Gatwick Airport Northern Runway Project

Design and Access Statement – Appendix 1 – Design Principles – Clean Version

Book 7

VERSION: 5.0

DATE: JULY 2024

Application Document Ref: 7.3

PINS Reference Number: TR020005

APFP Regulations 5(2)(q) **Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009**

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1 Introduction

1.1 Introduction

1.1.1 This Appendix describes the Design Principles that underpin the design and integration of the Project into its context. They are written to capture the key principles documented within this DAS that have shaped the indicative design so far as part of development of the masterplan, and to make a commitment that these will be maintained and developed as part of future detailed design and delivery phases of the Project.

1.1.2 The Design Principles represent a ‘forward-looking’ view of the key components of the design, whereas the earlier volumes of this DAS illustrate the process whereby the masterplan was achieved. The principles will be followed at the detailed design stage as secured through DCO Requirements 4, 5, 6 and 10.

1.1.3 The Design Principles reflect the design commitments of Gatwick Airport Limited (GAL) in relation to the Project. They are intended to set out a unified approach to design and capture the collective knowledge of the Project team at the time of making an application for development consent, and have subsequently taken account of comments received from Interested Parties during the Examination process. They create an overarching, shared resource which give clarity to stakeholders over the required design outcomes. They give detail on design intent and objectives to be achieved, whilst providing some flexibility for the detailed designs to be developed.

1.1.4 Underpinning the Design Principles is GAL’s aim to deliver good design. Through committing to and delivering on these Design Principles, good design will be achieved through the detailed design of the Project.

Approach to Control of Design

1.1.5 These Design Principles will be secured through the DCO and will provide certainty as to the principles that will be applied in designing the Project. They provide stakeholders with assurance on how the design of the Project will be developed following the grant of consent.

1.1.6 Requirements 4 (detailed design), 5 (local highway works – detailed design), 6 (national highway works) and 10 (surface and foul water drainage – detailed design) in Schedule 2 to the **Draft Development Consent Order** (Doc Ref. 2.1) ensure that the detailed design of the Project is in accordance with these Design Principles. Before work can commence on any relevant part of the Project, details for that part must be shared and (where relevant) approved as follows:

- In relation to the local highway works, details of the layout, siting, scale and external appearance of buildings, structures and works must be approved by the relevant highway authority (in consultation with the relevant planning authority) under DCO Requirement 5;
- In relation to the national highway works, the details specified in the protective provisions for the benefit of National Highways in Part 3 of Schedule 9 to the DCO must be approved by National Highways pursuant to the process detailed in those provisions, as provided for by DCO Requirement 6;
- In relation to the 'listed works' (being those works listed in Schedule 12 (Non-Highway Works for which Detailed Design Approval is Required) to the DCO), details of the layout, siting, scale and external appearance of buildings, structures and works must be approved by Crawley Borough Council (CBC) (or, for Work No. 40(a) (pedestrian footbridge over the River Mole), Mole Valley District Council (MVDC) in consultation with Reigate and Banstead Borough Council (RBBC)) under DCO Requirement 4(4); and
- In relation to other works (being neither highway works nor 'listed works'), CBC must be consulted on their design under DCO Requirement 4(1).
- In relation to surface or foul water drainage (except for highway works and ‘listed works’), CBC must be consulted on their design under DCO Requirement 10(1);

- In relation to surface or foul water drainage forming part of any 'listed works', details of the surface and foul water drainage must be approved by CBC (in consultation with West Sussex County Council, the Environment Agency and Thames Water Utilities Limited) under DCO Requirement 10(3).

1.1.7 These Design Principles assist in providing a comprehensive and integrated scheme design and are the point of reference in accordance with which all parts of the authorised development must be constructed – as secured in Requirements 4(7)(a) (for 'listed works'), 5(2)(a) (for local highway works), 6(2)(a) (for national highway works) and 4(3) (for all other works).

1.1.8 This Appendix forms one of a suite of control documents that capture the Project's operational design-related commitments.

1.1.9 Other control documents that also secure measures related to the Project's design include:

- The plans contained within **Book 4 – Plans and Drawings**.
- **ES Appendix 5.3.2 Code of Construction Practice** [REP4-007] including its Annexes.
- **ES Appendix 8.8.1 Outline Landscape and Ecology Management Plan** [REP2-021, REP2-023, REP2-025 and REP2-027].
- **ES Appendix 5.4.2 Carbon Action Plan** [APP-091].
- **ES Appendix 5.4.1 Surface Access Commitments** [APP-090].
- **ES Appendix 11.9.6 Flood Risk Assessment - Annex 2 Surface Access Drainage Strategy** [APP-148]; and
- **ES Appendix 19.8.1 Public Rights of Way Management Strategy** [REP2-009].

1.1.10 This Appendix will be a control document and should be read in conjunction with the other control documents and **ES Appendix 5.2.3 Mitigation Route Map** [REP2-011] to understand the full suite of mitigation measures proposed.

1.1.11 The list below sets out where design principles and measures are secured in other control documents:

- In the case of landscape and ecological design, detailed landscape requirements are secured in the **ES Appendix 8.8.1 Outline Landscape and Ecology Management Plan** [REP2-021, REP2-023, REP2-025 and REP2-027] (oLEMP). These

Design Principles provide landscape and ecological principles to be considered in the development of detailed design alongside the detailed requirements of the oLEMP which will be fully defined through the relevant landscape and ecology management plan (LEMP). Therefore, these documents are to be read in parallel when designing works. Requirement 8 in the **Draft Development Consent Order** (Doc Ref. 2.1) provides that, before works are commenced on any part of the Project, a LEMP must be submitted to and approved by CBC (in consultation with RBBC, MVDC or Tandridge District Council (TDC) to the extent relevant). The LEMPs must be substantially in accordance with the **ES Appendix 8.8.1 Outline Landscape and Ecology Management Plan** [REP2-021, REP2-023, REP2-025 and REP2-027].

- There are specific requirements in the **Draft Development Consent Order** (Doc Ref. 2.1) for the approval of detailed drainage designs (DCO Requirements 6, 10 and 11). The detailed drainage designs for the proposed development must be in accordance with the drainage Design Principles included within this Appendix. The detailed drainage designs for the highway works must be in accordance with the **Surface Access Drainage Strategy** (Annex 2 to the Flood Risk Assessment [APP-148]) which has been shared with the local highway authorities and National Highways (DCO Requirements 6(2)(c) and 11).
- Construction-related design commitments (including compound siting and design) are set out in the **ES Appendix 5.3.2 Code of Construction Practice** [REP4-007] and its Annexes. DCO Requirement 7 specifies that the construction of the authorised development must be carried out in accordance with the **ES Appendix 5.3.2 Code of Construction Practice** [REP4-007]. The CoCP contains a series of Annexes providing further detail on construction environmental management systems and measures, including and of most relevance to design:
  - **Annex 1: Water Management Plan** [APP-083] containing design measures to manage how water would drain during construction, including the prevention of any pollution and the protection of hydromorphological and ecological elements of watercourses and water resources; and
  - **Annex 6: Outline Arboricultural and Vegetation Method Statement** [REP3-022, REP3-024 and REP3-026] containing measures to protect trees and vegetation during construction, together with preliminary removal and protection plans, to be detailed in subsequent Arboricultural and Vegetation Method Statements through the detailed design process and in accordance with Requirement 28.

Approach to Approval of Detailed Design

1.1.12 The works subject to detailed design approval are described in DCO Requirements 4(4), 5 and 6 in Schedule 2 of the **Draft Development Consent Order** (Doc Ref. 2.1)**.** The relevant discharging authority (specified in each Requirement) will be asked to approve the detailed design and the detailed designs must be in accordance with these Design Principles. DCO Requirement 4(1) requires that CBC is consulted on any part of the authorised development except highway works and 'listed works' prior to that development being carried out. Any such part of the authorised development must be in accordance with these Design Principles under DCO Requirement 4(3).

Independent Design Adviser's role and process

1.1.13 **Annex A** of this document sets out the role of the independent Design Adviser which is part of the detailed design process. It explains the scope of the Design Adviser's independent design review and their engagement with other stakeholders, including through a design review meeting. As explained in **Annex A**, where a design review has been carried out GAL will submit a Design Review Statement with the relevant submissions.

1.1.14 The process of an independent design review will ensure that the Design Principles are applied appropriately and which forms a clear part of the Design Adviser's remit, as explained in **Annex A**.

Structure of the Design Principles

1.1.15 To assist with an understanding of the design against the Design Principles, they have been split into four categories:

- Project-Wide Design Principles;
- Detailed Built Form Design Principles;
- Detailed Drainage Design Principles; and
- Detailed Landscape Design Principles.

1.1.16 The Project-Wide Design Principles respond to the site characteristics and its context to underpin the detailed design of the Project to ensure its integration into its surrounding, informed by the Project's vision and objectives, analysis and assessment work contained in the **Environmental Statement** [APP-026 to APP-217] and main volumes of the **Design and Access Statement** [REP2-032 to REP2-036]. The matters covered by the Project-Wide principles include design quality, landscaping, built-form, noise, resources and waste, and lighting and amenity. The lighting related Project-wide design principles have been informed by the high-level criteria, guidance and illustrative details contained in the **Operational Lighting Framework** [APP-077] to secure the key principles within the Framework which apply to the detailed design of the development.

