



DOCUMENT 4

CHAPTER 7: AIRPORT RELATED DEVELOPMENT

Heathrow Airport Expansion Consultation
Heathrow proprietary documentation



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7. AIRPORT RELATED DEVELOPMENT

7.1 Introduction

- 7.1.1 The overall Masterplan is primarily influenced by the core components of the expanded airport; in particular, the runway location, terminals, aprons and satellites. It is also influenced by associated aspects of the expansion, including road and river diversions for instance.
- 7.1.2 The expanded airport also needs to be supported by other airport related land uses and activities. In some cases, these uses are provided within the operational boundary, but often they are located outside (but in close proximity to) the airport.
- 7.1.3 For the purposes of Masterplan scheme development, facilities required to support an expanded airport have been categorised as either Airport Related Development (ARD) or Airport Supporting Facilities (ASF).
- 7.1.4 Broadly, ARD comprises development that has direct economic and operational links to the airport such as hotels, general cargo and supply chain offices. ASF broadly comprise facilities essential to the operation of the airfield including airport offices, aircraft maintenance, customs-controlled cargo sheds, in-flight catering, fuel facilities and car parking. Supporting operations, the requirements of passengers and colleagues, and trade, these facilities are of considerable importance to the success of Heathrow as Britain's only hub airport.
- 7.1.5 As the Masterplan scheme has progressed, several component options have been re-categorised between the ARD and ASF reflecting the close relationship between the categories. In addition, the term 'Airport Related Development' is one that has a specific meaning in the Planning Act 2008 (the Act).
- 7.1.6 To avoid confusion, and in recognition of the close relationship between them, as progress is made towards the finalisation of our Masterplan, ARD and ASF will fall under a single heading of Airport Supporting Development (ASD). This will be detailed in our application for a Development Consent Order which will be lodged in due course.
- 7.1.7 Demand for ARD and ASF is generated by the forecast demand for additional floorspace to serve the expanded airport and from the relocation of uses displaced by expansion proposals. This chapter deals with ARD. The various categories of ASF are dealt with in the preceding chapters.
- 7.1.8 It should be noted at the outset that during Masterplan development there have been changes both to the forecasts for ARD and the classification of certain uses. For example, Airline Catering was originally classified as an ARD use. However, it was subsequently re-categorised as ASF after Airport Expansion Consultation



One, as it was considered essential to the operation of the airfield. Therefore, there are still references in the earlier stages of this chapter to Catering as still being categorised as ARD (e.g. Table 7.1).

- 7.1.9 In developing the Masterplan for land required for ARD, as a result of the expanded airport, our approach has been to consider three inter-related land use components This includes:
1. Scale of land uses - what is the type and scale of ARD that may be generated as a result of the airport expansion; of this, what should be brought forward by Heathrow and what should be left for the market to deliver?
 2. Location of land uses - what land parcels or sites may be appropriate to be utilised to accommodate the identified scale of land use demand?
 3. Zoning of land uses - what design and development principles should be set for areas around the airport to inform land use distribution principles and subsequently the evolution of development zones?
- 7.1.1 These factors all take into account the planning policy and environmental designation of land and the sensitivity of sites to neighbouring uses. The outcome of all three evaluations was combined with the wide range of components outlined in this report, such as the runway and terminal facilities, etc., to inform the Masterplan assembly process for the expanded airport.

7.2 Scale of Land Uses Evaluation

Methodology

- 7.2.1 The purpose of the scale of land uses evaluation was to identify the potential demand for additional Airport Related Development as a result of the expanded airport and to consider what of that demand should be brought forward by Heathrow, and what should be left for the market to deliver. The assessment was undertaken in parallel with, but entirely separate to, the location of land uses evaluation. As a result, the identification of the scale of land use demand was not influenced by the availability of land parcels / sites.
- 7.2.2 The methodology adopted for this evaluation comprised the following steps:
1. Stage 1 – identify the employment generating land use categories and produce an evidence base to define the potential overall scale of land use demand against those categories, as well as generate scenarios as a basis for evaluation;



2. Stage 2 – establish how the evaluation disciplines as detailed in the Masterplan Scheme Development Manual would undertake the evaluation and the supporting information required to assist them;
3. Stage 3 – completion of the evaluation by the disciplines as set out in the Masterplan Scheme Development Manual.

7.2.3 The aim of the evaluation exercise was to gather information from each of the disciplines (i.e. operations and services, delivery, business case, sustainability and community, and planning and property) about the implications of different scales of demand for Airport Related Development required to support the expanded airport. Using the outputs from the discipline evaluation and applying professional judgement, the evaluation assessed the airport related land use demand that could eventually (following consultation and refinement) be taken forward and promoted by Heathrow.

7.2.4 The evaluation also gave some consideration to how permission for any forecast demand would be delivered, including consideration of inclusion in the DCO application, separate planning applications, the Local Plan process (potentially informed by a Joint Sub-Regional Planning Framework being developed by Heathrow Strategic Planning Group), etc.

Stage 1 - Forecasting Overall Demand

7.2.5 Heathrow employed Lichfields to undertake an Employment Land Forecasting Study which was the core evidence base for the evaluation. The study:

1. Identified the types of employment generating land use that are currently airport related, and mapped the existing floorspace (by business) in these typologies within five miles of Heathrow (or slightly further to encompass significant employment sites just beyond five miles);
2. Set out an approach to assessing how these land uses might grow, depending on their relationship with the airport's operations. This included, for example, how External Temporary Storage Facilities (ETSF) growth is linked to an increase in cargo travelling through the expanded airport, or how hotel rooms are influenced by the total amount of passenger movements and staff requirements; and
3. Applied these growth criteria at that time to the baseline by typology, to identify additional demand by 2040.

7.2.6 The total forecast of overall demand by 2040 in the original draft Lichfields study available at the time is summarised in Table 7.1:



Table 7.1 Demand for airport related land uses (m2)

Land Use	Current	Of Which Displaced	Demand for Additional Space	2040
Airline Catering	c. 65,000	c. 16,000	c. 51,000	c. 116,000
Maintenance	c. 102,000	c. 1,000	c. 27,000	c. 129,000
Cargo Handling (ETSF)	c. 512,000	c. 18,000	c. 534,000	c. 1,046,000
Freight Forwarding	c. 389,000	c. 6,000	c. 106,000	c. 495,000
Light Industry	c. 25,000	c. 0	c. 25,000	c. 50,000
Heavy Industry	c. 24,000	c. 0	c. 24,000	c. 48,000
Other Airport-related Warehousing and Logistics	c. 441,000	c. 68,000	c. 445,000	c. 886,000
Office Supporting Airport Supply Chain	c. 109,000	c. 46,000	c. 63,000	c. 172,000
Small-scale Local Office Demand	c. 54,000	c. 7,000	c. 31,000	c. 85,000
Large-scale International Corporate Office Demand	c. 276,000	c. 2,000	c. 218,000	c. 494,000
Total	c. 1,997,000	c. 164,000	c. 1,524,000	c. 3,521,000
Hotel Rooms	c.10,800	c. 2,355 to 2,960	c. 6,300	c.18,700*

*Net demand less hotels already under construction within the airport today.

7.2.7 The typology of Airport Related Development tested at that time in the initial evaluation is summarised in Table 7.2:



Table 7.2 Airport related development typologies

Airport Related Development Category	Specific Uses
Commercial	Hotels; offices; other commercial uses not currently in Heathrow's operating model such as conferencing facilities, retail, other airport-related logistics.
Displaced employment generating land uses	Anything deemed 'airport-related' i.e. linked to passenger volume, ATM growth or cargo throughput of the airport, or benefitting from proximity to the airport, that is displaced by an expanded airport. Lakeside is not included in these figures.
Airport-Related employment: generating uses related directly to the operation of the airport	Includes ETSF and Freight Forwarding linked to cargo throughput, maintenance operations for ground vehicles, airline catering linked to the number of ATMs, etc
Other Airport-Related employment generating uses	Includes logistics uses that prefer to be located near the airport but do not necessarily process cargo (i.e. they benefit generally from being in the South East region, West London and near the M25 and M4/M3 corridors).

7.2.8 To assist the decision-making process at that time, the evaluation defined a series of scenarios for testing purposes. As a starting point, the higher and lower ends of the combined range of airport related land use demand were defined, as well as a 'mid-point' scenario. A summary of the scenarios is set out in Table 7.3.



Table 7.3 Summary of Demand Scenarios

	High	Mid	Low
Hotel	150% of Lichfield demand for terminal-linked; 100% of Lichfields demand for bus-linked; 100% of provision for 'more distant' demand; and all displaced is replaced	150% of Lichfield demand for terminal-linked; 100% of v demand for bus-linked; no provision for 'more distant' demand + replace displaced	150% of Lichfield demand for terminal-linked; 100% of Lichfield demand for bus-linked; no provision for 'more distant' demand
Offices	100% of Lichfield demand	91% of Lichfield demand	74% of Lichfield demand
Other Commercial	100% of HAL-identified demand	66% of HAL-identified demand	44% of HAL-identified demand
ETSF	100% of Lichfield demand	50% of Lichfield demand	25% of Lichfield demand
Freight Forwarding	100% of Lichfield demand	50% of Lichfield demand	25% of Lichfield demand
Catering	100% of Lichfield demand	50% of Lichfield demand	25% of Lichfield demand
Maintenance	100% of Lichfield demand	50% of Lichfield demand	25% of Lichfield demand
Logistics	100% of Lichfield demand	50% of Lichfield demand	25% of Lichfield demand
Manufacturing	100% of Lichfield demand	50% of Lichfield demand	25% of Lichfield demand
BA Waterside	GFA, all parking and all landscaping replaced	GFA replaced with no parking or landscape	GFA replaced at 2x density with no parking or landscape
ETSF	100% Replaced	50% Replaced	25% Replaced
Catering	100% Replaced	50% Replaced	25% Replaced
Freight Forwarding	100% Replaced	50% Replaced	25% Replaced
Non Aero Logistics	100% Replaced	50% Replaced	25% Replaced
Maintenance	100% Replaced	50% Replaced	25% Replaced
Office	100% Replaced	50% Replaced	25% Replaced

- 7.2.9 All scenarios were prepared purely for testing purposes. It was not the intent that any one of the scenarios was seen as correct. Instead, the testing of the various scenarios by the disciplines as part of the evaluation process provided feedback and evidence that would enable a refined land use demand to be compiled for future consultation and further testing.

Stage 2 – Approach to Evaluation

- 7.2.10 Given the bespoke nature of the land use quantum evaluation, it was not considered appropriate for the disciplines to respond against each of the evaluation criteria as defined in the standard Evaluation Matrix (as set out in the Masterplan Scheme Development Manual), since many of the evaluation criteria are spatial in nature.
- 7.2.11 Instead, each discipline was asked to comment on their preference for each development scenario as well as to provide general commentary on the suitability of the various land uses. The spatial feedback was captured within the location of land uses evaluation.



Stage 3 – Evaluation Feedback and Interpretation / Application

7.2.12 The tables below summarise the preferences from the evaluation of the scale of development, for each land use category. The rating was based on:

1. Red – less preferred
2. Amber – neutral
3. Green – more preferred
4. Black – unworkable

7.2.13 Based on the commentary provided by each discipline and the evaluation rating recorded, professional judgement was applied to each airport related land use typology to identify a refined range of land use demand which, at that time, was considered to be advanced to the next stage of testing and assessment.

Commercial Land Uses (Hotel, Office and Other Commercial)

7.2.14 Commercial land use evaluation feedback is summarised in Table 7.4.

Table 7.4 Summary of ARD land use evaluation feedback

	Hotel			Office			Other Commercial		
	High	Mid	Low	High	Mid	Low	High	Mid	Low
Operation & Service	Green	Green	Amber	Red	Green	Amber	Red	Amber	Amber
Delivery	Red	Amber	Amber	Red	Amber	Amber	Red	Amber	Amber
Business Case	Green	Green	Amber	Red	Amber	Green	Green	Green	Amber
Sustainability	Red	Amber	Green	Red	Amber	Green	Red	Amber	Green
Planning	Red	Amber	Amber	Red	Amber	Amber	Black	Black	Black
Property	Amber	Green	Green	Red	Green	Amber	Amber	Amber	Amber

7.2.15 The feedback on the hotel demand evaluation identified the need to balance the minimum required to operate the airport satisfactorily against the planning perspective that the scenario with least impacts would include only terminal-linked hotel rooms.



- 7.2.16 The evaluation found that the provision of hotel rooms at and around the airport was influenced by a number of factors that, when combined, informed an overall estimated range of provision that was in the upper range, or broadly equivalent to the mid-point scenario. These factors were:
1. The level of hotel provision needed to meet a minimum operational requirement to adequately serve staying and transferring passengers, and staff associated with the airport and airlines;
 2. The status of the hotels and their relationship to the airport – for example, where hotels are terminal-linked they are deemed to be 100% related to the airport's operation;
 3. Benchmarking of other international airports and public transport interchanges, and market information about the appropriateness of the existing mix of on-airport and off-airport (linked by bus) hotels;
 4. The need to replace displaced hotels that are highly related to the airport's users (passengers and staff);
 5. The need to consider planning and sustainability factors including the implications of a larger land requirement from a higher demand scenario.
- 7.2.17 The evaluation found that the provision of other office space at and around the airport was influenced by several factors that, when combined, informed an overall estimated range of provision that was in the upper range, or broadly equivalent to the mid-point scenario. These factors were:
1. The relationship to the operation of the airport – for instance, whether offices were required directly in the supply chain (e.g. for airlines and suppliers), or for meeting wider commercial / market demand as one would expect in proximity of a global hub airport in a major city;
 2. The need to consider replacement of displaced office space related to the airport's operation or supply chain, and consideration of how that space was replaced;
 3. The need to consider planning and sustainability factors including the implications of a larger land requirement from a higher demand scenario.
- 7.2.18 The evaluation found that the provision of other commercial space at and around the airport was influenced by a number of factors that, when combined, provided some clear insights into what could be included:



1. The evaluation specifically considered the provision of 'destination' type floorspace (including stand-alone facilities such as conference centres, bio-medical science centres, non-aero logistics and retail). The outcome of the evaluation – from a planning and surface access point of view in particular – was that these uses would probably not be appropriate to be brought forward by Heathrow as part of a DCO application. However, there was an opportunity to consider other means of delivering such facilities where the planning system may facilitate their delivery;
2. In addition, through the evaluation process it was ascertained that some ancillary retail or conferencing facilities (for example) may be appropriate development at a hub airport, e.g. within parkways, terminal areas or other areas with pre-existing footfall, and as part of other land uses (e.g. coffee shops within a car park, or conference rooms in hotels).

Industrial Land Uses (Including ETSF and Freight Forwarding, Maintenance, Logistics and Manufacturing)

7.2.19 Industrial land use evaluation feedback is summarised in Table 7.5 and Table 7.6.

Table 7.5 Airport related land uses

	ETSF			Freight Forwarding			Catering			Maintenance		
	High	Mid	Low	High	Mid	Low	High	Mid	Low	High	Mid	Low
Ops & Service (Cargo)							No stated preference			No stated preference		
Ops & Service (Passenger, Security, Hub)	No stated preference			No stated preference								
Ops & Service (Surface Access)												
Delivery												
Business Case												
Sustainability												
Planning												
Property												



Table 7.6 Other airport related land uses

	Logistics			Manufacturing		
	High	Mid	Low	High	Mid	Low
Ops & Service (Passenger, Security, Hub)	No stated preference			NSP		
Ops & Service (Surface Access)						
Delivery						
Business Case						
Sustainability						
Planning						
Property						

7.2.20 The evaluation found that the provision of ETSF and Freight Forwarding at and around the airport was influenced by a number of factors that, when combined, informed an overall estimated range of provision that was in the high to mid-point scenarios. These factors were:

1. The need to replace displaced floorspace that is highly related to the airport's users;
2. Heathrow's commitment to double cargo capacity;
3. The need to ensure the airport related transport movements are planned in a coordinated manner;
4. The need to consider the planning and sustainability consequences of a larger land requirement.

7.2.21 The evaluation for the provision of catering and maintenance identified the potential for consolidated facilities in close proximity to the airport to manage and reduce overall transport demand, but that view has to be balanced against the possibility that the industry requirements may reduce over time. A mid to low scenario was assumed for its future provision.

7.2.22 With regard to logistics / warehousing and manufacturing floorspace, the evaluation found that an element of the forecast need may choose to locate around the airport out of convenience rather than necessity to be close to the airport. Therefore, it was concluded that a mid to low scenario should be assumed.



Displaced Uses

7.2.23 Displaced land use evaluation feedback is summarised in Table 7.7.

Table 7.7 Displaced Land Uses evaluation

	BA Waterside			ETSF			Freight Forwarding			Catering		
	High	Mid	Low	High	Mid	Low	High	Mid	Low	High	Mid	Low
Ops & Service (Cargo)	Not Relevant									No stated preference		
Ops & Service (Surface Access)				No stated preference			No stated preference					
Ops & Service (Other)				No stated preference			No stated preference					
Delivery												
Business Case	No stated preference									No stated preference		
Sustainability												
Planning												
Property												

	Logistics			Maintenance			Office		
	High	Mid	Low	High	Mid	Low	High	Mid	Low
Ops & Service (General)							No preference		
Ops & Service (Surface Access)									
Delivery									
Business Case	No stated preference			No stated preference			Accounted for in Commercial scenarios		
Sustainability									
Planning									
Property									

7.2.24 A summary of key observations from the displaced use evaluation include:

1. BA Waterside – Replacement of existing car parking in full (high scenario) was identified as non-compliant with current planning policy and potentially difficult from a surface access (transport movements) perspective. The risk associated with the impact on a core airline operator was also flagged, and it was noted that engagement was ongoing;
2. ETSF and Freight Forwarding – An operational risk was identified of under-provision of directly operational services, which might reduce the effectiveness



of increased cargo operations. However, if 100% of operations are not all processed through the airport the question was raised as to whether it should all be brought forward by Heathrow;

3. Catering – An operational risk was identified of under-provision of directly operational services, which might impact airline operations. Surface access identified the potential for increased traffic if not accommodated / secured close to the airport or where it can be managed;
4. Logistics – Surface access suggested that the traffic associated with the use is potentially avoidable if it could be re-provided away from the airport. It was noted that the extent of linkage to airport operations was to be established.
5. Maintenance – Surface access expressed a preference to control re-provision and reduce the impacts of airport-related traffic. Planning and delivery identified impacts of full delivery if the existing provision is footloose and it creates higher construction volumes; and
6. Office – Preference for re-provision on public transport network from surface access perspective. Planning supported re-provision of airport-related uses.

Conclusion – Scale of Land Uses Evaluation

7.2.25

The potential range of land use requirements is substantial, but it should be remembered that not all of this development needs to be planned or integrated with the airport and that there is an important decision to be taken about how much of the forecast airport related land use demand it would be appropriate to include within the DCO application. All of the typologies of airport related land use have a relationship with the airport, but some relationships are closer than others. A summary of the key observations from the evaluation is set out in Table 7.8:



Table 7.8 Strength of relationship of airport related development

Airport-Related Land Use	Strength of relationship & potential role for Heathrow in delivery
ETSF & Freight Forwarding	ETSF and Freight Forwarding are intrinsically linked to the operation of the airport – they respond to the scale of cargo that is processed and need to provide enough well-located, controlled space to satisfy the need to store, process and move goods effectively. We have committed to a significant increase in the amount of cargo to be processed at the airport, and to ensure that there is no additional airport related traffic with expansion. There could be benefit in planning their location carefully in relation to the airport's expansion to ensure they are efficiently and sustainably located.
Catering	Catering is an important function which relies on swift access to the aircraft to operate effectively. Consideration should be given to the potential for industry changes which may reduce demand in the future, but securing additional capacity for airline catering could maintain and improve efficient airline operations and avoid congestion on local roads. As such there could be benefit in exercising control over the location of at least an element of the additional demand for new catering facilities.
Maintenance	An expanded airport will have an enlarged fleet of aircraft, ground vehicles and other machinery that will need to be maintained as part of a safe and efficient operation. From an operational perspective, there would be benefit for some of this demand to be controlled and delivered in addition to on airport (MRO) maintenance.
Logistics	This category of industrial land use is less directly related to the cargo operation of the airport – instead it reflects the demand for general warehousing in the region that is catalysed by being close to a major cargo hub. There is, therefore, less need to plan for the full extent of this future demand.
Manufacturing	This category of land use is less directly related to the airport's operation and does not need to be located in very close proximity.
Offices	The airport generates demand for a range of supply chain, small-scale and international scale office space. Some of these categories are more related to the airport's operation than others. We consider that the office space related to the airport's supply chain needs to be confidently provided for. Equally there could be economic benefit (through income, job creation and business rates) in planning for some of the demand for international scale office space.
Hotels	The airport relies on hotel rooms for passengers and colleagues, including airline crew. The provision of new hotel rooms should include a terminal-linked offer and a local offer linked by a bespoke bus service or other public transport. We consider that all demand for terminal-linked hotel rooms should be delivered by Heathrow as it is on-airport and intrinsically linked to the airport's operational needs. There would be benefit in also planning for other local airport related hotels given their importance in meeting the needs of airport users and workers.

7.3 Location of Land Uses Evaluation

Methodology

- 7.3.1 The purpose of the location of land uses evaluation was to identify a selection of land parcels / sites that may be suitable for development to accommodate the land use demands arising from the expanded airport. The assessment was undertaken in parallel with, but entirely separate to, the scale of land uses evaluation. As a result, the initial identification of land parcels / sites was not influenced by any particular scale of required development.
- 7.3.2 The methodology adopted in the location of land uses evaluation comprised the following steps:
1. Stage 1 – establish discontinuation rules and identify potential sites for evaluation;
 2. Stage 2 – define the land use categories to be used in the evaluation of sites;
 3. Stage 3 – establish how the disciplines would undertake the evaluation and the supporting information to be provided;



4. Stage 4 – completion of the evaluation by the disciplines as set out in the Masterplan Scheme Development Manual; and
5. Stage 5 – application through professional judgement of the evaluation results to create a matrix setting out the relative acceptability of each site for redevelopment.

7.3.3 Using the outputs from the discipline evaluation and applying professional judgement, the aim of the evaluation exercise was to reach a view on the development potential of each of the sites for airport related development, rather than to discontinue sites potentially prematurely. The output would assist in informing decision making later in the scheme development process.

