

Final Report
August 2026

Assessment of H7 capital efficiency



Civil Aviation Authority
Our ref: 24862902

steer

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Appendix

A Document Register

Glossary

Abbreviation	Long-form
AGL	Aerodrome Ground Lighting
AMC	Asset Management and Compliance
BAC	Budget at Completion
Capex	Capital expenditure / Capital investment
CPI	Consumer Price Index
■ ■ ■	■ ■ ■
CAA	Civil Aviation Authority
CEMAR	Contract Event Manager and Reporting
CCRS	Client Change Request Sheet
CPB	Capital Programme Board
CTA	Central Terminus Area
CTR	Cargo Tunnel Refurbishment
DoA	Deed of Amendment
DfT	Department for Transport
DI	Delivery Integrator
DIWE	Demonstrably Inefficient and Wasteful Expenditure
EAC	Estimate at Completion
EBS	Early Baggage Store
GHAB	Ground Handling Approval Board
IRR	Internal Rate of Return
HAC	Heathrow Additional Capacity
HAL	Heathrow Airport Limited
HASSP	Heathrow Asset Significance Scorecard Priority
HBS	Hold baggage screening
HGL	Heathrow Gateway Lifecycle
IFS	Independent Fund Surveyor
L&L	Leadership & Logistic
LCA	Licensed to Control Airside
LHS	Left Hand Side
MTR	Main Tunnel Refurbishment
NEC	New Engineering Contract
PGF	Programme Governance Framework
RAB	Regulatory Asset Base
RATs	Rapid Access Taxiways

Abbreviation	Long-form
RETs	Rapid Exit Taxiways
RHS	Right Hand Side
SAC	Sort Allocation Computer
SPG	Stakeholder Programme Group
TTS	Track Transit System

Source: Steer

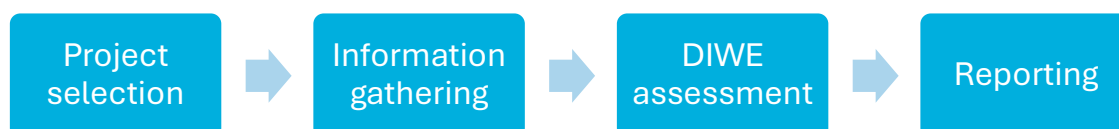
Definitions

Term	Description
Budget at Completion (BAC)	The budget of a project which is approved by airlines. This budget is set at Gateway 3 (G3), which is the investment decision gateway of a project, and can be updated in the future upon airlines approval.
Client Change Request Sheet (CCRS)	The CCRS documents the process of seeking airlines' approval of changes made to a project. The document is usually in a table format and summarises the changes, their causes, and their impacts on the costs of the project. If a change is approved by the airlines, it is then reflected in an update of the BAC.
Estimated at Completion (EAC)	Forecast of total project cost at completion, based on progress, risks, and scope changes at a point in time. The EAC may be higher or lower than the BAC depending on cost performance and project changes. If the project has been completed, the EAC becomes equal to actual full project cost at Gateway 7 (G7), which is when project reached close out stage.

Source: HAL, Steer

Executive Summary

- 1.7 Steer was appointed by the Civil Aviation Authority (CAA) to undertake an ex-post capital expenditure (capex) efficiency review covering the capex delivered under backward looking (or ex post) arrangements since 31 December 2018, which is the cut-off date of the last ex post review. The purpose of this review is to support the CAA in determining whether any adjustment is required to the Regulatory Asset Base (RAB) at the start of H8 (2027–2031), reflecting any capex incurred that is inefficient. The review covers capex incurred between 1 January 2019 and 31 December 2024.
- 1.8 The aim of the ex-post efficiency review is to assess whether capital expenditure has been incurred in a manner that is inefficient or wasteful, in line with the principle of Demonstrably Inefficient and Wasteful Expenditure (DIWE). This approach has been designed to try and ensure that the capital costs that HAL incurs represent fair value for consumers.
- 1.9 Our review followed the following steps:



Project selection

- 1.10 We followed a structured and stakeholder-informed methodology to identify a shortlist of projects for the ex-post efficiency review. The approach was guided by engagement with the CAA, airlines and Heathrow Airport’s Independent Fund Surveyor (IFS).
- 1.11 To identify the shortlist, a multi-stage filtering process was applied to the full list of projects in scope provided by HAL. Key selection criteria included:
- Eligibility:
 - Projects with capex spend between 1 January 2019 and 31 December 2024; and
 - Projects that went through budget approval at G3 before 1 March 2024.
 - Regulatory precedent: Projects which the CAA explicitly signalled during the last ex post review¹ as projects to revisit at the next review.
 - Airline concerns: Projects suggested by airlines that should be included within this review.
 - Overspend and materiality:

¹ Civil Aviation Authority (CAA). (2022). *Economic regulation of Heathrow Airport Ltd: H7 Final Proposals Appendices D–K (CAP2365E3)*. Available at <https://www.caa.co.uk/publication/download/19743> (Accessed 29 September 2025).

- Projects with significant overspend, in terms of variance between their Estimated At Completion (EAC) amount and their Budget At Completion (BAC)² amount; and
- Of those projects, projects with the highest capex incurred in the review period.

- 1.12 To ensure the shortlist of projects was balanced and representative we applied the following tests:
- Balance between IFS or non-IFS reviewed projects;
 - Percentage of ex-post capex incurred during 2019-2024; and
 - Percentage of ex-post capex overspend.
- 1.13 The final shortlist includes nine IFS and four non-IFS reviewed projects. It also captures projects that collectively represent a significant share of both total capex incurred during the review period (31%) and the vast majority (89%) of the overall overspend.
- 1.14 The table on the following page captures the list of projects and summarises the criteria used for the selection process. The EAC and BAC values reflect the latest information received in January and February 2026.

² The terms EAC and BAC are defined in the 'Source: Steer Definitions' section at the beginning of the report.

Table Exc.1.1: Selected projects for the ex-post capex efficiency review

Project	EAC (£m)	BAC (£m)	EAC minus BAC (£m)	EAC vs BAC (%)	Regulatory precedent	Airlines concerns	Overspend materiality	IFS	Capex incurred 2019-2024 (£m)
PRJ-000206 - Main Tunnel	£320m*	£85m	£235m*	276%*	✓	✓	✓	✓	£106m
PRJ-000387 - Cargo Tunnel	£200m*	£54m	£146m*	269%*	✓	✓	✓	✓	£152m
PRJ-000255 - Airside Taxiways - Cul De Sacs Tr6	£22m	£17m	£5m	29%			✓		£22m
PRJ-000533 - B216 T1_T2 HBS	£170m	£118m	£51m	43%			✓	✓	£39m
PRJ-000535 - B216 T4 HBS	£181m	£96m	£85m	88%	✓		✓	✓	£78m
PRJ-000537 - B216 T5 HBS	£171m	£148m	£24m	16%			✓	✓	£37m
PRJ-000742 - B6361.01 Eastern Campus Logistics and Compliance	£18m	£13m	£5m	36%			✓		£17m
PRJ-000776 - B7509 Magenta	£56m	£41m	£15m	36%	✓	✓	✓	✓	£56m
PRJ-000800 - B6401 TTS Enhancements	£82m	£82m	£0m	0%		✓		✓	£57m
PRJ-001524 - B7228 - Runway Resurfacing - Deep Interventions	£25m	£21m	£3m*	16%*			✓	✓	£25m
PRJ-001330 - B7228 Runway Resurfacing - Southern Runway	£132m	£129m	£3m	3%		✓	✓	✓	£109m
PRJ-001410 - B7201.08 - Forecourt Health and Safety Works	£17m	£11m	£6m	59%			✓		£17m
PRJ-001786 - B75-053.00 - Compass Centre Acquisition	£127m	£127m	£0m	0%		✓			£127m
Total	£1,520m*	£943m	£578m*	61%*	4	6	11	9	£842m

Source: HAL, Steer analysis. Note: (*) These figures are lower than the corresponding figures published in CAA initial proposals for H8, Appendix I, Table I.2 ([CAP 3332F](#)), because they reflect the updated information received in January and February 2026, which we were in the process of reviewing at the time of publication of CAA's initial proposals.

Review methodology

- 1.15 For the IFS projects, the assessment relied primarily on IFS documentation, supplemented by additional information provided by HAL and the airlines. The non-IFS projects were reviewed using information requested directly from HAL.
- 1.16 Throughout the process, Steer worked closely with HAL and the IFS to clarify information, understand project delivery, and test key decisions. Formal question trackers were used to record all queries and responses, ensuring a transparent and auditable engagement process managed by the CAA.
- 1.17 Steer assessed project efficiency using the Demonstrably Inefficient or Wasteful Expenditure (DIWE) framework, a methodology used by UK regulators, including the CAA, to determine whether capital spending is inefficient.
- 1.18 The CAA DIWE framework is based on a set of criteria (or factors) covering areas such as:
- a. Use of resources;
 - b. Procurement;
 - c. Cost control;
 - d. Decision making;
 - e. Duplication;
 - f. Error;
 - g. Delay;
 - h. Value for money; and
 - i. Benefits.
- 1.19 More detail on the CAA DIWE framework is presented in Chapter 2 of the report. For each project, where we found evidence of inefficiencies, we indicate the DIWE factors that underpin our findings.

Summary of findings

- 1.20 Across the projects reviewed, and with the information available up to July 2026, we recommend **a DIWE of £5.7m (2024 CPI prices and 2024 CPIH prices) for the capex incurred in the 2019-2024 period**, related to the following projects:
- PRJ-000742 - B6361.01 Eastern Campus Logistics and Compliance: £4.8m
 - PRJ-001330 - B7228 Runway resurfacing - Southern Runway: £0.9m
- 1.21 Table Exc.1.2 outlines our findings on whether our analysis indicates that an inefficiency was found. This includes a summary of the conclusion on each project. There is a detailed analysis of each project set out in Chapter 3.

Table Exc.1.2: Summary of DIWE assessment

Inefficiency found?	DIWE Estimate (Nominal /2024 CPI)	Review conclusion
PRJ-000206 – B131 Main Tunnel		
No	-	The project experienced significant delivery problems related to contractor █████ in the 2019-2023 period. There were ongoing

Inefficiency found?	DIWE Estimate (Nominal /2024 CPI)	Review conclusion
		uncertainties linked to the appointment of replacement contractors [REDACTED] in late 2024. Those remain under contract negotiation. Steer concludes that while the problems with [REDACTED] impacted delivery timescales, HAL's decisions were reasonable based on the information available at the time (factor 'd) Decision making'), and appropriate cost control mechanisms were in place (factor 'c) Cost control') However, elements relating to new contractual arrangements between [REDACTED] are still ongoing at the time of this review. Steer recommends that the efficiency of capex under the [REDACTED] contracts are reviewed in the next ex-post review.
PRJ-000387 – B131 Cargo Tunnel		
No	-	The project experienced increases in cost driven by a re-scope of works at pseudo G3, resulting in additional scope and associated costs, as well as further cost pressures arising from unforeseen site conditions encountered during delivery. Steer concludes that the re-scoped works were justified and represented necessary scope not included in the original G3 baseline (factor 'd) Decision making'), with associated costs appearing reasonable based on the available evidence. The cost increases linked to unforeseen ground conditions were also managed appropriately, with surveys and investigations undertaken in line with industry best practice (factor 'f) Error). There was also a Client Change Request Sheet (CCRS) issued in 2023 to request a budget increase on the project. This was not assessed in this review as this budget change occurred in 2025, which falls outside the current review period. Steer recommends that this is reviewed in the next ex-post review.
PRJ-000255 - Airside Taxiways - Cul De Sacs Tr6		
No	-	The project experienced unforeseen and highly localised ground conditions that were not identified during initial surveys, as well as operational constraints that required re-phasing of works, resulting in minor additional costs. Steer concludes that ground condition surveys were undertaken appropriately based on existing knowledge of the airport campus (factor 'a) Use of resources'), and the unforeseen conditions could not have reasonably been identified in advance. HAL responded appropriately by updating its evidence base to inform future works. The additional costs associated with operational re-phasing were also not reasonably avoidable (factor 'c) Cost control').
PRJ-000533 - B216 T1_T2 HBS		
No	-	The project experienced schedule management challenges associated with the delivery integrator ([REDACTED]), as well as issues relating to the integration of embargoes into the construction programme, which represented a planning oversight.

Inefficiency found?	DIWE Estimate (Nominal /2024 CPI)	Review conclusion
		Steer concludes that HAL took appropriate and timely actions to mitigate the schedule management issues, and as the root causes largely fell outside the review period, no inefficient use of resources was identified (factor ‘a’). While the handling of embargoes represented a notable oversight (factor ‘a’ Use of resources’), HAL acted appropriately in rejecting associated compensation claims from the contractors and therefore preventing additional costs.
PRJ-000535 - B216 T4 HBS		
No	-	The project experienced schedule management challenges associated with the delivery integrator (■■■■), as well as issues relating to the integration of embargoes into the construction programme, which represented a planning oversight. Steer concludes that HAL took appropriate and timely actions to mitigate the schedule management issues, and as the root causes largely fell outside the review period, no inefficient use of resources was identified (factor ‘a’). While the handling of embargoes represented a notable oversight (factor ‘a’ Use of resources’), HAL acted appropriately in rejecting associated compensation claims from the contractors and therefore preventing additional costs.
PRJ-000537 - B216 T5 HBS		
No	-	The project experienced a late introduction of additional scope relating to dual image processing, which was not included at G3 due to uncertainty and evolving operational requirements, resulting in an increase in project costs. Steer concludes that deferring the decision until the requirements were better understood was reasonable given the uncertainty at the time and the operational constraints of implementing changes within a live baggage system (factor ‘d’ Decision making’). The subsequent decision to introduce the additional scope was appropriate and aligned with stakeholder needs.
PRJ-000742 - B6361.01 Eastern Campus Logistics and Compliance		
Yes	£4.8m / £4.8m	The project experienced delays in delivery and cost overruns driven by an immature design of the Early Bag Store (EBS) requirements, which led to duplication of works in the form of manual handling of early bags and increase in testing effort. This resulted in project completion significantly later than originally anticipated. Steer concludes that these errors, delays and associated cost increases were avoidable and attributable to shortcomings in defining the EBS design by HAL and/or its contractors (Factors ‘e’ Duplication’ and ‘g’ Delay’).
PRJ-000776 - B7509 Magenta		
No	-	The project experienced unplanned organisational changes which required the redesign of the employee resource system,

Inefficiency found?	DIWE Estimate (Nominal /2024 CPI)	Review conclusion
		as well as delays to the User Acceptance Testing (UAT) process due to reliance on corporate resources undergoing restructuring during COVID-19. Steer concludes that the redesign was a proportionate and necessary response, and that HAL followed appropriate governance processes (factor 'e) Duplication'). Steer further concludes that the UAT delays were driven by factors outside of HAL's control and could not reasonably have been anticipated (factor 'g) Delay').
PRJ-000800 - B6401 Track Transit System (TTS) Enhancements		
No	-	The project experienced delays associated with [REDACTED] delivery (the supplier of the Track Transit System cars), which resulted in programme impacts and the cost overruns (factors 'd) Delay' and 'c) Cost control'). Steer concludes that HAL has taken appropriate steps to mitigate the impact of these delays through the application of contractual safeguards. However, there remains a degree of uncertainty as to whether additional costs arising from the delays will ultimately be recovered. Given that commercial discussions and negotiations are ongoing, the final financial position of the project has not yet been established. Steer therefore recommends that this project is revisited in the next review.
PRJ-001524 - B7228 Runway resurfacing - Deep Interventions		
No	-	The project experienced a reduction in the available night working window due to a busy summer flight schedule, which introduced additional delivery constraints in programme execution. Steer concludes that, based on the information available during the planning stages, HAL and its contractors could not reasonably have anticipated this operation requirements (factor 'd) Decision making').
PRJ-001330 - B7228 Runway resurfacing - Southern Runway		
Yes	£0.9m / £0.9m	The project experienced a cost overrun of £0.9m arising from errors related to driver licensing requirements (factor 'f) Error'). Steer concludes that these errors could reasonably have been anticipated and avoided through appropriate checks to appropriately identified licensing needs earlier, enabling contractors to recruit suitably qualified drivers from the outset. The project also experienced a further cost pressure, reflected in a CCRS valued at approximately £4m, which was still progressing through governance at the time of the review. Steer is not in a position to reach a definitive conclusion at this stage. It is recommended that this issue is revisited as part of the next ex-post review, once greater clarity on scope and justification is available.

Inefficiency found?	DIWE Estimate (Nominal /2024 CPI)	Review conclusion
PRJ-001410 - B7201.08 - Forecourt Health and Safety Works		
No	-	The project experienced cost increases associated with a combination of unforeseen ground conditions, coordination challenges across multiple interfaces, and the introduction of enhanced specification and safety requirements. Steer concludes that, while some of these factors could potentially have been better anticipated during earlier project stages (factor 'f' Error'), they are not uncommon in projects of this nature and complexity. Importantly, Steer considers that even with improved anticipation and planning, the overall cost outcome would not have differed materially. As such, the cost increases do not represent avoidable inefficiencies.
PRJ-001786 - B75-053.00 - Compass Centre Acquisition		
No	-	HAL acquired the Compass Centre as part of a strategic investment proposal in 2023. HAL claimed that the reason for the acquisition was to mitigate the risk of forced relocation in the event that the landlord, XXX, chose to terminate the lease. By acquiring the property, HAL aimed to avoid the potential disruption and costs associated with relocating to alternative facilities. Steer concludes that, although HAL paid a premium to acquire the asset, the total cost of relocating to a different office the operational and non-operational activities that were being carried out in Compass Centre was larger than the premium HAL paid for the acquisition of the Compass Centre. In addition, Steer considers that the analysis of alternative options was not assessed as robustly as could reasonably have been expected, and that the compressed timeline for stakeholder engagement and decision-making limited the opportunity for effective scrutiny of the investment proposal, including its costs, assumptions, and strategic rationale. Notwithstanding all the issues that we have identified and that could have been avoided to enable a more structured and transparent investment decision, we conclude that there was no cost inefficiency compared to a relocation option.
Total	£5.7m / £5.7m	

Source: Steer

- 1.46 In addition, we recommend that the following projects are further analysed in the next ex-post efficiency review, as at the time of this review it was too early to assess Demonstrably Inefficient or Wasteful Expenditure in expenditure planned to be incurred beyond late 2024:
- PRJ-000206 – B131 Main Tunnel;
 - PRJ-000387 – B131 Cargo Tunnel;
 - PRJ-000800 - B6401 Track Transit System (TTS) Enhancements; and
 - PRJ-001330 - B7228 Runway resurfacing - Southern Runway.

1 Introduction

Background

- 1.1 Steer has been appointed by the Civil Aviation Authority (CAA) to undertake an ex-post capital expenditure (capex) efficiency review covering the capex delivered under backward looking (or ex post) arrangements since 31 December 2018, which is the cut-off date of the last ex post review. This is to determine if any adjustment to the entry Regulatory Asset Base (RAB) at H8 is necessary. As part of its regulatory duties, the CAA conducts a capex ex-post efficiency review of the projects delivered under ex post arrangements, i.e. projects that received Gateway 3 (G3) approval before 1 March 2024, as projects approved after this date fall under the new ex-ante arrangements. This review covers capex incurred during the period from 1 January 2019 to 31 December 2024.

Purpose

- 1.2 The aim of the ex-post efficiency review is to assess whether capital expenditure has been incurred in a manner that is inefficient or wasteful in line with the principle of Demonstrably Inefficient and Wasteful Expenditure (DIWE). This ensures that the capital costs that HAL incurs represent fair value for consumers. A more detailed explanation of DIWE and how this principle is assessed is provided in Chapter 2 of this report.

Price base

- 1.3 The capex values and inefficiencies quantified in this ex-post review are presented in nominal prices (i.e. including inflation) unless stated otherwise. This is because costs are usually reported in nominal terms during the delivery of construction projects. The results of the DIWE are presented in both nominal terms and 2024 CPI prices, with the overall result also presented in 2024 CPIH prices.

Structure of the report

- 1.4 This report is structured as follows:
- Chapter 2 sets out our approach to selecting the projects for the ex-post review, explains the DIWE assessment framework, and details the review process we followed for reviewing the selected projects;
 - Chapter 3 presents our analysis of the ex-post review of each of the selected projects;
 - Chapter 4 concludes with a summary of findings from the review; and

- Appendix A lists the documents we considered in this review.

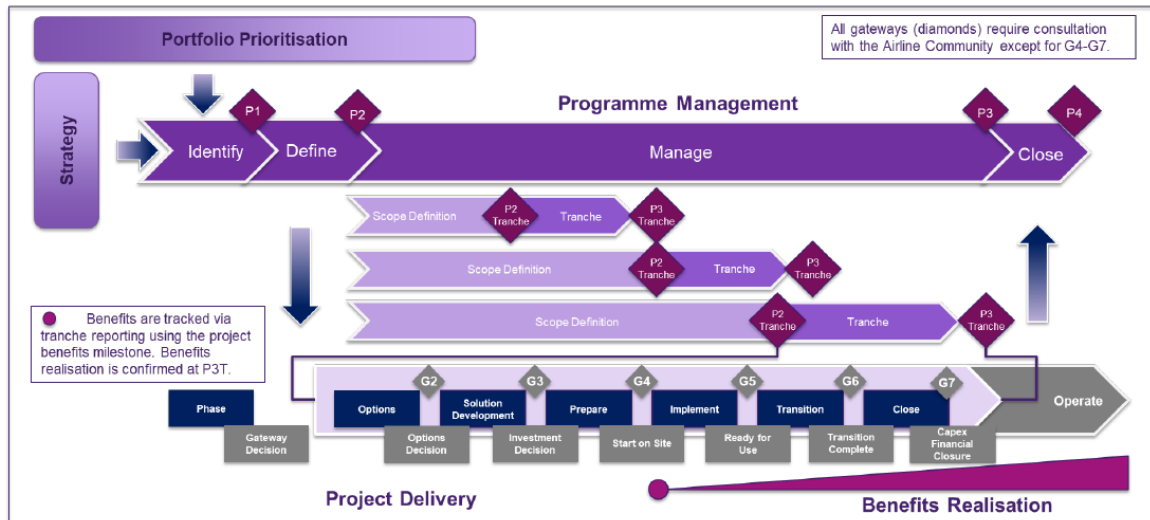
2 Our approach

Summary of HAL's gateway process

- 2.1 The approaches we have followed to select and review the projects rely on HAL's gateway process. We have summarised this process below to ensure the reader's understanding of this report.
- 2.2 Consistent with HAL's Programme Governance Framework (PGF) and the Heathrow Gateway Lifecycle (HGL), the projects we have analysed might present different financial information reflecting the different stages of their estimation and execution processes.
- 2.3 The key stages that HAL follows for capital projects delivery are summarised below and illustrated in the chart:
- P1 Gateway: Identify – Confirms the initial viability of a programme.
 - P2 Gateway: Define – Establishes programme organisation and control structures, defines solution options, and validates the Business Case. Once a programme has passed this stage, it is broken down into tranches and subsequently into individual projects. Between P2 and P3 Gateways, there are additional stages that are triggered after reaching P2 Tranche (P2T), where the scope is defined:
 - G2 – Options Decision: Confirms the preferred solution to meet project requirements after evaluating potential options.
 - G3 – Investment Decision: Stage at which projects receive airlines endorsement of the developed solution, ensuring it is buildable, costed, and aligned to project and programme objectives. Airlines need to express their support to the investment at this stage. Once approved by the airlines, HAL can move a project from Development (pre-investment) into Core delivery budget.
 - G4 – Start on Site: Prepares the delivery team and supply chain to mobilise and begin on-site implementation.
 - G5 – Readiness for Use: Confirms asset delivery and completion of operational readiness activities. Handover to operations is completed.
 - G6 – Transition Complete: Ensures full integration of the asset into business-as-usual operations, including resolution of any outstanding issues.
 - G7 – Capex Financial Closure: Finalises the project's financial position, completes final payments.