1.1.17 The series of Detailed Design Principles provides bespoke design requirements for specific works areas in the Project, informed by the **Environmental Statement** [APP-026 to APP-217] and site specific analysis and initial design work contained in the main volumes of the **Design and Access Statement** [REP2-032 to REP2-036].

1.1.18 Collectively, the Project-wide and Detailed Design Principles provide a comprehensive suite of design measures to be considered and reflected in the layout, siting, scale and external appearance of the detailed design of each part of the authorised development. The design principles cover all environmental aspects (such as the water environment, landscape and visual impacts, recreational provisions and the historic environment) in order to limit or minimise any environmental impacts as well as setting design considerations including materiality, sustainability, operational efficiency, accessibility and functionality.

Table 1.11.1: Project-Wide Design Principles

Project-Wide Design Principles	
Design Quality	
D1	To achieve good design, the detailed design of the authorised development will be: ▪ receptive to the landscape and historical character and function, landscape permeability, landform and vegetation; ▪ visually appropriate and sensitive to place, with an appearance that demonstrates good aesthetics as far as possible and appropriate to its function; ▪ sustainable, durable, adaptable and resilient as far as reasonably practicable having regard to regulatory and other constraints; ▪ functional and fit-for-purpose; and ▪ efficient in use of natural resources and energy used in their construction.
Landscaping	
L1	Any trees, scrub, habitats and hedgerows which are features of ecological value will be retained and incorporated within the design, where feasible to do so and with regards to the Removal and Retention Plans for trees and vegetation to be approved under the detailed Arboricultural and Vegetation Method Statements described in CoCP Annex 6 (Doc Ref. 5.3).
L2	Tree and shrub planting will be provided within built-up areas (such as car parks) to reinforce retained tree lines and across the Project. The landscape planting will include a variety of native trees and shrubs and wildflower grasslands.
L3	New woodland will be planted along the highway works and new road alignments including:

Project-Wide Design Principles	
	▪ The replacement of an existing non-native hedgerow comprising Leyland cypress (Leylandii) between the A23 London Road and Perimeter Road East with a native species-rich hedgerow of approximately 125 metres in length (Work No. 42(a)). ▪ The provision of a new native species-rich hedgerow along Crawter's Brook to create a green corridor link to the west of the airport, of approximately 750 metres in length (Work No. 42(a)).
L4	Vegetation retention proposals for all elements of the Project will be designed to: ▪ Ensure existing vegetation is retained wherever possible and adverse impacts on the important features and locally distinctive patterns of development at Gatwick Airport are minimised. ▪ Minimise adverse impacts on the character of surrounding landscapes and townscapes. ▪ Restore the green barrier along A23 London Road and M23 Spur Road separating the south of Horley from the airport and its related infrastructure; ▪ Protect important urban green spaces, including Riverside Garden Park and Church Meadows. ▪ Ensure that visually significant vegetation is retained to minimise adverse effects on visual receptors, heritage assets, protect important views and protect the natural beauty and setting of the AONBs and the National Park
L5	The management of, or implementation of, proposed mitigation to enhance existing green infrastructure including hedgerows, woodland, trees, shrubs, wetland and amenity planting will be designed to: ▪ Enhance the character, visual quality and biodiversity of Gatwick Airport and its surrounding landscape/townscape. ▪ Enhance the screening capacity of visually significant vegetation.
L6	Proposed woodland, tree, scrub, shrub, wetland, amenity and grassland planting will be designed to:

Project-Wide Design Principles	
	▪ Ensure a high quality environment is created within Gatwick Airport and its surrounding landscape/townscape. ▪ Provide replacement/compensation planting where vegetation would be removed, particularly as a result of surface access improvements within and adjacent to the A23/M23 Spur corridor. ▪ Integrated with existing green open spaces and create enhanced habitat corridors.
L7	Proposed earth shaping, embankments, cuttings or bunds will be designed to: ▪ Ensure that visual screens are provided to minimise adverse effects on visual receptors and provide an opportunity for the creation of diverse habitats. ▪ Provide replacement/compensation features where they have been removed.
L8	Proposed fences, walls or barriers will be designed to: ▪ Ensure that visual screens are provided to minimise adverse effects on visual receptors. ▪ Provide replacement/compensation features where they have been removed.
L9	Proposed hard landscaping will be designed to: ▪ Enhance existing green infrastructure including hedgerows, woodland, trees, shrubs, wetland and amenity planting; ▪ Enhance the character, visual quality and biodiversity of Gatwick Airport and its surrounding landscape/townscape. ▪ Enhance the screening capacity of visually significant vegetation.
L10	A buffer zone of at least 15 metres will be provided around any areas of Ancient Woodland, measured from the boundary of the woodland. No works will be carried out within these buffers. Where possible and within the Order Limits, the buffer zone will contribute to wider ecological networks and be part of the green infrastructure provisions in the works area.

Project-Wide Design Principles	
L11	New planting provisions will take account of aerodrome safeguarding regulations determined by the ICAO and CAA in place at the time of detailed design taking place.
Built Form	
BF1	All new buildings constructed as part of the Project will be designed and constructed to achieve Net Zero emissions during operation.
BF2	Detailed design will consider how to reduce reliance on the energy grid during prolonged warmer/colder seasons and more extreme temperature events, particularly low carbon heating and cooling systems and ventilation systems.
BF3	The detailed design of buildings will include design measures and / or features to manage the risk of extreme storm events, flood events and heatwave related drought events.
BF4	New buildings will be designed to maximise water efficiency and to meet the minimum standards for BREEAM 'Excellent' rating (or equivalent at the time of detailed design) within the Water Category.
Noise	
N1	Detailed design will aim to minimise noise emissions from noise sources and ensure that noise-sensitive facilities are designed to insulate them from external noise to meet good internal noise standards. Noise barriers and bunds (described below) will be designed to deliver the noise screening for aircraft and other sources anticipated in the Environmental Statement.
N2	Plant associated with new facilities will be designed with noise attenuation where necessary to avoid noise disturbance to noise-sensitive uses on and off-site, in particular with reference to BS4142 for off-site receptors.
N3	To reduce adverse noise impacts associated with the proposed surface access improvements, the design shall include: ▪ A new right turn onto the A23 from the North Terminal Roundabout which removes the current need for traffic wishing to turn right instead having to turn left and U-turn at the Longbridge Roundabout,

Project-Wide Design Principles	
	thus reducing traffic flows on this section of the A23. ▪ Approximately 1 metre high noise barrier to be installed along the North Terminal Roundabout flyover elevated section (facing Riverside Garden Park). ▪ Approximately 1 metre high noise barrier to be installed along the South Terminal Roundabout flyover elevated section, north side.
Resource & Waste	
RW1	Detailed design will seek opportunities to repurpose the use of existing assets, components, products and materials.
Lighting & Amenity	
LA1	Lighting levels will take account of the extent to which people need to see after dark and how this varies from area to area, with some requiring high levels of visual acuity whilst others will enable just a basic understanding of scale and the ability to identify a safe passage through a space.
LA2	The lighting design for each element of the Project will consider the manner in which the space that is being designed will be used after dark as well as its relationship to spaces adjoining it.
LA3	A considered and consistent lighting approach shall be developed for the key navigational routes such as roads and pedestrian paths. Light will play an important role in supporting legibility and accessibility and in reinforcing specific visual and physical connections across Gatwick Airport.
LA4	The design of artificial lighting must support the various needs of the passengers and staff at Gatwick Airport after dark. This includes those with special needs and the elderly. Supporting a highly accessible after-dark environment will include avoiding excessive contrasts, avoiding direct and reflected sources of glare, avoiding shiny, mirror-like surfaces at pedestrian level, controlling shadow and limiting potentially confusing upward lighting.