Stage 1 – Identification of Sites

7.3.4 The process started with a 'blank canvas' – i.e. all land parcel / sites around the airport were theoretical opportunity sites for development based on geographical / physical boundaries. Three discontinuation rules were applied as an initial filter which resulted in parcels of land not being considered if they failed any of the following:

1. Rule 1: Land where a substantial proportion of the existing use is residential, on the basis that The London Plan and local policy seek to avoid the further loss of residential stock unless there is a planned replacement elsewhere;
2. Rule 2: Land currently beneficially occupied by other land uses, save for where the land is significantly under-utilised;
3. Rule 3: Land parcels smaller than 2ha.

7.3.5 Figure 7.1 shows the range of sites that were considered at this stage of the process. Note that, at this stage, all site boundaries were approximate and were based on the best information available at the time. These would be subject to further work and possible amendment. Throughout the Masterplan development process, Heathrow has endeavoured to contact potentially affected landowners and users but, given the number and scale of sites involved, may not have notified everyone. Heathrow continues to encourage potentially affected landowners and users to respond to our consultation.

--- County / Borough Boundary -- Illustrative Airport Expansion Boundary AC V4.9 ■ Opportunity Sites

- 7.17** Copyright © Heathrow Airport Limited 2019



2. Rule 5: Sites where a substantial proportion of existing use is formal recreational space, e.g. designated parks / play areas / sports facilities (save for golf courses);
3. Rule 6: Sites which are reservoirs and other significant waterbodies.

7.3.8 The following sites were not advanced on the basis that they did not meet one or more of the discontinuation rules:

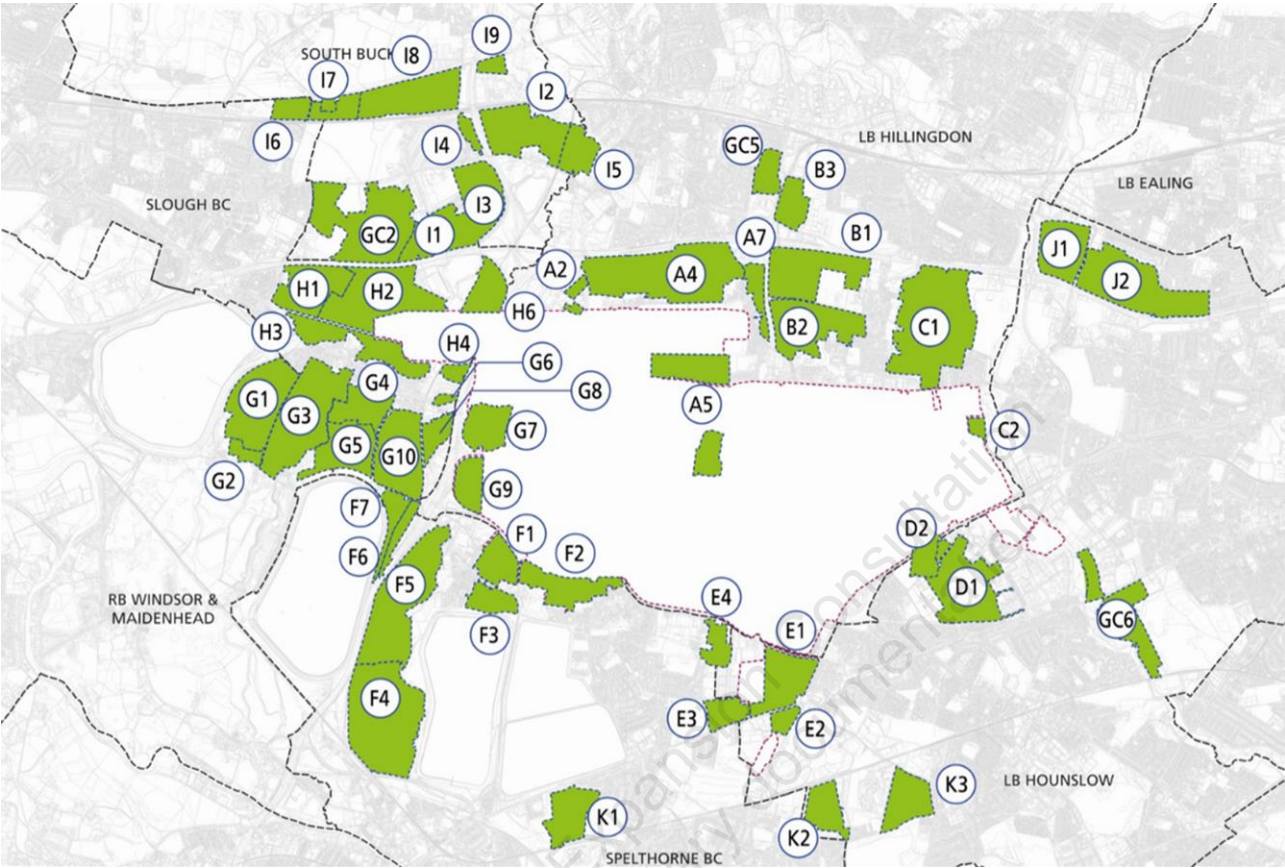
1. A1 was discontinued on the basis of designated recreational space (Rule 5);
2. F1 was discontinued on the basis of designated recreational space (Rule 5);¹
3. H5 was discontinued on the basis that the site includes a waterbody (Rule 6);
4. J3 was discontinued on the basis of designated recreational space (Rule 5);
5. K4 was discontinued because site is more than two miles from the expanded airfield boundary and is not served directly by rail (Rule 4);
6. K5 was discontinued because site is more than two miles from the expanded airfield boundary and is not served directly by rail (Rule 4);
7. L1 was discontinued because site is more than two miles from the expanded airfield boundary and is not served directly by rail (Rule 4);
8. GC1 was discontinued because site is more than two miles from the expanded airfield boundary and is not served directly by rail (Rule 4)
9. GC3 was discontinued because site is more than two miles from the expanded airfield boundary and is not served directly by rail (Rule 4).
10. GC4 was discontinued because site is more than two miles from the expanded airfield boundary and is not served directly by rail (Rule 4).

7.3.9 Figure 7.2 shows the sites that were advanced to evaluation.

¹ The boundary of this site was subsequently amended to avoid the recreational area and it was taken forward into the evaluation process.



Figure 7.2 Opportunity sites that were evaluated



Key

County / Borough Boundary

Illustrative Airport Expansion Boundary AC V4.9

Opportunity Sites

Figure 246: Opportunity sites that were evaluated



Stage 2 - Land Use Categorisation of Options

- 7.3.10 In order for the technical disciplines to be able to evaluate the appropriateness of a site for redevelopment, it was considered necessary to identify a selection of land uses that might be accommodated on each site on the basis that some land uses may be more acceptable than others and that this may affect views on the overall suitability of a site for development.
- 7.3.11 Those considered as part of the evaluation were as follows:
1. Airport Supporting Facilities;
 2. Industrial;
 3. Infrastructure (e.g. balancing ponds, truck park);
 4. Parking;
 5. Office;
 6. Hotel;
 7. Other commercial (e.g. retail conference centre);
 8. Home Office Immigration Removal Centre (replacement facility);
 9. BA Waterside (replacement facility);
 10. Landscape.
- 7.3.12 At this stage in the process no decisions were taken on which potential sites were appropriate for which land use. As a result, it was necessary to consider a range of options. To make the process more manageable some land uses were assigned to particular sites to inform the initial assessment. This assignment of uses was informed by a series of distribution principles as set out in Table 7.9.



Table 7.9 Distribution Principles

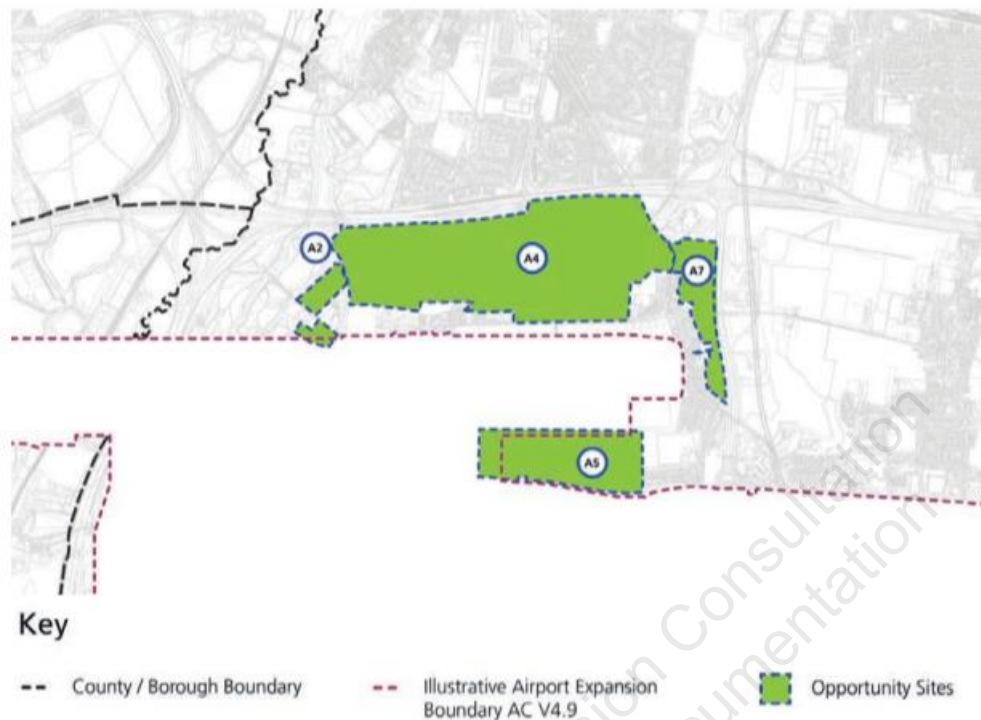
Land Use	Specific Land Use	Distribution Principles
Hotel	Terminal Linked	Location to be informed by the on-going Terminals design team analysis.
	Direct Bus Link	Sites should be located close to public transport nodes and with good access to trunk road network, therefore close to CTA, T5 and parkways.
Office	Supply Chain	It is less critical that sites are located on or adjacent to the airport boundary; Sites could often be co-located with cargo and warehousing facilities.
	International	Sites with good proximity to high quality public transport nodes; Opportunity for location adjacent to terminals, Hatton Cross or Central Terminal Area.
Commercial	Retail	Landside provision to be linked to public transport nodes and mixed-use areas to provide complimentary offer (but not an attractor in its own right) such as Hatton Cross and Central Terminal Area.
	Non-Airport Related Logistics	Sites with good access to trunk road network.
Infrastructure	Balancing ponds, sewerage, battery charging / storage and truck park	Location to be informed by the various ancillary uses design team analysis. Truck Park – assumed a central case which was a site to the west of the M25 junction 14
Industry	Cargo & Freight Forwarding	Sites within / on customs boundary, or within 1 mile of the cargo entrance to the airport <ul style="list-style-type: none"> • With good highway access to trunk roads • With swift, unimpeded access to the ITSF with low risk of delay • Sites to the south and west to align with current cargo industry distribution.
	Airline Catering	No particular preference for spatial location around the perimeter (albeit there would need to be an access point to the airside boundary) and <ul style="list-style-type: none"> • With good highway access to trunk roads • With swift, unimpeded access with low risk of delay Sites immediately adjacent to (no greater than 1 mile) or preferably on the airport boundary.
	Vehicle Maintenance	With good highway access to trunk roads Distance from airport less of a critical factor
Car Parking	Passenger and Colleague Car Parking	Location to be informed by the masterplanning design team analysis. Assumptions made were: <ul style="list-style-type: none"> • multi-storey car parking • support areas for other vehicles at surface (eg: car rental, bus and taxi stands) • Parkways located to the north (east of M4 Spur and west of Harlington) and south west (Cemex site) to serve main terminals • Parking retained to the north east of current airport adjacent to the aircraft maintenance area
Displaced Uses	BA Waterside	Sites with good proximity to <ul style="list-style-type: none"> • the airport • public transport, or • good highway access to trunk roads
	Immigration Removal Centres	Sites within close proximity of the airfield; <ul style="list-style-type: none"> • With good highway access to trunk roads • Avoid proximity to residential areas Desirable to have an airside / landside location.

Stages 3 to 5 – Evaluation Approach and Results

- 7.3.13 The evaluation sought to understand the acceptability of each site for development and followed the requirements set out in the Masterplan Scheme Development Manual. The overall BRAG assessment summarising the development potential of each site was based upon the evaluation feedback. At that time, professional judgement was based on discipline scoring.
- 7.3.14 Area A opportunity sites – these four sites are located to the north of the existing airport, bordered by the M4 motorway, M4 Spur and the east end of the new runway location, as shown in Figure 7.3.



Figure 7.3 Area A Sites



7.3.15 The outcomes from the Area A evaluation are summarised in Table 7.10.

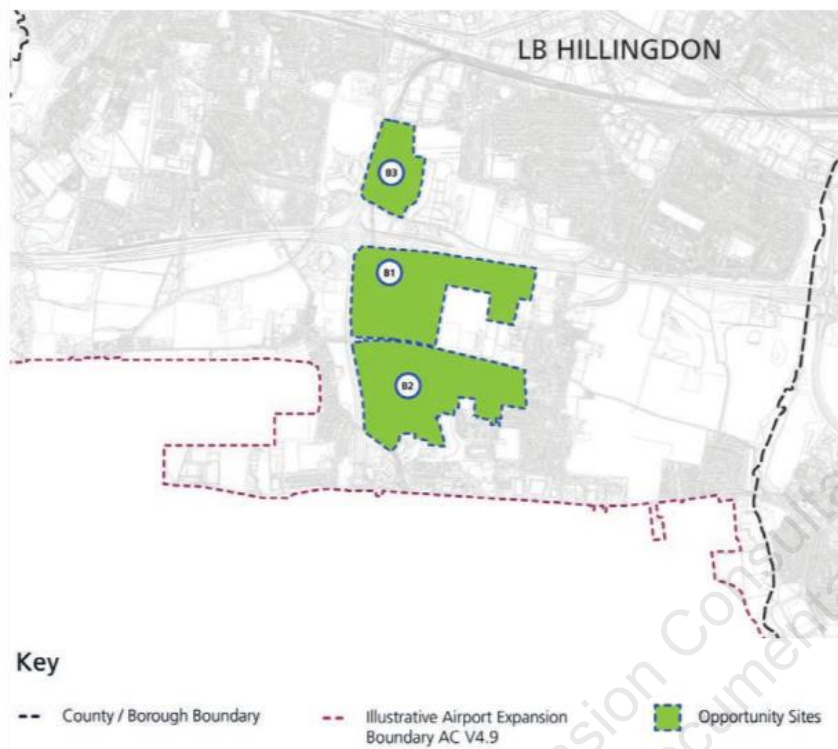
Table 7.10 Summary results for the opportunity sites in Area A

Site	Development	Landscape Mitigation
A2	Parts of the site may be suitable for development, particularly the underused brownfield land to the south west. The site is located within the Green Belt and the Colne Valley Regional Park, although it accommodates operational industrial premises.	There is potential within this site to create additional green infrastructure and increased habitat connectivity, potentially linking to the Lower Colne Site of Importance for Nature Conservation and enhancing the historic setting of the adjacent Harmondsworth barn, landscape and views.
A4	Parts of the site may be suitable for development, especially toward the south given the likely proximity to the expanded airport boundary. The site is located within the Green Belt, and any development will need to respect the adjacent residential communities at Harmondsworth and Sipson. The site may also be affected by the re-alignment of the A4.	This site has potential to implement mitigation for European Protected Species displaced by the partial loss of Harmondsworth Moor and to enhance characteristics of the landscape and views.
A5	Parts of the site may be suitable for development since, although Green Belt, it is already fragmented. Consideration will need to be given to the existing commercial premises, the impact on adjacent residential properties and the adjacent recreation ground.	There are very limited opportunities for priority habitats or species to be present in this area. As part of any new development green infrastructure proposals provide the opportunity to enhance characteristics of the landscape and view.
A7	Parts of the site may be suitable for development. The site is located in the Green Belt, although its character and function is harmed by the adjacent M4 Spur. The impact on adjacent residential properties would require careful consideration.	The site provides an opportunity for providing additional green infrastructure and creating increased habitat connectivity. These mitigation proposals also have the potential to enhance characteristics of the landscape and views.

7.3.16 Area B opportunity sites – these three sites are located to the north of the existing airport and adjacent to the M4 Spur, as shown in Figure 7.4.



Figure 7.4 Area B Sites



7.3.17 The outcomes from the Area B evaluation are summarised in Table 7.11.

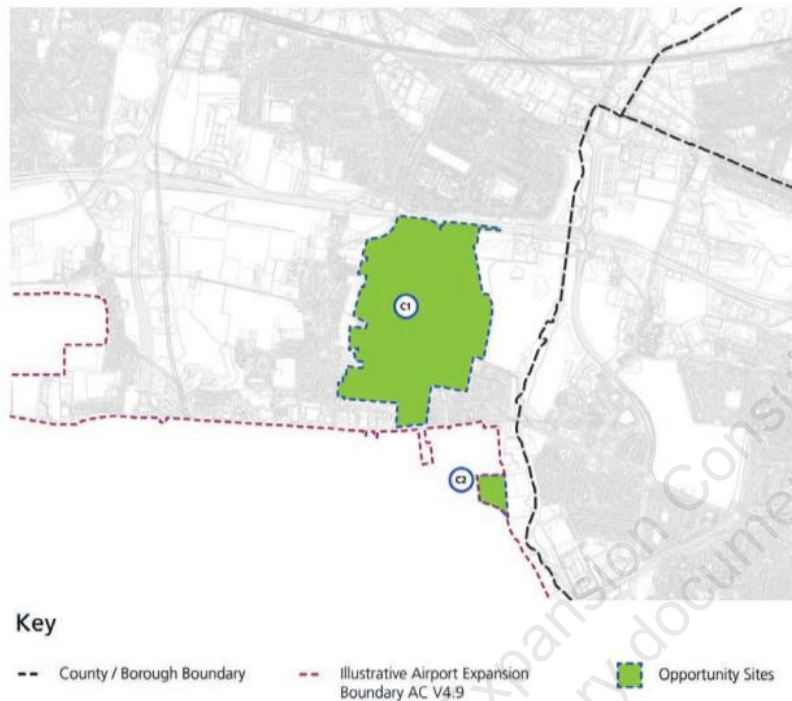
Table 7.11 Summary results for the opportunity sites in Area B

Site	Development	Landscape Mitigation
B1	Part of the site may be suitable for development. The site as a whole is located in the Green Belt, although those parts adjacent to the M4 and M4 Spur are heavily influenced by the presence of the motorway and are less important in Green Belt terms. Consideration also needs to be given to the previous landfill, Heathrow Express tunnels and the Site of Importance for Nature Conservation designation on part of the site.	Part of this site is designated as a Site of Importance for Nature Conservation, although the sand and gravel workings may have altered the baseline. The site has the potential to accommodate an important east-west green infrastructure link, which would be valuable as both a recreational route and in improving habitat connectivity.
B2	Part of the site may be suitable for development. Located in the Green Belt, but its character and function is heavily influenced by the proximity to the M4 Spur. Consideration also needs to be given to the previous landfill and Heathrow Express tunnels.	Similarly to site B1, B2 has the potential to accommodate an important east-west green infrastructure link, which could be designed to enhance the setting of the Grade II Listed Sipson House located to the south.
B3	The site may be suitable for development. The site is located within the Green Belt but adjoins commercial premises to the north and is adjacent to the listed Cherry Lane Cemetery. The site is situated within an urban area characterised by major road infrastructure and built form.	Site not evaluated for landscape.



- 7.3.18 Area C opportunity sites – these two sites are located to the north east of the existing airport and to the east of Harlington village, as shown in Figure 7.5.

Figure 7.5 Area C Sites



- 7.3.19 The outcomes from the Area C evaluation are summarised in Table 7.12.

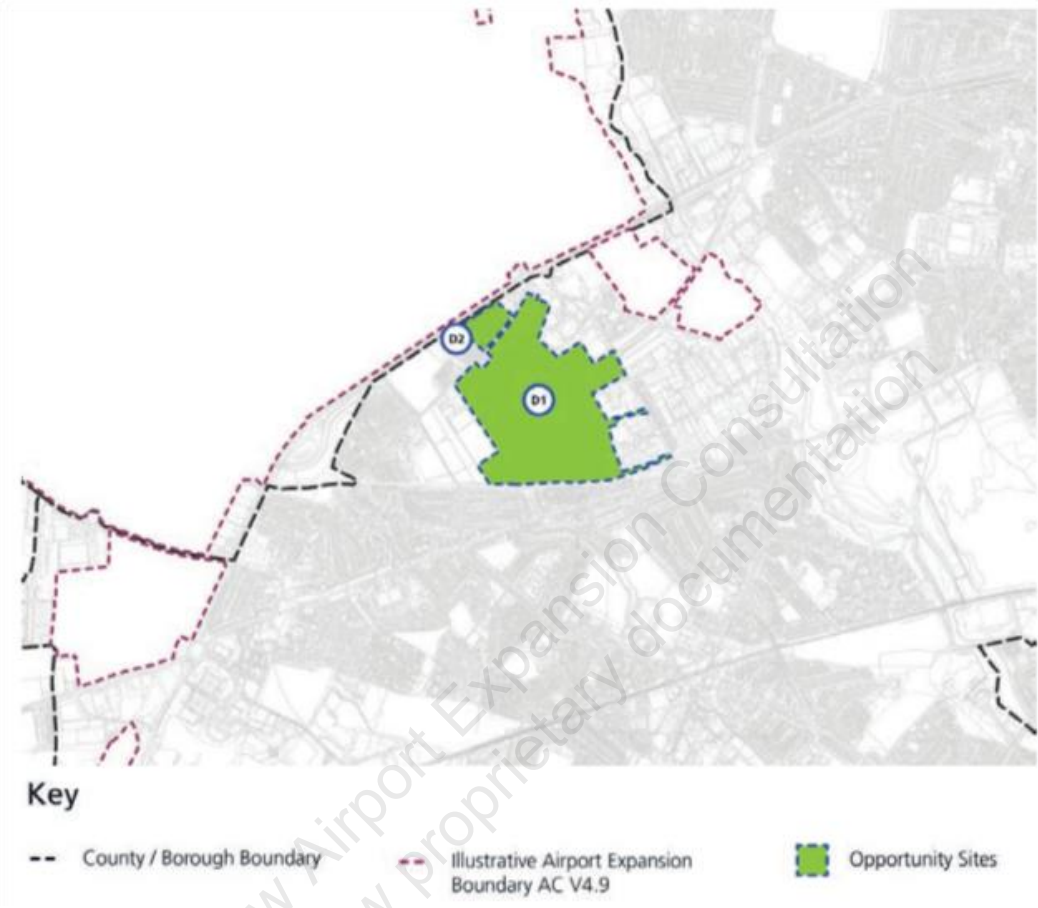
Table 7.12 Summary results for the opportunity sites in Area C

Site	Development	Landscape Mitigation
C1	Only the southern part of the site may be suitable for development as it adjoins existing residential and commercial development and is influenced by the character of the Bath Road. The site is located within the Green Belt, and is designated a Site of Importance for Nature Conservation.	Located directly west of Cranford Park, the site has the potential to provide an important connection between the River Colne and River Crane catchments, both in terms of recreation and habitat creation. Habitat creation within this site would have the potential to create an enhanced setting to the Harlington Village Conservation Area (to the west) and the Cranford Park Conservation Area to the east.
C2	The site may be suitable for development as it is surrounded on three sides by the airport and related development, but careful consideration would need to be given to any ecological impacts and the wider River Crane corridor.	This site has good potential for providing mitigation measures that would enhance the landscape character and views. Habitat creation in this area would be positive and provide the opportunity for protected species mitigation and the creation of linkages between the Colne and Crane catchments.