- P3 Gateway: Manage – Oversees delivery of the programme’s outputs via one or more tranches or projects.
- P4 Gateway: Close-Out – Ensures that benefits have been delivered or there is clear evidence that they will be delivered.

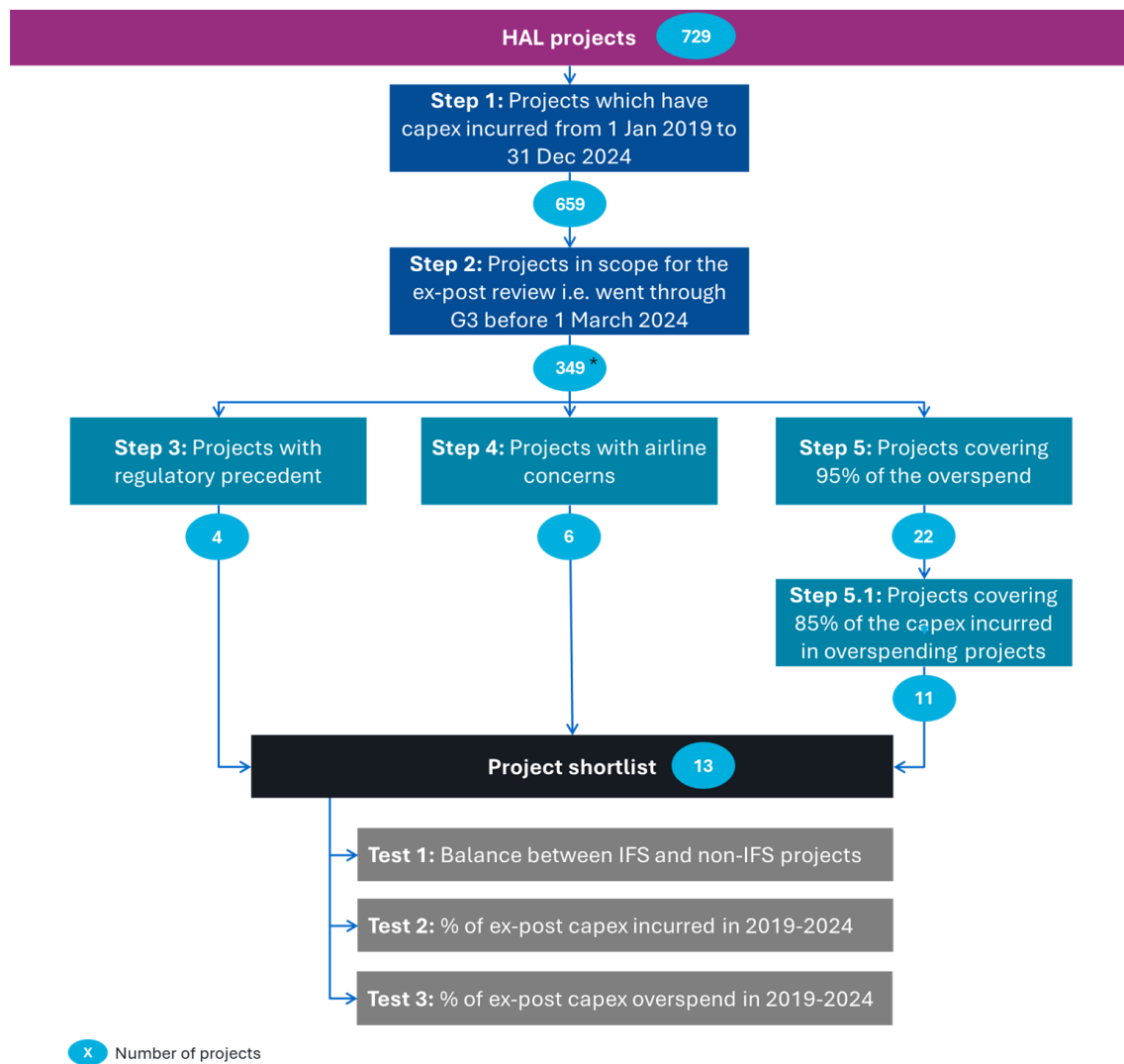
Figure 2.1: HAL's Programme and project gateway lifecycle



Source: HAL

Project selection process

- 2.4 This section outlines the methodology we used to identify the projects selected for ex-post efficiency review. The approach has been informed by ongoing engagement with the CAA; by the incorporation of regulatory considerations; and inputs from the airline community. It has also considered thresholds based on capex spend and overspend of projects.
- 2.5 A filtering process was developed and applied to the full dataset of projects provided by HAL in October 2025. Each step served as a filter to progressively narrow the number of projects, resulting in a shortlist of 13 selected unique projects to be reviewed. This process is summarised in Figure 2.2 and further detailed below.

Figure 2.2: Selection of projects process

Source: Steer Note: (*) This figure is lower than the corresponding figures published in CAA initial proposals for H8, Appendix I, Table I.1 ([CAP 3332F](#)), because it reflects the updated information received in January and February 2026, which we were in the process of reviewing at the time of publication of CAA's initial proposals.

Step 1: Time period

- 2.6 The scope for this review includes capex spend on projects between 1 January 2019 and 31 December 2024. According to the CAA working paper *CAP1964*³, the last capex ex-post efficiency review was conducted on capex incurred up to December 2018. This implies that projects which were active between 2019 and the cut-off date of December 2024, and have incurred capex, are potentially within the scope of the H7 ex-post efficiency review.

³ Civil Aviation Authority (CAA). (2020). Economic regulation of Heathrow: working paper on the efficiency of HAL's capital expenditure during Q6 (CAP 1964). Available at: <https://www.caa.co.uk/publication/download/18067> (Accessed 29 September 2025).

Step 2: Ex-post projects

- 2.7 The second step involved filtering the projects actually in scope of the ex-post review. Those are projects which went through budget approval at stage G3 (budget) before 1 March 2024. The projects approved after this date fall under the new ex-ante arrangements.

Step 3: Regulatory precedent

- 2.8 We have identified the projects with regulatory precedent, i.e. projects which the CAA explicitly signalled during the last ex post review⁴ as candidates for review again at the following ex-post review. According to the CAA:
- “The Cargo Tunnel and Main Tunnel projects may need to be reviewed further at the end of H7” (CAP2365, March 2024, paragraph D26).
 - The CAA also recommends that “a review of capital projects that were ongoing during iH7 should be considered at the end of H7, particularly if the Independent Fund Surveyor or other stakeholders identify potential inefficiencies. This includes projects such as Project Magenta and the T4 Hold Baggage Screening” (CAP2365, March 2024, paragraph D9, D22, D26).

Step 4: Airline suggestions

- 2.9 Steer held a meeting with airlines, facilitated by the CAA, where airlines made suggestions of projects to review. All their suggestions have been included in our shortlist. The projects they have indicated include some identified also by the regulatory precedent step, as well as through the materiality test described in the below sections, and they are:
- Main Tunnel;
 - Cargo Tunnel;
 - Magenta;
 - Runway Resurfacing - Southern Runway;
 - Compass Centre Acquisition; and
 - TTS Enhancements.

Step 5: Projects with overspend

- 2.10 The projects which have an Estimated At Completion (EAC) amount higher than their Budget At Completion (BAC)⁵ amount, which we define as ‘projects with overspend’, face higher risk of having inefficient and/or wasteful expenditure. Therefore, one of the criteria for selecting projects for ex-post review is whether the projects have an identified overspend.

⁴ Civil Aviation Authority (CAA). (2022). *Economic regulation of Heathrow Airport Ltd: H7 Final Proposals Appendices D–K (CAP2365E3)*. Available at <https://www.caa.co.uk/publication/download/19743> (Accessed 29 September 2025).

⁵ The terms EAC and BAC are defined in the ‘Source: Steer Definitions’ section at the beginning of the report.

- 2.11 Out of the 349 projects in scope for the ex-post review, 116 projects present an overspend. There is a large concentration of overspend within a small number of projects as 22 projects account for 95% of the total overspend.

Step 5.1: Materiality of capex incurred in overspending projects

- 2.12 Within the 22 projects accounting for 95% of total overspend, we have selected the ones with the highest capex incurred during the period under review (2019-2024). Specifically, we have selected the 11 projects with the highest capex incurred in this period, which account for 85% of the capex incurred in overspending projects during 2019-2024.

Project shortlist

- 2.13 Considering all the steps above, we identify 13 unique projects that meet, at least, one of the three selection criteria:
- Projects with regulatory precedent;
 - Projects with airlines concerns; and
 - Projects covering 95% of the overspend and, within these, projects covering 85% of the capex incurred in overspending projects during 2019-2024.
- 2.14 This project shortlist has gone through three tests to ensure that the sample is balanced.

Test 1: Balance between IFS or Non-IFS reviewed projects

- 2.15 The first test has been to ensure that the project shortlist has a mix of IFS and non-IFS projects, as non-IFS projects are not subject to the IFS scrutiny and, therefore, have a higher risk of inefficiency. However, those are generally smaller and less complex projects. Out of the 13 projects that were shortlisted, 9 (or 69%) had been previously reviewed by the IFS.

Test 2: Percentage of ex-post capex incurred during 2019-2024

- 2.16 As a second test, we wanted to ensure that the 13 projects selected for the review account for a material portion of the capex incurred during the review period 2019-2024. The 13 projects selected for the review account for 31% of the £2.7 billion of capex in scope.

Test 3: Percentage of ex-post capex project overspend

- 2.17 Lastly, we ensured that the 13 projects selected account for most of the overspend of the 349 projects in scope for the ex-post review. The combination of Steps 3, 4, 5 and 5.1 mean that the 13 projects selected for review account for 89% of the overall overspend of the projects in scope.

List of selected projects

- 2.18 The table below captures the list of projects and summarises the criteria used for the selection process.

Table 2.1: Selected projects for the ex-post capex efficiency review

Project	EAC (£m)	BAC (£m)	EAC minus BAC (£m)	EAC vs BAC (%)	Regulatory precedent	Airlines concerns	Overspend materiality	IFS	Capex incurred 2019-2024 (£m)
PRJ-000206 - Main Tunnel	£320m*	£85m	£235m*	276%*	✓	✓	✓	✓	£106m
PRJ-000387 - Cargo Tunnel	£200m*	£54m	£146m*	269%*	✓	✓	✓	✓	£152m
PRJ-000255 - Airside Taxiways - Cul De Sacs Tr6	£22m	£17m	£5m	29%			✓		£22m
PRJ-000533 - B216 T1_T2 HBS	£170m	£118m	£51m	43%			✓	✓	£39m
PRJ-000535 - B216 T4 HBS	£181m	£96m	£85m	88%	✓		✓	✓	£78m
PRJ-000537 - B216 T5 HBS	£171m	£148m	£24m	16%			✓	✓	£37m
PRJ-000742 - B6361.01 Eastern Campus Logistics and Compliance	£18m	£13m	£5m	36%			✓		£17m
PRJ-000776 - B7509 Magenta	£56m	£41m	£15m	36%	✓	✓	✓	✓	£56m
PRJ-000800 - B6401 TTS Enhancements	£82m	£82m	£0m	0%		✓		✓	£57m
PRJ-001524 - B7228 - Runway Resurfacing - Deep Interventions	£25m	£21m	£3m*	16%*			✓	✓	£25m
PRJ-001330 - B7228 Runway Resurfacing - Southern Runway	£132m	£129m	£3m	3%		✓	✓	✓	£109m
PRJ-001410 - B7201.08 - Forecourt Health and Safety Works	£17m	£11m	£6m	59%			✓		£17m
PRJ-001786 - B75-053.00 - Compass Centre Acquisition	£127m	£127m	£0m	0%		✓			£127m
Total	£1,520m	£943m	£578m	61%	4	6	11	9	£842m

Source: HAL, Steer analysis. Note: (*) These figures are lower than the corresponding figures published in CAA initial proposals for H8, Appendix I, Table I.2 ([CAP 3332F](#)), because they reflect the updated information received in January and February 2026, which we were in the process of reviewing at the time of publication of CAA's initial proposals.

Project review process

Information and data gathering

- 2.19 Of the 13 projects selected for ex-post review, nine projects were subject to IFS assurance. The role of the IFS at Heathrow Airport is to provide HAL, the airlines, their stakeholders and the CAA with independent assurance on project delivery, including scrutiny of cost control, governance, and risk management.
- 2.20 Given the depth of analysis and continuous oversight provided by the IFS, Steer's initial review of projects was based on the IFS documentation, which offers a high level of scrutiny and a robust evidence base. Further information was provided by HAL upon request in order to deep dive into specific project issues.
- 2.21 The remaining four projects were not reviewed by the IFS. For these projects, Steer has developed a comprehensive list of information requests, and this information was provided directly by HAL. We have also considered the information that airlines provided to the CAA.
- 2.22 A full record of the documentation supplied by the IFS, HAL and the airlines is included in Appendix A. All costs presented in this report are derived from HAL's and airlines' most recent submission in January and February 2026, with information up to October 2025. Accordingly, the latest estimates for the EAC and BAC on each project are referenced as of October 2025.

Stakeholder engagement

- 2.23 As discussed in the project selection section above, airline stakeholders were engaged at the outset of the review to identify which projects they wished the CAA to examine in greater detail. This ensured that airline priorities were reflected in the scope of the review.
- 2.24 Steer also engaged closely with both HAL and the IFS throughout the review process. This included regular meetings, facilitated by the CAA, to clarify details in IFS reports; to discuss how projects were delivered in practice; and to test the rationale behind key decisions. The IFS and HAL also provided additional explanations where documentation alone was insufficient to establish a clear understanding of each project's performance.
- 2.25 Steer set up formal question trackers with both HAL and the IFS. These trackers recorded all questions raised during the review, along with the corresponding responses, creating a clear and auditable trail of engagement. The trackers were managed by the CAA to ensure consistency and accountability across all parties.

Timeline

- 2.26 A timeline of the above data gathering and stakeholder engagement is outlined below:
- A Request for Information (RFI) was sent to HAL and the IFS on each selected project in May 2025.

- Steer undertook an initial assessment of the information followed by a Question and Answer process with HAL, the IFS and the airlines (in both oral and written format) in June 2025, managed by the CAA.
- HAL shared an updated project list in October 2025. In the same month, Steer sent a follow up RFI to HAL.
- HAL shared this additional information with the CAA and Steer in January and February 2026.
- The airlines also shared evidence with the CAA and Steer in February 2026.
- HAL shared additional information on Compass Centre Acquisition during June and July 2026, and a meeting was held to discuss the information.
- Steer reviewed the further evidence and concluded its analysis in July 2026 (this report).

Assessment framework

- 2.27 In order to assess whether any inefficiencies exist within the projects selected for this ex-post review, Steer has followed the Demonstrably Inefficient or Wasteful Expenditure (DIWE) framework. This framework is widely used by the Competition and Markets Authority (CMA) and other UK regulators, including the CAA, to assess whether capital expenditure has been incurred in a manner that is inefficient or wasteful. Where the CAA determines that expenditure qualifies as DIWE, this amount will be excluded from the opening Regulatory Asset Base (RAB) for the H8 price control (2027 to 2031). The CAA used the DIWE framework in its ex-post efficiency review of capex at Q6 and iH7.
- 2.28 A particular feature of the DIWE framework is that it places the burden of proof on the CAA to demonstrate that HAL's capital expenditure has been inefficient or wasteful. Unless such a demonstration is made, HAL's capital expenditure is presumed to be efficient.
- 2.29 Another feature of the DIWE framework is that any inefficiency is determined for the projects selected for review and no extrapolation is made to projects outside the review sample.
- 2.30 When determining the efficiency of capital expenditure under ex-post review, the CAA uses a list of criteria (or factors) to assess whether expenditure may be classified as DIWE. These factors are listed in Table 2.2 below. For ease of reference, we have also added shorthand labels for each factor.

Table 2.2: DIWE Assessment Framework

Factor	Factor in short form
a) The extent to which HAL identified and utilised appropriate resources.	Use of resources
b) The process by which any third-party contract was procured.	Procurement
c) The extent to which HAL was, or ought to have been, able to control the relevant expenditure, including:	Cost control

Factor	Factor in short form
i. whether HAL had in place appropriate processes to oversee and control its internal costs; ii. whether HAL had in place appropriate contract management processes to oversee and control third-party costs; and iii. to what extent these processes were applied effectively.	
d) The information that was reasonably available to HAL and/or its third-party contractors, at the time that it and/or they made any relevant decisions in relation to expenditure or the control of expenditure. This includes information relating to stakeholder views in relation to that expenditure.	Decision making
e) The extent to which any expenditure involved an unnecessary duplication of activity on the part of HAL and/or its third-party contractors.	Duplication
f) The extent to which any expenditure was increased by any material error or mistake on the part of HAL and/or its third-party contractors.	Error
g) The extent to which any expenditure was increased by any avoidable delay on the part of HAL and/or its third-party contractors.	Delay
h) The extent to which any expenditure was proportionate to the outputs which that expenditure was intended to, and/or did, deliver.	Value for money
i) The extent to which those outputs were appropriate outputs to be delivered in the context of creating (direct and indirect) benefits for the users of its services or in facilitating HAL's efficient compliance with regulatory or statutory obligations.	Benefits

Source: CAA, [CAP 1964](#), p.47-49, Steer analysis

- 2.31 For each project, Steer has assessed whether potential inefficiencies exist by applying the above framework and where we found evidence of cost inefficiencies, we indicate the factors that underpin our assessment of Demonstrably Inefficient and Wasteful Expenditure.

3 Ex-post review of projects

PRJ-000206 – B131 Main Tunnel

- 3.1 The Main Tunnel Refurbishment (“main tunnel”) project comprises the refurbishment of the existing Main Vehicular Tunnel at Heathrow Airport. The tunnel is the primary entrance into the Heathrow Airport Central Terminal Area (CTA), serving Terminals 2 & 3, and previously Terminal 1 before it closed to passenger operations in 2015.
- 3.2 The project has been ongoing since the G3 investment decision in 2013 and has faced extensive delays. Multiple setbacks, coordination challenges between the main and cargo tunnel refurbishments, scope changes, and COVID-19 disruptions delayed the G5 milestone from April 2016 to the forecast date of December 2026 (IFS March 2025 report).

Table 3.1: B131 Main Tunnel – Gateway Timeline

Gateway	Submission Date
G0/G1	No formal submission
G2	No formal submission
G3	May-13
G4	Dec-13
G5	Dec-26 (forecast)
G6	Apr-27 (forecast)
G7	Jul-27 (forecast)

Source: IFS B131 Main Tunnel IFS Interim Close Out Report; IFS B131 Main Tunnel January 2025 Monthly Report

Scope

- 3.3 The main tunnel project was originally combined with the cargo tunnel refurbishment project under Business Case B131 ‘Tunnels Refurbishment Project’. The ‘Design & Build’ scopes for the refurbishment of both tunnels were awarded to [REDACTED] in January 2014.
- 3.4 Following ongoing and well-documented concerns over [REDACTED] delivery performance, HAL made the decision to de-scope the cargo tunnel project from the [REDACTED] contract in May 2016.

Cost

- 3.5 As of October 2025, the EAC of the main tunnel project was £319.6m. This represented a variance of +£234.6m compared to the BAC, as indicated in Table 3.2. The BAC remained unchanged from the one set at G3 in May 2013. We understand, from the information reviewed, that airlines have not approved any of the budget increases for this project that HAL has proposed since G3 approval.
- 3.6 About £106.1m of capex was incurred on this project during the review period.

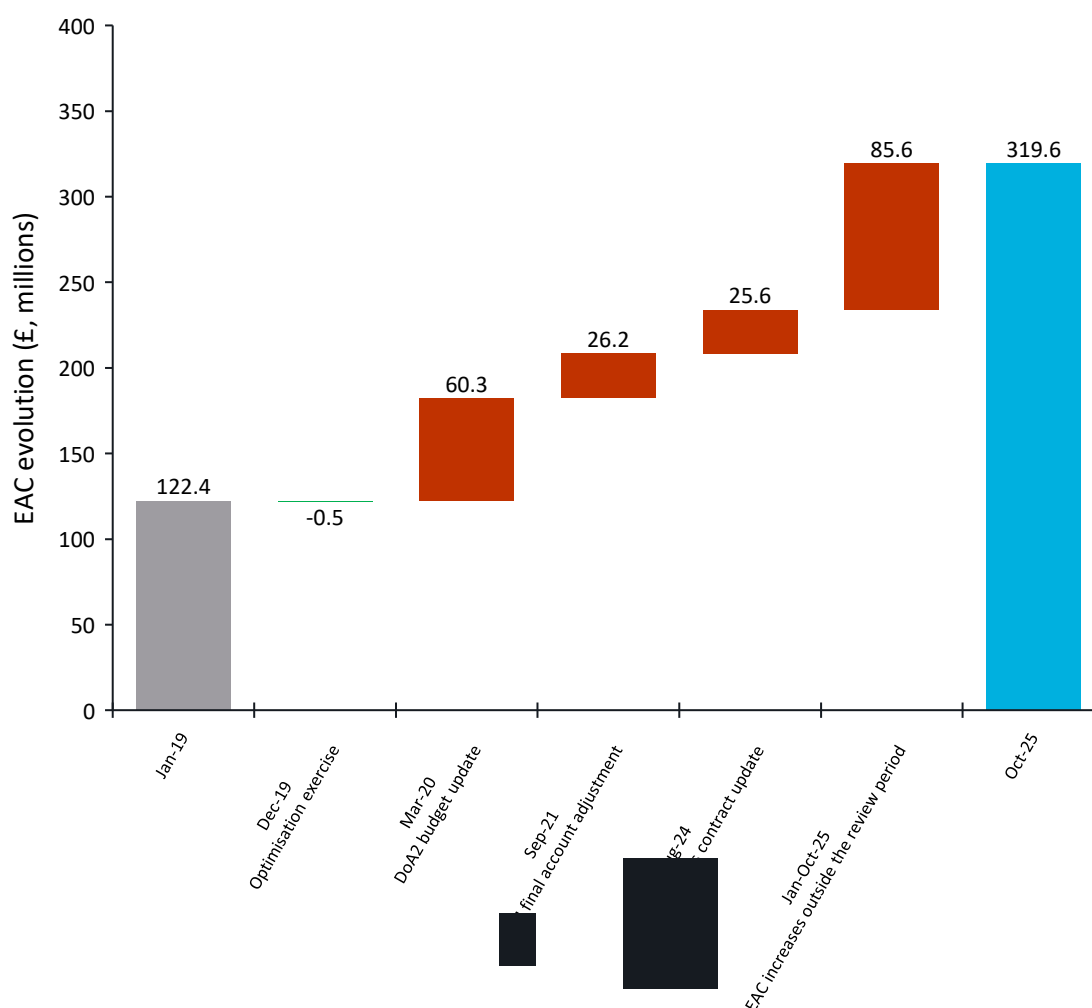
Table 3.2: B131 Main Tunnel - EAC, BAC and Capex incurred in the 2019 - 2024 review period (£m)

EAC (Oct-25)	BAC	EAC minus BAC	EAC vs. BAC (%)	Capex incurred 2019-2024
£319.6m	£85.0m	£234.6m	276.0%	£106.1m

Source: HAL, Steer analysis Note: EAC – estimated at completion; BAC – budget at completion. Those are defined at the beginning of the report.