Project-Wide Design Principles	
LA5	Energy efficiency will be considered at all stages of the Project, including design, construction and operation. This includes the efficiency of the energy supply and whether renewable energy measures could be integrated into the design of the Project.
LA6	Artificial light must be designed to assist in maintaining a safe environment at all times. This includes positively defining potential hazards such as steps and ramps and areas where pedestrians encounter moving vehicles, at for example, pedestrian crossings. Such areas may be defined after dark through passive techniques, such as landscape materials with appropriately contrasting reflectance, as well as through active illumination; perhaps using focused light and increased intensity.
LA7	Lighting shall be designed to provide an overall sense of security throughout Gatwick Airport, including supporting both active surveillance (e.g. CCTV) if/when required and modelling of people and surfaces will be provided where required. Where CCTV surveillance is supported by infra-red technology, the requirement for additional light in the visible spectrum may not always be necessary. It should be noted that perceptions of safety and security are not necessarily dependent on providing high intensities of light and indeed, in some cases, low levels of light can be important in maintaining a sense of security and privacy. Creating an environment that feels secure will largely be dependent on ensuring that spaces are legible, appear well maintained, give due consideration to inclusivity and do not inhibit adaptation.
LA8	In general, lighting will be controlled to remain contained within the site boundary. Positioning and the use of directional lighting and shields shall be used to prevent unintended light spill, including light spill onto adjacent habitat areas.
LA9	Lighting in the vicinity of sensitive receptors will ensure that potential adverse effects are identified, controlled and mitigated. Mitigation shall typically be provided in the form of lighting equipment utilising precise optics and lenses, baffles and light

Project-Wide Design Principles	
	shields, in conjunction with a suitable lighting control regime. Individual habitat requirements may necessitate the specification of a particular lighting spectrum, however this shall be proportionate and not at the expense of safety.
LA10	The lighting design will consider sustainable development and be designed to minimise adverse impacts on heritage assets, biodiversity, local residents and users of public rights of way and open space through specifying types of lighting equipment, mounting location, materiality, durability and light source to minimise disruption to safety and security during operation.
LA11	Lighting will be designed to avoid disturbance to areas of value for bats by shielding adjacent habitats of value.

Table 1.11.2: Detailed Built Form Design Principles

Detailed Built Form Design Principles	
Airfield Works (Work Nos. 1 to 7)	
DBF1	The design in the repositioning of the existing northern runway (Work No. 1) 12 metres to the north (measured from the centreline of the existing northern runway) will include the following: ▪ Removal of a 12m strip of hardstanding (part runway, part shoulder) on the southern side of the existing northern runway and reinstatement of land as grass; ▪ Reconstruction of the existing northern shoulder to bring this to runway standard; ▪ Construction of a new 12m strip of hardstanding (part runway, part shoulder) to the northern side of the existing northern runway; ▪ Replacement of drainage and re-installation of airfield ground lighting; and ▪ Resurfacing of the repositioned northern runway. The repositioned northern runway will be of 45m in width (excluding shoulders) and 2.6km in length.
DBF2	The runway access track (Work No. 2) running east-to-west between the main runway and the repositioned northern runway will be surfaced with grasscrete (or a similar product).
DBF3	The design in the conversion of the three existing aircraft stands to west of Pier 3 to fully serviced overnight parking/remote aircraft stands (Work No. 3) will include the installation of fuel hydrants, fixed electric ground power, lighting and stand entry guidance systems.
DBF4	Where proposed taxiways (Work No. 4) would bisect parts of floodplain areas, syphoned connections will be installed to retain floodplain connection on both sides of the taxiways.

Detailed Built Form Design Principles	
DBF5	The aircraft holding area (Charlie Box) (Work No. 5) will be designed to provide new operational aircraft hold points to allow aircraft to be held prior to accessing the northern runway. The new taxiways and taxi routes will be designed for Code C, Code E and Code F aircraft (as defined in International Civil Aviation Organisation (ICAO) Annex 14).
DBF6	The design of Pier 7 (Work No. 6) will be of no more than three floors and include passenger circulation space, passenger service areas (inc. commercial facilities and WC facilities), processing and waiting areas for passengers, access structures to allow for boarding of aircraft and an autonomous vehicle station.
DBF7	The design of Pier 7 (Work No. 6) shall include the following design features: ▪ A contemporary aesthetic ensuring that the building complements surrounding buildings, reflects modern design techniques and uses quality design materials. ▪ Of a linear building form. ▪ Materials may include lightweight cladding and areas of glazing to provide natural light and facilitate views of the airfield. Solar shading will be designed on the building's southern façade, as necessary.
DBF8	The design of Pier 7 (Work No. 6) will have regard to the following considerations: ▪ Health and wellbeing (including access in compliance with the Equality Act 2010 and British Standard 8300-2:2018). ▪ Accessibility for all. ▪ A floorplate configuration that promotes natural daylight, ventilation and intuitive wayfinding. ▪ Climate change impact and energy performance. ▪ Security, safety and low energy lighting. ▪ Considers the future re-use and recycling of the building fabric. ▪ Efficient servicing and recycling.

Detailed Built Form Design Principles	
DBF9	The reconfiguration and constructed aircraft stands in the apron to the south of Pier 7 (Work No. 6) would be designed for Code C and E aircraft (as defined in ICAO Annex 14).
DBF10	The design of the Oscar Area (Work No. 7) will accommodate no more than eight remote aircraft stands.
DBF11	The design of the airfield works (Work Nos. 1 to 7) will comply with the Civil Aviation Authority's (CAA) licensing and certification criteria for UK licensed aerodromes. The airfield design will be subject to the CAA approval process under CAP 791: Procedures for changes to aerodrome infrastructure (or other relevant and appropriate process that is in place when the detailed design is being carried out). If detailed design conflicts arise between engagement with the CAA through the CAP 791 approval process and consultation with Crawley Borough Council (under Requirement 4(1) of the DCO), the CAA's position will carry greater weight.
Replacement CARE Facility (Work No. 9)	
DBF12	The replacement CARE facility building (Work No. 9) will be of a contemporary design to be reflective of surrounding operational buildings and be of efficient methods of construction and materials. The building design will incorporate the following design features: ▪ Structural frame with curtain walling with lightweight cladding and translucent panels where possible for natural daylighting. ▪ Materials will include profiled metal or composite sheet cladding and roofing, with translucent panels for natural daylighting and to key areas (such as office and welfare spaces).
DBF13	The main building will be designed having regard to the following considerations: ▪ Health and wellbeing (including access in compliance with the Equality Act 2010 and British Standard 8300-2:2018). ▪ Security, safety and low energy lighting.

Detailed Built Form Design Principles	
	▪ Efficient servicing and recycling. ▪ Safe pedestrian walking routes. ▪ Good quality staff accommodation and amenities. ▪ Lifecyle costs, demolition and future recycling of building fabric. ▪ Surface parking with disability provision.
DBF14	The design of the replacement CARE facility will take account of the movement of Large Refuse Vehicles, including the need for unloading, loading and parking of these vehicles. The parking spaces for these vehicles will be circa 18m x 12m x 2.5m in size.
Replacement Motor Transport Facilities (Work No. 10)	
DBF15	The design of the main building in the replacement motor transport facilities (Work No. 10) will be of a contemporary design to reflect its surroundings and efficient methods of construction and materials. The main building will have a series of vehicle roller shutters or sectional doors. The building design will have regard to the following considerations: ▪ Health and wellbeing (including access in compliance with the Equality Act 2010 and British Standard 8300-2:2018). ▪ Security, safety and low energy lighting. ▪ Efficient servicing and recycling. ▪ Safe pedestrian walking routes. ▪ Good quality staff accommodation and amenities. ▪ Lifecyle costs, demolition and future recycling of building fabric. ▪ Surface parking with disability provision.

Detailed Built Form Design Principles	
Replacement Ground Maintenance Facilities (Work No. 11) and Replacement Airfield Surface Transport Facilities (Work No. 12)	
DBF16	The hardstanding area of the replacement ground maintenance facilities (Work No. 11) will have an area of approximately 1,230m^2 and the hardstanding area of the replacement airfield surface transport facilities (Work No. 12) will have an area of approximately 1,440m^2. If the facilities are designed together, then opportunities will be explored to reduce the overall area of hardstanding to be lower than the combined total (of approximately 2,670m^2) through efficiencies in the design. The hardstanding area will be designed to provide sufficient space for vehicles to manoeuvre.
DBF17	The design of the replacement facilities (Work Nos. 11 and 12) will have regard to the following considerations: ▪ Health and wellbeing (including access in compliance with the Equality Act 2010 and British Standard 8300-2:2018). ▪ Security, safety and low energy lighting. ▪ Efficient servicing and recycling. ▪ Safe pedestrian walking routes. ▪ Lifecyle costs, demolition and future recycling of building fabric. ▪ Surface parking with disability provision (only applicable to the replacement motor transport facilities). The design of the office and welfare facilities in the replacement ground maintenance facilities will be of a portacabin style building (or similar) and provide good quality staff accommodation and amenities.
Replacement Rendezvous Point North (Work No. 13)	
DBF18	The design of the replacement rendezvous point north (Work No. 13) will have regard to the following considerations: ▪ Health and wellbeing (including access in compliance with the Equality Act 2010 and British Standard 8300-2:2018).