7.3.20 Area D opportunity sites – these two sites are located to the south-east of the existing airport, as shown in Figure 7.6.

Figure 7.6 Area D sites



7.3.21 The outcomes from the Area D evaluation are summarised in Table 7.13.

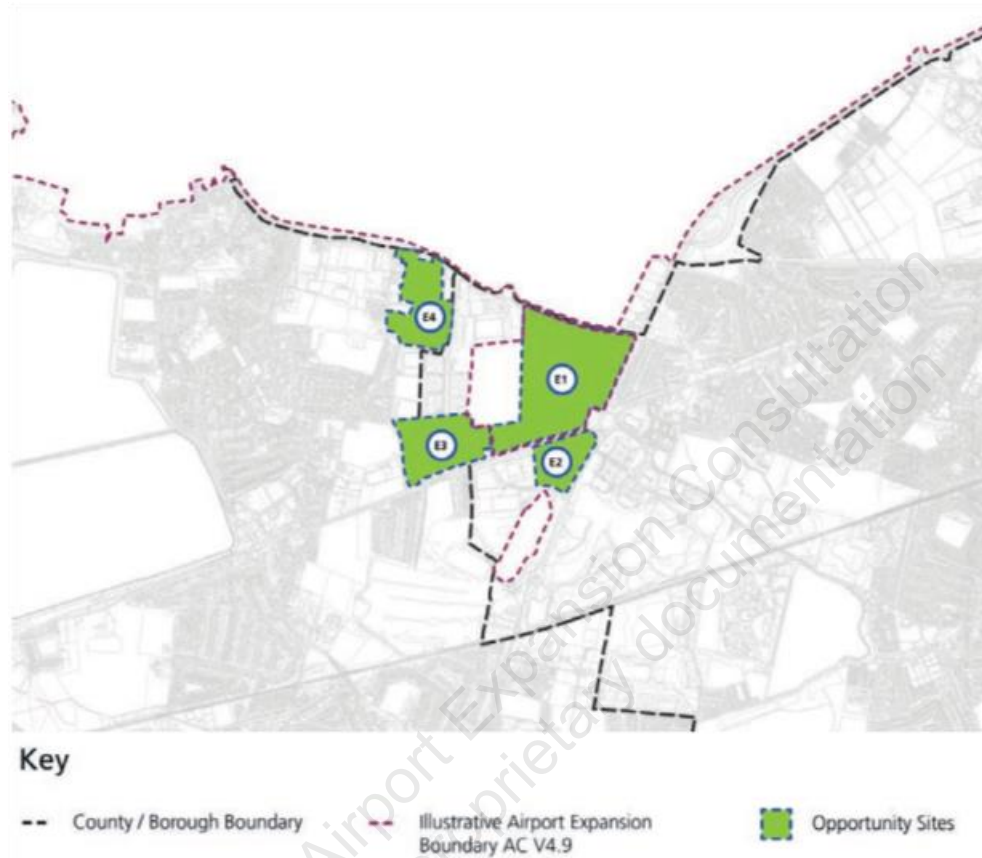
Table 7.13 Summary results for the opportunity sites in Area D

Site	Development	Landscape Mitigation
D1 & D2	The sites may be suitable for development given the surrounding urban land uses although the northern part of site D2 may be impacted by height limitations associated with the southern runway. The sites fall within the Green Belt, are partially designated as Hatton Meadows Site of Importance for Nature Conservation and are adjacent to Hatton Cemetery.	This site provides excellent opportunities for enhancement for biodiversity. The existing Site of Importance for Nature Conservation could be retained and enhanced with appropriate habitat management.



- 7.3.22 Area E opportunity sites – these four sites are located to the south of the existing airport, as shown in Figure 7.7.

Figure 7.7 Area E sites



- 7.3.23 The outcomes from the Area E evaluation are summarised Table 7.14.



Table 7.14 Summary results for the opportunity sites in Sub Area E

Site	Development	Landscape Mitigation
E1	The site may be suitable for development given its proximity to the airport and surrounding urban uses. The site falls within the Green Belt, and contains Scheduled Ancient Monuments to the north. This site was included in the AC Masterplan. Fuel safeguarding zones associated with the existing facility to the west require consideration.	Site not evaluated for landscape
E2	The site may be suitable for development. The site falls in the Green Belt and contains open green space, however, it does include some brownfield parcels and has an extant planning permission for a hotel led development.	This area has the potential to be managed for positive biodiversity outcomes as its current condition is already reasonable.
E3	The site may be suitable for development given the adjacent airport related uses. It is located in the Green Belt, and consideration will need to be given to existing residential properties and the community centre.	Site not evaluated for landscape.
E4	The site may be suitable for development due to adjacent uses. It forms part of the Green Belt which is fragmented but is immediately adjacent to the fuel farm to the south and therefore safeguarding zones will need to be considered as will impacts on residential and commercial uses fronting Long Lane.	Site not evaluated for landscape.

7.3.24 Area F opportunity sites – these seven sites are located to the south-west of the existing airport, as shown in Figure 7.8.



Figure 7.8 Area F sites



7.3.25 The outcomes from the Area F evaluation are summarised in Table 7.15.



Table 7.15 Summary results for the opportunity sites in Area F

Site	Development	Landscape Mitigation
F1	The site may be suitable for development. The site forms part of the Green Belt, but occupies a unique strategic location at an important entrance to the airport from the highway network to the south and west. This site was included in the AC Masterplan. The relationship with adjacent residential properties will need to be carefully considered.	The ecological value of the recreation site on adjacent land is currently minimal and could be enhanced with wider landscape improvements.
F2	The site may be suitable for development. The site occupies an important location as one of the key entrances to the airport and this site was included in the AC Masterplan. Any development would need to respect the residential properties to the south and adjacent land uses, as well as a Site of Importance for Nature Conservation.	Site not evaluated for landscape.
F3	The site is not considered suitable for development. The site is designated in local planning policy as a safeguarded waste management site, and it is currently occupied.	Site not evaluated for landscape.
F4	The site is not considered suitable for development. The site is registered as Common Land and it is a designated Site of Special Scientific Interest.	There is potential for the site to be designed into a north-south green infrastructure link which would be an enhancement to the Colne Valley Regional Park, the wider landscape and views.
F5	The site is not considered suitable for development. The site fulfils an important Green Belt function and is adjacent to a Site of Special Scientific Interest.	There is potential for the site to be designed into a north-south green infrastructure link which would be an enhancement to the Colne Valley Regional Park, the wider landscape and views. This area provides a good opportunity to increase biodiversity value in the area through the linkage of the Staines Moor SSSI to the wider landscape.
F6	Only parts of the site to the west adjacent to F7 may be suitable for development. The site is designated as a Site of Special Scientific Interest but is understood to be in poor condition from previous uses and also forms part of the Green Belt. The site may be required for M25 works associated with airport expansion.	There is potential for the site to be designed into a north-south green infrastructure link which would be an enhancement to the Colne Valley Regional Park, the wider landscape and views. This area provides a good opportunity to increase biodiversity value in the area through the linkage of the Staines Moor SSSI to the wider landscape.
F7	The site may be suitable for development. The site is part of the Strategic Gap, the Colne Valley Regional Park and the Green Belt but is brownfield land used for parking and storage.	Site not evaluated for landscape.



7.3.26 Area G opportunity sites – these ten sites are located to the west of the existing airport, as shown in Figure 7.9.

Figure 7.9 Area G sites

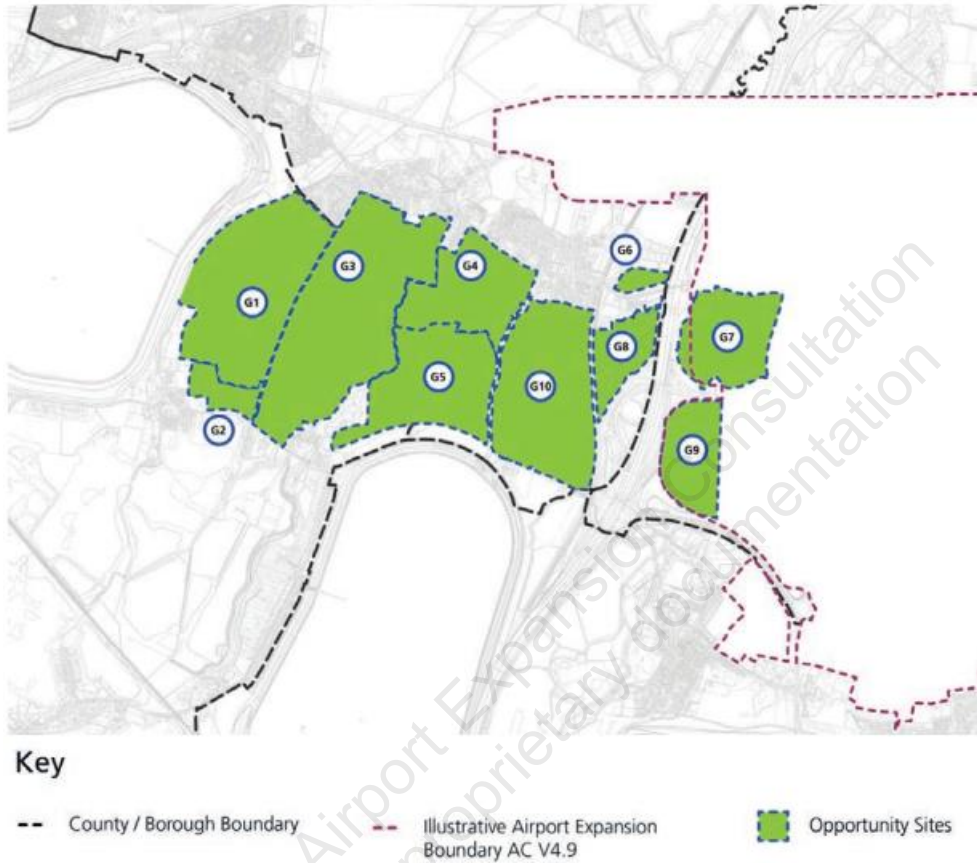


Figure 260: Area G Sites

7.3.27 The outcomes from the Area G evaluation are summarised in Table 7.16.



Table 7.16 Summary results for the opportunity sites in Area G

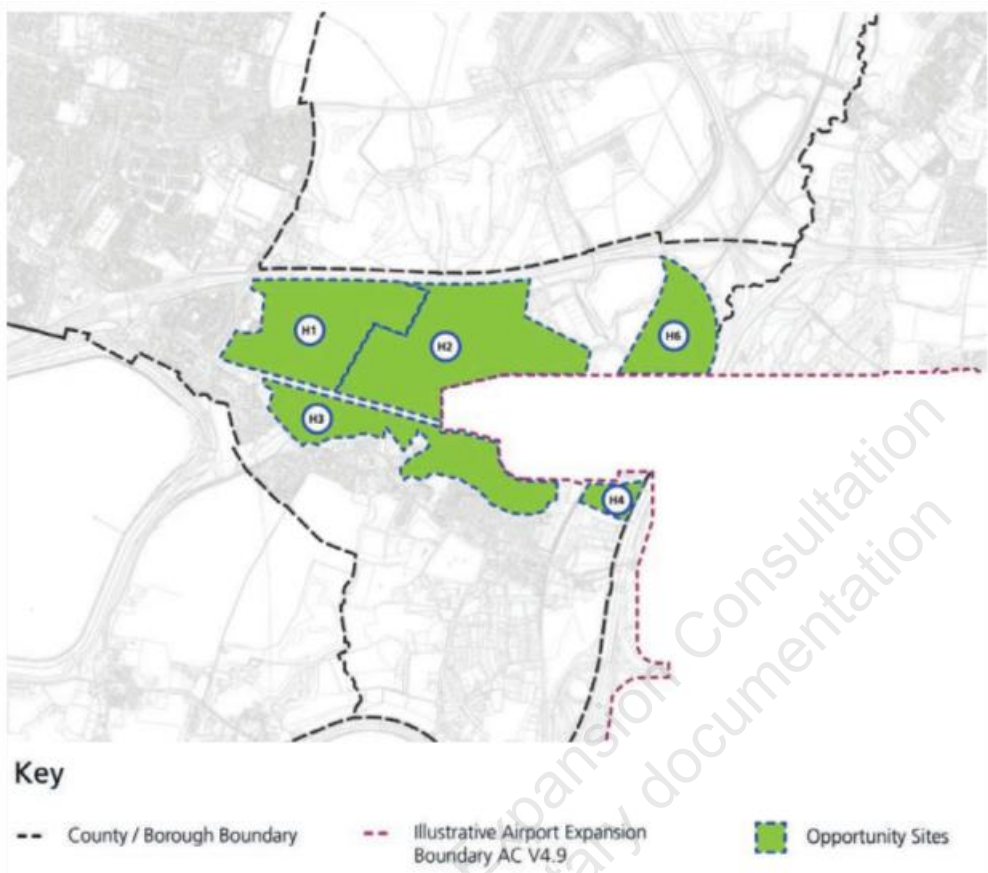
Site	Development	Landscape Mitigation
G1	The site is not considered suitable for development. The site forms part of the Green Belt and a core part of the Colne Valley Regional Park. Residential uses are located close to the northern and southern boundaries.	This site provides an excellent opportunity for green infrastructure as it can be improved substantially, it is adjacent to the Horton Brook which will be a valuable feature in the Colne Valley and can be linked to Horton Lakes, Arthur Jacobs Nature Reserve and Eric Mortimer Memorial Lakes.
G2	The site is not considered suitable for development. The site contributes to the open character of the Green Belt and the Colne Valley Regional Park, and contains heritage assets.	As above
G3	The site is not considered suitable for development. The site contains high grade agricultural land and forms an important part of the Green Belt, the Strategic Gap and the Colne Valley Regional Park. Residential dwellings are located to the north and waterbodies to the south.	This is a high priority target for biodiversity and landscape improvements with this potentially forming a valuable spine for green infrastructure in the area.
G4	Part of the site may be suitable for development. Although the site is designated Green Belt, Strategic Gap and forming part of the Colne Valley Regional Park, the eastern part adjoins the established industrial area to the west.	This area has good potential for inclusion as green infrastructure, especially if G3 and G1 are also secured.
G5	The eastern part of the site may be suitable for development given proximity to the established industrial uses to the east. The remainder of the site is not considered suitable for development due in part to its contribution to the Green Belt and Colne Valley Regional Park.	This area has good potential for inclusion as green infrastructure, especially if G4, G3 and G1 are also secured.

Site	Development	Landscape Mitigation
G6	The site may be suitable for development. The site is located in the Green Belt, Strategic Gap and Colne Valley Regional Park, however is bound by industrial uses and road infrastructure. The site may be impacted by M25 works.	Site not evaluated for landscape.
G7	The site may be suitable for development. The site has a limited Green Belt function since it is bound on all sides by highway network and is in close proximity to airfield operations. This site was included in the AC Masterplan.	Site not evaluated for landscape.
G8	Potentially suitable for development. The site forms part of the Green Belt, the Strategic Gap and the Colne Valley Regional Park, however it is an isolated greenfield site adjacent to existing industrial uses. The site may be subject to M25 works.	Site not evaluated for landscape.
G9	The site may be suitable for development. The site is designated as Green Belt and Colne Valley Regional Park, however it is isolated between the airport, the M25 and approach roads. This site was included in the AC Masterplan.	Site not evaluated for landscape.
G10	The site is considered unsuitable for development on the basis that it is in existing largely occupied industrial estate.	Site not evaluated for landscape.

7.3.28 Area H opportunity sites – these five sites are located to the north-west of the existing airport, as shown in Figure 7.10.



Figure 7.10 Area H sites



7.3.29 The outcomes from the Area H evaluation are summarised in Table 7.17.



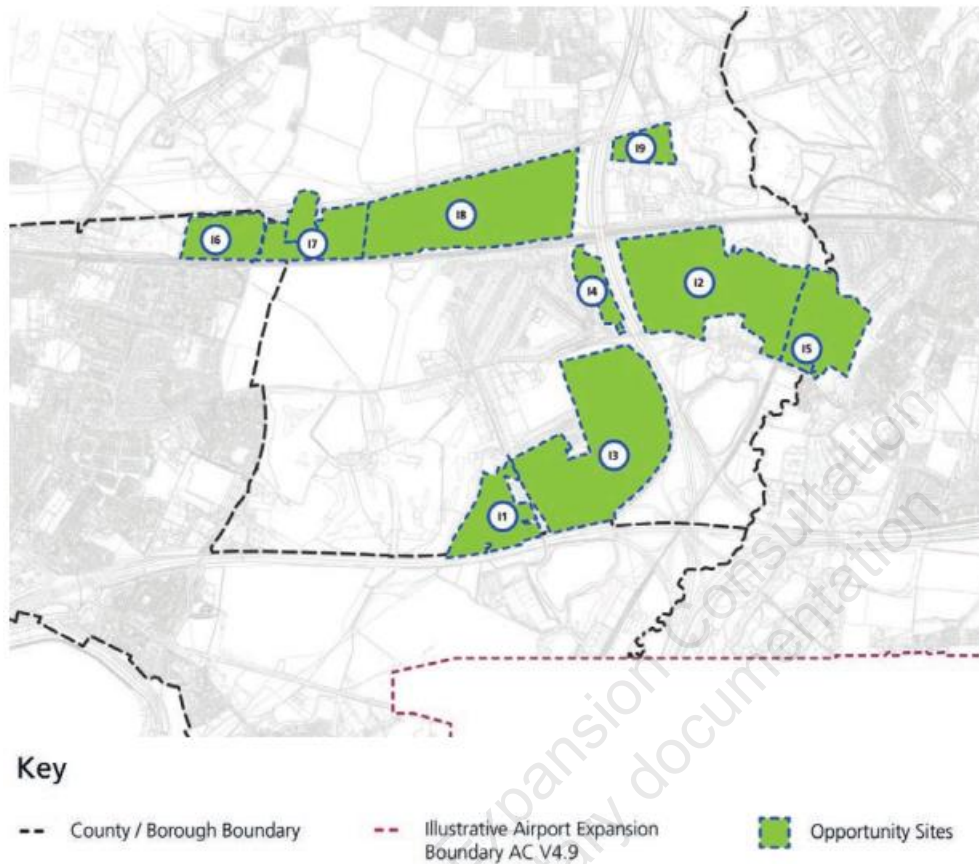
Table 7.17 Summary results for the opportunity sites in Area H

Site	Development	Landscape Mitigation
H1, H2 & H6	Parts of these sites may be considered suitable for development. There are a number of constraints on and adjacent to the area including the presence of a bat corridor, previous land fill requiring remediation and Green Belt, Colne Valley Regional Park and Strategic Gap considerations.	There are opportunities for parts of these sites to form part of a north-south green infrastructure link, to enhance the wider landscape and biodiversity, to improve public open space to the north of Colnbrook and to improve green and blue infrastructure links with Old Slade Lake.
H3	Most of this site is unsuitable for development because of proximity to neighbouring residential uses, however there may be small parcels adjacent to the expanded airfield which are suitable for operational purposes	The opportunity exists to increase open space quality and to incorporate mitigation within priority habitats.
H4	The site may be suitable for development. The site is designated Green Belt land and falls within the Strategic Gap and Colne Valley Regional Park, but is immediately adjacent to existing industrial uses and major road infrastructure. Site may be impacted by M25 works.	Site not evaluated for landscape

7.3.30 Area I opportunity sites – these nine sites are located to the north of the existing airport and north of the M4 motorway, as shown in Figure 7.11.