- 3.7 The evolution of the EAC during the review period is shown in the Figure 3.1 below.

Figure 3.1: B131 Main Tunnel - EAC evolution from January 2019 to October 2025



Source: IFS reports, Steer analysis. Note: EAC – estimate at completion.

- 3.8 The events which contributed to the increases in EAC are discussed in the “Review of key issues” section below.

Documentation reviewed

- 3.9 We reviewed the following documentation prepared by the IFS for B131 Main Tunnel Refurbishment.

- Monthly reports;
- G3 gateway report;
- Interim close out report; and
- IFS summary report.

Review of key issues

- 3.10 The key issues section reflects those issues that occurred within the review period (2019-2024). The issues that occurred before this period were reviewed in an earlier ex-post review conducted by the CAA⁶.

- 3.11 However, we acknowledge that significant performance problems with contractor [REDACTED] occurred pre-2019 and these historic issues created a difficult legacy for the project entering our review window.

Issue 1: Continuous delivery issues with contractor [REDACTED] despite undertaking an optimisation exercise (2019 to 2023)

- 3.12 In July 2018, HAL and its contractor [REDACTED] paused delivery of the main tunnel project to undertake an optimisation exercise, intended to reset the project by clarifying the remaining scope, establishing a realistic programme, and confirming cost to complete.

- 3.13 This process culminated in a Heads of Terms 2 in December 2019, followed by the formalisation of the Deed of Amendments 2 (DoA2) in March 2020, which increased the budget by £60.3 million, as shown in Figure 3.1, updated the scope of works, and set out renewed commitments from [REDACTED]. At that stage, HAL decided to continue with [REDACTED] as the delivery integrator on the project.

- 3.14 HAL decided to proceed with [REDACTED] after evaluating several procurement alternatives. These are documented in Table 3.3 below. The option HAL chose at the time was Option 2 in the table.

Table 3.3: B131 Main Tunnel – Procurement options to determine next steps with [REDACTED]

Option 1	Option 2	Option 3	Option 4	Option 5
Continue as is	Commercial Settlement (additional budget) and	Close out settlement with [REDACTED] and appoint other	HAL terminate contract with [REDACTED] and appoint other	[REDACTED] terminate with HAL, which would need to

⁶ Heathrow Q6 Capex Efficiency Review, Arcadis, March 2020

Option 1	Option 2	Option 3	Option 4	Option 5
	continue with [redacted] under DoA2	delivery integrator	delivery integrator	appoint other delivery integrator

Source: IFS B131 Main Tunnel Interim Close Out Report

- 3.15 According to HAL’s options assessment, continuing with [redacted] with a commercial settlement (Option 2) was presented as the most viable route forward. The commercial settlement resulted in a budget increase of £60.3 million in March 2020 with a further adjustment of £26.2 million in September 2021. In HAL’s view, this option avoided a more expensive “close out settlement” and relied on [redacted] existing knowledge of the works and promised continuity of delivery.
- 3.16 At the time, this decision was supported by the IFS, which recognised that HAL had undertaken a structured and collective approach through the optimisation exercise. According to the IFS, the review of the Basis of Design documents and [redacted] renewed commitments at senior level gave the appearance of a controlled and achievable path to completion.
- 3.17 In practice, however, [redacted] quickly proved unable to meet the commitments made under DoA2. [redacted] performance did not improve and problems with delivery persisted. This led to HAL terminating the contract with [redacted] in 2023 and contracted the continuation of the project to [redacted] (Tunnel Cladding) and [redacted] (Operational Life Safety Systems).
- 3.18 Based on the information available at the time, we assess that HAL took the appropriate steps to reset the project through the optimisation exercise and DoA2 implemented in 2020. While HAL decided to continue with [redacted], it appeared at the time to have put in place measures to mitigate its exposure to further cost risk, including the adoption of a NEC Option C contract, under which cost overruns and cost savings were shared between HAL and [redacted]. These types of contracts are designed to incentivise performance and therefore limit cost overruns. We assess that it was the right type of contract in this context.
- 3.19 After reviewing the evidence, we conclude that HAL properly terminated its contract with [redacted]
- Issue 2: scope and cost increases since terminating with [redacted] and appointing [redacted] as new contractors (2024 and 2025)*
- 3.20 In 2024, HAL contracted [redacted] to carry out this project, taking over from [redacted]. The scope of works proposed with [redacted] included:
- outstanding works that [redacted] failed to deliver including the cladding and end-to-end testing; and
 - scope which was previously not included in [redacted] scope of work including fire damage remedial works and associated testing.
- 3.21 As we show in Figure 3.1 the project’s BAC increased by £111.2 million in the 2024-2025 period, £25.6 million in 2024 and a further £85.6 million in January to

October 2025. This budget increase reflected the new commercial arrangements being negotiated with [REDACTED] to accommodate the changes in scope listed above.

- 3.22 At the time of this review, HAL was still discussing the contractual arrangements for completing the outstanding Q6 Project works, which include the cladding installations and end-to-end testing that were removed from [REDACTED] scope and reassigned to [REDACTED]. The project's EAC has increased several times during the period 2024-2025 to reflect [REDACTED] final costs incurred on the project and commercial arrangements with [REDACTED] to finish the project. Since the contractual arrangements with [REDACTED] are still being negotiated, we recommend that these contracts should be reviewed as part of the next ex-post review.

Conclusion

- 3.23 Regarding Issue 1 (issues with the contractor [REDACTED]), HAL's decision to continue with [REDACTED] under the DoA2 arrangement appears to have presented challenges for the delivery of the works. However, in our assessment, the decision taken at the time was reasonable in light of the information available (DIWE factor 'd) Decision making'). The restructured contractual terms with [REDACTED] also reflected the mitigations we would expect to see to ensure control of future costs (DIWE factor 'c) Cost control'), as [REDACTED] had a clear incentive to limit cost overruns under the Option C NEC contract. We also assess that HAL's contract with [REDACTED] was terminated appropriately, including the non-payment of certain fees for non-delivery.
- 3.24 We also note that in its interim close-out report dated from July 2024, the IFS indicated it was satisfied with HAL management team for its efforts in progressing the project from the DoA2 in March 2020. Therefore, we conclude that there is no Demonstrably Inefficient Wasteful Expenditure on this Issue.
- 3.25 Regarding Issue 2, which relates to the appointment of the new contractors, [REDACTED], we have considered this matter against DIWE factor 'd) Decision making'. However, as the contractual and commercial arrangements relating to these works remain subject to ongoing negotiations at the time of this review, it is not yet possible to fully assess the implications of the decisions taken.
- 3.26 We therefore recommend that the efficiency of capex under the [REDACTED] contracts are reviewed in the next ex-post review.
- 3.27 Table 3.4 summarises our assessment of the capex incurred in the B131 – Main Tunnel project during the 2019 to 2024 period under review.

Table 3.4: DIWE assessment – B131 Main Tunnel (capex incurred from January 2019 to December 2024)

DIWE factor	Has this factor caused DIWE?
a) Use of resources	No
b) Procurement	No
c) Cost control	No
d) Decision making	No

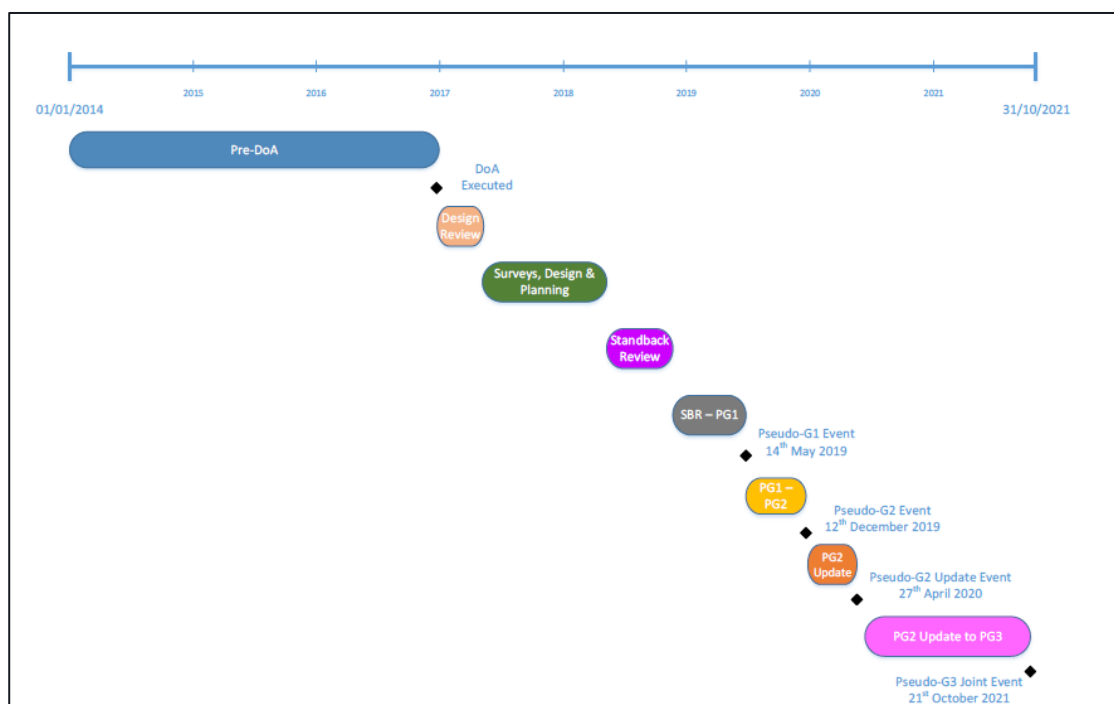
DIWE factor	Has this factor caused DIWE?
e) Duplication	No
f) Error	No
g) Delay	No
h) Value for money	No
i) Benefits	No

Source: Steer

PRJ-000387 – B131 Cargo Tunnel

- 3.28 The Cargo Tunnel Refurbishment (“cargo tunnel”) project involves upgrading and restoring the existing cargo tunnel at Heathrow Airport. The two-way airside tunnel is a vital transport route connecting Terminal 4 and the cargo area with the Central Terminal Area (CTA) supporting a high volume of cargo vehicle traffic.
- 3.29 The project received G3 approval in May 2013, alongside the Main Tunnel Refurbishment project. In January 2014, [REDACTED] was appointed to deliver the works. However, due to underperformance, in May 2016 HAL decided, to remove the cargo tunnel project from [REDACTED] scope of works. This change was formally implemented through a Deed of Amendment in December 2016.
- 3.30 A pseudo-gateway process was introduced to reassess the project’s scope and objectives, following the decision to exclude the cargo tunnel project from [REDACTED] scope.
- 3.31 The revised cargo tunnel project reached Pseudo-G3 stage in October 2021. In December 2021, HAL appointed [REDACTED] as the role of delivery integrator with an updated scope of works and a revised cost estimate. The timeline of the Pseudo gateway process is outlined in Figure 3.2 below.

Figure 3.2: B131 Cargo Tunnel – Project timeline to Pseudo-G3 (Oct-21)



Source: IFS Psuedo-G3 report

- 3.32 At the time of this review, the project was forecast to reach G6 by September 2026, as shown in Table 3.5.

Table 3.5: B131 Cargo Tunnel – Gateway Timeline

Gateway	Submission Date
G0/G1	No formal submission

Gateway	Submission Date
G2	No formal submission
G3	May-13
G4	Dec-13
Pseudo-G1	May-19
Pseudo-G2	Apr-20
Pseudo- G3	Oct-21
Pseudo-G4	Jan-22
G5	May-26 (forecast)
G6	Sep-26 (forecast)
G7	Not reported

Source: IFS B131 Cargo Tunnel March 2025 Monthly Report

Scope

- 3.33 The cargo tunnel project comprises the refurbishment of the existing tunnel running beneath the Southern Runway and the taxiways Alpha and Bravo. The project involves the design, procurement, installation, commissioning, and handover of a range of mechanical, electrical, communications and traffic management systems and civil facilities for the tunnel.

Cost

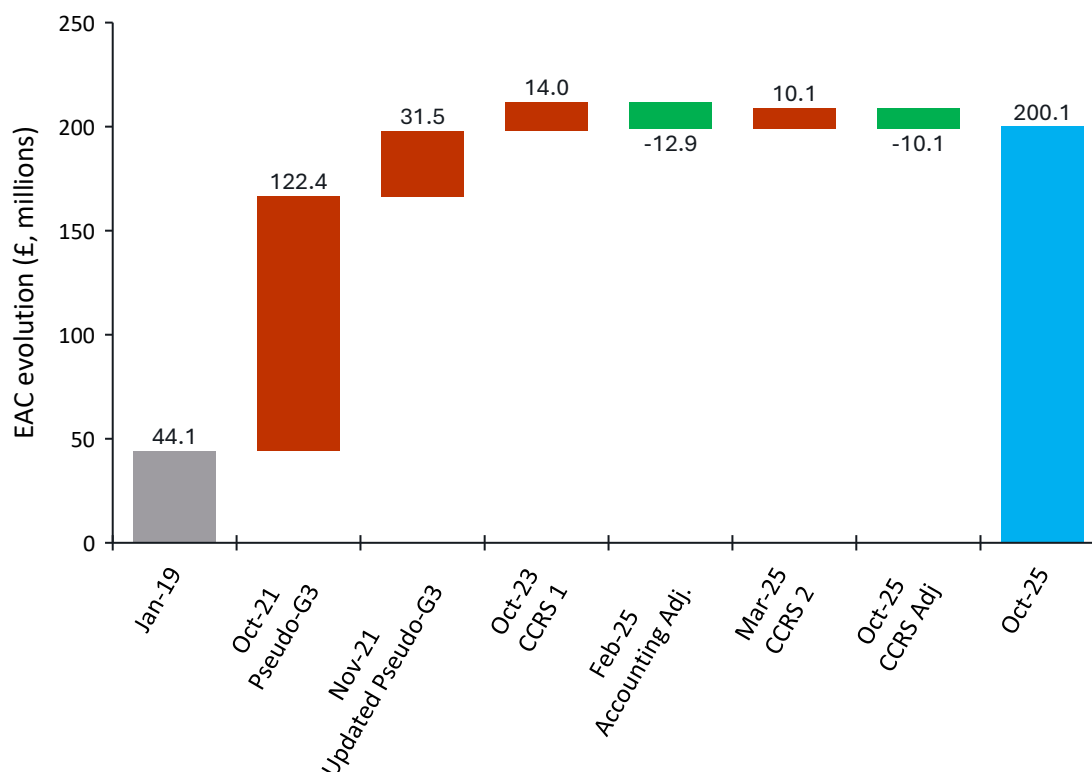
- 3.34 As of October 2025, the latest EAC of the cargo tunnel project was £200.1m, a variance of +£145.9m compared to the BAC. We note that BAC did not materially change from the BAC set at G3 in May 2013. We understand from the information reviewed that airlines have only approved one budget increase of £10.1m recently in March 2025. Further details on this increase are set out below in the “Review of key issues section”.
- 3.35 About £152m of capex was incurred on this project during the review period, as shown in Table 3.6.

Table 3.6: B131 Cargo tunnel - EAC, BAC and Capex incurred in the 2019 - 2024 review period (£m)

EAC (Oct-25)	BAC	EAC minus BAC	EAC vs. BAC (%)	Capex incurred 2019- 2024
£200.1	£54.3m	£145.9m	268.8%	£152.0m

Source: HAL, Steer analysis Note: EAC – estimated at completion; BAC – budget at completion. Those are defined at the beginning of the report.

- 3.36 The evolution of the EAC cost during the review period is shown in Figure 3. below.

Figure 3. : B131 Cargo Tunnel - EAC evolution from January 2019 to October 2025

Source: Steer analysis of information provided by HAL. Note: EAC – estimate at completion.

- 3.37 The events which contributed to the increases in EAC are discussed in the “Review of key issues” section below.

Documentation reviewed

- 3.38 We reviewed the following documentation, prepared by the IFS and provided by HAL through the Q&A process, related to project B131 Cargo Tunnel Refurbishment.

- Monthly reports;
- G3 gateway report;
- Pseudo-G3 gateway report;
- CCRS Comments for November 2023 Report (issued 12th January 2024) including the following supplementary documentation:
 - Cargo Tunnel CCRS Extract from July 2023 AMC SPG Slide Deck;
 - Cargo Tunnel EDP;
 - Cargo Tunnel Fibre Duct Issues;
 - Cargo Tunnel Refurbishment SPR Existing Roof Survey;
 - Grass area 26 and NPR HV Cable Routes July 2022;
- OCS – GA26C Option 4 and As built;
-  – Southern Plant Room, Heathrow – 06.04.2022;

- July 2023 SPG Presentation;
- IFS summary report;
- 868B_Cargo_Tunnel-Response_to_CAA – Steer-ex-post-review;
- 868B_CCRS_Comments_for_Nov_2023_Report; and
- CAA-H7-868 – Heathrow response to CAA Initial View on H7 Ex-Post Assessment Compass Centre excluded – 20260114.

Review of key issues

- 3.39 This section outlines three main issues that arose during the review period from 2019 to 2024. The issues that occurred before this period were reviewed in CAA’s earlier ex-post review⁷, which found a DIWE of £12.7m.

Issue 1: re-scope and new costing through pseudo-gateway process (2019 to 2021)

- 3.40 From the start of the review period (January 2019) to Pseudo-G3 in October 2021, the project underwent significant re-planning and re-scoping accompanied by a corresponding increase in costs. The revised scope and cost position presented at Psuedo-G3 established the new basis for progressing the project on site with the new contractor, [REDACTED].
- 3.41 It is our assessment the majority of the re-scoping reflected works that were necessary but had not been included in the original G3 scope (May 2013), including asbestos removal and changes in project requirements. We note that the IFS reviewed the proposed re-scope at Pseudo-G3 (October 2021) and was satisfied with the replanning undertaken.
- 3.42 As Figure 3. above shows, at the Pseudo-G3 (October 2021) the EAC was set at £166.6m. This is a variance of approximately +£122.4m from the budget set at the start of the project (£44.1m). Project delivery began on site after October 2021, following the revised scope and planning outlined at Pseudo-G3. In November, the EAC was further updated, resulting in an increase of £31.5 million to a total of £198.5 million for the EAC. This adjustment was made as the IFS determined the true EAC was likely to be closer to this value of £198.5m.

Issue 2: Cost increase request in 2023

- 3.43 In October 2023, HAL requested airlines’ approval for an additional BAC increase of £14.0 million, through a Client Change Request Sheet (CCRS). HAL presented this request for airline approval at the Capital Portfolio Board meeting on 11 July 2023.
- 3.44 At this meeting, HAL explained that the additional £14m comprised £11.31m of “scope change” and £2.70 million due to “EAC pressures”. It also explained that the CCRS proposal had not yet been reviewed by the IFS.
- 3.45 Subsequently, as part of its review role, the IFS requested the supporting documentation and presentation materials from the CPB meeting to assess

⁷ Heathrow Q6 Capex Efficiency Review, Arcadis, March 2020

whether HAL's justification was sufficient to support the proposed budget increase of £14m.

- 3.46 Notably, the airline community did not approve this increase, meaning that it resulted in an EAC increase only (as shown in Figure 3. above) whilst the BAC stayed the same at £44.1m.
- 3.47 Steer requested and reviewed the detailed CCRS showing each cost component and corresponding justification, which HAL had shared with the IFS. We compared our independent analysis with that conducted by the IFS at the time. From our review, we found that of the £14m budget increase that HAL requested:
- £2.06m justified an increase in both EAC and BAC; and
 - Of the remaining £11.94m, Steer did not have enough information to conclude.
- 3.48 As a result, we requested further information from HAL through the Q&A process led by the CAA to understand the items which made up the £11.94 in more detail. Steer understood that this amount relates to CCRS cost items arising from issues encountered on site where assumptions made at Pseudo-G3 were subsequently found to be incorrect. These include the need to redesign and reroute the New Power Route (NPR) following the discovery of damaged cables, and the identification of unforeseen conditions in the existing fire main after site mobilisation, which required the resequencing of asbestos removal works.
- 3.49 Having reviewed this evidence, we assess that these cost increases resulted from site conditions that HAL could not have reasonably anticipated at Pseudo G3 based on the information that was reasonably available (DIWE factor 'd) Decision making'). We assess that the surveys were undertaken on a sample basis in line with industry best practice.
- 3.50 Steer has experienced comparable circumstances on airfield projects at other airports and appreciate that there is always a low probability that the survey is not fully accurate as it is based on a sample. It is our assessment that, ultimately, the site conditions vary from the survey samples and that the additional works that led to the cost increase of £11.94m reflected changes in requirements and site conditions that could not have reasonably been foreseen at Pseudo G3 and, therefore, do not constitute a DIWE.