Detailed Built Form Design Principles	
	▪ Security, safety and low energy lighting. ▪ Efficient servicing and recycling. ▪ Safe pedestrian walking routes. ▪ Lifecyle costs, demolition and future recycling of building fabric. ▪ Direct access to the airfield secure zone. ▪ Secure fencing, with rapid access gates to the airfield secure zone and closable access gates to the landside roads. The cabin building will be a modular design, having regard to efficient methods of construction and materials. The site will be secured with a fence with closable access gates from the landside roads and rapid access gates onto the airside to provide direct access to the airfield and its internal road network.
Replacement Fire Training Ground (Work No. 14)	
DBF19	The design of the replacement fire training ground (Work No. 14) facilities will have regard to the following considerations: ▪ Health and wellbeing. ▪ Maximise the re-use of existing buildings and equipment where possible. ▪ Security, safety and low energy lighting.
DBF20	The replacement of the fire training ground will involve the reuse and relocation of existing facilities as far as possible. The existing facilities include a fire training rig, a control centre, a compartment fire training complex, a road traffic collision mock-up area, classrooms, underground water storage, a water tower and deluge system.
Satellite Airport Fire Service Facility (Work No. 15)	
DBF21	The design of the fire service facility (Work No. 15) will have regard to the following considerations:

Detailed Built Form Design Principles	
	▪ Health and wellbeing. ▪ Good quality staff accommodation and amenities. ▪ Security, safety and low energy lighting. ▪ Direct access to the airfield.
DBF22	The main garage building will have a dual front and rear access, and be positioned near to the End Around Taxiway East (Work No. 4(g)).
Aircraft Hangar (Work No. 16)	
DBF23	The aircraft hangar (Work No. 16) will be of a contemporary design to reflect its surroundings, reflect modern design techniques and be of efficient methods of construction and materials. The hangar will incorporate the following design features: ▪ Longspan structural frame and large doors to provide clear width access for aircraft. ▪ Materials will include a steel portal frame with metal cladding and roofing with use of transparent or translucent panels for natural daylighting in the main hangar space and its external doors. ▪ External materials of a robust nature, with suitable protection where impact may occur and be chosen to have low maintenance requirements. The hangar's cladding will be designed to reduce its visual impact and be in keeping with existing and similar airfield facilities and buildings. ▪ Secondary and staff areas not required to accommodate aircrafts will be designed to have a reduced building height. ▪ Areas with permanent workstations and which do not require direct access to the hangar maintenance access will have access to natural light and views out, as per the British Council of Offices' Guide to Specification (in place at the time that detailed design is carried out). ▪ Direct access to the apron to the south of the site, with other accommodation positioned to the rear.

Detailed Built Form Design Principles	
	▪ Provision of zones around the hangar's façade to allow for access and maintenance and the permissible percentage of façade to allow fire tender access. ▪ Suitable, secure fencing and lighting around the site. The fencing will serve to separate the site from non-secure landside areas. ▪ Energy efficient lighting. ▪ Car and bus drop off for staff, with safe walking routes. ▪ Limited vehicular parking, for maintenance and operational vehicles.
DBF24	The hangar's size will be primarily determined by the opening and clear space requirements of the aircraft it will service, with the building designed to be as efficient as possible to minimise overall mass and visual impact.
DBF25	The aircraft hangar's staff will have good quality welfare facilities including: ▪ Showers and WCs facilities; ▪ Internal and external space for work breaks; ▪ Staff canteen or kitchen facilities; ▪ Staff lockers; and ▪ Meeting and training rooms. All staff areas will be accessible to everyone, with separate or additional facilities provided as needed. Stepped access will be avoided where possible, using ramps for changes in level and lifts between internal building floors.
DBF26	During the detailed design of the hangar, consideration will be made for the generation of renewable energy on site and the use of rainwater harvesting.
Western Noise Mitigation Bund (Work No. 18)	

Detailed Built Form Design Principles	
DBF27	The detailed design of the western noise mitigation bund (Work No. 18) will include: ▪ The replacement western noise mitigation bund and wall, including earthworks and bunding of approximately 8 metres in height (forming the western section of the noise bund and wall) and up to 10m in height (forming the eastern section of the noise wall, beyond the bund), provided at the western end of northern runway; and ▪ Noise barriers approximately 10 metres in height shall be provided for approximately 500 metres to the north of the relocated Taxiway Juliet and around the boundary of the re-located fire training ground.
Larkins Road (Work No. 20)	
DBF28	The design of the realigned Larkins Road will have a carriageway width of approximately 9.3m, with a verge approximately 5m wide on either side (except for the area south of Pond M, between Brockley Wood and Hangar 1).
North & South Terminal Buildings (Work Nos. 22 and 23)	
DBF29	For the North Terminal building, the International Departure Lounge (IDL) northern extension (Work No. 22(a)) shall comprise approximately 9,900m^2 of additional floorspace over Levels 20, 30 and 40 and the IDL southern extension (Work No. 22(b)) shall comprise approximately 12,600m^2 of additional floorspace over Levels 10, 20 and 30. For the South Terminal building, the IDL extension (Work No. 23(a)) shall comprise approximately 15,000m^2 of additional floorspace over Levels 10, 20, 30 and 40. The extensions to both terminal buildings will be designed to provide a high quality passenger focused environment connected to the existing IDL buildings and shall incorporate the following design features:

Detailed Built Form Design Principles	
	▪ A distinctive quality that provides a sense of place for passengers and staff, and reflects the important nature of the IDLs in the passenger journey at the airport. ▪ A contemporary aesthetic and design approach to the form, massing and façade treatment of the IDL extensions, ensuring that the extensions and the existing terminal buildings complement each other. ▪ Reflect modern design techniques and use high quality and robust materials that are durable, low-maintenance and weather and corrosion resistant. ▪ Have regard to the scale and massing of the existing terminal buildings. ▪ The floorplate configuration will promote intuitive wayfinding within the extensions and the existing terminal buildings. ▪ The floorplate and façade will provide, where possible, natural light and views to the airfield. ▪ The layout, floorplate configuration and façade will consider overall functionality of the terminal building and be climate adaptive, taking into account ventilation, shade and insulation during summer and winter seasons. ▪ Materials will include lightweight cladding, metal rainscreen cladding, composite cladding and glazed curtain walling. ▪ Solar shading to limit glare and overheating on the southern façade. ▪ Facilitate maintenance and inspections to minimise disruption to airport operations. ▪ Accessible spaces for all users, with limited changes in levels and making the use of ramps and lifts in place of stepped access. Lifts will be made clearly visible and have wayfinding signage. The floorplate configuration will allow for places of rest will be provided on routes between destinations. ▪ Vertical connectivity and clear views between levels allowing for ease of movement.
DBF30	The North Terminal IDL extensions (Work Nos. 22(a) and 22(b)) will allow for continued apron level operations, with bus gates and baggage circulation movements unimpeded. Internal access to adjacent terminal buildings will be maintained. Public routes will changes in level will be improved where possible.

Detailed Built Form Design Principles	
DBF31	The South Terminal IDL extension (Work No. 23(a)) will provide additional connectivity between levels of the existing IDL through the creation of new circulation cores or atriums. The IDL extension will be designed to ensure apron level operations, coach drop off and servicing routes are maintained.
DBF32	The detailed design of the North Terminal and South Terminal buildings (Work Nos. 22 and 23), including associated public realm areas, will be designed to clearly indicate the principal entrances and to aide intuitive wayfinding. Pedestrian routes and building entrances will be simple, direct and clearly defined within the landscape. Complementary wayfinding and entrance signage will be considered within the design of the building's form and external treatment to provide integrated and clear definition of entrances and routes.
DBF33	The detailed design of the North Terminal and South Terminal buildings (Work Nos. 22 and 23) will have regard to the following considerations: ▪ Health and wellbeing (including access in compliance with the Equality Act 2010 and British Standard 8300-2:2018). ▪ Accessibility for all. ▪ A floorplate configuration that promotes natural daylight and ventilation. ▪ Promote intuitive wayfinding principles and integrated wayfinding information. ▪ Efficient servicing and promote recycling. ▪ A core and floorplate design to permit flexibility to adapt to changing needs. ▪ Climate change impact and energy performance. ▪ Security, safety and low energy lighting. ▪ Consider the re-use of existing structure and building fabric as an early consideration in the design strategy. ▪ Sense of place and high-quality passenger experience. ▪ Robust fabric and materials. ▪ Long-term adaptability of the façade to enable future updates in style or materials.

Detailed Built Form Design Principles	
	▪ Acoustic environment design. The design of the terminal buildings will embed sustainable and modern construction methods into the design, including modular and off-site construction.
DBF34	The detailed design of the North Terminal and South Terminal buildings (Work Nos. 22 and 23) will consider the health and wellbeing of passengers, airport visitors and staff, such as: ▪ Biophillic design. ▪ Quiet zones, relaxation spaces and family areas, including comfortable and flexible seating. ▪ Provisions for culturally sensitivity, such as prayer rooms. ▪ Water stations. ▪ Art installations. ▪ Inclusive toilet and sanitary facilities, including ambulant disabled and fully accessible WCs and changing places.
North Terminal and South Terminal forecourts (Work Nos. 24 and 25)	
DBF35	The forecourt works will provide improved access to the terminal frontages, car parks, hotels and pick-up and drop-off areas for different transport modes, with consideration to pedestrians and active travel measures.
DBF36	The detailed design of the North Terminal and South Terminal forecourts (Work Nos. 24 and 25) will include: ▪ High quality, robust and durable hard surfacing materials requiring minimal maintenance. ▪ Promote pedestrian use and active travel. ▪ Clear and defined safe crossing points for pedestrians over roads and cycleways.