Figure 7.11 Area I sites



7.3.31 The outcomes from the Area I evaluation are summarised in Table 7.18.



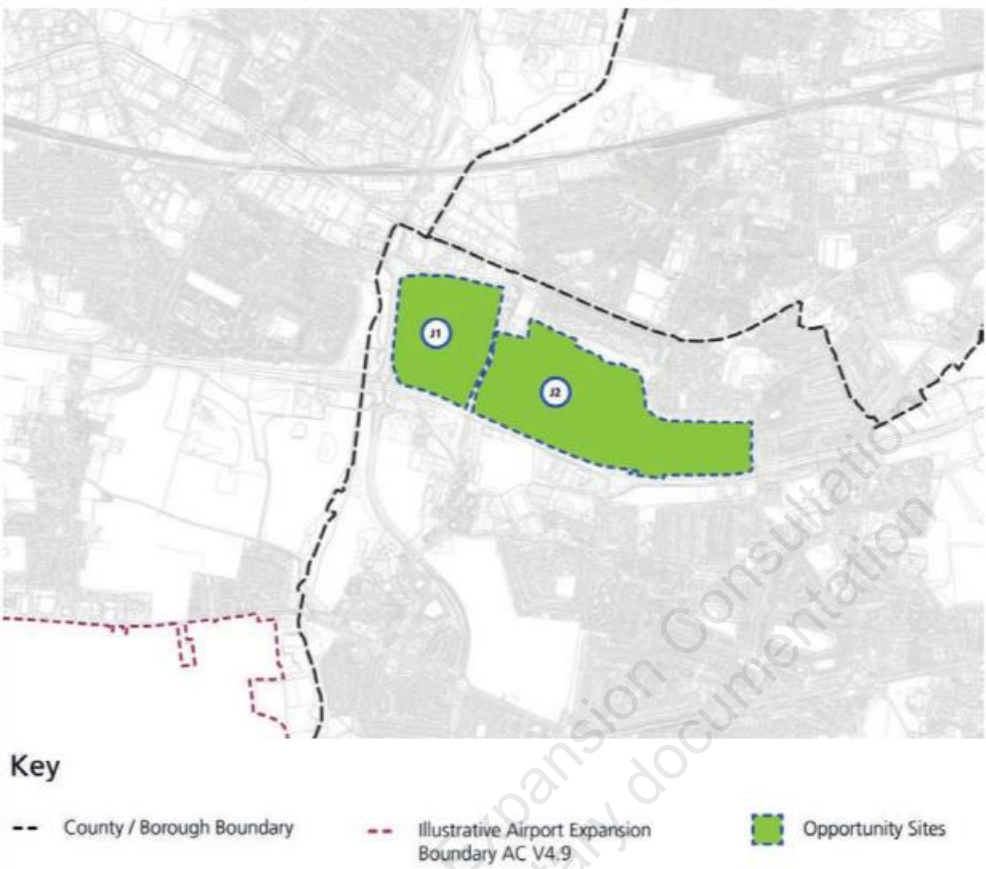
Table 7.18 Summary results for the opportunity sites in Area I

Site	Development	Landscape Mitigation
11	The site is not considered suitable for development. The site forms part an important part of the Green Belt and Colne Valley Regional Park.	The site provides an opportunity for enhancement and creation of recreational spaces to enhance the Colne Valley Regional Park and characteristics of the local landscape and views.
12	The site is not considered suitable for development. The site is within the Green Belt and contains residential properties, a listed building and an operational golf course.	The opportunity exists to integrate mitigation which would enhance the Colne Valley Regional Park landscape and green infrastructure.
13	The site is not considered suitable for development. The site forms part of the Green Belt and the Colne Valley Regional Park.	The site provides an opportunity to enhance the Colne Valley Regional Park landscape and green infrastructure. This area may be essential to mitigate for European Protected Species.
14	The site is not considered suitable for development. It is designated as Green Belt land, forms part of the Colne Valley Regional Park, and includes a number of heritage assets.	As above
15	The site may be suitable for development. It is designated as Green Belt land and within the Colne Valley Regional Park, but represents operational brownfield land which is safeguarded as an aggregate rail depot site in planning policy.	Site not evaluated for landscape.
16	The site is not considered suitable for development, partly on the basis that it forms part of the Green Belt, the Strategic Gap, the Colne Valley Regional Park, as well as being a designated nature reserve.	Site not evaluated for landscape.
17	The site is not considered suitable for development. It forms part of the Green Belt and the Colne Valley Regional Park. The site is safeguarded by Buckinghamshire County Council as a multi-modal facility.	Site not evaluated for landscape.
18	The site is not considered suitable for development. The eastern part of the site is earmarked in emerging local planning policy for a release from the Green Belt.	Site not evaluated for landscape.
19	The site is not considered suitable for airport related development. The site is designated as Green Belt land and within the Colne Valley Regional Park. The site is also a functioning industrial estate which is allocated for employment uses.	Site not evaluated for landscape.

7.3.32 Area J opportunity sites – these two sites are located to the north-east of the existing airport and north of the M4 motorway, as shown in Figure 7.12.



Figure 7.12 Area J Sites



7.3.33 The outcomes from the Area I evaluation are summarised in Table 7.19.

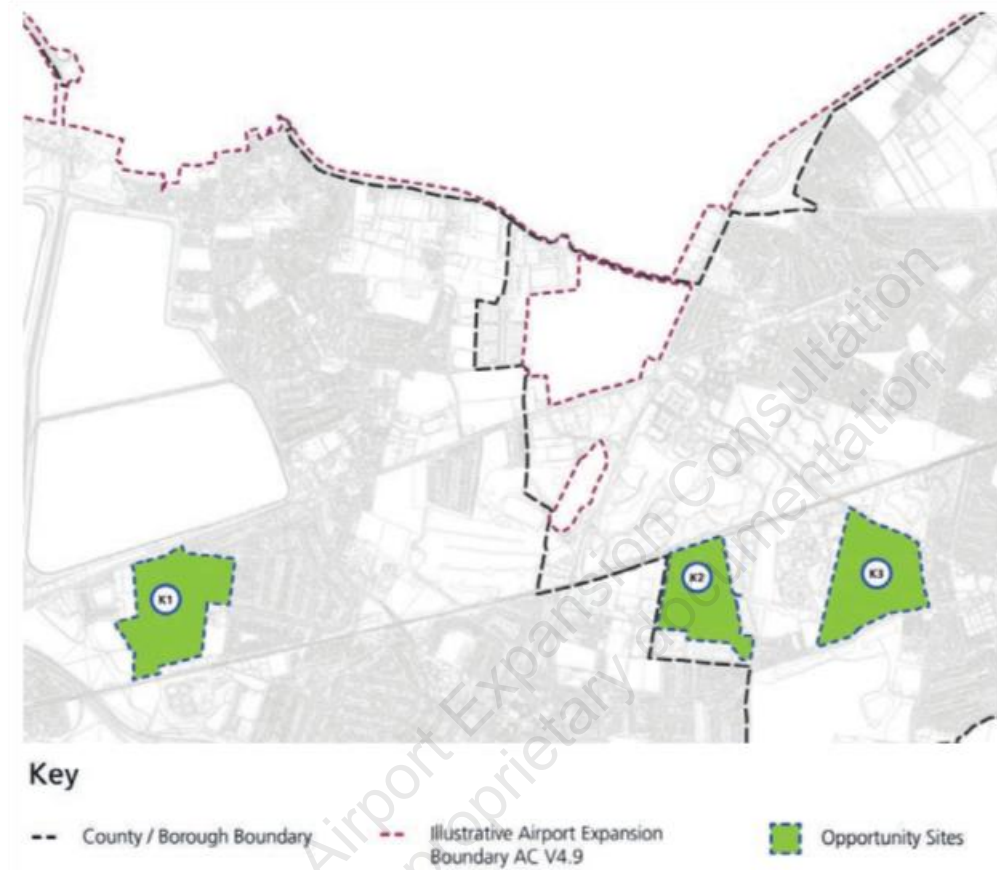
Table 7.19 Summary results for the opportunity sites in Area J

Site	Development	Landscape Mitigation
J1	Part of the site may be considered suitable for development. The northern part of the site represents operational brownfield land. The southern part is currently allocated for minerals safeguarding, whilst emerging local policy proposes partial de-designation from the Green Belt to potentially provide an industrial hub with ancillary uses.	Site not evaluated for landscape.
J2	The site is not considered suitable for development. The site is designated as Green Belt and is in part a Site of Importance for Nature Conservation.	Site not evaluated for landscape.



- 7.3.34 Area K opportunity sites – these three sites are located to the south of the existing airport, as shown in Figure 7.13.

Figure 7.13 Area K sites



- 7.3.35 The outcomes from the Area K evaluation are summarised in Table 7.20.



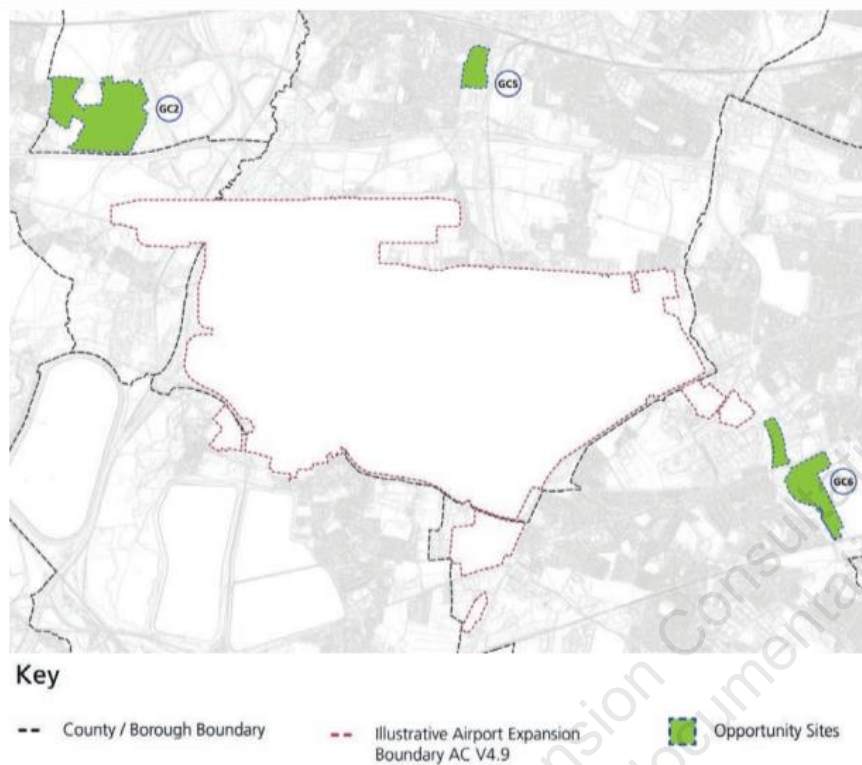
Table 7.20 Summary results for the opportunity sites in Area K

Site	Development	Landscape Mitigation
K1	The site is not considered suitable for development. The site fulfils an important Green Belt function and the immediate area is characterised by residential development. The site is considered to be relatively isolated and remote from the airport.	Site not evaluated for landscape.
K2	The site is not considered suitable for development. It is a valuable Green Belt site as well as a Site of Importance for Nature Conservation, and is isolated from the airport.	Site not evaluated for landscape.
K3	The site is considered unsuitable for development. The site is designated as a Site of Importance for Nature Conservation and is a valuable part of the Green Belt.	Site not evaluated for landscape.

7.3.36 Area GC opportunity sites – these three sites are located to the south and north of the existing airport, as shown in Figure 7.14.



Figure 7.14 Area GC sites



7.3.37 The outcomes from the Area GC evaluation are summarised in Table 7.21.

Table 7.21 Summary results for the opportunity sites in Area GC

Site	Development	Landscape Mitigation
GC2	The site is not considered suitable for development. The site forms an important part of the Green Belt land and Colne Valley Regional Park.	Horton Brook flows through the site, which is a valuable wildlife corridor. Although the site is currently a Golf Course and not publicly accessible, numerous Public Rights of Way are located around the site so there is some potential for landscape mitigation.
GC5	Part of the site may be considered suitable for development. The site is located in the Green Belt, but is bound to the north, south and west by urban land parcels. Part of the site contains brownfield development.	The site was formerly used as a golf course and contains some mature landscape features however it is unlikely to have potential for landscape mitigation.
GC6	The site is not considered suitable for development. The site is designated as a Site of Importance for Nature Conservation, it falls within the Green Belt and forms part of the wider River Crane corridor.	The site is currently used as a golf course but potentially has value in terms of enhancement to form part of the green infrastructure network within the River Colne catchment.



- 7.3.38 During the completion of the evaluation a handful of further sites were identified, including those as a result of engagement with Heathrow Strategic Planning Group (HSPG). These sites were still to be undertaken through formal evaluation but an initial view on the development prospects of each is summarised in Table 7.21 and Table 7.22.

Figure 7.15 Area NS, HS sites

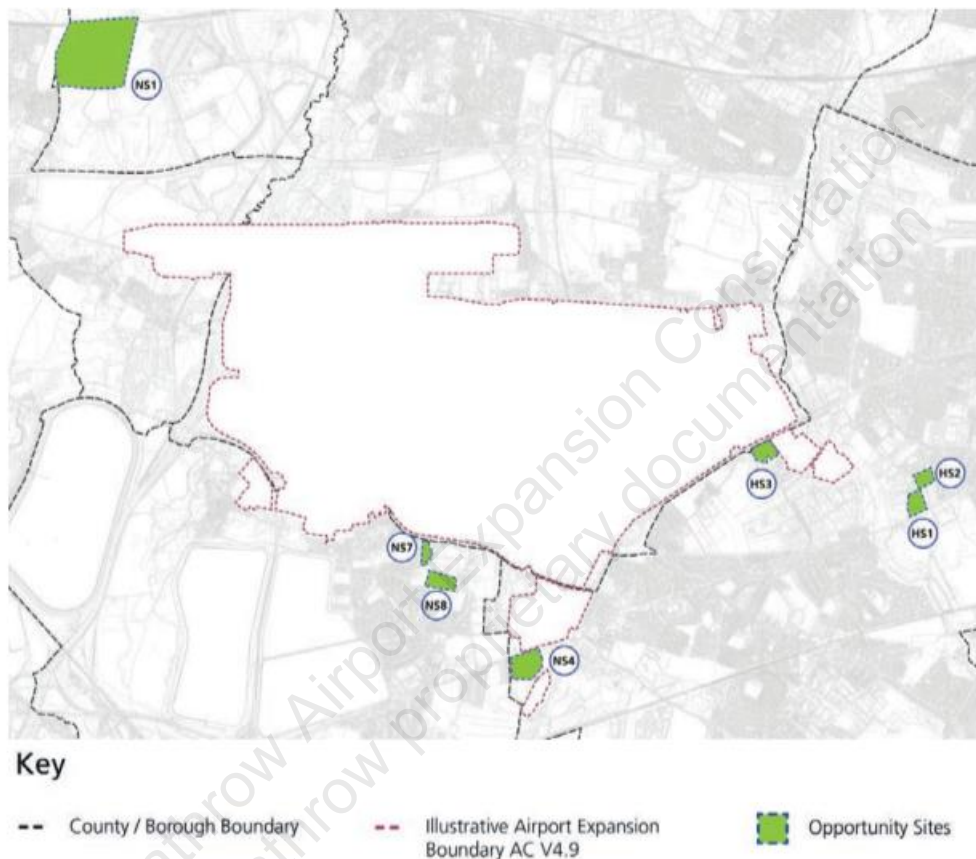




Table 7.22 Summary results for the opportunity sites in Areas NS and HS

Site	Development	Landscape Mitigation
NS1	The site is not considered suitable for development. The site is considered to have an important Green Belt function and is located within the Colne Valley Regional Park.	The site has several features which mean it has the potential to become a valuable feature of the green infrastructure network. A Public Right of Way crosses the site, eventually connecting to the Grand Union Canal to the north.
NS4	The site is not considered suitable for airport related development and contains a number of occupied industrial premises.	The site is currently in industrial use and is unlikely to be considered a priority for landscape mitigation.
NS7	Site may be considered suitable for development. The site forms part of the Green Belt but is fragmented, and is in close proximity to operational industrial uses and the airfield. The relationship with residential uses will require careful consideration.	This site is characterised by habitats that are likely to be of low conservation value for biodiversity and would benefit from enhancement. While the site would not be a priority in terms of landscape mitigation it could be designed to provide a local green infrastructure connection south of Heathrow.
NS8	Site may be considered suitable for development. The site forms part of the Green Belt but is fragmented and small, and is in close proximity to operational industrial uses and to the airfield. The relationship with residential uses, a school and recreational ground will require careful consideration.	As above
HS1	The site may be considered suitable for development. The site is designated as Green Belt but is identified in emerging local policy for release for employment uses.	Site not evaluated for landscape.
HS2	The site is designated as Local Open Space but is identified in emerging local policy for release for residential uses so is not likely to be available for meeting airport related demand.	Site not evaluated for landscape.
HS3	Site may be suitable for industrial / commercial uses similar to the adjacent land, given the proximity of the new airport boundary.	Site not evaluated for landscape.

7.4 Options Refinement during Masterplan Assembly

Airport Expansion Consultation One

- 7.4.1 Airport Expansion Consultation One (January 2018) on Heathrow's emerging plans for the airport expansion was conducted between January and March 2018. Its purpose was to gather feedback from prescribed consultees, members of the community and wider consultees on a range of topics, including ARD.
- 7.4.2 Feedback was sought at Airport Expansion Consultation One (January 2019) on the sites and their potential uses which were identified in the 'Our Emerging Plans' document.

Options refinement

- 7.4.3 The design process which led to Masterplan Assembly and subsequently to the Preferred Masterplan has been influenced by feedback from Airport Expansion Consultation One (January 2019), engagement with land owners and key stakeholders, particularly HSPG and the Local Planning Authorities (LPAs), and the full options evaluation process during Scheme Development.

Airport Expansion Consultation One (January 2019) Feedback

- 7.4.4 A process of analysis was applied to the feedback gathered from Airport Expansion Consultation One (January 2019) which enabled the teams to regard the feedback in tandem with the masterplanning work and the land use decision-making process facilitated by the Land Use Decision Tree (see section 7.4.14). As



part of these processes, the land use proposals evolved through gateways M2 to M4.

Stakeholder Engagement

- 7.4.5 Engagement with the HSPG and some LPAs through bi-lateral meetings has been continuous through the assembly options development and has helped to guide the location and scale of future demand.

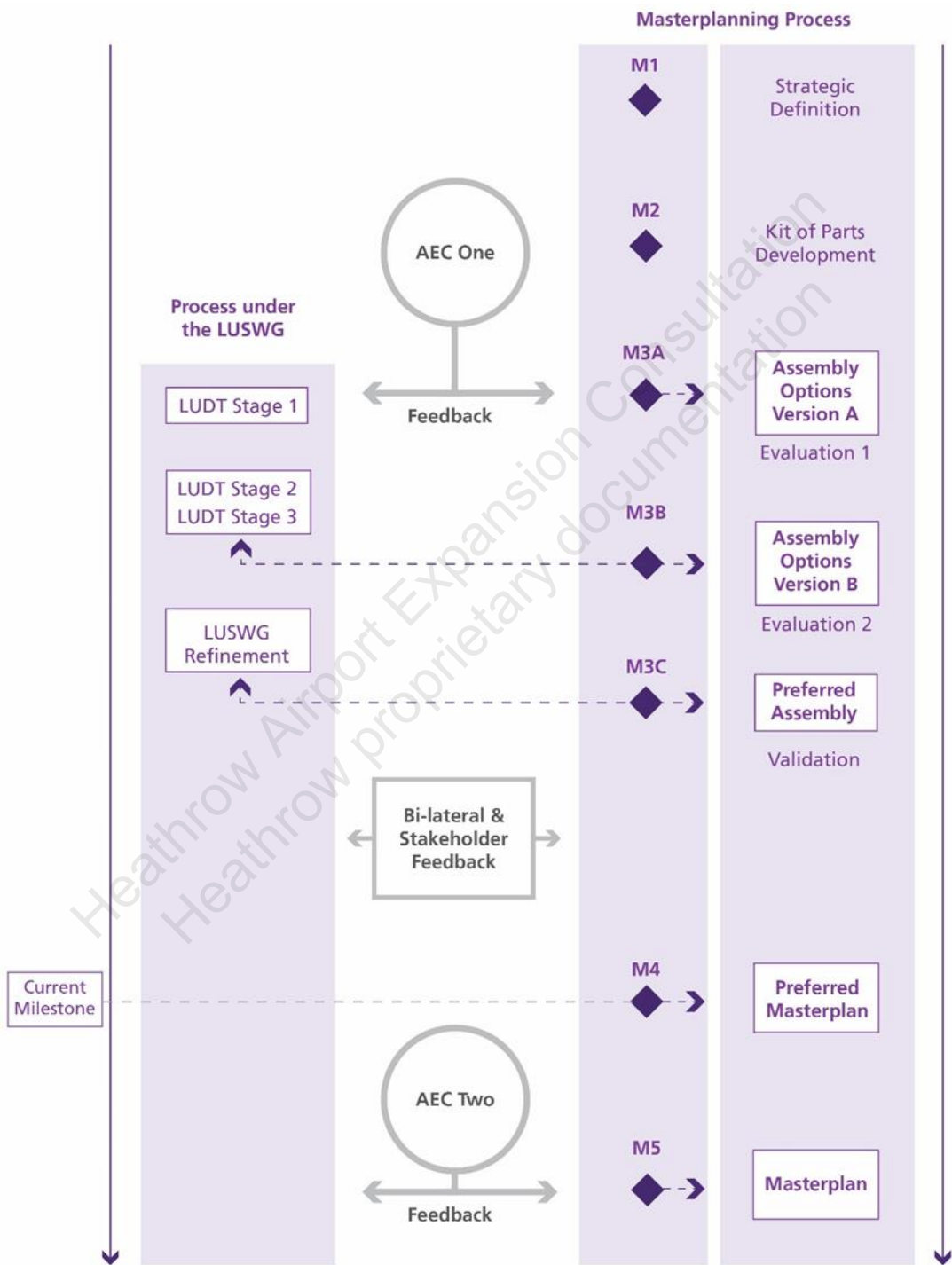
Community Engagement

- 7.4.6 The Masterplanning Team has provided support to the Heathrow Community and Stakeholder Team, including the preparation of Local Area Documents and holding internal, multidisciplinary workshops focusing on the 16 surrounding settlements that will be impacted by the airport expansion.
- 7.4.7 This work led to the follow up Community Engagement Sessions (CESs), which ran from November to December 2018, with surrounding communities that are the closest in proximity and will be impacted by the expansion:
1. Stanwell Moor;
 2. Harmondsworth;
 3. Poyle, Colnbrook and Brands Hill;
 4. Stanwell; and
 5. Sipson and Harlington;
- 7.4.8 The CESs' key objectives were:
1. To provide local communities with the opportunity to participate fully in the development of our masterplanning proposals;
 2. To develop a clearer understanding of local communities' views on the changes in their areas and how we can make them more appropriate - identify areas that need more detailed consideration; and
 3. To increase understanding of the rationale behind key infrastructure requirements.
- 7.4.9 Feedback from the community engagement workshops was targeted to the specific local communities with information which was relevant to them, such as pedestrian and cycle routes, green areas, nature of the road treatment, noise and visual buffers. This feedback has since been assimilated, incorporated and tested as part of the more detailed design development process and refinement for M5.



7.4.10 Figure 7.16 shows the ARD development and stakeholder engagement process throughout the Masterplan Scheme Milestones and Gateways.

Figure 7.16 ARD progression throughout the Masterplan Scheme Development Milestones and Gateways





- 7.4.11 Heathrow has continued to undertake consultation with HSPG and bi-lateral meetings with surrounding Councils, and to document key land use related feedback.