Issue 3: Cost changes in 2025

- 3.51 Since the budget increase requested in 2023 in the form of a Client Change Request Sheet, the cargo tunnel project has had two further budget changes, both in 2025:
- -£12.9m (February 2025): reduction in the EAC cost reflecting the transfer of  Actual Cost of Work Performed (ACWP) to the Main Tunnel Project; and
 - +£10.1m (March 2025): cost increase, through a Client Change Request Sheet which the airlines approved, which means that both the EAC and BAC have increased by this amount.
- 3.52 The cost reduction of -£12.9m was recorded as an accounting adjustment. A BAC increase of £10.1m was formally approved by the airlines in March 2025.

Subsequently, it appears that the EAC was revised down in October 2025, bringing the EAC back to £200.1m. As these figures fall outside the review period, they have not been examined in detail but are included in Figure 3. for completeness.

Conclusion

- 3.53 Regarding Issue 1 (re-scope and new costing through pseudo G3), we are of the view that the additional scope and corresponding additional cost of £154m related to justifiable works, which had not been included in the original G3 scope. We also assess that the cost proposed for the re-scoped work appears to be reasonable, based on the evidence available. We therefore assess that, having tested DIWE factors ‘e) duplication’ and ‘d) decision making’, there is no Demonstrably Inefficient and Wasteful Expenditure related to the additional cost of £153.9 set at pseudo G3 (Oct-21).
- 3.54 Regarding Issue 2, the CCRS submitted in October 2023, Steer assess that the cost increase of £14m was due to unforeseen conditions on site, and it appears that HAL undertook the relevant surveys on the ground which followed best practice. We therefore assess that, having tested the DIWE factor in particular error (factor ‘f’), that there is no Demonstrably Inefficient and Wasteful Expenditure on this project.
- 3.55 Issue 3 has not been assessed against the DIWE framework, as these cost changes fall outside the review period. This issue should be considered as part of the next ex-post review covering the post-2024 period.
- 3.56 Table 3.7 summarises our assessment of the capex incurred in the B131 – Cargo Tunnel project during the 2019 to 2024 review period.

Table 3.7: DIWE Assessment – B131 Cargo Tunnel (capex incurred from January 2019 to December 2024)

DIWE factor	Has this factor caused DIWE?
a) Use of resources	No
b) Procurement	No
c) Cost control	No
d) Decision making	No
e) Duplication	No
f) Error	No
g) Delay	No
h) Value for money	No
i) Benefits	No

Source: Steer

PRJ-000255 - Airside Taxiways - Cul De Sacs Tr6

- 3.57 Project PRJ-000255 - Airside Taxiways - Cul De Sacs Tr6 was motivated by the early failure of a section of Alpha North Taxiway and by the need to identify rehabilitation solutions for the taxiway pavement, Blocks 801, 802 and 803. These pavement blocks were constructed in 2006 as part of the Eastern Apron Development (EAD) and North Eastern Taxiway (NET) projects.
- 3.58 The pavement within the blocks experienced premature cracking, including corner cracking, half cracking and delta cracking and settlement of some of the halves or broken slabs pieces. The pavement also experienced mud pumping, which indicated issues with the foundation material directly below the pavement structure, mainly due to the poor ground conditions underneath the pavement, related to the clay present in the subgrade and to existing ponds.
- 3.59 The project was effectively divided into two subprojects: Alpha North and Block 21 Outer.
- 3.60 Alpha North achieved G3 on 17 May 2018 and Block 21 Outer on 19 April 2018. Works on site (that is, G5) for Alpha North were completed on 7 March 2019, four months later than anticipated and on 4 April 2019 for Block 21 Outer (one and a half months later than anticipated). The gateway timeline is shown in the below table.

Table 3.8: B6361.01 PRJ-000255 - Airside Taxiways - Cul De Sacs Tr6 Gateway Timeline

Gateway	Alpha North	Block 21 Outer
G3	May-18	Apr-18
G4	Jun-18	May-18
G5	Mar-19	Apr-19
G6	May-19	Not reported but project completed
G7	Jun-19	Not reported but project completed

Source: CAA-H7-845-16-19731-00-TS-193-000001 - Schedule update 2603

Scope

- 3.61 The scope of the Alpha North part of project included:
- Evaluating the existing pavement conditions and identifying the main reasons for the premature failure of the pavement;
 - Identifying the options at the solution development stage and select the preferred option; and
 - Removing the root of failure and achieve a 30-year design life.
- 3.62 The preferred option for the Alpha North part of the project was a partial block reconstruction of the centreline area of Blocks 801, 802 and 803. The type of pavement that was selected was rigid pavement, consisting of a PQC layer, laid over a LC layer on Granular Sub-base material. HAL also decided to exclude Block 804 from the works.

3.63 For Block 21 Outer part of the project, the scope included:

- Full depth pavement reconstruction;
- Replacement and realignment of existing AGL fittings;
- Rehabilitation of stop bars;
- Replacement of ducts and pits as required; and
- Reinstating pavement markings and signage.

Cost

3.64 The final cost account of the project was £21.7m which represented a variance of +£4.9m compared to the BAC. This variance is explored in more detail in the “Review of key issues” section below.

3.65 While G3 was in April and May 2018, we understand that, from a project accounting perspective, all of the capex was incurred in the 2019 – 2024 review period.

Table 3.9: PRJ-000255 - Airside Taxiways - Cul De Sacs Tr6– EAC, BAC and Capex incurred in the 2019 – 2024 review period (£m)

EAC	BAC	EAC minus BAC	EAC vs. BAC (%)	Capex incurred 2019-2024
£21.7m	£16.9m	+£4.9m	+29.0%	£21.7m

Source: HAL, Steer analysis Note: EAC – estimated at completion; BAC – budget at completion.

Documentation Reviewed

3.66 This project was not assured by the IFS. Therefore, all the documentation we reviewed was provided by HAL following several iterations of data requests managed by the CAA:

- Project Management Plan Between G3 and G4;
- Alpha North Tender Programme;
- Description of the Scope of the Alpha North Project Pre G3;
- Alpha North Achievement of G3 report;
- Alpha North Achievement of G3 certificate;
- Description of the Scope of the Alpha North Project;
- Schedule Update;
- Request for approval of the funding for the Alpha North Project;
- Alpha North Lessons Learned;
- Description of the Scope of Block 21 Outer Project;
- Block 21 Outer Project G3 Risk Register;
- Block 21 Outer Project G3 Schedule;
- Block 21 Outer Achievement of G3 report; and
- Block 21 Outer Achievement of G3 certificate.

Review of key issues

3.67 Our review has identified two issues with this project with the potential for justifying cost inefficiencies. We address these in turn below.

Issue 1: Soft ground conditions (Alpha North)

- 3.68 The project design approved at G3 was based on an intrusive geotechnical survey, including Ground-penetrating Radar (GPR) and topographical surveys.
- 3.69 The Alpha North construction works were awarded to [REDACTED]. In September 2018, the contractor warned about soft ground conditions, resulting in a significant project scope redesign. Specifically, the designed pavement depth increased by 0.5m to 1.6m compared to what was anticipated at G3. The associated delay caused by this redesign was approximately 20 weeks and the cost associated with the redesign of Alpha North was +£4.1m.
- 3.70 As part of the Question and Answer (Q&A) process, we have questioned HAL whether the intrusive geotechnical survey it had undertaken was suitable for a work of this nature. HAL has indicated that *“Standard practice to determine testing areas was carried out as part of the design phase”*. It also stated that *“the ground conditions later encountered during construction were localised and found outside of the testing areas. These conditions, which were unprecedented for Heathrow, resulted in Asset Specification guidance being updated to include testing for consolidation issues to minimise the risk of recurrence in future projects”*.
- 3.71 Based on the evidence reviewed, it is Steer’s assessment that HAL’s surveys were consistent with technical practice. There is also no guarantee that more extensive surveys would have identified the soft spots as those were very localised. We also note that lessons learnt from this issue appear to have been reflected in the Asset Specification guidance to avoid future occurrences.
- 3.72 We have also questioned the suitability of the original design based on the results of the geotechnical survey at the time. HAL has responded that *“the original design was appropriate based on the ground investigation and would not have been tolerable to allow for extremely soft ground across the site occurring at this stage”*, and that *“the subsequent change in scope and the need to redesign once the project had started on site was unavoidable (an ‘unknown unknown’) and would have materialised regardless of conducting post-G3 surveys - all means of identifying the soft ground converge on the same outcome, requiring a redesign”*.
- 3.73 Steer has experienced soft ground issues on airfield projects at other airports and appreciates that there is always a low probability that the survey is not fully accurate as it is based on a sample. It is our assessment that, ultimately, the ground conditions vary from the survey samples and that the new scope design with an increase pavement depth was unavoidable.

Issue 2: Changes to phasing plan (Block 21 Outer)

- 3.74 Our review has indicated that HAL has undertaken changes to the phasing plan of the Block 21 Outer project due to an operational constraint not anticipated at project scope design.
- 3.75 More specifically, the maintenance works at Block 21 Outer required the closure of runway exit A9E. As a consequence, the distance required between aircraft

increased to four nautical miles on the runway, reducing the flow of aircraft to 36 per hour. This closure had not been foreseen by the project team before G3. Therefore, [REDACTED] and Heathrow's Airside Operation's team agreed that the project's phasing had to be reviewed post G3 to avoid this runway exit closure.

- 3.76 The later changes in the phasing plan needed to avoid the runway exit closure resulted in an overspent, which we estimate at +£0.8m compared to the G3 cost estimate. The associated delay caused by this change in the phasing plan was approximately six weeks.
- 3.77 The operational constraint beyond those accounted for in the cost estimate approved at G3 resulted in an overspend relative to the G3 approved budget. Steer assesses that it is common that operational assumptions evolve over time on a project, in particular, on areas which interface with runway operations. There is also no evidence indicating that the overspend would have been lower than +£0.8m if this operational constraint would have been detected pre-G3.

Conclusion

- 3.78 Regarding Issue 1, we assess that the ground condition surveys were conducted in a manner consistent with existing knowledge of ground conditions in the airport campus, therefore, making appropriate use of resources (DIWE factor 'a) Use of resources'). The evidence indicates that the soft ground conditions later encountered were unprecedented and HAL took appropriate steps to update its evidence base to inform future surveys (condition 'd) Decision making'). While we do not consider that the surveys should have been more extensive at the time, there is no guarantee that those would have identified the soil conditions as they were very localised. Therefore, we assess that there is no Demonstrably Inefficient or Wasteful Expenditure on this issue.
- 3.79 On Issue 2 related to Block 21 Outer re-phasing, we assess that failure to foresee all possible operational constraints at project scope design is a common issue on projects of this nature. In addition, we have not found evidence that this additional cost of +£0.8m could have been reasonably mitigated or avoided if the operation constraint had been identified pre-G3 (Factor 'c) Cost control'). Therefore, we assess that this additional +£0.8m cost does not constitute Demonstrably Inefficient or Wasteful Expenditure either.
- 3.80 Table 3.7 summarises our assessment of the capex incurred in project PRJ-000255 - Airside Taxiways - Cul De Sacs Tr6, which was fully incurred during the 2019 to 2024 period under review.

Table 3.10: DIWE assessment – PRJ-000255 - Airside Taxiways - Cul De Sacs Tr6

DIWE factor	Has this factor caused DIWE?
a) Use of resources	No
b) Procurement	No
c) Cost control	No
d) Decision making	No

DIWE factor	Has this factor caused DIWE?
e) Duplication	No
f) Error	No
g) Delay	No
h) Value for money	No
i) Benefits	No

Source: Steer

PRJ-000533 - B216 T1_T2 HBS

- 3.81 The B216 T1/T2 Hold Baggage Screening (HBS) project involved replacing the existing screening machines in Terminal 1 and Terminal 2. The project was necessary both to comply with Standard 3 screening requirements set by the Department for Transport (DfT) and the European Union (EU Directive EU1087/2011), and to replace equipment that had reached the end of its asset life.
- 3.82 This project formed part of the wider B216 Standard 3 HBS and Asset Replacement programme, which involved replacing HBS machines across the airport.
- 3.83 The project passed G3/4 in July 2016 and G5 in Aug 2021. The project was completed and reached financial closure (G7) in March 2022. Steer only conducted a DIWE assessment of the capex incurred against this project over the period 2019-2024, in line with the scope of the review. The gateway timeline is shown in Table 3.11.

Table 3.11: B216 T1_T2 HBS – Gateway Timeline

Gateway	Submission Date
G0/G1	No formal submission
G2	No formal submission
G3/4	Jul-16
G5	Aug-21
G6	Dec-21
G7	Mar-22

Source: IFS B216 T1_T2 HBS Close out report

Scope

- 3.84 The project scope included replacing the HBS machines and upgrading the conveyor belts as outlined in Table 3.12 below.

Table 3.12: B216 T1_T2 HBS – Scope

Terminal	Item
T1 Transfers	Hold baggage machines [REDACTED]
T2 Direct	Hold baggage machines [REDACTED]
	New conveyor (inline) [REDACTED]
	New conveyor (offline) [REDACTED]

Source: IFS B216 T1_T2 HBS Close out report

Cost

- 3.85 The final cost account of the capex incurred on this project was £169.6m, which represents a variance of +£51.2m compared to the BAC. This is explored in detail in the “Review of key issues” section.
- 3.86 About £38.5m capex was incurred on this project during the 2019 to 2024 review period, 23% of the final cost account figure.

Table 3.13: B216 T1_T2 HBS – EAC, BAC and Capex incurred in the 2019 – 2024 review period (£m)

EAC	BAC	EAC minus BAC	EAC vs. BAC (%)	Capex incurred 2019-2024
£169.6m	£118.3m	£51.2m	+43.3%	£38.5m

Source: HAL, Steer analysis. Note: EAC – estimated at completion; BAC – budget at completion

Documentation reviewed

- 3.87 We reviewed the following documentation prepared by the IFS for B216 T1_T2 BHS:
- Monthly reports (August 2014– September 2021);
 - IFS Initial review;
 - G3 gateway report;
 - Close out report; and
 - IFS Summary report.
- 3.88 We also reviewed information provided by HAL:
- List of compensation events of the DI;
 - Deed of Amendment 6 with the DI;
 - 868A 1907 CPB Minutes v2;
 - 868A 1907 CPB Slide Pack v3;
 - 868A HBS Summary_Master-Rev01;
 - 868_DOA6_T1_2_and_T4_HBS_2025-12-15; and
 - CAA-H7-868 – Heathrow response to CAA Initial View on H7 Ex-Post Assessment Compass Centre excluded – 20260114.

Review of key issues

- 3.89 The issues faced on the T1_T2 HBS project closely mirrored those on the T4 HBS project discussed in the next section. The Delivery Integrator (DI) who is responsible for the coordination, integration and delivery of all the systems and stakeholders related to the hold baggage screening project in T1 and T2 (this project), as well as in T4, was [REDACTED].
- 3.90 On both projects, we have found evidence that the delivery integrator, [REDACTED], demonstrated poor schedule management throughout the project. We also found issues of coordination between HAL and [REDACTED] regarding the way scheduled restrictions on construction activities (referred to as “embargoes”) were

embedded into the project work schedule. We address these issues in turn below for T1 and T2.

- 3.91 During our review we have also found indication of comparable schedule management issues with the machine suppliers [REDACTED]. We did not examine this matter further, as this issue occurred before January 2019, the start of this review period.

Issue 1: Poor schedule management by the delivery integrator [REDACTED]

- 3.92 The IFS reports document that HAL consistently raised concerns about poor schedule management from the delivery integrator, [REDACTED], throughout duration of works on site (between 2018 and 2019).
- 3.93 Key issues raised within the IFS reports included:
- Frequent schedule changes;
 - Dates set in the contract not matching the actual execution dates, as shown in the contract event manager and reporting;
 - No resource planning and limited support provided to the supply chain; and
 - Scheduled restrictions on construction activities (known as “embargoes”) missing or incorrectly applied in the work schedule.
- 3.94 In the first half of 2019, HAL and [REDACTED] undertook workshops, called “Springboard” events, to improve productivity in areas such as schedule, cost and contract management. HAL’s team provided a briefing to the IFS in September 2019 regarding the changes to the planning and controls processes for T1/2 (and T4). This introduced changes to the way in which the schedule was developed, with the focus being on how commercial activities can support, rather than drive, delivery. The IFS recognised this approach resulted in some significant improvements and a focus on completing the project.
- 3.95 Based on the evidence we reviewed, it is our assessment that HAL took appropriate steps to address the identified schedule management issues which started before January 2019, the beginning of the review period. These actions were effective in driving efficiency on the project during the review period 2019-2024.

Issue 2: Issues with the integration of embargoes in the work schedule

- 3.96 Embargoes are scheduled restrictions on construction activities during periods of peak passenger demand, operational activity, or night-time noise restrictions. Typically, HAL sets embargoes for each project upfront as part of the contractual arrangements with the supply chain. At HAL, the embargo categories are as follows:
- Red Days – [REDACTED]; and
 - Amber Days – [REDACTED].
- 3.97 Our review has identified an issue with the integration of embargoes in the work schedule by [REDACTED] which was an important contributor to work delays and cost

increases. As the project progressed, the number of embargo dates increased but these were not promptly reflected in the work schedule.

- 3.98 The increased frequency of embargoed days was driven by the year-on-year increase of passenger volumes and the resulting increases in baggage operational requirements. However, [REDACTED] were slow in incorporating these additional embargoes into the schedule. Although the increase in frequency of the embargoed days started in March 2018, they were not incorporated into the delivery integrators baseline programme until March 2019.
- 3.99 As a result, there was a delay in milestone dates including 56 days for G5 and 40 days for G6 and G7. This delay in incorporating additional embargoes created a significant misalignment in planning, which delayed project delivery. We assess that this was a major oversight in planning, as embargoes are a typical operational requirement that should have been proactively managed by both HAL and the delivery integrator.
- 3.100 To understand the impact of coordination issues between HAL and the delivery integrator, Steer requested a summary of compensation events⁸ between [REDACTED] and HAL. Our review of this summary has identified the existence of Deed of Amendment 6 (DoA6), which was an update of the contract terms with [REDACTED]. This resulted in an increase of the T1 & T2 contract price by [REDACTED], from [REDACTED] at G3 to [REDACTED] in September 2019.
- 3.101 Based on our review of the DoA6, we assess that the project cost increase of £17.4m appears to mostly relate to scope change rather than contractor inefficiency. This view is supported by airline engagement at the Capital Portfolio Board meeting on 18 July 2019, where no formal objections were recorded on the DoA6, as well as the absence of concerns from the IFS regarding the scope changes. Given the complexity of baggage projects, it is common for a degree of scope change to occur during implementation.
- 3.102 We also note that [REDACTED] requested compensation claims to HAL amounting to approximately [REDACTED] in relation to change in embargoes during project delivery, as shown in Table 3.14. HAL rejected 99.7% of these claims, as also shown in Table 3.14, and approved payments of [REDACTED] across T1_2 HBS and T4 in aggregate. Therefore, Steer concludes that had HAL paid for these compensation events in full, the project cost would have been nearly [REDACTED] million higher than the [REDACTED] discussed above.

Table 3.14: Combined compensation events summary – T1/2 and T4.

Embargoes CEs	Contractor Original Quote (£)	Project Manager Implemented Price ⁹ (£)
T1/2	[REDACTED]	[REDACTED]

⁸ A compensation event is a formally defined circumstance that entitles the contractor to additional time, money, or both because the event changes the contractor's obligations or costs in a way that was not allowed for in the original contract.

⁹ Cost actually paid by HAL within the project.

Embargoes CEs	Contractor Original Quote (£)	Project Manager Implemented Price ⁹ (£)
T4	████	████
Total	████	████

Source: HAL

Conclusion

- 3.103 We assessed DIWE factor ‘a) use of resources’ in relation to Issue 1 (schedule management issues with █████). Steer assesses that HAL undertook appropriate actions to mitigate the issues with the schedule management on the project. As the majority of the underlying schedule management issues arose prior to the review period, and no inefficient or wasteful use of resources was identified in the mitigation activities undertaken, we conclude that there is no instance of Demonstrably Inefficient or Wasteful Expenditure in relation to this issue.
- 3.104 We also assessed DIWE factors ‘a) use of resources’ and ‘g) delay’ in relation to Issue 2, the integration of embargoes in the work schedule. Despite the problems with the incorporation of embargoes in the work schedule being a major oversight on the project, Steer assesses that HAL did not incur Demonstrably Inefficient or Wasteful Expenditure as it rejected the compensation claims from █████ thereby avoiding costs resulting from this oversight.

Table 3.15: DIWE assessment – B216 T1_T2 HBS

DIWE factor	Is this factor involved in the DIWE?
a) Use of resources	No
b) Procurement	No
c) Cost control	No
d) Decision making	No
e) Duplication	No
f) Error	No
g) Delay	No
h) Value for money	No
i) Benefits	No

Source: Steer

PRJ-000535 - B216 T4 HBS

- 3.105 The B216 T4 HBS project involved upgrading and replacing the existing screening machines in Terminal 4. The project was necessary both to comply with Standard 3 screening requirements set by the Department for Transport (DfT) and the European Union (EU Directive EU1087/2011), as well as replacing equipment that had reached the end of its asset life.
- 3.106 This project formed part of the wider B216 Standard 3 HBS and Asset Replacement programme, which involved replacing HBS machines across the airport including Terminals 1, 2 and 5, which are separate projects involved in the scope of this review.
- 3.107 The project passed G3/4 in July 2016 and G5 in May 2022, and the project was completed in January 2023. Steer only carried out the DIWE assessment of capex incurred on this project over the period 2019-2024, in line with the scope of the review. The gateway timeline is shown in Table 3.16.

Table 3.16: B216 T4 HBS – Gateway Timeline

Gateway	Submission Date
G0/G1	No formal submission
G2	Jul-14
G3/4	Jul-16
G5	May-22
G6	Aug-22
G7	Jan-23

Source: IFS B216 T4 close out report

Scope

- 3.108 The scope of the project included replacing the HBS machines and upgrading the conveyor belts as outlined in the table below.
- 3.109 Following the COVID-19 pandemic, the project was stood down. In January 2021, HAL decided not to resume works to complete the T4 HBS project, and the works were paused. After a review and consultation with stakeholders in the following months, HAL chose to recommence works, but only on the Left Hand Side (LHS), to enable the terminal to reopen when required. The Right Hand Side (RHS) was delayed and has since become a separate project, now referred to as B71-041 T4 HBS RHS. The BAC was reduced to reflect the removal of the RHS element from the original project. The scope and cost of the RHS project are not assessed in this review.

Table 3.17: B216 T4 HBS – Scope

Item	Quantity/Detail
HBS machines [REDACTED]	[REDACTED]
HBS machines [REDACTED]	[REDACTED]
New conveyor	[REDACTED]

Source: IFS B216 T4 close out report.

Note: one [REDACTED] machine was transferred to [REDACTED] resulting in a total of [REDACTED] machines installed in [REDACTED].

