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H8 capital expenditure assessment – Steer report for Initial Proposals



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The logo for Steer, featuring the word "steer" in a bold, lowercase, sans-serif font.

Contents

1	Introduction	1
	Overview	1
	HAL’s H8 capex submission	1
	Our approach to capex assessment	4
	Structure of this document	6
2	Need assessment	7
	Our approach to need assessment	7
	BC01.00 Security Programme	11
	BC02.00 T2 Baggage Programme	17
	BC03.01 Asset Management & Compliance Programme	21
	BC03.02 Terminal 4 Front Door and Car Park	35
	BC03.03 T3 Hold Baggage Screening replacement (T3IB)	39
	BC03.04 T5 Pilz Obsolescence	42
	BC04.00 H8 new asset renewal scope	45
	BC05.00 Electrical network	63
	BC06.00 Heat decarbonisation	67
	BC07.00 Noise mitigation	70
	BC08.00 Carbon and Sustainability Programme	76
	BC09.00 People and Planet	83
	BC10.00 Modernising Heathrow Programme	87
	BC11.00 Occupancy infrastructure	92
	BC12.00 Commercial Programme	95
	BC13.00 H8 new - commercial scope	101
	BC14.00 Digital	105
	BC15.00 T5 Early Bag Store front door	109
	BC16.00 Efficient Airport programme	112
	BC17.00 H8 new - Passenger Experience	119
	Need assessment scoring summary	125
3	H8 capex envelope threshold	127
	Capex envelope threshold	127
	Capex envelope threshold range	129
	HAL’s capacity to deliver capex	132
	Projects below the capex envelope threshold	143
4	Efficiency assessment	167
	Our approach to efficiency assessment	167
	Removal of duplications	171
	Alternative scopes	172
	Our approach to cost benchmarking – projects with cost plans	174
	A112 - PRJ-001601 - B71-031.00 - Wave 1 Tunnel Improvements in ART, SAR, NAR	177

C037- PRJ-001956 - B7680.36 CPC	181
G017- PRJ-001816 - B73-017.00 Tr5 T2A Baggage System	185
G020 - PRJ-001883 - B73-020.00 Essential Asset Replacement	189
G021 – PRJ-001884 - B73-021.00 Shell & Core	193
J01 – Electricity network 11KV and 33KV upgrades	198
K01 – PRJ-001563 - B75-019.00 - Cargo Southside Transformation	202
M02 – T5 Level 30 & 40 Lounge	205
T027 – PRJ-001993 - B74-003.02 PCA Improvements on Served Stands - Phase 3	209
T04 – PRJ-001606 - B7239 - Airspace Modernisation – Easterly Alternation Infrastructure	212
Our approach to cost benchmarking – projects with basis of estimate	216
A231 - B71-138 - T3 Pier 7 Structural	217
A232 - T3 Refurbishment of Pier 7 and Connector (EXTERNAL)	220
A234- Asset Management & Compliance P2 R&O's	223
B016 – Rolling programme for pavements and stands	225
B017 – Western Campus Inter-Terminal Baggage Transport Asset Replacement (DCV)	228
D03 - PRJ-001901 - B71-152 Terminal 4 Front Door and Car Park - Tranche 34	231
E01 - T3 Standard 3 HBS Replacement	234
H043- EA P2 R&O's	237
J02 - Electricity network 132KV new network	239
K065- Commercial P2 R&O's	242
M16 – Land optimisation – decking (LS2 and LS4) – Replace Pex / N4	244
P03 – T5 Capacity Optimisation Phase 1	247
Q03 - Intelligent Operations and Optimisation	250
Q01 - Next-Gen Passenger Services -Passenger Automation	253
U02 - Climate Adaptation to Flood risk	256
N01 - Occupancy Infrastructure	258
C041 - In airport Cargo, OAA Upgrade to Southside CPSRA & Control Post 25 Phase 2	261
F06 - PRJ-001903 - B7320.01 Project 5	265
Efficiency assessment – Summary and conclusions	267
5 H8 capex envelope	270

Appendices

A Need assessment techniques summary

B Historical capex analysis by category

Figures

Figure 1.1: HAL's Programme and project gateway lifecycle

4

Figure 1.2: H8 capex envelope determination process	6
Figure 2.1: Prioritisation and project selection process for H8 capex envelope	7
Figure 2.2: HAL aircraft noise regulations and controls	72
Figure 2.3: Note mitigation project - cost split	73
Figure 2.4: Estimated Capex per carbon emission savings by 2031 for certain Tranches	79
Figure 3.1: Projects ranked according to their need case score	128
Figure 3.2: Determination of the capex envelope threshold	129
Figure 3.3: Determination of the capex envelope threshold range	130
Figure 3.4: HAL Capex, 2000-2026 and H8, £m, 2024 prices	134
Figure 3.5: HAL minimum-average-maximum annual Capex, 2000-2024 and H8, £m, 2024 prices	135
Figure 3.6: HAL minimum-average-maximum 5-year implied Capex, 2000-2024 and H8, £m, 2024 prices	136
Figure 3.7: HAL minimum-average-maximum, 5-year rolling Capex, 2000-2019 and H8, £m, 2024 prices	137
Figure 3.8: Heat map of the concentration of projects in H8 by airport location	138
Figure 3.9: Capacity to deliver capex calculation, £bn, 2024 prices	141
Figure 3.10: Capacity to deliver capex range vs. HAL H8 Capex, £bn, 2024 prices	141
Figure 5.1: Step changes between HAL’s capex submission and Steer’s proposed capex envelope mid-point, £m, 2024 CPI prices	271
Figure B.1: HAL Capex per category, excluding one-offs, 2014-2024 and H8, £m, 2024 prices	287

Tables

Table 1.1: HAL's H8 capex programme grouped by Business Case	2
Table 2.1: BC01.00 – Capex submission (£m, 2024 CPI prices)	11
Table 2.2: BC01.00 – Overview	12
Table 2.3: BC01.00 – Need case scores per project	15
Table 2.4: BC02.00 – Capex submission (£m, 2024 CPI prices)	17
Table 2.5: BC02.00 – Overview	18
Table 2.6: BC02.00 – Need case scores per project	20
Table 2.7: BC03.01 – Capex submission (£m, 2024 CPI prices)	21
Table 2.8: BC03.01 – Overview	26
Table 2.9: BC03.01 – Net Impact scoring	27
Table 2.10: BC03.01 – Need case scores per project	29
Table 2.11: BC03.02 – Capex submission (£m, 2024 CPI prices)	35
Table 2.12: BC03.02 – Overview	35
Table 2.13: BC03.02 – Need case scores per project	38
Table 2.14: BC03.03 – Capex submission (£m, 2024 CPI prices)	39
Table 2.15: BC03.03 – Overview	39
Table 2.16: BC03.03 – Need case scores per project	41

Table 2.17: BC03.04 – Capex submission (£m, 2024 CPI prices)	42
Table 2.18: BC03.04 – Overview	42
Table 2.19: BC03.04 – Need case scores per project	44
Table 2.20: BC04.00 – Capex submission (£m, 2024 CPI prices)	45
Table 2.21: BC04.00 – Overview	51
Table 2.22: BC04.00 – Net Impact scoring	53
Table 2.23: BC04.00 – Need case scores per project	54
Table 2.24: BC05.00 – Capex submission (£m, 2024 CPI prices)	63
Table 2.25: BC05.00 – Overview	63
Table 2.26: BC05.00 – Need case scores per project	66
Table 2.27: BC06.00 – Capex submission (£m, 2024 CPI prices)	67
Table 2.28: BC06.00 – Overview	67
Table 2.29: BC06.00 – Need case scores per project	69
Table 2.30: BC07.00 – Capex submission (£m, 2024 CPI prices)	70
Table 2.31: BC07.00 – Overview	70
Table 2.32: BC07.00 – Need case scores per project – Indicative*	75
Table 2.33: BC08.00 – Capex submission (£m, 2024 CPI prices)	76
Table 2.34: BC08.00 – Overview	77
Table 2.35: BC08.00 – Need case scores per project	81
Table 2.36: BC09.00 – Capex submission (£m, 2024 CPI prices)	83
Table 2.37: BC09.00 – Overview	83
Table 2.38: BC09.00 – Need case scores per project	86
Table 2.39: BC10.00 – Capex submission (£m, 2024 CPI prices)	87
Table 2.40: BC10.00 – Overview	88
Table 2.41: BC10.00 – Need case scores per project	91
Table 2.42: BC11.00 – Capex submission (£m, 2024 CPI prices)	92
Table 2.43: BC11.00 – Overview	92
Table 2.44: BC11.00 – Need case scores per project	94
Table 2.45: BC12.00 – Capex submission (£m, 2024 CPI prices)	95
Table 2.46: BC12.00 – Overview	96
Table 2.47: BC12.00 – Net Impact scoring	98
Table 2.48: BC12.00 – Likelihood scoring	98
Table 2.49: BC12.00 – Need case scores per project	99
Table 2.50: BC13.00 – Capex submission (£m, 2024 CPI prices)	101
Table 2.51: BC13.00 – Overview	101
Table 2.52: BC13.00 – Net Impact scoring	103
Table 2.53: BC13.00 – Likelihood scoring	103
Table 2.54: BC13.00 – Need case scores per project	104
Table 2.55: BC14.00 – Capex submission (£m, 2024 CPI prices)	105
Table 2.56: BC14.00 – Overview	105
Table 2.57: BC14.00 – Need case scores per project	108

Table 2.58: BC15.00 – Capex submission (£m, 2024 CPI prices)	109
Table 2.59: BC15.00 – Overview	109
Table 2.60: BC15.00 – Need case scores per project	111
Table 2.61: BC16.00 – Capex submission (£m, 2024 CPI prices)	112
Table 2.62: BC16.00 – Overview	113
Table 2.63: BC16.00 – Need case scores per project	116
Table 2.64: BC17.00 – Capex submission (£m, 2024 CPI prices)	119
Table 2.65: BC17.00 – Overview	120
Table 2.66: BC17.00 – Need case scores per project	123
Table 2.67: Need assessment results at Business Case level	125
Table 3.1: Capex envelope threshold range	130
Table 3.2: Capex by business case and strength of the need case (£m, 2024 CPI prices)	131
Table 3.3: Capex allocated by location, H8, £bn, 2024 prices	138
Table 3.4: Capex allocated by area with a cap of £0.2bn, H8, £bn, 2024 prices	139
Table 3.5: Capex allocated by area with a cap of £0.4bn, H8, £bn, 2024 prices	139
Table 3.6: Capacity to deliver capex calculation, £bn, 2024 prices	140
Table 3.7: Projects ranked by the strength of their need case (£m, 2024 CPI prices)	144
Table 4.1: Projects categorised by minimum capex at H8, £m, 2024 CPI prices	168
Table 4.2: List of projects selected for cost benchmarking, £m, 2024 CPI prices	168
Table 4.3: HAL CPI forecast vs latest forecast	171
Table 4.4: Projects where we have asked additional information from HAL to clear the risk of duplication	171
Table 4.5: T04 – PRJ-001606 - B7239 - Airspace Modernisation – Easterly Alternation Infrastructure - Summary table	172
Table 4.6: T04 – PRJ-001606 - B7239 - Airspace Modernisation – Easterly Alternation Infrastructure – Alternative cost submission	173
Table 4.7: A112 - PRJ-001601 - B71-031.00 - Wave 1 Tunnel Improvements in ART, SAR, NAR - Summary table	177
Table 4.8: A112 - PRJ-001601 - B71-031.00 - Wave 1 Tunnel Improvements in ART, SAR, NAR – Cost benchmark	178
Table 4.9: A112 - PRJ-001601 - B71-031.00 - Wave 1 Tunnel Improvements in ART, SAR, NAR – H8 Capex	180
Table 4.10: C037 - PRJ-001956 - B7680.36 CPC - Summary table	181
Table 4.11: C037 - PRJ-001956 - B7680.36 CPC – Cost benchmark	182
Table 4.12: C037 - PRJ-001956 - B7680.36 CPC – Building works	183
Table 4.13: C037 - PRJ-001956 - B7680.36 CPC – H8 Capex	184
Table 4.14: G017 - PRJ-001816 - B73-017.00 Tr5 T2A Baggage System - Summary table	185
Table 4.15: G017 - PRJ-001816 - B73-017.00 Tr5 T2A Baggage System – Cost benchmark	186
Table 4.16: G017 - PRJ-001816 - B73-017.00 Tr5 T2A Baggage System – H8 Capex	188
Table 4.17: G020 - PRJ-001883 - B73-020.00 Essential Asset Replacement - Summary table	189
Table 4.18: G020 - PRJ-001883 - B73-020.00 Essential Asset Replacement – Cost benchmark	190
Table 4.19: G020 - PRJ-001883 - B73-020.00 Essential Asset Replacement – H8 Capex	192

Table 4.20: G021 – PRJ-001884 - B73-021.00 Shell & Core - Summary table	193
Table 4.21: G021 – PRJ-001884 - B73-021.00 Shell & Core – Cost benchmark	193
Table 4.22: G021 – PRJ-001884 - B73-021.00 Shell & Core – Facilitating works	196
Table 4.23: G021 – PRJ-001884 - B73-021.00 Shell & Core – H8 Capex	197
Table 4.24: J01 – Electricity network 11KV and 33KV upgrades - Summary table	198
Table 4.25: J01 – Electricity network 11KV and 33KV upgrades – Cost benchmark	199
Table 4.26: J01 – Electricity network 11KV and 33KV upgrades – H8 Capex	201
Table 4.27: K01 – PRJ-001563 - B75-019.00 - Cargo Southside Transformation - Summary table	202
Table 4.28: K01 – PRJ-001563 - B75-019.00 - Cargo Southside Transformation – Cost benchmark	202
Table 4.29: K01 – PRJ-001563 - B75-019.00 - Cargo Southside Transformation – H8 Capex	204
Table 4.30: M02 – T5 Level 30 &40 Lounge - Summary table	205
Table 4.31: M02 – T5 Level 30 &40 Lounge – Cost benchmark	206
Table 4.32: M02 – T5 Level 30 &40 Lounge – Building works	207
Table 4.33: M02 – T5 Level 30 &40 Lounge – H8 Capex	208
Table 4.34: T027 – PRJ-001993 - B74-003.02 PCA Improvements on Served Stands - Phase 3 - Summary table	209
Table 4.35: T027 – PRJ-001993 - B74-003.02 PCA Improvements on Served Stands - Phase 3 – Cost benchmarking	210
Table 4.36: T027 – PRJ-001993 - B74-003.02 PCA Improvements on Served Stands - Phase 3 – Building works	211
Table 4.37: T027 – PRJ-001993 - B74-003.02 PCA Improvements on Served Stands - Phase 3 – H8 Capex	211
Table 4.38: T04 – PRJ-001606 - B7239 - Airspace Modernisation – Easterly Alternation Infrastructure - Summary table	212
Table 4.39: T04 – PRJ-001606 - B7239 - Airspace Modernisation – Easterly Alternation Infrastructure – Cost benchmark	213
Table 4.40: T04 – PRJ-001606 - B7239 - Airspace Modernisation – Easterly Alternation Infrastructure – External works	214
Table 4.41: T04 – PRJ-001606 - B7239 - Airspace Modernisation – Easterly Alternation Infrastructure – H8 Capex	215
Table 4.42: A231 - B71-138 - T3 Pier 7 Structural - Summary table	217
Table 4.43: A231 - B71-138 - T3 Pier 7 Structural – Cost benchmark	218
Table 4.44: A231 - B71-138 - T3 Pier 7 Structural – Services Estimation	219
Table 4.45: A231 - B71-138 - T3 Pier 7 Structural – H8 Capex	219
Table 4.46: A232 - T3 Refurbishment of Pier 7 and Connector (EXTERNAL) - Summary table	220
Table 4.47: A232 - T3 Refurbishment of Pier 7 and Connector (EXTERNAL) – Cost benchmark	221
Table 4.48: A232 - T3 Refurbishment of Pier 7 and Connector (EXTERNAL) – H8 Capex	222
Table 4.49: A234- Asset Management & Compliance P2 R&O's - Summary table	223
Table 4.50: A234- Asset Management & Compliance P2 R&O's – H8 Capex	224
Table 4.51: B016-Rolling programme for pavements and stands - Summary table	225
Table 4.52: B016-Rolling programme for pavements and stands – Cost Benchmark	226

Table 4.53: B016-Rolling programme for pavements and stands – H8 Capex	227
Table 4.54: B017 – Western Campus Inter-Terminal Baggage Transport Asset Replacement (DCV) - Summary table	228
Table 4.55: B017 – Western Campus Inter-Terminal Baggage Transport Asset Replacement (DCV) – Cost Benchmark	229
Table 4.56: B017 – Western Campus Inter-Terminal Baggage Transport Asset Replacement (DCV) – H8 Capex	230
Table 4.57: D03 - PRJ-001901 - B71-152 Terminal 4 Front Door and Car Park - Tranche 34 - Summary table	231
Table 4.58: D03 - PRJ-001901 - B71-152 Terminal 4 Front Door and Car Park - Tranche 34 – Cost benchmark	232
Table 4.59: D03 - PRJ-001901 - B71-152 Terminal 4 Front Door and Car Park - Tranche 34 – H8 Capex	233
Table 4.60: E01 - T3 Standard 3 HBS Replacement - Summary table	234
Table 4.61: E01 - T3 Standard 3 HBS Replacement – Cost benchmark	235
Table 4.62: E01 - T3 Standard 3 HBS Replacement – H8 Capex	236
Table 4.63: H043- EA P2 R&O's – Summary table	237
Table 4.64: H043- EA P2 R&O's – Cost benchmarking –H8 Capex	238
Table 4.65: J02 - Electricity network 132KV new network - Summary table	239
Table 4.66: J02 - Electricity network 132KV new network – Cost benchmark	240
Table 4.67: J02 - Electricity network 132KV new network – Unit Cost	240
Table 4.68: J02 - Electricity network 132KV new network – H8 Capex	241
Table 4.69: K065- Commercial P2 R&O's - Summary table	242
Table 4.70: K065- Commercial P2 R&O's – Estimation	243
Table 4.71: M16 Land optimisation – decking (LS2 and LS4) – Replace Pex / N4 – Summary table	244
Table 4.72: M16 Land optimisation – decking (LS2 and LS4) – Replace Pex / N4 – Cost benchmark	245
Table 4.73: M16 Land optimisation – decking (LS2 and LS4) – Replace Pex / N4) – H8 Capex	246
Table 4.74: P03 – T5 Capacity Optimisation Phase 1- Summary table	247
Table 4.75: P03 – T5 Capacity Optimisation Phase 1– Cost benchmark	247
Table 4.76: P03 – T5 Capacity Optimisation Phase 1– H8 Capex	249
Table 4.77: Q03 - Intelligent Operations and Optimisation- Summary table	250
Table 4.78: Q03 - Intelligent Operations and Optimisation – Cost Benchmark	251
Table 4.79: Q03 - Intelligent Operations and Optimisation – Building works	251
Table 4.80: Q03 - Intelligent Operations and Optimisation – H8 Capex	252
Table 4.81: Q01 - Next-Gen Passenger Services -Passenger Automation- Summary table	253
Table 4.82: Q01 - Next-Gen Passenger Services -Passenger Automation – Cost Benchmark	254
Table 4.83: Q01 - Next-Gen Passenger Services -Passenger Automation – Cost Assessment	254
Table 4.84: Q01 - Next-Gen Passenger Services -Passenger Automation – H8 Capex	255
Table 4.85: U02 - Climate Adaptation to Flood risk- Summary table	256
Table 4.86: U02 - Climate Adaptation to Flood risk– H8 Capex	257
Table 4.87: N01 - Occupancy Infrastructure - Summary table	258

Table 4.88: N01 - Occupancy Infrastructure – Cost benchmark	259
Table 4.89: N01 - Occupancy Infrastructure – H8 Capex	260
Table 4.90: C041 - Enhanced border experience - Summary table	261
Table 4.91: C041 - Enhanced border experience – Cost Benchmark	262
Table 4.92: C041 - Enhanced border experience – Control Post 25 Phase 2 – Cost Benchmark	262
Table 4.93: C041 - Enhanced border experience – Royal Suite Opportunity Site – Cost Benchmark	263
Table 4.94: C041 - Enhanced border experience – OAA Upgrade to Southside CPSRA – Cost Benchmark	264
Table 4.95: C041 - Enhanced border experience – H8 Capex	264
Table 4.96: F06 - PRJ-001903 - B7320.01 Project 5 - Summary table	265
Table 4.97: F06 - PRJ-001903 - B7320.01 Project 5 – Cost Benchmark	266
Table 4.98: F06 - PRJ-001903 - B7320.01 Project 5 – H8 Capex	266
Table 4.99: Summary of cost benchmarking results (H8 capex only)	268
Table 5.1: Our proposed capex envelope, £m, 2024 CPI	270
Table 5.2: Capex envelope annual spend profiles (Lower limit, Mid-point, and Upper limit)	271
Table A.1: Asset Renewal – Need assessment techniques	273
Table A.2: Security & Technology – Need assessment techniques	275
Table A.3: Commercial – Need assessment techniques	278
Table A.4: Baggage – Need assessment techniques	279
Table A.5: Sustainability & Energy – Need assessment techniques	281
Table A.6: Capacity – Need assessment techniques	282
Table B.1: Reclassification of Regulatory Accounts capex categories	285
Table B.2: Reclassification of H8 Business Cases	286
Table B.3: HAL Capex annual average, 2014-2024 (excluding one-offs and Covid) and H8, £m, 2024 prices	287

Glossary

Acronym	Definition
AMC	Asset Management Compliance
ATRS	Automated Tray Return System
BC	Business Case submitted by HAL
BCIS	Building Cost Information Service
BHS	Baggage Handling System
C&S	Carbon & Sustainability
CAA	Civil Aviation Authority
Capex	Capital expenditure / Capital investment
CPI	Consumer Price Index
CRP	Commercial Revenue Programme
DPP	Discounted Payback Period
EBS	Early Baggage Storage
H8	Heathrow Regulatory period 2027-2031
HAL	Heathrow Airport Limited
IATA	International Air Transport Association
ICC	International Construction Costs
MH	Modernising Heathrow
mppa	Million passengers per annum
NPV	Net Present Value
OBR	Office for Budget Responsibility
OSS	One Stop Security
SLAs	Service Level Agreements
sqm	Square metres
T2BP	Terminal 2 Baggage Programme
TPI	Tender Price Indices/Index
WACC	Weighted Average Cost of Capital

Source: Steer

1 Introduction

Overview

- 1.1 Steer has been appointed by the Civil Aviation Authority (CAA) to support its assessment of the Capital Investment Plan for the next regulatory period H8 (2027-2031). Our role is to assess and estimate Heathrow Airport Limited’s (HAL’s) capital expenditure (capex) envelope for the H8 period in the context of a two-runway airport.
- 1.2 This report sets out our assessment of HAL’s H8 capex business plan. It outlines our assessment of the need and efficiency of projects submitted by HAL in its H8 Business Plan.
- 1.3 The approach and methodologies used in the document are based on the work that we undertook ahead of business plan submission and builds on the feedback we receive from HAL and Airlines, following dedicated deep dive sessions we run in June 2025.
- 1.4 In this document, we use the term “project” to refer to the project/initiative line items included in the ‘CAA Data Tables’¹ that HAL submitted to the CAA as part of its H8 Business Plan. Programmes and/or tranches of capital expenditure are a group of projects with a common objective and similar in nature.
- 1.5 All costs are expressed in 2024 CPI prices, unless otherwise specified. The overall results of the assessment are presented in both 2024 CPI and 2024 CPIH prices.

HAL’s H8 capex submission

- 1.6 As a part the regulatory process for the determination of airport charges at Heathrow for the period 2027 to 2031 (also labelled as H8), HAL submitted in July 2025 its H8 Business Plan, which included their proposed capex programme.
- 1.7 HAL’s proposed capex programme includes **488 projects** which incur capex during H8, as disclosed in the ‘CAA Data Tables’. These projects are grouped into **20 Business Cases**, capturing common objectives or other similarities.
- 1.8 The ‘CAA Data Tables’ are templates developed by the CAA in order for HAL to populate its capex plan in a certain way. As instructed by the CAA, Steer considers

¹ Document name in HAL submission: “A8 - 1. H8 Capex Data Tables

this document as the primary source of information for this assessment. Other sources are considered as complementary sources.

1.9 The ‘CAA Data Tables’ provide a total capex amount for H8 of £10.0 billion (2024 CPI prices) after People and Planet prioritisation adjustment and Phasing adjustment, whereas other submitted documents such as the *H8 Capital Portfolio – Business Case Framework* shows a capex amount of £9.5 billion (2024 CPI prices). The difference is related to an “Efficiency” adjustment of £0.5 billion (2024 CPI prices) that HAL applies to the overall capex programme, which is not reflected in the information reported in the ‘CAA Data Tables’.

1.10 The sum of the capital costs of the 488 projects before People and Planet prioritisation adjustment and Phasing adjustment is £10.3 billion over H8 (2024 CPI prices). However, as mentioned in the paragraph above, HAL applies some adjustments to this amount in order to arrive at the £9.5 billion (2024 CPI prices) capex programme. These adjustments are described below:

- **People and planet prioritisation adjustment**, which we understand results in a cost reduction of -£112m (2024 CPI prices) due to the de-scoping of projects de-prioritised by HAL within the Business Case BC 09.00. However, the names of these projects and the cost disaggregation of the £112m amount has not been provided;
- **Phasing adjustment**, an adjustment of -£176m (2024 CPI prices), or c. -1.7% of the £10.3 billion capex (2024 CPI prices), which we understand is an adjustment that HAL applies to reflect HAL bias between plan and actuals; and
- **Efficiency adjustment**, an adjustment of -£496m (2024 CPI prices), or -5% of the £10 billion capex (2024 CPI prices) after adjustments, which we understand as being an efficiency commitment from HAL in reducing the cost of its overall capex programme.

1.11 The table below provides a summary list of the Business Cases and the adjustments that HAL applied to arrive at the **total capex value for H8 of £9.5 billion (2024 CPI prices)**.

Table 1.1: HAL's H8 capex programme grouped by Business Case

Business Case / Adjustment	H8 capex (£m, 2024 CPI prices)
BC01.00 Security Programme	£348
BC02.00 T2 Baggage Programme	£493
BC03.01 Asset Management & Compliance Programme	£2,036
BC03.02 Terminal 4 Front Door and Car Park	£316
BC03.03 T3 Hold Baggage Screening replacement (T3IB)	£92
BC03.04 T5 Pilz Obsolescence	£113
BC04.00 H8 new asset renewal scope	£1,185
BC05.00 Electrical network	£568

Business Case / Adjustment	H8 capex (£m, 2024 CPI prices)
BC06.00 Heat decarbonisation	£319
BC07.00 Noise mitigation	£241
BC08.00 Carbon and Sustainability Programme	£369
BC09.00 People and Planet	£207
BC10.00 Modernising Heathrow Programme	£1,783
BC11.00 Occupancy infrastructure	£394
BC12.00 Commercial Programme	£229
BC13.00 H8 new - commercial scope	£567
BC14.00 Digital	£455
BC15.00 T5 Early Bag Store front door	£50
BC16.00 Efficient Airport programme	£212
BC17.00 H8 new - Passenger Experience	£310
Sum of Business Cases	£10,287
People and Planet prioritisation adjustment	-£112
Phasing adjustment	-£176
Sub-total (as disclosed in the CAA Data Tables)	£9,999
Efficiency	-£496
Total	£9,502

Source: HAL, Steer

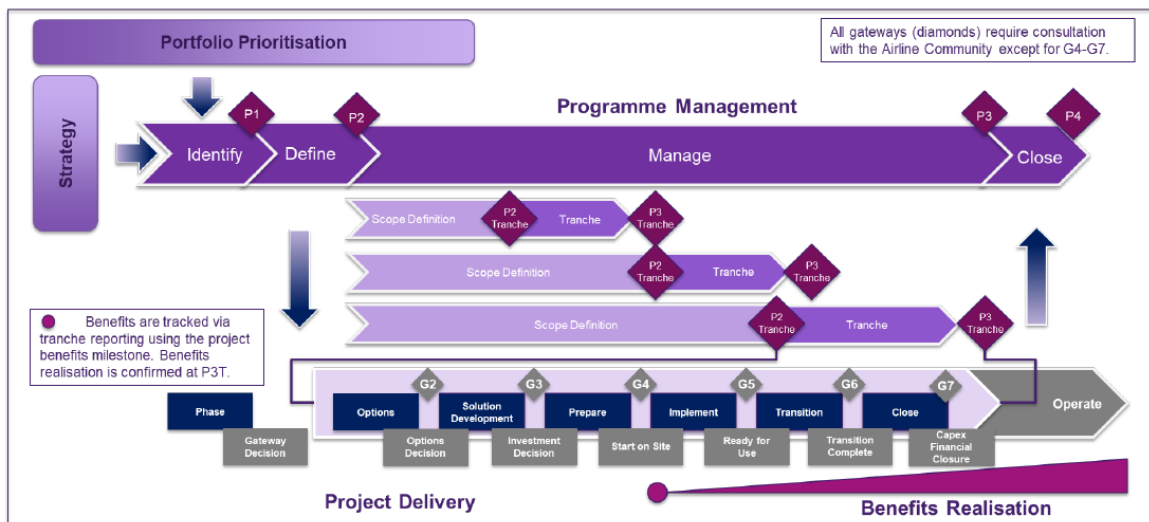
- 1.12 In addition to the information that HAL submitted in July 2025, we had access to more information from HAL through the Questions and Answers process (Q&A) coordinated by the CAA.

Project maturity stages

- 1.13 Consistent with HAL’s Programme Governance Framework (PGF) and the Heathrow Gateway Lifecycle (HGL), the projects that are included in the submission present different degrees of maturity according to their gateway stage of design and approval.
- 1.14 The key stages that HAL follows for capital projects delivery are summarised below and are illustrated in the diagram that follows:
- **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:** Validates 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 in order to include it in the Regulated Asset Base (RAB).
- **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 1.1: HAL's Programme and project gateway lifecycle



Source: HAL Business Case Framework, page 23

Our approach to capex assessment

1.15 We have undertaken the capex assessment of HAL’s H8 capex plan in five steps:

1. Assessment of the alignment with the CAA Business Plan Guidance requirements;
2. Assessment of the need of the projects to further the interests of consumers;
3. Estimation of H8 capex envelope threshold;
4. Assessment of the efficiency of the projects; and
5. Proposed H8 capex envelope.

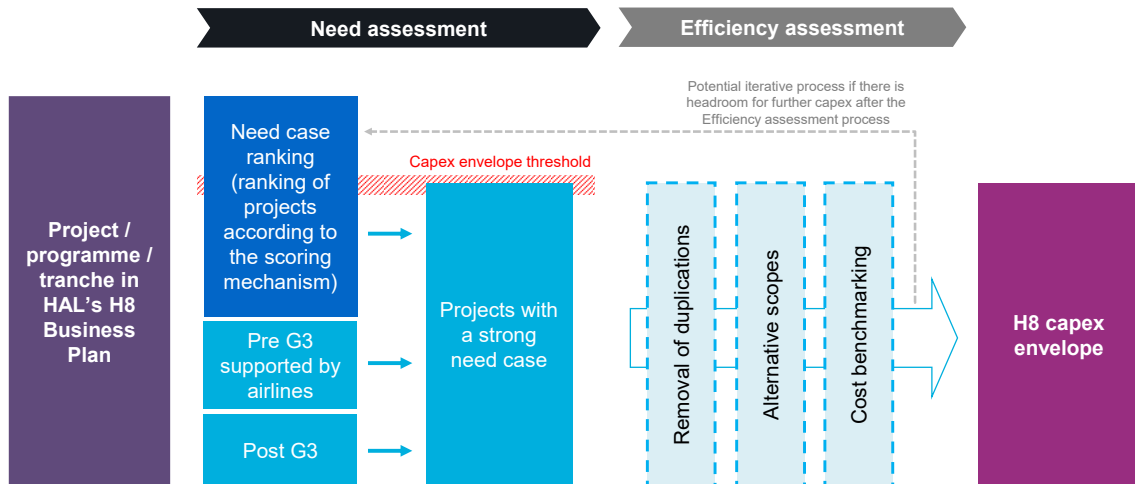
Assessment of the alignment with the CAA Business Plan Guidance requirements

- 1.16 We have assessed whether the CAA Business Plan Guidance requirements for capex set out in the *CAA document CAP3083A: H8 method statement and business plan guidance, Appendix A*, were met by HAL.
- 1.17 We have undertaken the assessment on a project-by-project basis, using the requirements set out in the *Capex by category and by project section* (pages 29-30) of the CAA Business Plan Guidance document.
- 1.18 The results of the assessment have been mainly used to inform certain aspects of the need assessment scoring, as described in the Consumer benefit scoring methodology.

H8 capex envelope determination process

- 1.19 We have developed a methodology to determine the optimal H8 capex envelope based on two key factors: (1) the need of the project; and (2) the efficiency of the project.
- 1.20 We assess the strength of the need cases in HAL’s Business Plan as a step towards setting the H8 capex envelope threshold. Projects that have already been through the G3 gateway and those that have support from airlines (beyond the formal G3 approval process), are considered as having a strong need case. The rest of the projects undergo a scoring-based need assessment as explained in the Need assessment chapter.
- 1.21 The Need assessment phase concludes with the determination of the projects that fall under the capex envelope threshold. These projects then go through an Efficiency assessment phase before the efficient capex envelope for H8 is defined.
- 1.22 The capex envelope threshold indicates the capex level that is sufficient for HAL to deliver the projects with a strong enough need case at this stage, as reflected in the need case scoring and falls within reasonable levels of capex delivery, which we assess based on HAL’s past delivery, location delivery constraints, and other deliverability considerations (namely supply chain constraints).
- 1.23 We assess the cost efficiency of the projects that have a strong need case. Our efficiency assessment comprises of a series of steps, namely assessment of duplications, alternative scopes and cost benchmarking.
- 1.24 There could be an iterative process for defining the capex envelope threshold if, after the efficiency assessment, there is headroom for further capex projects to be included, and provided their need case is sufficiently strong at this stage.
- 1.25 The overall process is illustrated in the figure below and detailed in the sections that follow.

Figure 1.2: H8 capex envelope determination process



Source: Steer

Structure of this document

1.26 The remainder of this document is structured as follows:

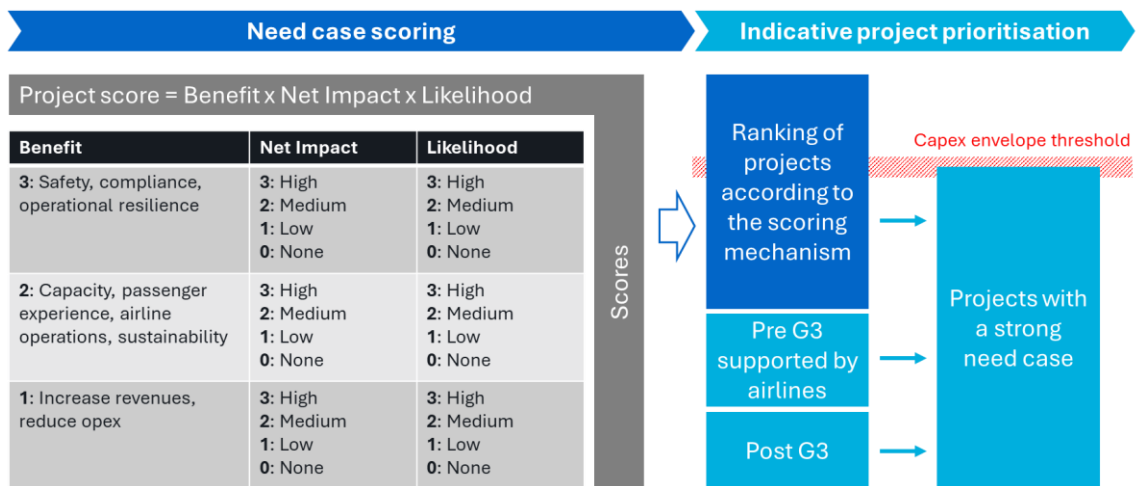
- Chapter 2: provides the need assessment of each of the 488 projects that HAL submitted in its Business Plan with capex expenditure to be incurred during any year of H8, grouped by Business Case.
- Chapter 3: describes the method that we have used to estimate our proposed capex envelope threshold for H8.
- Chapter 4: provides the efficiency assessment of HAL's capex plan.
- Chapter 5: presents our proposed H8 capex envelope.
- Appendix A: summarises the technical aspects we have set out as relevant to assess the need of projects, which we set out in consultation with HAL and the airlines in June 2025, and before HAL submitted their Business Plan.
- Appendix B: includes an analysis which complements our 'capacity to deliver' assessment provided in Chapter 3.

2 Need assessment

Our approach to need assessment

2.1 In our approach to the need assessment, we have developed a two-stage methodology: the need case scoring and the indicative project prioritisation processes. This methodology is illustrated in the figure below and explained in the following paragraphs.

Figure 2.1: Prioritisation and project selection process for H8 capex envelope



Source: Steer

Need case scoring

2.2 The projects that have gone through G3 gateway or have support from the airlines are assessed to already have a strong need case and, therefore, are not required to be scored.

2.3 At the time of closing this report, the airlines had not indicated support to any project at a gateway stage prior to G3.

2.4 The need assessment process for ranking projects that have not gone through G3 gateway nor have support from the airlines considers three **consumer benefit categories**. These benefit categories are the following:

- Projects that contribute to the safety, compliance, and operational resilience of the airport. This category is considered the most critical one to further the interest of consumers, and has been assigned the highest benefit weight, which is 3.

- Projects that contribute to the capacity, passenger experience, airline operations, and sustainability of the airport. This category has been assigned a consumer benefit weight of 2.
- Projects that contribute to increase revenues and reduce opex at the airport. This category has been assigned a consumer benefit weight of 1. We expect that the benefits mentioned in this category will be traceable through the rest of HAL's Business Plan.

2.5 It could be argued that each subcategory of the categories above (e.g. safety, resilience, capacity) could have its own weight and different stakeholders might assign a different weight per subcategory. We consider that reducing the groupings to three benefit categories, as described above, is a pragmatic way to achieve a higher consensus among stakeholders while ensuring the best interest of consumers.

2.6 We score each project against each of the three consumer benefit categories, using a Net Impact metric and a Likelihood metric as defined below.

2.7 Projects are expected to deliver a tangible outcome for consumers and, as such, the **Net Impact** of each project against each consumer benefit category, is defined as the positive impact that the project is expected to have minus the negative consequences. Some of the negative consequences could be the temporary decrease in service quality during the construction works; an increase in opex required for a new facility or system; or simply the high capex required for the project.

2.8 The Net Impact of each of the three categories of consumer benefits is then evaluated as per the following scoring criteria:

- High Net Impact: 3.
- Medium Net Impact: 2.
- Low Net Impact: 1.
- No Net Impact: 0.

2.9 For each project, each of the three consumer benefit categories is also assessed against the **Likelihood** of benefit occurrence, in order to determine how likely it will be for the project to be executed as planned and to deliver what it is expected from it.

2.10 The Likelihood of each of the three consumer benefit categories to materialise is evaluated as per the following scoring criteria:

- High Likelihood: 3.²
- Medium Likelihood: 2.

² Meaning that the Net Impact is highly likely.

- Low Likelihood: 1.
- No Likelihood: 0.