The Land Use Strategy Working Group (LUSWG)

- 7.4.12 The LUSWG was established as a multidisciplinary group to enable and lead evidence-based decision making on ARD land uses and to make recommendations on key land use decisions to inform the Masterplan Scheme.
- 7.4.13 The LUSWG brought together representatives from various teams, including the Integrated Design Team (IDT) and appropriate Task Orders, as well as Heathrow Commercial, Property, Legal, Community and Planning teams. The group focused primarily on ARD components, but with due regard to interfaces with other types of development, including ASF and displaced community facilities.
- 7.4.14 The Group developed the Land Use Decision Tree (LUDT), a decision-making tool to guide Heathrow in addressing issues around land use in a structured and coordinated manner.
- 7.4.15 The LUDT was separate to the previous 'Scale of Land Uses' and 'Location of Land Uses' evaluation process used during Airport Expansion Consultation One (January 2019). The scale and location of land uses was developed to identify the potential demand and sites for additional ARD as a result of the expanded airport. The LUDT was introduced to ensure rigorous, evidence-based decision making to the evaluation of land use quantum and sites which would help inform development of the Preferred Masterplan. A copy of the LUDT is included in Appendix A.

Assembly Options A

- 7.4.16 The ARD land use components were derived using early forecast outputs from the draft Lichfields reports, as well as outcomes from the scale and sites evaluation used at Airport Expansion Consultation One (January 2019), as an initial basis for Masterplan testing.
- 7.4.17 The Assembly Options A (AOAs) were informed by an initial assessment of Airport Expansion Consultation One (January 2019) feedback.
- 7.4.18 The key differences applied within AOA ARD land use strategy were as follows;
1. AO1A – with no West Landside Terminal Zone (LTZ), thus Passenger-Driven ARD (Hotels and Offices) was focused along the airport perimeter road;
 2. AO2A – with no West LTZ, thus Passenger-Driven ARD (Hotels and Offices) was focused along the airport perimeter road;



3. AO3A – sufficiently large West LTZ allows for Passenger-Driven ARD (Hotels and Offices), in addition to ARD sites balanced along the public transport spine; and
4. AO4A – sufficiently large West LTZ allows for Passenger-Driven ARD (Hotels and Offices) to be focused on the West LTZ and the Parkways.

- 7.4.19 The ARD land use strategy was to locate hotels and offices along the public transport spine or in areas of assumed mass transit connectivity to promote sustainable modes of transport. Warehouse type uses were preferred in locations to the south of the airport, in close proximity or adjacent to on and off airport cargo functions to create efficiencies by clustering uses of similar nature.
- 7.4.20 The Compass Centre was initially identified as an ARD displacement. However, as it accommodates Heathrow functions that are essential to the operation of the airfield, it was subsequently reallocated as an ASF item and thus the quantum demand for ARD was reduced accordingly.
- 7.4.21 Table 7.23 is a summary of Assembly Option version A ARD land use quantum supply (AOA 1 - 4).

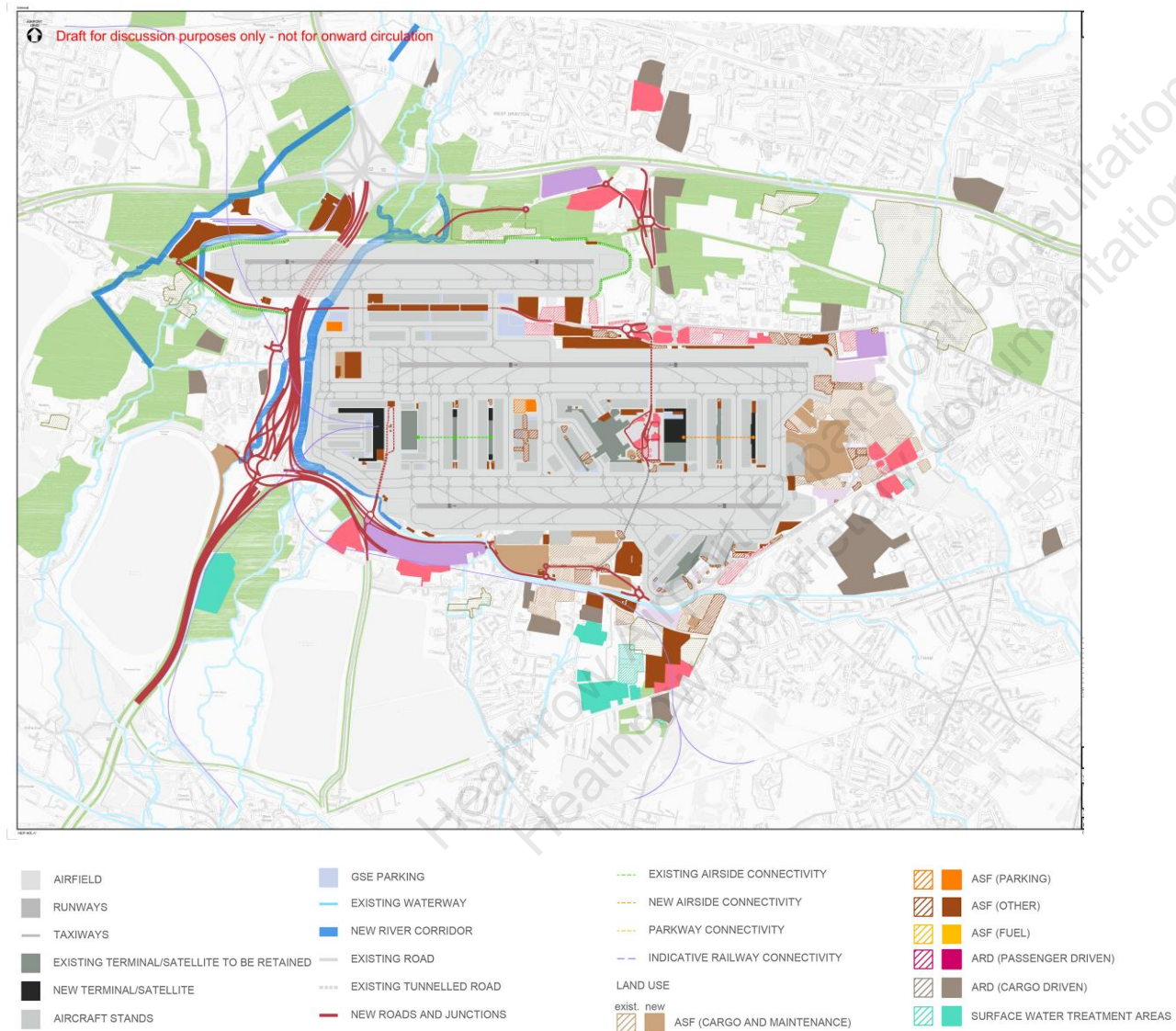
Table 7.23 AOA ARD Land Use Supply area schedule summary (new and displaced)

Land Use	Supply AO1A	Supply AO2A	Supply AO3A	Supply AO4A
ETSF	249,000 sqm	249,666 sqm	248,500 sqm	249,367 sqm
ETSF / Freight Forwarding Displacement	113,183 sqm	112,233 sqm	112,233 sqm	113,183 sqm
Maintenance (non-MRO)	8,291 sqm	8,291 sqm	7,917 sqm	7,917 sqm
Maintenance (non-MRO) Displacement	1,900 sqm	1,900 sqm	2,500 sqm	2,500 sqm
Hotels	6,193 keys	6,193 keys	6,325 keys	6,175 keys
Hotels Displacement	1,757 keys	1,757 keys	2,125 keys	2,125 keys
Offices	275,608 sqm	275,608 sqm	273,608 sqm	275,608 sqm
Offices Displacement	17,392 sqm	17,392 sqm	42,392 sqm	42,392 sqm

- 7.4.22 Each option is shown in Figure 7.17 to Figure 7.20.



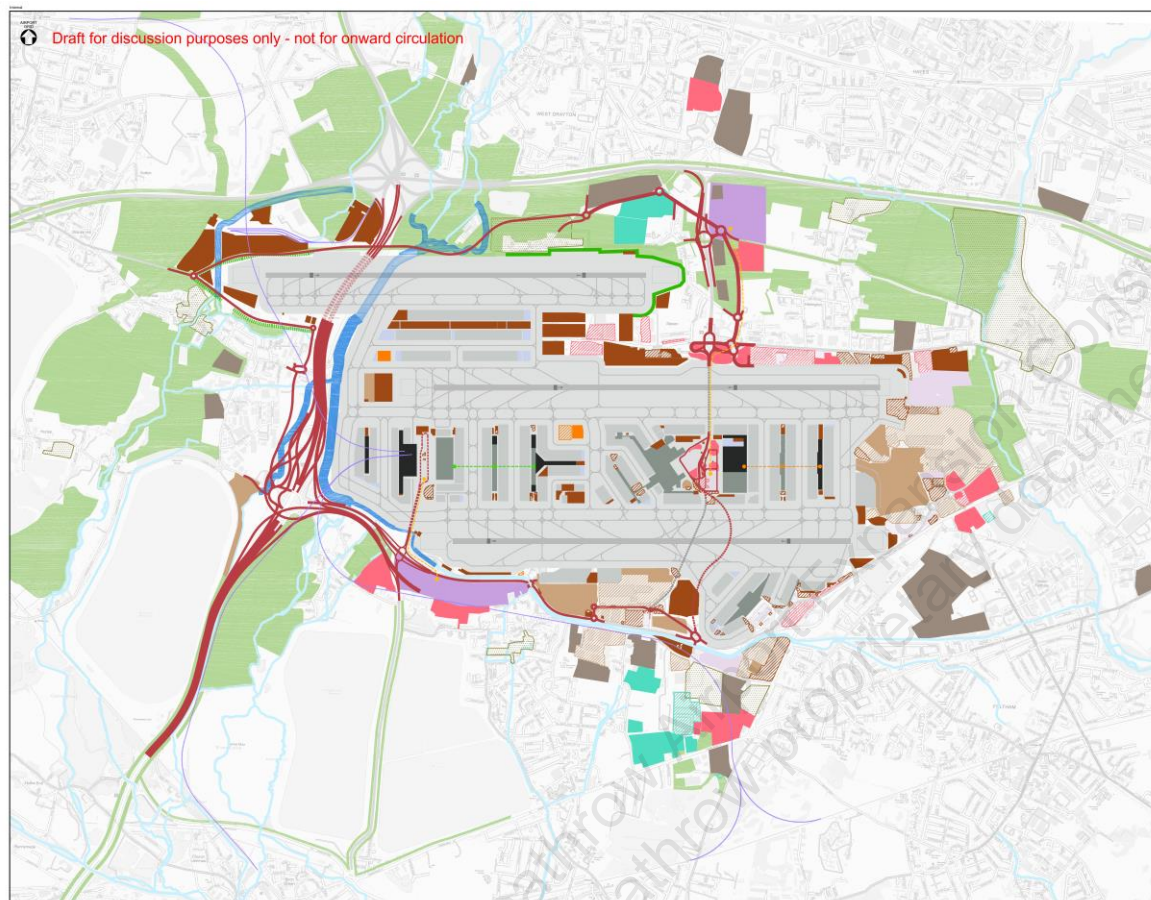
Figure 7.17 AO1A Illustrative Plan



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Figure 7.18 AO2A Illustrative Plan

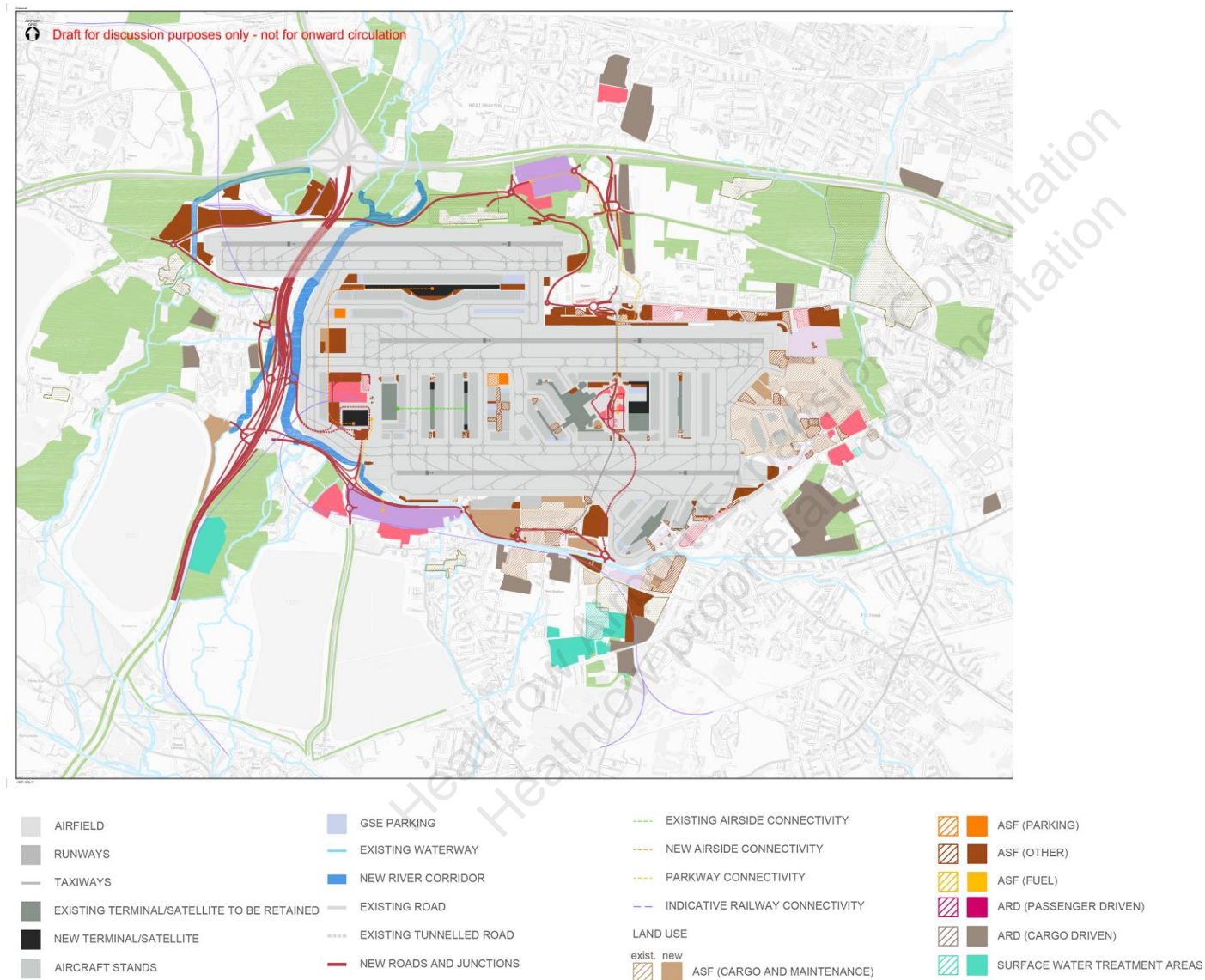


AIRFIELD	GSE PARKING	EXISTING AIRSIDE CONNECTIVITY	ASF (PARKING)	GREEN AREAS
RUNWAYS	EXISTING WATERWAY	NEW AIRSIDE CONNECTIVITY	ASF (OTHER)	CONSERVATION AREAS / SCHEDULED MONUMENTS
TAXIWAYS	NEW RIVER CORRIDOR	PARKWAY CONNECTIVITY	ASF (FUEL)	
EXISTING TERMINAL/SATELLITE TO BE RETAINED	EXISTING ROAD	INDICATIVE RAILWAY CONNECTIVITY	ARD (PASSENGER DRIVEN)	
NEW TERMINAL/SATELLITE	EXISTING TUNNELLED ROAD	LAND USE	ARD (CARGO DRIVEN)	
AIRCRAFT STANDS	NEW ROADS AND JUNCTIONS	exist new	SURFACE WATER TREATMENT AREAS	
		ASF (CARGO AND MAINTENANCE)		

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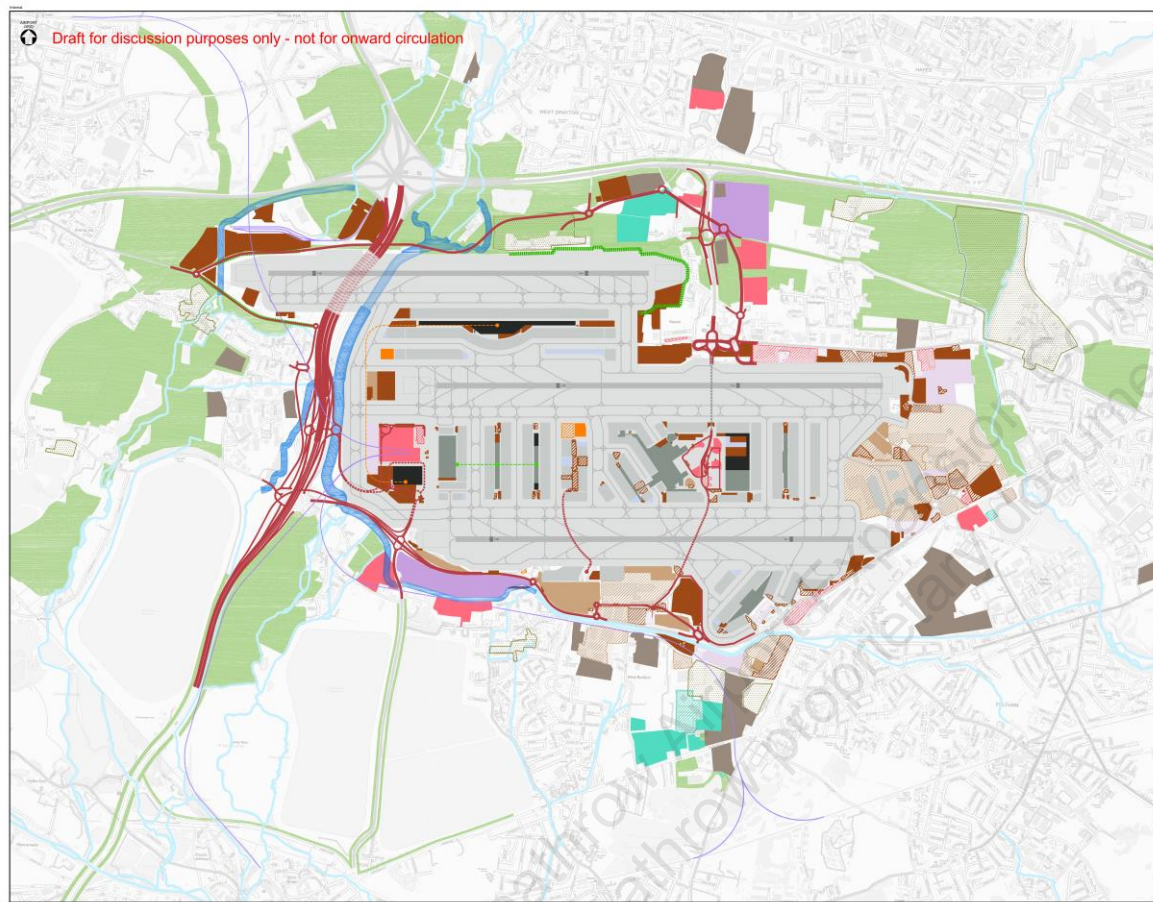
Figure 7.19 AO3A Illustrative Plan



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Figure 7.20 AO4A Illustrative Plan





Assembly Options Evaluation 1

- 7.4.23 AOA evaluation included land use feedback from Heathrow's evaluation disciplines; Business Case, Operations and Service, Communities, Planning, Sustainability, Property and Delivery. The primary outcomes were fed back to the relevant disciplines to inform the Masterplan process and the further refinement of options using the LUDT process Stage 2 and 3 testing.
- 7.4.24 Evaluation 1 identified the following key outcomes when considering the preferred land use strategy:
1. Focus hotels and offices in West LTZ in order to have a good land use efficiency and small commercial area;
 2. Preference for least overall Green Belt loss; and
 3. Refine the concentration of off-airport land uses.
- 7.4.25 AOA marked part of the M3A Milestone, which confirmed the shortlist of Masterplan options which would be taken forward for detailed Masterplan evaluation.
- 7.4.26 Following Evaluation 1, the ANPS was designated and full Airport Expansion Consultation One (January 2019) feedback was available. The Assembly Options version B included updates based on the learning from these two sources as well as the learning from the first evaluation, stakeholder engagement and further design development.

LUDT Stage 1

- 7.4.27 Stage 1 of the LUDT started at the same time as the M3a milestone and considered the potential types and quanta of ARD to determine if they should be included in the DCO application, by applying the associated development (AD) principles set out in Government guidance. The ARD land use typologies considered at Stage 1 of the LUDT were those relevant uses as identified in the Lichfields Employment Land Forecasting Study (ELFS) Stage 1 and Stage 2 Reports (March 2018), in addition to the hotel pipeline sensitivity analysis (May 2018), having regard to the outcomes from the Scale of Land Uses evaluation. The typologies comprised:
1. External Temporary Storage Facility (ETSF)
 2. Freight Forwarding (FF)
 3. Logistics
 4. Maintenance (Non-MRO)



5. Manufacturing
6. Terminal and Bus Linked Hotels
7. Wider Hotels
8. Small Scale Local Offices
9. Supply Chain Offices
10. International Offices

- 7.4.28 The typologies were subject to some updates during the LUDT process as explained later in this chapter.
- 7.4.29 The ELFS considered the potential scale of airport related employment land uses up to 2040 across a range of sectors associated with the current and future operations of Heathrow airport.
- 7.4.30 Following the Preferred Assembly validation at M3C, the demand forecasts were extended from 2040 to 2050 and the M4 Preferred Masterplan adapted to cater for a capacity of 142 million passengers per annum (mppa) by 2050. The M3C Masterplan had a capacity of 135mppa at 2035. As the Lichfield's forecast for proposed ARD land uses was based upon a capacity of 130mppa by 2040, it is now being updated to reflect the increased capacity in the Preferred Masterplan. No additional ARD land uses are incorporated in the M4 Preferred Masterplan over and above that provided in the Preferred Assembly Masterplan assessed at M3C – further detail is provided in section 7.5.
- 7.4.31 The outcomes of Stage 1 of the LUDT for ARD are set out in Table 7.24.

