of accommodating changes to taxiway vertical profiles during design development.

Sustainable Design: Principle S-13

Utilising the cut/fill balance also mitigates the generation of surplus material that would need to be transported off site. This will be further refined as the scheme develops to provide further mitigating adverse impacts on the environment.

Sustainable Design: Principle S-14

The existing airport pavement infrastructure has been re-used where possible. For example the existing runway is being overlaid. The passenger apron and taxiway are also retained in the masterplan design. This mitigates the schemes environmental impact by reducing the requirement to create new infrastructure and reduces generation of waste.

Sustainable Design: Principle S-15

The site radar makes use of a previous radar installation location. This maximises use of existing infrastructure. Takes advantage of existing operational efficiency and mitigates adverse environmental impacts by reusing existing infrastructure.

Sustainable Design: Principle S-16

The use of, where practicable, sustainable materials in the building construction (i.e. recycled aggregates) This mitigates the adverse environmental impact of the scheme.

Sustainable Design: Principle S-17

The existing cargo facilities located in the north-east of the site would be retained during Construction Phase I and used for airport operational buildings i.e. vehicle storage, as well as equipment, storage, laydown and working areas during Construction Phase I.







7.01Sustainability

7.2 Sustainable Building Design Principles

Achieve a high standard of energy efficiency in line with most recent government guidance.

Design Principles: D. Sustainability



Sustainable Design: Principle S-18

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:

Sustainable Design: Principle S-19

Re-using existing buildings and vacant floors wherever possible.

Sustainable Design: Principle S-20

Designing buildings flexibly from the outset to allow a wide variety of possible uses.

Sustainable Design: Principle S-21

Using sustainable materials wherever possible and making the most sustainable use of other materials.

Sustainable Design: Principle S-22

Minimising waste and promoting recycling, during both construction and occupation.

Photo Voltaic Example







7.01Sustainability

7.3 Social Sustainability

7.3.1 Continued Public Engagement



Design Principles: D. Sustainability

Before the application for a Development Consent Order ('DCO') for the proposed development was made, RiverOak was required to consult with those living in the vicinity of the land under section 47 of the Planning Act 2008 ('the Act'), as well as publicising the proposed application locally and nationally under section 48 of the Act. In addition, section 42 of the Act requires applicants of DCO applications to consult with persons with an interest in the land and prescribed local authorities and statutory bodies.

Sustainable Design: - Social Engagement: Principle S-23

The Manston Airport project will feature continued public engagement as the project progresses into detailed design.

Previous Manston Airport Public Consultation





Images from: (TR020002/APP/7.3)





8.01Summary

8.0 Summary

This Design Guide presents a live document which will be developed in tandem with the detailed design of the airport. It will also be developed in conjunction with the CAA (Civil Aviation Authority) regulations which will inform the design guidelines through a process of consultation following the DCO (Development Consent Order) process.

Following on from the design framework established in the Design and Access Statement, the design principles have been developed (TR020002/APP/7.3) using the below sections in order to address and ensure good design is committed to for the Manston Airport Scheme:

A. Respect for Context

with reference to Historic England Guidance

Reflecting the historical context of Manston Airport as well as being sensitive to the surrounding area.

B. Character and Identity

to address NPS 2018, Para 4.29-35

Promoting and maintaining a vision for Manston Airport with a strong sense of place and distinct built environment

C. Materiality & Landscaping

to address NPS 2018, Para 4.29-35

Defining a palette of high quality materials and landscaping that relate to Manston and its history and unify the airport

D. Sustainability

to address NPS 2018, Para 4.30

Creating a set of sustainable design principles in both construction and design of the built environment

The buildings within the application will be specifically designed to meet customer and end-user demands but also to current institutional standards to optimise future flexibility and lifespan. The following initiatives will be incorporated:

- Future proofing and flexibility
- Sustainable construction
- Optimise energy efficiency and natural light
- Promote cycling
- Waste management systems
- Roof lights to Hangars and Warehouses

In summary the proposed scheme will provide a range of benefits including:

- Generation of employment
- Optimisation of future development through coherent, rationalised and efficient design
- Improvement of vehicular and pedestrian access through and to the site
- Enhanced landscaping to the site
- Improvement of safety and security to the site
- Sustainable Urban Drainage Systems