- 2.11 The projects that have more granular information and are well defined in HAL’s H8 Business Plan submission, have more chances of being highly scored in terms of Likelihood of consumer benefit occurrence. In other words, the Likelihood scoring is linked to the robustness of the need case evidence that HAL submits in its Business Plan. The assessment that we have undertaken on a project-by-project basis of the alignment with the CAA Business Plan Guidance requirements also informs our view on the score of each project against the Likelihood of benefit occurrence.
- 2.12 In addition, before the Business Plan submission, we developed a summary of the expert techniques that we intended to use to inform both, the Net impact and Likelihood scores. This summary was shared with HAL and the airlines who had the opportunity to provide feedback to us in writing and through meetings. Their feedback was integrated into the expert techniques we have used and the latest version of these is available in Appendix A.
- 2.13 The score attributed to each project is the sum of the multiplications of scores obtained from evaluating each project against each of the three consumer benefit categories. For example, a project that it is assessed to have a 2 (medium) Net Impact and a 1 (low) Likelihood for all three of the consumer benefit categories, scores: $3 \times 2 \times 1 + 2 \times 2 \times 1 + 1 \times 2 \times 1 = 12$. The maximum score that a project can achieve is 54 ($= 3 \times 3 \times 3 + 2 \times 3 \times 3 + 1 \times 3 \times 3$).
- 2.14 In order to have consistency across project scores, the Net Impact and Likelihood scores have been assured, moderated, and calibrated across projects.
- 2.15 Interdependencies among projects have also been considered in the scoring to the best of our knowledge, ensuring that the enabling projects have at least the same scores as the project (or projects) that they enable.

Indicative project prioritisation

- 2.16 The strength of the need case of the projects is the key factor in determining the capex envelope threshold. The projects with a strong need case are compiled starting with post G3 projects, following by pre G3 projects supported by airlines, and adding the rest of the projects ranked according to the need case scoring mechanism, from higher to lower.
- 2.17 The capex envelope threshold is not intended to be interpreted as a specific capex amount. Rather it provides a range value to accommodate projects which need cases are of comparable strength albeit having just slightly different need case scores.

- 2.18 The projects at Post G3 gateway stage, pre G3 projects supported by the airlines, and the projects with the highest need case scores constitute the indicative list of prioritised projects.
- 2.19 We note that this is an indicative list because the need assessment is based on the evidence available at Business Plan stage. Through the capex governance framework, HAL and airlines will firm up what projects to deliver in H8, within the capex envelope threshold, taking account of evolving needs and more mature information on optioneering, need case, and benefits to consumers.

BC01.00 Security Programme

HAL’s submission

2.20 This section provides a summary of what was submitted by HAL on this Business Case.

Projects and costs

2.21 As the table below shows, the projects in this Business Case are at a reasonable level of maturity, as all projects are at least at P2T stage and some are already at post G3 gateway stage.

Table 2.1: BC01.00 – Capex submission (£m, 2024 CPI prices)

ID	Label	Gateway as of July-25	Capex (£m, 2024 CPI)		
			Pre-H8	H8	Post H8
	Overall Business Case		391	348	-
	By project				
C01	PRG-000072 - B7680 - Security Transformation Programme	N/A	14	16	-
C012	PRJ-001701 - B7680.08 - T2 CSA, CS & T2B	Post-G3	46	7	-
C014	PRJ-001716 - B7680.11 – T5 CSA	Post-G3	69	13	-
C015	PRJ-001718 - B7680.12 T3 Non-Pax Search – Arrivals	P2T	5	3	-
C016	PRJ-001719 - B7680.13 - T4 CSA & CS	G2	66	37	-
C024	PRJ-001864 - B7680.23 T5 BA crew L20 & Royal Suite	P2T	8	7	-
C025	PRJ-001868 - B7680.24 Major Equipment Procurement	Post-G3	68	8	-
C026	PRJ-001869 - B7680.25 T3 Non-Pax Search – Departures	P2T	7	10	-
C027	PRJ-001897 - B7680.27 – Control Posts 12 & 18	G2	24	22	-
C031	PRJ-001920 - B7680.30 – High Complexity Control Posts	G2	16	28	-
C035	PRJ-001933 - B7680.34 - Tranche 2: Advanced Screening Algorithms	P2T	9	11	-
C037	PRJ-001956 - B7680.36 CPC	P2T	40	85	-
C039	PRJ-002005 - B7680.38 T5 BA Crew L20	G2	14	4	-
C040	Data Insight – Dashboards & Reporting, Pro-active Service and Support Model & Prescriptive Maintenance Algorithms	P2	6	33	-
C041	In airport Cargo, OAA Upgrade to Southside CPSRA & Control Post 25 Phase 2	P2	0	65	-

Source: A8 - 1. H8 Capex Data Tables, Steer analysis

Overview

2.22 The table below summarises the Business Case information provided by HAL in its Business Plan submission.

Table 2.2: BC01.00 – Overview

Category	Description
Scope	<p>The security programme consists of projects which aim at providing a security compliant airport with innovative technologies and processes that enhance threat detection, improve the user experience, and safeguard future growth. The programme is divided into four tranches whose delivery commenced in H7 with expected completion by 2029.</p> <ul style="list-style-type: none"> Tranche 1 - Compliance: Replacement of security equipment with new technology to comply with DfT NGSC (Next Generation Security Checkpoint) mandate across 146 security lanes at Heathrow; projects include associated building works for compliance and growth. Tranche 2 - Optimisation: Central Image Processing, Advanced Screening Algorithms and flexible staff deployment at checkpoints. Tranche 3 - Enhanced Body and Bag product: Data insights, a Pro-active Service & Support Model, Predictive Maintenance Algorithms. Tranche 4 - Enhanced Vehicle and Goods product: Southside Other Airside Area (OAA) upgrade to Critical Part of the Security Restricted Area (CPSRA), expansion of CP25 and a new screening facility for the Royal Suite.
Need case	<ul style="list-style-type: none"> The primary driver of Tranche 1 projects is achieving compliance with the DfT’s NGSC mandate, which is required to maintaining the airport’s operating licence. Additionally, the projects are driven by needed capacity increases, and enhancement of efficiency and passenger experience. Tranche 2 projects are driven by the need for resilient, innovative security checkpoint solutions with increased throughput. Tranche 3 projects aim at enhancing operational resilience, reducing unplanned downtimes and enabling efficient resourcing. Tranche 4 projects aim at reducing existing security and safety risks. The projects are also required to enable the Cargo Southside Development with needed screening capacities and efficient operations.
Optioneering	<p>According to HAL, product options for Tranche 1 technologies were tested ahead of the preferred supplier selection. For Tranche 2 projects, HAL indicates that options were developed through operational planning and stakeholder engagement. Options for tranches 3 and 4 are currently under development, according to HAL.</p>
Outcomes & benefits	<p>HAL claims the following outcomes and benefits for each tranche:</p> <p>Tranche 1:</p> <ul style="list-style-type: none"> Compliance of security lanes to the DfT NGSC mandate. Increased throughput rates of security lanes and thus enabling sustainable growth of passenger departure flows. Improved threat detection capabilities. Improved asset life of security equipment (extra 15 years). Enhanced passenger and colleague experience. <p>Tranche 2:</p>

Category	Description
	<ul style="list-style-type: none"> Increased throughput of security lanes through Advanced Screening Algorithms. Security risk reduction through Advanced Screening Algorithms. Tranche 3: <ul style="list-style-type: none"> Improved equipment reliability with reduced downtimes and thus an enhanced passenger and colleague experience. Improved operational and peak capacity resilience. Tranche 4: <ul style="list-style-type: none"> Reduction of security risks. Enabler for Southside Cargo redevelopment (efficient and scalable cargo operations). Safety risk reduction.
Impact on Opex/ Revenues	According to HAL, annual opex reductions can be achieved with less security officers required for operations (£18.9m of reduction per year for Tranches 1 and 2). However, in the years 2027/28 less reductions are expected due to roll-out costs (training, inefficiencies/ disruptions during implementation, third party support, etc.).
Airlines	Extensive engagement with airlines has been undertaken, according to HAL, to build support for key programme decisions during P2 stage.

Source: HAL, Steer analysis

Need assessment

2.23 The below sections summarise our assessment of the need for each project included in this Business Case.

Summary of our assessment

2.24 Tranche 1 projects³ are needed for compliance with the DfT NGSC mandate to upgrade the security equipment of all lanes to CTiX and full body security scanners. This requirement provides a high degree of criticality for the execution of these projects, which are already at a reasonable level of maturity (at least P2T). This justifies our ‘3:High’ score for Net Impact and Likelihood in the ‘Safety, compliance and operational resilience’ category of consumer benefits for these projects. Nevertheless, we note that the need case for the building works of most of the projects cannot be properly assessed due to a lack of detailed information.

2.25 Most of the six projects that are related to control post or colleagues and crew screening (projects C015, C026, C027, C031, C037, C039) , score ‘1:Low’ for Net Impact and Likelihood in the ‘Capacity, passenger experience, airline operations, sustainability’ category of consumer benefits, since these projects do not directly involve passengers, and evidence of critical capacity gains has not been provided. The exceptions are project C031, which Likelihood is ‘2:Medium’ due to its higher criticality; and project C039, which Net impact is ‘2: Medium’ owing to direct benefits to British Airways. The three projects that are directly linked to passengers (C016 and CO24) score higher on this category of consumer benefits

³ C012, C014, C015, C016, C024, C025, C026, C027, C031, C037, C039

for both Net Impact and Likelihood, since they provide new lanes, which improve the passenger throughput and experience, and their need case is more critical due to growing passenger numbers. Also, an increased capacity of more than 23% has been stated by HAL for project C016.

- 2.26 With regards to ‘Increase revenues, reduce opex’ category of consumer benefits of Tranche 1 projects, HAL’s stated that annual opex reductions of £9.5m can mainly be associated with the Central Security Areas (project C016, aside from the Post-G3 related projects) where less lanes would be needed to achieve a required capacity, and the control post central project (project C037) where several control posts will be consolidated into one location, hence the higher ‘2:Medium’ scores for these projects and a ‘1:Low’ score for the remaining projects of Tranche 1 for both Net Impact and Likelihood.
- 2.27 Tranche 2 includes the advanced screening algorithm project, namely APIDS (project C035), which currently is on hold until confirmation of the regulatory approval pathway. The implementation of APIDS will improve threat detection capabilities and reduce risk of human error for the screening of cabin baggage and personal belongings. This innovative technology will contribute to the fulfilment of some of HAL’s strategic goals as it enhances the passenger experience through reduction of cabin baggage rechecks, increases throughput per lane and hence enables the realisation of operational efficiency and capacity benefits. APIDS will contribute to annual opex reductions, as it will reduce the number of security officers required in the central screening room. Accordingly, we assess the Net Impact for all categories of consumer benefits to be ‘2:Medium’. There is a risk of implementation delays due to pending regulatory approvals, hence a ‘2:Medium’ score for Likelihood on all categories except for the ‘Increase revenues, reduce opex’ category, which is lower due to lower probability of achieving cost reductions in the short term.
- 2.28 The consumer benefits of the Tranche 3 project (project C040) cannot yet be properly determined since the scope provided by HAL in the Business Plan is reflective of the early stage of project maturity (P2) and, therefore, lacks the required details for the assessment. The potential outcomes (improved equipment reliability, improved operational resilience, and opex reductions) are plausible. However, there is little information available in the Business Plan and the uncertainty is high given the early maturity of the project, hence the low scores across all three categories of consumer benefits and no scores for the ‘Increase revenues, reduce opex’ category.
- 2.29 There is a need for delivery of Tranche 4 project (project C041) since it will significantly reduce security and safety risks, hence the relatively high scores for the ‘Safety, compliance and operational resilience’ benefit category. The project is also needed to enable the Southside Cargo Transformation project as it will ensure efficient and scalable cargo operations by providing the required control post capacities and by allowing reduced processing times for cargo movement to apron stands (all inside CPSRA without boundary crossings between OAA and

CPSRA), justifying the relatively high scores also for the ‘Capacity, passenger experience, airline operations, sustainability’ category of consumer benefits. Some opex reductions can be expected from the closure of several control posts which will be consolidated into an expanded CP25, hence the ‘2:Medium’ scores for the ‘Increase revenues, reduce opex’ category.

- 2.30 Project C01 has been scored similarly to the highest total score in this Business Case to ensure that the overall programme costs are included in the capex envelope if at least one of its related projects is included in the capex envelope.

Scores

Table 2.3: BC01.00 – Need case scores per project

ID	Label	Safety, compliance, operational resilience		Capacity, passenger experience, airline operations, sustainability		Increase revenues, reduce opex		TOTAL
		Net Impact	Likelihood	Net Impact	Likelihood	Net Impact	Likelihood	
	Overall Business Case weighted averages (pre-G3 projects only)*	3	3	2	2	2	1	32
	By project							
C01	PRG-000072 - B7680 - Security Transformation Programme	3	3	3	3	2	2	49
C015	PRJ-001718 - B7680.12 T3 Non-Pax Search – Arrivals	3	3	1	1	1	1	30
C016	PRJ-001719 - B7680.13 - T4 CSA & CS	3	3	3	3	2	2	49
C024	PRJ-001864 - B7680.23 T5 BA crew L20 & Royal Suite	3	3	2	2	1	1	36
C026	PRJ-001869 - B7680.25 T3 Non-Pax Search – Departures	3	3	1	1	1	1	30
C027	PRJ-001897 - B7680.27 – Control Posts 12 & 18	3	3	1	1	1	1	30
C031	PRJ-001920 - B7680.30 – High Complexity Control Posts	3	3	1	2	1	1	32
C035	PRJ-001933 - B7680.34 - Tranche 2: Advanced Screening Algorithms	2	2	2	2	2	1	22
C037	PRJ-001956 - B7680.36 CPC	3	3	1	1	2	1	31
C039	PRJ-002005 - B7680.38 T5 BA Crew L20	3	3	2	1	1	1	32
C040	Data Insight – Dashboards & Reporting, Pro-active Service and Support Model & Prescriptive Maintenance Algorithms	1	1	1	1	0	0	5
C041	In airport Cargo, OAA Upgrade to Southside CPSRA & Control Post 25 Phase 2	3	2	3	2	2	2	34
	Project not scored	Reason						

ID	Label	Safety, compliance, operational resilience		Capacity, passenger experience, airline operations, sustainability		Increase revenues, reduce opex		TOTAL
		Net Impact	Likelihood	Net Impact	Likelihood	Net Impact	Likelihood	
C012	PRJ-001701 - B7680.08 - T2 CSA, CS & T2B	Post-G3						
C014	PRJ-001716 - B7680.11 – T5 CSA	Post-G3						
C025	PRJ-001868 - B7680.24 Major Equipment Procurement	Post-G3						

Source: HAL, Steer analysis. Note: (*) The overall Business Case weighted average scores are calculated by weighting the projects' scores with their H8 capex values.

BC02.00 T2 Baggage Programme

HAL’s submission

2.31 This section provides a summary of what was submitted by HAL on this Business Case.

Projects and costs

2.32 As the table below shows, the projects in this Business Case are at a reasonable level of maturity, as all projects are at least at P2T stage and some are already at post G3 gateway stage.

Table 2.4: BC02.00 – Capex submission (£m, 2024 CPI prices)

ID	Label	Gateway as of July-25	Capex (£m, 2024 CPI)		
			Pre-H8	H8	Post H8
	Overall Business Case		224	493	0
	By project				
G01	PRG-000073 - B7233 - T2 Baggage - Strategy and Scoping	N/A	-6	34	0
G06	PRJ-001713 - B73-006.00 - Tr3 - IT ICS Asset Refresh Phase 1	Completed	3	0	-
G08	PRJ-001717 - B73-008.00 - Tr3 - T1 Backbone Phase 1	Post-G3	4	0	-
G011	PRJ-001789 - B73-011.00 - Tr4 - Demolitions North	P2T	28	7	-
G015	PRJ-001800 - B73-015.00 - Tr3 - T1 Backbone Phase 2	Post-G3	12	5	-
G017	PRJ-001816 - B73-017.00 Tr5 T2A Baggage System	G2	167	302	-
G020	PRJ-001883 - B73-020.00 Essential Asset Replacement	P2T	9	59	-
G021	PRJ-001884 - B73-021.00 Shell & Core	P2T	5	57	-
G022	PRJ-001890 - B73-022.00 T2A Office and Welfare	P2T	3	2	-
G023	Decommission T1 baggage system	P2	-	1	-
G024	Baggage P2 R&O's	P2	-	27	-

Source: A8 - 1. H8 Capex Data Tables, Steer analysis

Overview

2.33 The table below summarises the Business Case information provided by HAL in its Business Plan submission.

Table 2.5: BC02.00 – Overview

Category	Description
Scope	<p>The Terminal 2 Baggage Programme (T2BP) focuses on modernising the baggage handling system for passengers using Terminal 2A. The scope of the programme includes:</p> <ul style="list-style-type: none"> • Installing a new baggage system within Terminal 2A. • Carrying out enabling works, such as relocating the Baggage Recovery Facility (BRF), moving the arrivals call-forward area outside its current footprint in T2A to create space for the new system, and demolition activities in the T1 building, the T2A connector, and the Starlight Point. • Replacing building and service assets in Terminal 1 to ensure continued operations and capacity until the new system is fully functional. • Upgrading Terminal 1 baggage assets to maintain service levels during the transition. • Relocating and enhancing non-baggage IT systems. • Decommissioning the existing baggage system in Terminal 1 once the new system is operational.
Need case	<p>The T1 Operational Life Extension Programme was set up to prolong the life of T1 until its demolition (phased from 2022 to 2027). According to HAL, currently, more than 85% of its baggage system components are obsolete or nearing the end of their technical life. HAL claims that operating T1 beyond this point exposes Heathrow to significant risks of equipment failures and an inability to bring BHS equipment back into operation.</p> <p>Furthermore, HAL mentions that staff working conditions do not represent a modern workplace, with the need to enhance and improve colleague health, safety, and wellbeing, and align with the latest health and safety standards.</p> <p>HAL states these challenges demonstrate a need to take action to mitigate the risks associated with the poor condition of T1 and deliver T2’s new baggage facilities and staff working conditions.</p>
Optioneering	<p>HAL indicates that two overarching options were considered:</p> <ul style="list-style-type: none"> • Stay in T1 - with 3 Options; and • Exit T1 with 2 Options and 3 Sub options. <p>These options were rated on certain key criteria like cost, deliverability, and alignment with the goals of the Heathrow Expansion Programme (Masterplan) that involves expansion of T2 to above 40mppa. The chosen option brings forward the construction of a new baggage system in T2A using already safeguarded space.</p>
Outcomes & benefits	<p>According to HAL, the quantitative benefits of the T2 Baggage Programme (T2BP) are:</p> <ul style="list-style-type: none"> • Maintain T2 baggage capacity at a level consistent with that experienced in 2019; • Maintain a performance level of T2 and in-system misconnect rate for both directs and transfers consistent with that in 2019; • Reduce the likelihood of risks associated with T2 baggage operations and services located in T1; and • Deliver opex savings for airline.
Impact on Opex/ Revenues	<p>Delivery of the T2BP will result in one-off operating costs, primarily associated with business change and operational readiness activities.</p>

Category	Description
	<p>HAL expects that there will be approximately £10m of one-off opex costs across the programme.</p> <p>HAL also claims that there will be a long-term reduction in opex compared with the do-nothing scenario. This is estimated at £3.4m per annum from operation in 2030.</p>
Airlines	<p>Engagement with stakeholders (including airlines) takes place within a defined governance framework at Heathrow. Since the inception of the programme, several forums have been established in line with HAL’s capital governance approach. HAL states that it has ensured that airlines are regularly and continuously involved in the baggage system solution design and its delivery.</p>

Source: HAL, Steer analysis

Need assessment

2.34 The below sections summarise our assessment of the need for each project included in this Business Case.

Summary of our assessment

2.35 We have assessed that all the projects included in this Business Case, except Essential Asset Replacement (G020) which lacks information, as being on the critical path in order to deliver T2BP outcomes. They have, therefore, the same benefit scores. The scores have been based on the fact that the T2BP:

- Is essential to increase operational resilience of the baggage handling capacity provided for T2 and significantly reduce the risk of failures and outages of the old T1 baggage system.
- Will maintain a BHS peak capacity at 2,000 bag per hour for T2.
- Will sustain Heathrow's regulated Baggage performance targets for direct and transfer misconnecting bags.
- Is forecasted to deliver operating cost savings of circa £3.4m per annum when fully operational in 2030, resulting in reduced baggage charges to airlines. However, this estimate is relatively uncertain at this stage.

2.36 In its Business Case, HAL has provided very limited information on the project Essential Asset Replacement (G020). However, through the Q&A, HAL has indicated that the project “reduces risks involving escape routes, fire and safety systems, all required under fire safety legislation (i.e., it addresses risks to compliance)”. Therefore, we score it as ‘3:High’ Net Impact in the ‘Safety, compliance, operational resilience’ benefit category. We score the Likelihood as ‘2:Medium’ as we would have expected further evidence such as a CRF score similar to what was provided in the Business Case BC03.01 assessed later in this report. HAL’s Business Plan does not provide indication of other benefits across the two remaining consumer benefit categories for this project.

Scores

Table 2.6: BC02.00 – Need case scores per project

ID	Label	Safety, compliance, operational resilience		Capacity, passenger experience, airline operations, sustainability		Increase revenues, reduce opex		TOTAL
		Net Impact	Likelihood	Net Impact	Likelihood	Net Impact	Likelihood	
	Overall Business Case weighted averages (pre-G3 projects only)*	3	3	2	3	1	2	38
	By project							
G01	PRG-000073 - B7233 - T2 Baggage - Strategy and Scoping	3	3	2	3	1	2	41
G011	PRJ-001789 - B73-011.00 - Tr4 - Demolitions North	3	3	2	3	1	2	41
G017	PRJ-001816 - B73-017.00 Tr5 T2A Baggage System	3	3	2	3	1	2	41
G020	PRJ-001883 - B73-020.00 Essential Asset Replacement	3	2	0	0	0	0	18
G021	PRJ-001884 - B73-021.00 Shell & Core	3	3	2	3	1	2	41
G022	PRJ-001890 - B73-022.00 T2A Office and Welfare	3	3	2	3	1	2	41
G023	Decommission T1 baggage system	3	3	2	3	1	2	41
G024	Baggage P2 R&O's	3	3	2	3	1	2	41
	Project not scored	Reason						
G06	PRJ-001713 - B73-006.00 - Tr3 - IT ICS Asset Refresh Phase 1	Post-G3						
G08	PRJ-001717 - B73-008.00 - Tr3 - T1 Backbone Phase 1	Post-G3						
G015	PRJ-001800 - B73-015.00 - Tr3 - T1 Backbone Phase 2	Post-G3						

Source: HAL, Steer analysis. Note: (*) The overall Business Case weighted average scores are calculated by weighting the projects' scores with their H8 capex values.

BC03.01 Asset Management & Compliance Programme

HAL’s submission

2.37 This section provides a summary of what was submitted by HAL on this Business Case.

Projects and costs

2.38 As the table below shows, the projects included in this Business Case are at different maturity stages with many at or post G3, while others are at very early P2T stage.

Table 2.7: BC03.01 – Capex submission (£m, 2024 CPI prices)

ID	Label	Gateway as of July-25	Capex (£m, 2024 CPI)		
			Pre-H8	H8	Post H8
	Overall Business Case		1,210	2,036	26
	By project				
A012	PRJ-000181 - B7216 AGL Reinforcement	Post-G3	15	1	-
A014	PRJ-000206 - Main Tunnel	Post-G3	352	9	-
A026	PRJ-000465 - B6206.13 Rail OTN & PLC Replacement	Post-G3	24	11	-
A029	PRJ-000487 - B6214.02 Pollution Infrastructure Renewal	P2T	9	12	-
A033	PRJ-000498 - B7205 M1/14 Firemain Controls	G3	8	2	-
A038	PRJ-000512 - B7221.00 PFOS (Trace contaminants – Fluorosurfactants (PFOS))	P2	0	40	0
A045	PRJ-000743 - B6361.02 Western Campus Logistics and Compliance	Post-G3	15	0	-
A056	PRJ-001254 - B7651.00 Safety & Resilience	G3	2	1	-
A062	PRJ-001331 - B7227.00 Terminals Critical Asset Management and Compliance	Post-G3	33	2	-
A066	PRJ-001337 - B7226 T2 chilled water	P2T	13	18	-
A067	PRJ-001408 - B7232 - Western Campus Baggage Obsolescence	Post-G3	17	2	-
A068	PRJ-001409 - B7231.01 - CP24A & Spout Lane	Post-G3	5	1	-
A073	PRJ-001422 - B7209.03 - MSCP4 Urgent Structural Works	Post-G3	39	1	-
A080	PRJ-001514 - B7237 MSCP3 Intumescent Paint, MSCP3 Civils Rehabilitation and Safety Improvements	P2T	7	21	-
A083	PRJ-001525 - B6672.04 - Blast Protection - Terminals	P2T	13	23	-
A085	PRJ-001531 - B71-069.00 - Minimum Energy Efficiency Standards (MEES) - EPC Compliance Property	P2T	3	2	-

ID	Label	Gateway as of July-25	Capex (£m, 2024 CPI)		
			Pre-H8	H8	Post H8
A091	PRJ-001568 - B71-002.00 - Wave 1 Non-Terminal Buildings Rehab and Emergency Lighting Renewal	P2T	8	3	-
A092	PRJ-001569 - B71-003.00 Wave 1 - Landside Roads and Perimeter Fence Renewal	G3	32	13	-
A093	PRJ-001570 - B71-004.00 - T3 Roofing structural renewal	G2	10	14	-
A096	PRJ-001573 - B71-007.00 - T2 Landside PRS Host Area Expansion	Post-G3	7	1	-
A099	PRJ-001578 - B71-013.00 - IDAHO Roadmap	P2T	1	5	-
A103	PRJ-001588 - B71-021.00 - Wave 1 Heavy Rail Tunnel Water Ingress & Fire Compliance	P2T	2	1	-
A104	PRJ-001589 - B71-022.00 - T5 BMS Upgrade	G2	6	33	-
A105	PRJ-001590 - B71-023.00 - T4 BMS Upgrade	G2	4	26	-
A108	PRJ-001594 - B71-027.00 - TTS Switch Overhauls and Replacements	P2T	3	1	-
A110	PRJ-001596 - B71-029.00 - T4 Sewage Chamber Refurbishment	Post-G3	8	1	-
A111	PRJ-001600 - B71-030.00 - T4 Emergency Lighting CBUs	Post-G3	8	1	-
A112	PRJ-001601 - B71-031.00 - Wave 1 Tunnel Improvements in ART, SAR, NAR	P2T	5	103	-
A113	PRJ-001602 - B71-032.00 - T4 PLC and Check-in Asset Replacement	G2	25	29	-
A114	PRJ-001603 - B71-033.00 - Heart System Renewal	P2T	20	22	-
A119	PRJ-001618 - B71-036.00 - CPSRA Strengthening	P2T	4	1	-
A124	PRJ-001641 - B7231.03 - UKPNS HVAC System	P2	1	2	-
A125	PRJ-001642 - B7231.02 - Waste Areas Incl Landside Sweeper Tip	G2	9	3	-
A126	PRJ-001644 - B71-041.00 - T4 HBS – Right Hand Side (RHS)	Post-G3	91	23	-
A135	PRJ-001669 - B71-056.00 - Commercial Minor Works 2023 - Property	Post-G3	1	-0	-
A137	PRJ-001672 - B71-059.00 - Technology Capital Purchase H7	Post-G3	4	3	-
A142	PRJ-001692 - B6214.09 - Southern Catchment	P2T	2	48	-
A145	PRJ-001698 - B71-035.01 - Wave 1 NATS Asset Replacement Phase 2	G3	3	1	-
A146	PRJ-001700 - B71-064 - Runway Approach Lighting Renewal	P2T	17	9	-
A147	PRJ-001736 - B71-030.01 - Rail UPS	P2T	7	13	-
A149	PRJ-001748 - B71-071.02 - Central Minor Works 2025	Post-G3	-	21	1

ID	Label	Gateway as of July-25	Capex (£m, 2024 CPI)		
			Pre-H8	H8	Post H8
A150	PRJ-001749 - B71-071.03 - Central Minor Works	Post-G3	5	15	3
A156	PRJ-001755 - B71-079.00 - Commercial Minor Works 2026 – Property	Post-G3	0	1	-
A160	PRJ-001759 - B71-060.02 - HV NAMP 2024	P2T	2	1	-
A162	PRJ-001761 - B71-060.04 - HV NAMP 2026	P2T	0	5	-
A163	PRJ-001764 - B71-086.00 Cyber for Assurance - 2023	P2T	20	7	-
A169	PRJ-001770 - B7228.03 - Northern Runway	P2T	71	30	-
A172	PRJ-001793 - B71-097.00 - FIDS and Media Screens - Low Complexity	P2T	7	1	-
A176	PRJ-001802 - B71-100 H7 Main Tunnel Renewals	P2T	32	26	1
A177	PRJ-001803 - B71-101 Landside Roads H7 Rolling Life Cycle - Project 1 - 2023 Resurfacing - Tranche 33	P2	1	0	-
A178	PRJ-001804 - B71-102 Rail Fire System (2023)	P2	4	7	-
A182	PRJ-001808 - B7205.08 T3 Service Subways - remedial works - 2024 works (FINAL)	G2	3	2	-
A183	PRJ-001812 - B71-106 - LEPC Rolling Lifecycle Phase 1	P2T	14	13	-
A184	PRJ-001813 - B71-107 - LEPC Rolling Lifecycle Phase 2	P2T	10	22	-
A186	PRJ-001817 - B71-110 Landside Safety Project	P2T	6	11	-
A187	PRJ-001818 - B71-111 Longford Link Bridge Project	P2T	1	0	-
A188	PRJ-001819 - B71-112 Colleague Car Parking Project	P2T	1	1	-
A189	PRJ-001821 - B71-114 UPS & Vesda Systems Replacement	P2T	4	15	-
A190	PRJ-001822 - B71-115 FIDS and Media Screens - High Complexity	P2T	2	10	-
A191	PRJ-001825 - B71-118 Airside Pedestrian Crossings	P2T	4	11	-
A192	PRJ-001827 - B71-120 Airside Specialist Vehicles	P2T	17	43	-
A193	PRJ-001831 - B71-124 T4 Level Transfers	P2T	6	6	-
A194	PRJ-001837 - B71-130 Airside Water Treatment Project	P2T	1	3	-
A195	PRJ-001838 - B71-131 External Potable Water Project	P2T	1	43	-
A198	PRJ-001854 - B71-003.01 Wave 1 - Airside Roads Renewal	G3	18	7	-
A202	PRJ-001872 - B71-098.01 Stands 303/305/334	G3	19	9	-

ID	Label	Gateway as of July-25	Capex (£m, 2024 CPI)		
			Pre-H8	H8	Post H8
A203	PRJ-001873 - B71-098.02 T5 Stand Replacements	P2T	19	24	-
A204	PRJ-001874 - B71-098.03 Stands 307/336	P2T	14	2	-
A205	PRJ-001875 - B71-098.04 Stand Entry Guidance System Replacement	P2T	5	5	-
A206	PRJ-001876 - B71-098.05 T5 Stand Refurbishment	P2T	3	3	-
A207	PRJ-001877 - B71-143 HRMS Replacement	P2T	14	5	-
A213	PRJ-001893 - B71-150 Baggage Data Analytics	P2T	8	3	-
A214	PRJ-001916 - B71-151.01 T3 LV Switchboard Replacement (Phase 2)	P2T	6	27	-
A215	PRJ-001917 - B71-151.02 T4 LV Switchboard Replacement (Phase 1)	P2T	2	11	-
A216	PRJ-001918 - B71-151.03 Estates LV Switchboard Replacement (Phase 1)	P2T	2	13	-
A218	PRJ-001923 - B71-154.02 Airfield Pavements Rolling Lifecycle – Concrete 2026	P2T	10	21	-
A219	PRJ-001924 - B71-154.03 Airfield Pavements Rolling Lifecycle – Asphalt	P2T	15	36	-
A220	PRJ-001925 - B71-154.04 Airfield Pavements Rolling Lifecycle – Life Extension	P2T	2	6	-
A227	PRJ-001960 - B71-163 LifeX Test System and Mobile Data Terminals	P2T	2	0	-
A228	PRJ-001986 - B71-167 CC Remob - MEP	P2T	3	7	-
A229	PRJ-001987 - B71-168 CC Remob - Working Areas, Meeting Rooms, Safety & Security	P2T	7	2	-
A230	PRJ-001988 - B71-169 CC Remob - Welfare	P2T	2	5	-
A231	B71-138 - T3 Pier 7 Structural	P2	1	105	1
A232	T3 Refurbishment of Pier 7 and Connector (EXTERNAL)	P2	4	326	3
A233	T3 Refurbishment of Pier 7 and Connector (INTERNAL)	P2	0	13	0
A234	Asset Management & Compliance P2 R&O's	P2	2	51	6
A235	Colleague car parking Access Control	P2	0	2	0
A236	At height safety for Terminals and car parks - Suicide and accident prevention	P2	0	43	0
A237	Flight Information Display Screens Renewals	P2	0	24	0
A238	T4 PAVA System	P2	0	2	0
A239	Passive Fire Protection Renewals	P2	0	11	0
A240	Fire Station (East & Headquarters Buildings) Uninterruptible Power Supply Communications Room Remediation	P2	0	1	0
A241	Rehabilitation of non terminal buildings	P2	1	52	1
A242	Engineering Female Toilets	P2	0	3	0
A243	T5D Attenuators Overhaul	P2	0	7	0
A244	Heavy Rail Tunnel - Re-Railing	P2	0	5	0

ID	Label	Gateway as of July-25	Capex (£m, 2024 CPI)		
			Pre-H8	H8	Post H8
A245	Rail Stations - Tunnel Vent Fan, Dampers, Fan Drives & Rotork Valves	P2	0	8	0
A246	TTS Train Control - (Regional Automatic Train Operation & Regional Automatic Train Protection)	P2	0	11	0
A247	Building Sustainability and Energy Performance	P2	0	20	0
A248	Joint and bearing replacement T4 on and off ramp	P2	0	10	0
A249	MSCP4 - Repair	P2	0	29	0
A250	MSCP5 Expansion Joints	P2	0	10	0
A251	Airside Roads Renewal	P2	0	19	0
A252	Fire Door Renewals	P2	0	1	0
A253	T3 Facility Asset Plan	P2	0	3	0
A254	T2 Cladding Remedial Works	P2	0	7	0
A258	T3 INTERNAL Pier 7 & Connector structural rehabilitation - Stairwell	P2	0	4	0
A259	B71-139 - T3 Pier 5 Roof	P2	0	33	0
A260	Toilet Block Rolling Refurbishment T2-T5	P2	1	35	3
A261	Water Treatment - Closed loop systems - Terminal 2	P2	0	2	0
A262	Chiller Renewals	P2	0	9	0
A263	Water Treatment for Cooling Towers	P2	0	3	0
A266	Traffic Signals (Urban Traffic Control) - Systems	P2	0	14	0
A268	Station Digital Mobile Radio Network	P2	0	3	0
A269	Picopass Card and Card Reader Replacement	P2	0	38	0
A270	New Integrated Test Facility (ITF) Project	P2	0	45	0
A271	B71-164 - TBS SAC Obsolescence	P2	0	16	0
A272	WeCa Inter Terminal Baggage Transport Asset Replacement DCV	P2	1	46	0
A273	Surface Movement Radar gearbox	P2	1	14	2
A274	Street Lighting Renewals	P2	0	9	1
A275	Manchester Arena Inquiry	P2	0	6	1
A276	Landside Roads Renewal	P2	0	10	0
A277	ATP Enhancements CAA Enforcement and Operational Efficiency	P2	0	0	0
A278	Border Security Enhancement	P2	0	1	0

Source: A8 - 1. H8 Capex Data Tables, Steer analysis

Overview

2.39 The table below summarises the Business Case information provided by HAL in its Business Plan submission.

Table 2.8: BC03.01 – Overview

Category	Description
Scope	<p>This Business Case encompasses the remaining projects within the H7 Asset Management Compliance (AMC) programme that are not covered in other Business Cases and that will be progressed during the H8 phase. The AMC programme focuses on delivering targeted asset renewals and interventions, guided by asset life and risk-based assessments. The renewals are categorised into:</p> <ul style="list-style-type: none"> • General tranches: One-off, complex projects with bespoke scopes and defined outcomes. • Rolling Lifecycle tranches: Repeatable works within asset families with common renewal profiles. • Business As Usual (BAU) tranches: Essential minor renewals (e.g. emergency works, small mechanical packages).
Need case	<p>The continuation of the AMC Programme is justified by risk mitigation. HAL states that without this investment, an increase in degradation in asset performance could be expected, impacting operational resilience, safety, and compliance. Indeed, it indicates that the residual asset life across engineering and baggage has declined from 49.68% in 2021 to 33.63% in 2025. To prioritise the targeted assets, HAL use an internal method called Corporate Risk Framework rating. Assets with a CRF score over 12 mean that the risks on these assets correspond to one of the below cases:</p> <ul style="list-style-type: none"> • A very high or high likelihood of materialising with a medium (severe) or very high (catastrophic) impact. If left unaddressed, these risks could result in safety incidents, operational impacts and/or service failures potentially meaning whole areas could be taken out of operational use; • A medium likelihood of materialising with a high (major) or very high (catastrophic) impact; or • A high velocity of impact.
Optioneering	<p>According to HAL, the optioneering analysis conducted for the AMC Programme was based on analysing the impact of the ‘do nothing’ scenario and establishing priorities between initiatives. An initial live register of assets nearing the end of life was compiled to represent the theoretical ‘do maximum’ option, totalling £6 billion (2024 real prices). This encompassed all potential renewals. The option selection was based on risk prioritisation, focused on projects addressing the most critical risks, resulting in a total capex profile of over £4.8 billion (2024 real prices), £2.0 billion of which is expected in H8.</p>
Outcomes & benefits	<p>The AMC Programme is structured around a diverse portfolio of initiatives, many of which are already in delivery or have passed key investment gateways. The intended outcomes are mainly to achieve sustained operations that are safe, secure, compliant and protect revenues, enhanced asset management capability and improved visibility of planned asset replacement works. Specific benefits are measured on the categories of both risk reduction and asset longevity:</p> <ul style="list-style-type: none"> • Reduction in CRF scores (for General tranches): success is measured by a change in the overall risk status. • Increase in average residual asset life (for Rolling Lifecycle tranches): success is measured by an uplift in remaining asset life post-investment.

Category	Description
Impact on Opex/ Revenues	HAL states that impacts on operating costs and revenue from this programme are not expected to be material, with the main focus of this Business Case set on ensuring asset resilience and compliance, rather than generating operational savings through enhancements. In any case, opex increases avoided through this programme are estimated to be £141.7m in H8 with a cumulative avoidance of £566.8m over the lifetime of the capital investment.
Airlines	HAL’s stated airline engagement consisted of recurrent engagement through the Airline Stakeholder Programme Group (SPG) and other working groups. The airlines approved the AMC programme at the P2 gateway in 2023 for H7 scope and acknowledged the scope of future periods.

Source: HAL, Steer analysis

Need assessment

2.40 The below sections summarise our assessment of the need for each project included in this Business Case.

Summary of our assessment

2.41 The main goal of the Business Case is the renewal and compliance of Heathrow’s asset base to sustain operational resilience, regulatory compliance and safety standards. Out of the 107 projects which have not passed G3 included in this Business Case, HAL provides CRF scores for 44 of them and doesn’t provide CRF scores for 63 of them. HAL justifies the absence of CRFs for some projects due to the fact that those are at Pre-P2T stage, i.e. at an earlier stage than the other projects and that “*the target benefits post investment are to be determined*”.

2.42 For those 44 projects with CRF scores, our assessment of the ‘Safety, compliance, operational resilience’ consumer benefit category is based on the CRF scores before and forecast after the investment, as per the table below. As the table shows, projects have received a ‘3:High’ Net Impact score when their forecast reduction of the CRF score from pre-investment to post-investment is ≥ 10 , and their pre-investment CRF score is > 15 . We have applied a similar logic to the ‘2:Medium’ score, which we have assigned when the pre-investment CRF is > 12 , or their forecast reduction of the CRF score from pre-investment to post-investment is ≥ 8 . We have assigned a ‘1:Low’ score, when the pre-investment CRF is ≤ 12 , and the forecast reduction of the CRF score is < 8 .

2.43 Considering the main goal of the Business Case stated above, we have not scored any project’s Net Impact in this category as ‘0: None’.