Cost

3.110 The final cost account of the project was £180.8m which represents a variance of +£84.6m compared to the BAC. These figures account for the removal of the RHS element of the original project.

3.111 The capex incurred in the review period was £78.3m, 43% of overall spend on the project.

Table 3.18: B216 T4 HBS – EAC, BAC and Capex incurred in the review period (£m)

EAC	BAC	EAC minus BAC	EAC vs. BAC (%)	Capex incurred 2019-2024
£180.8m	£96.1m	+£84.6m	+88.0%	£78.3m

Source: HAL, Steer analysis. Note: 1) EAC – estimated at completion; BAC – budget at completion. 2) Costs reported in this table account for the removal of the RHS element from the original project.

Documentation reviewed

3.112 We reviewed the following documentation prepared by the IFS for B216 T4 HBS.

- Monthly reports (August 2014– September 2021);
- IFS Initial review;
- G3 gateway reports;
- Close out report; and
- IFS summary report.

3.113 We also reviewed information provided by HAL:

- List of compensation events of the DI;
- Deed of Amendment 6 with the DI;
- 868A 1907 CPB Minutes v2;
- 868A 1907 CPB Slide Pack v3;
- 868A HBS Summary_Master-Rev01;
- 868_DOA6_T1_2_and_T4_HBS_2025-12-15; and
- CAA-H7-868 – Heathrow response to CAA Initial View on H7 Ex-Post Assessment Compass Centre excluded – 20260114.

Review of key issues

- 3.114 The issues faced on the T4 HBS project closely mirrored those on the T1/T2 HBS project discussed previously. The Delivery Integrator (DI) who is responsible for the coordination, integration and delivery of all the systems and stakeholders related to the hold baggage screening project in T4 (this project), as well as for T1/T2, and T5 was [REDACTED].
- 3.115 On both projects, we have found evidence that the delivery integrator, [REDACTED], demonstrated poor schedule management throughout the project. We also found issues of coordination between HAL and [REDACTED] regarding the way scheduled restrictions on construction activities (referred to as “embargoes”) were embedded into the project work schedule. We address these issues in turn below.
- 3.116 During our review we have also found indication of comparable schedule management issues with the machine suppliers [REDACTED]. We did not examine this matter further, as this issue occurred before January 2019, the start of this review period.

Issue 1: Poor schedule management by the delivery integrator [REDACTED]

- 3.117 The IFS reports document that HAL consistently raised concerns about poor schedule management from the delivery integrator, [REDACTED], throughout duration of works on site (between 2018 and 2019).
- 3.118 Key issues raised within the IFS reports included:
- Frequent schedule changes;
 - Dates set in the contract not matching the actual execution dates, as shown in the contract event manager and reporting;
 - No resource planning and limited support provided to the supply chain; and
 - Scheduled restrictions on construction activities (known as “embargoes”) missing or incorrectly applied in the work schedule.
- 3.119 In the first half of 2019, HAL and [REDACTED] undertook workshops, called “Springboard” events, to improve productivity in areas such as schedule, cost and contract management. HAL’s team provided a briefing to the IFS in September 2019 regarding the changes to the planning and controls processes for T4 (and T1/2). This introduced changes to the way in which the schedule was developed, with the focus being on how commercial activities can support, rather than drive, delivery. The IFS recognised this approach resulted in some significant improvements and a focus on completing the project.
- 3.120 Based on the evidence we reviewed, it is our view that HAL took appropriate steps to address the identified schedule management issues which arose outside prior to this review period. These actions were effective in driving efficiency on the project during the review period 2019-2024.

Issue 2: Issues with the integration of embargoes in the work schedule

- 3.121 Embargoes are scheduled restrictions on construction activities during periods of peak passenger demand, operational activity or night-time noise restrictions.

Typically, HAL sets embargoes for each project upfront as part of the contractual arrangements with the supply chain. At HAL, the embargo categories are as follows:

- Red Days – [REDACTED]; and
- Amber Days – [REDACTED].

- 3.122 Our review has identified problems with the integration of embargoes in the work schedule by [REDACTED] which contributed to work delays and cost increases. As the project progressed, the number of embargo dates increased but these were not promptly reflected in the work schedule.
- 3.123 The increased frequency of embargoed days was driven by the year-on-year increase of passenger volumes and the resulting increases in baggage operational requirements. However, [REDACTED] were slow in incorporating these additional embargoes into the work schedule. Although the increase in frequency of the embargoed days started in March 2018, they were not incorporated into the delivery integrators baseline programme until March 2019.
- 3.124 As a result, there was a delay in milestone dates including 56 days for G5 and 40 days for G6 and G7. This delay in incorporating additional embargoes created a significant misalignment in planning, which delayed project delivery. We assess that this was a major oversight in planning, as embargoes are a typical operational requirement that should have been proactively managed by both HAL and the delivery integrator.
- 3.125 To understand the impact of problems with coordination of embargoes between HAL and the delivery integrator [REDACTED], Steer requested a summary of compensation events¹⁰ between [REDACTED] and HAL. Our review of this summary identified the existence of Deed of Amendment 6 (DoA6), which was an update of the contract terms with [REDACTED]. This resulted in an increase of the T4 contract price by [REDACTED], from [REDACTED] at G3 to [REDACTED] in September 2019.
- 3.126 Based on our review of the DoA6, we assess that the project cost increase of £47.2m appears to mostly relate to scope change rather than contractor inefficiency. This view is supported by airline engagement at the Capital Portfolio Board meeting on 18 July 2019, where no formal objections were recorded on the DoA6, as well as the absence of concerns from the IFS regarding the scope changes. Given the complexity of baggage projects, it is common for a degree of scope change to occur during implementation.
- 3.127 We also note that [REDACTED] requested compensation claims to HAL amounting to approximately [REDACTED] in relation to change in embargoes during project delivery, as shown in Table 3.19. HAL rejected 99.7% of these claims, as also shown in Table 3.19, and approved payments of [REDACTED] across T1_2 HBS and T4 in aggregate. Therefore, Steer concludes that had HAL paid for these compensation events in

¹⁰ A compensation event is a formally defined circumstance that entitles the contractor to additional time, money, or both because the event changes the contractor's obligations or costs in a way that was not allowed for in the original contract.

full, the project cost would have been nearly [REDACTED] million higher than the [REDACTED] discussed above.

Table 3.19: Combined compensation events summary – T1/2 and T4.

Embargoes CEs	Contractor Original Quote (£)	Project Manager Implemented Price ¹¹ (£)
T1/2	[REDACTED]	[REDACTED]
T4	[REDACTED]	[REDACTED]
Total	[REDACTED]	[REDACTED]

Source: HAL

Conclusion

- 3.128 We assessed DIWE factor ‘a) Use of resources’ in relation to Issue 1 (schedule management issues with [REDACTED]). Steer assesses that HAL undertook appropriate actions to mitigate the issues with the schedule management on the project. As most of the underlying schedule management issues arose prior to the review period, and no inefficient or wasteful use of resources was identified in the mitigation activities undertaken during the review period, we conclude that there is no instance of Demonstrably Inefficient or Wasteful Expenditure in relation to this issue.
- 3.129 We also assessed DIWE factors ‘a) Use of resources’ and ‘g) Delay’ in relation to Issue 2, in relation to the integration of embargoes in the work schedule. Despite embargoes being a major oversight on the project, Steer assesses that HAL did not incur Demonstrably Inefficient or Wasteful Expenditure as it rejected the DI’s compensation claims.

Table 3.20: DIWE assessment – B216 T4 HBS

DIWE factor	Is this factor involved in the DIWE?
a) Use of resources	No
b) Procurement	No
c) Cost control	No
d) Decision making	No
e) Duplication	No
f) Error	No
g) Delay	No
h) Value for money	No
i) Benefits	No

¹¹ Actual price paid by HAL within the project.

Source: Steer

PRJ-000537 - B216 T5 HBS

- 3.130 The B216 T5 Hold Baggage Screening (HBS) project involved upgrading and replacing the existing screening machines in Terminal 5. The project was necessary both to comply with Standard 3 screening requirements set by the Department for Transport (DfT) and the European Union (EU Directive EU1087/2011), and to replace equipment that had reached the end of its asset life.
- 3.131 This project formed part of the wider B216 Standard 3 HBS and Asset Replacement programme, which involved replacing HBS machines across the airport.
- 3.132 The original plan was to include Terminal 5 HBS in the same G3 submission as T1_T2 and T4. However, the T5 G3 was deferred by a month to enable learning from early works/activities to be fed into the solution for T5, thereby improving certainty of cost and schedule prior to G3.
- 3.133 This project achieved G3 in August 2016 and reached completion and financial closure (G7) in May 2021. The gateway timeline is shown in Table 3.21 below.

Table 3.21: B216 T5 HBS – Gateway Timeline

Gateway	Submission Date
G0/G1	No formal submission
G2	No formal submission
G3/4	Aug-16
G5	Mar-20
G6	Nov-20
G7	Mar-21

Source: IFS B216 T5 HBS Close out report, Steer analysis

Scope

- 3.134 The project scope included replacing the hold baggage machines and upgrading the conveyor belts as outlined in the table below.

Table 3.22: B216 T5 HBS – Scope

Item	Quantity/ Detail
Hold baggage machines (XXX)	XXX
Hold baggage machines (XXX)	XXX
New conveyor (inline)	XXX
New conveyor (offline)	XXX

Source: IFS B216 T5 HBS Close Out Report, Steer analysis

Cost

- 3.135 The EAC of the project was £171.4m, which represents an overspend of +£23.7m compared to the G3 approved BAC of £147.7m, as indicated in Table 3.23 below.
- 3.136 Only about £37.3m capex was incurred on this project during the review period; 22% of the final cost account of £171.4m.

Table 3.23: B216 T5 HBS – EAC, BAC and Capex incurred in the review period (£m)

EAC	BAC	EAC minus BAC	EAC vs. BAC (%)	Capex incurred 2019-2024
£171.4m	£147.7m	+£23.7m	+16.1%	£37.3m

Source: HAL, Steer analysis. Note: EAC – estimated at completion, BAC – budget at completion. Those are defined at the beginning of the report.

Documentation reviewed

- 3.137 We reviewed the following documentation prepared by the IFS for B216 T5 HBS:
- Monthly reports (August 2014– September 2021);
 - IFS Initial review;
 - G3 gateway reports;
 - Close out report; and
 - IFS summary report.

Review of key issues

- 3.138 This project was deferred to allow for incorporating lessons from earlier works and activities in T1_T2 HBS and T4 HBS projects, thereby improving confidence in the cost and schedule prior to G3. Notably, the delivery integrator for this project was [REDACTED], rather than [REDACTED] which delivered the T1_T2 and T4 HBS projects.
- 3.139 Our review of IFS materials has indicated that this project was well managed, with the delivery integrator [REDACTED] performing strongly in terms of schedule planning and management, as well as in identifying cost savings throughout delivery, in contrast with the performance of both T1_T2 HBS and T4 HBS projects.
- 3.140 In its close-out report, the IFS noted that [REDACTED] project team managed challenges from the HBS machine supplier ([REDACTED]) effectively, in contrast with what was reviewed in the T1_T2 and T4 HBS projects. However, as for the two other projects, the issues with [REDACTED] supply of HBS machines occurred before January 2019, the start of this review period and, therefore, we did not examine this matter.

Issue 1: Late introduction of the Dual Image scope

- 3.141 At the G3 in August 2016, the implementation of dual image processing was not included within the project scope and BAC. Dual image processing is the requirement for bags to be processed through two independent image streams rather than a single integrated system.

- 3.142 Post G3, the project focused on delivering the core HBS infrastructure first, as Standard 3 screening requirements had to be met by September 2018 in the UK. Following further analysis and consultation with the airline community in 2018-2019, a decision was taken to implement the dual image processing, which required the addition of  HBS machines and associated implementation works. This caused an increase in the EAC of £8.52m in August 2019.
- 3.143 In our assessment, deferring the decision until the solution was better defined was reasonable given the level of uncertainty at G3 and the timing for delivering the project (DIWE factor ‘d) Decision making’). This appears to also be a careful decision in light of the operational constraints associated with implementing changes within a live baggage system.
- 3.144 While we are not clear on why the BAC was not increased as a result of this decision, the IFS indicated in the project close out report that *“both the project team and airline community responded positively and proactively, with the Client Change Request Sheet (CCRS) narrative reflecting a fair and reasonable position on both sides.”*

Conclusion

- 3.145 We have tested the late introduction of the dual image scope against the DIWE factors (in particular factor ‘d) Decision making’) and have assessed that late introduction was a reasonable decision given the level of uncertainty at G3 and the timing for delivering the project.
- 3.146 We therefore have not found any Demonstrably Inefficient and Wasteful Expenditure on this project.
- 3.147 Table 3.24 summarises our assessment of the capex incurred in project B216 T5 HBS during the 2019 to 2024 period under review.

Table 3.24: DIWE assessment – B216 T5 HBS (capex incurred from January 2019 to December 2024)

DIWE factor	Has this factor caused DIWE?
a) Use of resources	No
b) Procurement	No
c) Cost control	No
d) Decision making	No
e) Duplication	No
f) Error	No
g) Delay	No
h) Value for money	No
i) Benefits	No

Source: Steer

PRJ-000742 - B6361.01 Eastern Campus Logistics and Compliance

- 3.148 Project PRJ-000742 - B6361.01 Eastern Campus Logistics and Compliance consists of replacing Heathrow's current Sort Allocation Computer (SAC), which is a bag sortation system used as part of Heathrow's baggage system. The replacement took place in Terminal 1&2 and 4. The replaced system uses a new software platform called [REDACTED].
- 3.149 The main objective of this replacement is to enhance the operational resilience of the airport's baggage handling software, reduce cyber risks and reduce long-term capex and operating expenditure (opex) by consolidating systems and standardising support across the airport.
- 3.150 The project achieved G3 on 21 July 2021 and G5 on 22 April 2024 on T4 and 27 June 2024 on T1 & T2, approximately 1 year later than anticipated at G3.
- 3.151 Project completion was achieved in November 2025. The gateway timeline is shown in the table below.

Table 3.25: B6361.01 Eastern Campus Logistics and Compliance Gateway Timeline

Gateway	Submission Date
G0	Dec-18
G1	Mar-20
G2	Jun-20
G3	Jul-21
G4	Mar-22
G5	Apr-24/Jun-24
G6	Oct-25
G7	Nov-25

Source: CAA-H7-842-13-LHR EaCa T4 SAC [REDACTED] G3-G7 - Implementation Schedule C02 17-11-23

Scope

- 3.152 The scope of this project includes:
- Migration of hardware from physical to virtual servers;
 - Replacement or upgrade of key software components such as [REDACTED]; and
 - Integration with essential systems including [REDACTED].
- 3.153 The scope of this project as set out above is confined to the Eastern Campus (T1&T2 and T4), targeting all components within the defined system architecture boundary (referred to as the "purple box").
- 3.154 Elements out of the scope of this project include mechanical asset replacements (e.g., conveyor belts), [REDACTED] systems outside the Sort Allocation Computer boundary, and any systems not explicitly part of the SAC infrastructure.

Cost

- 3.155 The final cost account of the project was £18.1m which represents a variance of +£4.8m compared to the BAC. We explore this variance in more detail in the “Review of key issues” section.
- 3.156 The capex incurred in the review period was £17.2m, 95% of overall spend on the project.

Table 3.26: PRJ-000742 - B6361.01 Eastern Campus Logistics and Compliance – EAC, BAC and Capex incurred in the 2019 – 2024 review period (£m)

EAC	BAC	EAC minus BAC	EAC vs. BAC (%)	Capex incurred 2019-2024
£18.1m	£13.3m	+£4.8m	+36.2%	£17.2m

Source: HAL, Steer analysis Note: EAC – estimated at completion; BAC – budget at completion.

Documentation reviewed

- 3.157 This project was not subject to IFS assurance. We reviewed the following documentation prepared by HAL:
- Business Case describing the project at G3;
 - Project Management Plan at G3;
 - Risk Register at G3;
 - Summarised schedule at G3;
 - Minutes of Meeting and presentation from Heathrow Capital Portfolio Board 28 October 2021;
 - B6361.01 Eastern Campus SAC Logistics and Conformance cyber vulnerability and obsolescence presentation from 15 December 2021;
 - Lessons Learned;
 - Benefits Realisation Plan;
 - Business Case Benefits Map;
 - Project Schedule at G5; and
 - Change log after G3.

Review of key issues

- 3.158 The issues raised during the review of this project are mainly related to the delays and cost overruns identified between the G3 submission and the project closure.

Issue 1: Manual processing of early bags and extension of the testing period owing to poor definition of software requirements

- 3.159 The early bag store system is the system used to manage bags that enter the baggage system some time before the associated outbound flight makeup position is opened for flight build. These are typically transfer bags or bags belonging to passengers who have arrived at the airport and checked in early.

- 3.160 According to HAL's change log for this project, £3.35m of the £4.8m cost overrun (or 70% of the total cost overrun), was caused by an immature design of the early bag store system at G3, which resulted in the need to manage early bags manually and to extend the testing period on site.
- 3.161 After the start of the implementation of the system, HAL discovered that the specifications developed and provided by the system supplier were insufficient to operate the new system. The commissioning team had to introduce a manual solution to manage early bags, and daytime testing had to be extended from the initially planned 3.5 weeks to 6.5 weeks. Other schedule adjustments were further necessary which caused additional delays of 8 to 10 weeks.
- 3.162 The remainder £1.45m overspend (out of £4.8m) was caused by associated issues identified later in the project which extended the testing duration even further. These were related to the deployment of a daytime mitigation team for the T1 and T4 SAC replacement to allow a phased transition from the previous SAC to the new one.
- 3.163 While the Business Case at G3 includes a description of the project scope and mentions certain risks on the project, the integration of the EBS into the project scope and the lack of maturity of its design are not mentioned. These elements were also not included in the G3 presentations to the airlines and the minutes of the associated meetings.
- 3.164 HAL's risk register at G3 included the risk '*Additional EBS development (beyond the allowance of hours included in the contract) required for the platform*' but without any mitigation measures mentioned or costed risk allowance associated with this risk. Through the Q&A, HAL indicated that this risk had overlapped with other risks which had mitigation measures and costed risk allowances. However, the total risk provision for these overlapping risks was £216.2k, over 15 times lower than the additional costs incurred because of this issue.
- 3.165 Therefore, while HAL has indicated through the Q&A that the risks associated with the lack of mature design of the EBS solution were known risks, we assess that those were largely underestimated and also not communicated to stakeholders at the investment decision.
- 3.166 We also investigated the urgency of the project in order to understand if the lack of maturity of the EBS design solution at G3 was justified by the time pressure to deliver the project. As mentioned in the introduction section above, the project objectives stated by HAL are to enhance the operational resilience of the airport's baggage handling software, reduce cyber risks and reduce long-term capex. Through the Q&A, we asked whether the pre-intervention CRF score¹² for this project could be provided as well as historical documentation providing evidence of the CRF score calculation. In response, HAL indicated that the pre-intervention

¹² To prioritise the targeted assets, HAL use an internal method called Corporate Risk Framework rating.

CRF score of the project was 20, which indicates a very high risk of failure, but without providing documented evidence.

- 3.167 Based on the reviewed evidence, we assess that the urgency of the project does not justify the lack of maturity of the EBS design solution before starting on site.
- 3.168 HAL has not requested airlines for any budget (BAC) increase related to the cost overruns that resulted from the need to manage early bags manually and to extend the testing period on site. However, we note that HAL requested, and the airlines approved, an increase of the budget (BAC) related to other changes in this project agreed by both parties.

Conclusion

- 3.169 We assess that there is a Demonstrably Inefficient or Wasteful Expenditure in this project related to unnecessary duplication of works on the part of HAL and/or its third-party contractors (DIWE factor ‘e) Duplication’) and avoidable delays (DIWE factor ‘g) Delays’). The cost overrun was caused by the need to manage early bags manually and to extend the testing period on site., which could have been avoided if HAL and its contractors had defined the EBS design appropriately from the outset, thereby avoiding the delays caused by the need to conduct extra testing of the system. The project achieved completion (G7) approximately 1 year later than anticipated at G3.
- 3.170 Table 3.27 summarises our assessment of the capex incurred in project PRJ-000742 - B6361.01 Eastern Campus Logistics and Compliance, during the 2019 to 2024 review period.

Table 3.27: DIWE assessment – PRJ-000742 - B6361.01 Eastern Campus Logistics and Compliance (capex incurred from January 2019 to December 2024)

DIWE factor	Has this factor caused DIWE?
a) Use of resources	No
b) Procurement	No
c) Cost control	No
d) Decision making	No
e) Duplication	Yes
f) Error	No
g) Delay	Yes
h) Value for money	No
i) Benefits	No

Source: Steer

Estimate of DIWE

- 3.171 Based on the change log provided by HAL, which details the issues and their associated costs, we estimate the total DIWE to be £4.8m, the full amount of cost overrun (EAC minus BAC). Having reviewed HAL’s monthly reporting for this

project, the totality of the DIWE took place in 2024, as the achievement of G5 suffered delays.

PRJ-000776 - B7509 Magenta

- 3.172 The B7509 Magenta project involved a significant transformation of the back-office software operation, which included the replacement of the existing employee resource planning system.
- 3.173 The business case for the project highlighted that the existing support services were not suitable to meet the future needs of HAL. In addition, the current system was nearing the end of its supported life, and the  hosting the system was scheduled to close by the end of May 2021.
- 3.174 This review covers the full project, which started at G0 in February 2019 and reached G5 in May 2022. The project lasted around three years and was completed in 2022. The gateway timeline is shown in the table below.

Table 3.28: B7509 Magenta – Gateway Timeline

Gateway	Submission Date
G0/G1	Feb-19
G2	Jul-19
G3	Aug-20
G4	No formalised submission
G5	May-22
G6	May-22
G7	Mar-22

Source: IFS B7509 Magenta IFS Close Out Report

Scope

- 3.175 The original scope, as defined in the Magenta G2 Business Case v1.0, consisted of two main components:
- Implementation of a new cloud-based employee resource planning solution; and
 - Development and implementation of a new target operating model for key support functions for Heathrow.
- 3.176 In 2020, after the G2 approval, the planned airport expansion was paused. These events led to major changes in HAL's operations and organisational structure, which had a direct impact on the Magenta project.
- 3.177 One of the outcomes of the organisational redesign was that the target operating model, originally planned as part of the programme, was no longer required. Consequently, all associated costs and expected benefits linked to the target operating model were removed from the B7509 Magenta Programme Business Case. After carrying out a full review and re-planning exercise, a revised business case was developed. The updated budget for the Magenta project approved at G3 (BAC) was £41.1m, which represents a reduction of £61.01 million from the budget estimated at G2, due to the exclusion of the target operating model.