Table 7.24 Summary of the outcomes of Stage 1 of the LUDT for ARD

ARD land use	Total maximum end state demand forecast based upon Lichfields ELFS March 2018 and September 2018 (GEA sqm / rooms)	LUSWG Stage 1 max. ARD quantum forecast (based on Lichfields reports March 2018 and hotel updates in September 2018) to be included within the Stage 2 illustrative distribution plan (GEA sqm / rooms)
External Temporary Storage Facility (ETSF)	543,195 sqm	439,988 sqm
Freight Forwarding (FF)	111,914 sqm	0 sqm
Logistics	468,093 sqm	0 sqm
Maintenance (Non-MRO)	27,971 sqm	13,985 sqm
Manufacturing	52,029 sqm	0 sqm



ARD land use	Total maximum end state demand forecast based upon Lichfields ELFS March 2018 and September 2018 (GEA sqm / rooms)	LUSWG Stage 1 max. ARD quantum forecast (based on Lichfields reports March 2018 and hotel updates in September 2018) to be included within the Stage 2 illustrative distribution plan (GEA sqm / rooms)
Terminal & Bus Linked Hotels	7,645 rooms [Terminal-linked hotel: 2,704 rooms. Bus-linked hotels: 4,941 rooms]	7,645 rooms
Wider Hotels	580 rooms	0 rooms
Small Scale Local Offices	38,640 sqm	0 sqm
Supply Chain Offices	78,540 sqm	46,282 sqm
International Offices	228,666 sqm	0 sqm
TOTAL	1,549,048 sqm / 8,225 rooms	500,255 sqm / 7,645 rooms

- 7.4.32 The Stage 1 outcomes concluded that some ARD land use categories would not satisfy the Associated Development (AD) principles set out in Government guidance and hence would not be progressed in the DCO application. For those uses that would pass the AD principles, consideration was given to the potential scale of the use that should be advanced to Stage 2 and 3 of the LUDT. Early consideration was given to a range of factors including ensuring that a sufficient scale was provided to satisfy the growth requirements of expansion, whilst recognising the role of the Local Plan process to strategically plan for wider growth over a long time period. It was noted that this would be subject to further engagement and evidence gathering.
- 7.4.33 In addition to new demand, Stage 1 also assessed the scale of demolished ARD uses that should be included in the Illustrative Distribution Plan (IDP) as re-provided floorspace and tested at Stages 2 and 3.
- 7.4.34 Heathrow identified a number of 'major displaced uses' that will be impacted by expansion which, due to their particular characteristics, required individual consideration. As a result, these uses were not considered as part of the Stage 1 displacement quantum and were instead considered individually outside of the LUDT process by Heathrow Property, albeit in parallel. These uses included:
1. BA Waterside (see Document 4 Chapter 6 Commercial Displacements);
 2. Harmondsworth and Colnbrook Home Office Immigration Removal Centre (see Document 4 Chapter 5 IRC Home Office Immigration Removals);
 3. Lakeside Waste Management Facilities (see Document 4 Chapter 6 Commercial Displacements);
 4. BT Data Centre and Maintenance Depot (see Document 4 Chapter 6 Commercial Displacements);



5. Total Fuel Depot Centre (see Document 4 Chapter 8 ASF Airport Supporting Facilities); and
6. Aggregate Industries (see Document 4 Chapter 6 Commercial Displacements).

7.4.35 Discussions were undertaken with the operator and consideration was given to whether replacement (in full or part) would satisfy Associated Development tests, similar to those used in LUDT Stage 1.

7.4.36 Table 7.25 provides a summary of the demolished floorspace that was assumed, at that time, for inclusion within Stages 2 and 3 of the LUDT process. It represents the quantum of existing ARD that the LUSWG considered potentially appropriate to replace and therefore include in the DCO.

Table 7.25 Summary of the demolished ARD floorspace assumed for inclusion within Stages 2 and 3 of the LUDT process

Use / Operation	Initial estimated scale of ARD uses demolished as a result of expansion (sqm GEA / rooms)	LUSWG Stage 1 demolished ARD uses to be included within the Stage 2 IDP (sqm GEA / rooms)
ETSF / FF Displacement	c.135,000sqm	93,959sqm
Office	c.50,000sqm	46,050sqm
Hotels	3,024 rooms	3,024 rooms
TOTAL	c.245,000sqm and 3,024 rooms	140,009sqm and 3,024 rooms

7.4.37 The rationale to the decision making is summarised below:

1. Heathrow supplied property-related data detailing estimated existing floorspace and land use across a series of parcels, obtained from available third-party sources;
2. The data was reviewed against the emerging assembly options to identify where the floorspace / buildings may be affected by expansion;
3. A schedule was produced recording where a use / floorspace may be lost due to expansion, though the source information was not exhaustive, and some gaps existed in the data set that can only be updated as the project progresses;
4. The schedule was assessed at high-level to identify those buildings / uses / floorspace where replacement was likely to be necessary and had potential to satisfy AD principles for re-provision within the DCO;
5. A shortlist of potential uses / floorspace that may be re-provided as part of the DCO was identified and challenged against the AD tests; and



6. A refined list of demolished uses / floorspace was recorded and factored into the LUDT Stage 1 process, with updates necessary once accurate property data was available, having regard to the latest Masterplan.

7.4.38 The Stage 1 process resulted in a defined quantum of new and replacement ARD being advanced for testing within Stages 2 and 3. This represents the net total following Stage 1 testing, i.e. the ELFS overall total forecast demand and the total quantum of ARD estimated to be displaced and is shown in Table 7.26.

Table 7.26 The net total following Stage 1 testing

LUSWG Stage 1 ARD New Demand for inclusion in Stage 2 (sqm GEA)	
ETSF	439,988 sqm
Maintenance (Non-MRO)	13,985 sqm
Terminal & Bus Linked Hotels	7,645 rooms
Supply Chain Offices	46,282 sqm
TOTAL	500,255 sqm / 7,645 rooms
LUSWG Stage 1 ARD Demolished for inclusion in Stage 2 (sqm GEA)	
ETSF / FF Displacement	93,959sqm
Office	46,050 sqm
General Hotels	3,024 rooms
TOTAL	140,009 sqm / 3,024 rooms
OVERALL TOTAL	640,264 sqm / 10,669 rooms

- 7.4.39 The relative priority and scale of each land use was also considered, based on operational importance and any appropriate policies (e.g. the Home Office Immigration Removal Centres). This provided guidance to the masterplanning team when distributing the Stage 1 quanta across potential development sites. A copy of the Land Use Hierarchy Table is contained in Appendix B.
- 7.4.40 Distribution and density principles were also identified for ARD uses based on operational requirements and locational preferences (see Appendix C: Distribution of Principle Plans and Capacity Testing Methodology). These principles, which were identified for new forecast demand and displaced provision, were prepared to inform LUDT Stages 2 and 3.

LUDT Stage 2 and 3 testing post Evaluation 1

- 7.4.41 In line with the LUDT process, following the completion of Stage 1, the next step was for the Masterplanning Team to prepare an IDP (LUDT Stage 2) based on the outputs from Stage 1.
- 7.4.42 The team had already independently prepared two base schemes representing the latest design optioneering for the core primary aviation infrastructure. The



schemes contained differing distribution of aprons and terminal configurations for the West LTZ with one favouring expansion north and the other favouring expansion west. These were used as a starting point to apply the outcomes of LUDT Stage 1 and create the initial IDPs for testing.

- 7.4.43 The airport expansion sites used in the schemes were primarily those identified as potentially suitable locations to accommodate ASF and ARD at Airport Expansion Consultation One (January 2019). Further sites were added as a result of Airport Expansion Consultation One (January 2019). feedback, as well as responses following engagement with HSPG and other stakeholders. This also informed the preparation of the IDPs.

LUDT Stage 3

- 7.4.44 Stage 3 commenced in June 2018 with an assessment of the IDTs against a series of planning-related tests. The test questions are summarised below:

1. Does the use fall within the Annex A red line boundary of the ANPS? If not, is there a robust justification for its inclusion (given its location outside the red line)?
2. Do the proposals make best use of the site and, if the site is located within the Annex A red line, do the proposals make best use of such land?
3. If the proposals are in the Green Belt, is it likely that very special circumstances can be demonstrated?
4. Are there other development control issues that affect the suitability of the site for the nature and scale of the development proposed?
5. Is it appropriate to include the development within the DCO or could its development be left to others to deliver within programme (such as the landowner, other developers or the operation of the market)?
6. If compulsory acquisition powers are necessary for a particular site, is there a compelling case in the public interest to justify the use of those powers?

- 7.4.45 If a site or land use could potentially fail one of the tests, the IDPs were reviewed to consider whether the use could be re-distributed as appropriate elsewhere (based on the priority and location requirements of that land use) and re-tested accordingly. This process was intended to sieve out those land uses or sites which would present a risk if included in the DCO application.

- 7.4.46 The IDPs cover a range of options with different balances of benefits and impacts, and it was necessary to test a range to help inform on the next steps. The IDPs were thus a tool for decision making rather than being the decision on a final Masterplan.



- 7.4.47 To facilitate the Masterplan development and determine the scale of provision allowed for ARD, the Stage 2 and 3 process resulted in two alternative land use scenarios;
1. 'Lean' or low land use scenario – a strategy that minimises the scale of ARD included in the DCO and leaves a larger quantum to be delivered by the market, guided updated local plans; and
 2. 'Striving to Meet Demand' or high land use scenario – inclusion of a land use quantum and / or development sites that increases the quantum of ARD delivered in the DCO, leaving a lower quantum to be delivered by the market. This would increase Heathrow's control over delivery and offers potential commercial benefits but might increase planning risks.

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Assembly Options B

- 7.4.48 In line with the Assembly Option testing process (M3B gateway) for the wider airport infrastructure, the team produced four IDPs as AOBs (two for each land use scenario) based on the Stage 1 outcomes. Each scenario was applied to the two growth priority options to the west of T5 (Westerly Apron option) and to the north of the existing northern runway (Northerly Apron option).
- 7.4.49 The approach adopted in the AOBs can be broadly summarised as follows;
1. AO1B - 'Lean' Strategy – Westerly Growth Option
 2. AO2B - 'Striving to Meet Demand' - Westerly Growth Option
 3. AO3B - 'Striving to Meet Demand' - Northerly Growth Option
 4. AO4B - 'Lean' - Northerly Growth Option
- 7.4.50 Table 7.27 is a summary of AOB ARD land use quantum supply.

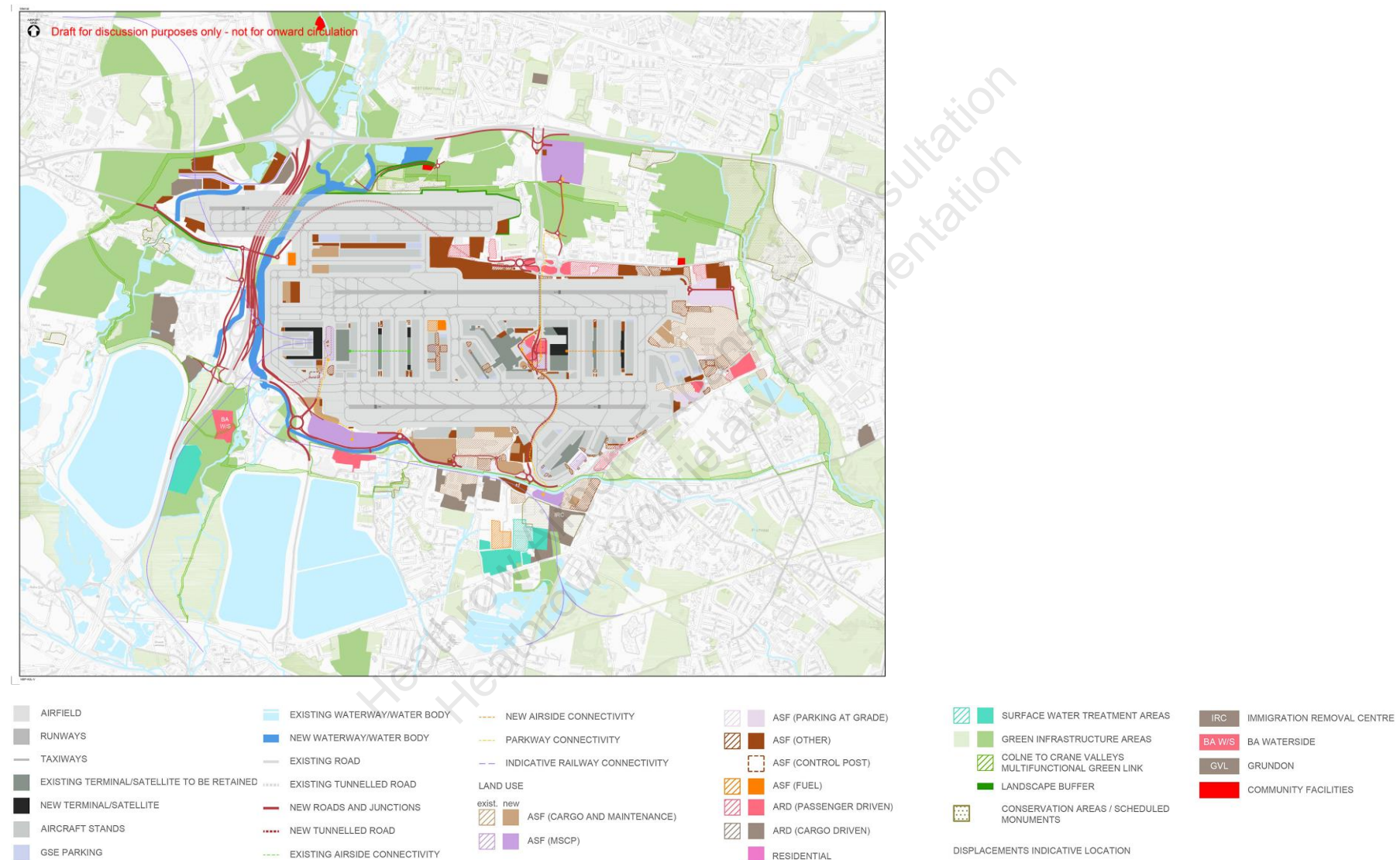
Table 7.27 Summary of Assembly Option version B ARD land use quantum supply (AOB 1 - 4)

Land Use	Supply AO1B	Supply AO2B	Supply AO3B	Supply AO4B
ARD ETSF	128,732 sqm	345,731 sqm	439,434 sqm	109,170 sqm
ARD ETSF / Freight Forwarding Displacement	64,292 sqm	64,292 sqm	68,248 sqm	84,491 sqm
Hotels	5,949 rooms	7,645 rooms	7,645 rooms	7,645 rooms
Hotels Displacement	2,051 rooms	2,051 rooms	1,502 rooms	1,796 rooms
Offices Displacement	30,425 sqm	30,425 sqm	30,425 sqm	30,425 sqm

- 7.4.51 Each option is shown in Figure 7.21 to Figure 7.24.



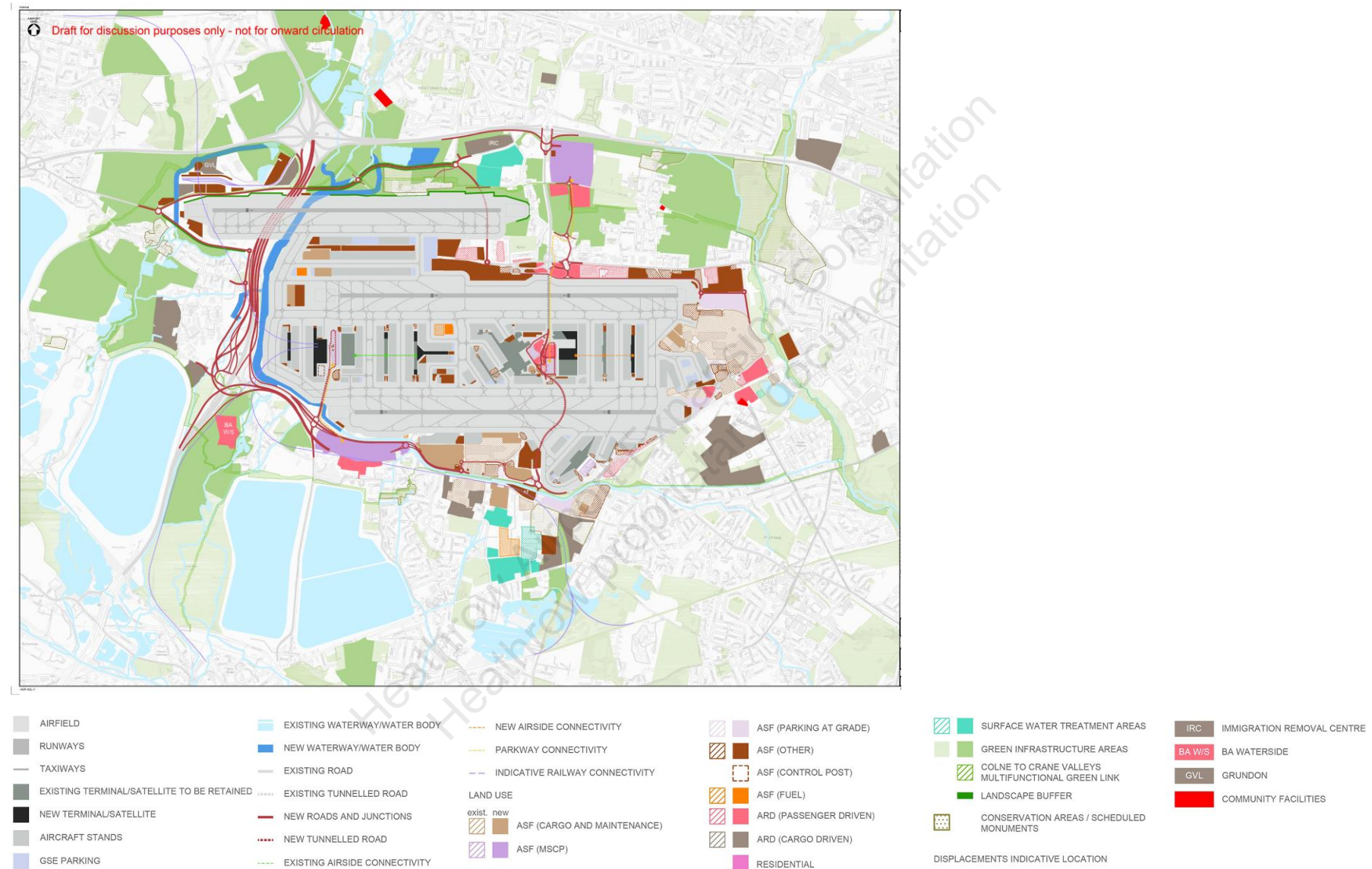
Figure 7.21 AO1B Illustrative Plan



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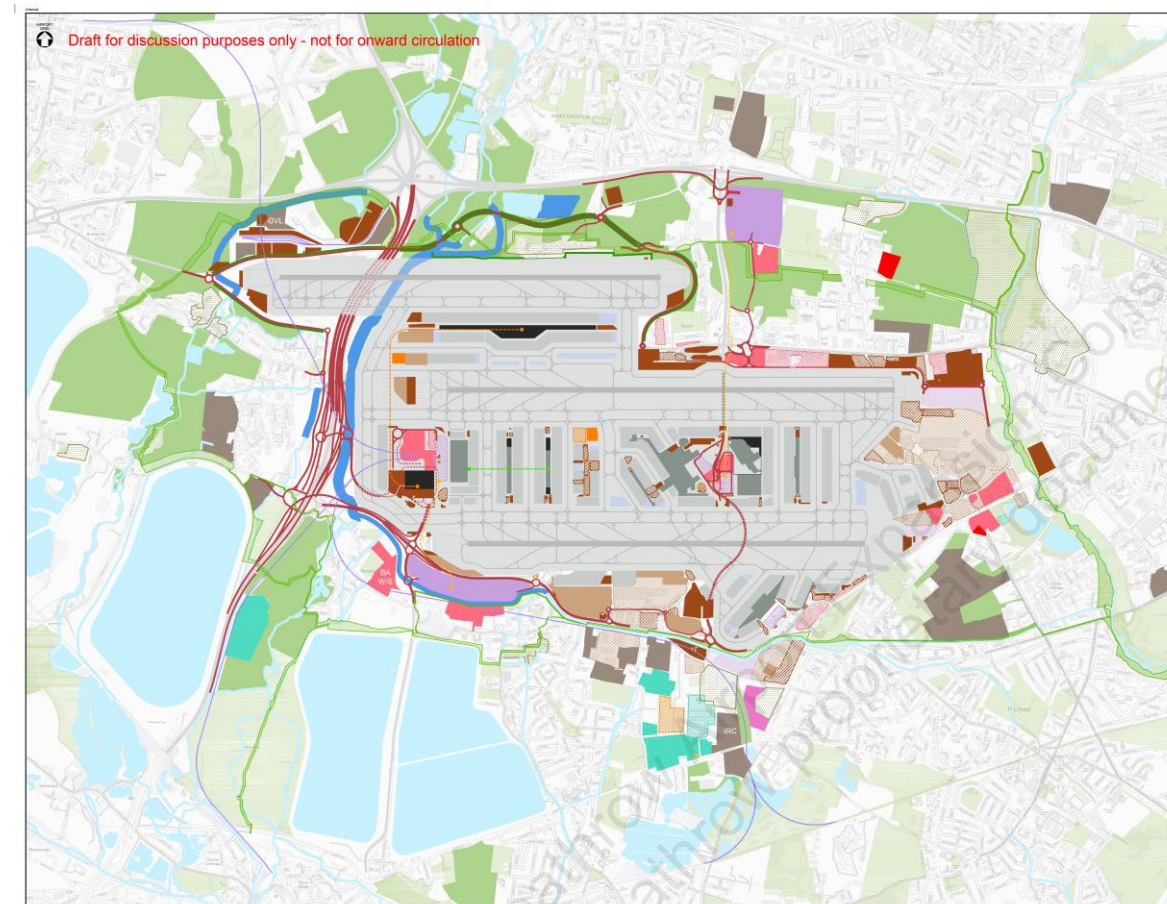
Figure 7.22 AO2B Illustrative Plan