Table 2.9: BC03.01 – Net Impact scoring

Safety, Compliance, Resilience Net Impact score	Conditions
3: High	Pre-investment CRF > 15 AND Reduction of CRF ≥ 10

Safety, Compliance, Resilience Net Impact score	Conditions
2: Medium	Pre-investment CRF >12 OR Reduction in CRF ≥ 8
1: Low	Pre-investment CRF ≤12 AND Reduction in CRF < 8

Source: Steer

- 2.44 Since the CRF is the only main evidence provided by HAL in its Business Plan to assess the ‘Safety, compliance, and operational resilience’ category of consumer benefits, we have scored the Likelihood as ‘2:Medium’. Indeed, while we assess that the CRF is an adequate method to prioritise asset renewals, we would have expected more in the form of explanation on how these scores were obtained for each asset.
- 2.45 In addition, through the Questions and Answers (Q&A), HAL confirmed that there has been no third-party validation of the CRF scores. While third-party validation of the CRF scores was never set out as an expectation by the CAA/Steer, it would have provided additional evidence given the lack of evidence on this Business Case compared to what Steer might have ideally expected. The pieces of evidence that we would have ideally expected for this Business Case are listed in Appendix A, section “Asset Renewal”. The content of this Appendix was shared with HAL before their Business Plan submission.
- 2.46 In the case of the 62 projects for which HAL has not included CRF scores, we have analysed the qualitative descriptions of the need case included in the Business Case document or in the cost plan documents provided to determine the Net Impact score in the ‘Safety, compliance, and operational resilience’ category of consumer benefits, with a Likelihood of ‘2: Medium’ or ‘1: Low’ depending on the clarity of the qualitative evidence.
- 2.47 Regarding the consumer benefit category ‘Capacity, passenger experience, airline operations, and sustainability’, for each project, the Net Impact and Likelihood criteria are scored based on the project description and whether specific benefits for the project are mentioned and/or quantified. In practice, we have identified that some of the projects should have ‘3:High’, ‘2:Medium’ or ‘1:Low’ Net Impact in this category and have been scored accordingly. When those impacts/benefits have not been explicitly mentioned nor quantified by HAL, the Likelihood has been scored as ‘1:Low’. When those impacts/benefits have been mentioned but not quantified by HAL, the Likelihood has been scored as ‘2:Medium’. Project scored as ‘None’ in Net Impact and Likelihood are those that have no identified benefits in this category.
- 2.48 The projects of this Business Case generate some opex savings but those are not material when compared to the overall capex, hence the ‘1:Low’ Net Impact

scores. Also, those savings are not provided by project but only at the overall Business Case level. This does not provide confidence in the opex savings benefits generated by each project, hence the ‘1:Low’ Likelihood scores.

Scores

Table 2.10: BC03.01 – Need case scores per project

ID	Label	Safety, compliance, operational resilience		Capacity, passenger experience, airline operations, sustainability		Increase revenues, reduce opex		TOTAL
		Net Impact	Likelihood	Net Impact	Likelihood	Net Impact	Likelihood	
	Overall Business Case weighted averages (pre-G3 projects only)*	2	1	1	1	1	1	14
	By project							
A029	PRJ-000487 - B6214.02 Pollution Infrastructure Renewal	1	2	0	0	1	1	7
A033	PRJ-000498 - B7205 M1/14 Firemain Controls	3	2	0	0	1	1	19
A038	PRJ-000512 - B7221.00 PFOS (Trace contaminants – Fluorosurfactants (PFOS))	3	2	0	0	1	1	19
A056	PRJ-001254 - B7651.00 Safety & Resilience	2	2	0	0	1	1	13
A066	PRJ-001337 - B7226 T2 chilled water	2	2	2	2	1	1	21
A080	PRJ-001514 - B7237 MSCP3 Intumescent Paint, MSCP3 Civils Rehabilitation and Safety Improvements	1	2	1	2	1	1	11
A083	PRJ-001525 - B6672.04 - Blast Protection - Terminals	2	2	1	1	1	1	15
A085	PRJ-001531 - B71-069.00 - Minimum Energy Efficiency Standards (MEES) - EPC Compliance Property	2	2	2	1	1	1	17
A091	PRJ-001568 - B71-002.00 - Wave 1 Non-Terminal Buildings Rehab and Emergency Lighting Renewal	1	2	2	1	1	1	11
A092	PRJ-001569 - B71-003.00 Wave 1 - Landside Roads and Perimeter Fence Renewal	2	2	1	2	1	1	17
A093	PRJ-001570 - B71-004.00 - T3 Roofing structural renewal	1	2	0	0	1	1	7
A099	PRJ-001578 - B71-013.00 - IDAHO Roadmap	1	2	0	0	1	1	7
A103	PRJ-001588 - B71-021.00 - Wave 1 Heavy Rail Tunnel Water Ingress & Fire Compliance	1	2	0	0	1	1	7

ID	Label	Safety, compliance, operational resilience		Capacity, passenger experience, airline operations, sustainability		Increase revenues, reduce opex		TOTAL
		Net Impact	Likelihood	Net Impact	Likelihood	Net Impact	Likelihood	
A104	PRJ-001589 - B71-022.00 - T5 BMS Upgrade	2	2	1	2	1	1	17
A105	PRJ-001590 - B71-023.00 - T4 BMS Upgrade	2	2	1	2	1	1	17
A108	PRJ-001594 - B71-027.00 - TTS Switch Overhauls and Replacements	1	2	0	0	1	1	7
A112	PRJ-001601 - B71-031.00 - Wave 1 Tunnel Improvements in ART, SAR, NAR	3	1	1	1	1	1	12
A113	PRJ-001602 - B71-032.00 - T4 PLC and Check-in Asset Replacement	1	2	1	2	1	1	11
A114	PRJ-001603 - B71-033.00 - Heart System Renewal	3	2	0	0	1	1	19
A119	PRJ-001618 - B71-036.00 - CPSRA Strengthening	3	2	0	0	1	1	19
A124	PRJ-001641 - B7231.03 - UKPNS HVAC System	1	2	2	1	1	1	11
A125	PRJ-001642 - B7231.02 - Waste Areas Incl Landside Sweeper Tip	3	2	1	2	1	1	23
A142	PRJ-001692 - B6214.09 - Southern Catchment	3	2	0	0	1	1	19
A145	PRJ-001698 - B71-035.01 - Wave 1 NATS Asset Replacement Phase 2	2	2	1	2	1	1	17
A146	PRJ-001700 - B71-064 - Runway Approach Lighting Renewal	2	2	1	2	1	1	17
A147	PRJ-001736 - B71-030.01 - Rail UPS	3	2	1	2	1	1	23
A160	PRJ-001759 - B71-060.02 - HV NAMP 2024	3	1	1	1	1	1	12
A162	PRJ-001761 - B71-060.04 - HV NAMP 2026	3	1	1	1	1	1	12
A163	PRJ-001764 - B71-086.00 Cyber for Assurance - 2023	3	2	0	0	1	1	19
A169	PRJ-001770 - B7228.03 - Northern Runway	3	2	2	2	1	1	27
A172	PRJ-001793 - B71-097.00 - FIDS and Media Screens - Low Complexity	3	2	2	2	1	1	27
A176	PRJ-001802 - B71-100 H7 Main Tunnel Renewals	2	2	0	0	1	1	13
A177	PRJ-001803 - B71-101 Landside Roads H7 Rolling Life Cycle - Project 1 - 2023 Resurfacing - Tranche 33	2	1	1	1	1	1	9
A178	PRJ-001804 - B71-102 Rail Fire System (2023)	3	1	0	0	1	1	10

ID	Label	Safety, compliance, operational resilience		Capacity, passenger experience, airline operations, sustainability		Increase revenues, reduce opex		TOTAL
		Net Impact	Likelihood	Net Impact	Likelihood	Net Impact	Likelihood	
A182	PRJ-001808 - B7205.08 T3 Service Subways - remedial works - 2024 works (FINAL)	2	1	0	0	1	1	7
A183	PRJ-001812 - B71-106 - LEPC Rolling Lifecycle Phase 1	2	2	0	0	1	1	13
A184	PRJ-001813 - B71-107 - LEPC Rolling Lifecycle Phase 2	2	2	0	0	1	1	13
A186	PRJ-001817 - B71-110 Landside Safety Project	2	2	0	0	1	1	13
A187	PRJ-001818 - B71-111 Longford Link Bridge Project	2	2	0	0	1	1	13
A188	PRJ-001819 - B71-112 Colleague Car Parking Project	2	2	0	0	1	1	13
A189	PRJ-001821 - B71-114 UPS & Vesda Systems Replacement	3	2	0	0	1	1	19
A190	PRJ-001822 - B71-115 FIDS and Media Screens - High Complexity	3	2	1	2	1	1	23
A191	PRJ-001825 - B71-118 Airside Pedestrian Crossings	1	2	2	2	1	1	15
A192	PRJ-001827 - B71-120 Airside Specialist Vehicles	3	2	2	2	1	1	27
A193	PRJ-001831 - B71-124 T4 Level Transfers	2	2	2	2	1	1	21
A194	PRJ-001837 - B71-130 Airside Water Treatment Project	2	2	2	2	1	1	21
A195	PRJ-001838 - B71-131 External Potable Water Project	1	2	2	2	1	1	15
A198	PRJ-001854 - B71-003.01 Wave 1 - Airside Roads Renewal	2	2	2	2	1	1	21
A202	PRJ-001872 - B71-098.01 Stands 303/305/334	2	2	2	2	1	1	21
A203	PRJ-001873 - B71-098.02 T5 Stand Replacements	2	2	2	2	1	1	21
A204	PRJ-001874 - B71-098.03 Stands 307/336	2	2	2	2	1	1	21
A205	PRJ-001875 - B71-098.04 Stand Entry Guidance System Replacement	2	2	2	2	1	1	21
A206	PRJ-001876 - B71-098.05 T5 Stand Refurbishment	2	2	2	2	1	1	21
A207	PRJ-001877 - B71-143 HRMS Replacement	3	2	0	0	1	1	19
A213	PRJ-001893 - B71-150 Baggage Data Analytics	2	2	2	1	1	1	17

ID	Label	Safety, compliance, operational resilience		Capacity, passenger experience, airline operations, sustainability		Increase revenues, reduce opex		TOTAL
		Net Impact	Likelihood	Net Impact	Likelihood	Net Impact	Likelihood	
A214	PRJ-001916 - B71-151.01 T3 LV Switchboard Replacement (Phase 2)	2	2	1	2	1	1	17
A215	PRJ-001917 - B71-151.02 T4 LV Switchboard Replacement (Phase 1)	2	2	1	2	1	1	17
A216	PRJ-001918 - B71-151.03 Estates LV Switchboard Replacement (Phase 1)	2	2	1	2	1	1	17
A218	PRJ-001923 - B71-154.02 Airfield Pavements Rolling Lifecycle – Concrete 2026	2	2	1	2	1	1	17
A219	PRJ-001924 - B71-154.03 Airfield Pavements Rolling Lifecycle – Asphalt	2	2	1	2	1	1	17
A220	PRJ-001925 - B71-154.04 Airfield Pavements Rolling Lifecycle – Life Extension	2	2	1	2	1	1	17
A227	PRJ-001960 - B71-163 LifeX Test System and Mobile Data Terminals	2	2	0	0	1	1	13
A228	PRJ-001986 - B71-167 CC Remob - MEP	1	1	0	0	1	1	4
A229	PRJ-001987 - B71-168 CC Remob - Working Areas, Meeting Rooms, Safety & Security	1	1	0	0	1	1	4
A230	PRJ-001988 - B71-169 CC Remob - Welfare	1	1	0	0	1	1	4
A231	B71-138 - T3 Pier 7 Structural	3	1	1	1	1	1	12
A232	T3 Refurbishment of Pier 7 and Connector (EXTERNAL)	3	1	1	1	1	1	12
A233	T3 Refurbishment of Pier 7 and Connector (INTERNAL)	3	1	1	1	1	1	12
A234	Asset Management & Compliance P2 R&O's	3	2	1	1	1	1	21
A235	Colleague car parking Access Control	3	1	1	1	1	1	12
A236	At height safety for Terminals and car parks - Suicide and accident prevention	3	2	1	1	1	1	21
A237	Flight Information Display Screens Renewals	1	1	2	1	1	1	8
A238	T4 PAVA System	2	2	0	0	1	1	13
A239	Passive Fire Protection Renewals	3	1	1	1	1	1	12
A240	Fire Station (East & Headquarters Buildings) Uninterruptible Power Supply Communications Room Remediation	3	1	1	1	1	1	12
A241	Rehabilitation of non terminal buildings	2	1	1	1	1	1	9

ID	Label	Safety, compliance, operational resilience		Capacity, passenger experience, airline operations, sustainability		Increase revenues, reduce opex		TOTAL
		Net Impact	Likelihood	Net Impact	Likelihood	Net Impact	Likelihood	
A242	Engineering Female Toilets	1	1	2	1	1	1	8
A243	T5D Attenuators Overhaul	2	2	1	1	1	1	15
A244	Heavy Rail Tunnel - Re-Railing	3	1	2	1	1	1	14
A245	Rail Stations - Tunnel Vent Fan, Dampers, Fan Drives & Rotork Valves	2	2	2	1	1	1	17
A246	TTS Train Control - (Regional Automatic Train Operation & Regional Automatic Train Protection)	2	2	1	1	1	1	15
A247	Building Sustainability and Energy Performance	1	1	3	1	1	1	10
A248	Joint and bearing replacement T4 on and off ramp	3	1	0	0	1	1	10
A249	MSCP4 - Repair	3	1	3	1	1	1	16
A250	MSCP5 Expansion Joints	3	1	3	1	1	1	16
A251	Airside Roads Renewal	2	1	3	1	1	1	13
A252	Fire Door Renewals	3	1	1	1	1	1	12
A253	T3 Facility Asset Plan	1	1	0	0	1	1	4
A254	T2 Cladding Remedial Works	1	1	0	0	1	1	4
A258	T3 INTERNAL Pier 7 & Connector structural rehabilitation - Stairwell	1	1	0	0	1	1	4
A259	B71-139 - T3 Pier 5 Roof	2	1	1	1	1	1	9
A260	Toilet Block Rolling Refurbishment T2-T5	1	1	2	1	1	1	8
A261	Water Treatment - Closed loop systems - Terminal 2	2	1	1	1	1	1	9
A262	Chiller Renewals	2	1	2	1	1	1	11
A263	Water Treatment for Cooling Towers	2	1	2	1	1	1	11
A266	Traffic Signals (Urban Traffic Control) - Systems	2	2	1	1	1	1	15
A268	Station Digital Mobile Radio Network	1	1	0	0	1	1	4
A269	Picopass Card and Card Reader Replacement	1	1	0	0	1	1	4
A270	New Integrated Test Facility (ITF) Project	1	1	0	0	1	1	4
A271	B71-164 - TBS SAC Obsolescence	2	1	0	0	1	1	7
A272	WeCa Inter Terminal Baggage Transport Asset Replacement DCV	2	1	2	1	1	1	11
A273	Surface Movement Radar gearbox	1	1	0	0	1	1	4
A274	Street Lighting Renewals	2	2	2	1	1	1	17
A275	Manchester Arena Inquiry	3	2	1	1	1	1	21
A276	Landside Roads Renewal	2	1	3	1	1	1	13

ID	Label	Safety, compliance, operational resilience		Capacity, passenger experience, airline operations, sustainability		Increase revenues, reduce opex		TOTAL
		Net Impact	Likelihood	Net Impact	Likelihood	Net Impact	Likelihood	
A277	ATP Enhancements CAA Enforcement and Operational Efficiency	3	1	1	1	1	1	12
A278	Border Security Enhancement	2	2	3	1	1	1	19
	Project not scored	Reason						
A012	PRJ-000181 - B7216 AGL Reinforcement	Post-G3						
A014	PRJ-000206 - Main Tunnel	Post-G3						
A026	PRJ-000465 - B6206.13 Rail OTN & PLC Replacement	Post-G3						
A045	PRJ-000743 - B6361.02 Western Campus Logistics and Compliance	Post-G3						
A062	PRJ-001331 - B7227.00 Terminals Critical Asset Management and Compliance	Post-G3						
A067	PRJ-001408 - B7232 - Western Campus Baggage Obsolescence	Post-G3						
A068	PRJ-001409 - B7231.01 - CP24A & Spout Lane	Post-G3						
A073	PRJ-001422 - B7209.03 - MSCP4 Urgent Structural Works	Post-G3						
A096	PRJ-001573 - B71-007.00 - T2 Landside PRS Host Area Expansion	Post-G3						
A110	PRJ-001596 - B71-029.00 - T4 Sewage Chamber Refurbishment	Post-G3						
A111	PRJ-001600 - B71-030.00 - T4 Emergency Lighting CBUs	Post-G3						
A126	PRJ-001644 - B71-041.00 - T4 HBS – Right Hand Side (RHS)	Post-G3						
A135	PRJ-001669 - B71-056.00 - Commercial Minor Works 2023 - Property	Post-G3						
A137	PRJ-001672 - B71-059.00 - Technology Capital Purchase H7	Post-G3						
A149	PRJ-001748 - B71-071.02 - Central Minor Works 2025	Post-G3						
A150	PRJ-001749 - B71-071.03 - Central Minor Works	Post-G3						
A156	PRJ-001755 - B71-079.00 - Commercial Minor Works 2026 – Property	Post-G3						

Source: HAL, Steer analysis. Note: (*) The overall Business Case weighted average scores are calculated by weighting the projects' scores with their H8 capex values.

BC03.02 Terminal 4 Front Door and Car Park

HAL’s submission

2.49 This section provides a summary of what was submitted by HAL on this Business Case.

Projects and costs

2.50 This Business Case includes only one project, which is at an earlier P2 level of maturity.

Table 2.11: BC03.02 – Capex submission (£m, 2024 CPI prices)

ID	Label	Gateway as of July-25	Capex (£m, 2024 CPI)		
			Pre-H8	H8	Post H8
	Overall Business Case		28	316	3
	By project				
D03	PRJ-001901 - B71-152 Terminal 4 Front Door and Car Park - Tranche 34	P2	28	316	3

Source: A8 - 1. H8 Capex Data Tables, Steer analysis

Overview

2.51 The table below summarises the Business Case information provided by HAL in its Business Plan submission.

Table 2.12: BC03.02 – Overview

Category	Description
Scope	<p>This Business Case is about the replacement of the existing T4 short stay multi-storey car park (MSCP4) with a new, 6-level car park with 883 spaces and 42 accessible bays.</p> <p>It also includes the provision of a dedicated arrivals forecourt and additional lanes, segregating access from drop-off.</p>
Need case	<p>MSCP4 is the primary arrival point for road-based passengers. However, it has the following problems according to HAL:</p> <ul style="list-style-type: none"> • It does not comply with modern standards, including Aviation Security in Airport Development (ASIAD) requirements. • Currently, only 50% of the capacity is used due to constant maintenance works to address the poor condition of structural elements. • The reduced capacity causes traffic congestion and poor passenger experience. • Maintenance capex spent exceeded £22m in the last 3 years.

Category	Description
	<p>HAL has designated it as a priority project with a pre-investment Corporate Risk Framework (CRF)⁴ score of 20, i.e. beyond the acceptable level of 12.</p>
Optioneering	<p>HAL indicates it has explored the following alternatives:</p> <ul style="list-style-type: none"> • Do nothing alternative: Cost of £10m per annum on maintenance capex: Discarded due to operational inefficiency, safety & compliance issues, poor passenger experience, and limited commercial opportunities. • Alternatives 1A & 1B: Upgrade of the existing structure (1A) or new structure with reuse of the existing foundation (1B): Discarded due to infeasibility to reuse foundations and non-compliance with standards. • Alternatives 2A & 2B: Construction of a new, compliant structure reusing the existing foundation: Discarded due to infeasibility to reuse foundations and complex structural accommodation. Option 2B also leaves no potential for commercial spaces. • Alternative 3: New structure growing vertically and horizontally: Remains viable but presents significant engineering and complexity risks. • Alternative 4 (baseline option): New car park with optimised structure expanded to 6 levels but concentrating footprint. • Alternative 5: Relocation of Short stay car park to current LSCP4 site with connection via shuttle: Discarded due to impact on passenger experience.
Outcomes & benefits	<p>This Business Case states the following benefits:</p> <ul style="list-style-type: none"> • Improved Resilience: reduction in CRF score. • Improved Passenger Experience: better accessibility and wayfinding. • Improved EBITDA: Reduction of repair costs and reduction of ground area, leaving spaces for commercial revenue • Reduction of carbon footprint: use sustainable materials and reduced traffic congestion.
Impact on Opex/ Revenues	<p>HAL indicates that the project will generate one-off opex costs totalling to £37.5m during H8 due to construction. The project is also expected to deliver a reduction in repairs and maintenance costs. As it is only at a P2T stage of maturity these have not yet been quantified.</p> <p>Additional commercial revenue of £3.1m p.a. (2024 real prices) from the increased car park capacity are also expected from HAL. In addition, the preferred design alternative does not require the occupation of the wineglass area, which could be destined to other commercial activities generating additional revenue.</p>
Airlines	<p>According to HAL, the proposal to demolish and rebuild MSCP4 was subsequently supported by the Airlines Operations Board, the highest level of governance, in April 2023.</p>

⁴ The Corporate Risk Framework rating is the method used by HAL to prioritise asset renewals based on risk scoring.

Category	Description
	<p>By June 2024, the project team presented to the AMC Stakeholder Programme Group (SPG) to highlight the funding request necessary to progress scope definition to P2T. The Group approved this request.</p> <p>In November 2024, the T4 Front Door & Car Park project was introduced to the T4 Airline Operators Committee, marking the beginning of stakeholder engagement. A key outcome from this session was the identification of a need for workshops to delve deeper into the work completed thus far.</p> <p>Most recently, in February 2025, a series of sessions were held with airline representatives to review the comprehensive options analysis undertaken to evaluate potential solutions for the challenges associated with MSCP4.</p>

Source: HAL, Steer analysis

Need assessment

- 2.52 The below sections summarise our assessment of the need for each project included in this Business Case.

Summary of our assessment

- 2.53 The main driver of the need case for the Terminal 4 Front Door and Car Park is ensuring compliance with modern standards, including Aviation Security in Airport Development (ASIAD) requirements. HAL indicates that visible elements of the car park are in very bad condition, and worse could be expected of non-visible elements. HAL indicates that “the potential for total failure is elevated” and “the car park is unsustainable at current failure rate”, having assigned it a score of 20 in HAL’s Corporate Risk Framework, when anything beyond 12 is unacceptable, making it a priority Business Case. This is reflected in our ‘3:High’ scoring of the ‘Safety, compliance and operational resilience’ customer benefit category.
- 2.54 Regarding the customer benefit category ‘Capacity passenger experience, airline operations and sustainability’, the reconstruction of MSCP4 should eliminate existing capacity restraints caused by the recurrent maintenance works, which should improve traffic and accessibility to the terminal. This should somehow improve passenger experience. Some sustainability benefits are also likely as a secondary effect of the reduced queuing times caused by the optimised road access and segregation between access and drop-off. All in all, we assess the benefits in this category to be of lower magnitude than those expected for the ‘Safety, compliance and operational resilience’ category.
- 2.55 The project will also increase commercial revenues and avoid maintenance opex. However, the latter has not been estimated by HAL as this stage, hence the ‘2:Medium’ Likelihood score.

Scores

Table 2.13: BC03.02 – Need case scores per project

ID	Label	Safety, compliance, operational resilience		Capacity, passenger experience, airline operations, sustainability		Increase revenues, reduce opex		TOTAL
		Net Impact	Likelihood	Net Impact	Likelihood	Net Impact	Likelihood	
	Overall Business Case	3	3	1	3	2	2	37
	By project							
D03	PRJ-001901 - B71-152 Terminal 4 Front Door and Car Park - Tranche 34	3	3	1	3	2	2	37
	Project not scored	Reason						
	-	-						

Source: HAL, Steer analysis

BC03.03 T3 Hold Baggage Screening replacement (T3IB)

HAL’s submission

2.56 This section provides a summary of what was submitted by HAL on this Business Case.

Projects and costs

2.57 This Business Case includes only one project, which is at an earlier P2 level of maturity.

Table 2.14: BC03.03 – Capex submission (£m, 2024 CPI prices)

ID	Label	Gateway as of July-25	Capex (£m, 2024 CPI)		
			Pre-H8	H8	Post H8
	Overall Business Case		10	92	-
	By project				
E01	T3 Standard 3 HBS Replacement	P2	10	92	-

Source: A8 - 1. H8 Capex Data Tables, Steer analysis

Overview

2.58 The table below summarises the Business Case information provided by HAL in its Business Plan submission.

Table 2.15: BC03.03 – Overview

Category	Description
Scope	<p>The scope is to deliver an upgrade to the Hold Baggage Screening (HBS) machines currently in use in Terminal 3 (T3). It includes:</p> <ul style="list-style-type: none"> • Replacement of obsolete Explosive Detection System (EDS) Machines; • IT Infrastructure: Deployment of two primary and two secondary HBS servers and replacement of four control stations and 28 viewing stations; • HBS Network and Integration: Upgrade/modification of the HBS network to support integration with new equipment, including necessary hardware, software, & client devices; and • Additional Enhancements: Optimisation of the efficiency during the staged replacement include new Manual Insertion Points (MIPs) at conveyor infeed and outfeed locations and additional viewing stations at Level 4 output points to enhance screening performance.

Category	Description
Need case	According to HAL, the current Hold Baggage Screening (HBS) machines, supplied by Leidos, will reach end-of life by January 2028, after which manufacturer support (including parts and spares) will cease and sourcing legacy components will involve long lead times, increasing the risk of prolonged outages. HAL indicates that the HBS is already deteriorating, requiring frequent part replacements to stay operational. Without timely replacement, HAL claims that faults and breakdowns will take significantly longer to resolve, increasing the risk of operational disruption. According to HAL, the Pre-investment Corporate Risk Framework (CRF) score for the project is 20 (Red) and the expected post investment CRF score is 4 (green). Hence an investment is required to avoid minimise risks and maintain baggage handling performance and compliance.
Optioneering	HAL indicated that it has limited its considered options to a ‘do nothing’ approach and a full asset replacement. However, it indicated that further detailed assessments of delivery models and a full options review will be undertaken in line with the Programme Governance Framework (PGF) as the project progresses.
Outcomes & benefits	The primary driver for Business Case is risk reduction and improved resilience through a risk reduction from red (score 20) to green (score 4). The Business Case stated benefits are: <ul style="list-style-type: none"> • Reduced misconnection rates for both direct and transfer baggage; • Improved punctuality in baggage processing and loading; • Enhanced security assurance through deployment of ECAC-compliant systems; and • Strengthened operational continuity through phased & risk-managed asset replacement.
Impact on Opex/ Revenues	There is no expected impact on aeronautical or non-aeronautical revenue because of this investment. There are no significant changes in opex expected.
Airlines	HAL claims that the project was presented and approved at Stakeholder Programme Group (SPG) in May 2025. Airlines have indicated broad support for the need case, according to HAL.

Source: HAL, Steer analysis

Need assessment

2.59 The below sections summarise our assessment of the need for each project included in this Business Case.

Summary of our assessment

2.60 This project will mainly deliver improved resilience, measured through a pre- and post-investment Corporate Risk Framework (CRF) score. This investment is expected to reduce the CRF score from 20 (Red) to 4 (Green), hence the ‘3:High’ scores in the ‘Safety, compliance, operational resilience’ consumer benefit category.

2.61 As a side effect, the replacement of the EDS machines in the T3 Baggage systems will also improve capacity, airlines operations and passenger experience by delivering an improved baggage security screening process in T3.

2.62 The project is not expected to impact revenues or opex.

Scores

Table 2.16: BC03.03 – Need case scores per project

ID	Label	Safety, compliance, operational resilience		Capacity, passenger experience, airline operations, sustainability		Increase revenues, reduce opex		TOTAL
		Net Impact	Likelihood	Net Impact	Likelihood	Net Impact	Likelihood	
	Overall Business Case	3	3	1	3	-	-	33
	By project							
E01	T3 Standard 3 HBS Replacement	3	3	1	3	0	0	33
	Project not scored	Reason						
	-	-						

Source: HAL, Steer analysis

BC03.04 T5 Pilz Obsolescence

HAL’s submission

2.63 This section provides a summary of what was submitted by HAL on this Business Case.

Projects and costs

2.64 All five projects included in this Business Case are at the very early P2T maturity stage.

Table 2.17: BC03.04 – Capex submission (£m, 2024 CPI prices)

ID	Label	Gateway as of July-25	Capex (£m, 2024 CPI)		
			Pre-H8	H8	Post H8
	Overall Business Case		21	113	29
	By project				
F02	PRJ-001903 - B7320.01 Project 1 – T5 Pilz Obsolescence Phase 1	P2T	10	4	1
F03	PRJ-001903 - B7320.01 Project 2	P2T	5	6	2
F04	PRJ-001903 - B7320.01 Project 3	P2T	2	11	3
F05	PRJ-001903 - B7320.01 Project 4	P2T	3	34	9
F06	PRJ-001903 - B7320.01 Project 5	P2T	1	58	15

Source: A8 - 1. H8 Capex Data Tables, Steer analysis

Overview

2.65 The table below summarises the Business Case information provided by HAL in its Business Plan submission.

Table 2.18: BC03.04 – Overview

Category	Description
Scope	<p>This Business Case is about the replacement of the Pilz safety control system in T5 baggage system. The scope includes:</p> <ul style="list-style-type: none"> • Modification of the BHS safety architecture; • Removal of the existing Pilz Safety System (PSS) controllers x 19 and redundant Pilz field components; • Installation of 97 Siemens Safety PLCs, one per existing transport area T5A (excludes DCV and Head of Stand Lines); • Recovery of Pilz PSS Controllers ETH / ETH-2 and field components to support Terminal 3 BHS system asset base plus T5 remaining assets until DCV replacement; • Compliance to regulations UKCA Machinery Directive and PUWER Regulations; and • Risk assessment and installation of new emergency stop pushbuttons, moving from “Line of Sight” to “Span of Control” activations.

Category	Description
Need case	<p>HAL indicates that this current Pilz safety system is based on Pilz 3000-series Programmable Logic Controllers (PLCs), which manage critical safety functions for the T5 baggage system.</p> <p>In 2016, Pilz ceased manufacture of the Pilz 3000 series, and according to HAL, the next generation (Pilz 4000-series) is not backward compatible with the 3000-series, necessitating a full replacement of the safety control architecture.</p> <p>The inability to replace failed components or to obtain spare parts poses a growing operational risk to the resilience of Heathrow’s baggage handling capability.</p>
Optioneering	<p>HAL states that a structured options assessment was undertaken to determine the most appropriate solution for replacing the obsolete Pilz safety control system. A “do nothing” option was not considered viable, as the safety system would fail over time due to the unavailability of critical components. As a result, three technical options were then developed and assessed in more detail.</p>
Outcomes & benefits	<p>The stated outcomes and benefits of the Business Case are the followings:</p> <ul style="list-style-type: none"> • Improved Resilience: Progressive reduction in Corporate Risk Factor (CRF) scores from 20 to 12 by the end of the tranche 2033 with progressive reduction throughout the delivery period. • Improved Passenger Experience: The system being design so that the impact of an outage is reduced. • Increased Safety: Improved safety measure through reduced lost time injury frequency and improved system diagnostics. • Compliance to the latest regulations and standards: Measured by Declaration of conformance CE/UKCA and PUWER.
Impact on Opex/ Revenues	<p>The proposed investment will have no material impact on opex. There are also no commercial revenue streams associated with this investment.</p>
Airlines	<p>All the scope of this Business Case is within Tranche 28 of the AMC programme. HAL states that it has been ongoing engagement with airlines through the governance processes and airlines approved the tranche in February 2025. According to HAL, the tranche was approved without objection at the Stakeholder Programme Group (SPG) and pre-approved at the Future Portfolio Group (FPG) in February 2025, demonstrating airline confidence and alignment with the strategic need.</p>

Source: HAL, Steer analysis

Need assessment

2.67 The below sections summarise our assessment of the need for each project included in this Business Case.

Summary of our assessment

2.68 The delivery is structured by phases which are broken done in the 5 projects defined in the submission (F02 to F06). Therefore, the 5 projects have been scored similarly on the basis that:

- The Pilz Safety control system replacement is required to address the growing operational and safety risks associated with the obsolescence of Pilz safety controllers in T5 Satellite A’s BHS. This investment should improve the Corporate Risk Factor (CRF) scores from 20 (red or unacceptable) to 12 (still red but better), hence all projects scoring ‘3:High’ in the ‘Safety, compliance, and operational resilience’ customer benefit category.
- The reduction of lost time incidents should result in fewer delay and improvements to baggage system performance in terms of reduced equipment downtime and outages and reduce baggage misconnections. This will not directly impact capacity or sustainability but will improve passenger experience and airline operations. We assess the benefits expected in this category will be of relatively modest magnitude, hence a ‘1:Low’ Net Impact. While these benefits are likely to materialise, no quantification has been provided, hence, a ‘2:Medium’ Likelihood.
- The replacement of the Pilz safety control system will not affect revenues and opex, hence scoring ‘0:None’ against this customer benefit category.

Scores

Table 2.19: BC03.04 – Need case scores per project

ID	Label	Safety, compliance, operational resilience		Capacity, passenger experience, airline operations, sustainability		Increase revenues, reduce opex		TOTAL
		Net Impact	Likelihood	Net Impact	Likelihood	Net Impact	Likelihood	
	Overall Business Case weighted averages (pre-G3 projects only)*	3	3	1	2	-	-	31
	By project							
F02	PRJ-001903 - B7320.01 Project 1 – T5 Pilz Obsolescence Phase 1	3	3	1	2	0	0	31
F03	PRJ-001903 - B7320.01 Project 2	3	3	1	2	0	0	31
F04	PRJ-001903 - B7320.01 Project 3	3	3	1	2	0	0	31
F05	PRJ-001903 - B7320.01 Project 4	3	3	1	2	0	0	31
F06	PRJ-001903 - B7320.01 Project 5	3	3	1	2	0	0	31
	Project not scored	Reason						
	-	-						

Source: HAL, Steer analysis. Note: (*) The overall Business Case weighted average scores are calculated by weighting the projects’ scores with their H8 capex values.