Cost

- 3.178 The EAC of the project was £55.8m which represents an overspend of +£14.7m compared to the budget set at G3, as indicated in the table below. Our review found that this cost overrun was due to various issues, including delays in go-live dates of the system, which led to additional resource requirements and consequent cost increases from key suppliers: [REDACTED] (system integrator) costs increased by £8.47m; [REDACTED] (human resource consultant) by £4.18m; and [REDACTED] (ERP provider) by £2.47m. This is explored in more detail in the “Review of key issues” section.
- 3.179 All capex incurred on this project was within the period of this review (Jan-19 to Dec-24).

Table 3.29: B7509 Magenta – EAC, BAC and Capex incurred in the 2019 – 2024 review period (£m)

EAC	BAC	EAC minus BAC	EAC vs. BAC (%)	Capex incurred 2019-2024
£55.8m	£41.1m	+£14.7m	+35.7%	£55.8m

Source: HAL, Steer analysis. Note: EAC – estimated at completion, BAC – budget at completion. Those are defined at the beginning of the report.

Documentation reviewed

- 3.180 We reviewed the following documentation prepared by the IFS related to B7509 Magenta:
- Monthly reports (May 2020 – October 2021);
 - G3 Business Case;
 - Gateway reports;
 - G2;
 - G3;
 - Close out report; and
 - IFS summary report.
- 3.181 The last IFS monthly report for this project was issued covering the period from October 2021 to November 2021. The IFS close out report was based on information received from the HAL Programme Team between September 2021 and May 2024. The project reached financial closure (G7) in March 2022.

Review of key issues

- 3.182 Our review of the reports prepared by the IFS indicates that the Magenta programme faced three main issues during delivery:
- Delays due to disruption and uncertainty related to COVID-19 and the multiples lockdowns in the UK, responsible for a cost overrun of c. £5m (out of £14.7m) from G3 (August 2020) to March 2021;
 - The need for a major redesign of the employee resource planning system following organisational restructuring responsible for a cost overrun of £3.4m (out of £14.7m); and

- Delays during user acceptance testing caused by data quality and reconciliation issues, responsible for a cost overrun of £6.3m (out of £14.7m).

3.183 We reviewed the first issue, but we concluded that it was largely influenced by the series of lockdowns the UK had as a result of COVID-19, which were outside HAL's control and could not be reasonably avoided or mitigated. The two other issues are assessed in more detail below.

Issue 1: Redesign of the employee resource planning system

3.184 The Magenta programme experienced multiple delays to the employee resource planning system's Go-Live date. Notably, our review identified a £3.4m increase in cost following the postponement of the Go-Live date from May to July 2021.

3.185 According to the information provided by HAL and the IFS reports we reviewed, the delay, and the associated cost increase, was driven by the impact of COVID-19, which led to a significant organisational restructuring. As a result, a major redesign of the employee resource planning system was required, as the original system design was no longer aligned with HAL's post-covid business structure. The information we reviewed from HAL indicates that cancelling or pausing the programme was not a viable option, as the legacy [REDACTED] was approaching decommissioning. Continuing with the old system would have introduced substantial operational and financial risks. The redesign was therefore necessary to ensure the new system could meet business needs and be implemented successfully.

3.186 While this issue, which caused a cost overrun of £3.4m, could have been identified as a duplication of activities (DIWE factor 'e) Duplication'), we have assessed that this was a proportionate and necessary response to unplanned organisational changes, and HAL appears to have followed appropriate internal governance processes and taken reasonable steps to manage risk against an issue which was ultimately out of its control.

Issue 2: Delays during user acceptance testing

3.187 The EAC of the project increased by +£6.3m in November 2020 attributed to delays during the user acceptance testing (UAT) phase.

3.188 We understand that the UAT process was delivered under a [REDACTED] contract with [REDACTED], such that any delays directly increased HAL's costs. However, we assess that this approach is consistent with typical industry practice, as services such as UAT are commonly procured on a [REDACTED] basis due to variable scope, reliance on third-party inputs, and uncertainty in duration. We don't assess there is any reason which would have led [REDACTED] to accept a different contract type.

3.189 Furthermore, subject-matter experts from the following HAL corporate departments were required to execute test scenarios, validate outcomes, and support defect resolution on the UAT phase:

- People / HR (Payroll);
- Finance;
- Procurement & Commercial;

- Business Services / Shared Services; and
- IT / Data / Integration Support;

3.190 From mid-2020 onwards, HAL lost approximately one-third of its subject-matter experts on the project due to the COVID-19 related organisational restructuring.

3.191 From the information reviewed, we assess that the additional cost is mainly caused by the organisational restructuring which was outside the control of the project team. We understand that this organisation restructuring was necessary to limit the financial impacts of COVID-19.

Conclusion

3.192 In relation to Issue 1, we assessed it against duplication of activities (DIWE factor 'e) Duplication'). We assess the redesign of the employee resource system was a proportionate and necessary response to unplanned organisational changes, and HAL appears to have followed appropriate internal governance processes and taken reasonable steps to manage risks against an issue which was ultimately out of its control.

3.193 In relation to Issue 2, we have assessed this against DIWE factor 'g) Delay'). However, Steer considers that the UAT process relied heavily on resources from HAL corporate departments, which went through a restructuring as a result of COVID-19. Steer further concludes that the information reasonably available at the time (DIWE factor 'd) Decision making') limited HAL's ability to fully anticipate the impacts arising from COVID-19 and the associated organisational restructuring.

3.194 Table 3.31 summarises our assessment of the capex incurred in the project, which was fully incurred during the 2019 to 2024 period under review.

Table 3.30: DIWE assessment - B7509 Magenta

DIWE factor	Has this factor caused DIWE?
a) Use of resources	No
b) Procurement	No
c) Cost control	No
d) Decision making	No
e) Duplication	No
f) Error	No
g) Delay	No
h) Value for money	No
i) Benefits	No

Source: Steer

PRJ-000800 - B6401 Track Transit System (TTS) Enhancements

- 3.195 The Track Transit System (TTS) enables passengers to travel between Terminal 5A, 5B and 5C at Heathrow. In 2019, passenger demand at Terminal 5 was projected to increase significantly. To address this, HAL established the Heathrow Additional Capacity programme, referred to as T5 Plus and T3 Plus, to develop options for accommodating growth ahead of the planned third runway expansion. Within this programme, the T5 TTS Enhancements project was launched as a “quick start” initiative to ensure Terminal 5 could handle the forecast increase in capacity before the third runway was built.
- 3.196 To maintain acceptable service levels for passengers, additional transit cars and system upgrades were required. The project therefore involved replacing the existing track transit system fleet, removing 10 old cars, and procuring and installing 20 new cars (resulting in a net increase of 10 cars), alongside the necessary system enhancement works.
- 3.197 The track transit system project achieved G3 in July 2019. After several changes and as per March 2025 IFS monthly report, the project was expected to reach G6 by February 2026, as shown in Table 3.31. We address project delays in detail below.

Table 3.31: B6401 TTS Enhancements – Gateway Timeline

Gateway	Submission Date
G1/G2	Jan-19
G3	Jul-19
G4	Aug-21
G5	Oct-25 (Forecast)
G6	Feb-26 (Forecast)

Source: IFS B6401 TTS Enhancements, March 2025 Monthly report

Scope

- 3.198 The scope of work includes removing 10 old cars and procuring, installing 20 new cars from [REDACTED], resulting in a net increase of 10 cars, and introducing a new mode of operation to support a dynamic system that can better meet service demands, delivering improved frequency, flexibility and resilience.

Cost

- 3.199 The budget (BAC) at G3 for the project was £80.7m, but this increased to £82.2m in August 2022. About £56.7m was incurred on the project during the review period, representing c.70% of the EAC of the project.

Table 3.32: B6401 TTS Enhancements – EAC, BAC and Capex incurred in the 2019 - 2024 review period (£m)

EAC (Oct-25)	BAC	EAC minus BAC	EAC vs. BAC (%)	Capex incurred 2019-2024
£82.4m	£82.2m	£0.2m	0.2%	£56.7m

Source: HAL, Steer analysis. Note: EAC – estimated at completion, BAC – budget at completion. Those are defined at the beginning of the report.

Documentation reviewed

3.200 We reviewed the following documentation prepared by the IFS for B6401 TTS Enhancements.

- Monthly reports (June 2021– March 2025);
- G3 gateway report; and
- IFS summary report.

3.201 We also reviewed information provided by HAL:

- 868D_2025-12-18_TTS_Project_Summary_of_Events;
- 868D_HALCon7603_DoA3_DAF_appended – Executed; and
- CAA-H7-868 – Heathrow response to CAA Initial View on H7 Ex-Post Assessment Compass Centre excluded – 20260114.

Review of key issues

3.202 The main issue regarding this project involves the delivery of TTS cars by the supplier [REDACTED]. We have conducted an evaluation of HAL's commercial management strategy to determine whether HAL has effectively mitigated the impact of these delivery delays on the total project cost, which we detail below.

Issue 1: Supplier delays impacting delivery of the TTS cars

3.203 The supplier contracted for supplying the TTS cars was [REDACTED] whilst [REDACTED] was appointed to deliver the enabling and ground works to support the new fleet.

3.204 Our review has found that HAL experienced a number of issues with [REDACTED] during delivery. This led to a 33-day delay in the project caused by:

- [REDACTED] prioritising other airports ahead of HAL;
- Issues during static and dynamic testing; and
- Quality issues with the TTS cars.

3.205 During the delay period, [REDACTED] remained on site progressing ground works, resulting in a prolongation issue where costs continued to accrue even while car delivery was held back by supplier delays. HAL did not update the EAC to account for these delays, a recurring issue documented by the IFS in monthly reports from January 2023 to March 2025. Although a £3.4m EAC increase was forecast by the end of 2024, it was not formally included in the project finances.

- 3.206 Based on further information received from HAL, we understand that HAL chose to prioritise completing the project rather than pursuing financial recovery for delay claims from [REDACTED] at this point in time.
- 3.207 We evaluated HAL's contract with [REDACTED] to determine whether HAL has taken appropriate steps to protect against cost overruns. The contract places responsibility for cost overruns related to the delivery of cars on [REDACTED] (NEC Option A Contract). The project's cost overrun is fully related to consequences of [REDACTED] delivery delay, which led to project management time and staff on site during delays. Additionally, the contract includes a clause allowing HAL to recover some delay-related costs, capped at [REDACTED]. The details of the delay damage claim are outlined in Table 3.33 below.

Table 3.33: B6401 TTS Enhancements – delay damage calculations

Contractual Completion Date (DoA3 App 1)	Days in delay	Applicable Daily Rate	Calculated Damages
Integration TTS Vehicles #11, 12, 13, 14, 15 & 16	658	[REDACTED]	[REDACTED]
Integration TTS Vehicles #17-20	730	[REDACTED]	[REDACTED]
Integration TTS Vehicles #21-24	760	[REDACTED]	[REDACTED]
Integration TTS Vehicles #25 & 26	811	[REDACTED]	[REDACTED]
Integration TTS Vehicles #27-30	762	[REDACTED]	[REDACTED]
Daily cap adjustment for concurrent delays			[REDACTED]
Total			[REDACTED]

Source: HAL, Steer analysis

- 3.208 HAL has not yet made a formal claim against [REDACTED], but it frequently updates [REDACTED] on its potential entitlement. Given the forecast EAC increase at the end of 2024 amounted to £3.4m and the delay damage allowed by the contractual terms will likely amount to [REDACTED] (table above), it is possible that about [REDACTED] of the cost overrun might not be recovered. However, it appears that most of the [REDACTED] is forecasted risk rather than actual spent, making the final cost overrun uncertain.
- 3.209 [REDACTED] have also requested a compensation event claim (CE-67) from HAL, which resulted from a delay in testing on the North Maintenance Road in January 2023. The delay was attributed to HAL, as they failed to respond appropriately to crucial safety documents sent in November 2022, causing the project to stall. Negotiations between HAL and [REDACTED] on this matter are ongoing, and HAL intends to issue an official assessment in [REDACTED]. Currently, no payments have been made, and the final amount is yet to be determined.

- 3.210 Given that contractual negotiations regarding delay compensations are still ongoing, we recommend that this project is reviewed during the next review period, when the final financial outcome is established.

Conclusion

- 3.211 We assessed [REDACTED] delay against DIWE factors ‘g) Delay’ and ‘c) Cost control’. We conclude that HAL has implemented contractual safeguards against [REDACTED] delay, but all cost overruns from the delay might not be recovered. Given that contractual negotiations related to delay compensations are still ongoing, we recommend that this project is reviewed during the next review period, when the final financial outcome is established. Therefore, we conclude there is no Demonstrably Inefficient or Wasteful Expenditure on this project during the review period.
- 3.212 Table 3.34 summarises our assessment of the capex incurred in the B6401 TTS Enhancements project during the 2019 to 2024 period under review.

Table 3.34: DIWE assessment – B6401 TTS Enhancements (capex incurred from January 2019 to December 2024)

DIWE factor	Has this factor caused DIWE?
a) Use of resources	No
b) Procurement	No
c) Cost control	No
d) Decision making	No
e) Duplication	No
f) Error	No
g) Delay	No
h) Value for money	No
i) Benefits	No

Source: Steer

PRJ-001524 - B7228 Runway resurfacing - Deep Interventions

- 3.213 The Deep Interventions project involved repairing cracks on the Southern and Northern Runways the Rapid Exit Taxiways and Runway Access Taxiways. The runways required resurfacing in H7 in line with their current asset life expectancy to maintain safe-for-use and fit-for-purpose runways. This project was part of the Runway Resurfacing Business Case (B7228), which involved both the Southern Runway (reviewed later in this report) and the deep interventions project, reviewed in this section.

Table 3.35: B7228 Deep Interventions – Gateway Timeline

Gateway	Submission Date
G0/G1	Nov-21
G2	Apr-22
G3	Apr-22
G4	May-22
G5	May-23
G6	Not reported but project is completed
G7	Not reported but project is completed

Source: IFS B7228 Runway Resurfacing – Deep Interventions G3 and monthly reports, Steer analysis.

Scope

- 3.214 The Deep Interventions project involved the following:
- Crack repairs on the Southern Runway, Northern Runway, Rapid Exit Taxiways, and Runway Access Taxiways; and
 - Ducting of Aerodrome Ground Lighting cables in areas of higher traffic and areas marked for future masterplan works.
- 3.215 The deep interventions project was completed in May 2023, prior to the start of the runway resurfacing project (see next section).

Cost

- 3.216 The final cost of the deep interventions project was £24.6m, which represented an overspend of +£3.4m compared to the BAC set at G3, as indicated in Table 3.36 below. All capex incurred on this project was within the period of this review.

Table 3.36: Deep Interventions – EAC, BAC and Capex incurred in the 2019-2024 review period (£m)

EAC	BAC	EAC minus BAC	EAC vs. BAC (%)	Capex incurred 2019-2024
£24.6m	£21.2m	+£3.4m	+16.8%	£24.6m

Source: HAL, Steer analysis. Note: EAC – estimated at completion, BAC – budget at completion. Those are defined at the beginning of the report.

Documentation reviewed

3.217 We reviewed the following documentation prepared by the IFS for B7228 Deep Interventions:

- Monthly reports (June 2022– May 2023);
- G2-G3 gateway reports; and
- IFS summary report.

Review of key issues

3.218 Our assessment indicates that the project encountered two challenges during delivery, resulting in an increased cost of £3.6m:

- Delays to the project caused by poor weather conditions; and
- Reduction of the working window at night (23:00 start vs 22:30) after project commencement.

3.219 Poor weather conditions required prolonging works from suppliers beyond the timeline set at G3. While we have initially investigated this issue to better understand the extent of the weather events and implications of the works, we assess that this issue was out of HAL's control and did not investigate further. We explore the second issue in more detail below.

Issue 1: Reduction of the working window at night

3.220 At G3, in April 2022, the runway works were originally planned and costed on the basis of a 22:30 nightly possession time. However, at the beginning of 2023, when the project was already ongoing, Heathrow Operations subsequently determined that this working window was operationally unfeasible and advised contractors that access could not begin until 23:00.

3.221 This was due to the 2023/24 runway operations summer schedule, having more of an impact than originally expected on the runway access times. This contributed to an increase in the project's cost at completion and an extended programme schedule for the following reasons:

- the reduced working time lowered asphalt laying productivity by approximately 20%;
- works required re-planning and sequencing adjustments for deeper interventions; and
- nightly operations were rendered less efficient due to compressed timeframes.

3.222 We assess that the shortening of the night working window reflected Heathrow's evolving operational requirements, which were not possible to reasonably foresee at G3.

Conclusion

3.223 While the reduction in the night working window exposed the project to risks of DIWE under factors 'g) Delay' and 'a) Use of resources', we assess that, at the time of budget estimation at G3, with the information available to HAL and its

contractors (factor ‘d) Decision making’), HAL could not reasonably have foreseen this change. The night working window adjustment reflected Heathrow’s evolving operational requirements, which were not possible to reasonably foresee at G3.

- 3.224 Therefore, Steer concludes that no Demonstrably Inefficient and Wasteful Expenditure has been identified on this project.
- 3.225 Table 3.37 summarises our assessment of the capex incurred in B7228 Deep Interventions project, which was fully incurred during the 2019 to 2024 period under review.

Table 3.37: DIWE assessment – B7228 Deep Interventions

DIWE factor	Has this factor caused DIWE?
a) Use of resources	No
b) Procurement	No
c) Cost control	No
d) Decision making	No
e) Duplication	No
f) Error	No
g) Delay	No
h) Value for money	No
i) Benefits	No

Source: Steer

PRJ-001330 - B7228 Runway resurfacing - Southern Runway

- 3.226 The B7228 Southern Runway Project involves resurfacing the Southern Runway along with its associated Rapid Access Taxiways and Rapid Exit Taxiways. As Heathrow's most critical assets, the runways are classified as top priority under the Heathrow Asset Significance Scorecard Priority. Based on the historic asset life expectancy, resurfacing of the Southern Runway was a key requirement for H7. This project forms part of the wider B7228 Runway Resurfacing Business Case, which covers both the Southern Runway and the Deep Intervention projects, both in scope for this ex-post review.
- 3.227 This project achieved G3 in June 2023. As of March 2025, it was expected to reach G5 in July 2025 and G7 by January 2026, as shown in Table 3.38.

Table 3.38: B7228 Southern Runway – Gateway Timeline

Gateway	Submission Date
G3	Jun-23
G4	Sep-23
G5	Jun-25
G6	Jul-25 (forecast)
G7	Jan-26 (forecast)

Source: IFS B7228 Runway Resurfacing Monthly Reports

Cost

- 3.228 As of October 2025, the EAC of the project was £132.1m and the BAC was £128.7m, after several adjustments approved by the airlines since the budget set at G3 in June 2023. This results in a variance of +£3.4m between the EAC and BAC costs as shown in Table 3.39 below. This cost position can still evolve as the project was not fully completed at the time of this review and there was an outstanding CCRS to be confirmed by airlines.

Table 3.39: B7228 Southern Runway – EAC, BAC and Capex incurred in the 2019-2024 review period (£m)

EAC (Oct-25)	BAC	EAC minus BAC	EAC vs. BAC (%)	Capex incurred 2019-2024
£132.1m	£128.7m	£3.4m	2.6%	£108.8m

Source: HAL, Steer analysis Note: EAC – estimated at completion; BAC – budget at completion. Those are defined at the beginning of the report.

Documentation reviewed

- 3.229 We reviewed the following documentation prepared by the IFS for B7228 Southern Runway.
- Monthly reports (June 2022– March 2025);

- G3 gateway reports;
- Southern Runway – CCRS – IFS comments 27 Jan 2025;
- G3 gateway presentation; and
- IFS summary report.

3.230 We also reviewed information provided by HAL:

- PRJ001330 – Runway Resurfacing STH – CCRS – IFS Comments 27 Jan 2025;
- 868E_Southern_Runway-Response_to_CAA-Steer; and
- CAA-H7-868 – Heathrow response to CAA Initial View on H7 Ex-Post Assessment Compass Centre excluded – 20260114.

Review of key issues

- 3.231 In February 2025, HAL submitted to the IFS and the airlines a Client Change Request Sheet to request an increase of the BAC agreed at G3 by £21.8m, corresponding to 11 cost items.
- 3.232 Supported by the IFS review of the request, the airlines approved ten out of the 11 HAL’s proposed additional cost items, resulting in an approved budget uplift of +£20.9m.
- 3.233 As a result, the BAC increased from £107.7m approved at G3 (Jun-23) to £128.7m approved by the airlines in February 2025.
- 3.234 Most of the additional cost items HAL requested related to two factors:
- Assumptions made at G3 that later proved invalid; and
 - The decision to commence on-site works at RIBA Stage 213, when design maturity was still limited.
- 3.235 Specifically, the key omissions in the scope and cost estimate at G3 (Jun-23), which justified the airlines’ approval of a budget increase were:
- Construction methodology assumed to be validated by trials prior to main works;
 - Exclusion of temporary ramping; and
 - Exclusion of works on the Aerodrome Ground Lighting system (e.g., ramping and blue edge lights, initially considered unnecessary but subsequently required).
- 3.236 We have found no issues with the ten (out of 11) cost items approved by the airlines. We have investigated the remaining cost item, which was not approved by the airlines and our assessment is presented below (Issue 1).

¹³ The RIBA stages are a structured framework developed by the Royal Institute of British Architects that outlines the key phases of a construction project. The construction stage is defined as RIBA Stage 5.

Issue 1: Cost overruns from airside driver licencing errors

- 3.237 During the course of the project, it was initially assumed that agency staff would meet the necessary driving licencing requirements and would, therefore, be able to drive themselves to and from work areas airside without needing dispensation.
- 3.238 In reality, agency staff were required to obtain dispensation from the HAL licencing team to operate airside, introducing an additional layer of administrative complexity to the project. In cases where staff did not meet the criteria of HAL's licencing team, contractors had to procure alternative drivers to serve the needs of the project. Although HAL and contractors negotiated some cost relief, this issue generated an increase of +£0.9m in project costs (EAC) due to delays in the project programme, which the airlines did not approved. The breakdown of this cost increase is outlined in Table 3.40 below.

Table 3.40: Southern Runway CCRS Output – cost increase due to driving licencing errors

Title	Cost (£000)
Mini Bus for [REDACTED] April 2024 to March 2025	120
Mini Bus driver for [REDACTED] - Nights	12
Additional [REDACTED] vehicle for various dates	14
Airside Driver Training for Agency Staff	783
Total	929

Source: February 2025 CCRS

- 3.239 The IFS concluded that this represented an avoidable cost pressure on the project's EAC, attributable to factors within HAL's direct control.
- 3.240 We have assessed that the issue causing this cost increase of £0.9m reflected shortcomings in HAL's planning and communication with its contractors. This was an avoidable cost attributable to factors within HAL's direct control which could reasonably have been avoided or mitigated.