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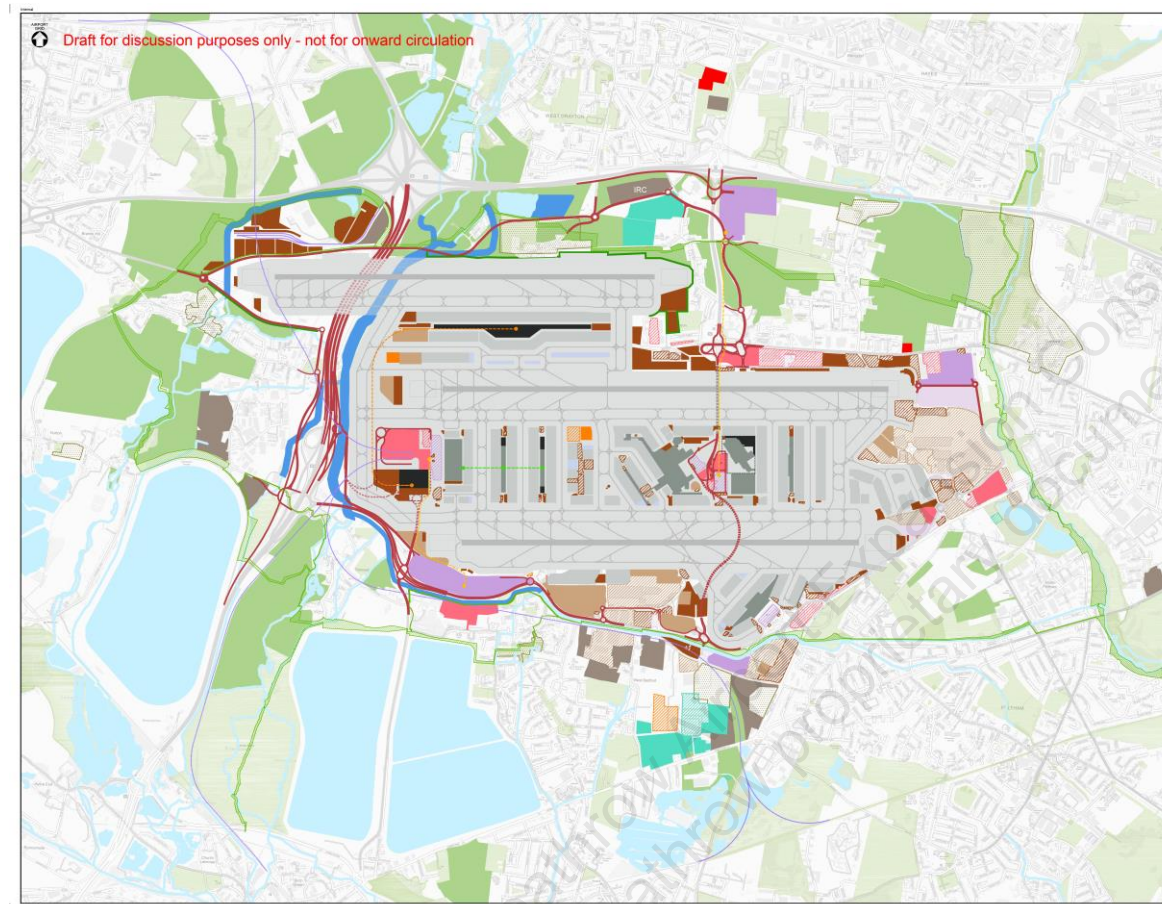
Figure 7.23 AO3B Illustrative Plan



AIRFIELD	EXISTING WATERWAY/WATER BODY	NEW AIRSIDE CONNECTIVITY	ASF (PARKING AT GRADE)	SURFACE WATER TREATMENT AREAS	IRC IMMIGRATION REMOVAL CENTRE
RUNWAYS	NEW WATERWAY/WATER BODY	PARKWAY CONNECTIVITY	ASF (OTHER)	GREEN INFRASTRUCTURE AREAS	BA W/S BA WATERSIDE
TAXIWAYS	EXISTING ROAD	INDICATIVE RAILWAY CONNECTIVITY	ASF (CONTROL POST)	COLNE TO CRANE VALLEYS MULTIFUNCTIONAL GREEN LINK	GVL GRUNDON
EXISTING TERMINAL/SATELLITE TO BE RETAINED	EXISTING TUNNELLED ROAD	LAND USE	ASF (FUEL)	LANDSCAPE BUFFER	COMMUNITY FACILITIES
NEW TERMINAL/SATELLITE	NEW ROADS AND JUNCTIONS	exist. new ASF (CARGO AND MAINTENANCE)	ARD (PASSENGER DRIVEN)	CONSERVATION AREAS / SCHEDULED MONUMENTS	
AIRCRAFT STANDS	NEW TUNNELLED ROAD	ASF (MSCP)	ARD (CARGO DRIVEN)		
GSE PARKING	EXISTING AIRSIDE CONNECTIVITY		RESIDENTIAL		

DISPLACEMENTS INDICATIVE LOCATION

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Assembly Option Evaluation 2

- 7.4.52 The evaluation testing of multiple options enabled slight variations in the ARD land use strategy to be applied. This approach provided the LUSWG with a wider range of feedback from the evaluation disciplines, which informed the land use decision making in the preparation of the Preferred Assembly.
- 7.4.53 AOB Evaluation identified the following key outcomes when considering the preferred LUS;
1. General preference for a 'lean' land use approach from a majority of the disciplines;
 2. Focus hotels and offices in West LTZ / CTA or on public transport spine; and
 3. Preference for ETSF / Freight Forwarding (new and displaced) to focus on the south and south east of the airport

Preferred Assembly

- 7.4.54 At this stage, the ELFS Stage 2 growth forecasts had been updated twice since March 2018; firstly, in May 2018 to account for pipeline hotels (as taken into account at LUDT Stage 1) and secondly, in November 2018 in respect of cargo-related uses. The latter occurred just after Evaluation 2. The original ELFS was based on certain cargo sector classifications. Lichfields was asked to review the assumptions applied, in particular the definitions for categories within the cargo sector, and they simplified the definitions as shown in Table 7.28. The Lichfields updates led to ETSF as a separate ARD land use category being incorporated within 'Freight Forwarding'.



Table 7.28 Lichfields definitions within the cargo sector, shown in GIA

Heathrow Typology	Original Categories - Lichfields ELFS Stage 1 (March 2018)	Forecast Demand - Lichfields ELFS Stage 2 (March 2018) GIA	Revised Categories – Lichfields (November 2018)	Forecast Demand – Lichfields (Nov. 2018) GIA
ASF	ITSF – a Government approved cargo facility inside the customs-controlled area of the airport.	113,307sqm	Transit Shed Operations - buildings located on or near (remote) the airside boundary and used for short-term storage of cargo in transit.	172,295sqm
ARD	ETSF – a Government approved facility situated outside the customs -controlled area of the airport.	517,329sqm	Freight Forwarding - focuses on freight forwarders including many of the activities that had previously been included under ETSF.	275,433sqm
ARD	Freight Forwarding - operations where goods are stored / processed before / after the completion of the necessary regulatory procedures.	106,585sqm		
ARD	Logistics – warehousing that directly interfaces with the airport or whose choice to occupy space within the assessment area is based on its proximity to Heathrow.	445,803sqm	Logistics - warehousing that directly interfaces with the airport or whose choice to occupy space within the assessment area is based on its proximity to Heathrow.	363,622sqm
	TOTAL GIA	1,183,024sqm		811,350sqm

7.4.55 The overall level of forecast demand is lower than Lichfields originally identified due to the revised categorisation, moving some existing data to different cargo categories, and revisions to forecast methodology. The updated methodology for freight forwarding and other airport related logistics, linked to import-export flows rather than total cargo volume, led to an overall reduction in future forecasts.

7.4.56 Based on the Stage 2 and 3 outcomes, the Evaluation 2 discipline feedback and updates to the Lichfields forecasts, it was recommended that the lean land use scenario was applied in principle as the Preferred Assembly.

7.4.57 Table 7.29 summarises the Preferred Assembly ARD land use quantum supply.



Table 7.29 The Preferred Assembly ARD Land Use Supply area schedule summary (new and displaced)

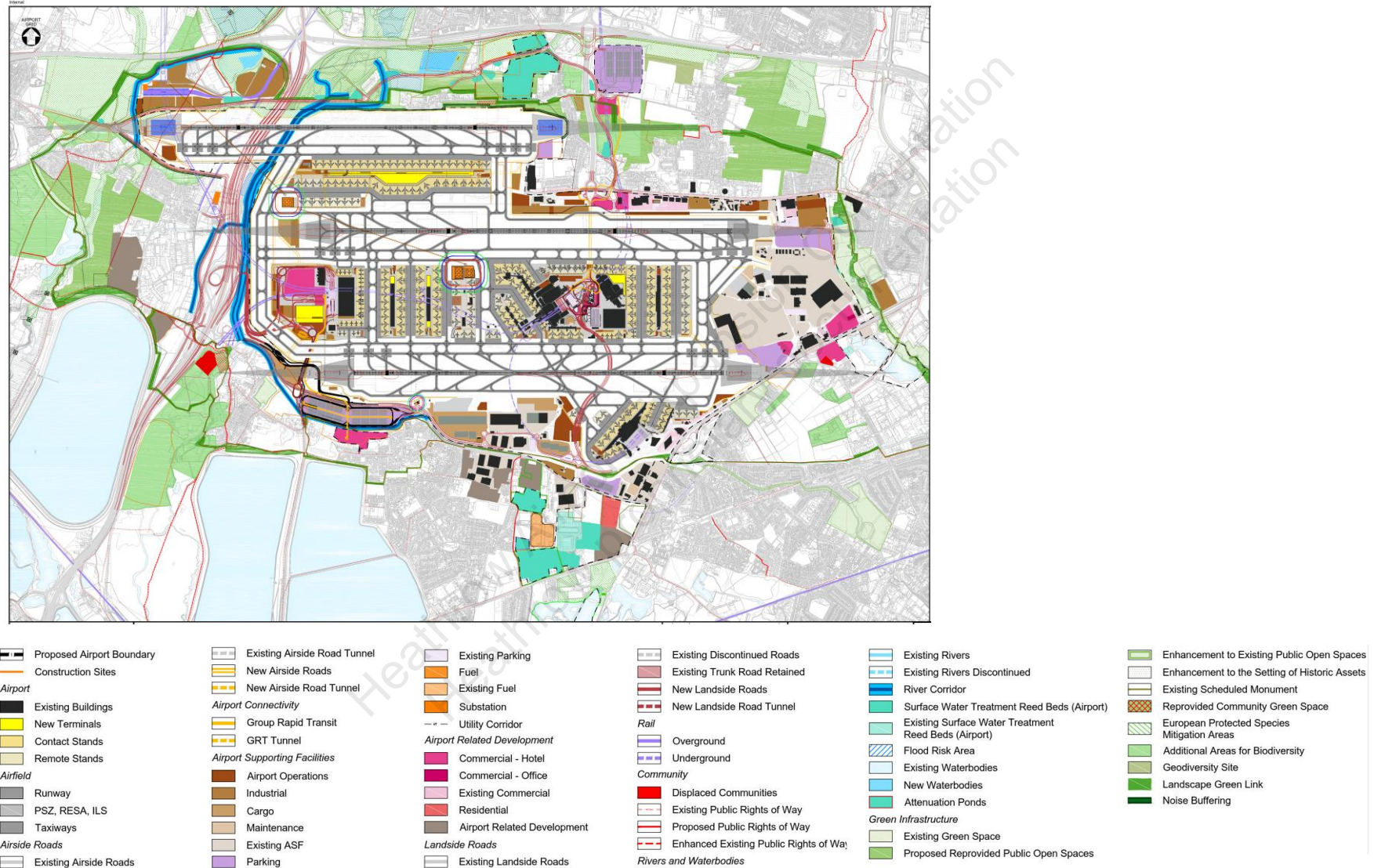
Land Use	Supply the Preferred Assembly
Freight Forwarding	50,816 sqm
Freight Forwarding Displacement	87,972 sqm
Hotels	7,239 rooms
Hotels Displacement	1,796 rooms
Offices Displacement	30,425 sqm

7.4.58 Figure 7.25 shows the Preferred Assembly Illustrative Plan.

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Figure 7.25 The Preferred Assembly Illustrative Plan





The Preferred Assembly

- 7.4.59 The Preferred Assembly went through validation at M3C to be assessed against criteria including affordability and phasing. This process refined some airfield components to create better assemblies and the right phasing selection to ensure that the Preferred Masterplan is affordable and deliverable. These had a consequential impact on the ARD quanta accommodated which was considered against, and was consistent with, LUDT principles.
- 7.4.60 In most cases the impacts resulted in a shortfall of quantum on the Preferred Masterplan in comparison to the Preferred Assembly. The key ARD changes that occurred were:
1. Retention of more existing commercial developments (and a consequent reducing in the uses to be replaced);
 2. Revisions to land use strategy to respond to community feedback, e.g. ARD to south of Southern Parkway removed and changed to landscaping; and
 3. Southern Perimeter road moved to the north of the Southern Parkway.

The Preferred Masterplan

- 7.4.61 As stated in section 7.4.30, the M4 Preferred Masterplan has been adapted to cater for a capacity of 142mppa by 2050 (the preferred assembly had a capacity of 135mppa at 2035). The Lichfields forecast for proposed ARD land uses was based upon a capacity of 130mppa by 2040; this is being updated to reflect the increased capacity in the Preferred Masterplan.
- 7.4.62 While the Preferred Masterplan allows for the increase in passenger numbers to 2050, it does not include any additional ARD land uses, though the quantum and phasing of ARD is considered to be appropriate. The scale of ARD within the Preferred Masterplan considered the quantum potentially appropriate for the DCO application, having regard to masterplanning and sustainability, as well as balancing securing the necessary quantum to support the airport expansion construction programme against the broader Local Plan process to deliver strategic growth over a longer period.
- 7.4.63 The main ARD changes from Milestone M3C to M4 Gateway are summarised below;
1. Overall reduction in Freight Forwarding quantum as a result of the following factors;
 - a. Reduction in site boundary at the cargo site west of Poyle Industrial Estate due to the inclusion of utilities in the same area, this is to retain the integrity of Colne Valley Regional Park;



- b. Discontinuing sites that are considered challenging in planning terms and do not accord with Heathrow's Surface Access Strategy, i.e. development zone Q05 (north of the M4);
 - c. The introduction of multi-storey typology for sites that are less sensitive, resulting in the balance from the loss outlined above;
2. ARD hotels and offices on-airport quantum has been reduced at some sites as a result of further refinement of LTZ and associated infrastructure requirements, e.g. roads;
3. ARD hotels and offices off-airport quantum has been reduced at sites due to competing land use requirements (for example where a site has been identified as required for open space re-provision or landscape mitigation) and in response to the following comments;
 - a. HSPG feedback;
 - b. LPA bi-lateral engagement feedback;
 - c. Community Feedback from engagement; and
 - d. Design Council feedback.

7.4.64 Table 7.30 is a summary of the Preferred Masterplan ARD land use quantum at 142mppa supply.

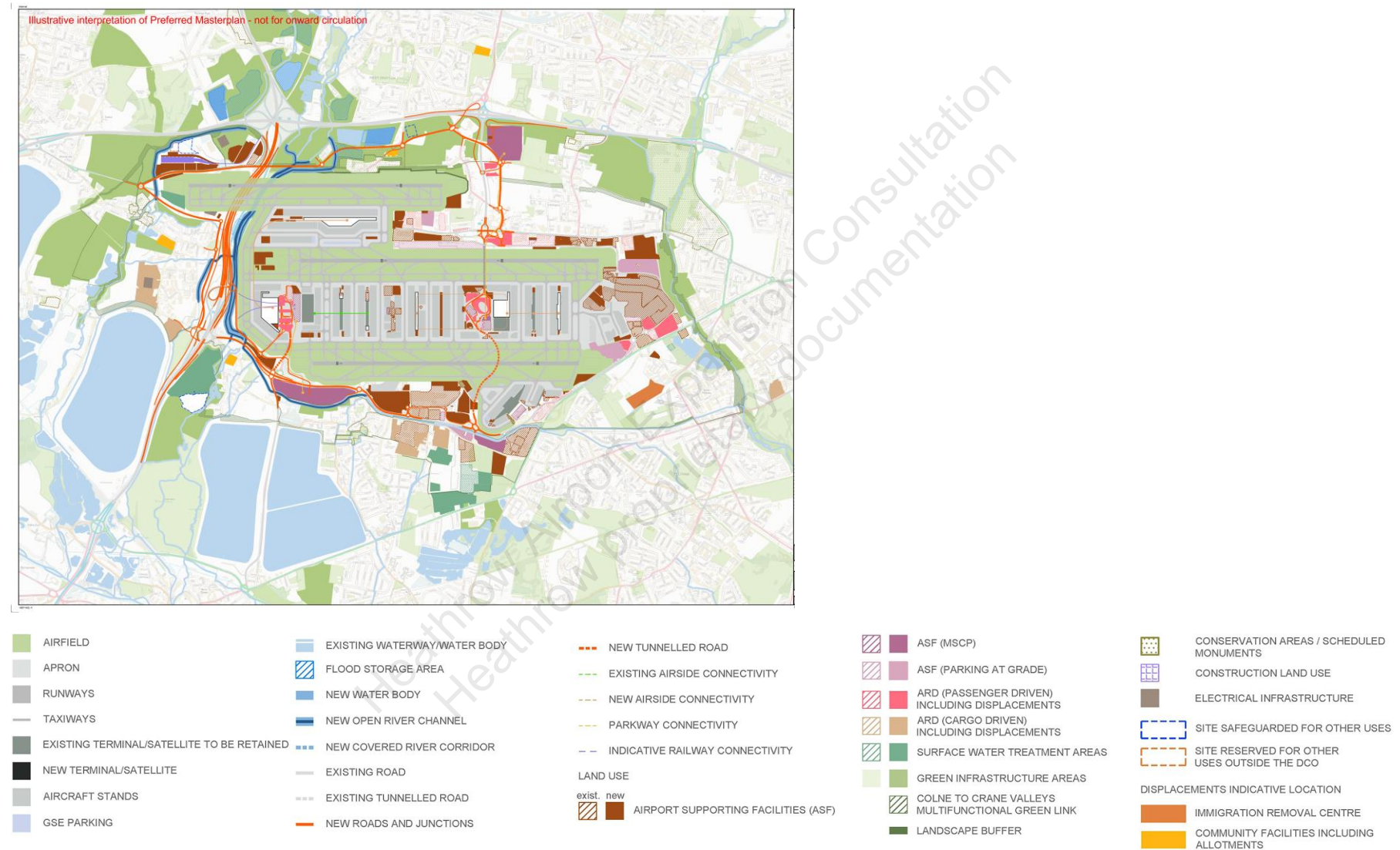
Table 7.30 The Preferred Masterplan ARD Land Use Supply area schedule summary (new and displaced)

Land Use	Supply for the Preferred Masterplan
Freight Forwarding & Freight Forwarding Displacement	148,106 sqm
Hotels	5,950 rooms
Hotels Displacement	1,446 rooms
Offices Displacement	20,513 sqm

7.4.65 Figure 7.26 shows the Preferred Masterplan Validation plan.



Figure 7.26 The Preferred Masterplan illustrative plan for ARD





- 7.4.66 This document will be updated in the light of Airport Expansion Consultation (June 2019) to incorporate any changes which emerge to the Masterplan relating to ARD land uses. The ARD Masterplanning Team will continue to cover the Masterplan Finalisation stage, supported by Airport Expansion Consultation (June 2019) feedback and on-going environmental assessment to refine and define appropriate mitigation for the effects of the Masterplan on communities and the environment to M5 Gateway.
- 7.4.67 Stage 4 includes both M4 (Preferred Masterplan for Airport Expansion Consultation June 2019) and M5 (Masterplan for DCO) Gateways. This stage will conclude with the submission of the DCO application.

7.5 *Next Steps*

- 7.5.1 This Updated Scheme Development Report documents the work done so far in developing our Preferred Masterplan. This consultation is an opportunity for local communities and the general public to have their say. Following this consultation, we will continue to refine our Preferred Masterplan and our proposals for how the Project is constructed and operated. This refinement will take into account the feedback we receive as part of this Consultation, as well as ongoing engagement with our stakeholders. Our refined scheme will then form the basis for our submission for a Development Consent Order.
- 7.5.2 Expansion is an important opportunity to build a long term, sustainable legacy for our local communities. This consultation is a key milestone in the delivery of this critical national infrastructure project. We are confident that this collaborative approach to produce our final plans will deliver a fairer future Heathrow.