BC04.00 H8 new asset renewal scope

HAL’s submission

2.69 This section provides a summary of what was submitted by HAL on this Business Case.

Projects and costs

2.70 This Business Case is at a very early stage of definition, with all projects still at pre-P1 gateway.

Table 2.20: BC04.00 – Capex submission (£m, 2024 CPI prices)

ID	Label	Gateway as of July-25	Capex (£m, 2024 CPI)		
			Pre-H8	H8	Post H8
	Overall Business Case		-	1,185	2,382
	By project				
B01	Continued Chiller Renewals	Pre P1	-	3	47
B02	Continued Passive Fire Protection Renewals	Pre P1	-	1	9
B03	Per and Polyfluoroalkyl Substances Remediation	Pre P1	-	40	-
B04	Cyber Security Mitigation - Operational Technology and End Devices	Pre P1	-	10	-
B05	Airfield Stand Flood Towers	Pre P1	-	20	-
B06	T4/5 HBS (Hold Baggage Screening) Bearing Replacement Phase 2	Pre P1	-	3	7
B07	Fire Main Network and System Renewals	Pre P1	-	16	34
B08	Pump Renewals – M1-14 Fire Main Pumping Station	Pre P1	-	6	14
B09	HV Resilience Renewals (2025 Power Incident Review)	Pre P1	-	9	21
B010	Airside/Landside Security Fencing - Rolling Renewals	Pre P1	-	11	24
B011	Substation Roofs	Pre P1	-	4	9
B012	Pedestrian crossings (airside phase 2)	Pre P1	-	8	16
B013	RAAC Structural Elements	Pre P1	-	9	18
B014	West Ramp Coach Park- Renewal Work	Pre P1	-	9	21
B015	Terminal Buildings EPC (Energy Efficiency Compliance)	Pre P1	-	16	34
B016	Rolling programme for pavements and stands	Pre P1	-	55	120
B017	Western Campus Inter-Terminal Baggage Transport Asset Replacement (DCV)	Pre P1	-	83	182
B018	RAAC External Cladding	Pre P1	-	15	33
B019	Engineering Spares and Emergencies	Pre P1	-	24	51
B020	HAL owned HV Network Renewals	Pre P1	-	1	3
B021	Rolling renewal of HV cabling	Pre P1	-	2	3
B022	CTA Sanitation Block	Pre P1	-	4	8
B023	Pioneer Data Centre power supply, UPS and support facilities	Pre P1	-	1	1

ID	Label	Gateway as of July-25	Capex (£m, 2024 CPI)		
			Pre-H8	H8	Post H8
B024	NATS - DME FERNAU 2020 - South	Pre P1	-	1	1
B025	NATS - EFPS Hardware & Software refresh HATCT & VCF	Pre P1	-	1	1
B026	NATS - UPS HATCT	Pre P1	-	1	1
B027	NATS - SIM Upgrade	Pre P1	-	1	1
B028	T4 Chilled Water Pipework Renewals	Pre P1	-	1	2
B029	NATS - SMR Terma 2000 N/S/E/W	Pre P1	-	1	3
B030	NATS - SENSIS MLAT	Pre P1	-	1	3
B031	Pump Renewals - T5 Fire Main Pump Renewals (Energy Centre)	Pre P1	-	2	3
B032	Rolling Maid Reader Asset Renewal 610e & 620 (2000 units across 6 years)	Pre P1	-	2	3
B033	NATS - Instrument Landing System Indra Navia	Pre P1	-	3	5
B034	Installation and renewal of UPS for Critical Assets	Pre P1	-	3	7
B035	NATS - SDPS HATCT & VCF	Pre P1	-	4	8
B036	T5 Fuel Farm Fire Water Deluge Pumping Station Renewals (Pumps and Valves)	Pre P1	-	3	5
B037	Southern Runway - Western Section Resurfacing	Pre P1	-	16	34
B038	Control Tower Refurbishment	Pre P1	-	25	55
B039	T3 Overhead height barriers to protect external RAAC cladding	Pre P1	-	2	3
B040	T4 Cladding Replacement (airside)	Pre P1	-	6	13
B041	MSCP5 Expansion Joints phase 2	Pre P1	-	9	21
B042	TTS - Train Control - RATP (Regional Automatic Train Protection) & RATO (Regional Automatic Train Operation)	Pre P1	-	22	48
B043	T3 Cladding Panel Replacement (including East Wing)	Pre P1	-	1	7
B044	Potable Water Network Renewals (1km of network per year)	Pre P1	-	3	47
B045	DTS (Data Transmission System) Servers	Pre P1	-	0	1
B046	Stations - Switchgear and Transformer replacement (CTA & T4)	Pre P1	-	0	1
B047	Main Tunnel North Plant Room Sump	Pre P1	-	0	2
B048	T4 Public Address Voice Alarm Replacement	Pre P1	-	0	3
B049	Central Battery Units - Renewals	Pre P1	-	0	5
B050	T4 Cladding Replacement (landside)	Pre P1	-	1	8
B051	AGL Fitting Replacements	Pre P1	-	1	9
B052	Calorifier Renewals	Pre P1	-	1	9
B053	Potable Water Pumping Stations Renewal Programme	Pre P1	-	1	9
B054	Control Post Barrier Renewals	Pre P1	-	1	9
B055	AGL DC Cable Replacement	Pre P1	-	1	10
B056	Fire Main Valve Replacement Strategy	Pre P1	-	1	14

ID	Label	Gateway as of July-25	Capex (£m, 2024 CPI)		
			Pre-H8	H8	Post H8
B057	Traffic Signals	Pre P1	-	2	33
B058	Replace 1km of network per year - Surface Water and Pollution	Pre P1	-	3	47
B059	Heavy Rail Tunnel - Mobile Communication System (GSM-R) Battery (UPS) Replacement	Pre P1	-	0	0
B060	Internal Potable Renewal - Non Terminal Buildings	Pre P1	-	0	0
B061	T2 - Internal Potable Renewal	Pre P1	-	0	0
B062	T4 - Internal Potable Renewal	Pre P1	-	0	0
B063	TTS - Power Distribution System PLC and Controls	Pre P1	-	0	1
B064	T3 - Internal Potable Renewal	Pre P1	-	0	1
B065	T5 - Internal Potable Renewal	Pre P1	-	0	1
B066	Airside Generator change over panels renewals	Pre P1	-	0	2
B067	UPS Renewals – roads, baggage tunnels	Pre P1	-	0	4
B068	T5 UPS Renewals	Pre P1	-	0	4
B069	T2 UPS Renewals	Pre P1	-	0	5
B070	Grooved Type Joints Replacements	Pre P1	-	0	5
B071	Rail Stations - T5 Fire System Replacement	Pre P1	-	0	5
B072	Western Interface Building Baxorter M&E Renewal	Pre P1	-	0	6
B073	APPROACH 27L Renew of LEDs	Pre P1	-	1	7
B074	T3IB 4 x Pre and Final Sorter Renewal	Pre P1	-	1	8
B075	Boiler Renewals	Pre P1	-	1	9
B076	Computer Room Air Conditioning Unit Renewals (CRAC)	Pre P1	-	1	9
B077	T5 DCV (Destination Coded Vehicle) Unloader EOL and Track Replacement	Pre P1	-	1	10
B078	T5 Chilled Water Pipework Renewals	Pre P1	-	1	11
B079	T5 Switchboard replacement	Pre P1	-	1	14
B080	Low Voltage Network Distribution Board Renewals	Pre P1	-	1	19
B081	Baggage PLC Replacement - Eastern Campus S7-400	Pre P1	-	2	29
B082	T3 Baggage - Controls replacement	Pre P1	-	3	38
B083	Engineering Minor Works	Pre P1	-	120	-
B084	TTS - UPS Equipment Rooms	Pre P1	-	0	1
B085	T4 Smoke Control - Replacement of Smoke Detection Equipment and Panels	Pre P1	-	0	1
B086	TTS - Power Distribution System Switch Gear	Pre P1	-	0	1
B087	Fire Detection Equipment and Panel Renewals	Pre P1	-	0	3
B088	TTS - Station Doors Overhaul	Pre P1	-	0	4
B089	Fire Damper Replacements	Pre P1	-	0	5
B090	Heavy Rail Tunnel - Replacement of Overhead Wires	Pre P1	-	0	5

ID	Label	Gateway as of July-25	Capex (£m, 2024 CPI)		
			Pre-H8	H8	Post H8
B091	Heavy Rail Tunnel - Switches and Crossings	Pre P1	-	0	5
B092	T5 Check-In Renewals	Pre P1	-	1	7
B093	T4 - Sanitation block renewals	Pre P1	-	1	9
B094	Radio System (emergency)	Pre P1	-	1	9
B095	Cooling Towers Renewals	Pre P1	-	3	45
B096	T4/T5 HBS (Hold Baggage Screening) Replacement	Pre P1	-	6	78
B097	T5 Baggage - Controls Replacement (S7-400 & Profibus)	Pre P1	-	8	113
B098	Stand Infrastructure Renewals	Pre P1	-	19	251
B099	BA - Renewal Work	Pre P1	-	0	1
B100	Heavy Rail Tunnel - Re-Railing Rolling Lifecycle	Pre P1	-	0	2
B101	Terminal stand-alone toilet facilities	Pre P1	-	0	3
B102	CCR (Constant Current Regulators) replacement (12 to 6.6 AMPs)	Pre P1	-	0	4
B103	Copper 50 Pair Network Cable Migration	Pre P1	-	0	5
B104	T4 Safe Walking Route	Pre P1	-	0	5
B105	Remote Sites Welfare Toilet Renewals	Pre P1	-	1	9
B106	Cargo Tunnel Renewals	Pre P1	-	1	19
B107	Non-Terminal Buildings - Roofs	Pre P1	-	2	23
B108	T3 Canopy replacement (either side of T3 East Wing)	Pre P1	-	2	23
B109	UKPNS NAMP Works (H8)	Pre P1	-	2	23
B110	Potable water tanks and plant rooms renewals	Pre P1	-	2	31
B111	T3 Renewal of Pier 5 and 7 Gate Rooms and Stairwells	Pre P1	-	2	32
B112	Main Tunnel Renewals	Pre P1	-	3	42
B113	MSCP (all) Fire Detection and Evacuation Systems	Pre P1	-	5	70
B114	Terminal Public Toilets and Welfare Rolling Renewals	Pre P1	-	13	177
B115	Property: T3 Interior	Pre P1	-	10	-
B116	Keyboard Video Monitor (KVM) system in Control Centre	Pre P1	-	10	2
B117	Aerodrome Live Fault Reporting (ALFRED)	Pre P1	-	8	2
B118	Airport Noise and Operations Monitoring (ANOMS)	Pre P1	-	8	2
B119	Foreign Object Debris (FOD) application and hardware	Pre P1	-	7	2
B120	Automated Public Address system (APA)	Pre P1	-	7	1
B121	Baggage Data Analytics (Merlin & ADMRIS)	Pre P1	-	7	1
B122	Airport Community APP	Pre P1	-	7	1
B123	Documented Operations Reporting and Information Systems (DORIS)	Pre P1	-	4	1

ID	Label	Gateway as of July-25	Capex (£m, 2024 CPI)		
			Pre-H8	H8	Post H8
B124	Heathrow Roster Management System (HRMS)	Pre P1	-	3	1
B125	Airport Operating to Plan (AOP)	Pre P1	-	2	1
B126	TMS Stand Planning system	Pre P1	-	2	0
B127	Passenger Flow Monitoring, Xovis	Pre P1	-	2	1
B128	Telematics System, Journeo	Pre P1	-	1	0
B129	Better Suite applications, Copenhagen Optimisation	Pre P1	-	4	1
B130	Sort Allocation Computer (SAC) and Supervisory Control And Data Acquisition (SCADA) baggage platform and products obsolescence.	Pre P1	-	42	8
B131	Crisplant Sort Controller (CSC) baggage platform and products	Pre P1	-	9	2
B132	Baggage desktop and laptop client operating systems and hardware	Pre P1	-	4	1
B133	Bag messaging for compliance with IATA 1755	Pre P1	-	4	1
B134	Vanderlande Traffyclite remote baggage IT monitoring and management system	Pre P1	-	2	0
B135	Handheld baggage scanners and location codes used by VIBES and BRS scanners	Pre P1	-	2	0
B136	Tech. component of refurbis - Airport Ops Ctrl Centre, STAR & Compass Centers	Pre P1	-	5	1
B137	HEART infrastructure monitoring system	Pre P1	-	3	1
B138	ArcGIS (Heathrow Explorer)	Pre P1	-	3	1
B139	Lift renewal	Pre P1	-	7	1
B140	DTS Servers	Pre P1	-	2	1
B141	MAXIMO asset management system	Pre P1	-	2	0
B142	Stand Entry Guidance system (SEGS)	Pre P1	-	8	2
B143	Common Data Environment (M-Files)	Pre P1	-	2	0
B144	Lighting Control System (LCS)	Pre P1	-	1	0
B145	Urban Traffic Control (UTC)	Pre P1	-	2	0
B146	Archway Metal Detector (AMD Net)	Pre P1	-	2	0
B147	Flight Information Display Systems (FIDS)	Pre P1	-	6	1
B148	Operational Performance Measurement (OPM)	Pre P1	-	7	1
B149	SSBD replacement	Pre P1	-	17	3
B150	HEX Enterprise Resource Planning System	Pre P1	-	1	0
B151	Azure Active Directory Business to Consumer	Pre P1	-	2	0
B152	Quantum Treasury system	Pre P1	-	1	0
B153	BACS payment system	Pre P1	-	1	0
B154	Health and Safety Incident Management system	Pre P1	-	9	2
B155	Microsoft platform and connectors	Pre P1	-	0	0
B156	Minor Capital Works for corporate systems	Pre P1	-	10	2

ID	Label	Gateway as of July-25	Capex (£m, 2024 CPI)		
			Pre-H8	H8	Post H8
B157	Security technology replacements and upgrades	Pre P1	-	17	3
B158	Essential maintenance for Heathrow's ageing data centres	Pre P1	-	21	4
B159	Secure data and file transfer solution upgrade	Pre P1	-	25	5
B160	Database standardisation to migrate apps and systems from Oracle to Microsoft SQL	Pre P1	-	4	1
B161	Network asset re-fresh - access switches, wireless LAN points, firewalls, telephony	Pre P1	-	25	5
B162	Server estate - incl. op system and database upgrade, plus H/W and virtualisation upgrade	Pre P1	-	17	3
B163	CCTV re-fresh	Pre P1	-	17	3
B164	Counter Unmanned Aerial systems (C-UAS) and Perimeter Intrusion Detection system (PIDS)	Pre P1	-	15	3
B165	Physical access control re-fresh	Pre P1	-	8	2
B166	Shared storage re-fresh	Pre P1	-	15	3
B167	End user computing, including laptops, desktops, phones and multi-functional devices	Pre P1	-	17	3
B168	Radio network consolidation	Pre P1	-	8	2
B169	Centrally held provision for technology equipment not covered by a Capital budget	Pre P1	-	6	1
B170	End User Compute devices and Identities cloud migration to Entra ID	Pre P1	-	12	3
B171	Asset Lifecycle Management	Pre P1	-	9	2
B172	Governance, risk and compliance solutions	Pre P1	-	2	1
B173	Vulnerability management and remediation	Pre P1	-	4	1
B174	Zero trust identity and access management	Pre P1	-	10	2
B175	Embed security awareness and training into culture of org	Pre P1	-	2	0
B176	Strengthening of data loss prevention controls	Pre P1	-	4	1
B177	Modernisation of end point protection	Pre P1	-	2	1
B178	Cloud workload protection platform	Pre P1	-	2	0
B179	Network microsegmentation for zero trust	Pre P1	-	7	2
B180	Operational Technology protection	Pre P1	-	5	1
B181	Multi cloud cloud security posture management solutions	Pre P1	-	2	0
B182	Next gen Sec Incident & Event Management and Sec Orchestration, Automation & Response modernisation and upgrade	Pre P1	-	1	0
B183	Cyber threat intelligence platform enhancements	Pre P1	-	1	0
B184	Extended attack surface management	Pre P1	-	1	0
B185	Policy	Pre P1	-	1	0
B186	Immutable Backups	Pre P1	-	3	1
B187	Cyber resilience and recoverability	Pre P1	-	10	2

Source: A8 - 1. H8 Capex Data Tables, Steer analysis

Overview

2.71 The table below summarises the Business Case information provided by HAL in its Business Plan submission.

Table 2.21: BC04.00 – Overview

Category	Description
Scope	<p>This Business Case deals with the renewal and compliance of Heathrow’s asset base to sustain operational resilience, regulatory compliance and safety standards.</p> <p>According to HAL, it includes a total of 187 projects which are not already included in BC03.01 Asset Management & Compliance Programme or in other Business Cases. Those projects are divided into physical assets (baggage, civil, electrical, fire, ICA, mechanical, and rail) and technology assets (operations, consumer, corporate, and foundational technology).</p>
Need case	<p>HAL estimates that a total of £5.5bn worth of physical assets and £600m worth of technology assets are reaching the end of their lifecycles. Non-critical renewals have been historically deferred, resulting in an overall decline in asset condition (with an average residual life drop from 55.9% in 2019 to 37.5% in 2024). HAL has decided to not ‘sweat’ the assets longer than needed.</p>
Optioneering	<p>For HAL, the do-nothing alternative would result in non-compliance with safety and security obligations, material risks to operational continuity and consumer outcomes (delays, congestion, degraded passenger experience), environmental and operational costs. However, renewing all end-of-life is not considered deliverable.</p> <p>HAL states that it has approached prioritisation by considering projects in progress since H7, operational delivery constraints and funding allowances. Physical asset renewals can be spread over longer periods, unlike technology renewals which typically require shorter and more frequent investments, due to their generally shorter average lifespan (5-7 years). Cyber security breaches are becoming increasingly threatening, and the maintenance of end-of-life assets may no longer be supported by manufacturers.</p> <p>To prioritise the targeted assets, HAL use an internal method called Corporate Risk Framework rating. Assets with a CRF score over 12 mean that the risks on these assets correspond to one of the below cases:</p> <ul style="list-style-type: none"> • A very high or high likelihood of materialising with a medium (severe) or very high (catastrophic) impact: If left unaddressed, these risks could result in safety incidents, operational impacts and/or service failures potentially meaning whole areas could be taken out of operational use; • A medium likelihood of materialising with a high (major) or very high (catastrophic) impact; or • A high velocity of impact.
Outcomes & benefits	<p>The intended outcomes of this Business Case are mainly to achieve sustained operations that are safe, secure, compliant and protect revenues, enhanced asset management capability and improved visibility of planned asset replacement works. Specific benefits are measured on the categories of both risk reduction and asset longevity:</p>

Category	Description
	<ul style="list-style-type: none"> Reduction in CRF scores (used for most physical asset renewals and technology asset renewals): success is measured by a change in the overall risk status. Increase in average residual asset life (for rolling physical asset renewals and all technology renewals from H8 onwards): success is measured by an uplift in remaining asset life and deferred renewal costs.
Impact on Opex/ Revenues	Generating additional revenue or opex savings is not the main focus of the Business Case. The main financial benefits are obtained through the reduced risk of disruptions and their associated costs. HAL estimate that the projects included in this Business Case will avoid £71m of opex during H8 and £284.1m over the lifetime of the investment.
Airlines	The emerging needs set out in this BC are a continuation of the H7 Asset Management Compliance (AMC) programme and HAL claims that stakeholders have been regularly engaged on this programme through H7. HAL indicates that as the projects within this Business Case are mobilised, airline engagement will remain a core part of governance, particularly where project delivery may affect airline operations or require coordination with other investment programmes.

Source: HAL, Steer analysis

Need assessment

2.72 The below sections summarise our assessment of the need for each project included in this Business Case.

Summary of our assessment

2.73 The 187 projects included in this Business Case are divided into two main asset groups: Physical (115 projects) and Technology assets (72 projects). Since the information available is substantially different for the two asset groups, the justification behind our scoring also differs across these two groups of assets.

2.74 For physical assets⁵, the information provided in the Business Plan includes the investment area, primary risk, velocity of degradation, CRF scores (pre-investment and forecast post investment) and yearly capex estimate. Our assessment of the ‘Safety, compliance, operational resilience’ consumer benefit category is based on the CRF scores before and forecast after the investment as per the table below. As the table shows, projects have received a ‘3:High’ Net Impact score when their forecast reduction of the CRF score from pre-investment to post-investment is ≥ 10 , and their pre-investment CRF score is > 15 . We have applied a similar logic to the ‘2:Medium’ score which we have assigned when the pre-investment CRF is > 12 , or their forecast reduction of the CRF score from pre-investment to post-investment is ≥ 8 . We have assigned a ‘1:Low’ score, when the pre-investment CRF is ≤ 12 , and the forecast reduction of the CRF score is < 8 .

⁵ Project B01 to B115

2.75 Considering the main goal of the Business Case is related to safety, compliance and operational resilience, we have not scored any project’s Net Impact in this category as ‘0: None’.

Table 2.22: BC04.00 – Net Impact scoring

Safety, Compliance, Resilience Net Impact score	Conditions
3: High	Pre-investment CRF > 15 AND Reduction of CRF ≥ 10
2: Medium	Pre-investment CRF >12 OR Reduction in CRF ≥ 8
1: Low	Pre-investment CRF ≤12 AND Reduction in CRF < 8

Source: Steer

- 2.76 Since the CRF is the only main evidence provided by HAL in its Business Plan to assess the ‘Safety, compliance, and operational resilience’ category of consumer benefits, we have scored the Likelihood as ‘2:Medium’. Indeed, while we assess that the CRF is an adequate method to prioritise asset renewals, we would have expected more in the form of explanation on how these scores were obtained for each asset.
- 2.77 In addition, through the Questions and Answers (Q&A), HAL confirmed that there has been no third-party validation of the CRF scores. While third-party validation of the CRF scores was never set out as an expectation from the CAA/Steer, it would have provided additional evidence given the lack of evidence on this Business Case compared to what Steer might have expected, which is set out in Appendix A and was shared with HAL before Business Plan submission.
- 2.78 For technology assets⁶, no CRF score or similar measure have been provided. Through the Q&A, we have asked HAL if something similar to CRF scores is used for the technology asset initiatives and if this could be provided. HAL has responded that technology assets are not prioritised based on the CRF but on asset life. Given this response, we would then have expected information on remaining asset life of the technology assets, which we have requested but has not been provided.
- 2.79 HAL has also mentioned in its response that it expects “to need to still use the CRF, but only where there are limitations in investment and potential delivery constraints (e.g. supply chain capacity, or stakeholder change capacity)”.

⁶ Project B116 to B187

- 2.80 In the absence of more information for technology assets, we have scored the Likelihood of the consumer benefit ‘Safety, compliance, and operational resilience’ category as ‘1:Low’. The Net Impact score is based on the investment area and description of the initiative. We have scored the projects from ‘1:Low’ to ‘3:High’ as we recognise that some of these projects are likely to have significant benefits in that category.
- 2.81 For all the projects, the scoring of the ‘Capacity, passenger experience, airline operations, and sustainability’ category of consumer benefits against the Net Impact and Likelihood criteria are based on the project description and whether specific benefits for the project are mentioned and/or quantified. In practice, we have identified that some of the projects should have ‘2:Medium’ or ‘1:Low’ Net Impact in that category and have been scored accordingly. However, those impacts/benefits are not explicitly mentioned by HAL or quantified, so the Likelihood has been scored as ‘1:Low’. Project scored as ‘0:None’ in Net Impact and Likelihood have simply no identified benefits in this category.
- 2.82 The projects of this Business Case generate some opex savings but those are not material when compared to the overall capex, hence the ‘1:Low’ Net Impact scores across all projects. Also, those savings are not provided by project but only at the overall Business Case level, which does not provide confidence in the opex savings benefits generated by each project, hence the low Likelihood scores.

Scores

Table 2.23: BC04.00 – Need case scores per project

ID	Label	Safety, compliance, operational resilience		Capacity, passenger experience, airline operations, sustainability		Increase revenues, reduce opex		TOTAL
		Net Impact	Likelihood	Net Impact	Likelihood	Net Impact	Likelihood	
	Overall Business Case weighted averages (pre-G3 projects only)*	2	2	1	1	1	1	12
	By project							
B01	Continued Chiller Renewals	1	2	2	1	1	1	11
B02	Continued Passive Fire Protection Renewals	2	2	1	1	1	1	15
B03	Per and Polyfluoroalkyl Substances Remediation	3	2	0	0	1	1	19
B04	Cyber Security Mitigation - Operational Technology and End Devices	3	2	0	0	1	1	19
B05	Airfield Stand Flood Towers	2	2	1	1	1	1	15
B06	T4/5 HBS (Hold Baggage Screening) Bearing Replacement Phase 2	2	2	2	1	1	1	17

ID	Label	Safety, compliance, operational resilience		Capacity, passenger experience, airline operations, sustainability		Increase revenues, reduce opex		TOTAL
		Net Impact	Likelihood	Net Impact	Likelihood	Net Impact	Likelihood	
B07	Fire Main Network and System Renewals	2	2	0	0	1	1	13
B08	Pump Renewals – M1-14 Fire Main Pumping Station	2	2	0	0	1	1	13
B09	HV Resilience Renewals (2025 Power Incident Review)	2	2	2	1	1	1	17
B010	Airside/Landside Security Fencing - Rolling Renewals	2	2	0	0	1	1	13
B011	Substation Roofs	2	2	0	0	1	1	13
B012	Pedestrian crossings (airside phase 2)	2	2	2	1	1	1	17
B013	RAAC Structural Elements	2	2	0	0	1	1	13
B014	West Ramp Coach Park- Renewal Work	2	2	0	0	1	1	13
B015	Terminal Buildings EPC (Energy Efficiency Compliance)	2	2	2	1	1	1	17
B016	Rolling programme for pavements and stands	2	2	1	1	1	1	15
B017	Western Campus Inter-Terminal Baggage Transport Asset Replacement (DCV)	2	2	0	0	1	1	13
B018	RAAC External Cladding	2	2	0	0	1	1	13
B019	Engineering Spares and Emergencies	2	2	0	0	1	1	13
B020	HAL owned HV Network Renewals	2	2	2	1	1	1	17
B021	Rolling renewal of HV cabling	2	2	2	1	1	1	17
B022	CTA Sanitation Block	2	2	2	1	1	1	17
B023	Pioneer Data Centre power supply, UPS and support facilities	2	2	0	0	1	1	13
B024	NATS - DME FERNAU 2020 - South	2	2	0	0	1	1	13
B025	NATS - EFPS Hardware & Software refresh HATCT & VCF	2	2	0	0	1	1	13
B026	NATS - UPS HATCT	2	2	0	0	1	1	13
B027	NATS - SIM Upgrade	2	2	0	0	1	1	13
B028	T4 Chilled Water Pipework Renewals	2	2	2	1	1	1	17
B029	NATS - SMR Terma 2000 N/S/E/W	2	2	0	0	1	1	13
B030	NATS - SENSIS MLAT	2	2	0	0	1	1	13
B031	Pump Renewals - T5 Fire Main Pump Renewals (Energy Centre)	2	2	2	1	1	1	17
B032	Rolling Maid Reader Asset Renewal 610e & 620 (2000 units across 6 years)	2	2	0	0	1	1	13
B033	NATS - Instrument Landing System Indra Navia	2	2	0	0	1	1	13

ID	Label	Safety, compliance, operational resilience		Capacity, passenger experience, airline operations, sustainability		Increase revenues, reduce opex		TOTAL
		Net Impact	Likelihood	Net Impact	Likelihood	Net Impact	Likelihood	
B034	Installation and renewal of UPS for Critical Assets	2	2	1	1	1	1	15
B035	NATS - SDPS HATCT & VCF	2	2	0	0	1	1	13
B036	T5 Fuel Farm Fire Water Deluge Pumping Station Renewals (Pumps and Valves)	2	2	1	1	1	1	15
B037	Southern Runway - Western Section Resurfacing	2	2	0	0	1	1	13
B038	Control Tower Refurbishment	2	2	1	1	1	1	15
B039	T3 Overhead height barriers to protect external RAAC cladding	2	2	0	0	1	1	13
B040	T4 Cladding Replacement (airside)	2	2	0	0	1	1	13
B041	MSCP5 Expansion Joints phase 2	2	2	0	0	1	1	13
B042	TTS - Train Control - RATP (Regional Automatic Train Protection) & RATO (Regional Automatic Train Operation)	2	2	0	0	1	1	13
B043	T3 Cladding Panel Replacement (including East Wing)	1	2	0	0	1	1	7
B044	Potable Water Network Renewals (1km of network per year)	2	2	1	1	1	1	15
B045	DTS (Data Transmission System) Servers	1	2	0	0	1	1	7
B046	Stations - Switchgear and Transformer replacement (CTA & T4)	1	2	1	1	1	1	9
B047	Main Tunnel North Plant Room Sump	2	2	0	0	1	1	13
B048	T4 Public Address Voice Alarm Replacement	2	2	0	0	1	1	13
B049	Central Battery Units - Renewals	1	2	1	1	1	1	9
B050	T4 Cladding Replacement (landside)	1	2	0	0	1	1	7
B051	AGL Fitting Replacements	1	2	1	1	1	1	9
B052	Calorifier Renewals	2	2	2	1	1	1	17
B053	Potable Water Pumping Stations Renewal Programme	1	2	2	1	1	1	11
B054	Control Post Barrier Renewals	1	2	0	0	1	1	7
B055	AGL DC Cable Replacement	2	2	1	1	1	1	15
B056	Fire Main Valve Replacement Strategy	2	2	0	0	1	1	13
B057	Traffic Signals	2	2	0	0	1	1	13
B058	Replace 1km of network per year - Surface Water and Pollution	2	2	2	1	1	1	17

ID	Label	Safety, compliance, operational resilience		Capacity, passenger experience, airline operations, sustainability		Increase revenues, reduce opex		TOTAL
		Net Impact	Likelihood	Net Impact	Likelihood	Net Impact	Likelihood	
B059	Heavy Rail Tunnel - Mobile Communication System (GSM-R) Battery (UPS) Replacement	2	2	0	0	1	1	13
B060	Internal Potable Renewal - Non Terminal Buildings	2	2	0	0	1	1	13
B061	T2 - Internal Potable Renewal	2	2	1	1	1	1	15
B062	T4 - Internal Potable Renewal	2	2	1	1	1	1	15
B063	TTS - Power Distribution System PLC and Controls	2	2	0	0	1	1	13
B064	T3 - Internal Potable Renewal	2	2	1	1	1	1	15
B065	T5 - Internal Potable Renewal	2	2	1	1	1	1	15
B066	Airside Generator change over panels renewals	2	2	0	0	1	1	13
B067	UPS Renewals – roads, baggage tunnels	2	2	1	1	1	1	15
B068	T5 UPS Renewals	2	2	1	1	1	1	15
B069	T2 UPS Renewals	2	2	1	1	1	1	15
B070	Grooved Type Joints Replacements	1	2	1	1	1	1	9
B071	Rail Stations - T5 Fire System Replacement	2	2	0	0	1	1	13
B072	Western Interface Building Baxorter M&E Renewal	2	2	0	0	1	1	13
B073	APPROACH 27L Renew of LEDs	2	2	1	1	1	1	15
B074	T3IB 4 x Pre and Final Sorter Renewal	2	2	0	0	1	1	13
B075	Boiler Renewals	1	2	1	1	1	1	9
B076	Computer Room Air Conditioning Unit Renewals (CRAC)	2	2	1	1	1	1	15
B077	T5 DCV (Destination Coded Vehicle) Unloader EOL and Track Replacement	2	2	0	0	1	1	13
B078	T5 Chilled Water Pipework Renewals	2	2	1	1	1	1	15
B079	T5 Switchboard replacement	1	2	1	1	1	1	9
B080	Low Voltage Network Distribution Board Renewals	2	2	1	1	1	1	15
B081	Baggage PLC Replacement - Eastern Campus S7-400	2	2	1	1	1	1	15
B082	T3 Baggage - Controls replacement	2	2	1	1	1	1	15
B083	Engineering Minor Works	1	2	0	0	1	1	7
B084	TTS - UPS Equipment Rooms	2	2	1	1	1	1	15
B085	T4 Smoke Control - Replacement of Smoke Detection Equipment and Panels	2	2	2	1	1	1	17

ID	Label	Safety, compliance, operational resilience		Capacity, passenger experience, airline operations, sustainability		Increase revenues, reduce opex		TOTAL
		Net Impact	Likelihood	Net Impact	Likelihood	Net Impact	Likelihood	
B086	TTS - Power Distribution System Switch Gear	2	2	0	0	1	1	13
B087	Fire Detection Equipment and Panel Renewals	2	2	1	1	1	1	15
B088	TTS - Station Doors Overhaul	1	2	1	1	1	1	9
B089	Fire Damper Replacements	2	2	0	0	1	1	13
B090	Heavy Rail Tunnel - Replacement of Overhead Wires	2	2	0	0	1	1	13
B091	Heavy Rail Tunnel - Switches and Crossings	2	2	0	0	1	1	13
B092	T5 Check-In Renewals	2	2	2	1	1	1	17
B093	T4 - Sanitation block renewals	1	2	1	1	1	1	9
B094	Radio System (emergency)	2	2	0	0	1	1	13
B095	Cooling Towers Renewals	2	2	1	1	1	1	15
B096	T4/T5 HBS (Hold Baggage Screening) Replacement	2	2	2	1	1	1	17
B097	T5 Baggage - Controls Replacement (S7-400 & Profibus)	1	2	1	1	1	1	9
B098	Stand Infrastructure Renewals	2	2	1	1	1	1	15
B099	BA - Renewal Work	2	2	0	0	1	1	13
B100	Heavy Rail Tunnel - Re-Railing Rolling Lifecycle	2	2	1	1	1	1	15
B101	Terminal stand-alone toilet facilities	1	2	2	1	1	1	11
B102	CCR (Constant Current Regulators) replacement (12 to 6.6 AMPs)	2	2	0	0	1	1	13
B103	Copper 50 Pair Network Cable Migration	2	2	1	1	1	1	15
B104	T4 Safe Walking Route	2	2	2	1	1	1	17
B105	Remote Sites Welfare Toilet Renewals	1	2	1	1	1	1	9
B106	Cargo Tunnel Renewals	2	2	1	1	1	1	15
B107	Non-Terminal Buildings - Roofs	1	2	0	0	1	1	7
B108	T3 Canopy replacement (either side of T3 East Wing)	1	2	1	1	1	1	9
B109	UKPNS NAMP Works (H8)	2	2	0	0	1	1	13
B110	Potable water tanks and plant rooms renewals	2	2	1	1	1	1	15
B111	T3 Renewal of Pier 5 and 7 Gate Rooms and Stairwells	1	2	1	1	1	1	9
B112	Main Tunnel Renewals	2	2	1	1	1	1	15
B113	MSCP (all) Fire Detection and Evacuation Systems	2	2	0	0	1	1	13

ID	Label	Safety, compliance, operational resilience		Capacity, passenger experience, airline operations, sustainability		Increase revenues, reduce opex		TOTAL
		Net Impact	Likelihood	Net Impact	Likelihood	Net Impact	Likelihood	
B114	Terminal Public Toilets and Welfare Rolling Renewals	1	2	2	1	1	1	11
B115	Property: T3 Interior	2	2	1	1	1	1	15
B116	Keyboard Video Monitor (KVM) system in Control Centre	1	1	1	1	1	1	6
B117	Aerodrome Live Fault Reporting (ALFRED)	2	1	2	1	1	1	11
B118	Airport Noise and Operations Monitoring (ANOMS)	3	1	3	1	1	1	16
B119	Foreign Object Debris (FOD) application and hardware	2	1	0	0	1	1	7
B120	Automated Public Address system (APA)	1	1	1	1	1	1	6
B121	Baggage Data Analytics (Merlin & ADMRIS)	2	1	1	1	1	1	9
B122	Airport Community APP	1	1	1	1	1	1	6
B123	Documented Operations Reporting and Information Systems (DORIS)	1	1	2	1	1	1	8
B124	Heathrow Roster Management System (HRMS)	1	1	1	1	1	1	6
B125	Airport Operating to Plan (AOP)	3	1	3	1	1	1	16
B126	TMS Stand Planning system	3	1	3	1	1	1	16
B127	Passenger Flow Monitoring, Xovis	2	1	1	1	1	1	9
B128	Telematics System, Journeo	1	1	1	1	1	1	6
B129	Better Suite applications, Copenhagen Optimisation	1	1	1	1	1	1	6
B130	Sort Allocation Computer (SAC) and Supervisory Control And Data Acquisition (SCADA) baggage platform and products obsolescence.	2	1	2	1	1	1	11
B131	Crisplant Sort Controller (CSC) baggage platform and products	3	1	3	1	1	1	16
B132	Baggage desktop and laptop client operating systems and hardware	3	1	3	1	1	1	16
B133	Bag messaging for compliance with IATA 1755	3	1	3	1	1	1	16
B134	Vanderlande Trafficlite remote baggage IT monitoring and management system	1	1	2	1	1	1	8
B135	Handheld baggage scanners and location codes used by VIBES and BRS scanners	2	1	3	1	1	1	13

ID	Label	Safety, compliance, operational resilience		Capacity, passenger experience, airline operations, sustainability		Increase revenues, reduce opex		TOTAL
		Net Impact	Likelihood	Net Impact	Likelihood	Net Impact	Likelihood	
B136	Tech. component of refurbis - Airport Ops Ctrl Centre, STAR & Compass Centers	3	1	3	1	1	1	16
B137	HEART infrastructure monitoring system	3	1	2	1	1	1	14
B138	ArcGIS (Heathrow Explorer)	1	1	1	1	1	1	6
B139	Lift renewal	2	1	3	1	1	1	13
B140	DTS Servers	2	1	2	1	1	1	11
B141	MAXIMO asset management system	2	1	1	1	1	1	9
B142	Stand Entry Guidance system (SEGS)	3	1	2	1	1	1	14
B143	Common Data Environment (M-Files)	2	1	2	1	1	1	11
B144	Lighting Control System (LCS)	3	1	3	1	1	1	16
B145	Urban Traffic Control (UTC)	3	1	2	1	1	1	14
B146	Archway Metal Detector (AMD Net)	3	1	3	1	1	1	16
B147	Flight Information Display Systems (FIDS)	2	1	3	1	1	1	13
B148	Operational Performance Measurement (OPM)	2	1	2	1	1	1	11
B149	SSBD replacement	2	1	2	1	1	1	11
B150	HEX Enterprise Resource Planning System	2	1	0	0	1	1	7
B151	Azure Active Directory Business to Consumer	1	1	2	1	1	1	8
B152	Quantum Treasury system	2	1	0	0	1	1	7
B153	BACS payment system	1	1	2	1	1	1	8
B154	Health and Safety Incident Management system	3	1	2	1	1	1	14
B155	Microsoft platform and connectors	3	1	3	1	1	1	16
B156	Minor Capital Works for corporate systems	2	1	2	1	1	1	11
B157	Security technology replacements and upgrades	3	1	2	1	1	1	14
B158	Essential maintenance for Heathrow's ageing data centres	3	1	3	1	1	1	16
B159	Secure data and file transfer solution upgrade	3	1	2	1	1	1	14
B160	Database standardisation to migrate apps and systems from Oracle to Microsoft SQL	2	1	2	1	1	1	11
B161	Network asset re-fresh - access switches, wireless LAN points, firewalls, telephony	2	1	2	1	1	1	11

ID	Label	Safety, compliance, operational resilience		Capacity, passenger experience, airline operations, sustainability		Increase revenues, reduce opex		TOTAL
		Net Impact	Likelihood	Net Impact	Likelihood	Net Impact	Likelihood	
B162	Server estate - incl. op system and database upgrade, plus H/W and virtualisation upgrade	2	1	2	1	1	1	11
B163	CCTV re-fresh	3	1	1	1	1	1	12
B164	Counter Unmanned Aerial systems (C-UAS) and Perimeter Intrusion Detection system (PIDS)	3	1	3	1	1	1	16
B165	Physical access control re-fresh	3	1	1	1	1	1	12
B166	Shared storage re-fresh	2	1	2	1	1	1	11
B167	End user computing, including laptops, desktops, phones and multi-functional devices	3	1	1	1	1	1	12
B168	Radio network consolidation	2	1	2	1	1	1	11
B169	Centrally held provision for technology equipment not covered by a Capital budget	2	1	2	1	1	1	11
B170	End User Compute devices and Identities cloud migration to Entra ID	2	1	2	1	1	1	11
B171	Asset Lifecycle Management	2	1	1	1	1	1	9
B172	Governance, risk and compliance solutions	3	1	3	1	1	1	16
B173	Vulnerability management and remediation	2	1	0	0	1	1	7
B174	Zero trust identity and access management	3	1	2	1	1	1	14
B175	Embed security awareness and training into culture of org	3	1	2	1	1	1	14
B176	Strengthening of data loss prevention controls	2	1	0	0	1	1	7
B177	Modernisation of end point protection	2	1	2	1	1	1	11
B178	Cloud workload protection platform	2	1	2	1	1	1	11
B179	Network microsegmentation for zero trust	2	1	2	1	1	1	11
B180	Operational Technology protection	2	1	2	1	1	1	11
B181	Multi cloud cloud security posture management solutions	2	1	2	1	1	1	11
B182	Next gen Sec Incident & Event Management and Sec Orchestration, Automation & Response modernisation and upgrade	2	1	0	0	1	1	7
B183	Cyber threat intelligence platform enhancements	3	1	1	1	1	1	12

ID	Label	Safety, compliance, operational resilience		Capacity, passenger experience, airline operations, sustainability		Increase revenues, reduce opex		TOTAL
		Net Impact	Likelihood	Net Impact	Likelihood	Net Impact	Likelihood	
B184	Extended attack surface management	3	1	1	1	1	1	12
B185	Policy	3	1	3	1	1	1	16
B186	Immutable Backups	3	1	2	1	1	1	14
B187	Cyber resilience and recoverability	3	1	2	1	1	1	14
	Project not scored	Reason						
	-	-						

Source: HAL, Steer analysis. Note: (*) The overall Business Case weighted average scores are calculated by weighting the projects' scores with their H8 capex values.

BC05.00 Electrical network

HAL’s submission

2.83 This section provides a summary of what was submitted by HAL on this Business Case.

Projects and costs

2.84 The Business Case includes three projects, one of which (Electricity network 11KV and 33KV upgrades) is at slightly more advanced P2T maturity stage and is an enabler for the two less mature projects, which are at pre P1 stage.

Table 2.24: BC05.00 – Capex submission (£m, 2024 CPI prices)

ID	Label	Gateway as of July-25	Capex (£m, 2024 CPI)		
			Pre-H8	H8	Post H8
	Overall Business Case		-	568	316
	By project				
J01	Electricity network 11KV and 33KV upgrades	P2T	-	186	-
J02	Electricity network 132KV new network	Pre P1	-	332	192
J03	National Grid Connection - Connecting Cable	Pre P1	-	50	124

Source: A8 - 1. H8 Capex Data Tables, Steer analysis

Overview

2.85 The table below summarises the Business Case information provided by HAL in its Business Plan submission.

Table 2.25: BC05.00 – Overview

Category	Description
Scope	<p>The scope of this project is to provide:</p> <ul style="list-style-type: none"> • Upgrades to the 33kV (primary network) to support reconfiguration of the current network, increasing capacity, enhancing resilience and enabling better fault response; • Critical upgrades to the 11kV network (secondary distribution network) to meet localised capacity increases; • Design and enabling work to support integration of the 11kV/33kV internal network with the planned 132kV National Grid connection (late 2030s); and • An allowance for a direct connection to the National Grid transmission network.
Need case	<p>The current system has three internal HV networks fed separately from Scottish and Southern Electricity Network (SEN). HAL claims that the current HV networks have limited capability to distribute the required capacity to all areas of the airport.</p>

Category	Description
	HAL notes that the current distribution network is already operating at the upper end of its design capacity. Limited headroom and a reduced ability to respond to incidents mean the system is less resilient. In addition, electricity demand is forecast to rise significantly, to support growth and safeguard resilience, according to HAL.
Optioneering	<p>HAL have developed three options for delivering the scope set:</p> <ul style="list-style-type: none"> • Option 1: Do nothing. • Option 2: Deliver only the 11kV and 33kV upgrades. • Option 3: Deliver the 11kV and 33kV upgrades and include the capability to support a future 132kV mesh system. This option is identified as the preferred approach. It addresses short term limitations in the network, and supports future capacity expansion and long-term requirements.
Outcomes & benefits	<p>The project scope will enable growth in line with demand forecasts, while also improving the airports' operational resilience through the ability to redistribute electrical loads across the network, and improving resilience in the electricity network.</p> <p>In the short term, the upgrades are expected to increase load transfer capability resilience across the campus. In the longer term, the system will be future proofed to support a 132kV mesh distribution network and a National Grid connection.</p>
Impact on Opex/ Revenues	<p>Operating cost impacts have not been quantified at this stage, given the status of the initiatives within the gateway lifecycle. However, HAL have considered the potential impacts that may arise from the upgrades.</p> <p>It is anticipated that increased network capacity and electrical demand will result in higher operating costs.</p>
Airlines	HAL states that they have engaged with airlines on the electrical network upgrades at several forums including the Joint Steering Board and the Stakeholder Portfolio Group (SPG). The purpose of the engagement was to provide sight of the final energy strategy work and HAL's key priorities.

Source: HAL, Steer analysis

Need assessment

2.86 The below sections summarise our assessment of the need for each project included in this Business Case.

Summary of our assessment

2.87 The need case for upgrading works to the 33kV and 11kV primary and secondary networks at Heathrow (project J01) is clear as it is critical for the operational resilience of Heathrow's airport and airline operations. The Business Case outlines the scope of work in four areas of Heathrow, which will improve capacity and load distribution, improving the fault tolerance of the distribution network. This is why this project scores '3:High' in 'Safety, compliance, operational resilience' and 'Capacity, passenger experience, airline operations, sustainability' categories of consumer benefits.