Conclusion

- 3.241 We assessed Issue 1 (cost overruns due to driver licencing errors) against the DIWE framework, (factor 'f' Error') and have concluded that the £0.9m cost increase was due to errors from HAL and its contractors that could have reasonably be predicted and avoided. Had planning been carried out correctly, HAL would have identified the correct licensing requirements in advance and contractors would have recruited drivers with the appropriate licence requirements from the outset, which would have avoided the £0.9m cost increase. Therefore, Steer concludes that a Demonstrably Inefficient and Wasteful Expenditure has been identified on this issue.
- 3.242 A second CCRS, valued at c. £4m, had been submitted and was progressing through governance at the time of the review. It was scheduled for review by the Asset Management and Compliance (AMC) Stakeholder Programme Group (SPG) in August 2025. The IFS had started to assess this CCRS to identify which

elements should reasonably have been included within the BAC; however, this assessment had not yet been finalised and formally approved by airlines at the time of this review. As these events are recent and are in the process of being clarified and reviewed, Steer is unable to provide an assessment at this point in time. We suggest this is reviewed during the next ex-post review.

- 3.243 Table 3.36 summarises our assessment of the capex incurred in the B7228 – Southern Runway project during the 2019 to 2024 period under review.

Table 3.41: DIWE assessment – B7228 Southern Runway

DIWE factor	Has this factor caused DIWE?
a) Use of resources	No
b) Procurement	No
c) Cost control	No
d) Decision making	No
e) Duplication	No
f) Error	Yes
g) Delay	No
h) Value for money	No
i) Benefits	No

Source: Steer

Estimate of DIWE

- 3.244 The DIWE impact in this case is estimated at £0.9m, equivalent to the full variance between the BAC and EAC attributable to the airside driver licensing issue. We assess that the DIWE was incurred in 2024 given that the submission date of the CCRS was early 2025.

PRJ-001410 - B7201.08 - Forecourt Health and Safety Works

- 3.245 PRJ-001410 - B7201.08 – Forecourt Health & Safety Works addresses urgent safety and compliance issues at Heathrow’s Terminal 3 and Terminal 5 forecourts.
- 3.246 At Terminal 3, a replacement of faulty lighting circuits and a degraded duct system was planned to meet modern electrical standards. At Terminal 5, 600 unstable manhole covers posed trip hazards due to water and sludge accumulation. The project was considered essential by HAL to ensure passenger safety, maintain operational continuity, and uphold Heathrow’s regulatory and service standards in these high-traffic areas.
- 3.247 The project achieved G3 on 24 February 2022 and G5 on 26 March 2024, as estimated on the original project schedule. At the time of our review, HAL confirmed that project completion (G7) has been delayed as there was a loss of information within the supply chain, meaning the Final Account process had to be restarted. The gateway timeline is shown in the table below.

Table 3.42: PRJ-001410 - B7201.08 - Forecourt Health and Safety Works Gateway Timeline

Gateway	Submission Date
G0	Apr-21
G1	Jul-21
G2	Feb-22
G3	Feb-22
G4	May-22
G5	Mar-24
G6	Jun-24
G7	Not yet achieved

Source: CAA-H7-843-08-1410 - Forecourt H&S Current Schedule

Scope

- 3.248 The scope of the B7201.08 – Forecourt Health & Safety Works project included two main workstreams:
- At Terminal 3, the design and installation of a new compliant pit and duct system to replace faulty street lighting infrastructure; and
 - At Terminal 5, the assessment and replacement of 600 manhole covers that pose trip hazards.
- 3.249 The project also involved surveys, stakeholder coordination, temporary works, reinstatement of pavement areas, and compliance with Heathrow’s safety, operational, and asset standards.
- 3.250 All works were to be delivered with minimal disruption to airport operations and in alignment with regulatory and environmental requirements.

Cost

- 3.251 The final cost account of the project was £17.0m which represents a variance of +£6.3m compared to the BAC set at G3. This is explored in more detail in the “Review of key issues” section.
- 3.252 All the capex was incurred in the review period, as detailed in the table below.

Table 3.43: PRJ-001410 - B7201.08 - Forecourt Health and Safety Works – EAC, BAC and Capex incurred in the review period (£m)

EAC	BAC	EAC minus BAC	EAC vs. BAC (%)	Capex incurred 2019-2024
£17.0m	£10.7m	+£6.3m	+59%	£17.0m

Source: HAL, Steer analysis Note: EAC – estimated at completion; BAC – budget at completion.

Documentation reviewed

- 3.253 This project was not assured by the IFS. We reviewed the following documentation requested from HAL:
- Implementation Schedule;
 - Contract Status Report for T1 and T2 works;
 - Contract Status Report for T4 works;
 - Project Description at G1;
 - Project Schedule with progress up to 17/02/24 (G4;)
 - G3 Cost Plan;
 - Contract Status Report;
 - Change Register up to 16/8/23;
 - Cost breakdown and changes between G7 and G3;
 - Latest Project Schedule;
 - Risk Register;
 - Lessons Learned;
 - Chain of emails confirming the realisation of the benefits;
 - Changes in cost G7 vs G3; and
 - Project Schedule at G5.

Review of key issues

Issue 1: Cost overruns

- 3.254 The evidence we reviewed indicated that the cost overrun of £6.3m (EAC minus BAC) was mainly due to an increase in contractor costs associated with a series of approved compensation events¹⁴ that occurred during the latter stages of the project. These were driven by a combination of factors, including:

¹⁴ A compensation event is a formally defined circumstance that entitles the contractor to additional time, money, or both because the event changes the contractor’s obligations or costs in a way that was not allowed for in the original contract.

- Unexpected ground conditions requiring additional scope and mitigation measures;
- Enhanced coordination requirements with Heathrow Operations and UK Power Networks (UKPN), which introduced additional complexity and interface management; and
- Increased specification and safety requirements for the pedestrian crossing, which necessitated design and delivery changes.

3.255 Based on the evidence reviewed, the cost increase of £6.3m is the result of scope changes to ensure compliance, safety, and operational continuity.

3.256 We assess that the additional scope was necessary and could potentially have been discovered before G3, so that the BAC accounted for the additional works. However, we assess that the total project cost, in the end, would not have been very different from the current final account.

Conclusion

3.257 We have tested the DIWE factors on this project, in particular the factor related to material error or mistake (factor ‘f) Error’) in relation to the lack of anticipation of:

- ground conditions;
- coordination requirements; and
- increased specification and safety requirements.

3.258 However, while these aspects could have potentially been better anticipated before G3, we assess the project cost, in the end, would not have been very different from what it has been. Therefore, we have not found a Demonstrably Inefficient or Wasteful Expenditure in this project.

3.259 Table 3.39 summarises our assessment of the capex incurred in project PRJ-000255 - Airside Taxiways - Cul De Sacs Tr6, which was fully incurred during the 2019 to 2024 period under review.

Table 3.44: DIWE assessment – PRJ-001410 - B7201.08 - Forecourt Health and Safety Works

DIWE factor	Has this factor caused DIWE?
a) Use of resources	No
b) Procurement	No
c) Cost control	No
d) Decision making	No
e) Duplication	No
f) Error	No
g) Delay	No
h) Value for money	No
i) Benefits	No

Source: Steer

PRJ-001786 - B75-053.00 - Compass Centre Acquisition

Project Overview

- 3.260 According to the project reports that HAL shared with us, HAL claimed that the reason for the acquisition of Compass Centre was to mitigate the risk of forced relocation in the event that the landlord, **xxxx**, chose to terminate the lease. By acquiring the property, HAL aimed to avoid the potential disruption and costs associated with relocating to alternative facilities.
- 3.261 Through stakeholder engagement, the airline community requested the CAA to review this project. We note that this project was not assured by the IFS.
- 3.262 This review covers the full project, which started at G1 in August 2023 and reached G6 in January 2024, meaning that the full project is within the timeline in scope for this review (Jan-19 to Dec-24). The gateway timeline is shown in Table 3.45.

Table 3.45: B75-053.00 Compass Centre – Gateway Timeline

Gateway	Submission Date
G1/2/3	Aug-23
G4/G5	Sep-23
G6	Jan-24

Source: CAA-H7-844-03-Compass Centre Acquisition CPB Sep 2023

Cost

- 3.263 In September 2023, HAL received approval from the airlines to proceed with the acquisition of the Compass Centre and associated facilities for £120.0m, plus an additional £7.4m of transaction costs, bringing the approved budget to £127.4m, which was spent without deviation. This is the cost in scope for our ex-post assessment.
- 3.264 In addition to these amounts, HAL spent £3.7m assessing the possibility of exiting the Compass Centre. This became Opex following the decision to proceed with the acquisition and it is, therefore, outside the scope of our assessment.
- 3.265 This brings the total cost related to the acquisition of the Compass Centre to £131.1m, as summarised in the table below.

Table 3.46: B75-053.00 - Compass Centre Acquisition – Total Cost

Cost category	Cost
Acquisition price	£120.0m
Transaction costs	£7.4m
Total acquisition costs	£127.4m
Exit assessment costs	£3.7m*
Total costs	£131.1m

Source: HAL, Steer analysis. * Opex cost, hence outside the scope of the ex-post review.

- 3.266 The landlord [REDACTED] had acquired the Compass Centre in 2021 for £102m, as reported in the [REDACTED] Valuation Report commissioned by HAL. As stated above, HAL subsequently acquired the Compass Centre in 2023 for £120m (an extra £18 million), representing a 18% increase in price over the two years from 2021 to 2023. After accounting for [REDACTED] estimated transaction costs of £6m, [REDACTED] net financial gain from the sale was approximately £12m (12%), in addition to £12m in rental income received from HAL during the two-year lease period (2021 to 2023).

Documentation reviewed

- 3.267 This project was not assured by the IFS.
- 3.268 The following documentation was provided by HAL and the airlines for project B75-053.00 - Compass Centre Acquisition:
- [REDACTED] UK Full Property Report
 - Compass Centre Acquisition CPB Sep 2023 presentation
 - Compass Centre Acquisition Detailed Expenditure Report
 - Capitalisation of Assets spreadsheet
 - Signed CC acquisition funding Sep 2023
 - 15000-20-RG-200-000015 Relocation Feasibility Report (R2)
 - Compass Centre Acquisition - Airline Deck 01082023
 - Compass Centre Acquisition G2 Review FINAL
 - CONFIDENTIAL_Instructions to Counsel - Compass Centre(224931603.1)
 - CONFIDENTIAL_Compass Centre Heathrow - Opinion of [REDACTED] (225136988.1)
 - B7230.02 Data Centra Relocation G1 Cost Plan Rev 1.0
 - Availability Report - Heathrow surrounding areas - [REDACTED] - June 2022
 - 20230920 BA Letter to HAL re CC acquisition
 - Heads of Terms - E2 Car Park - Draft 12 12 22
 - 21-223_SGP_F20_ZZ_DR_A_001000_Option 9_Developed Layout & Ramp
 - Compass Centre Development Programme – Draft
 - B7230.03 Future APOC G1 Cost Plan
 - 1708 CPB Minutes V1
 - 2109 CPB Minutes V1.1
 - APOC pre G0 community session 150322 updated
 - Compass Centre Heathrow Offer_June23
 - Compass Centre Heathrow Offer_17July23
 - [REDACTED] Letter_Response-to-2nd-Offer-18July23
 - Email [REDACTED] Heathrow Spring 23
 - CC acquisition discussion notes 010823
 - Email following 31AUG23 session from [REDACTED]
 - Compass_Centre_Acquisition_G2_Review_UPDATED 18Sept.2023
 - Extracts from letter from IAG to the CAA dated 9th of February 2026, shared by the CAA via email

- Heathrow response to CAA Initial View on H7 Ex-Post Assessment Compass Centre
- H7 Capital Investment Protocol
- 1912 FPG Slide Deck v3.0 – PRJ-001974 – B75-081.00 – Poyle Investment
- 1912 CPB Minutes V2
- Letter from HAL to [REDACTED] – April 2022
- 03JULY26 Appendix v2
- InvitationMeeting29JUN23
- 27JAN22 FPG Minutes v2.0
- 27JAN22 FPG Slide Pack v3.0
- 24FEB22 FPG Slide Pack v2.0
- 24FEB22 FPG Minutes v1.0
- 24MAR22 FPG Slide Pack v3.0
- 24MAR22 FPG Minutes v2.0
- 16896-XX-RG-XXX-000002
- B7230.02 - CC DC Move Governance Slides May 2022 v0.4
- 220112 APOC_Data Centres Relocation

Review of key issues

3.269 We identified the following issues regarding HAL’s acquisition of the Compass Centre, which we explore in detail below:

- Acquisition price above the independently assessed market value;
- Incomplete assessment of alternative relocation options; and
- Inadequate engagement with the airlines.

Issue 1: Acquisition price above market value

3.270 HAL hired [REDACTED] to provide a market value ahead of the acquisition. The [REDACTED] Valuation Report assessed that the market value of Compass Centre on 14 September 2023 was £91.3m, with a range from £84.1m to £99.0m, depending on estimated yield and rental value. HAL’s acquisition price of £120m is 31% higher than the £91.3m market valuation, representing a significant premium over the [REDACTED] valuation ([REDACTED] UK Full Property Report, page 2).

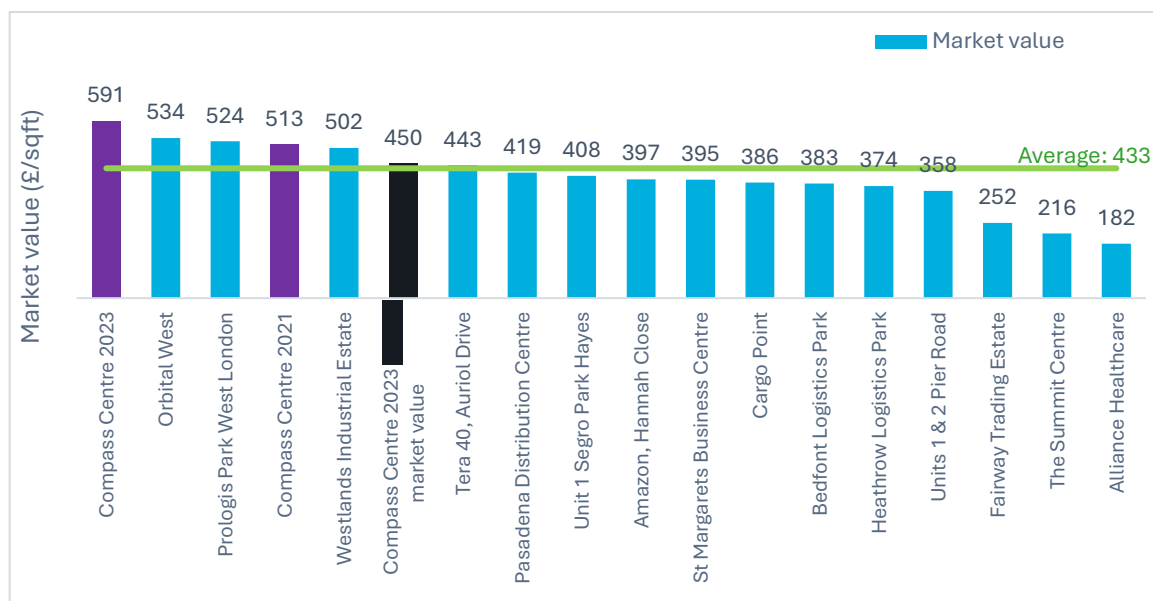
3.271 The [REDACTED] Valuation Report is based on a sample of 15 rental and sales transactions in the vicinity of Heathrow. These are shown by the blue bars in the Figure below. The majority of the transaction information is drawn from the same 2023 year as the valuation, with the remaining transactions happening in 2021 and 2022.

3.272 Steer estimates the benchmarking market value per square foot as the average market value of 13 transactions in the vicinity of Heathrow, 12 sourced from the 15 transactions included in the [REDACTED] report (we exclude the three transactions below £300 per square foot, which we consider as outliers), plus the acquisition of Compass Centre by [REDACTED] in 2021 (second purple bar in the Figure below). Steer’s estimated benchmarking market value stands at £433 per square foot and is represented by the green line in the Figure below. This benchmarking figure is only

3.6% lower than the [REDACTED] valuation of the Compass Centre of £450 per square foot (or £91.3m).

- 3.273 It is the Steer view that our benchmarking analysis supports the [REDACTED] valuation of Compass Centre at the time of the investment proposal. The [REDACTED] valuation of the Compass Centre can, therefore, be used as an indication of the cost that HAL would have paid for the potential acquisition of an equivalent property in the surroundings of Heathrow.

Figure 3.3: Market valuation of Compass Centre vs comparators



Source: [REDACTED] Valuation Report dated 18 September 2023, Steer analysis

- 3.274 HAL justifies the higher price paid for the property by positioning the transaction within a ‘Special Purchaser’ situation, rather than using a market value. According to RICS Valuation Global Standards¹⁵, a Special Purchaser is a particular buyer for whom a particular asset has a Special Value because of advantages arising from its ownership that would not be available to other buyers in a market. This Special Value is an amount that reflects particular attributes of an asset that are only of value to a Special Purchaser. We agree that, in this situation, HAL could be considered as a Special Purchaser because staying at Compass Centre provided them particular benefits over other potential interested parties.
- 3.275 The airline community expressed concern about the transaction value agreed with [REDACTED]. In a letter sent by British Airways (BA) to HAL on 20 September 2023, the following was stated: “We continue to believe that the purchase price of £120 million far exceeds market value and is almost double our own valuations. While we recognise the valuation of Compass Centre completed by [REDACTED], we continue to believe that this valuation overestimates the value of the campus. It is also higher than a compulsory purchase order that could be made at market value as pointed out by HAL’s own advisers.” Through further evidence received from the airline

¹⁵ [Red-Book-Global-Standards-incorporating-IVS.pdf](#)

community, we understand that their estimated value resulted from assuming a space of [REDACTED] (versus the 202,917 square feet of Compass Centre as reported by [REDACTED]), and a unit rate of [REDACTED], which is lower than the [REDACTED] valuation of £450 per square foot. In our assessment, we have not analysed if HAL required less space than what it had at its disposal at the time of the investment decision, as there is no evidence to demonstrate that a smaller space would suffice. The lower unit rate that BA used in its calculations was taken from a presentation that HAL shared with the airlines (dated 18 September 2023) and, afterwards, HAL acknowledged that that data point was incorrect and provided an updated version of the same presentation.

- 3.276 We assess that the acquisition price of Compass Centre compared to the market value of the property is only one part of the assessment, and consideration also needs to be given to the additional cost of relocation. This is because Compass Centre hosts not just employees' office and training space; it also hosts in their premises the Airport Operations Centre (APOC) and the main Data centre, both of which would also need to be relocated away from the Compass Centre. The full cost assessment is presented in the next section, after the review of the alternative relocation options.

Issue 2: Incomplete assessment of alternative relocation options

- 3.277 The investment proposal for acquiring the Compass Centre submitted by HAL to the airline community ahead of G3 approval assumed that there were no suitable facilities available for relocation within a 5-mile radius of the Compass Centre. Based on this assumption, HAL concluded that relocating would require the use of terminal space for office activities and for the APOC, leading to a reduction in commercial areas and, consequently, a negative impact on future revenues. The Data centre relocation option was in a HAL's owned building on the East side of the airport campus. HAL provided an estimation of the overall capital costs of relocation of £132.3m. Steer assesses that HAL conducted an incomplete assessment of alternative relocation options for the reasons set out below.
- 3.278 Firstly, the [REDACTED] Valuation Report dated 18 September 2023 refers to 7.4 million square feet of space in the Heathrow development pipeline, which includes planned or proposed developments in the area, plus an additional 677,000 square feet of developments expected to become available within the year. This compares with 202,917 square feet of the Compass Centre. We note that [REDACTED] did not assess whether any of this space could be suitable for HAL's relocation needs.
- 3.279 Secondly, at the time of submitting the investment proposal for G3 approval, HAL had not procured any third-party advisors to independently identify and evaluate suitable alternative properties for relocation. The report on alternative locations that HAL shared from a third-party company is dated from June 2022, more than a year before the investment proposal was taken forward by HAL. HAL could have procured an updated analysis of the available office space around Heathrow. HAL could have also contemplated the option of having several smaller office locations to host employees' office and training space, rather than a single facility, which would have been more difficult to find in the market. In contrast to the

approach to procure office space, HAL considered several separate location options for the relocation of the APOC and Data centre. All shortlisted sites were owned by HAL and were located within the airport perimeter boundary, thus avoiding future relocation risks. [REDACTED] was selected as the preferred option for the APOC, and [REDACTED] was selected as the most suitable option for the Data centre. Although the assessment of the operational activities of Compass Centre was done in 2022, we assess that the conclusions would have been similar had the assessment been done closer to the investment proposal date, as the number of potentially suitable relocation sites within HAL's airport perimeter was unlikely to have materially changed between 2022 and September 2023.

- 3.280 Thirdly, at G3, HAL indicated the importance of the convenience for employees of staying at Compass Centre by including three out of six criteria related to this matter in their options evaluation (HAL's presentation Compass Centre Acquisition – Options Review, 29 August 2023). The other three criteria related to EBITDA, operational efficiency, and operational continuity. HAL considered a seventh criterion, related to the expansion of Heathrow, which we consider to be irrelevant for the option assessment because at the time of the investment decision there was no support from the Government for the expansion of Heathrow airport. We acknowledge the importance of the convenience for employees of staying at Compass Centre, but we also assess that the criteria used by HAL to determine the best option did not give proper consideration to the interest of consumers.
- 3.281 Fourthly, HAL used the time urgency in acquiring the facility as a key decision factor for the investment approval. HAL argued that *"If [REDACTED] was successful [in their legal proceedings to terminate the lease] then Heathrow would likely have to vacate the Compass Centre within 16-22 months of the date of [REDACTED] section 25 notice, whereas it would take a minimum of 24 months to relocate APOC and the data centre from the Compass Centre from the date of mobilisation"*¹⁶. The first consideration is the fact that, at the time of the decision to acquire Compass Centre for £120m, the owner had not issued a notice to vacate the facilities. This is stated by HAL: *"To date [REDACTED] have not chosen to issue a notice to oppose our continued occupation due to market conditions."* (HAL's presentation Compass centre acquisition Airline engagement, 10 August 2023). Even assuming that 24 months would have been required for relocation of the operational activities, this could have been undertaken by HAL because the timeframe from the date of [REDACTED] section 25 notice until the point in time that HAL (in the worst-case scenario of no permission to appeal) would have had to exit Compass Centre would have been 22 to 28 months. The 22 to 28 months timeframe takes into account the time that HAL initially would have had to exit Compass Centre (6 months minimum by law) plus the timeframe of 16 to 22 months estimated by HAL and validated by the legal

¹⁶ We have not been able to validate the 24 months stated by HAL. In the document B7230.03 Future APOC G1 Cost Plan, 22 April 2022, [REDACTED] states that construction duration is estimated in 36 weeks for APOC. In the document B7230.02 Data Centre Relocation G1 Cost Plan Rev 1.0, [REDACTED] states that construction duration is estimated in 41 weeks for Data centre.

advisor [REDACTED], which starts counting from the time in which HAL starts the legal proceedings to avoid vacating the Compass Centre. Even if the landlord serves a hostile s.25 notice and immediately issues court proceedings seeking termination without a new tenancy, the tenant can remain in occupation beyond the termination date provided the tenant has issued its own renewal claim before the statutory deadline (the termination date in the s.25 notice). The landlord's early application does not accelerate the tenant's departure where the tenant has protected its position in time.