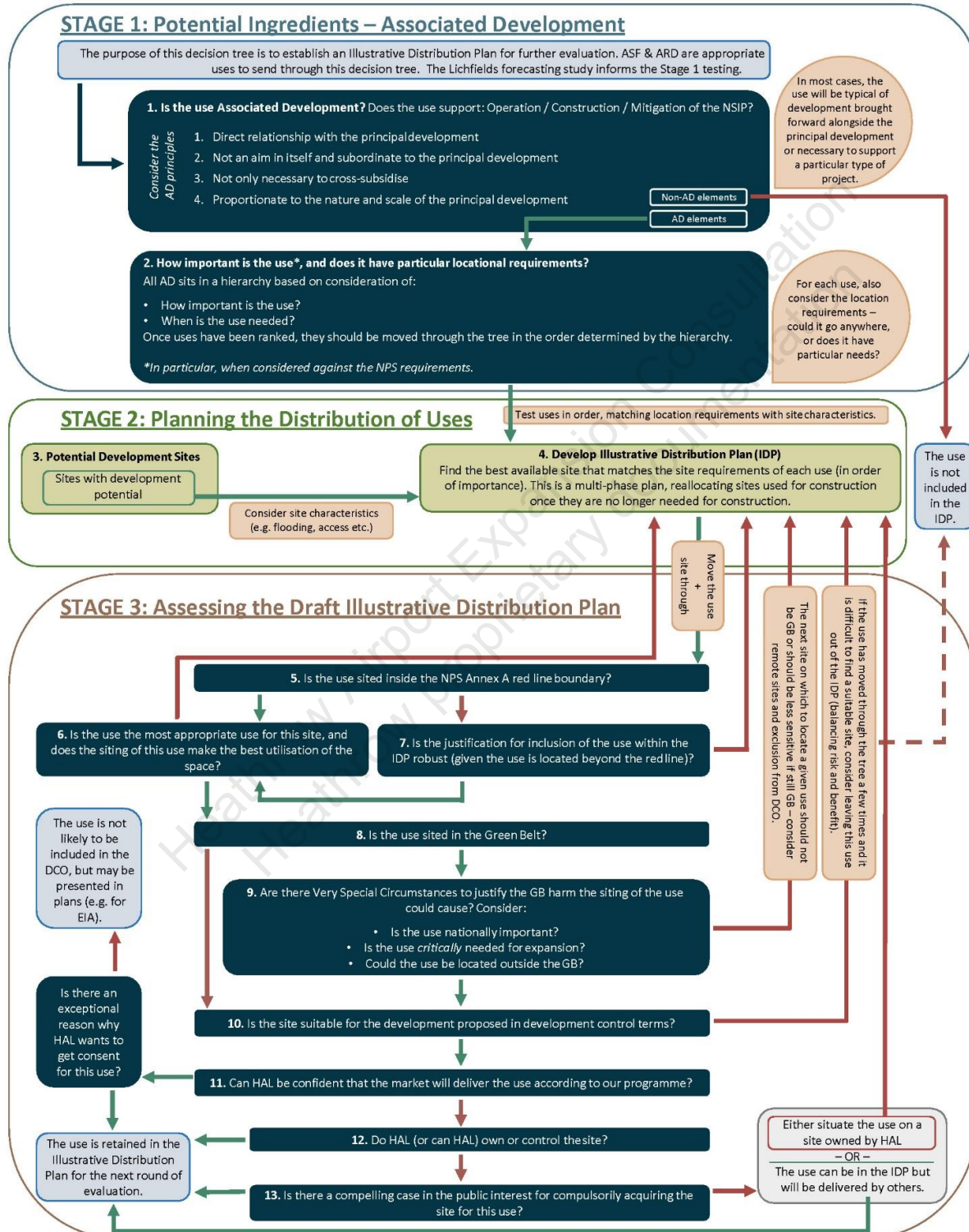
7.6 Appendices

Appendix A: Land Use Decision Tree process

Classification: Internal

LAND USE DECISION TREE

[to inform an illustrative distribution plan pending the outcome of Consultation 1]





Appendix B: ARD Land Use Hierarchy Table – LUDT Stage 1

Rank	Land Use Type	Land Use Category
1	ASF	Airport Operations: air traffic control tower & support offices, aircraft de-icing storage / parking, airfield fire-fighting, airside operations building, airside vehicle fuel facilities, airport offices, baggage, control authority offices, control post, fire training ground, rendezvous points, fuel receipt facilities & storage, fuel – fire water, fuel – into-plane depots, ground service equipment (GSE) maintenance, GSE parking, ILS, oxygen / nitrogen storage compounds, police station., radar, radio antenna farms, snow base/ storage sites and grit store, airside standalone ramp accommodation, VIP facilities, ITO baggage, sanitation block, cabin waste
2	ASF	Cargo (primary): Animal quarantine unit, Cargo ITSFs, Cargo transshipment areas, Royal Mail cargo facility, Truck park
3	ASF	Maintenance (primary): Aircraft maintenance base, Low cost carrier
4	ASF	Industrial (primary): Construction compounds / batcher sites, Data centres
5	Community	Primary School(s): Potential replacement of Harmondsworth Primary School and (potentially) Heathrow Primary School
6	Community	Allotments: Relocation of displaced Moor Lane and Pinglestone in Hillingdon, and Vineries in Spelthorne
7	ASF	Parking: Business car park, Staff car park, Staff car park – multi storey, Long term car park, Long term car park – multi storey, Landside bus and coach, Authorised vehicle area, Taxi feeder park, Car rental facilities, Car park other, Allowance for Inter-Terminal coaching, Allowance for staff coaching
8	Community	Sports/Recreation: Harmondsworth Recreation Ground
9	Community	Sports/Recreation: Little Harlington Playing Fields
10	ARD	Immigration Removal Centre
11	Community	Heathrow Special Needs Centre
12	Community	Harmondsworth Community Hall
13	Community	Wonderland Day Nursery (currently in Harmondsworth Community Hall)
14	Community	Sant Nirankari Centre for Oneness
15	ASF	SSE – Displaced
16	ASF	Cargo (secondary): Bonded warehouses
17	ASF	Maintenance (secondary): Aircraft maintenance RR
18	ASF	Industrial (secondary): Energy centre(s), High voltage substations, Landside vehicle fuel stations, Low voltage substations, Underground facilities escape shafts, Underground facilities ventilation shafts
19	ASF	Total Railhead - Displaced
20	ARD	Operational office (Compass Centre) - Displaced
21	ARD	Customs House
22	ARD	Hotel – Displaced – Terminal linked (in keys, not operator)
23	ARD	Hotel – Displaced – Bus linked (in keys, not operator)
24	ARD	Hotel – Displaced – Wider (in keys, not operator)
25	ARD	Hotel – Terminal and bus linked
26	ASF	CLC
27	ARD	Office Supply Chain – Displaced - BA Waterside
28	ARD	Office Supply Chain – Displaced – Heathrow Boulevard

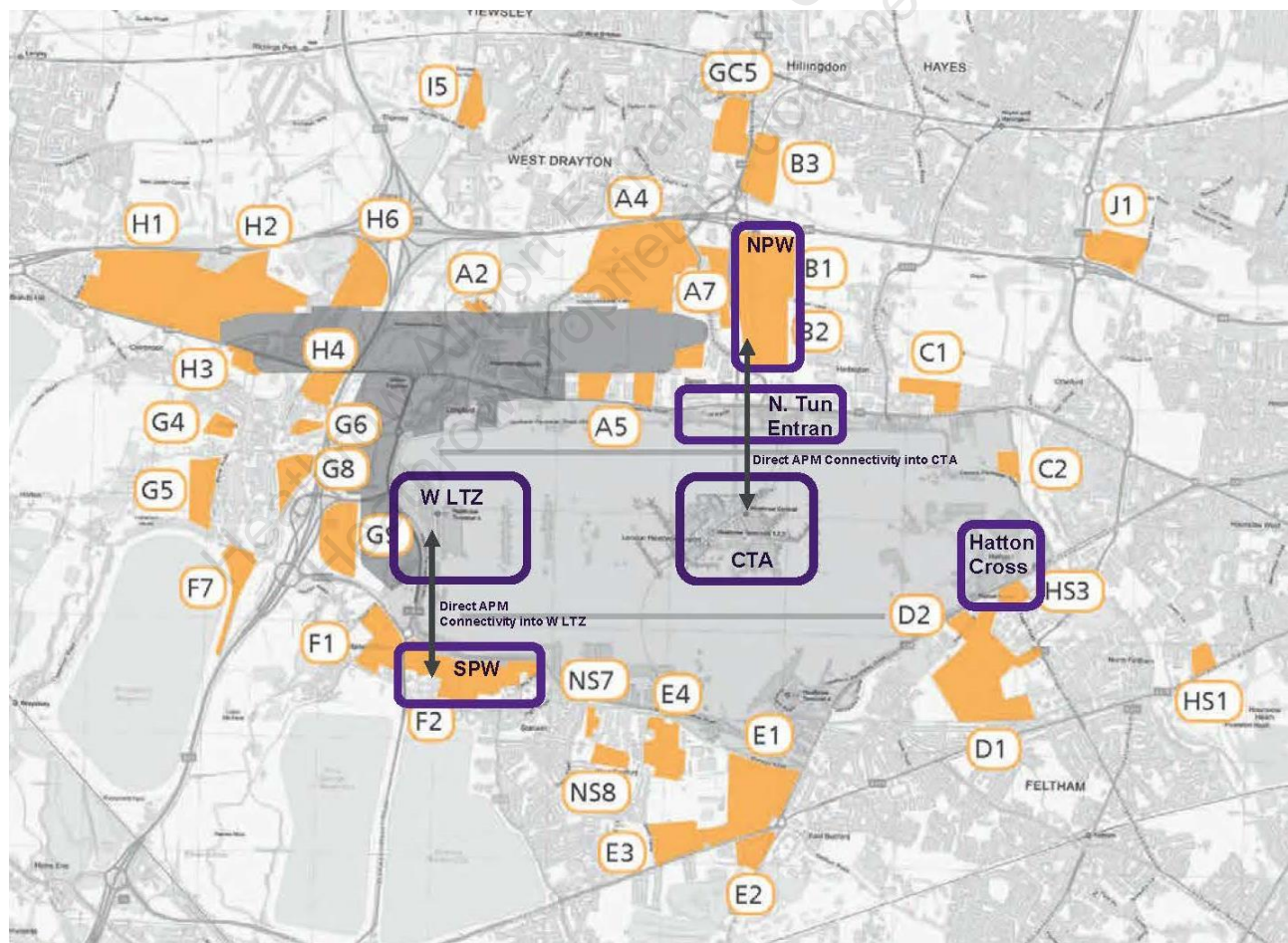


Rank	Land Use Type	Land Use Category
29	ARD	Office Supply Chain
30	ASF	Aggregate Industries - Displaced
31	ARD	Airpets
32	ARD	ETSF / Freight Forwarding - Displaced
33	ARD	ETSF
34	ARD	Maintenance (Non- MRO)
35	ARD	Grundon EfW
36	ARD	Grundon MRF (Tanhouse Farm)

Appendix C: Distribution of Principle Plans

ARD – Displaced Hotels (keys, not operator specific) Terminal and Bus Linked Distribution Principles

Figure 7.27 Displaced Hotels -Terminal and Bus Linked Distribution Principles

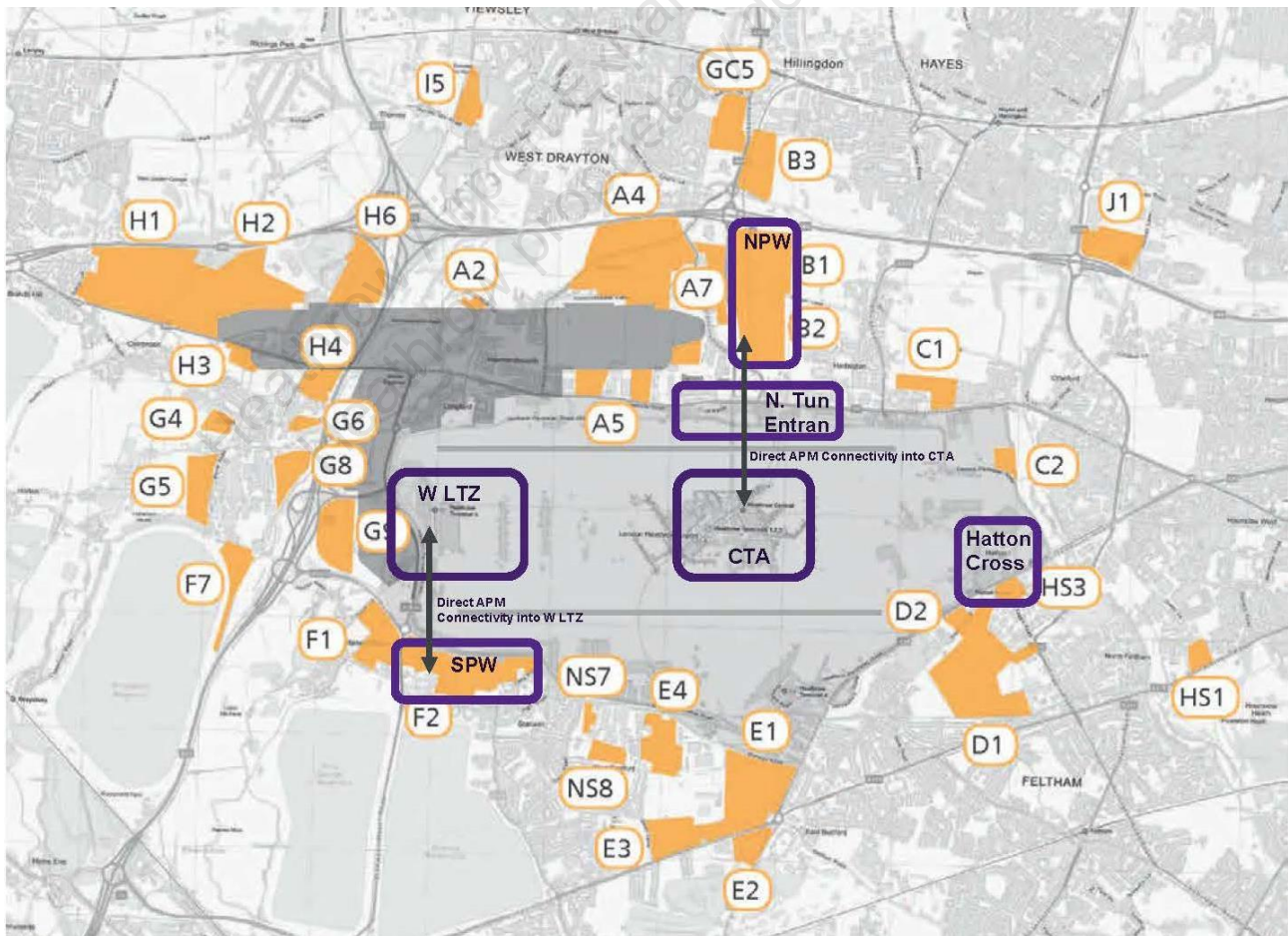




1. It is assumed the displaced hotel provision will not be able to be accommodated within the CTA and West LTZ due to phasing and physical constraints, that will not allow the sites to be readily available.
2. Therefore, the distribution principles for the displaced proportion of hotels is as follows:
 - a. Sites on the perimeter (for availability purposes) or in the parkways or parking facility (with assumed dedicated connectivity into central terminal zones will follow);
 - b. On high quality public transport nodes providing rapid terminal access (allows for higher density development); and
 - c. Within or immediately adjacent to terminals (allows for higher density development).

ARD – New Hotels (keys, not operator specific) Terminal and Bus Linked Distribution Principle

Figure 7.28 New Hotels - Terminal and Bus Linked Distribution Principle

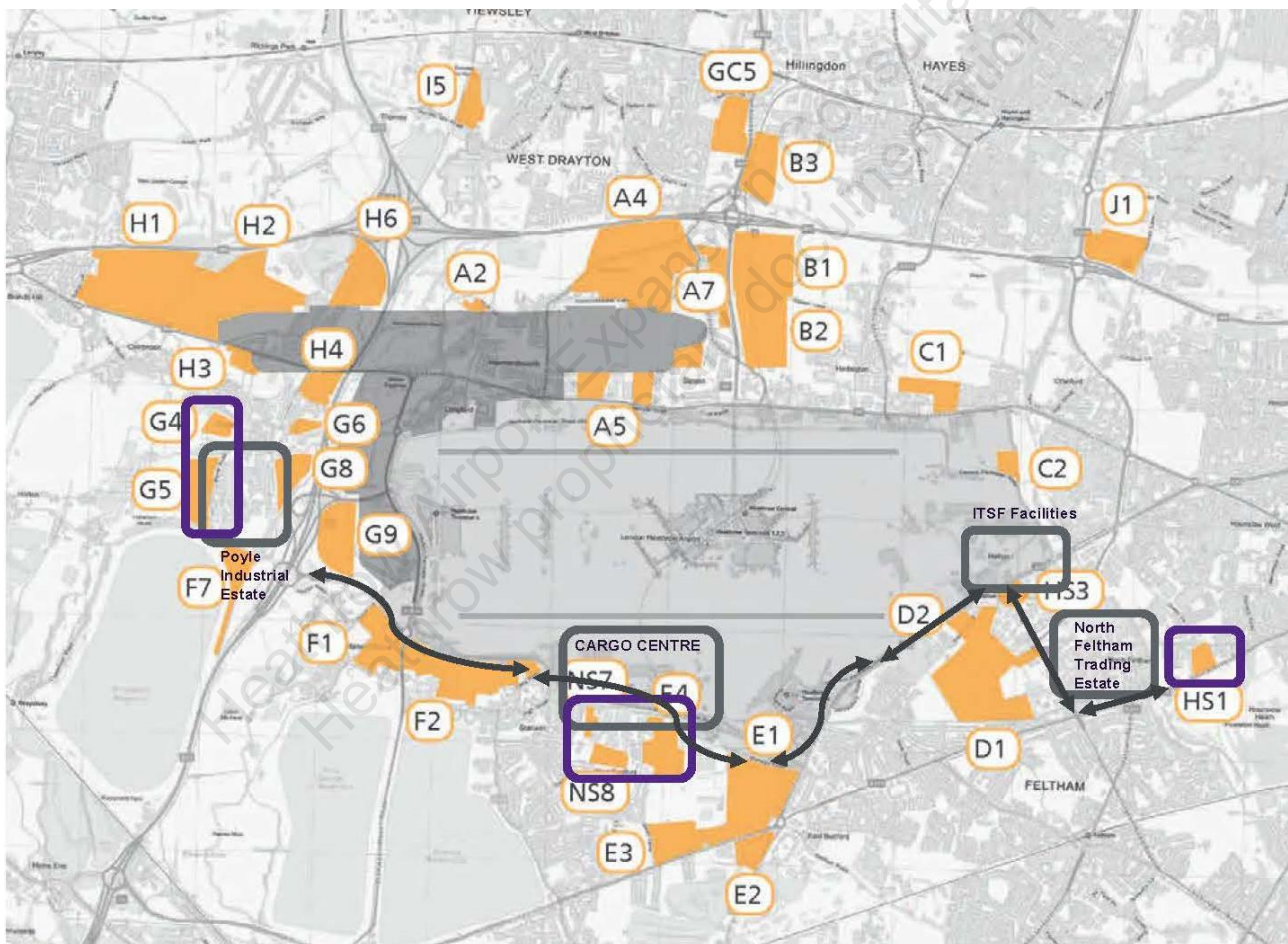




1. Within or immediately adjacent to terminals (allows for higher density development);
2. Sites on high quality public transport nodes providing rapid terminal access (allows for higher density development); and
3. Sites on the perimeter or in the parkways or parking facility (with assumed dedicated connectivity into central terminal zones will follow).

7.6.1 ARD – New and Displaced Freight Forwarding (floorspace, not operator specific) Distribution Principles

Figure 7.29 New and Displaced Freight Forwarding (floorspace, not operator specific) Distribution Principles



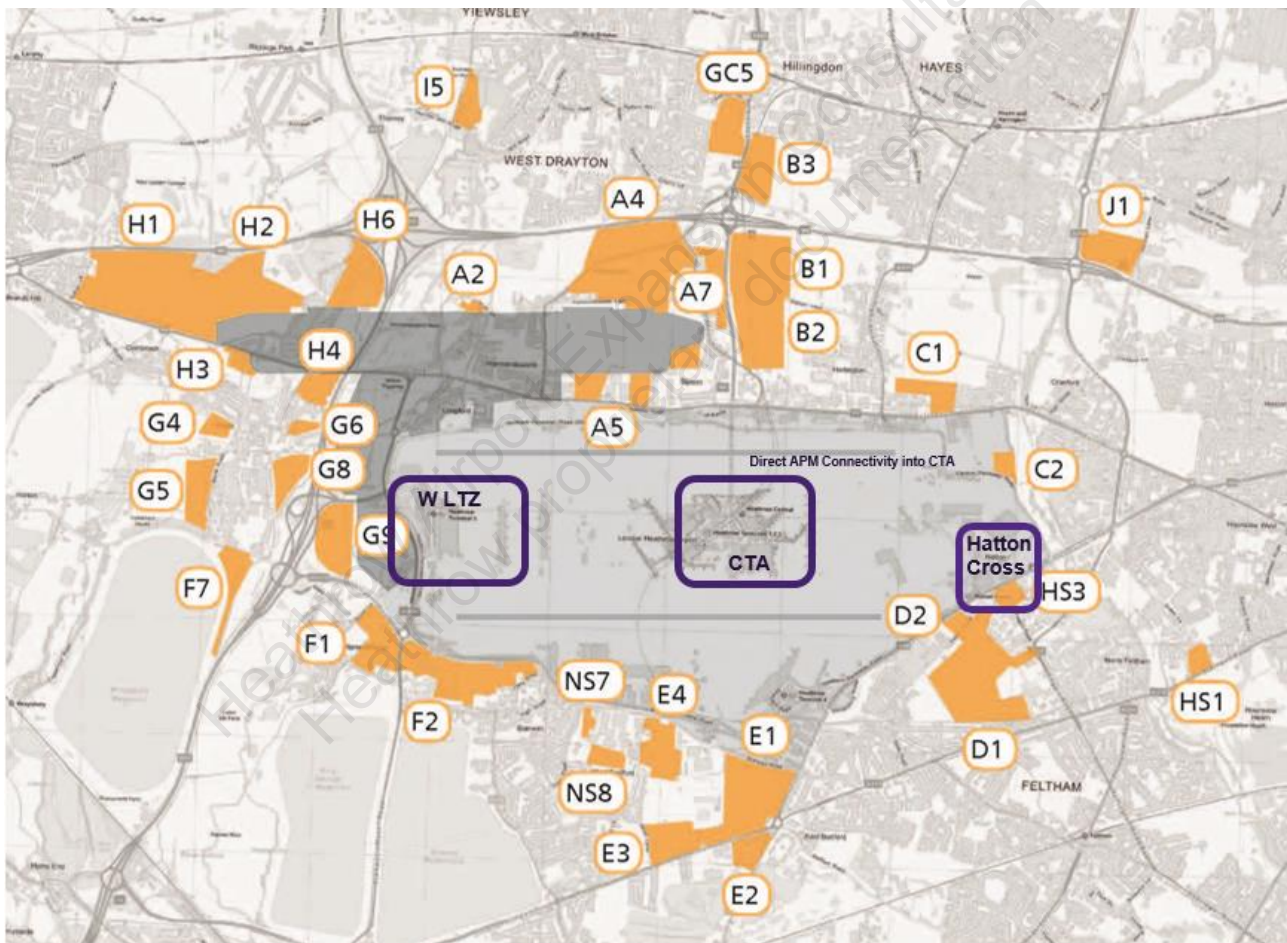
1. Within / on customs boundary, or within one mile of the cargo entrance to the airport;
2. Good highway access to trunk roads – ‘...it is highway access – rather than geographical location per say – that is the key determinant.’;



3. Swift, unimpeded access to the Internal Temporary Storage Facilities (ITSF), with low risk of delay;
4. Potential to consolidate the existing cargo hub toward the south of the airport;
5. Potential to create a 'Consolidation Cargo Centre' to create efficiencies in the freight network; and
6. Avoid sites to the north and north east of the airport as more sensitive for trip generating uses and not favoured within the Surface Access Strategy.

ARD – Displaced Supply Chain Distribution Principles

Figure 7.30 Displaced Supply Chain Distribution Principles



1. Generally, within 1 mile of the airport;
2. Good access to public transport providing connectivity to terminal areas; and
3. Potential to co-locate with cargo / warehousing activities.