- 2.88 The 132kV new mesh network (project J02) is at very early stage of maturity (pre P1 level) and it has not been developed sufficiently to identify options and clear outputs. However, whenever it is delivered, it will significantly improve the electrical network capacity to enable potential electrification requirements in the short term, and resilience and fault tolerance in the long term, hence the Net Impact score of ‘2:Medium’ for ‘Safety, compliance, operational resilience’ and ‘3:High’ for ‘Capacity, passenger experience, airline operations, sustainability’ categories of consumer benefits. Due to the lack of definition of the outputs of this project and the critical role of third parties, including National Grid, in its implementation, we assess that the project is likely to be delayed, even beyond H8, hence the ‘1:Low’ score against the Likelihood of both categories of consumer benefits.
- 2.89 The National Grid connection project (project J03) is also at a very early stage of maturity and it is very likely that will not mature sufficiently nor have the third parties enabling works performed in time for HAL to implement it in H8, hence the ‘1:Low’ score across the two first consumer benefit categories.
- 2.90 The three projects will increase opex in the longer term, particularly when the network and distribution system become larger and more complex, owing to additional maintenance costs, hence no scores against this category of consumer benefits.
- 2.91 Another consideration for the need case assessment is that there are interdependencies among the projects in the Business Case. We assess that project J03 is linked to J02, and project J02 is linked to J01. Therefore, for the full realisation of the Business Case, the projects need to be developed sequentially.

Scores

Table 2.26: BC05.00 – Need case scores per project

ID	Label	Safety, compliance, operational resilience		Capacity, passenger experience, airline operations, sustainability		Increase revenues, reduce opex		TOTAL
		Net Impact	Likelihood	Net Impact	Likelihood	Net Impact	Likelihood	
	Overall Business Case weighted averages (pre-G3 projects only)*	2	2	3	2	-	-	22
	By project							
J01	Electricity network 11KV and 33KV upgrades	3	3	3	3	0	0	45
J02	Electricity network 132KV new network	2	1	3	1	0	0	12
J03	National Grid Connection - Connecting Cable	1	1	1	1	0	0	5
	Project not scored	Reason						
	-	-						

Source: HAL, Steer analysis. Note: (*) The overall Business Case weighted average scores are calculated by weighting the projects' scores with their H8 capex values.

BC06.00 Heat decarbonisation

HAL’s submission

2.92 This section provides a summary of what was submitted by HAL on this Business Case.

Projects and costs

2.93 As the table below shows, the Business Case includes two projects, both at early stages of maturity, with project R01 ‘PRJ-001686 - B74-006 - Decarbonisation of Heat’ being a pilot and also an enabler of the other project – project R02.

Table 2.27: BC06.00 – Capex submission (£m, 2024 CPI prices)

ID	Label	Gateway as of July-25	Capex (£m, 2024 CPI)		
			Pre-H8	H8	Post H8
	Overall Business Case		9	319	796
	By project				
R01	PRJ-001686 - B74-006 - Decarbonisation of Heat	P2T	9	47	-
R02	Heat Decarbonisation (Energy Hub, Easy wins, Temp Reduction, Energy Hub)	Pre P1	-	272	796

Source: A8 - 1. H8 Capex Data Tables, Steer analysis

Overview

2.94 The table below summarises the Business Case information provided by HAL in its Business Plan submission.

Table 2.28: BC06.00 – Overview

Category	Description
Scope	<p>This Business Case is about the replacement of the heating and hot water generating systems across the airport, which rely on fossil fuels (natural gas and gas oil), with zero-carbon alternatives.</p> <p>Phase 1: Pilot Implementation:</p> <ul style="list-style-type: none"> Complete detailed design and engineering to ensure successful integration into the terminal’s infrastructure, including power, space, and resilience requirements. Deliver a smaller-scale energy hub at Terminal 5 to begin reducing carbon emissions from heating. <p>Phase 2: Design and Enabling Works:</p> <ul style="list-style-type: none"> Initiate design for future energy hubs at Terminals 2A, 3 (P06), 4, and 5 (5A, 5B, 5C). Assess space, technology, and power upgrade needs across terminals. Deliver enabling works, including thermal efficiency improvements at Terminals 4 and 5, and convert Terminal 4’s heating system from medium to low temperature hot water.

Need case	HAL’s Sustainability Strategy includes the reduction of carbon emissions for scopes 1 and 2 to the maximum possible in order to achieve Net Zero by mid 2030s. Replacing the current heating systems with zero or low carbon emission solutions will contribute to achieving such target.
Optioneering	HAL provides the evaluation criteria and the process followed to determine the solution to be deployed in Phase 1. Phase 2 does not require an optioneering process at this stage.
Outcomes & benefits	<ul style="list-style-type: none"> • Eliminate fossil fuel use and end combustion for heating. • Minimise refrigerant emissions by using low or zero global warming potential alternatives. • Improve energy efficiency and operational resilience by replacing ageing infrastructure. • Ensure thermal comfort for passengers, staff, and critical assets like data centres. • Adapt to climate change, with the system designed to operate in temperatures up to 40°C, addressing rising heat risks.
Impact on Opex/ Revenues	Potential increases in opex could arise from the transition from fuel/gas to electricity, but nothing has been assumed at this stage by HAL.
Airlines	HAL claims that several sessions have been held with the airlines since 2023. “Following the sessions at Carbon and Sustainability Stakeholder Programme Group (CSSPG), the P2T for Phases 1 and 2 was approved at the Future Portfolio Group (FPG). The FPG approval included the endorsement of the launch of the Decarbonisation of Heat tranche.”

Source: HAL, Steer analysis

Need assessment

2.95 The below sections summarise our assessment of the need for each project included in this Business Case.

Summary of our assessment

2.96 The main argument that HAL puts forward in the Business Case to develop the two projects related to heat decarbonisation is related to their sustainability targets. Indeed, replacing the current heating systems (that use fuel and gas) with zero or low carbon emissions solutions will contribute to achieve the Net Zero targets/goals.

2.97 The UK Government has set as a sustainability goal for all UK airports to achieve Net Zero carbon emissions by 2040. This aspirational goal, which is not a statutory mandate, implies that the resources to be deployed to achieve the Net Zero target need to be “reasonable” without setting obligations about levels of investment or timing for transitioning to a net zero carbon emissions position. Please refer to BC08.00 Carbon and Sustainability Programme later in this document for further discussion on sustainability goals and targets.

2.98 In response to our questions, HAL has clarified that the heating systems that these two projects would replace will already be at the end of their useful asset life at the time of replacement.

- 2.99 The optioneering exercise that HAL has undertaken to select a solution considers the carbon emissions parameter as the main evaluation criteria with a weight of 80%. We assess that the optioneering process followed a balanced approach for setting the criteria, but not the weights assigned to each. The cost metric only had a 20% weight, against 80% weight given to carbon reduction. The selected solutions for Phase 1 (the pilot project R01) were Air Source Heat Pumps and Water Source Heat Pumps. The learnings from this project will provide inputs to the design of the rest of the heating systems across the airport (project R02).
- 2.100 We assess that both projects have a Net Impact ‘1:Low’ for ‘Safety, compliance, operational resilience’ and a ‘2:Medium’ for ‘Capacity, passenger experience, airline operations, sustainability’, as they will be replacing assets that will be ending their asset lives (albeit the criticality of the replacement is not clear) and also they will be contributing to reduce the environmental impact.
- 2.101 Phase 1 of the Business Case (project R01) is reasonably defined at this stage and the benefits that will deliver are clear, hence the ‘2:Medium’ and ‘3:High’ scores in Likelihood for the categories mentioned above. The definition of Phase 2 (project R02) is less mature at this stage and its delivery will very much rely on the delivery and outcomes of Phase 1, hence the lower Likelihood scores given to the Phase 2 project, as compared to Phase 1 project.
- 2.102 HAL has not indicated impacts on revenues nor opex.

Scores

Table 2.29: BC06.00 – Need case scores per project

ID	Label	Safety, compliance, operational resilience		Capacity, passenger experience, airline operations, sustainability		Increase revenues, reduce opex		TOTAL
		Net Impact	Likelihood	Net Impact	Likelihood	Net Impact	Likelihood	
	Overall Business Case weighted averages (pre-G3 projects only)*	1	1	2	1	-	-	9
	By project							
R01	PRJ-001686 - B74-006 - Decarbonisation of Heat	1	2	2	3	0	0	18
R02	Heat Decarbonisation (Energy Hub, Easy wins, Temp Reduction, Energy Hub)	1	1	2	1	0	0	7
	Project not scored	Reason						
	-	-						

Source: HAL, Steer analysis. Note: (*) The overall Business Case weighted average scores are calculated by weighting the projects’ scores with their H8 capex values.

BC07.00 Noise mitigation

HAL’s submission

2.103 This section provides a summary of what was submitted by HAL on this Business Case.

Projects and costs

2.104 The only project included in this Business Case is at very early maturity stage (Pre P1).

Table 2.30: BC07.00 – Capex submission (£m, 2024 CPI prices)

ID	Label	Gateway as of July-25	Capex (£m, 2024 CPI)		
			Pre-H8	H8	Post H8
	Overall Business Case		-	241	518
	By project				
S01	Noise Mitigation (linked to capacity restrictions)	Pre P1	-	241	518

Source: A8 - 1. H8 Capex Data Tables, Steer analysis

Overview

2.105 The table below summarises the Business Case information provided by HAL in its Business Plan submission.

Table 2.31: BC07.00 – Overview

Category	Description
Scope	The Noise mitigation project is intended to provide noise insulation to buildings in the community, vortex damage repairs, together with economic assistance to residents to relocate from high-noise areas.
Need case	HAL states that this project recognises that prolonged exposure to aircraft noise is associated with health impacts, including sleep disturbance, cognitive impairment, and annoyance. It also acknowledges the potential risk to local communities from falling roof tiles as a consequence of an aircraft vortex strike. It is aligned with Government policy on noise management, set out in the Aviation Noise Policy Statement, Aviation Policy Framework, and Reforming policy on the design and use of UK airspace.
Optioneering	Three options were considered by HAL: <ul style="list-style-type: none"> Option 1: Do Nothing (i.e. close the existing schemes). This option was disregarded as it not consistent with current regulations. Option 2: Continue with the existing level of offer and engagement. This option was disregarded by HAL because the existing scheme does not seem to deliver the required levels of uptake or benefits to comply with government policy.

Category	Description
	<ul style="list-style-type: none"> Option 3: Undertake a new approach. This is the preferred option by HAL, which implies a material increase in the expenditure related to noise mitigation versus current levels. <p>A parallel consideration is the proposed treatment of noise mitigation costs as capex rather than opex, which is a change compared to H7 and previous regulatory periods.</p>
Outcomes & benefits	<p>Outcomes:</p> <ul style="list-style-type: none"> 6,000–7,000 homes to receive acoustic insulation. 13 schools and 12 community buildings to be upgraded with insulation and ventilation. 100 homes supported for vortex damage, with 1,500–2,000 more proactively protected. 5–10 residential relocations supported annually. Benefits: Improved quality of life for residents.
Impact on Opex/ Revenues	<p>These costs were previously accounted for as opex. Under the proposed approach (i.e. capex), there will be a reduction in opex (presumably in the same order of magnitude) and no impact on revenues.</p>
Airlines	<p>HAL notes that “the noise programme was presented on 27 March 2025 in Constructive Engagement Round 2, where feedback from airlines was limited to noting that addressing noise issues around the airport is a key aim for one of the airline partners”.</p>

Source: HAL, Steer analysis

Need assessment

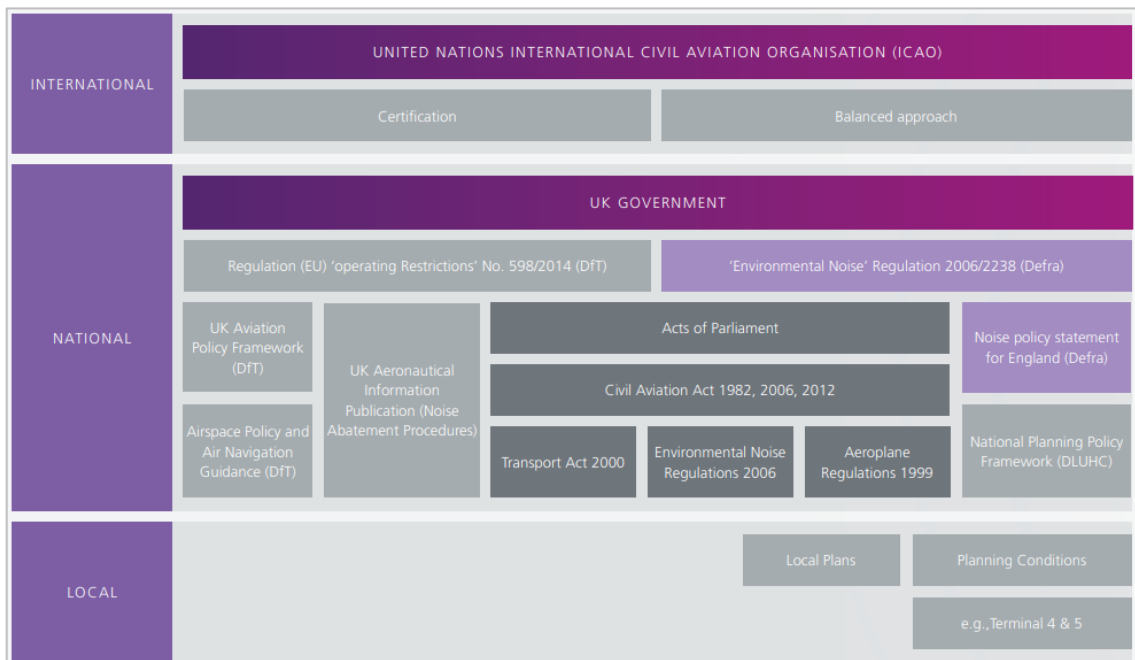
2.106 The below sections summarise our assessment of the need for each project included in this Business Case.

Summary of our assessment

2.107 HAL plays an active role in managing the noise impact from aircraft landing and taking off from the airport, including: air transport movement cap of 480,000, alternation of runways, night quotas, climb gradient, continuous descent approach and higher aeronautical charges for noisier aircrafts.

2.108 As part of the mitigation plans for noise impact, HAL has been deploying the initiatives included in this Business Case for decades now. These initiatives are consistent with international and national regulations. The chart below summarises the regulations and controls under which HAL operates for aircraft noise management.

Figure 2.2: HAL aircraft noise regulations and controls



Source: Heathrow Noise Action Plan October 2024

- 2.109 The regulations, under which HAL operates, mandate to protect the affected community located in the surroundings of the airport, although it is not prescriptive on the amount of resources (in the broader sense) that need to be deployed to fulfil the obligations.
- 2.110 Consistent with the above, the latest Government’s National Policy Statement (March 2023) indicated the following: The Government’s overall policy on aviation noise is to balance the economic and consumer benefits of aviation against their social and health implications in line with the International Civil Aviation Organisation’s Balanced Approach to Aircraft Noise Management. This should take into account the local and national context of both passenger and freight operations and recognise the additional health impacts of night flights. **The impact of aviation noise must be mitigated as much as is practicable and realistic to do so**, limiting, and where possible reducing, the total adverse impacts on health and quality of life from aviation noise.
- 2.111 HAL proposes to invest £241 million (2024 prices) during H8, with an even annual spend of £48.2 million. This annual spend compares to annual expenditure at the end of H7 of around £20-25 million on insulation and vortex schemes, as stated by HAL in the Business Case. The fact that HAL proposes to double the annual costs in H8 vs the expected annual spend by the end of H7 is not explained in the Business Case from a quantitative perspective, but HAL has clarified through the Questions and Answers (Q&A) process that the main reasons are: (1) HAL’s decision to strictly apply the latest Government’s National Policy Statement and international authorities (for night targets, specifically), which imply lowering the level of decibels that people should be exposed to; and (2) moving from a partially

funded insulation scheme to a fully funded one in order to encourage a higher uptake of the insulation programme. HAL estimates that it will be reaching the target for insulating the properties already identified by late 2030s.

- 2.112 There is no comparison between the current outputs of the noise programme versus the proposed future initiatives. There is no built-up description of the cost. The only cost information that is provided in HAL’s Business Plan is presented in the figure below. The total cost in the table does not exactly match the £241 million budget of the project but could be related to rounding.

Figure 2.3: Note mitigation project - cost split

Component	Expenditure – H8 (£m)	Share of QNS budget (%)
Residential Insulation Scheme (RIS)	151.0	63%
Quieter School Program (QSP)	23.0	10%
Vortex Impact & Protection Scheme (VPS)	33.5	14%
Home Relocation Assistance Scheme (HRAS)	0.5	0%
Research	1.5	1%
Service Delivery	12.0	5%
Delivery Partner	20.0	8%

Source: HAL BC07.00 Noise mitigation Business Case, page 18

- 2.113 We understand that the cost estimates are consistent with the outcomes that HAL is targeting, namely: 6,000–7,000 homes, 13 schools and 12 community buildings insulation, 100 homes supported for vortex damage plus 1,500–2,000 homes proactively protected, and 5–10 residential relocations supported annually. These targets are not explained nor linked to the regulatory obligations for noise mitigation in the Business Case although further explanations have been received via Q&A.
- 2.114 We are not able to properly assess the consumer (in this case, the community) benefits of HAL’s proposal, although it is apparent that HAL might likely be exceeding their obligations because: (1) the cost budget is double in magnitude compared to the estimated annual spending budget by the end of H7; (2) the National Policy Statement was issued in 2023 and there are no records of HAL failing to comply; (3) the number of noise complaints per air traffic movement are not higher compared with other major airports⁷; and (4) the noise impact is expected to decrease over time as aircraft movements are not increasing due to the cap and new aircraft coming into the market are less noisy.

⁷ Heathrow had 0.15 complaints per air traffic movement (ATM) in 2023, compared with 0.37 in Schiphol. Sources: [Heathrow Noise Complaints 2023](#); [Noise complaints against Schiphol increased by 7% last year - DutchNews.nl](#)

2.115 Noise mitigations initiatives in the community are mainly a compliance related matter, and it has been considered as such in our consumer benefit scoring. We have assigned a ‘3:High’ score for Net Impact of ‘Safety, compliance, operational resilience’, and a ‘2:Medium’ for Likelihood on that same category due to the low maturity of the Business Case. We score ‘1:Low’ for Net Impact and Likelihood of ‘Capacity, passenger experience, airline operations, sustainability’ to reflect the link with the sustainability element of the initiative, and pondering the low additional impact that it might have compared with the current status. No impacts on revenues nor opex are foreseen directly from this Business Case.

Treatment of noise mitigation costs from an economic regulation perspective

- 2.116 HAL’s proposal to treat noise mitigation costs as capex rather than opex is a material change compared to the current status. The reasons stated by HAL are the following: (1) Capex is recovered over the useful life of the investment versus opex which is recovered fully ‘in-period’ and airport charges are higher in the short term; (2) Benefits of the investment are longer term than ‘in-period’; (3) Capex actuals are used rather than opex forecasts; (4) More certainty for supply chain; (5) Ringfenced budget; and (6) Great transparency for the airlines. These reasons are valid arguments but do not fully capture the net cost-benefit of the proposed change in the treatment of these costs. For example, HAL does not factor the cost of capital that is added to capex, which increases the overall cost and impacts airport charges.
- 2.117 HAL confirmed to us through Questions and Answers (Q&A) that the proposed change of treatment has not been discussed with the company’s auditors for its potential implementation in the Statutory Accounts. The regulatory treatment of costs does not necessarily need to follow the statutory reporting principles but is a relevant reference.
- 2.118 After undertaking a high-level review of the treatment of noise mitigation costs at major economically regulated airports in Europe, we conclude that it is not a common practice to capitalise these costs and treat them as capex in the Statutory Accounts, nor it is common for regulators to treat them as capex under their respective regulatory frameworks. The airports analysed were Brussels, Dublin, Frankfurt, Madrid, Paris CDG, Rome FCO, Stockholm, Vienna, and Zurich⁸.

⁸ <https://www.dublinairport.com/corporate/residential-noise-insulation-scheme>; <https://www.aena.es/en/corporative/environment-sustainability/acoustic-isolation/noise-insulation-schemes.html>; <https://www.ecologie.gouv.fr/taxe-sur-les-nuisances-sonores-aeriennes-tnsa>; <https://www.autorita-trasporti.it/en/airport-charges/>; <https://tile.loc.gov/storage-services/service/ll/llgtrd/2019713400/2019713400.pdf>; <https://www.schiphol.nl/en/schiphol-group/financial-information/>; <https://www.acm.nl/en/publications/acm-increase-schiphols-charges-not-unreasonable>; https://www.viennaairport.com/en/company/airport_charges; <https://report.flughafen-zuerich.ch/2021/ar/en/reporting-of-noise-related-costs-in-the-financial-statements/>; <https://www.aena.es/sites/Satellite?blobcol=urldata&blobkey=id&blobtable=MungoBlobs&blobwhere=1576857313267&ssbinary=true>

The only exception we found was Madrid, which is operated by Aena and regulated by DGAC. The DGAC includes the costs that are required under the Royal Decrees for Noise Insulation as regulated capex, linking these with the legal requirement to provide the necessary noise mitigations to enable the operation of the runways.

- 2.119 In the assessment that we reflect in the calculation of the scores below, we are not considering that this project will reduce opex even if the CAA decides to allow the change in treatment from opex to capex, as the order of magnitude of the overall cost will remain the same, if not higher, with the change in treatment.
- 2.120 Although we are providing our assessment (and the associated need case scores below) on this Business Case, the CAA has advised us to remove it from the need case ranking. This is because we understand that the CAA does not accept HAL’s proposal to change the treatment of noise mitigation costs from opex to capex at H8. Keeping noise mitigation as opex ensures that the regulatory treatment of these costs remains aligned with the treatment in the statutory accounts, where noise mitigation costs are considered opex, rather capex.

Scores

Table 2.32: BC07.00 – Need case scores per project – Indicative*

ID	Label	Safety, compliance, operational resilience		Capacity, passenger experience, airline operations, sustainability		Increase revenues, reduce opex		TOTAL
		Net Impact	Likelihood	Net Impact	Likelihood	Net Impact	Likelihood	
	Overall Business Case	3	2	1	1	-	-	20
	By project							
S01	Noise Mitigation (linked to capacity restrictions)	3	2	1	1	0	0	20
	Project not scored	Reason						
	-	-						

Source: HAL, Steer analysis. Note: (*) Indicative scores as this BC was removed from the need case ranking as discussed above.

BC08.00 Carbon and Sustainability Programme

HAL’s submission

2.121 This section provides a summary of what was submitted by HAL on this Business Case.

Projects and costs

2.122 The majority of the projects in this Business Case are at a relatively early P2/P2T maturity stage, with some projects at G2 stage and only one at post G3 stage.

Table 2.33: BC08.00 – Capex submission (£m, 2024 CPI prices)

ID	Label	Gateway as of July-25	Capex (£m, 2024 CPI)		
			Pre-H8	H8	Post H8
	Overall Business Case		159	369	-
	By project				
T01	PRG-000074 - B74-000.00 - H7 Carbon Programme: Programme Initiation and Scoping	N/A	17	-5	-
T03	PRJ-001605 - B7239 - Airspace Modernisation – Airspace Change	P2T	9	10	-
T04	PRJ-001606 - B7239 - Airspace Modernisation – Easterly Alternation Infrastructure	G2	24	109	-
T06	PRJ-001619 - B74-003.00 PCA Improvements on Served Stands - Phase 1	P2T	22	13	-
T07	PRJ-001620 - B74-004.00 - EV Charging Stations	G2	6	8	-
T08	PRJ-001654 - B74-005.01 ATM Efficiencies – Pairwise Departures (PWS)	Post-G3	2	0	-
T010	PRJ-001687 - B74-007 - CTA Active Travel Project	G2	9	2	-
T011	PRJ-001703 - B74-008.00 Carbon - Data and insights	P2T	3	2	-
T014	PRJ-001743 - B74-004.02 - EV Back Office	P2T	1	0	-
T015	PRJ-001745 - B74-011.02 - CBS eBus Charging	P2T	6	10	-
T016	PRJ-001746 - B74-011.03 - Bus + Coach eBus Charging	P2	5	3	-
T018	PRJ-001775 - B74-002.07 - Active Travel - Secure Cycle Parking	P2T	3	1	-
T019	PRJ-001777 - B74-002.09 - Active Travel – East	P2T	2	13	-
T021	PRJ-001779 - B74-002.02 - Heathrow Travel Wallet	P2T	2	1	-
T022	PRJ-001780 - B74-002.03 - Bus/Coach Waiting Facilities	P2T	3	3	-
T023	PRJ-001809 - B74-005.02 – ATM Efficiencies – Reduction of Departure Spacing (RODS)	P2T	1	2	-

ID	Label	Gateway as of July-25	Capex (£m, 2024 CPI)		
			Pre-H8	H8	Post H8
T024	PRJ-001810 - B74-005.03 ATM Efficiencies – Departure Management (DMAN)	G2	2	2	-
T025	PRJ-001941 - B74-022.00 Easterly Alternation Airspace Change Proposals (EA-ACP)	P2T	1	1	-
T026	PRJ-001992 - B74-003.01 PCA Improvements on Served Stands - Phase 2	G2	27	28	-
T027	PRJ-001993 - B74-003.02 PCA Improvements on Served Stands - Phase 3	G2	11	86	-
T028	Taxi + Private Hire	P2	-	4	-
T029	Active Travel North	P2	-	10	-
T030	Airspace Change noise mitigation + minor G2 increase	G2	-	24	-
T031	AVA enhancements	P2	-	7	-
T034	B74-023.00 Intelligent Integrated Queue Project (IIQP)	P2	2	1	-
T036	Bus Priority	P2	-	8	-
T037	Colleague Car Parking	P2	-	3	-
T038	eBus Charging Depot (HAL)	P2	-	15	-
T040	Hatton Cross Bus Capacity	P2	-	8	-

Source: A8 - 1. H8 Capex Data Tables, Steer analysis

Overview

2.123 The table below summarises the Business Case information provided by HAL in its Business Plan submission.

Table 2.34: BC08.00 – Overview

Category	Description
Scope	The initiatives included in this Business Case relate to airspace modernisation ⁹ , Electric Vehicle (EV) infrastructure, Pre-Air Conditioning (PCA) infrastructure, and sustainable surface access initiatives.
Need case	This group of initiatives aim to reduce carbon emissions and achieve Net Zero emissions by 2040 for scopes 1 and 2 (i.e. emissions under the control of the airport), and by 2050 for scope 3, as targeted by the UK Government.
Optioneering	A “do nothing” option was considered by HAL but ruled out as it is claimed to be incompatible with the UK’s legally binding carbon budgets and Heathrow’s Net Zero Plan.

⁹ Airspace modernisation involves: redesigning flight paths to have more direct and efficient approaches, improving air traffic management systems, reducing environmental impact (e.g. emissions and noise), and increasing capacity and resilience to the operations.

Category	Description
Outcomes & benefits	<p>Outcomes:</p> <p>In the air:</p> <ul style="list-style-type: none"> • Cut airborne carbon emissions by up to 15% by 2030 (vs. 2019). • Achieve net zero by 2050. <p>On the ground:</p> <ul style="list-style-type: none"> • Cut ground carbon emissions by at least 45% by 2030 (vs. 2019). • Cut supply chain emissions by at least 35% by 2030 (vs. 2019). • Improve local air quality by reducing NO_x emissions. • Reach Net Zero for Scopes 1 and 2 emissions by 2036 (end of H9). <p>Benefits:</p> <ul style="list-style-type: none"> • Operational Resilience: Upgrades to key assets and promotion of sustainable travel modes enhance Heathrow’s ability to manage risks. • Passenger Experience: Better surface access and EV infrastructure improve journey reliability. • Workplace Environment: Enhanced commuting options to support staff wellbeing. • Community Impact: Active travel and bus service improvements to reduce local congestion.
Impact on Opex/ Revenues	None, low or moderate (no quantitative information provided).
Airlines	<p>HAL indicates that “PCA and surface access were identified by airlines as priority areas for investment during H8”.</p> <p>It also highlights “the potential for opex savings for airlines on fuel associated with the PCA tranche and potentially airspace modernisation”.</p>

Source: HAL, Steer analysis

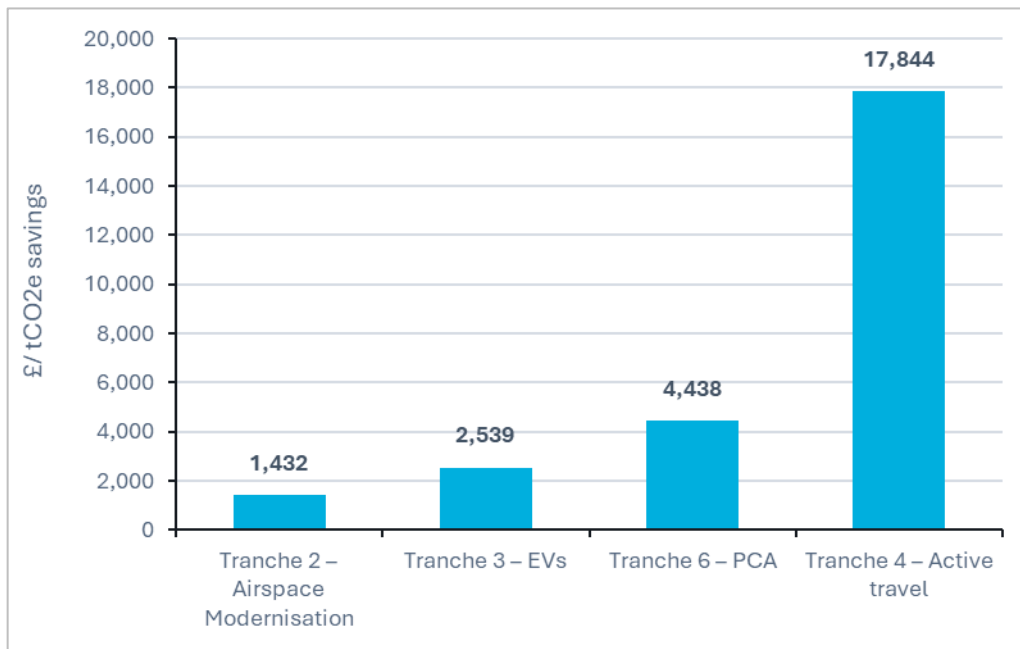
Need assessment

2.124 The below sections summarise our assessment of the need for each project included in this Business Case.

Summary of our assessment

2.125 As presented in the following chart, some tranches of projects in the Business Case provide a greater effectiveness at reducing carbon emissions over time than others, according to HAL. Specifically, Airspace Modernisation (Tranche 2, projects T03, T04, T08, T023, T024, T025, T030, T034) is the most cost-effective measure, followed by EVs (Tranche 3, projects T07, T014, T015, T016, T038) and PCA (Tranche 6, projects T06, T026, T027). Active travel (Tranche 4, projects T010, T018, T019, T021, T022) is the least cost-effective way of reducing carbon emissions, according to HAL’s data provided in the Business Case. This analysis captures the whole life capex and not just H8 expenditure, although it does not capture the total lifetime abatement which is deemed to be a more subjective metric.

Figure 2.4: Estimated Capex per carbon emission savings by 2031 for certain Tranches



Source: HAL, Steer analysis

- 2.126 HAL justifies the investments in projects to reduce carbon emissions with the UK Government’s goal to achieve “Zero Carbon Airports” by 2040. The use of “zero carbon” is not accurate, as it is not possible for airports to have zero carbon emissions (even for scopes 1 and 2) in the foreseeable future with the technology that we have nowadays. HAL has interpreted that the Government aspires to achieve Net Zero carbon emissions for airports (i.e. scopes 1 and 2) by 2040. This target date is earlier than the global aviation industry (including OACI, IATA and ACI), which targets 2050 for all the aviation sector. The term “net zero” implies that there will be some residual carbon emissions (usually below 10% compared to the reference year), and these remaining emissions will be offset with carbon capture solutions. The “net zero” target also implies that the level of resources that need to be deployed to reduce carbon emissions needs to be “reasonable” and aligned with the effective result. Even taking the most restrictive target dates, we assess that HAL might be proposing to deploy a more than “reasonable” amount of resources in H8 to reduce carbon emissions.
- 2.127 We assess that there are some initiatives included in this Business Case that have a very large capex compared to the level of carbon emissions that can reduce. This is reflected, for example, in the lower scores for Active travel projects (Tranche 4) and higher scores for Airspace Modernisation projects (Tranche 2).
- 2.128 All the projects/tranches included in this Business Case have in common the sustainability component of the ‘Capacity, passenger experience, airline operations, sustainability’ category of consumer benefits. The link to other consumer benefits such as compliance is very different among projects/tranches and, if not mentioned in the subsequent explanations, it should be considered that there are none.

- 2.129 We assess that none of the projects will deliver opex saving benefits, because the projects either have little if any opex implications (for example, projects related to active travel) or no quantitative information of opex savings nor new revenue is provided in the Business Case.
- 2.130 The project ‘PRJ-001703 - B74-008.00 Carbon - Data and insights’ (Tranche 1) is expected to provide a powerful set of tools to manage more accurately carbon emissions. We assess that the information related to the project is sufficient to score ‘3:High’ in Net Impact and Likelihood for ‘Capacity, passenger experience, airline operations, sustainability’ category of consumer benefits.
- 2.131 The Airspace Modernisation related projects (Tranche 2) provide an optimal solution to reduce carbon emissions, are aligned with the UK’s airspace modernisation strategy directed by the DfT, and potentially help airlines to reduce their fuel consumption, hence the ‘3:High’ scores for both Net Impact and Likelihood for ‘Capacity, passenger experience, airline operations, sustainability’ category of consumer benefits. We also assess that these projects will deliver some benefits in terms of safety and operational resilience by improving the airspace configuration and procedures, hence a ‘1:Low’ score in Net Impact and a ‘3:High’ in Likelihood for ‘Safety, compliance, operational resilience’ category.
- 2.132 The Electric Vehicles (EVs) infrastructure related projects (Tranche 3) provide a hard-to-assess justification for the required investment. The potential reduction in carbon emissions from these investments is small compared to other sources of carbon emissions, such as heaters and boilers (scopes 1 and 2) and aircraft (scope 3). The uptake of the EV infrastructure by both landside and airside potential users is low as of today, it is uncertain how fast it will evolve to become significant, and it is largely outside HAL’s control. The investment could be designed to have a commercial operating model by which users would pay for the electricity that they use. HAL has explained to us through Questions and Answers (Q&A) that such commercialisation would result in users paying very high prices compared to other EV infrastructure outside Heathrow, which would slow down the uptake of electric vehicles and equipment at HAL. These factors contribute to score ‘2:Medium’ in Net Impact and Likelihood for ‘Capacity, passenger experience, airline operations, sustainability’ category of consumer benefits.
- 2.133 The Pre-Air Conditioning (PCA) infrastructure related projects (Tranche 6) will clearly reduce scope 3 carbon emissions and provide fuel savings to the airlines but, at the same time, will increase the electricity consumption, which HAL recovers from airlines through other regulated charges (ORCs), albeit this impact is not quantified in the Business Case. We, therefore, score these projects ‘3:High’ in Net Impact and Likelihood for ‘Capacity, passenger experience, airline operations, sustainability’ category of consumer benefits.
- 2.134 Contrary to the projects described above, the projects related to Active travel (Tranche 4) and surface access initiatives (Tranche X, projects T028, T029, T031, T036, T037, T040), do not present neither evidence of what the investments are

going to be used for nor the specific benefits that each project will provide. For these reasons, we score ‘1:Low’ in Likelihood for ‘Capacity, passenger experience, airline operations, sustainability’ category of consumer benefits. We assess that the Net Impact in this same category varies across the projects. Project T036 has a ‘3:High’ score due to the potential high positive impact of public access improvement. Projects T010, T019, T022, T029 and T040 have a ‘2:Medium’ score due to their contribution to road decongestion and public transport. The remaining projects in this tranche have a ‘1:Low’ score to acknowledge for their expected limited Net Impact in passenger experience and sustainability. Compared to the projects assessed in Tranches 2, 3 and 6, the carbon emission savings expected from the projects in Tranche 4 are minor in the short term (1% of the total estimated savings of the whole set of projects covered in this Business Case by 2031). Also, we assess that in Tranche 4, there are three projects (T010, T018, T019) that have a small safety element in their need case, hence we score ‘1:Low’ in Net Impact and Likelihood for ‘Safety, compliance, operational resilience’ category of consumer benefits.

Scores

Table 2.35: BC08.00 – Need case scores per project

ID	Label	Safety, compliance, operational resilience		Capacity, passenger experience, airline operations, sustainability		Increase revenues, reduce opex		TOTAL
		Net Impact	Likelihood	Net Impact	Likelihood	Net Impact	Likelihood	
	Overall Business Case weighted averages (pre-G3 projects only)*	0	1	3	3	-	-	18
	By project							
T03	PRJ-001605 - B7239 - Airspace Modernisation – Airspace Change	1	3	3	3	0	0	27
T04	PRJ-001606 - B7239 - Airspace Modernisation – Easterly Alternation Infrastructure	1	3	3	3	0	0	27
T06	PRJ-001619 - B74-003.00 PCA Improvements on Served Stands - Phase 1	0	0	3	3	0	0	18
T07	PRJ-001620 - B74-004.00 - EV Charging Stations	0	0	2	2	0	0	8
T010	PRJ-001687 - B74-007 - CTA Active Travel Project	1	1	2	1	0	0	7
T011	PRJ-001703 - B74-008.00 Carbon - Data and insights	0	0	3	3	0	0	18
T014	PRJ-001743 - B74-004.02 - EV Back Office	0	0	2	2	0	0	8
T015	PRJ-001745 - B74-011.02 - CBS eBus Charging	0	0	2	2	0	0	8
T016	PRJ-001746 - B74-011.03 - Bus + Coach eBus Charging	0	0	2	2	0	0	8

ID	Label	Safety, compliance, operational resilience		Capacity, passenger experience, airline operations, sustainability		Increase revenues, reduce opex		TOTAL
		Net Impact	Likelihood	Net Impact	Likelihood	Net Impact	Likelihood	
T018	PRJ-001775 - B74-002.07 - Active Travel - Secure Cycle Parking	1	1	1	1	0	0	5
T019	PRJ-001777 - B74-002.09 - Active Travel – East	1	1	2	1	0	0	7
T021	PRJ-001779 - B74-002.02 - Heathrow Travel Wallet	0	0	1	1	0	0	2
T022	PRJ-001780 - B74-002.03 - Bus/Coach Waiting Facilities	0	0	2	1	0	0	4
T023	PRJ-001809 - B74-005.02 – ATM Efficiencies – Reduction of Departure Spacing (RODS)	1	3	3	3	0	0	27
T024	PRJ-001810 - B74-005.03 ATM Efficiencies – Departure Management (DMAN)	1	3	3	3	0	0	27
T025	PRJ-001941 - B74-022.00 Easterly Alternation Airspace Change Proposals (EA-ACP)	1	3	3	3	0	0	27
T026	PRJ-001992 - B74-003.01 PCA Improvements on Served Stands - Phase 2	0	0	3	3	0	0	18
T027	PRJ-001993 - B74-003.02 PCA Improvements on Served Stands - Phase 3	0	0	3	3	0	0	18
T028	Taxi + Private Hire	0	0	1	1	0	0	2
T029	Active Travel North	0	0	2	1	0	0	4
T030	Airspace Change noise mitigation + minor G2 increase	1	3	3	3	0	0	27
T031	AVA enhancements	0	0	1	1	0	0	2
T034	B74-023.00 Intelligent Integrated Queue Project (IIQP)	1	3	3	3	0	0	27
T036	Bus Priority	0	0	3	1	0	0	6
T037	Colleague Car Parking	0	0	1	1	0	0	2
T038	eBus Charging Depot (HAL)	0	0	2	2	0	0	8
T040	Hatton Cross Bus Capacity	0	0	2	1	0	0	4
	Projects not scored	Reason						
T01	PRG-000074 - B74-000.00 - H7 Carbon Programme: Programme Initiation and Scoping	Negative adjustment						
T08	PRJ-001654 - B74-005.01 ATM Efficiencies – Pairwise Departures (PWS)	Post-G3						

Source: HAL, Steer analysis. Note: (*) The overall Business Case weighted average scores are calculated by weighting the projects’ scores with their H8 capex values.