- 3.282 We also note that the process followed by HAL to obtain an independent legal opinion upon airlines' request for assessing the alternatives from a legal perspective does not constitute best practice. HAL provided a set of defined statements for [REDACTED] to opine on, without giving the opportunity to the legal firm to provide an open and unrestricted opinion on the most suitable options for HAL.
- 3.283 Lastly, the future expansion of Heathrow as part of the development of the third runway was used as an argument by HAL to justify that the price to be paid was going to be lower than in an "expansion scenario". However, the IRR calculation presented by HAL in the investment proposal was based on the higher revenue and traffic forecasts that would only materialise if expansion occurred. In other words, the IRR implicitly assumed an expansion scenario. At the date of the investment proposal, the Government was not supportive of expanding Heathrow airport, and the DfT was not undertaking any process to grant permissions on the third runway. Therefore, HAL's argument that the price paid was lower than in an "expansion scenario" becomes invalid.
- 3.284 In summary, we assess that HAL could have engaged third-party companies to (1) identify alternative locations at the time of the investment decision; (2) estimate the costs of relocations options, considering both a single facility to move to or several facilities; and (3) assess the preferred option based on a set of criteria that balanced convenience to employees, cost and the interest of consumers. HAL overstated the time urgency of relocation in case of a termination notice from landlord [REDACTED] was issued. Consideration should not be given to benefits in an "expansion scenario" because at the time of the investment decision the Government did not support the expansion of Heathrow airport.
- 3.285 Because we conclude that HAL did not follow a proper assessment of the alternative options at the time of the investment proposal, we have conducted our own cost estimates with the information that we have gathered from HAL, from the airlines, and our own sources. In the table below we present the acquisition and relocation costs for four cases: (1) HAL's Compass Centre acquisition proposal; (2) HAL's cost of an alternative location; (3) Steer's cost estimate of relocation to a single location; and (4) Steer's cost estimate of relocation to multiple locations. The sources and assumptions underlying the cost estimates are detailed after the table.

Table 3.47: B75-053.00 - Compass Centre Acquisition - Options comparison, Capex (£m, 2023 prices)

	Case 1: HAL – Compass Centre acquisition proposal	Case 2: HAL – Exit alternative	Case 3: Steer – Exit Option 1 (one site)	Case 4: Steer – Exit Option 2 (multiple sites)
Property acquisition	120.0	NA	91.3	91.3
Transaction costs	7.4	NA	5.6	5.6
Remobilisation costs	18.0	NA	NA	NA
APOC fit out and relocation	NA	21.9	19.2	19.2
Data centre fit out and relocation	NA	71.3	42.8	42.8
Office fit out and relocation	NA	39.1	18.0	39.1
Total	145.4	132.3	176.9	198.0

Source: HAL, Steer analysis

3.286 The sources and assumptions underpinning the cost estimates are as follows:

- **Property acquisition.** In HAL's Compass Centre acquisition case, the property acquisition is the value HAL paid. In Steer's exit to one site and to multiple sites (cases 3 and 4) we assume the property acquisition cost of £91.3m. This is the [REDACTED] independent valuation of the Compass Centre, which we assess above as a good indication of the cost that HAL would have paid for the potential acquisition of an equivalent property in the surroundings of Heathrow. We have not assumed a higher acquisition cost in the case of multiple locations (case 4), albeit it is likely that this case may command a higher acquisition cost than the single location case (case 3).
- **Transaction costs.** In the case of HAL's acquisition of Compass Centre (case 1), we assume the transaction costs that HAL incurred. We estimate the transaction costs that would be incurred in Steer's exit to one and multiple locations (cases 3 and 4) assuming the same transaction to acquisition ratio as seen in the HAL's acquisition of Compass Centre (6.2%).
- **Remobilisation costs.** These relate to the necessary upgrade of the facilities in Compass Centre in the acquisition scenario. The amount of £18m was estimated by HAL and disclosed to the airlines as part of the Compass Centre investment proposal¹⁷. This element was not part of the investment proposal but it was noted that a subsequent capex approval was going to be sought from the airlines.
- **APOC fit out and relocation.** These costs only apply to the three exit cases (cases 2 to 4). Steer's estimates used in cases 3 and 4 are taken from a report prepared by [REDACTED] to HAL where they estimate the cost of relocating the operations control room to building [REDACTED]¹⁸ (once the site was identified as the

¹⁷ Compass Centre acquisition Airline engagement 10 August 2023

¹⁸ B7230.03 Future APOC G1 Cost Plan. 22 April 2022. Original estimate of £17.0m in 2022 prices.

optimal location) at £17.0m in 2022 prices, which is equivalent to £19.2m, in 2023 prices. We consider that this cost reflects the scope of works that would reasonably be expected. In HAL's exit alternative (case 2), HAL assumes a slightly higher cost estimate of £21.9m (£19.4m in 2022 prices)¹⁹.

- **Data centre fit out and relocation.** These costs only apply to the three exit cases (cases 2 to 4). In its exit alternative (case 2), HAL uses the cost estimate provided by [REDACTED] of £63.3m²⁰, in 2022 prices, equivalent to £71.3m in 2023 prices. We assess that the scope of works underpinning this cost estimate includes additional infrastructure beyond what was in place at Compass Centre at that time. To ensure a like-for-like cost estimate, In the Steer exit cases (cases 3 and 4), we use the G0 cost estimate for the “lift-and-sift” option²¹ of £38.0m in 2022 prices, equivalent to £42.8m in 2023 prices.
- **Office fit out and relocation.** HAL provided several cost estimates of the relocation of the non-operational activities of Compass Centre (office and training facilities, excluding APOC and Data centre). These cost estimates range from £18.0m to £39.1m. As there is no evidence of an independent cost estimate supporting these values, we have undertaken our own cost scrutiny. We use the [REDACTED] office fit-out costs report²² as the basis for our scrutiny having regard for the additional cost in the case of multiple locations. Our scrutiny resulted in a cost range similar to the one provided by HAL. Therefore, we have used the lower and upper ranges provided by HAL in our own cases (cases 3 and 4).

- 3.287 Our cost estimates of the two relocation cases (cases 3 and 4) result in an overall capex higher than HAL's Compass Centre acquisition (case 1); £176.9m to £198.0m versus £145.4m, when costs related acquisition, remobilisation, and relocation are taken into account. We have also developed our estimates for the impact on EBITDA of all the cases presented in the Table above, and the conclusions remained unchanged.
- 3.288 Therefore, we conclude that, although HAL did not carry out a complete assessment of the alternative options, the investment proposal for the acquisition of Compass Centre at a price of £120.0m compares favourably among plausible alternative options when all costs, including property acquisition and relocation costs are taken into account.

Issue 3: Inadequate stakeholder engagement

- 3.289 The airline community expressed their concerns about how the decision-making process was taking place at the time of the investment approval. Some of these concerns are captured below.

¹⁹ Heathrow Airport Future Portfolio Group 17 August 2023

²⁰ Efficient Airport Programme - Compass Centre Exit / B7230.02 Compass Centre Data Centre Move G1- Business Justification May 2022.

²¹ Future Portfolio Group 27 January 2022. Original estimate of £38.0m in 2022 prices.

²² [REDACTED]

- 3.290 In the minutes of the Heathrow Capital Portfolio Board meeting held on 17 August 2023, the airline community stated the following: *“There has been no opportunity to discuss potential alternatives to the Compass Centre acquisition. While we have been aware of discussions surrounding the acquisition of Compass Centre, and have regularly requested updates through CPB (since October 2022), we have not had sight of either the proposed purchase price or the terms of the transaction until 1st August 2023 (with an update on 8th August)”*, *“The current recommendation to acquire Compass Centre pre-supposes substantial costs relating to the move of the [REDACTED] data centre and APOC. There has been no review or discussion surrounding these costs so we have no knowledge or materials to support those costs being real.”* And they go on to say *“are we buying a building above market value to house a data centre and within the near term a [REDACTED] data centre will move out, this will mean we have paid for Compass Centre whereas the data centre is moved, is there assurance that the data centre does not need to move out?”*.
- 3.291 Furthermore, BA sent a letter to HAL on 20 September 2023 stating the following: *“We consider that HAL’s stakeholder engagement to have been poor, having essentially given the airlines a very limited time frame to consider an entirely new business case”, “The late notice of HAL’s proposed transaction before CPB approval has meant that there has been no opportunity for normal due diligence of this investment to take place.”*
- 3.292 The lack of sufficient information to properly analyse the proposed investment is well noted in the statements included in the minutes of the meetings held between HAL and the airlines. The lack of sufficient time to properly analyse the information is evidenced by the fact that G1/G2/G3/G4/G5 gateways took place only during August and September 2023. We note that the airlines received the first communication in relation to the acquisition of the Compass Centre about one year earlier, in June 2022, during an informal meeting between AOC, LACC and Heathrow to discuss progress on a possible acquisition of Compass Centre from [REDACTED].
- 3.293 We assess that the change in relocation strategy that HAL took from 2022 to 2023 was not communicated to the airlines in time, which contributed to the airlines’ lack of comfort in approving the investment. During 2022, HAL requested several approvals to progress with the relocation plans to move Compass Centre activities to [REDACTED] (and a separate location for Data centre). In the minutes from the meeting Heathrow Airport Future Portfolio Group 21 September 2023, HAL acknowledged that *“the acquisition proposal came through in a short amount of time.”*
- 3.294 Therefore, Steer concludes that HAL did not share with the airlines the appropriate information in a timely manner to allow them to make an informed decision, which led to an inadequate engagement with airlines.

Conclusion

- 3.295 Steer concludes that, although HAL paid a premium to acquire Compass Centre, the total cost of relocating to a different office the operational and non-

operational activities that were being carried out in Compass Centre was larger than the premium HAL paid for the acquisition of the Compass Centre. In addition, Steer considers that the analysis of alternative options was not assessed as robustly as could reasonably have been expected, and that the compressed timeline for stakeholder engagement and decision-making limited the opportunity for effective scrutiny of the investment proposal, including its costs, assumptions, and strategic rationale. Notwithstanding all the issues that we have identified and that could have been avoided to enable a more structured and transparent investment decision, we conclude that there was no cost inefficiency compared to a relocation option. We can also conclude that the agreed acquisition price with [REDACTED] was the best possible price after months of negotiations and in a non-competitive environment.

- 3.296 Therefore, we have not found a Demonstrably Inefficient or Wasteful Expenditure in this project.

Table 3.48: DIWE assessment - B75-053.00 - Compass Centre Acquisition

DIWE factor	Has this factor caused DIWE?
a) Use of resources	No
b) Procurement	No
c) Cost control	No
d) Decision making	No
e) Duplication	No
f) Error	No
g) Delay	No
h) Value for money	No
i) Benefits	No

Source: Steer

4 Summary of findings and conclusions

4.1 Table 4.1 summarises whether any capex inefficiencies were identified on each project during our assessment and the estimated DIWE per project, shown in both nominal and real 2024 CPI prices based on the estimated year(s) where the DIWE occurred. We conclude that the total capex inefficiencies for the 2019-2024 period account for £5.7m (in nominal prices, 2024 CPI prices, and 2024 CPIH prices).

Table 4.1: Summary of ex-post review of projects

Project	Inefficiency found?	Capex spend 2019-2024 (Nominal)	Estimate of DIWE (Nominal)	Estimate of DIWE (CPI 2024)
PRJ-000206 - Main Tunnel	No	£106.1m	N/A	N/A
PRJ-000387 - Cargo Tunnel	No	£152.0m	N/A	N/A
PRJ-000255 - Airside Taxiways - Cul De Sacs Tr6	No	£21.7m	N/A	N/A
PRJ-000533 - B216 T1_T2 HBS	No	£38.5m	N/A	N/A
PRJ-000535 - B216 T4 HBS	No	£78.3m	N/A	N/A
PRJ-000537 - B216 T5 HBS	No	£37.3m	N/A	N/A
PRJ-000742 - B6361.01 Eastern Campus Logistics and Compliance	Yes	£17.2m	£4.8m	£4.8m
PRJ-000776 - B7509 Magenta	No	£55.8m	N/A	N/A
PRJ-000800 - B6401 TTS Enhancements	No	£56.7m	N/A	N/A

Project	Inefficiency found?	Capex spend 2019-2024 (Nominal)	Estimate of DIWE (Nominal)	Estimate of DIWE (CPI 2024)
PRJ-001524 - B7228 - Runway Resurfacing - Deep Interventions	No	£25m	N/A	N/A
PRJ-001330 - B7228 Runway Resurfacing - Southern Runway	Yes	£108.8m	£0.9m	£0.9m
PRJ-001410 - B7201.08 - Forecourt Health and Safety Works	No	£17.0m	N/A	N/A
PRJ-001786 - B75-053.00 - Compass Centre Acquisition	No	£127m	N/A	N/A
Total		£841.7m	£5.7m	£5.7m

Source: Steer

4.2 In addition, we recommend that the following projects are further analysed in the next ex-post efficiency review, as recent developments may indicate a risk of those projects constituting Demonstrably Inefficient or Wasteful Expenditure:

- PRJ-000206 – B131 Main Tunnel;
- PRJ-000387 – B131 Cargo Tunnel;
- PRJ-000800 - B6401 Track Transit System (TTS) Enhancements; and
- PRJ-001330 - B7228 Runway resurfacing - Southern Runway.

Appendix

A – Document Register

- 4.3 The following table compiles all the documents that have been reviewed to undertake this capex efficiency review. These documents were completed with additional information received through a Questions & Answers process and with online sessions held with HAL and the IFS.

Documentation analysed for the capex efficiency review

Project	Documentation
PRJ-000206 - Main Tunnel	• IFS Monthly reports • IFS G3 gateway report • IFS Interim close out report • IFS summary report
PRJ-000255 - Airside Taxiways - Cul De Sacs Tr6	• Project Management Plan Between G3 and G4 • Alpha North Tender Programme • Description of the Scope of the Alpha North Project Pre G3 • Alpha North Achievement of G3 report • Alpha North Achievement of G3 certificate • Description of the Scope of the Alpha North Project • Schedule Update • Request for approval of the funding for the Alpha North Project • Request for approval of the funding for the Alpha North Project • Alpha North Lessons Learned • Description of the Scope of Block 21 Outer Project • Block 21 Outer Project G3 Risk Register • Block 21 Outer Project G3 Schedule • Block 21 Outer Achievement of G3 report • Block 21 Outer Achievement of G3 certificate
PRJ-000387 - Cargo Tunnel	• IFS Monthly reports • IFS G3 gateway report • IFS Pseudo-G3 gateway report • CCRS Comments for November 2023 Report (issue 12th January 2024) ○ Cargo Tunnel CCRS Extract from July 2023 AMC SPG Slide Deck ○ Cargo Tunnel EDP

Project	Documentation
	○ Cargo Tunnel Fibre Duct Issues ○ Cargo Tunnel Refurbishment SPR Existing Roof Survey ○ Grass area 26 and NPR HV Cable Routes July 2022 ○ OCS – GA26C Option 4 and As built ○  – Southern Plant Room, Heathrow – 06.04.2022 ● July 2023 SPG Presentation ● IFS summary report ● 868B_Cargo_Tunnel-Response_to_CAA – Steer-ex-post-review ● 868B_CCRS_Comments_for_Nov_2023_Report ● CAA-H7-868 – Heathrow response to CAA Initial View on H7 Ex-Post Assessment Compass Centre excluded – 20260114.
PRJ-000533 - B216 T1_T2 HBS	● IFS Monthly reports (August 2014– September 2021) ● IFS Initial review ● IFS G3 gateway report ● IFS Close out report ● IFS Summary report ● List of compensation events of the DI ● Deed of Amendment 6 with the DI ● 868A 1907 CPB Minutes v2 ● 868A 1907 CPB Slide Pack v3 ● 868A HBS Summary_Master-Rev01 ● 868_DOA6_T1_2_and_T4_HBS_2025-12-15 ● CAA-H7-868 – Heathrow response to CAA Initial View on H7 Ex-Post Assessment Compass Centre excluded – 20260114.
PRJ-000535 - B216 T4 HBS	● IFS Monthly reports (August 2014– September 2021) ● IFS Initial review ● IFS G3 gateway reports ● IFS Close out report ● IFS summary report ● List of compensation events of the DI ● Deed of Amendment 6 with the DI ● 868A 1907 CPB Minutes v2 ● 868A 1907 CPB Slide Pack v3 ● 868A HBS Summary_Master-Rev01 ● 868_DOA6_T1_2_and_T4_HBS_2025-12-15 ● CAA-H7-868 – Heathrow response to CAA Initial View on H7 Ex-Post Assessment Compass Centre excluded – 20260114.
PRJ-000537 - B216 T5 HBS	● IFS Monthly reports (August 2014– September 2021) ● IFS Initial review

Project	Documentation
	• IFS G3 gateway report • IFS Close out report • IFS summary report
PRJ-000742 - B6361.01 Eastern Campus Logistics and Compliance	• Business Case describing the project at G3 • Project Management Plan at G3 • Risk Register at G3 • Summarised schedule at G3 • Minutes of Meeting and presentation from Heathrow Capital Portfolio Board 28 October 2021 • B6361.01 Eastern Campus SAC Logistics and Conformance cyber vulnerability and obsolescence presentation from 15 December 2021 • Lessons Learned • Benefits Realisation Plan • Business Case Benefits Map • Project Schedule at G5 • Change log after G3 • Heathrow's responses to our draft ex-post review
PRJ-000776 - B7509 Magenta	• IFS Monthly reports (May 2020 – October 2021) • IFS G3 Business Case • IFS Gateway reports ○ G2 ○ G3 • IFS Close out report • IFS summary report
PRJ-000800 - B6401 TTS Enhancements	• IFS Monthly reports (June 2021– March 2025) • IFS G3 gateway report • IFS summary report • 868D_2025-12-18_TTS_Project_Summary_of_Events; • 868D_HALCon7603_DoA3_DAF_appended – Executed; and • CAA-H7-868 – Heathrow response to CAA Initial View on H7 Ex-Post Assessment Compass Centre excluded – 20260114.
PRJ-001330 - B7228 Runway Resurfacing - Southern Runway	• IFS Monthly reports (June 2022– March 2025) • IFS G3 gateway reports • IFS Southern Runway – CCRS – IFS comments 27 Jan 2025 • IFS G3 gateway presentation • IFS summary report • PRJ001330 – Runway Resurfacing STH – CCRS – IFS Comments 27 Jan 2025; • 868E_Southern_Runway-Response_to_CAA-Steer; and

Project	Documentation
	CAA-H7-868 – Heathrow response to CAA Initial View on H7 Ex-Post Assessment Compass Centre excluded – 20260114.
PRJ-001410 - B7201.08 - Forecourt Health and Safety Works	- Implementation Schedule - Contract Status Report for T1 and T2 works - Contract Status Report for T4 works - Project Description at G1 - Project Schedule with progress up to 17/2/24 (G4) - G3 Cost Plan - Contract Status Report - Change Register up to 16/8/23 - Cost breakdown and changes between G7 and G3 - Latest Project Schedule - Risk Register - Lessons Learned - Chain of emails confirming the realisation of the benefits - Changes in cost G7 vs G3
PRJ-001524 - B7228 - Runway Resurfacing - Deep Interventions	- IFS Monthly reports (June 2022– May 2023) - IFS G2-G3 gateway reports - IFS summary report
PRJ-001786 - B75- 053.00 - Compass Centre Acquisition	- XXX UK Full Property Report - Compass Centre Acquisition CPB Sep 2023 presentation - Compass Centre Acquisition Detailed Expenditure Report - Capitalisation of Assets spreadsheet - Signed CC acquisition funding Sep 2023 - Heathrow_response_to_CAA_Initial_View_on_H7_Ex-Post_Assessment_Compass_Centre 15000-20-RG-200-000015 Relocation Feasibility Report (R2) - Compass Centre Acquisition - Airline Deck 01082023 - Compass Centre Acquisition G2 Review FINAL - CONFIDENTIAL_Instructions to Counsel - Compass Centre(224931603.1) - CONFIDENTIAL_Compass Centre Heathrow - Opinion of XXX (225136988.1) - B7230.02 Data Centra Relocation G1 Cost Plan Rev 1.0 - Availability Report - Heathrow surrounding areas - XXX - June 2022 20230920 BA Letter to HAL re CC acquisition - Heads of Terms - E2 Car Park - Draft 12 12 22 21-223_SGP_F20_ZZ_DR_A_001000_Option 9_Developed Layout & Ramp

Project	Documentation
	• Compass Centre Development Programme – Draft • B7230.03 Future APOC G1 Cost Plan • 1708 CPB Minutes V1 • 2109 CPB Minutes V1.1 • APOC pre G0 community session 150322 updated • Compass Centre Heathrow Offer_June23 • Compass Centre Heathrow Offer_17July23 • XXX Letter_Response-to-2nd-Offer-18July23 • Email XXX Heathrow Spring 23 • CC acquisition discussion notes 010823 • Email following 31AUG23 session from XXX • Compass_Centre_Acquisition_G2_Review_UPDATED 18Sept.2023 • Extracts from letter from IAG to the CAA dated 9th of February 2026, shared by the CAA via email • H7 Capital Investment Protocol • 1912 FPG Slide Deck v3.0 – PRJ-001974 – B75-081.00 – Poyle Investment • 1912 CPB Minutes V2 • Letter from HAL to XXX – April 2022 • 03JULY26 Appendix v2 • InvitationMeeting29JUN23 • 27JAN22 FPG Minutes v2.0 • 27JAN22 FPG Slide Pack v3.0 • 24FEB22 FPG Slide Pack v2.0 • 24FEB22 FPG Minutes v1.0 • 24MAR22 FPG Slide Pack v3.0 • 24MAR22 FPG Minutes v2.0 • 16896-XX-RG-XXX-000002 • B7230.02 - CC DC Move Governance Slides May 2022 v0.4 • 220112 APOC_Data Centres Relocation

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