Detailed Built Form Design Principles	
	▪ Soft landscaping provisions where suitable. ▪ Security and safety provisions. ▪ Intuitive wayfinding supplemented by clear directional signage to terminal entrances, transport hubs, hotels and other key airport destinations. ▪ Routes that are inclusive and accessible for all, with ramps favored over stepped accesses and the use of tactile paving and other measures to aid the visually impaired.
Hotel Buildings (Work Nos. 26, 27, 28(a) and 29)	
DBF37	The hotel buildings will incorporate the following design features: ▪ A contemporary aesthetic reflecting modern design techniques and use high quality and robust materials suitable for its immediate context and adjacent buildings, and of an aesthetic to suit hotel building typology. ▪ The external appearance will comprise lightweight cladding and areas of glazing to the public areas of the building. ▪ Maximise views and natural light through its design to enhance visitor and staff experience and comfort. Windows will be provided to individual rooms taking into consideration privacy and acoustic requirements. ▪ Provide good-quality public realm, including hard and soft landscaping, around the hotel to provide visual and attractive amenity for staff and visitors to the building. ▪ Pedestrian routes to the hotel and within its public realm will be well integrated with pedestrian routes to the airport terminal and other transport facilities, to provide convenient access for travellers.
DBF38	The design of the hotel buildings will have regard to the following considerations: ▪ Health and wellbeing (including access in compliance with the Equality Act 2010 and British Standard 8300-2:2018). ▪ Accessibility for all.

Detailed Built Form Design Principles	
	▪ Floorplate configuration to promote natural daylight and ventilation. ▪ Core and floorplate design to permit flexibility to adapt to changing needs. ▪ Security, safety and low energy lighting. ▪ Efficient servicing and recycling. ▪ Lifecycle costs, demolition and future recycling of building fabric. ▪ Internal acoustic standards between adjacent rooms or public areas. ▪ Climate change and energy performance. ▪ Renewable energy generation.
DBF39	In the conversion of Destination Place office to a hotel (Work No. 29), the design of the façade will take account of its location, visibility of each of its elevations and footprint set back from main façade. Embodied carbon should be a key consideration in the approach of the façade, with retention and renovation of the existing building fabric a primary consideration, subject to condition, performance and ability to reduce energy consumption. The façade treatment will be in keeping with the adjacent South Terminal buildings and be of a quality and robust nature with low maintenance requirements. The façade fenestration should account for the internal room arrangement whilst maintaining a considered rhythm to the façade.
Office Building (Work No. 28(b))	
DBF40	The office building will incorporate the following design features: ▪ A contemporary, and light industrial aesthetic to ensure that the building complements its surroundings, reflects all new buildings complement each other, reflect modern design techniques, high quality and robust materials, and an industrial/aviation aesthetic. ▪ A design which has regard to the scale and massing of surrounding buildings.

Detailed Built Form Design Principles	
	▪ Clearly defined and visible entrance points, enhanced by the public realm's design and landscape provisions. ▪ The façade will incorporate large areas of glazing to give visual amenity and natural light to the users, with floor plate depth to be considered to avoid deep floor plates. ▪ Materials will include appropriate cladding and glazing. ▪ The building will be orientated in a north-south direction to reduce the amount of south-facing glazing, but solar shading will still be considered to limit glare and overheating, if necessary. Surrounding the office building will be soft landscaping and amenity space for employees and visitors.
DBF41	The design of the office building will have regard to the following considerations: ▪ Health and wellbeing (including access in compliance with the Equality Act 2010 and British Standard 8300-2:2018). ▪ Accessibility for all. ▪ Functionality and efficiency to support the daily operations and tasks of the employees. ▪ Flexibility. ▪ Comfort and wellbeing. ▪ Spaces that promote collaboration and communication. ▪ Technology integration. ▪ Privacy and acoustics. ▪ Accessibility for all. ▪ Solar and passive shade. ▪ Servicing and waste recycling. ▪ Security, safety, access control and CCTV. ▪ Considers the future re-use of the building fabric.

Detailed Built Form Design Principles	
	▪ Renewable energy generation.
Car Park H Site (Work No. 28)	
DBF42	The design of the Car Park H site will have regarding to the following considerations: ▪ Seek to retain existing trees to the north and south where feasible to do so against design requirements. ▪ Soft and hard landscaping provisions around the perimeter of new buildings for visual and attractive amenity. ▪ Access to the site from public transport provisions, taxis or on-airport car parks. ▪ Phasing requirements to enable the site to be delivered in phases. ▪ Improve the pedestrian route(s) between the site to South Terminal. ▪ Maintain two rights of access routes between the existing buildings forming the Hilton Hotel. ▪ Provision of a linear public realm area, linking to the new uses. The public realm will allow for easy and attractive circulation between buildings as well as providing visual amenity for building users. If the site is brought forward in stages, the design of each component will have regard to other elements and demonstrate that it does not preclude the development of the remaining area.
Multi-storey and Decked Parking (Work Nos. 22(g), 28(c), 30(b), 31((e) and 32)	
DBF43	The design of the decked car parking (Work No. 31(e) and 32) will incorporate the following design features: ▪ A naturally ventilated open façade. ▪ Materials will include a galvanised or painted metal frame or constructed in pre-cast or in-situ concrete. ▪ Clearly visible entrance to aid intuitive wayfinding. ▪ Circulation cores and exits to be clearly visible, with directional signage and level markers to aid in wayfinding.

Detailed Built Form Design Principles	
	▪ Incorporate vehicular access and ramps, stairs and ticketing areas. ▪ The building form and structural solution will be cognisant of the scale and massing of surrounding buildings. Unless specified in a separate Design Principle, the need for additional or enhanced façade cladding on the decked car parking structures and its design will be considered at the detailed design stage, informed by the site's context, security requirements, embodied carbon, maintenance and visual impact.
DBF44	The design of decked car parking and multi-storey car parking buildings (Work Nos. 22(g), 28(c), 30(b), 31(e) and 32) will have regard to the following considerations: ▪ Level floor/ramp and ramped floor options. ▪ Security, safety, CCTV, slip resistance surface and low energy lighting. ▪ Blue badge holder parking. ▪ Ventilation and smoke extraction. ▪ Charging points for electric vehicles. ▪ Renewable energy generation. ▪ Safe walking routes for pedestrians. ▪ Access control and ticketing. ▪ Cycle, scooter and motorcycle parking.
DBF45	In order to limit visibility to Charlwood House, the design of Car Park X (Work No. 31) will: ▪ Locate the decked parking provision in the eastern portion of the Works Area and ensure the decked parking is located to the north of retained vegetation (on the site's southern boundary) and not directly north of the site access.

Detailed Built Form Design Principles	
	▪ Limit tree and hedgerow removal on the site's boundaries where possible, other than as required to widen the vehicular entrance to Car Park X from Charlwood Road. ▪ Provide re-planting (of native trees and hedgerows) along the southern boundary to further screen views from the Listed Building (Charlwood House) and wider countryside, and minimise any light spill outside the site.
DBF46	The design of the multi-storey car parking buildings (Work No. 22(g), 28(c) and 30(b)) will incorporate the following design features: ▪ The facades will maintain open areas for natural ventilation. ▪ Materials may include galvanized or painted metal frame or constructed in pre-cast or in-situ concrete. ▪ Clearly visible entrance and circulation cores to aid intuitive wayfinding. Unless specified in a separate Design Principle, the need for additional or enhanced façade cladding on the mulit-storey car parking buildings and its design will be considered at the detailed design stage, informed by the site's context, embodied carbon, maintenance and visual impact.
DBF47	Additional or enhanced cladding will be provided on the western elevation of the multi-storey Car Park H (Work No. 28(c)) where it faces the public realm area and the Hilton Hotel. The cladding will be designed to provide a higher visual quality façade and feature bespoke elements, such as decorative metal panels, while maintain the practical functions of ventilation and shading to serve the car park building.
DBF48	The detailed design of multi-storey Car Park Y (Work No. 30(b)) will consider its prominent location adjacent to the North Terminal and existing hotels and where visible from the A23, residential and commercial areas to the north and east.
DBF50	The detailed design of multi-storey Car Park Y (Work No. 30(b)) will include:

Detailed Built Form Design Principles	
	▪ A shared vehicular entrance with the adjacent hotel site (Premier Inn Gatwick Airport (A23 Airport Way) hotel) and which will be set back from the site boundary with the hotel. ▪ A multi-lane vehicular entrance to limit the impact of queuing vehicles on the existing hotel's entrance (Premier Inn Gatwick Airport (A23 Airport Way) hotel) or the main highway. ▪ Bus drop off points separate to car entry to the car park, to allow both to function independently. The bus drop off will be protected from the weather by being located internally or having a canopy or shelter for waiting passengers. ▪ A defined cycle path with clear crossing points for pedestrians to cross the cycle path and a clear crossing point for cyclists to cross the entry into the car park and existing hotel (Premier Inn Gatwick Airport (A23 Airport Way) hotel). Clear lines of sight for cyclists will be provided along the cycle path. ▪ A clear zone around the footpath of the mulit-storey car park to allow for maintenance access and required fire tender access. ▪ Soft landscaping provisions between the multi-storey car park and the existing highway. ▪ Retention of the existing line of tree planting between the existing hotel (Premier Inn Gatwick Airport (A23 Airport Way) hotel) and the multi-storey car parking building, or replacement of the existing trees if necessary. ▪ Allowances for access to the underground attenuation storage facility (Work No. 30(a)) for inspection, as required. If the site is brought forward in stages, the design of each component will have regard to other elements and demonstrate that it does not preclude the development of the remaining area.
DBF51	The design of external lighting for decked car parks (Work No. 31(e) and 32) will consider the following: ▪ Using white light sources which are dimmable. ▪ Utilising column-mounted luminaires at the perimeter of the car park. ▪ Alignment of lighting columns with parking space lines.