BC09.00 People and Planet

HAL’s submission

2.135 This section provides a summary of what was submitted by HAL on this Business Case.

Projects and costs

2.136 All the projects in this Business Case are at the very early Pre P1 maturity stage.

Table 2.36: BC09.00 – Capex submission (£m, 2024 CPI prices)

ID	Label	Gateway as of July-25	Capex (£m, 2024 CPI)		
			Pre-H8	H8	Post H8
	Overall Business Case		-	207	-
	By project				
U02	Climate Adaptation to Flood risk	Pre P1	-	63	-
U03	eGSE	Pre P1	-	71	-
U04	Nature Positive	Pre P1	-	27	-
U05	Zero Waste	Pre P1	-	46	-

Source: A8 - 1. H8 Capex Data Tables, Steer analysis

Overview

2.137 The table below summarises the Business Case information provided by HAL in its Business Plan submission.

Table 2.37: BC09.00 – Overview

Category	Description
Scope	<p>HAL indicates that the People and Planet project will deliver £207m of sustainability-related initiatives in H8 across four themes:</p> <ul style="list-style-type: none"> Climate Adaptation: drainage improvements and protection of critical assets to strengthen resilience against flooding; Electric Ground Service Equipment (eGSE): charging infrastructure to enable airlines and handlers to transition their GSE fleets, avoiding 500 new diesel vehicles entering service; Nature Positive: habitat restoration, new woodlands, water quality enhancements, and a 10% increase in land under biodiversity management; and Zero Waste: new facilities and schemes to reduce waste by 2,400 tonnes and increase recycling rates from 50% to 65–70%.
Need case	<p>According to HAL, the project responds to multiple drivers: Heathrow’s “Connecting People and Planet” strategy; compliance with Government policy (Net Zero Strategy, Jet Zero Strategy, UK Climate Adaptation Strategy, and Nature Positive Plan); and consumer priorities, with waste identified as the top environmental issue by 85% of passengers. HAL highlights that the initiatives address climate risks such as flooding and extreme weather, health and community concerns including air</p>

Category	Description
	quality and biodiversity, and regulatory requirements such as the deposit return scheme, emissions trading and biodiversity net gain. Without intervention, HAL considers that Heathrow risks falling short of Net Zero, waste, and resilience objectives.
Optioneering	<p>HAL reports that two options were assessed:</p> <ul style="list-style-type: none"> • Do Nothing: which would result in Heathrow failing to meet Net Zero, waste and biodiversity objectives, with increased risk and higher long-term costs. • Do Something: investment in the four themes as a single coordinated programme. This was selected as the preferred option, which HAL considers ensures compliance, efficiency, and alignment with airline and passenger expectations. HAL notes that further initiative-level options will be developed through the Gateway Lifecycle.
Outcomes & benefits	<p>HAL indicates that expected outcomes include increasing recycling rates to 65–70% by 2031, avoiding 2,400 tonnes of waste, delivering a 10% increase in biodiversity land management, enhancing water quality monitoring and treatment, saving up to 12,000 tCO₂e annually through eGSE electrification, and strengthening flood resilience to protect over 1,000 flights and 200,000 passengers daily.</p> <p>Passenger experience is expected to be improved through better recycling facilities and water refill stations. HAL states that benefits include regulatory compliance, improved environmental performance, lower emissions, healthier communities, greater operational resilience, and support for airlines in meeting their waste reduction and Net Zero targets.</p>
Impact on Opex/ Revenues	<p>HAL notes that operating costs are expected to reduce through lower waste volumes and rebates on recyclables. HAL also expects eGSE electrification to reduce fuel and maintenance costs, supported by Heathrow’s Clean Vehicle Policy and lower apron pass charges for compliant vehicles.</p> <p>New RFID-enabled charging infrastructure is intended to allow accurate cost recovery from “Team Heathrow”.</p> <p>According to HAL, improved mitigation to flooding will minimise loss of revenue from any related disruption and cancellations caused by flood events.</p>
Airlines	<p>HAL reports that airlines have consistently identified sustainability as a strategic priority. HAL states that British Airways and Virgin have supported alignment of Heathrow’s initiatives with their own Net Zero and waste goals. HAL claims that during Constructive Engagement, airlines called for targeted initiatives within HAL’s control to reduce waste and emissions. Specific support has been expressed for eGSE charging (BA, Menzies, dnata) and biodiversity disclosure (ANA, JAL, Qantas via TNFD). HAL indicates that airline engagement has shaped the scope and priorities of the programme.</p>

Source: HAL, Steer analysis

Need assessment

2.138 The below sections summarise our assessment of the need for each project included in this Business Case.

Summary of our assessment

- 2.139 HAL indicates that investment in climate adaptation (project U02) is required to address a material and growing operational risk from flooding. The case highlights that flooding already presents challenges for Heathrow, with exposure expected to increase under climate change. The investment is therefore presented as necessary to protect critical assets, reduce recovery times, and align with the Department for Transport’s Climate Adaptation Strategy. While this provides a clear strategic rationale for delivering compliance and operational resilience benefits to consumers, the evidence remains high-level, with no detailed modelling outputs or quantified measures of benefit, hence the ‘2:Medium’ score for Net Impact and Likelihood for ‘Safety, compliance, operational resilience’ category. Based on the information provided, we assess that there is no impact on the other consumer benefits categories.
- 2.140 For electric ground service equipment (eGSE), project U03, HAL sets out the need to support the transition of the GSE fleet to electric models in order to deliver Net Zero targets and avoid the purchase of up to 500 new diesel vehicles during H8. The initiative also aligns with airline commitments and Heathrow’s Clean Vehicle Policy. However, the case relies largely on qualitative statements, with limited quantified evidence of expected uptake from third parties, emission reductions or operating cost savings, hence the ‘1:Low’ scores across ‘Capacity, passenger experience, airline operations, sustainability’ and ‘Increase revenues, reduce opex’ categories of consumer benefits. The exception is the score of ‘2:Medium’ for Net Impact in ‘Capacity, passenger experience, airline operations, sustainability’, consistently with the electric vehicle related projects in BC08.00 Carbon and Sustainability Programme Business Case. We assess that there are no clear direct impacts on ‘Safety, compliance, operational resilience’.
- 2.141 HAL’s Nature Positive initiative (project U04) is positioned as a requirement to deliver the airport’s Nature Positive Plan and respond to new biodiversity and water quality regulations. The need is further supported by consumer research and investor surveys which identify biodiversity as an emerging risk. The strategic case is therefore clear, but the evidence remains indicative, with commitments framed around a headline 10% increase in land under biodiversity management and improvements to water quality, rather than a detailed baseline or measurable targets, and a clear link to regulatory compliance. This justifies the ‘1:Low’ score across ‘Safety, compliance, operational resilience’ and ‘Capacity, passenger experience, airline operations, sustainability’ of consumer benefits, with no evident opex saving benefits being delivered.
- 2.142 Finally, the Zero Waste project (project U05) is framed as a response to passenger priorities, with 85% of survey respondents identifying waste as a material environmental issue. The programme is also intended to prepare for upcoming policy changes such as compliance with the deposit return scheme. Compared with the other themes, HAL provides a stronger evidence base here, including quantified projections of a 2,400-tonne reduction in waste and a 15–20% increase in recycling rates (sustainability benefits), which would deliver some opex savings.

This makes the Zero Waste initiative a better substantiated need case within the People and Planet programme, but still lacking evidence that relevant opex solutions were considered in the optioneering, or what the reduction in recycling rates would be if HAL maintained the status quo. For these reasons, we score this project ‘1:Low’ across all three categories of consumer benefits, except for ‘2:Medium’ score in Likelihood for ‘Capacity, passenger experience, airline operations, sustainability’ to reflect the more mature analysis on the expected outcomes.

Scores

Table 2.38: BC09.00 – Need case scores per project

ID	Label	Safety, compliance, operational resilience		Capacity, passenger experience, airline operations, sustainability		Increase revenues, reduce opex		TOTAL
		Net Impact	Likelihood	Net Impact	Likelihood	Net Impact	Likelihood	
	Overall Business Case weighted averages (pre-G3 projects only)*	1	1	1	1	1	1	8
	By project							
U02	Climate Adaptation to Flood risk	2	2	0	0	0	0	12
U03	eGSE	0	0	2	1	1	1	5
U04	Nature Positive	1	1	1	1	0	0	5
U05	Zero Waste	1	1	1	2	1	1	8
	Project not scored	Reason						
	-	-						

Source: HAL, Steer analysis. Note: (*) The overall Business Case weighted average scores are calculated by weighting the projects’ scores with their H8 capex values.

BC10.00 Modernising Heathrow Programme

HAL’s submission

2.143 This section provides a summary of what was submitted by HAL on this Business Case.

Projects and costs

2.144 HAL explains that the full Modernising Heathrow programme totals £14,922m (2024 CPI) across multiple price controls. This Business Case includes only projects that HAL proposes to be part of the ‘business-as-usual’ capital programme totalling £1,783m in H8, out of £6,484m (2024 CPI) across multiple price controls. HAL indicates that the treatment of the additional £8,438m (2024 CPI) costs not included in the ‘business-as-usual’ H8 Business Case is to be confirmed, subject to the CAA regulatory review process.

2.145 All of the projects are at an early stage of maturity (P1).

Table 2.39: BC10.00 – Capex submission (£m, 2024 CPI prices)

ID	Label	Gateway as of July-25	Capex (£m, 2024 CPI)		
			Pre-H8	H8	Post H8
	Overall Business Case		187	1,783	4,514
	By project				
P02	Development Consent order	P1	101	185	8
P03	T5 Capacity Optimisation Phase 1	P1	65	230	-
P04	T5 Capacity Optimisation Phase 2	P1	-	766	100
P05	Enabling Modernising Heathrow	P1	17	346	194
P06	Ancillary Projects	P1	4	256	508
n/a	T2A Main building stage 3 & T2	P1	-	-	2,622
n/a	Contingency	P1	-	-	1,082

Source: Table 14 of “1. BC10.00 Modernising Heathrow Programme Business Case”, Steer analysis. Notes: (1) In an appendix to the Business Case, HAL states that the full cost of the Modernising Heathrow programme is £14,922m (2024 CPI) and indicates that the treatment of the additional cost not included in the H8 Business Case is to be confirmed, subject to the CAA regulatory review process; (2) Through the Q&A, HAL indicated to us that the data populated in the A8 - 1. H8 Capex Data Tables for pre-H8 and post-H8 for BC10.00 was not accurate, therefore, we have populated the table above using Table 14, from Appendix 3 of the Business Case as an alternative source, which HAL has confirmed to us via Q&A to be accurate. (3) The last two projects listed in the table have not been assessed as they do not have any capex planned for H8.

Overview

2.146 The table below summarises the Business Case information provided by HAL in its Business Plan submission.

Table 2.40: BC10.00 – Overview

Category	Description
Scope	<p>This Business Case comprises five tranches, each forming part of the Modernising Heathrow programme. The programme focuses on terminal expansion and the replacement of Terminal 3.</p> <p>The five tranches included are:</p> <ul style="list-style-type: none"> • Tranche 1 - Development Consent Order (DCO): It focuses on following the appropriate assurance processes to secure consent for the Modernising Heathrow programme. • Tranche 2 - Enabling Modernising Heathrow: works to enable the construction of T2C satellite and the extension of T2A (Tranche 7). • Tranche 5 - T5 Capacity Optimisation Phase 1: optimisation of T5 and provision of additional stands to increase the capacity by 2 mppa. • Tranche 6 - T5 Capacity Optimisation Phase 2: extensions to T5 Satellite B and T5 Satellite C, as well as continued improvements to T5 Satellite A to increase the capacity by 4mppa. • Part of Tranche 4 – Ancillary Projects: This tranche includes projects that support the primary activities at T2 and T5. Key elements include the construction of two control posts, new cargo stands, and new and improved airside roads.
Need case	<p>HAL states that the Modernising Heathrow (MH) programme addresses two critical needs: increasing passenger capacity and resolving infrastructure challenges at Terminal 3 (T3).</p> <p>According to HAL, with Heathrow nearing its aircraft movement cap and forecasted demand rising to 90 million passengers annually by 2031, larger aircraft and upgraded facilities are essential.</p> <p>T3, opened in 1961, suffers from fragmented design, high maintenance costs, and poor energy performance. It underperforms in passenger satisfaction and poses environmental and operational risks.</p>
Optioneering	<p>HAL states that a structured options assessment was undertaken to determine the most appropriate solution for expanding capacity at Heathrow. Over fifteen years of master planning, including extensive airline engagement, have informed the preferred way forward according to HAL. Several sub-options were evaluated and are described in the Business Case.</p> <p>Ultimately, the preferred option was to expand capacity at T5 and T2 and result in the demolition of T3. HAL indicates that it will accommodate the same number of aircraft movements while enabling the use of larger aircraft, thereby increasing the number of passengers served.</p>
Outcomes & benefits	<p>HAL states that MH will:</p> <ul style="list-style-type: none"> • Increase capacity, driving increased revenue and profit, from an increase in passenger traffic enabled by the capacity delivered. • Deliver more efficient capex by driving lower whole life cost compared to not addressing the current issues at T3. • Maintain the current capacity during construction. • Improve resilience of operations from airfield reliability and added capacity. • Improve operational efficiency from improved baggage reliability and modern design. • Improve passenger experience from airfield reliability, improved accessibility and improved baggage reliability.

Category	Description
Impact on Opex/ Revenues	There will be additional opex and commercial revenues due to increase in passenger numbers caused by the additional capacity provided by the programme. The estimates provided by HAL during the H8 period are based on an increase of passenger of 7.2 mppa across the period. However, only 2mppa additional capacity is provided by MH during H8. Also the commercial revenue estimate includes aeronautical revenues. The delivery of MH is at an early stage and any one off opex impacts are unknown and will be evaluated as specific projects develop.
Airlines	HAL indicates that the MH programme has been in development for over a decade and has been subject to extensive airline engagement and review. Throughout this period, HAL claims that it has worked closely with the airline community through dedicated engagement forums. This includes the Expanding Heathrow Launch event in December 2024.

Source: HAL, Steer analysis

Need assessment

2.147 The below sections summarise our assessment of the need for each project included in this Business Case.

Summary of our assessment

2.148 As set out in the CAA document *CAP3083A: H8 method statement and business plan guidance, Appendix A*, “[HAL’s] business plan should focus on the operation of a two-runway airport and capex related to significant capacity expansion of terminals and the third runway will be dealt with separately.” (page 28).

2.149 We assess that 4 out of the 5 projects submitted in this Business Case with capex spend planned for H8 do not meet this requirement. The projects and the reasons why they do not meet the requirement are:

- **P02 - Development Consent order:** we understand from the Questions and Answers (Q&A) process that this project is entirely about securing the consent for the expansion of T2. We assess it as being an enabling project of a “significant capacity expansion of terminals”.
- **P04 - T5 Capacity Optimisation Phase 2:** This project is about delivering +4mppa capacity by 2034 through the extensions of T5 Satellite B and T5 Satellite C. We assess this as being a “significant capacity expansion of terminals” as it increases the footprint of a terminal. However, we acknowledge that the addition of +4mppa capacity by 2034 is likely to have significant benefits in the context of a two-runway airport. There is still the possibility for HAL to use other regulatory mechanisms currently being considered outside the H8 arrangements to develop this project. HAL Business Case indicates that this project would need G3 approval in early 2030, meaning sufficient time exists to make a decision on the best regulatory way forward ahead of G3 approval in early 2030.

- **P05 - Enabling Modernising Heathrow:** This project includes enabling works for the construction of T2C satellite. It is an enabler for a “significant capacity expansion of terminals”.
 - **P06 - Ancillary Projects:** During the Q&A, HAL indicated that the main scope of this project is the provision of spaces currently provided by the E2 car park, which will be demolished as part of the T2 expansion project. We consider this to be an enabling scope for the expansion of T2 in the future, i.e. an enabler for a “significant capacity expansion of terminals”.
- 2.150 The projects above have, therefore, been scored as zero as they are assessed as not needed (in the sense they are not in scope) for business-as-usual H8.
- 2.151 We note that HAL excluded ‘Tranche 3: Campus Wide Utilities’ from its H8 submission. However, the appendix to the Business Case sets out that this tranche will have £12m of capex during the H8 timeframe. Through Q&A, HAL has indicated that the scope of the H8 expenditure of this tranche is mainly related to the design of a new fuel storage facility, which is required to maintain adequate fuel volumes to accommodate increased usage and resilience in the event of a supply line failure. We also understand from the Q&A and the Business Case that this facility has been brought forward in the programme to satisfy airlines’ concerns during the Constructive Engagement process. While not included in the H8 submission, we assess this scope satisfies the CAA scope requirements for including this project as part of ‘business-as-usual’ capex for H8. We would consider it in our need assessment should HAL choose to include this project, and corresponding information, in its H8 Business Plan submission.
- 2.152 For the reasons explained above, the only H8 project included in this Business Case that has a positive need assessment score is P03 - T5 Capacity Optimisation Phase 1. The primary objective of this project is to increase capacity by 2mppa, hence the ‘1:High’ scores in the capacity benefit category. It is also likely that there will be some operational resilience benefit as a result of the capacity increase, albeit of lower magnitude (and hence lower scores) than the capacity benefits.
- 2.153 The increase of the number of passengers per year caused by this project will ultimately increase opex and increase commercial revenues. However, this project will ease congestion in T5, and will potentially increase retail performance versus a ‘do nothing’ scenario, which explains our consideration of some opex and revenues benefits.

Scores

Table 2.41: BC10.00 – Need case scores per project

ID	Label	Safety, compliance, operational resilience		Capacity, passenger experience, airline operations, sustainability		Increase revenues, reduce opex		TOTAL
		Net Impact	Likelihood	Net Impact	Likelihood	Net Impact	Likelihood	
	Overall Business Case weighted averages (pre-G3 projects only)*	0	0	0	0	0	0	3
	By project							
P02	Development Consent order	0	0	0	0	0	0	0
P03	T5 Capacity Optimisation Phase 1	1	2	3	3	1	1	25
P04	T5 Capacity Optimisation Phase 2	0	0	0	0	0	0	0
P05	Enabling Modernising Heathrow	0	0	0	0	0	0	0
P06	Ancillary Projects	0	0	0	0	0	0	0
	Project not scored	Reason						
	-	-						

Source: HAL, Steer analysis. Note: (*) The overall Business Case weighted average scores are calculated by weighting the projects' scores with their H8 capex values.

BC11.00 Occupancy infrastructure

HAL’s submission

2.154 This section provides a summary of what was submitted by HAL on this Business Case.

Projects and costs

2.155 This Business Case is at a very early stage of maturity (Pre P1).

Table 2.42: BC11.00 – Capex submission (£m, 2024 CPI prices)

ID	Label	Gateway as of July-25	Capex (£m, 2024 CPI)		
			Pre-H8	H8	Post H8
	Overall Business Case		-	394	88
	By project				
N01	Occupancy Infrastructure	Pre P1	-	394	88

Source: A8 - 1. H8 Capex Data Tables, Steer analysis

Overview

2.156 The table below summarises the Business Case information provided by HAL in its Business Plan submission.

Table 2.43: BC11.00 – Overview

Category	Description
Scope	<p>The scope is divided into two main areas: infrastructure modifications and enabling works, as well as costs directly tied to airline relocations, such as moving lounges and office spaces. This scope is still evolving, and the specific requirements for lounge and office relocations will depend on which scenario is ultimately chosen.</p> <p>However, key elements of the scope include:</p> <ul style="list-style-type: none"> • Construction of a new early bag storage facility in Terminal 4 with capacity for 3,000 bags; • Installation of additional automated border control gates in Terminals 4 and 2; • Addition of two new Flight Connection Centre (FCC) security lanes in Terminal 4; • Relocation of lounges; and • Relocation of office spaces. <p>There may also be other infrastructure changes required, such as coaching gates, kerbside drop-off areas, extra CSA lanes, and reclaim belts, but these are scenario-dependent and might be addressed through operational adjustments rather than physical construction.</p>
Need case	<p>The key driver for this occupancy balancing project is the need to increase capacity to meet rising demand and enhance Heathrow’s resilience. Demand in 2024 reached 84m passengers, exceeding the declared capacity of 82mppa. According to HAL, the future demand is</p>

Category	Description
	forecast to reach 90m by 2031, which requires an uplift in capacity and a step change in infrastructure.
Optioneering	HAL indicates that a structured options assessment was conducted to identify the most appropriate solution. Nine illustrative options were identified to assess how capacity could be better balanced across the airport. HAL mentions that Airline’s views on the options were gathered and considered to determine the preferred option. The options were assessed against several objectives and narrowed down to two lead scenarios. However, HAL indicates that these still require further work with the airline stakeholders to verify the preferred scenario.
Outcomes & benefits	<p>The Occupancy changes are expected to improve the balance of terminal utilisation between T2, T3 and T4 in order to unlock additional capacity at the airport and improve resilience.</p> <p>The Business Case states that this will strengthen Heathrow’s competitive position by enhancing the airport’s attractiveness as a connecting hub, with improved transfer propositions and more intra-terminal connections.</p> <p>According to HAL, there are also operational benefits identified by NATS that can be realised from the two proposed occupancy scenarios. The two lead scenarios would both deliver the similar benefits:</p> <ul style="list-style-type: none"> • 11% reduction in average start-up delay; • 89% reduction in average stand-off wait time; and • 3-minute reduction in ground interactions. <p>However, scenario 2 would also be associated with modest increases in average arrival taxi time, departure taxi delay, and Runway Holding Area (RHA) delay.</p>
Impact on Opex/ Revenues	Changes to Terminal occupancy will give rise to both one-off and ongoing operating costs, as well as incremental increases to Aeronautical and non-Aeronautical revenues.
Airlines	As the Occupancy programme is currently pre-P1, initial engagement has taken place with stakeholders to build support and gather feedback. According to HAL, Airline’s views on the optioneering exercise were gathered and considered to determine the preferred option.

Source: HAL, Steer analysis

Need assessment

2.157 The below sections summarise our assessment of the need for each project included in this Business Case.

Summary of our assessment

2.158 The primary objective of this project is to increase capacity by 3.5mppa, hence the ‘3:High’ Net Impact in the ‘Capacity, passenger experience, airline operations, sustainability’ category of consumer benefits. There will also be some operational resilience benefit as a result of the capacity increase.

2.159 The increase of the number of passengers per year triggered by this project will ultimately increase opex and will increase commercial revenues. However, busy terminals tend to discourage passengers from visiting retail areas, leading to lower non-aeronautical spending. As this project will ease congestion, it would likely

boost retail performances. Therefore we expect a ‘1:Low’ Net Impact in the ‘Increase revenues, reduce opex’ consumer benefit category.

2.160 Nevertheless, the project is still in its early stages and requires further work to ensure its benefits are robust, which explains our ‘2:Medium’ Likelihood for all the consumer benefits categories.

Scores

Table 2.44: BC11.00 – Need case scores per project

ID	Label	Safety, compliance, operational resilience		Capacity, passenger experience, airline operations, sustainability		Increase revenues, reduce opex		TOTAL
		Net Impact	Likelihood	Net Impact	Likelihood	Net Impact	Likelihood	
	Overall Business Case	1	2	3	2	1	2	20
	By project							
N01	Occupancy Infrastructure	1	2	3	2	1	2	20
	Project not scored	Reason						
	-	-						

Source: HAL, Steer analysis

BC12.00 Commercial Programme

HAL’s submission

2.161 This section provides a summary of what was submitted by HAL on this Business Case.

Projects and costs

2.162 The projects covered in this Business Case are at different levels of maturity, with all projects at P2T stage or above.

Table 2.45: BC12.00 – Capex submission (£m, 2024 CPI prices)

ID	Label	Gateway as of July-25	Capex (£m, 2024 CPI)		
			Pre-H8	H8	Post H8
	Overall Business Case		183	229	83
	By project				
K01	PRJ-001563 - B75-019.00 - Cargo Southside Transformation	P2T	9	59	83
K02	PRJ-001043 - B6611.05 – GRD Replacement – MRI Horizon	Post-G3	6	0	-
K09	PRJ-001696 - B75-043 - Marketing e-commerce (WeChat)	G2	0	1	-
K010	PRJ-001697 - B75-044 - 3rd Party Distribution (B2B)	On Hold	0	2	-
K013	PRJ-001856 - B75-058.00 CI Existing Products 2024-2026	Post-G3	30	5	-
K018	PRJ-001983 - B75-084.00 CI Retail Manager	P2T	3	0	-
K019	Public and Private 5G Infrastructure	G2	31	17	-
K020	Tr7 SSO/Loyalty	P2T	5	0	-
K021	PRG-000075 - B75-035.00 - Commercial Revenue Programme: Programme Initiation and Scoping	N/A	7	2	-
K027	PRJ-001529 - B75-068.00 BA Crew Car Park	P2T	7	19	-
K028	PRJ-001534 - B75-005.00 - Car Park Proposition	P2T	2	1	-
K035	PRJ-001638 - B75-019.01 - Airside Transshipment Centre	G2	0	3	-
K037	PRJ-001683 - B75-037.00 - ULEZ Park & Ride Car Park	Post-G3	1	0	-
K039	PRJ-001688 - B75-040 - T5C Airline Lounge	G2	12	4	-
K044	PRJ-001771 - B75-018.02 - VIP Diplomatic Product	G2	12	17	-
K045	PRJ-001892 - B75-059.00 HCC Capacity	G2	1	2	-
K046	PRJ-001896 - B75-060.00 T5 Luxury	P2T	3	1	-
K047	PRJ-001899 - B75-042.01 - Land Opt - Long Stay 2/3	G2	5	10	-
K049	PRJ-001909 - B75-063.00 T2 Space Opt - T2 L20 AS - Retail Units at Connections	G2	5	3	0

ID	Label	Gateway as of July-25	Capex (£m, 2024 CPI)		
			Pre-H8	H8	Post H8
K051	PRJ-001911 - B75-065.00 T5 Space Opt - L20 AS - Retail & F&B inc BOH	G2	8	4	-
K052	PRJ-001912 - B75-066.00 T5 Space Opt - L20 AS- F&B in Ex-Lounge	G2	3	4	-
K053	PRJ-001913 - B75-067.00 VIP Communal Lounge	G2	19	11	-
K055	PRJ-001942 - B75-071.00 T2 Space Opt – T2 L10 – LS Retail and F&B Changes	G2	4	2	-
K056	PRJ-001967 - B75-074.00 Consent Project (Compliance)	P2T	3	3	-
K061	T5 Satellites Space Optimisation	P2T	4	2	-
K063	Tr7 C&C	P2T	1	0	-
K064	Tr7 VIP	P2T	2	1	-
K065	Commercial P2 R&O's	N/A	-	55	-

Source: A8 - 1. H8 Capex Data Tables, Steer analysis

Overview

2.163 The table below summarises the Business Case information provided by HAL in its Business Plan submission.

Table 2.46: BC12.00 – Overview

Category	Description
Scope	<p>This Business Case includes exclusively the remaining projects of the H7 Commercial Revenue Programme (CRP), which will be delivered during H8. Those relate to:</p> <ul style="list-style-type: none"> • Optimisation of terminal space, including retail; • Development of sites for office and logistic purpose, including car parking; • Digital transformation investments; and • Cargo development, including the cargo southside investment.
Need case	<p>According to HAL, the CRP was launched to address the financial and operational challenges resulting from the Covid-19 pandemic, which significantly disrupted Heathrow’s commercial income and investment activity. With commercial revenue representing a substantial portion of total income under the single till model, there was an urgent need to stabilise and rebuild this revenue base.</p> <p>The programme responded to shifting passenger behaviours, regulatory changes, and competitive pressures by redefining Heathrow’s commercial strategy.</p>
Optioneering	<p>The Business Case indicates that a structured prioritisation process was conducted in 2023 to define the CRP scope. From an initial list of 96 potential initiatives, 10 were excluded due to misalignment with programme objectives. The remaining 86 options, spanning six investment categories, were assessed to identify those most aligned with</p>

Category	Description
	strategic goals and expected outcomes. This process informed the development of the programme’s P2 gateway submission.
Outcomes & benefits	<p>The proposed initiatives aim to support Heathrow’s commercial revenue base, a key component of the single till model, helping to maintain competitive aeronautical charges.</p> <p>In addition to financial returns, the Business Case outlines broader benefits:</p> <ul style="list-style-type: none"> • Meet/ exceed evolving passenger service expectations; • Diversify revenue streams; • Create digital and data transformation; • Safeguard sustainable & supportable growth across all commercial functions; • Improve public transport mode share; and • Make Heathrow a great place to live and work.
Impact on Opex/ Revenues	<p>Over a 40-year asset life, the CRP is projected to deliver £1.6 billion in revenue benefits, comprising £1,225 million in incremental revenue and £382 million in revenue protection. Within H8, it is expected to generate £329 million revenue benefits, comprising £212 million in incremental revenue and £117 million in revenue protection.</p> <p>The CRP is expected to increase opex by £215m over a 40-year asset life, including £39m in H8.</p> <p>We understand that the above estimates are for the overall CRP, not specifically for projects delivered during H8.</p>
Airlines	<p>HAL claims that some airlines should benefit from the enhanced lounge offer delivered in this Business Case, as well as the increase in cargo capacity.</p> <p>HAL indicates that, since the inception of the CRP, several forums have been established to serve the purpose of ensuring airlines are regularly and continuously involved in the commercial revenue solution design and its delivery. These include the:</p> <ul style="list-style-type: none"> • Strategic Airline Working Group; • Stakeholder Programme Group (SPG); • Future Portfolio Group (FPG); and • Capital Portfolio Board (CPB).

Source: HAL, Steer analysis

Need assessment

2.164 The below sections summarise our assessment of the need for each project included in this Business Case.

Summary of our assessment

2.165 The overarching goal of the projects included in this Business Case is to increase commercial revenues. Therefore, for the benefit category ‘Increase revenues, reduce opex’, we based the Net Impact score on the Net Present Value (NPV) of the tranche of the project, and the Likelihood score on the Discounted Payback Period (DPP), as set out in the table below. As the table shows, the higher the NPV, the greater the Net Impact score, and the lower the DPP, the higher the Likelihood score.

2.166 Through the Questions and Answers (Q&A), HAL has confirmed that the NPV and the DPP calculations include the commercial outcomes expected from projects which do not have costs incurred at H8. Given this inconsistency, we have capped the Likelihood scores to '2: Medium' for this benefit category.

Table 2.47: BC12.00 – Net Impact scoring

Revenues and Opex Net Impact score	NPV
3: High	> 100
2: Medium	10-100
1: Low	1-10

Source: Steer

Table 2.48: BC12.00 – Likelihood scoring

Revenues and Opex Likelihood score	DPP
3: High	N/A*
2: Medium	< 5
1: Low	≥ 5

Source: Steer. Note: (*) See paragraph above the tables.

2.167 For the two other benefit categories, we have scored the projects based on the information provided in HAL’s Business Case. Only two projects (K027 and K056) presented evidence indicating some operational resilience benefits which we score as '1:Low' or '2:Medium' for Net Impact and '1:Low' for Likelihood as the benefits are not explicitly mentioned by HAL.

2.168 The evidence of 'Capacity, passenger experience, and airline operation' benefits varied across projects, as reflected in the score range from '0:None' to '2:Medium' for their Net Impact. The Likelihood is scored as follows:

- '3:High', when the benefits are quantified by HAL;
- '2:Medium', when the benefits are stated by HAL but not quantified; and
- '1:Low', when the benefits are deducted from the project description by Steer.

2.169 In its Business Case, HAL has not provided the NPV and the DPP for 'K01: PRJ-001563 - B75-019.00 - Cargo Southside Transformation'. However, through the Q&A, it has indicated that it expects this project to achieve an internal rate of return (IRR) of at least 9.14% when combined with the Cargo Efficiency Improvements project. The latter is a small project (c.£2m) delivered at H7. Based on this information, we assess that its total score in the 'Increase revenues, reduce opex' benefit category should be '2:Medium' in order to align with the above scoring approach. The project has also some compliance and capacity benefits which are scored accordingly.

2.170 Project ‘K065: Commercial P2 R&O's’ centralises known potential Risks and Opportunities of the programme. HAL has indicated that holding these centrally allows them to reflect the latest view of the programme whilst driving risks down and materialising the opportunities and continuing to challenge projects and the supply chain to deliver on/under budget. This project K065 and project K021 have been scored similarly to the highest total score in this Business Case to ensure that the overall programme costs are included in the capex envelope if at least one of its related projects is included in the capex envelope.

Scores

Table 2.49: BC12.00 – Need case scores per project

ID	Label	Safety, compliance, operational resilience		Capacity, passenger experience, airline operations, sustainability		Increase revenues, reduce opex		TOTAL
		Net Impact	Likelihood	Net Impact	Likelihood	Net Impact	Likelihood	
	Overall Business Case weighted averages (pre-G3 projects only)*	0	0	1	2	2	1	12
	By project							
K01	PRJ-001563 - B75-019.00 - Cargo Southside Transformation	1	1	2	3	2	1	17
K09	PRJ-001696 - B75-043 - Marketing e-commerce (WeChat)	0	0	0	0	2	2	4
K010	PRJ-001697 - B75-044 - 3rd Party Distribution (B2B)	0	0	0	0	2	2	4
K018	PRJ-001983 - B75-084.00 CI Retail Manager	0	0	0	0	2	2	4
K019	Public and Private 5G Infrastructure	0	0	1	2	1	2	6
K020	Tr7 SSO/Loyalty	0	0	0	0	2	2	4
K021	PRG-000075 - B75-035.00 - Commercial Revenue Programme: Programme Initiation and Scoping	0	0	2	3	2	1	14
K027	PRJ-001529 - B75-068.00 BA Crew Car Park	2	1	1	1	2	1	10
K028	PRJ-001534 - B75-005.00 - Car Park Proposition	0	0	1	3	3	1	9
K035	PRJ-001638 - B75-019.01 - Airside Transshipment Centre	0	0	0	0	2	2	4
K039	PRJ-001688 - B75-040 - T5C Airline Lounge	0	0	1	3	3	1	9
K044	PRJ-001771 - B75-018.02 - VIP Diplomatic Product	0	0	0	0	3	2	6
K045	PRJ-001892 - B75-059.00 HCC Capacity	0	0	1	2	2	1	6
K046	PRJ-001896 - B75-060.00 T5 Luxury	0	0	0	0	2	2	4

ID	Label	Safety, compliance, operational resilience		Capacity, passenger experience, airline operations, sustainability		Increase revenues, reduce opex		TOTAL
		Net Impact	Likelihood	Net Impact	Likelihood	Net Impact	Likelihood	
K047	PRJ-001899 - B75-042.01 - Land Opt - Long Stay 2/3	0	0	2	3	2	1	14
K049	PRJ-001909 - B75-063.00 T2 Space Opt - T2 L20 AS - Retail Units at Connections	0	0	0	0	3	2	6
K051	PRJ-001911 - B75-065.00 T5 Space Opt - L20 AS - Retail & F&B inc BOH	0	0	0	0	3	2	6
K052	PRJ-001912 - B75-066.00 T5 Space Opt - L20 AS- F&B in Ex-Lounge	0	0	0	0	3	2	6
K053	PRJ-001913 - B75-067.00 VIP Communal Lounge	0	0	0	0	3	2	6
K055	PRJ-001942 - B75-071.00 T2 Space Opt – T2 L10 – LS Retail and F&B Changes	0	0	0	0	3	2	6
K056	PRJ-001967 - B75-074.00 Consent Project (Compliance)	1	1	0	0	2	2	7
K061	T5 Satellites Space Optimisation	0	0	0	0	2	2	4
K063	Tr7 C&C	0	0	0	0	2	2	4
K064	Tr7 VIP	0	0	0	0	2	2	4
K065	Commercial P2 R&O's	0	0	2	3	2	1	14
	Project not scored	Reason						
K02	PRJ-001043 - B6611.05 – GRD Replacement – MRI Horizon	Post-G3						
K013	PRJ-001856 - B75-058.00 CI Existing Products 2024-2026	Post-G3						
K037	PRJ-001683 - B75-037.00 - ULEZ Park & Ride Car Park	Post-G3						

Source: HAL, Steer analysis. Note: (*) The overall Business Case weighted average scores are calculated by weighting the projects' scores with their H8 capex values.

BC13.00 H8 new - commercial scope

HAL's submission

2.171 This section provides a summary of what was submitted by HAL on this Business Case.

Projects and costs

2.172 The projects in this Business Case are all at a very early stage of maturity.

Table 2.50: BC13.00 – Capex submission (£m, 2024 CPI prices)

ID	Label	Gateway as of July-25	Capex (£m, 2024 CPI)		
			Pre-H8	H8	Post H8
	Overall Business Case		-	567	-
	By project				
M01	T3 Pier 6 Lounge	Pre P1	-	40	-
M02	T5 Level 30 & 40 Lounge	G1	-	106	-
M04	T2 IDL	Pre P1	-	10	-
M05	T5 Satellites	Pre P1	-	3	-
M06	H8 Shell & Core x 45 (all terminals)	Pre P1	-	48	-
M07	Advertising - Interior LED	Pre P1	-	5	-
M08	T2 Towers Upgrade (Advertising)	Pre P1	-	4	-
M09	Mass Advertising Digitalisation & Removal	Pre P1	-	20	-
M10	Retail New Scope : T5 IDL	G1	-	78	-
M11	Retail New Scope : T3 IDL	Pre P1	-	40	-
M13	VIP Cars	Pre P1	-	2	-
M14	VIP Phase 4	Pre P1	-	38	-
M15	Retail New Scope : T4 IDL	Pre P1	-	20	-
M16	Land optimisation - decking (LS 2 and LS4) - replace Pex/N4	Pre P1	-	80	-
M17	Carpark revolution	Pre P1	-	20	-
M18	Perimeter parking opportunities	Pre P1	-	20	-
M19	Onwards travel proposition	Pre P1	-	10	-
M21	Poyle	Pre P1	-	23	-

Source: A8 - 1. H8 Capex Data Tables, Steer analysis

Overview

2.173 The table below summarises the Business Case information provided by HAL in its Business Plan submission.

Table 2.51: BC13.00 – Overview

Category	Description
Scope	<p>This Business Case includes exclusively new commercial initiatives developed for H8. Those aim to:</p> <ul style="list-style-type: none"> Optimise and increase space, including retail space;

Category	Description
	<ul style="list-style-type: none"> • Provide better airline lounge offers and premium services; • Digitalise further advertisement and services; and • Enhance car parking and other surface access offers.
Need case	<p>HAL indicates that it faces growing pressures on its commercial revenues from space constraints, regulatory shifts, and evolving passenger expectations. Therefore, it claims that continued investment is essential for its affordability, competitiveness, and resilience. This Business Case builds on H7’s Commercial Revenue Plan, covered in BC12.00, with new initiatives informed by data, consumer insights, airline feedback, and long-term goals.</p>
Optioneering	<p>HAL indicates that the commercial revenue initiatives included in this Business Case are at an early stage of definition and development. Options analysis is, therefore, ongoing and will be developed at a later stage.</p> <p>It sees the ‘do something’ approach as necessary, given the growing pressures mentioned in the need case section above.</p>
Outcomes & benefits	<p>The proposed initiatives aim to support Heathrow’s commercial revenue base, a key component of the single till model, helping to maintain competitive aeronautical charges.</p> <p>In addition to financial returns, the Business Case outlines broader benefits:</p> <ul style="list-style-type: none"> • Strengthening Heathrow’s reputation and consumer trust; • Encouraging repeat use through improved customer experience; • Enhancing performance against regulatory and commercial benchmarks, including ASQ and QSM; and • Improving public transport access and reducing ground-level carbon emissions;
Impact on Opex/ Revenues	<p>HAL’s preliminary analysis estimates total revenue benefits of £2,861 million over the asset life, with £86 million expected during H8. At this stage of maturity, quantification of opex impacts has not yet been completed.</p>
Airlines	<p>HAL claims that some airlines should benefit from the enhanced lounge offer delivered in this Business Case.</p> <p>HAL states that as the initiatives outlined in this Business Case are still in the early stages of development, formal governance structures have not yet been established. However, initial discussions with airlines have already taken place through recent Constructive Engagement sessions.</p>

Source: HAL, Steer analysis

Need assessment

2.174 The below sections summarise our assessment of the need for each project included in this Business Case.

Summary of our assessment

2.175 The overarching goal of the projects included in this Business Case is to increase commercial revenues. Therefore, for the benefit category ‘Increase revenues, reduce opex’, we have based the Net Impact score on the Net Present Value (NPV) and the Likelihood score on the Discounted Payback Period (DPP), as set out in

the table below. As the table shows, the higher the NPV, the greater the Net Impact score and the lower the DPP, the higher the Likelihood score.

2.176 Conversely to BC12.00, we understand that the NPV and the DPP calculations include only the commercial outcomes expected from projects which have costs incurred at H8. Therefore, the Likelihood scores are going up to ‘3:High’.

Table 2.52: BC13.00 – Net Impact scoring

Opex and Revenues Net Impact score	NPV
3: High	> 100
2: Medium	10-100
1: Low	1-10

Source: Steer

Table 2.53: BC13.00 – Likelihood scoring

Opex and Revenues Likelihood score	DPP
3: High	< 5
2: Medium	5-10
1: Low	≥ 10

Source: Steer

2.177 For the two other benefit categories, we have scored the projects based on the information available in the Business Case, which is relatively well detailed for that matter. Only two projects, M06 and M08, present respectively compliance and safety benefits which we score respectively as ‘3:High’ and ‘1:Low’ for Net Impact, and ‘3:High’ for Likelihood, given the robustness of the evidence.

2.178 The evidence of ‘Capacity, passenger experience, and airline operation’ benefits varied across projects, as reflected in the score range from ‘0:None’ to ‘3:High’ for their Net Impact. The Likelihood is scored as follows:

- ‘3:High’, when the benefits are quantified by HAL;
- ‘2:Medium’, when the benefits are stated by HAL but not quantified; and
- ‘1:Low’, when the benefits are deducted from the project description by Steer.

Scores

Table 2.54: BC13.00 – Need case scores per project

ID	Label	Safety, compliance, operational resilience		Capacity, passenger experience, airline operations, sustainability		Increase revenues, reduce opex		TOTAL
		Net Impact	Likelihood	Net Impact	Likelihood	Net Impact	Likelihood	
	Overall Business Case weighted averages (pre-G3 projects only)*	0	0	1	2	2	2	11
	By project							
M01	T3 Pier 6 Lounge	0	0	1	3	2	2	10
M02	T5 Level 30 & 40 Lounge	0	0	1	3	2	2	10
M04	T2 IDL	0	0	0	0	2	2	4
M05	T5 Satellites	0	0	0	0	1	3	3
M06	H8 Shell & Core x 45 (all terminals)	3	3	0	0	3	2	33
M07	Advertising - Interior LED	0	0	0	0	2	2	4
M08	T2 Towers Upgrade (Advertising)	1	3	0	0	1	2	11
M09	Mass Advertising Digitalisation & Removal	0	0	0	0	2	2	4
M10	Retail New Scope : T5 IDL	0	0	0	0	3	2	6
M11	Retail New Scope : T3 IDL	0	0	0	0	3	2	6
M13	VIP Cars	0	0	0	0	1	2	2
M14	VIP Phase 4	0	0	1	3	2	2	10
M15	Retail New Scope : T4 IDL	0	0	1	2	2	3	10
M16	Land optimisation - decking (LS 2 and LS4) - replace Pex/N4	0	0	2	3	2	2	16
M17	Carpark revolution	0	0	0	0	2	2	4
M18	Perimeter parking opportunities	0	0	2	3	2	2	16
M19	Onwards travel proposition	0	0	1	2	2	2	8
M21	Poyle	0	0	0	0	1	1	1
	Project not scored	Reason						
	-	-						

Source: HAL, Steer analysis. Note: (*) The overall Business Case weighted average scores are calculated by weighting the projects' scores with their H8 capex values.

BC14.00 Digital

HAL’s submission

2.179 This section provides a summary of what was submitted by HAL on this Business Case.

Projects and costs

2.180 All of the projects in this Business Case are at a very early stage of maturity.

Table 2.55: BC14.00 – Capex submission (£m, 2024 CPI prices)

ID	Label	Gateway as of July-25	Capex (£m, 2024 CPI)		
			Pre-H8	H8	Post H8
	Overall Business Case		-	455	-
	By project				
Q01	Next-Gen Passenger Services -Passenger Automation	Pre P1	-	160	-
Q02	Next-Gen Passenger Services -Commercial Revenues	Pre P1	-	150	-
Q03	Intelligent Operations and Optimisation	Pre P1	-	95	-
Q06	Predictive and Proactive Asset Management	Pre P1	-	5	-
Q07	Modernising Corporate Processes	Pre P1	-	5	-
Q08	Enterprise operational systems and data enablement	Pre P1	-	40	-

Source: A8 - 1. H8 Capex Data Tables, Steer analysis

Overview

2.181 The table below summarises the Business Case information provided by HAL in its Business Plan submission.

Table 2.56: BC14.00 – Overview

Category	Description
Scope	<p>The scope of the Digital Future Business Case includes new projects which aim at delivering an airport-wide business modernisation in five strategic focus areas, as follows:</p> <ul style="list-style-type: none"> • Next-Generation Passenger Services – comprising initiatives on Passenger Automation (self-service units, digital identity management) and on preserving or increasing Commercial Revenue. • Intelligent Operations & Optimisation – with projects on Smart Stands and Passenger Flow Monitoring (PFM). • Predictive & Proactive Asset Management. • Modernising Corporate Processes. • Enterprise core systems & data enablement – including projects on Core Operational Systems & Data Transformation.

Category	Description
Need case	The digital transformation of the airport business is considered by HAL as a necessity for Heathrow’s continuous modernisation to remain competitive as UK’s leading hub airport. HAL argues that many peer airports, airline partners, retail operators, and suppliers are already investing in digital technologies to streamline operations and enhance service delivery.
Optioneering	Pre P1 optioneering studies for Next-Generation Passenger Service projects have already commenced while the development of options for the other strategic focus areas has not started yet. HAL argues that doing nothing would increasingly constrain the ability to operate efficiently, adapt to disruption, and meet rising expectations.
Outcomes & benefits	The intended outcomes have been listed for each of the five focus areas and are summarised for each of the key stakeholders across the Business Case, as follows: <ul style="list-style-type: none"> • Outcomes for Heathrow are intended to be increased capacities, improved resilience, reduced opex and revenue growth, and better decision-making and control. • For airlines, it is envisaged to achieve reduced staff effort, greater scheduling stability, enhanced data integration, and improved security and compliance. • Passengers will benefit from faster, more seamless journeys, improved handling of disruptions and more control over their journey.
Impact on Opex/ Revenues	Although opex reductions are expected for all five focus areas, quantifications for H8 have only been provided for Passenger Flow Monitoring (£5m) and Heathrow Data Transformation (£20m) initiatives. HAL expects £18.8m in incremental revenues and £47.3m in revenue protection benefits in H8, which can be increased to £187.5m of incremental revenue uplift and £472.5m of revenue protection in H9.
Airlines	According to HAL, airlines have played a central role in shaping the Digital Future scope during the Constructive Engagement rounds 1&2 and through written submissions provided in November 2024. Digitalisation and automation have been highlighted as an enabler to their own strategic priorities. Constructive feedback has been received in particular on options for the various passenger automation projects. Engagement will continue for the assessment of options and implementation planning to ensure alignment with the airlines’ needs and expectations.

Source: HAL, Steer analysis

Need assessment

2.182 The below sections summarise our assessment of the need for each project included in this Business Case.

Summary of our assessment

2.183 HAL’s intention for the digital transformation of the airport and the associated projects included in this Business Case can be considered an enabler for Heathrow’s continuous modernisation. The need assessment of the suggested initiatives of the Business Case, however, show a broad range of results which are

partly due to the lack of clarity or detail on the intended scope for some of the projects, as they are all at Pre P1 stage. The assessment results are therefore summarised separately for each of the projects.

- 2.184 Next-Gen Passenger Services - Passenger Automation (project Q01): The various passenger automation projects have the potential to promote more reliable, efficient and flexible airline operations, to enhance passenger experience, and to deliver capacity improvements. With the available information, we have scored ‘1:Low’ Net Impact on ‘Safety, compliance, operational resilience’ consumer benefit category and ‘3:High’ on ‘Capacity, passenger experience, airline operations, sustainability’. We assess both categories a score of ‘2:Medium’ for Likelihood, as the majority of the technology to be deployed is well known and the benefits could be more easily predicted. HAL does not indicate cost savings for their own operations, hence no score for ‘Increase revenues, reduce opex’ category; although we foresee some potential in cost reductions.
- 2.185 Next-Gen Passenger Services - Commercial Revenues (project Q02): Albeit the initiatives are not fully defined at this stage, we assess that there is potential to achieve the intended outcomes and increase passenger experience and revenues, hence scoring ‘2:Medium’ in Net Impact for ‘Capacity, passenger experience, airline operations, sustainability’ and ‘Increase revenues, reduce opex’ categories, but scoring ‘1:Low’ in Likelihood.
- 2.186 Intelligent Operations and Optimisation (project Q03): The projects Smart Stands and Passenger Flow Monitoring (PFM) can enable more resilient operations, improve safety with the smart Foreign Object Debris (FOD) detection, and can contribute to complying with ICAO Annex 9 recommendations. Other possible gains are improvements in airline operations through more reliable turnarounds and passenger flows, enhancements in capacity and passenger experience, as well as reduced carbon emissions from faster aircraft engine-off and opex reductions. Consequently, we have scored Net Impact ‘1:Low’ for ‘Safety, compliance, operational resilience’, ‘3:High’ for ‘Capacity, passenger experience, airline operations, sustainability’ and ‘2:Medium’ for ‘Increase revenues, reduce opex’, with a ‘1:Low’ score for Likelihood across the three categories due to the lack of detailed plans that show how to achieve the intended outcomes.
- 2.187 Predictive and Proactive Asset Management (project Q06): Smart asset management can improve resilience with less downtimes and reduce operational disruptions through more reliable infrastructure and systems, improving operations and passenger experience. We score Net Impact ‘2:Medium’ for ‘Safety, compliance, operational resilience’ and ‘1:Low’ for ‘Capacity, passenger experience, airline operations, sustainability’, with a Likelihood score of ‘1:Low’ for both categories. HAL does not indicate that there will be opex savings, although we foresee some potential for that to be achieved.
- 2.188 Modernising Corporate Processes (project Q07): The associated scope of this strategic focus area remains rather vague, and it seems that most of the strategic

goals will not be affected by this project, hence scoring this project as zero across the three categories. There could be possible opex reductions through streamlined internal processes, although these would need to be quantified.

- 2.189 Enterprise core systems and data enablement (project Q08): Although additional data has been provided through the Questions and Answers (Q&A) process, it is difficult to quantify and to confirm the stated benefits of better coordinated and efficient operations through improved data exchange including the related opex savings, as well as a more consistent passenger experience through improved stakeholder collaboration. Nevertheless, we assess that the project has the foundations for a need case and we have scored a Net Impact of ‘1:Low’ for ‘Capacity, passenger experience, airline operations, sustainability’ and ‘2:Medium’ for ‘Increase revenues, reduce opex’, with a ‘1:Low’ score for Likelihood for both categories.

Scores

Table 2.57: BC14.00 – Need case scores per project

ID	Label	Safety, compliance, operational resilience		Capacity, passenger experience, airline operations, sustainability		Increase revenues, reduce opex		TOTAL
		Net Impact	Likelihood	Net Impact	Likelihood	Net Impact	Likelihood	
	Overall Business Case weighted averages (pre-G3 projects only)*	1	1	2	1	1	1	11
	By project							
Q01	Next-Gen Passenger Services - Passenger Automation	1	2	3	2	0	0	18
Q02	Next-Gen Passenger Services - Commercial Revenues	0	0	2	1	2	1	6
Q03	Intelligent Operations and Optimisation	1	1	3	1	2	1	11
Q06	Predictive and Proactive Asset Management	2	1	1	1	0	0	8
Q07	Modernising Corporate Processes	0	0	0	0	0	0	0
Q08	Enterprise operational systems and data enablement	0	0	1	1	2	1	4
	Project not scored	Reason						
	-	-						

Source: HAL, Steer analysis. Note: (*) The overall Business Case weighted average scores are calculated by weighting the projects’ scores with their H8 capex values.

BC15.00 T5 Early Bag Store front door

HAL’s submission

2.190 This section provides a summary of what was submitted by HAL on this Business Case.

Projects and costs

2.191 Only one project is included in this Business Case, which is at very early stage of maturity.

Table 2.58: BC15.00 – Capex submission (£m, 2024 CPI prices)

ID	Label	Gateway as of July-25	Capex (£m, 2024 CPI)		
			Pre-H8	H8	Post H8
	Overall Business Case	-	-	50	-
	By project				
V01	T5 Early Bag Store	Pre P1	-	50	-

Source: A8 - 1. H8 Capex Data Tables, Steer analysis

Overview

2.192 The table below summarises the Business Case information provided by HAL in its Business Plan submission.

Table 2.59: BC15.00 – Overview

Category	Description
Scope	The scope of this initiative involves modifying the T5 Early Bag Store (EBS) to support a demand-driven approach to loading baggage into containers at build points. At this stage, the scope remains under development, and HAL intends to work with airlines to refine it.
Need case	The current EBS capacity in T5 has the potential to accommodate more than 6,000 bags since an expansion project in 2018. However, the operational set up of the bag store does not support a demand-driven model. British Airways has proposed an investment to improve the capabilities and functionality of the EBS, specifically to address perceived issues with bag inflows and outflows.
Optioneering	Since this project is at developmental stage and scope is still in discussion with stakeholders’, solution options have not yet been developed.

Category	Description
Outcomes & benefits	The demand-driven approach implemented in this project would enable the potential to deliver operational savings to airlines. This would result from reduced staffing requirements for baggage handling by enabling airlines to batch build baggage ready for transport and loading onto aircraft in a much shorter period of time, compared to current arrangement, where the baggage build location is allocated as soon as flight opens for check-in and remains open for the full flight open period.
Impact on Opex/ Revenues	The project will have negligible impacts on the airport opex and no impacts on commercial revenues. However, it has the potential to generate operational savings for airlines through reduced staffing requirements for baggage handling. Given the stage of maturity, this benefit has not yet been quantified. As the initiative progresses through the gateway lifecycle, HAL intends to quantify operating cost impacts through discussion with airlines.
Airlines	HAL claims that as part of the recent round of Constructive Engagement (CE), HAL presented a range of investment areas within the Capital Portfolio to airlines. Following discussions, British Airways, which is the main airline that operates in Terminal 5, expressed interests in potential changes to the T5 Early Bag Store (EBS) capabilities. HAL states that this is why this project is submitted as part of HAL H8 Business Plan submission.

Source: HAL, Steer analysis

Need assessment

- 2.193 The below sections summarise our assessment of the need for each project included in this Business Case.

Summary of our assessment

- 2.194 The primary benefit of this project will be to improve airlines operations, in particular for British Airways, which we score as ‘2:Medium’ Net Impact. There will also be some operational resilience benefits due to the added flexibility of the baggage system, but based on the information provided we assess its Net Impact to be of a lower magnitude than the Net Impact of the airline operations benefits.
- 2.195 Nevertheless, this project is still at its early stage and requires further work to ensure the benefits are delivered and this is reflected in the ‘2:Medium’ Likelihood scores for both airline operations and operational resilience, as set out in the table below. For example, the impact on the wider baggage system and processes and the fact that T5 was not designed for a compressed/demand-driven delivery to outputs will have to be consider in future development stages.

Scores

Table 2.60: BC15.00 – Need case scores per project

ID	Label	Safety, compliance, operational resilience		Capacity, passenger experience, airline operations, sustainability		Increase revenues, reduce opex		TOTAL
		Net Impact	Likelihood	Net Impact	Likelihood	Net Impact	Likelihood	
	Overall Business Case	1	2	2	2	-	-	14
	By project							
V01	T5 Early Bag Store	1	2	2	2	0	0	14
	Project not scored	Reason						
	-	-						

Source: HAL, Steer analysis

BC16.00 Efficient Airport programme

HAL’s submission

2.196 This section provides a summary of what was submitted by HAL on this Business Case.

Projects and costs

2.197 As the table below shows, the projects in this Business Case are at different stages of maturity, ranging from P2 to Post-G3 stages.

Table 2.61: BC16.00 – Capex submission (£m, 2024 CPI prices)

ID	Label	Gateway as of July-25	Capex (£m, 2024 CPI)		
			Pre-H8	H8	Post H8
	Overall Business Case		138	212	-
	By project				
H01	PRG-000076 - B76-004.00 - Efficient Airport Programme: Programme Initiation and Scoping	N/A	5	3	-
H04	PRJ-001608 - B76-001.00 - Airfield Optimisation	P2T	5	2	-
H06	PRJ-001614 - B76-003 - Border Force Holding Rooms - T2, T4 and T5	G2	8	1	-
H010	PRJ-001726 - B76-008 - PAX ID (Biometrics)	P2	0	8	-
H013	PRJ-001733 - B76-015 - TMS Stand Planning integration	P2T	4	1	-
H016	PRJ-001865 - B76-017.00 - Manual Handling Aids	G2	4	4	-
H017	PRJ-001885 - B76-016.02: T2 LED Replacement	P2T	4	3	-
H021	PRJ-001894 - B76-006.00 - Passenger Flow Monitoring (PFM) - Futures	P2T	18	20	-
H022	PRJ-001895 - B76-006.02 - Passenger Flow Monitoring (PFM) Deployment Wave 2	Post-G3	4	2	-
H025	PRJ-001936 - B76-019.00 Seating Improvements	P2T	11	11	-
H026	PRJ-001937 - B76-020.00 Digital Screen Optimisation	P2T	3	1	-
H027	PRJ-001943 - B76-021.00 VCF Enhancements	P2T	17	21	-
H028	PRJ-001945 - B76-003.01 - Border Force Holding Rooms - T3	G2	3	0	-
H029	PRJ-001950 - B76-022.00 EDM T4 LED Replacement	P2T	1	0	-
H031	PRJ-001952 - B76-024.00 EDM T5 LED Replacement Wave 2	P2T	1	0	-
H032	PRJ-001953 - B76-025.00 - EDM Estates and Rail LED Replacement	G2	1	0	-

ID	Label	Gateway as of July-25	Capex (£m, 2024 CPI)		
			Pre-H8	H8	Post H8
H033	PRJ-001954 - B76-026.00 EDM IE5 Motor Upgrade (Phase 1)	P2T	11	4	-
H034	PRJ-001955 - B76-027.00 EDM Phase 2 Futures	P2T	8	12	-
H040	PRJ-001985 - B76-033.00 Additional Coaching Gate T5	P2T	4	6	-
H041	APOC Systems, Tools and Processes inc Punctuality	P2	2	9	-
H042	Baggage Improvement Scope	P2	5	43	-
H043	EA P2 R&O's	P2	19	58	-

Source: A8 - 1. H8 Capex Data Tables, Steer analysis

Overview

2.198 The table below summarises the Business Case information provided by HAL in its Business Plan submission.

Table 2.62: BC16.00 – Overview

Category	Description
Scope	<p>HAL indicates that the Efficient Airport (EA) Programme is designed to enhance operational efficiency, improve passenger experience, and maintain Heathrow’s competitive position.</p> <p>The scope spans multiple tranches, including:</p> <ul style="list-style-type: none"> • Passenger Service Transformation: seating, digital screen optimisation, self-service bag drops, border room enhancements, beacons¹⁰, automated announcements, and passenger flow monitoring; • Baggage Optimisation: manual handling aids, out-of-gauge baggage upgrades, reclaim automation, and tracking improvements; • Aircraft and Airfield Capacity Optimisation: airfield optimisation, runway/taxiway surface condition monitoring, and Virtual Contingency Facility (VCF) enhancements; • Planning and Efficiency: stand planning and turnaround management tools; • Energy Demand Management: LED replacements, HVAC upgrades, occupancy sensors; and • APOC¹¹: systems, tools and processes.

¹⁰ A beacon is a small, battery-powered device that uses bluetooth low energy to continuously broadcast a unique identifier to nearby smartphones. When a mobile app is set up to listen for this signal, it can use the data to trigger actions like sending a notification, displaying information, or tracking location.

¹¹ APOC at Heathrow Airport stands for Airport Operations Centre, which is a central command centre that coordinates daily activities to ensure the airport runs smoothly and efficiently.

Category	Description
Need case	HAL states that the programme responds to forecast traffic growth, operational inefficiencies, and competitive pressures from other hub airports. Passenger numbers are expected to increase significantly, placing pressure on facilities already at or near capacity at peak times. HAL indicates that the programme is required to address constraints in passenger processing, baggage handling, and airfield operations, as well as to meet energy efficiency and sustainability expectations. Without investment, HAL highlights risk of bottlenecks, higher costs, reduced service quality, and reputational harm. The programme is presented as essential to maintain resilience, improve efficiency, and align with Government policy objectives on Net Zero and inclusive transport.
Optioneering	HAL indicates that four options were considered: <ul style="list-style-type: none"> • Do Nothing: which would risk operational inefficiency and reputational decline; • Minimal investment: addressing only critical compliance issues; • Full redevelopment: which HAL considered disproportionate and unaffordable; and • A balanced programme: combining targeted investment in efficiency, resilience, and passenger experience. HAL reports that this option was selected as the preferred option following internal workshops, cost/benefit analysis, and engagement with airlines.
Outcomes & benefits	HAL states that the programme is expected to deliver: £102m in opex efficiencies over H8; a 2–5% improvement in punctuality through enhanced turnaround management, predictive maintenance, and improved resilience; improved baggage misconnect rates; and a 0.01–0.02 points uplift in Quality of Service Monitor (QSM) scores. Passenger benefits are expected to include more predictable journeys, improved accessibility and comfort (including for passengers requiring support), and enhanced wayfinding and automation. Energy Demand Management projects are expected to reduce energy use and carbon emissions across terminals, supporting Net Zero commitments.
Impact on Opex/ Revenues	HAL estimates net opex benefits of £102m in H8. Benefits are attributed to reduced energy use from LED and HVAC upgrades, efficiencies from automated security lane allocation, improvements in passenger flow monitoring, and reduced use of glycol on the airfield. HAL notes that some projects, such as Turnaround Management and Passenger Flow Monitoring, will increase maintenance costs due to new assets, though these are outweighed by savings. HAL does not expect any direct revenue increases from the programme.
Airlines	HAL states that airline engagement has shaped the scope, with priorities such as turnaround time reduction, baggage reliability, and passenger processing reflected in the programme. Airlines endorsed the H7 scope at P2 and acknowledged future settlement period scope, though HAL notes that in recent rounds of Constructive Engagement, airlines did not provide specific feedback affecting the scope of this Business Case.

Source: HAL, Steer analysis

Need assessment

2.199 The below sections summarise our assessment of the need for each project included in this Business Case.

Summary of our assessment

- 2.200 HAL indicates that the Efficient Airport Programme has been developed to address several critical drivers: forecast traffic growth, operational inefficiencies, and rising passenger expectations. The case highlights that, without investment, Heathrow risks increasing bottlenecks, declining service standards, and higher operating costs. This provides a clear overarching rationale for the programme, though the strength of the evidence varies across individual projects.
- 2.201 The projects under the Passenger Service Transformation tranche (projects H06, H028, H040) include upgrades to the Border Force holding rooms to meet compliance requirements, and an additional coaching gate to ensure operational resilience. We score '2:Medium' on Net Impact and Likelihood for 'Safety, compliance, operational resilience' consumer benefit category to address the compliance and the operational resilience factors, respectively for each type of project, as the evidence is not sound. For 'Capacity, passenger experience, airline operations, sustainability' we score '2:Medium' on Net Impact to reflect the effects that the projects could provide on capacity and passenger experience, but we score '1:Low' on Likelihood due to the lack of quantified evidence of current deficiencies or measurable improvements. These projects do not have a direct link with revenues and opex.
- 2.202 There are several projects related to passenger transformation that are digital in nature (projects H010, H021, H022, H025, H026), covering biometrics, passenger flow monitoring, connectivity and displays. We score '1:Low' on Net Impact and Likelihood for 'Safety, compliance, operational resilience' consumer for their relative contribution to operational resilience. For 'Capacity, passenger experience, airline operations, sustainability' we score '3:High' on Net Impact to reflect their impact on passenger experience and airline operations, although we score '2:Medium' on Likelihood for the lack of sufficient evidence to understand how the improvements are going to be materialised. We assess that these projects should have an increase in commercial revenues (linked to the better passenger experience and the lower waiting times), hence the '1:Low' score on Net Impact and Likelihood for 'Increase revenues, reduce opex' due to the lack of evidence.
- 2.203 On the pure operational side, there are projects in this Business Case that HAL proposes to strengthen the overall resilience and optimisation of the operations of the airport, including specific projects for airfield and baggage performance (projects H04, H013, H016, H027, H041, H042). While assess that these projects are critical enablers, HAL has not provided quantified evidence of the expected gains or punctuality improvements at project level. In baggage, the introduction of manual handling aids is justified by reference to lost time injuries, but no detailed data on injury rates or the expected reduction from the intervention is included. Hence we score '3:High' on Net Impact for 'Safety, compliance, operational resilience' and 'Capacity, passenger experience, airline operations, sustainability' categories, and we score '1:Low' on Likelihood for those same categories. While we assess that there might be some costs related efficiencies in these projects,

we have not considered these to be material and, therefore, we have not provided a score for the impacts on revenues and opex.

- 2.204 Energy Demand Management projects (projects H017, H029, H031, H032, H033, H034) are justified on the basis of ageing assets and the requirement to reduce energy consumption in line with sustainability commitments and cost savings. HAL presents these as straightforward opportunities to deliver opex savings and emissions reductions. However, for many projects, baselines for current energy use and clear estimates of savings are not provided, meaning that benefits remain indicative rather than evidenced. Therefore, we score '2:Medium' for Net Impact and Likelihood on 'Safety, compliance, operational resilience' category, due to need to replace the assets and guarantee operational resilience, and with proven technology. For the consumer benefit categories 'Capacity, passenger experience, airline operations, sustainability' and 'Increase revenues, reduce opex' we score '1:Low' on Net Impact and Likelihood due to the lack of evidence of the impacts on sustainability and opex.
- 2.205 Projects H01 and H043 are defined as Programme spend projects, which capture programme-level spend on establishment, scope definition, supervision, and risk. As this projects are enablers for the rest of the projects in the Business Case, we have scored them with the same values as the project in this Business Case with the highest score.
- 2.206 Across all projects in this Business Case, HAL highlights that investment is needed to maintain Heathrow's competitive position against other hub airports that are modernising and digitising their facilities. This provides a credible strategic context, but again the case would be stronger if supported with data on Heathrow's current and expected performance after the projects are implemented.

Scores

Table 2.63: BC16.00 – Need case scores per project

ID	Label	Safety, compliance, operational resilience		Capacity, passenger experience, airline operations, sustainability		Increase revenues, reduce opex		TOTAL
		Net Impact	Likelihood	Net Impact	Likelihood	Net Impact	Likelihood	
	Overall Business Case weighted averages (pre-G3 projects only)*	2	1	2	1	0	0	16
	By project							
H01	PRG-000076 - B76-004.00 - Efficient Airport Programme: Programme Initiation and Scoping	2	2	2	1	0	0	16

ID	Label	Safety, compliance, operational resilience		Capacity, passenger experience, airline operations, sustainability		Increase revenues, reduce opex		TOTAL
		Net Impact	Likelihood	Net Impact	Likelihood	Net Impact	Likelihood	
H04	PRJ-001608 - B76-001.00 - Airfield Optimisation	3	1	3	1	0	0	15
H06	PRJ-001614 - B76-003 - Border Force Holding Rooms - T2, T4 and T5	2	2	2	1	0	0	16
H010	PRJ-001726 - B76-008 - PAX ID (Biometrics)	1	1	3	2	1	1	16
H013	PRJ-001733 - B76-015 - TMS Stand Planning integration	3	1	3	1	0	0	15
H016	PRJ-001865 - B76-017.00 - Manual Handling Aids	3	1	3	1	0	0	15
H017	PRJ-001885 - B76-016.02: T2 LED Replacement	2	2	1	1	1	1	15
H021	PRJ-001894 - B76-006.00 - Passenger Flow Monitoring (PFM) - Futures	1	1	3	2	1	1	16
H025	PRJ-001936 - B76-019.00 Seating Improvements	1	1	3	2	1	1	16
H026	PRJ-001937 - B76-020.00 Digital Screen Optimisation	1	1	3	2	1	1	16
H027	PRJ-001943 - B76-021.00 VCF Enhancements	3	1	3	1	0	0	15
H028	PRJ-001945 - B76-003.01 - Border Force Holding Rooms - T3	2	2	2	1	0	0	16
H029	PRJ-001950 - B76-022.00 EDM T4 LED Replacement	2	2	1	1	1	1	15
H031	PRJ-001952 - B76-024.00 EDM T5 LED Replacement Wave 2	2	2	1	1	1	1	15
H032	PRJ-001953 - B76-025.00 - EDM Estates and Rail LED Replacement	2	2	1	1	1	1	15
H033	PRJ-001954 - B76-026.00 EDM IE5 Motor Upgrade (Phase 1)	2	2	1	1	1	1	15
H034	PRJ-001955 - B76-027.00 EDM Phase 2 Futures	2	2	1	1	1	1	15
H040	PRJ-001985 - B76-033.00 Additional Coaching Gate T5	2	2	2	1	0	0	16
H041	APOC Systems, Tools and Processes inc Punctuality	3	1	3	1	0	0	15
H042	Baggage Improvement Scope	3	1	3	1	0	0	15
H043	EA P2 R&O's	2	2	2	1	0	0	16
	Project not scored	Reason						
H022	PRJ-001895 - B76-006.02 - Passenger Flow Monitoring (PFM) Deployment Wave 2	Post-G3						

Source: HAL, Steer analysis. Note: (*) The overall Business Case weighted average scores are calculated by weighting the projects' scores with their H8 capex values.

BC17.00 H8 new - Passenger Experience

HAL's submission

2.207 This section provides a summary of what was submitted by HAL on this Business Case.

Projects and costs

2.208 All projects in this Business Case are at very early stage of maturity, with all projects at pre P1 gateway stage.

Table 2.64: BC17.00 – Capex submission (£m, 2024 CPI prices)

ID	Label	Gateway as of July-25	Capex (£m, 2024 CPI)		
			Pre-H8	H8	Post H8
	Overall Business Case		-	310	-
	By project				
L01	Additional washroom capacity in Terminal 5 and general	Pre P1	-	16	-
L02	Cleaning	Pre P1	-	8	-
L03	Water refill stations	Pre P1	-	2	-
L04	Seating and Digital signage	Pre P1	-	50	-
L05	Multi faith prayer rooms	Pre P1	-	7	-
L06	Family proposition & provision	Pre P1	-	14	-
L07	Premium proposition & provision	Pre P1	-	18	-
L08	Additional changing places (accessible washrooms) provision	Pre P1	-	5	-
L09	Additional accessible toilets	Pre P1	-	10	-
L10	Terminal 3 arrivals Baggage reclaim buggy route	Pre P1	-	25	-
L11	Creation of quiet spaces for sensory needs	Pre P1	-	10	-
L12	Enablement Hub Upgrades	Pre P1	-	5	-
L13	Terminal 4 accessible route for remote operations	Pre P1	-	5	-
L14	Support and integration for Air Passenger Assist App	Pre P1	-	5	-
L15	Autonomous wheelchairs full rollout	Pre P1	-	3	-
L16	Provision of alternative mobility equipment	Pre P1	-	3	-
L17	Additional lift access for EMA handling	Pre P1	-	20	-
L18	Digital proposition development	Pre P1	-	9	-
L19	Enhanced border experience	Pre P1	-	60	-
L20	Connections	Pre P1	-	10	-
L21	Airport look and feel – Exteriors (painting, cleaning, decorating facades)	Pre P1	-	3	-
L22	Airport look and feel – Passenger long distance walkways (decoration, intelligent lighting)	Pre P1	-	7	-
L23	Airport look and feel – Gate areas Terminals 3, 4 and 5	Pre P1	-	8	-

ID	Label	Gateway as of July-25	Capex (£m, 2024 CPI)		
			Pre-H8	H8	Post H8
L24	Airport look and feel – T3 specific targeted improvements (including IDL and Pier flooring)	Pre P1	1	7	-

Source: A8 - 1. H8 Capex Data Tables, Steer analysis

Overview

2.209 The table below summarises the Business Case information provided by HAL in its Business Plan submission.

Table 2.65: BC17.00 – Overview

Category	Description
Scope	<p>HAL indicates that the Passenger Experience programme is structured around three pillars:</p> <ul style="list-style-type: none"> • Brilliant Basics: washrooms, cleanliness, seating, signage, accessibility, family and premium provision, prayer rooms, quiet spaces, baggage reclaim route, PRS facilities, autonomous wheelchairs, and mobility equipment; • Helping Passengers Flow: enhanced border experience and improvements for connecting passengers; and • Enabling Enjoyment: upgrades to exteriors, walkways, gate areas, and targeted Terminal 3 improvements. <p>Initiatives are intended to maintain satisfaction under rising passenger volumes and address service gaps for key passenger groups.</p>
Need case	<p>According to HAL, passenger expectations are rising, while space constraints, ageing facilities, and complex operations are increasing pressure on infrastructure. Research indicates that without investment, overall satisfaction would fall from 4.26 in 2024 to 4.14 by 2031. HAL highlights four groups at risk: Passengers Requiring Support (PRS), connecting passengers, premium travellers, and families. For PRS, demand has risen 45% since 2019 and penetration is projected to increase to 3.4% of all passengers by 2030. Connecting passengers face long walks and uncertain routings, premium travellers report declining satisfaction from inconsistency, and families highlight needs for reassurance, comfort, and simplicity. HAL presents investment as necessary to sustain satisfaction and mitigate reputational and revenue risks.</p>
Optioneering	<p>HAL states that initiatives are at a pre P1 stage of maturity and that detailed option analysis has not yet been undertaken. A “Do Nothing” option is referenced, which HAL indicates would lead to a measurable decline in passenger satisfaction. The proposed scope reflects targeted interventions aligned with passenger priorities and Constructive Engagement feedback. Further optioneering and cost/benefit analysis will be undertaken as initiatives progress through the Gateway Lifecycle.</p>

Category	Description
Outcomes & benefits	HAL indicates that initiatives are expected to maintain or improve overall passenger satisfaction to 4.35, increase “Customer Effort (Ease)” to 91.6%, and raise “Enjoy my time at the Airport” scores to 77.1%. Targets include maintaining perceptions of cleanliness at 4.30 and wayfinding at 4.32, improving lounge comfort from 4.09 to 4.20, increasing gate comfort from 4.18 to 4.27, enhancing the border experience for non-EEA passengers from 4.39 to 4.59, and raising PRS satisfaction from 4.12 to 4.35. HAL highlights additional benefits from accessible washrooms, mobility aids, and improved connections, but benefits remain qualitative with no monetised assessment.
Impact on Opex/ Revenues	HAL states that operating cost impacts have not yet been quantified. Potential opex savings are noted in relation to automation of PRS services (e.g. autonomous wheelchairs reducing reliance on labour-intensive assistance contracts), but these remain indicative. HAL indicates that improved satisfaction has the potential to mitigate declines in commercial revenues, but acknowledges the difficulty in attributing specific revenue impacts to individual initiatives.
Airlines	HAL reports that airlines engaged through Constructive Engagement rounds expressed broad support for passenger experience initiatives, particularly those addressing PRS needs and baggage performance. Airline forums also noted the importance of “getting the basics right” and optimising passenger flow. HAL indicates that airline engagement will continue through gateway reviews and governance forums as initiatives develop, although no evidence is provided that airline feedback has materially altered the proposed scope.

Source: HAL, Steer analysis

Need assessment

2.210 The below sections summarise our assessment of the need for each project included in this Business Case.

Summary of our assessment

- 2.211 HAL indicates that the Passenger Experience programme is required to sustain service quality as passenger numbers grow and existing facilities come under pressure. HAL forecasts that without investment overall satisfaction would fall from 4.26 in 2024 to 4.14 by 2031. This provides an overarching rationale for considering the ‘passenger experience and capacity’ benefits of these initiatives, but the supporting evidence is limited and at a high level.
- 2.212 Demand for assistance has grown by 45% since 2019 and HAL forecasts it to continue increasing to 3.4% of passengers by 2030. This growth reflects both demographic change and Heathrow’s reliance on resource-intensive assistance. HAL positions new facilities, mobility equipment, and autonomous wheelchairs as essential to address these pressures. While this establishes the obligation to comply¹² and a credible need for Passengers Requiring Support (PRS) related

¹² [Rights of disabled passengers on transport - GOV.UK](https://www.gov.uk/government/topics/disabled-people)

projects (projects L08, L09, L10, L013, L017), HAL has not provided robust data on the resources and outcome of the proposed interventions. Hence we score '2:Medium' for Net Impact and Likelihood for 'Safety, compliance, operational resilience' consumer benefit category.

- 2.213 The projects above and the remaining projects in the Business Case have a clear direct impact on passenger experience. We also assess that improvements in passenger experience lead to increases in commercial spend¹³.
- 2.214 Aside from the projects related to Passengers Requiring Support (PRS), other key projects included in the Business Case include initiatives to address other passenger segments such as connecting passengers, premium passengers, and families. Connecting passengers represent around a quarter of traffic at Heathrow and are highlighted as experiencing lower satisfaction, driven by long walking distances, inconsistent wayfinding, and operational variability. HAL proposes digital signage and connection improvements but does not quantify the extent of current inefficiencies (e.g. average connection times or rates of missed connections) or the magnitude of the expected benefit. Premium travellers are also identified as a segment where satisfaction is falling, reflecting gaps in exclusivity, lounge comfort, and the consistency of the premium product. While this aligns with survey feedback, HAL does not provide clear baselines on current provision or quantified evidence on the potential revenue or satisfaction benefits of enhancements. Similarly, for families, the rationale is framed around reassurance, comfort, and ease of journey, but without supporting data on pain points (such as queueing times with children, availability of family facilities, or usage levels).
- 2.215 Across the programme, interventions such as additional seating, expanded washrooms, and upgraded border facilities are positioned as necessary to manage congestion and rising demand. These proposals are all aligned to improve the passenger experience, but again HAL does not provide utilisation data, performance benchmarks, or quantified outcomes.
- 2.216 While the strategic rationale is clear and strongly aligned to consumer priorities¹⁴, the information provided remains at an early stage of maturity to meet the requirements of the guidance. Consequently we score '2:Medium' for Net Impact and '1:Low' for Likelihood on 'Capacity, passenger experience, airline operations, sustainability' consumer benefit category.
- 2.217 HAL notes potential opex efficiencies (e.g. from automation of PRS services) and the link between satisfaction and commercial revenues, but provides no evidence or breakdown. We concur with the potential of the projects to achieve some

¹³ [ACI Releases New Research Paper Analyzing the Influence of Customer Service Quality on Airports' Non-aeronautical Revenue | Aviation Pros](#)

¹⁴ Reference survey: ICS, Heathrow Airport, H8 Quantitative Priorities, Research Report, July 2025

revenues benefits or opex efficiencies, hence we score ‘1:Low’ for Net Impact and Likelihood on ‘Increase revenues, reduce opex’ category.