Detailed Built Form Design Principles	
	▪ A preferred height of column mounted luminaires to be circa 4m (where practicable) above finished deck level. This excludes external lighting at Car Park H which will have lower height columns of circa 3m and with supplementary low level lighting. ▪ The luminaires will be a 'flat glass' type with 0% uplight and no tilt above horizontal level. ▪ Barrier design will limit vehicle headlight spill externally. ▪ Precise lenses, baffles and light shields will be used where necessary to restrict the potential for obstructive light to ecological sensitive areas, heritage assets and surrounding rural landscape. ▪ If practicable, base hinged columns are preferred. Mid-hinge columns may also be considered.
Surface Car Parking (Work No. 33)	
DBF52	The surface car parking (Work No. 33) will incorporate the following design features: ▪ Clear and orderly layout of spaces to aid circulation and space recognition. ▪ Easy identifiable entrance and exit systems. ▪ Parking to have solid surface or where appropriate to be surfaced with a permeable material (such as 'Grasscrete' paving), to facilitate sustainable drainage. ▪ Security fencing between the car parking area and the airfield. The detailed design of the surface car parking will be designed to limit the extent of tree and vegetation removal along the site's southern boundary, adjacent to Lowfield Heath Road, and will incorporate new landscaping provisions to seek to screen views of the car park from the south from Lowfield Heath Road and the northern extent of Bonnetts Lane.
DBF53	The design of surface car parking will have regard to the following considerations:

Detailed Built Form Design Principles	
	▪ Mast lighting and CCTV. ▪ Security, safety, CCTV, slip resistance and low energy lighting. ▪ Blue Badge holder parking. ▪ Use of recycled materials from Gatwick Airport as sub-base or similar. ▪ Safe walking routes for pedestrians. ▪ Access control and ticketing.
DBF54	The design of external lighting for surface car parking will consider the following: ▪ Using white light sources which are dimmable. ▪ Utilising column-mounted luminaires at the perimeter of the space. ▪ Alignment of columns with parking space lines. ▪ A preferred column height of 6-8m (above finished ground level), optimised for efficient spacing and uniformity and dependent on the scale of the car park. Column heights of 6m at the perimeter of the space is preferred to reduce back-spill beyond. The preferred column heights will not exceed 8m above finished ground level to minimise light obtrusion and environmental impact. ▪ The luminaires will be a 'flat glass' type with 0% uplight and no tilt above horizontal level. ▪ Precise lenses, baffles and light shields will be used where necessary to further restrict the potential for obtrusive light to ecologically sensitive areas, heritage assets and surrounding rural landscape. ▪ If practicable, base hinged columns are preferred. Mid-height columns may also be considered.
Surface Access (Work Nos. 35, 36 and 37)	

Detailed Built Form Design Principles	
DBF55	Local highway authority roads are to be designed in accordance the relevant local design standards, including the Manual for Streets.
DBF56	The design will include a noise barrier approximately one metre in height along the North Terminal roundabout flyover elevated section (facing Riverside Garden Park).
DBF57	The design will include a noise barrier approximately one metre in height along the South Terminal roundabout flyover elevated section, north side.
DBF58	The extension to the existing culvert under the A23 on the Burstow Stream Tributary will be designed to be as short as possible and would be designed with a depressed invert, a natural bed gradient in order to maintain continuity of flow and sediment transport capability and would be no smaller than the diameter of the existing culvert. The culvert would also be designed with splayed wing walls to reduce the light and dark barrier.
DBF59	The permanent lighting design as part of the Longbridge Roundabout highways improvements will have regard to the proximity to the Church Road (Horley) Conservation Area.
DBF60	The extent of vegetation clearance and planting as part of the Longbridge Roundabout highways improvements will be designed to avoid visual impacts on views across the Church Road (Horley) Conservation Area and from adjacent residential properties to the west at Church Road, Woodroyd Avenue and Longbridge Road where possible.
DBF61	The design will include the provision of a permanent additional pedestrian route linking Riverside Garden Park into the replacement public open space in Car Park B, linking with the Sussex Border Path to the north of the A23.
Perimeter Road South (Work No. 42)	
DBF62	The design will include the construction of a 300mm high weir on the southern entrance to the River Mole runway culvert (eastern box) (Work No. 42(b)).

Detailed Built Form Design Principles	
DBF63	The design will include the creation of a fish pass on the existing weir located immediately upstream of the River Mole runway culvert (Work No. 42(b)), designed to be suitable for multi species to improve fish passage particularly during low flow conditions. The design will include mechanisms for future maintenance and any debris clearance necessary for the pass to function. D

Table 1.11.3: Detailed Drainage Design Principles

Detailed Drainage Design Principles	
Authorised Development (Excluding the highways works and excepted development)	
DDP1	Surface water drainage storage attenuation features (tanks, ponds etc) will be sized to cater for the 1 in 100 (1%) Annual Exceedance Probability (AEP) storm event plus a 25% allowance for climate change as required by Environment Agency guidance using the appropriate hydrology at the time of detailed design.
DDP2	Any loss of fluvial (river) floodplain and interruption to flood flow routes would be mitigated to ensure no increase in flood risk to other parties at any time during the construction phases and post project completion. The mitigation measures will be designed for the 1 in 100 (1%) Annual Exceedance Probability (AEP) event plus the appropriate allowance for climate change as required by Environment Agency guidance using the appropriate hydrology at the time of detailed design. Any updates to climate change allowances at the time of detailed design will be considered when designing fluvial mitigation and compensation.
DDP3	Infiltration basins and retention ponds will not appear utilitarian or urban and would be designed to appear as naturalistic elements within the wider setting, that take account of existing topography, gradients and field boundaries. Planting would be provided to soften edges where this is appropriate to the context. The drainage design shall incorporate Sustainable Drainage Systems (SuDS) that provide for runoff treatment and reduce the risk of flooding in local catchments by providing storage and attenuation.
DDP4	The design of drainage and water mitigation measures will consider the exceedance of the networks/measures capacity and ensure that this would occur safely. Exceedance routes will be clearly shown on design plans and an understanding of the receptors potentially impacted will be set out, as well as any mitigation measures necessary.

Detailed Drainage Design Principles	
DDP5	Surface water drainage systems shall be developed in accordance with the ideals of sustainable development (i.e. SuDS). These will seek to mimic the natural environment and replicate the natural drainage prior to development. This shall prioritise the infiltration of runoff to ground where practicable over the restriction of runoff rates (i.e. attenuation). Based on the preliminary ground investigation, the majority of Gatwick Airport is located within an area of clay geology so infiltration may not be feasible. If infiltration of runoff is not viable, then above-ground source control options would be prioritised where practicable, noting restrictions due to the need to not attract wildfowl due to aircraft safeguarding.
DDP6	Improvements to the wastewater sewer system will include the following: ▪ Replacement of pumps and the pumping main at pumping station PS06 to provide additional capacity; and ▪ Construction of a new pumping station on the east side of the Brighton-London mainline railway to convey all wastewater flows from this area to Crawley STW to relieve the gravity outfall pipe discharging to Thames Water's Horley STW sewer network.
DDP7	The Project will include additional treatment of flows from the long term storage lagoons to increase capacity for the storage of de-icer contaminated runoff.
DDP8	Car parks will include measures (e.g. interceptors) to ensure no detrimental water quality impact upon receiving watercourses.
DDP9	Ground and groundwater conditions will be taken into account in the detailed design to minimise risk to groundwater quality, to minimise impedance to groundwater flow and to minimise risk of groundwater flooding.
DDP10	Storage features within the drainage network will be sufficient for the mitigation and to minimise any impact on water quality including:

Detailed Drainage Design Principles	
	▪ A below ground storage Car Park Y up to 32,000m3 within the existing airfield water drainage network (Work No. 30(a)). ▪ A new surface water drainage pumping facility from the Pond A catchment. The underground attenuation storage facility will be designed and built taking account of the future loads for the area above it, including the multi-storey car park (Work No. 30(b)).
DDP11	A drainage network would be installed, consisting of carrier drains, filter drains, ditches and attenuation basins/ponds, along with flow control arrangements to limit discharges to watercourses in line with the relevant national and local standards.
DDP12	Drainage requirements will consider no environmentally significant detriment to the water quality of the receiving watercourses.
DDP13	Syphons are proposed to retain floodplain connectivity beneath Taxiway Yankee and the proposed end around taxiway (End Around Taxiway West) (Work No. 4(f)). Syphons beneath the western noise mitigation bund (Work No. 18) would maintain floodplain connectivity.
DDP14	The water treatment works (constructed wetland treatment system) (Work No. 43) will be designed to handle typical effluent biodegradable de-icers (such as glycols, acetates and formats) from the pollution storage lagoons based on an optimum inflow of 100l/s and treated to a standard that would allow discharge to the Gatwick Stream. The design of the constructed wetland system will include: • reed beds, surrounded by embankments and suitable boundary treatment; • blower systems, provided with acoustic hoods and enclosed by acoustic fencing; • a mix of wetland vegetation species within the reed beds, including those that are resilient to climate change;

Detailed Drainage Design Principles	
	• bunded nutrient dosing tank and pumps, pipework, pumps, bunding and maintenance access; • a cabin, secure storage unit and the reprovision of the car parking for Gatwick Greenspace Partnership; and • a mechanism to monitor the quality of outflows prior to discharge to the Gatwick Stream and a means to return flows of insufficient quality (defined by the discharge consent to be agreed with the Environment Agency as the relevant consenting authority) to the long-term storage lagoons.
DDP15	The new pumping station at the south-west of the site will be sized based on the final design of the Project to ensure runoff from new impermeable areas associated with the alterations to the runway and taxiways (within the existing Pond M catchment) is controlled to greenfield runoff rates and identifies the requirements for sufficient failure and emergency procedures for the pumping station.
DDP16	Soft/bio engineering will be used in preference to concrete where natural riverbanks require protection at the connecting spillways to the new flood compensation areas (FCAs) from watercourses. The bank forms would also be varied where they are being altered/ lowered to aid natural variance of flow in the channel. Planting would take place on the Museum Field FCA (Work No. 38). This would restore natural vegetation to the floodplain whilst protecting the banks from erosion. The FCAs would include measures to reduce their own impact including: ▪ Fish refuges such as at low points within the FCA that could be connected to the watercourse by swales to encourage any fish that move with rising flood water to return to the river as flood waters recede. ▪ Design flow control structure(s) to reduce water levels slowly (if the water level receded rapidly fish are more likely to be stranded).
DDP17	An open lidded culvert with substrate channel on the River Mole culvert will be provided and designed with a depressed invert and a natural bed gradient to maintain sediment transport capability. The extension will also be designed with splayed

Detailed Drainage Design Principles	
	wing walls to reduce the light and dark barrier, as well as include baffles (refuges within a culvert that assist fish with their journey upstream) in the new channel or a low flow channel to retain sediment and create suitable depth of flow under a range of conditions. An expanded metal grid will be provided where the River Mole channel runs below the Taxiway Juliet and this new section of channel will include a low flow channel and a bed with substrate to allow vegetation to establish.
DDP18	The re-naturalised section of the River Mole will not be netted (to avoid impinging on tree growth and nature movement of the channel).
DDP19	Syphoned connections will be installed beneath the noise mitigation feature in the north-western area (Work No. 18) to maintain floodplain connectivity from Man's Brook.
Highways Works (Work No. 35,36 & 37)	
DDP20	The drainage design for the highways works shall comply will the principles set out in the ES Appendix 11.9.6 Flood Risk Assessment - Annex 2 Surface Access Drainage Strategy. (Doc Ref. 5.3).

Table 1.11.4: Detailed Landscape Design Principles

Detailed Landscape Design Principles	
Replacement Open Space (Work Nos. 34(c) and 40)	
DLP1	The design of open space shall be easily accessible by all groups of people. The design of the open space will consider the needs of different groups of people, including families with children, older adults, and people with disabilities.
DLP2	The activities and amenities provided in the open space shall be versatile and suitable for different age groups and interests. For example, the space could include areas for sports, playgrounds, seating areas, and green spaces for picnics and relaxation.
DLP3	Open spaces shall be well-lit and have clear lines of sight to prevent criminal activity and anti-social behaviour. Security measures will be provided (such as CCTV cameras) to deter criminal activity and provide a sense of safety for users.
DLP4	Footpath connections will be provided between the existing areas of open space in Riverside Garden Park and Church Meadows and replacement areas in Car Park B and to the west of the River Mole adjacent to Church Meadows.
DLP5	Woodland, scrub and species-rich grassland creation within Car Park B to provide an extension of Riverside Garden Park.
DLP6	Creation of new habitats within a newly created mitigation area north and east of Longbridge Roundabout comprising woodland, scrub and tree planting and species-rich, wet and dry grassland creation.
DLP7	Marginal planting would also be introduced around new attenuation ponds.
DLP8	In the design of the Church Meadow Replacement Open Space, the repositioning of the footbridge over the River Mole (Work No. 40(a)) will be considered either downstream of the meander or with a wider bridge span to avoid the risk of erosion outside the meander bend.
Museum Field Environmental Mitigation Areas (Work No. 38)	

Detailed Landscape Design Principles	
DLP9	The design of the Museum Field Environmental Mitigation Area will consider the creation of new habitats in the western part of the site, comprising woodland, wet woodland, scrub and tree planting and species-rich grassland. The design will consider linkages and connections to the existing North West Zone biodiversity area managed by GAL.
DLP10	The proposed earth bund in the south and east of Museum Field shall provide a mosaic of habitats comprising scrub, grassland and bare or poorly vegetated ground to provide a matrix of habitats suitable for a variety of invertebrates.
DLP11	The flood compensation areas (including access arrangements) at Museum Field and Brook Farm shall be designed in a manner that minimises the disturbance of buried archaeological remains as far as practicable.
DLP12	An extension to the River Mole footpath shall be provided to the land at Museum Field and Brook Farm.
DLP13	The farm access bridges over Man's Brook will have a wider clear span than would otherwise be required in a more stable environment.
Active Travel Routes	
DLP14	Active travel measures are to be designed in with due consideration of relevant design guidance such as LTN 1/20 Cycle Infrastructure Design.
DLP15	Active travel measures will consider the inclusive design principles as set out in DMRB CD 143 Designing for Walking, Cycling and Horse-Riding.
DLP16	The Project's active travel path for pedestrian and cyclists connecting Longbridge Roundabout to Car Park Y on the southern side of the highways improvement works will include a raised embankment on the right bank of the River Mole. Culverts would be included in the detailed design beneath the path if necessary to maintain floodplain connectivity. The need for culverts to maintain floodplain connectivity would be determined through the Project's detailed design process and if required, consented through a Flood Risk Activity Permit application to the Environment Agency.
River Mole diversion area (Work No. 39)	

Detailed Landscape Design Principles	
DLP17	The diversion of the River Mole (Work No. 39) shall create an increased length of channel with a more sinuous, natural course and more diverse channel profile.
DLP18	The design of the River Mole diversion (Work No. 39) will seek opportunities for ecological linkages through enhanced wildlife corridors and nodes, wet grassland habitats, native scrub and hedgerow planting and open scrub planting.
Pentagon Field ecological area (Work No. 41)	
DLP19	The design shall provide: ▪ Approximately 1ha of planting, including grassland reinstated for grazing of livestock. ▪ New woodland planting along the eastern boundary (along Balcombe Road), approximately 250m in length and 15m in width. ▪ Native scrub and hedgerow planting to supplement existing field boundaries and filter views to the surrounding rural landscape. ▪ A block of native woodland immediately south of Pentagon Field. ▪ The placement and grading of the spoil deposition, with a maximum height of up to 4m (above ground level) and with side slopes of a maximum of 1 in 3 gradient.

1.2 Glossary

Table 1.2.1: Glossary of Terms

Term	Description
CAA	Civil Aviation Authority
DAS	Design and Access Statement
EIA	Environmental Impact Assessment
ES	Environmental Statement
GAL	Gatwick Airport Limited
IEMA	Institute of Environmental Management and Assessment
mppa	Million passengers per annum
NSIP	Nationally Significant Infrastructure Project
NTS	Non-Technical Summary
PEIR	Preliminary Environmental Information Report

Annex A: The Design Adviser’s role and process

Annex A – The Design Advisor's role and process

1.1 Approach to Design Consents process

1.1.1 This annex sets out GAL's approach to design review at the post-consent, detailed design phase. For the avoidance of doubt, the details of the layout, siting, scale and external appearance of buildings, structures and works detailed design proposals will be shared as follows:

- in relation to local highway works, through approval by the relevant highway authority under DCO Requirement 5;
- in relation to national highway works, through approval by National Highways under DCO Requirement 6 and Part 3 of Schedule 9 of the DCO;
- in relation to the 'listed works' (being those works listed in Schedule 12 (Non-Highway Works for which Detailed Design Approval is Required) to the DCO), through approval by CBC or MVDC in consultation with RBBC under DCO Requirement 4(4); and
- in relation to other works (being neither highway works nor 'listed works'), through consultation with CBC under DCO Requirement 4(1).

1.2 Appointment of an independent Design Adviser

1.2.1 GAL will appoint a suitably qualified and experienced independent Design Adviser;

1.2.2 The Design Adviser will report to GAL's Chief Technical Officer;

1.2.3 The Design Adviser will be provided with administrative support (Eg to arrange meetings) by GAL in order to carry out the role;

1.2.4 GAL considers that to effectively incorporate design advice into the design development of specified buildings and structures, that the Design Adviser would be appointed at an early stage of the design process, likely to be within RIBA stage 2.

1.3 Role of the Design Adviser

1.3.1 The role of the Design Adviser will be to work with GAL's design and architectural teams and review the design proposals brought forward by those teams.

1.3.2 In assessing the proposals, it would be at the discretion of the independent Design Adviser to convene a design review meeting.

1.3.3 The attendees of the design review meeting would be determined by the Design Adviser but as a minimum would include invitations to:

- the Applicant's design team,
- An officer from the relevant local authority, and
- in relation to the highways elements, a National Highways representative or a member from the relevant Local Highway Authority as appropriate to their remit as highways authority.

1.3.4 The Design Adviser could invite others to participate in the design review meeting such as neighbouring local authority officer(s) and statutory consultees.

1.3.5 The Design Adviser would oversee / chair any discussion based on a presentation of the proposals from the GAL team.

1.4 Remit of the Design Adviser and scope of work

1.4.1 The role of the Design Adviser will be to undertake an independent review of the following specified elements of the Proposed Development:

- Work No 26 (Hotel north of multi-storey car park 3)
- Work No 27 (Hotel on the car rental site)
- Work No 28 (Car Park H site)
- Work No 30 (b) (Car Park Y)
- Work No 31 (e) (Car Park X)
- Work No 35 (a) – (v) (works associated with the South Terminal Junction improvements)
- Work No 36 (a) – (q) (works associated with the North Terminal Junction improvements)
- Work No 37 (a) – (l) (works associated with the Longbridge Roundabout Junction improvements)
- Work No 40(a) (pedestrian footbridge over the River Mole)

1.5 Design Review and other material considerations for the Design Adviser role

1.5.1 The Design Adviser will focus on review of the following aspects:

- Adherence to Design Principles.
- Building mass (scale and form).
- Material, Façade treatment and design.
- Hard and soft landscaping.
- Pedestrian, passenger and active travel routes

1.5.2 The Design Adviser will be required to take into account a number of critical considerations including:

- CAA Regulations
- Aerodrome Safeguarding
- ICAO Standards
- Health and Safety At Work Act 1974
- Building Regulations
- Security
- DMRB

1.5.3 The Design Adviser will not be required to review:

- Internal Layouts
- Phasing
- Project Requirements
- Interface and dependency with other projects
- Sustainability Strategy

1.6 Outputs

1.6.1 Following a review of the proposals and the convening of a design review meeting (as necessary), the Design Adviser will prepare a written report (the "Design Report") for consideration by GAL.

1.6.2 The Design Report shall contain:

- An executive summary;
- A review of the design presented and its appropriateness given the local context and any constraints and other requirements placed on GAL;
- The views of any design review meeting, where appropriate;
- Set out recommendations including any areas for further consideration by GAL's design team, prior to finalising the design.

1.6.3 The Design Report will be advisory and non-binding on GAL.

1.6.4 GAL will however, take into account any recommendations made by the Design Adviser in the Design Report.

1.6.5 In bringing forward detailed proposals to discharge Requirements 4, 5 and 6, GAL will provide to the relevant authority a Design Review Statement in relation to those Works listed in paragraph 4.1 above, which shall include:

- details of the review carried out,

- the Executive Summary of the Design Adviser's Design Report, and
- a response to the Design Adviser's recommendations and any areas for further consideration contained in the Design Report.

Paul Finch OBE, HonFRIBA

1. Qualifications and Experience

My organization

I work for the media company, Emap, which among many other things publishes the Architects' Journal and the Architectural Review (I have edited both titles), and runs the annual World Architecture Festival (which I founded in 2008; I am its Programme Director). I entered specialist journalism as a graduate trainee in 1972. From 1983 to 1994 I edited Building Design, then a weekly print magazine. From 1994 to 1999 I edited the Architects' Journal, also a weekly. After a period as a publisher and editorial director I resumed editing duties on the Architectural Review from 2005 to 2009, since when I have worked mainly on World Architecture Festival. I wrote a weekly column for the Architects' Journal, in print and on-line, for two decades. I write a regular column on design and planning for Property Week. I am a founding co-editor of Planning in London, a specialist quarterly publication (now on-line), which is the official media arm of the London Planning & Development Forum, itself a sub-set of the National Planning Forum.

From 1999 to 2014 I was involved with the Commission for Architecture & the Built Environment (CABE) in various capacities. Initially a founder commissioner of the organization (which replaced the Royal Fine Art Commission), I subsequently became deputy chairman and then acting chairman, between 1999 and 2005. I also served as chairman of the Commission's design review panel for four years. In 2009 I was successful in an application to become Cabe's chairman, a post I occupied until the organization was abolished by the incoming government following the Comprehensive Spending Review in 2010 (although we continued to receive funding for two further years).

Encouraged by ministers to maintain the organization in some way, I helped to oversee Cabe's merger with the Design Council, which took place in April 2011, and I continued to chair Design Council Cabe until 2014. I was also Deputy Chairman of the Design Council during this period. Between 2005 and 2012 I chaired CABE's London Olympics design review panel. In addition I served on two associated design review panels, covering the Olympic Village and the Stratford City shopping and commercial development.

Other relevant experience

I chaired a standing Cabe design panel for the Royal Borough of Greenwich in 2015/2016. I chaired a review panel for the emerging Heathbourne senior living village, Bushey in 2022/2023. I am currently chairing a panel reviewing detailed designs for a major residential development at Convoys Wharf, Deptford.

In addition I have sat on, or chaired, architect selection panels for projects including the Conservators' Wing at the British Museum; the extension at the Naval Museum, Greenwich; Jubilee Gardens phase 1, South Bank, London; the working party for Jubilee Gardens Phase 2 and British Film Institute centre; Irfan new town masterplan, Oman; fit-out for the Rothschild building, City of London; Elizabeth House redevelopment, Waterloo; residential development at the Commonwealth Institute, London; Jewish Centre, Finchley Road, London; remodelling of the Hilton Hotel, Park Lane, London; Olympicopolis cultural quarter, Queen Elizabeth Park, Stratford; Cambridge University masterplan for North-west Cambridge; and new buildings for University College London.

I was part of a group advising on policies for the Thames chaired by John Gummer when he was environment secretary; I was a member of the task force chaired by Sir Stuart Lipton reporting to the London Mayor on proposals for the regeneration of post-riot Tottenham; I have acted as an advisor to Greenwich Council on the evolution of its town centre designs. I have chaired or spoken at innumerable public or semi-public events on the subject of housing, planning, regeneration and design quality over the past 25 years, at universities, professional institutes, and most notably Central Hall Westminster, for a series of six debates on the future of London in 1996, attended by 1,500 people on each occasion.

Over the past 25 years I have at various times been a trustee of the Architecture Foundation; a Council Member and Trustee of the Architectural Association; a member of the Royal Academy architectural advisory forum; chairman of the Trinity Buoy Wharf Trust (funding educational initiatives mainly in East London); chair of the 'Inspire!' appeal to rebuild the Wren spire at St Bride's, Fleet Street (achieved); and honorary secretary of the Reform Club's Charles Barry Society.

For 10 years I was a member of the RIBA Awards Group, and a Stirling Prize juror for two years. For 20 years I was a British Construction Industry Awards judge. I have overseen judging of the World Architecture Festival Awards since 2008. I am currently deputy chairman of the Royal Fine Art Commission Trust (since 2019), and am a judge for the Trust's Building Beauty Awards programme launched in 2022. I am chairman of the recently formed charity, Vinehill Trust, which supports music, built heritage and health initiatives

I have given evidence at various public inquiries, including the Heron Tower in the City of London; the Shard tower in Southwark; the 'Walkie Talkie' tower in the City of London; housing in Lower Sydenham, London Borough of Bromley; the 'Curve' housing development in Chiswick; regeneration of the area next to Hampton Court station; the office/mixed use complex at Upper Ground on London's South Bank; and housing for Guildford Cathedral.

I have also given evidence in respect of two developments in Dublin – the replacement of the former Irish Tourist Board Office, and the Tara Street Tower next to the station by the Liffey.

Academic qualifications and credentials

MA (Cantab); Honorary Fellow, University College London; Honorary doctorate, University of Westminster; Honorary member, Architectural Association. Honorary Fellow, Royal Institute of British Architects; Honorary Fellow, Royal Incorporation of Architects in Scotland; Honorary member, Royal Society of Architects in Wales; Honorary Member, London chapter, American Institute of Architects; Honorary Member, British Council for Offices.

I was awarded on OBE for services to architecture in 2002.