- 2.218 Overall, the Passenger Experience programme presents a strong strategic case built on rising demand, evolving passenger expectations, and identified service gaps. However, the evidence provided does not demonstrate the scale of the problems or the expected impact of the interventions.

Scores

Table 2.66: BC17.00 – Need case scores per project

ID	Label	Safety, compliance, operational resilience		Capacity, passenger experience, airline operations, sustainability		Increase revenues, reduce opex		TOTAL
		Net Impact	Likelihood	Net Impact	Likelihood	Net Impact	Likelihood	
	Overall Business Case weighted averages (pre-G3 projects only)*	0	0	2	1	1	1	8
	By project							
L01	Additional washroom capacity in Terminal 5 and general	0	0	2	1	1	1	5
L02	Cleaning	0	0	2	1	1	1	5
L03	Water refill stations	0	0	2	1	1	1	5
L04	Seating and Digital signage	0	0	2	1	1	1	5
L05	Multi faith prayer rooms	0	0	2	1	1	1	5
L06	Family proposition & provision	0	0	2	1	1	1	5
L07	Premium proposition & provision	0	0	2	1	1	1	5
L08	Additional changing places (accessible washrooms) provision	2	2	2	1	1	1	17
L09	Additional accessible toilets	2	2	2	1	1	1	17
L10	Terminal 3 arrivals Baggage reclaim buggy route	2	2	2	1	1	1	17
L11	Creation of quiet spaces for sensory needs	0	0	2	1	1	1	5
L12	Enablement Hub Upgrades	0	0	2	1	1	1	5
L13	Terminal 4 accessible route for remote operations	2	2	2	1	1	1	17
L14	Support and integration for Air Passenger Assist App	0	0	2	1	1	1	5
L15	Autonomous wheelchairs full rollout	0	0	2	1	1	1	5
L16	Provision of alternative mobility equipment	0	0	2	1	1	1	5
L17	Additional lift access for EMA handling	2	2	2	1	1	1	17
L18	Digital proposition development	0	0	2	1	1	1	5
L19	Enhanced border experience	0	0	2	1	1	1	5
L20	Connections	0	0	2	1	1	1	5

ID	Label	Safety, compliance, operational resilience		Capacity, passenger experience, airline operations, sustainability		Increase revenues, reduce opex		TOTAL
		Net Impact	Likelihood	Net Impact	Likelihood	Net Impact	Likelihood	
L21	Airport look and feel – Exteriors (painting, cleaning, decorating facades)	0	0	2	1	1	1	5
L22	Airport look and feel – Passenger long distance walkways (decoration, intelligent lighting)	0	0	2	1	1	1	5
L23	Airport look and feel – Gate areas Terminals 3, 4 and 5	0	0	2	1	1	1	5
L24	Airport look and feel – T3 specific targeted improvements (including IDL and Pier flooring)	0	0	2	1	1	1	5
	Project not scored	Reason						
	-	-						

Source: HAL, Steer analysis. Note: (*) The overall Business Case weighted average scores are calculated by weighting the projects' scores with their H8 capex values.

Need assessment scoring summary

- 2.219 This section summarises the need assessment scoring conducted in this chapter and brings together the projects that went through a need assessment scoring with the post-G3 projects, as those have already been approved by airlines.
- 2.220 Our need assessment scores range from 0 to 49 score points, or from 0% to 91% of the maximum possible score of 54.
- 2.221 Given the high number of projects assessed, in the table below we provide a summarised and indicative view of the need assessment scoring at Business Case level.
- 2.222 The following anomalies should be noted:
- As advised by the CAA, *BC07.00 Noise mitigation* has been removed from the need case scoring (i.e. zero score) owing to CAA rejecting HAL’s proposal to change the treatment of noise mitigation costs from opex to capex at H8. Keeping noise mitigation as opex ensures that the regulatory treatment of these costs remains aligned with the treatment in the statutory accounts, where noise mitigation costs are considered opex, rather capex.
 - Most of the projects included in *BC10.00 Modernising Heathrow Programme* are assessed as related to significant expansion of terminal capacity which, in accordance with the CAA H8 Business Plan Guidance, will be dealt with separately from the H8 process.¹⁵ Therefore, these have been removed from the need case scoring (i.e. zero score). The only project that has been scored within this Business Case is ‘T5 Capacity Optimisation Phase 1’.
- 2.223 Removing the anomalies listed above, the total H8 capex in HAL’s Business Plan decreases from **£9,502 million (2024 CPI prices) to £7,825 million (2024 CPI prices)**.

Table 2.67: Need assessment results at Business Case level

Business case	Weighted score	Weighted score (as a % of maximum score of 54)	H8 Cost (£m, 2024 CPI)
Projects Post-G3			
BC01.00 Security Programme	-	-	28
BC02.00 T2 Baggage Programme	-	-	5
BC03.01 Asset Management & Compliance Programme	-	-	94
BC08.00 Carbon and Sustainability Programme	-	-	-5
BC12.00 Commercial Programme	-	-	5
BC16.00 Efficient Airport programme	-	-	2
Post-G3 total			129

¹⁵ CAA, CAP3083: H8 method statement and business plan guidance, March 2025, paragraph 4.3

Business case	Weighted score	Weighted score (as a % of maximum score of 54)	H8 Cost (£m, 2024 CPI)
Projects Pre-G3			
BC02.00 T2 Baggage Programme	38	71%	488
BC03.02 Terminal 4 Front Door and Car Park	37	69%	316
BC03.03 T3 Hold Baggage Screening replacement (T3IB)	33	61%	92
BC01.00 Security Programme	32	59%	320
BC03.04 T5 Pilz Obsolescence	31	57%	113
BC05.00 Electrical network	22	41%	568
BC11.00 Occupancy infrastructure	20	37%	394
BC08.00 Carbon and Sustainability Programme	18	34%	373
BC16.00 Efficient Airport programme	16	29%	210
BC15.00 T5 Early Bag Store front door	14	26%	50
BC03.01 Asset Management & Compliance Programme	14	26%	1,942
BC04.00 H8 new asset renewal scope	12	23%	1,185
BC12.00 Commercial Programme	12	22%	224
BC13.00 H8 new - commercial scope	11	21%	567
BC14.00 Digital	11	20%	455
BC06.00 Heat decarbonisation	9	16%	319
BC09.00 People and Planet	8	14%	207
BC17.00 H8 new - Passenger Experience	8	14%	310
BC10.00 Modernising Heathrow Programme	3	6%	1,783
BC07.00 Noise mitigation	0	0%	241
Project total (incl. Post-G3)			10,285
Adjustments			
People and Planet prioritisation adjustment*	-	-	-112
Phasing adjustment	-	-	-176
Efficiency	-	-	-497
Total			9,502

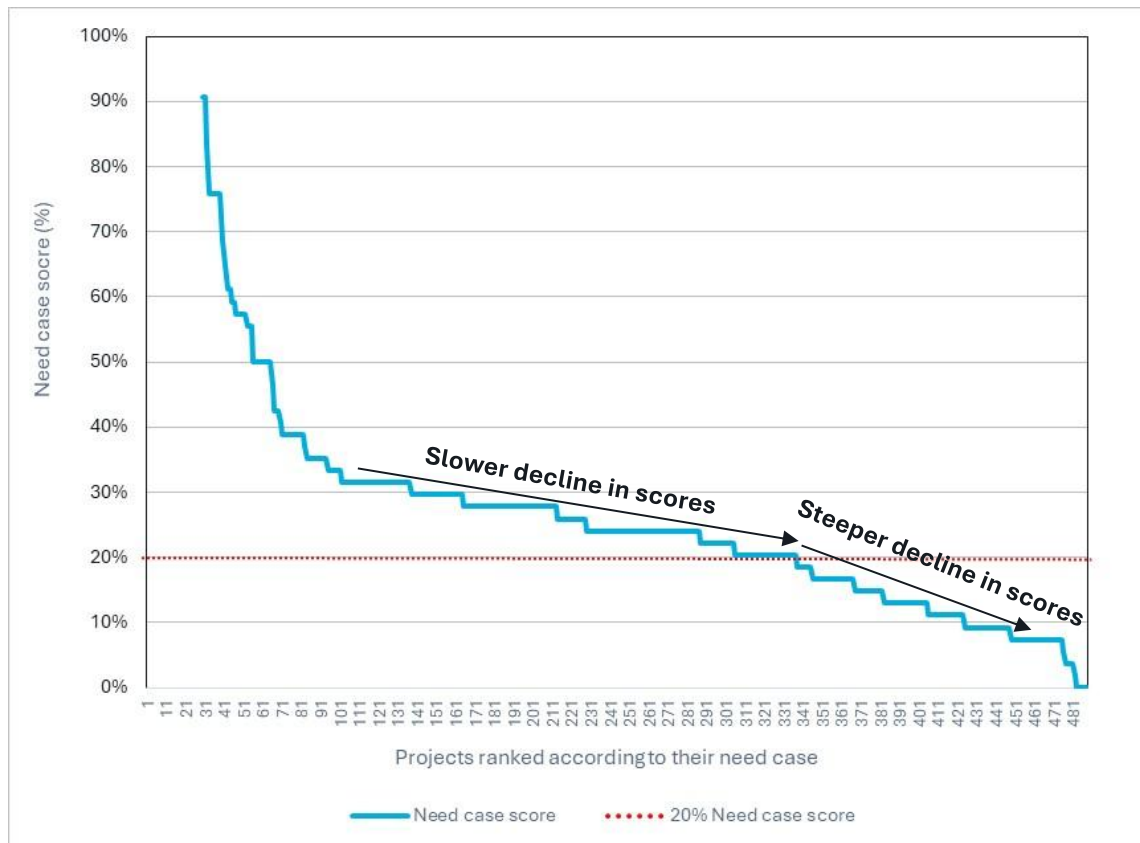
Source: HAL, Steer analysis. Note: (*) Labelled as 'carbon programme efficiencies/phasing' in CAA Data Tables.

3 H8 capex envelope threshold

Capex envelope threshold

- 3.1 The capex envelope threshold indicates the capex level that is sufficient to accommodate projects with a strong need case (based on the need case scoring). We use the need case scoring to determine the strength of the need case reflective of the information provided by HAL in its Business Plan submission.
- 3.2 We assess that a strong enough need case has, as a minimum, a score at 20% of the maximum possible score (54), which is equivalent to a minimum need case score of 11. Based on the information made available to us at this stage, setting the minimum need assessment score at 20% of the maximum score means that 337 projects (69% of the total) have a strong enough need case to be considered in the indicative set of prioritised projects. These projects include the Post G3 projects and the projects that have support from the airlines; being 28 in total.
- 3.3 As the red horizontal line in the chart below shows, below the 20% need case score threshold, projects present steep declining scores, meaning a sharp decrease in the strength of the need cases beyond this threshold. We therefore assess that going beyond this threshold, risks expanding the capex envelope to a point where projects that do not have a strong enough need case at Business Plan submission would be considered for H8.
- 3.4 The chart below plots the score of each of the 488 projects for which we assessed the need case, scored from highest to lowest score. The list of projects starts with the Post G3 projects and the projects supported by the airlines which, according to our methodology, already have a strong need case. The chart shows that:
- There are groups of projects with similar scores, which are indicated by the various plateaux; and
 - The scores decrease non linearly as we progress through the ranking, with some substantial inflection points, suggesting abrupt drops in the strength of the need case.
- 3.5 The overall scoring levels provide valuable information regarding the strength of the need cases and the benefits to consumers that can be expected on the basis of the information provided in the Business Plan.

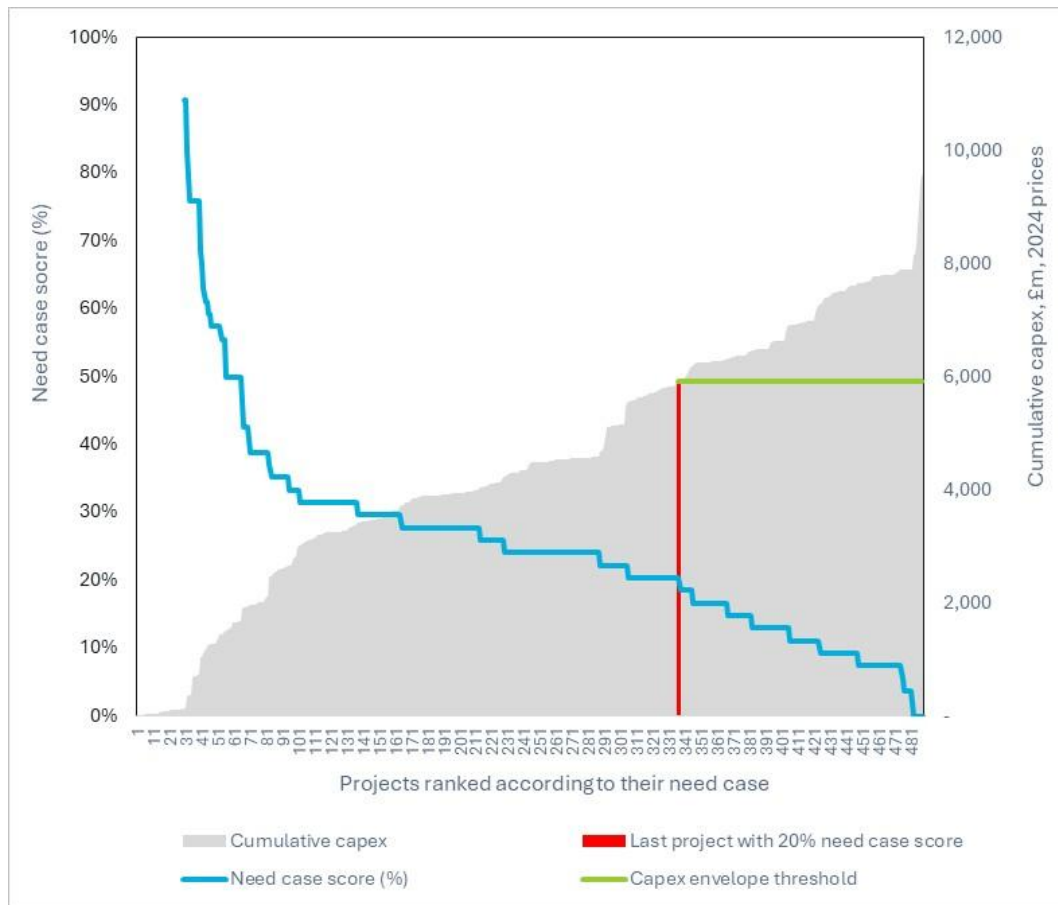
Figure 3.1: Projects ranked according to their need case score



Source: Steer. Note: The chart includes the 488 projects that are included in HAL’s submission. The first 28 projects are the Post G3 projects and the projects supported by the airlines, hence do not present a score as they already have a strong need case.

- 3.6 Combining the ranking of projects according with their need (which includes the Post G3 projects and the projects supported by the airlines) and the capex of each of the projects as submitted by HAL, our proposed 20% need case score threshold sets the **capex envelope threshold at £5,931 million (2024 CPI prices)**. This represents the cumulative capex of the first 337 projects (i.e. projects with a 20% need case score or higher). This conclusion is reflected in the chart below, where the red vertical line is the last project with a score of at least 20% of the maximum score, driving a cumulative capex amount represented by the green horizontal line - the capex envelope threshold of £5,931 million (2024 CPI prices).
- 3.7 For consistency with HAL submission, we have applied HAL Phasing adjustment of c. -1.7% and HAL efficiency adjustment of -5% to the capex presented in the chart below. These adjustments represent a -6.6% impact on the capex per project submitted by HAL.
- 3.8 The People and Planet prioritisation adjustment has not been applied as it is an adjustment which removes, from H8 capex, projects which are less of a priority within BC 09.00. And we assess that, through our 20% need case score threshold, we have already removed the projects which are less of a priority.

Figure 3.2: Determination of the capex envelope threshold



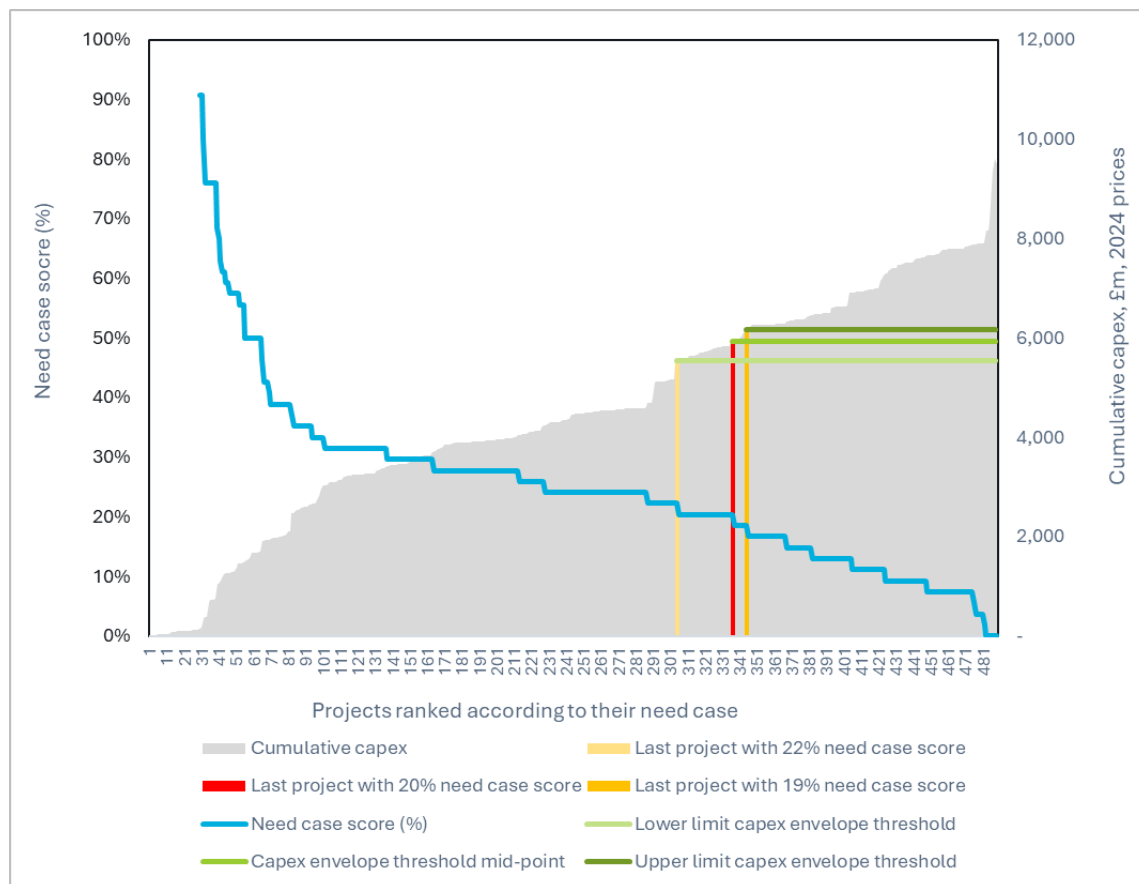
Source: Steer

Capex envelope threshold range

- 3.9 We recognise that the need case scoring approach used in this report involves a degree of expert judgement which leads to some variability in the results. To accommodate this variability, we assess that establishing a capex envelope threshold range would be more appropriate than a capex envelope threshold point.
- 3.10 As explained above, we assess the minimum need case score should be set at 20% of the maximum possible score, corresponding to 11 score points and a capex threshold of £5.9 billion (2024 CPI prices). These are represented by the solid red (score) and green (capex threshold) lines in the chart below. However, considering that certain inaccuracies might exist in the scoring mechanism and that there is a case to include some flexibility to add or remove projects as these continue to mature in their path to G3 approval stage, we assess that the capex envelope threshold range from a score of 10 (or 19% of maximum score of 54) to a score of 12 (or 22% of the maximum score of 54). According to the need case scoring, a score of 10, (19%) corresponds to a capex envelope threshold of £6.2 billion (2024 CPI prices), and represents the next group of projects that have lower scores but could still be considered if their need case improves. A higher score of

12 (22%), corresponding to a capex envelope threshold of £5.5 billion (2024 CPI prices) is a higher need scoring bar that would improve the need case without substantially reducing the capex delivered. These two alternative thresholds are indicated in the chart below by the light and dark orange vertical lines (scores) and the light and dark green horizontal lines (capex envelope threshold).

Figure 3.3: Determination of the capex envelope threshold range



Source: Steer

3.11 We assess that the **capex envelope threshold range for H8 is £5.5 to £6.2 billion (2024 CPI prices)**, which is equivalent to -29% and -21% respectively of HAL’s H8 capex plans excluding anomalies (i.e. excluding Noise mitigation Business Case and all the Modernising Heathrow Business Case projects except for T5 Capacity Optimisation Phase 1). The table below summarises these conclusions.

Table 3.1: Capex envelope threshold range

	Score (points)	Score (% of maximum score of 54)	Number of projects	H8 Cumulative capex (£m, 2024 CPI prices)	vs. HAL BP capex exc. anomalies*
Lower limit of capex envelope threshold	12	22%	305	5,535	-29%
Capex envelope threshold (midpoint)	11	20%	337	5,931	-24%

	Score (points)	Score (% of maximum score of 54)	Number of projects	H8 Cumulative capex (£m, 2024 CPI prices)	vs. HAL BP capex exc. anomalies*
Upper limit of capex envelope threshold	10	19%	345	6,174	-21%

Source: Steer. Note: (*) HAL's Business Plan capex amount excluding anomalies is £7,826m (2024 CPI prices).

- 3.12 The table below presents the results by Business Case for the mid-point of the capex envelope threshold. We note that this is indicative as it is through the capex governance framework that HAL and airlines will firm up what projects to deliver in H8, within the capex envelope threshold, taking account of evolving needs and more mature information on optioneering and benefits to consumers.

Table 3.2: Capex by business case and strength of the need case (£m, 2024 CPI prices)

Business Case	HAL H8 BP capex	% of H8 capex	
		In the envelope (mid point)	Out of the envelope (mid point)
BC01.00 Security Programme	348	91%	9%
BC02.00 T2 Baggage Programme	493	100%	0%
BC03.01 Asset Management & Compliance Programme	2,036	76%	24%
BC03.02 Terminal 4 Front Door and Car Park	316	100%	0%
BC03.03 T3 Hold Baggage Screening replacement (T3IB)	92	100%	0%
BC03.04 T5 Pilz Obsolescence	113	100%	0%
BC04.00 H8 new asset renewal scope	1,185	63%	37%
BC05.00 Electrical network	568	91%	9%
BC06.00 Heat decarbonisation	319	15%	85%
BC07.00 Noise mitigation	241	0%	100%
BC08.00 Carbon and Sustainability Programme	369	74%	26%
BC09.00 People and Planet	207	30%	70%
BC10.00 Modernising Heathrow Programme	1,783	13%	87%
BC11.00 Occupancy infrastructure	394	100%	0%
BC12.00 Commercial Programme	229	57%	43%
BC13.00 H8 new - commercial scope	567	26%	74%
BC14.00 Digital	455	35%	65%
BC15.00 T5 Early Bag Store front door	50	100%	0%
BC16.00 Efficient Airport programme	212	100%	0%
BC17.00 H8 new - Passenger Experience	310	21%	79%
Total	10,287	58%	42%
Adjustments			
People and Planet prioritisation adjustment (labelled as 'carbon programme efficiencies/phasing' in CAA Data Tables)	-112		
Phasing adjustment	-176		
Efficiency	-497		
Total	9,502		

Source: Steer

HAL's capacity to deliver capex

- 3.13 In the below sections, we have tested the outcome of the capex envelope threshold based on the strength of the need case against our assessment of the capex that HAL has the capacity to deliver during the H8 regulatory period. We assess the amount of capex HAL has the capacity to delivery through the combination of three quantitative methods, supplemented by some qualitative considerations.
- 3.14 The three quantitative methods combine information from capex delivered by HAL during the last 25 years with the location of the capex projects that HAL proposes for H8, as follows:
- Method A: Annual historical capex;
 - Method B: 5-year rolling historical capex; and
 - Method C: Location-based H8 capex.
- 3.15 The assessment is supplemented by the following additional qualitative considerations:
- Construction supply chain: resource constraints and costs pressures; and
 - Expansion of Heathrow.

Quantitative methods

Method A: Annual historical capex 2000-2024

- 3.16 The historical capex analysis has been undertaken sourcing data from HAL's Statutory and Regulatory Accounts. Statutory Accounts data included the period 2000-2024; with March year end accounts until March 2006, and December year end accounts from 2007 to 2024. Regulatory Accounts are available on a March year end basis from 2000 to March 2014, and on a December year end basis from 2015 to 2024. The 2014 Regulatory Accounts were a transition from March year end to December year end. We combined statutory and regulatory accounts to obtain an estimate of the accounts in the 12 months to December from 2000 to 2014. The Regulatory Accounts from 2014 to 2024 provide some granularity on the capex projects undertaken in each year, whereas the accounts from previous years only provide the annual amount, similarly to the Statutory Accounts. The difference in the total annual capex of any given year between the Statutory and the Regulatory Accounts is less than 2%. All the figures provided in this section are presented on a December year end basis.
- 3.17 Some projects and categories of projects have been isolated in order to provide a more homogeneous capex comparison across the historical period of analysis (2000 to 2024). The following projects and categories of projects have been identified as 'One-offs', i.e. projects that are non-recurring and do not impact the capacity of HAL to deliver more capex:

- Terminal 5 (T5): the terminal was built between 2002 and 2009 (when T5C was completed) with a capex of £4,300m (nominal). The construction site was ringfenced from the rest of the airport meaning it did not impact the operations; and it had an independent road access to the site.
- Terminal 2 (T2): the terminal was built between 2010 and 2014 with a capex of £2,500m (nominal). The construction site was ringfenced from the rest of the airport and did not impact the operations, except for the road access through the northern tunnels.
- Categories B and C costs: Capex related to the planning and pre-construction works of the future third runway and associated developments. The category B and C capex in the period 2017-2024 accounts for £511m (nominal).
- Next Generation Security: Following the regulatory compliance mandate, HAL spent £304m (nominal) during 2023-2024 to deploy new security equipment. A large portion of the spend is related to the purchase of the equipment and, therefore, the capex spent is not reflective of the volume of the works done on-site.
- Acquisition of the Compass Centre (office building): HAL bought the building for £127m (nominal) in 2024. The acquisition of a building is not reflective of works done on-site.

3.18 The analysis of historical capex incurred by HAL is limited to the availability of information that we have been able to have access to. It is likely that there are more projects that could be considered as ‘one-offs’ for the period before 2014 (aside from T5 and T2 construction projects), but we have not found sufficient information to identify and isolate them.

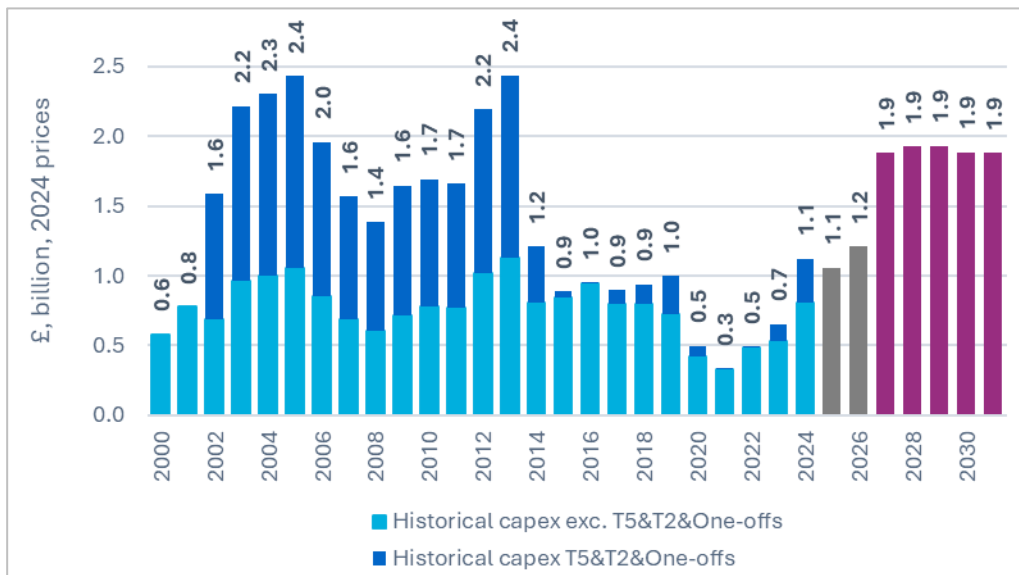
3.19 In order to present the capex figures in a comparable manner, we have used the Greater London Tender Price Indices (TPI) from BCIS to convert the amounts to constant 2024 prices.

3.20 The chart below includes the historical capex, plus HAL’s estimated capex for 2025 and 2026¹⁶, and HAL’s H8 capex as included in the Business Plan submission. HAL’s H8 capex plan amounts to £9,502 million, which includes the efficiencies noted by HAL, and it is in 2024 CPI prices. HAL’s H8 capex plan expressed in 2024 TPI¹⁷ prices is lower by 2%. In order to keep the traceability of the capex, the amount submitted by HAL, £9,502 million (2024 CPI prices) will be used for the analysis.

¹⁶ Source: HAL document: 62 CAA-H8-021 - CAA bilateral - Capex and Capex Deliverability 2025-08-04

¹⁷ [Construction Industry Forecast | BCIS](#)

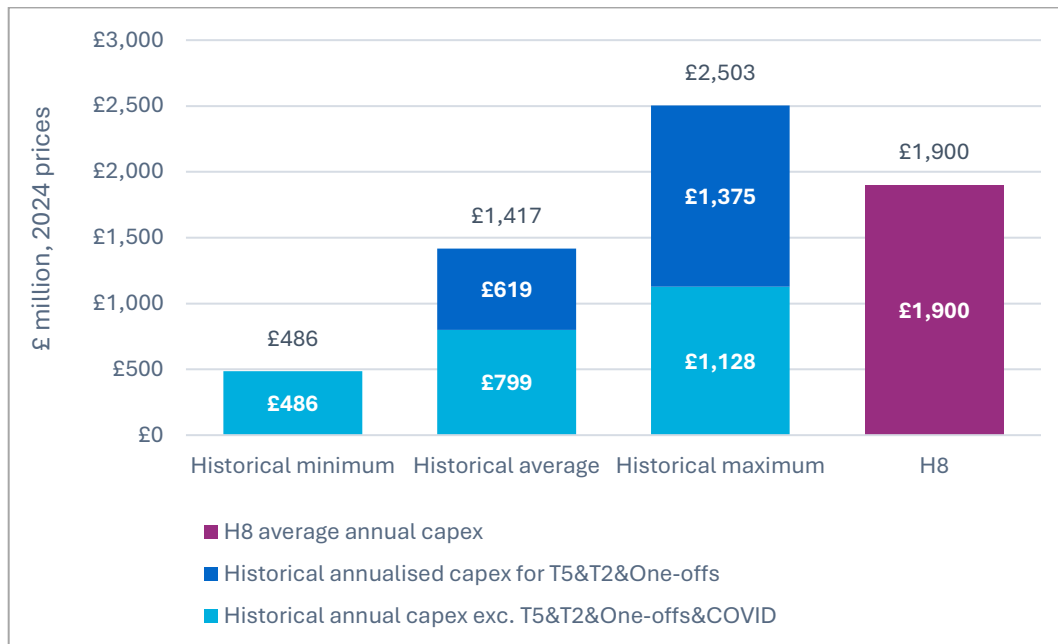
Figure 3.4: HAL Capex, 2000-2026 and H8, £m, 2024 prices



Source: HAL, Steer

- 3.21 HAL’s H8 capex plan assumes an annual spend of around £1.9 billion for each of the five years of the regulatory period. This figure is 57% higher than the estimated capex for 2026, and it has only been reached in six of the last 25 years.
- 3.22 From the historical annual capex data, we can extract the annual minimum, average and maximum capex values for the period 2000-2024, which are presented in the next chart. We excluded the years 2020 and 2021 from these calculations, as these years were highly impacted by COVID-19. The minimum and maximum values for ‘Capex excluding T5&T2&One-offs’ and for ‘Capex T5&T2&One-offs’ have been considered separately and then summed together in the chart.

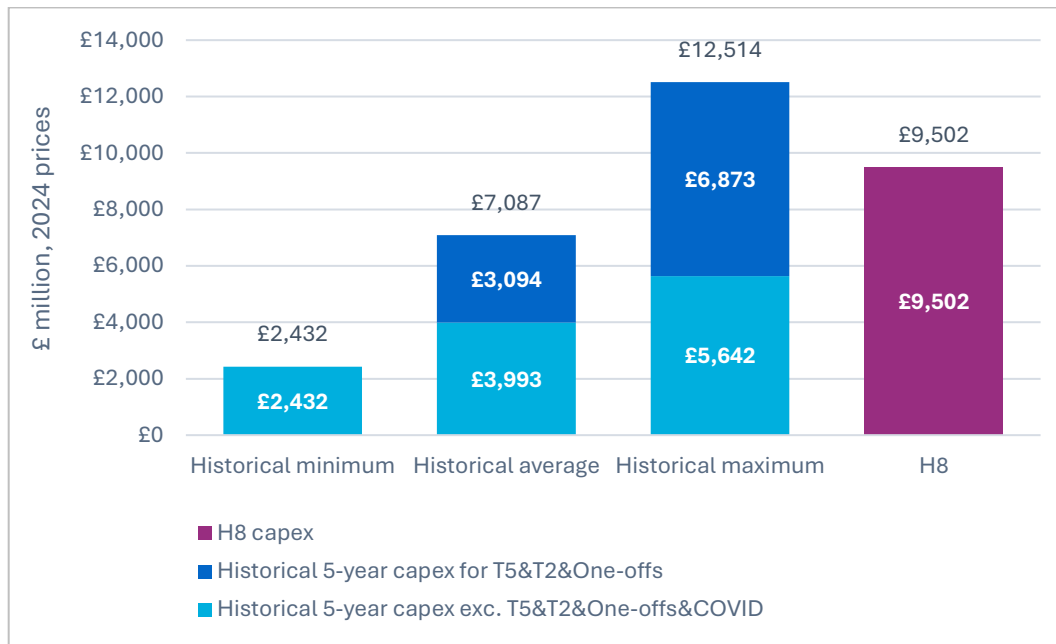
Figure 3.5: HAL minimum-average-maximum annual Capex, 2000-2024 and H8, £m, 2024 prices



Source: HAL, Steer

- 3.23 As the chart shows, the average annual capex excluding T5, T2, ‘One-offs’ and COVID-19 over the last 25 years is c.£799m (2024 prices). The minimum and maximum capex versus the average is c.40% lower (c.£486m) and c.40% higher (c.£1,128m), respectively.
- 3.24 If T5, T2 and ‘One-offs’ are added, the annual average capex is £1,417m, and the annual maximum is £2,503m (2024 prices). However, it should be noted that the maximum annual capex that HAL has reported since the year 2000 is £2,437m, which corresponds to the year 2013. We have also conducted an analysis on specific categories of capex such as Asset renewal, Passenger experience and Sustainability to validate the historical annual average capex excluding ‘One-offs’ calculated above. This analysis is available in Appendix B.
- 3.25 A theoretical estimation of the capex for a five-year regulatory period could be calculated by multiplying the annual values times five. This information is presented in the figure below.

Figure 3.6: HAL minimum-average-maximum 5-year implied Capex, 2000-2024 and H8, £m, 2024 prices



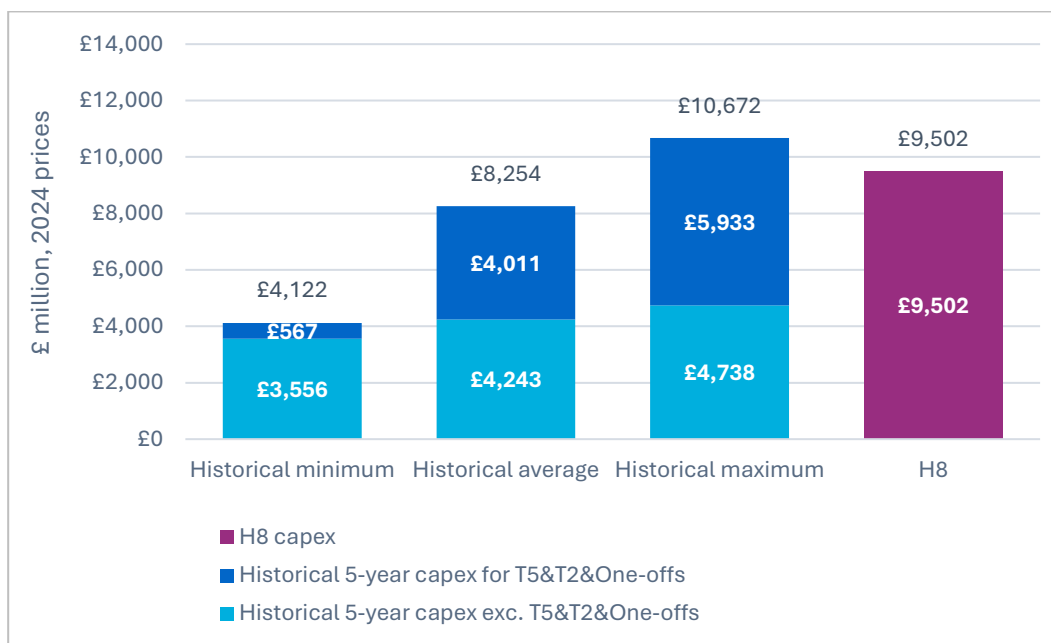
Source: HAL, Steer. Note: The 5-year values presented in this chart result from multiplying the annual values times five. Any difference is due to rounding.

- 3.26 The Figure shows that the average capex for a five-year period excluding T5, T2, ‘One-offs’ and COVID-19 over the last 25 years is c.£4.0bn (2024 prices). If T5, T2 and ‘One-offs’ are added, the average capex is £7.1bn (2024 prices).
- 3.27 It is important to acknowledge that some limitations are implied in this approach because Heathrow, as any other airport, has an uneven capex profile across the years, reflecting the cyclical nature of the large projects that need to be undertaken. We attempt to mitigate this in Method B below.

Method B: 5-year rolling capex

- 3.28 In this method, we use the same historical annual capex data from 2000 to 2024 used in Method A. The difference is that we calculate the historical minimum, maximum and average based on 5-year rolling capex amounts. We started by calculating the total capex for the first five-year period in the sample, 2000-2004, and then calculated subsequent rolling 5-year capex amounts by adding a new year (and dropping the start year) for every year from 2004 to 2019. We did not include the years after 2019 in the 5-year rolling capex calculations due to the impact of COVID-19.

Figure 3.7: HAL minimum-average-maximum, 5-year rolling Capex, 2000-2019 and H8, £m, 2024 prices



Source: HAL, Steer

- 3.29 As the figure above shows, the average capex for a five-year period excluding T5, T2 and ‘One-offs’ over the 2000-2019 period is £4.2bn (2024 prices). If T5, T2 and ‘One-offs’ are added, the average capex is £8.3bn (2024 prices). The average 5-year capex values calculated through this 5-year rolling capex method (Method B) are higher than the 5-year average based on annual values (Method A) by 6% (without T5, T2 and one-offs) and 16% (with T5, T2 and one-offs).

Method C: Location-based H8 capex

- 3.30 The tight physical footprint and the high asset utilisation in which Heathrow operates impose additional challenges for delivering capex at the airport. Most of the projects that are delivered need to be coordinated with operations at some level. Executing projects during the quiet operating hours, when the runways are not operational and the airport is closed for passengers, is restricted to less than five hours per night.
- 3.31 Based on our analysis of the projects that historically have been delivered at the airport by location, we assess that there are a limited number of precedents in which capex (excluding T5 and T2 construction works) was higher than £0.2bn (2024 prices) in a single area of the airport in a year. The exceptions to this are mainly projects related to baggage. Our analysis did not find historical precedents of capex higher than £0.4bn (2024 prices) in a single area of the airport in a year¹⁸.

¹⁸ It is acknowledged that the methodology entails certain limitations linked to the level of granularity that is provided in HAL’s Regulatory Accounts.

3.32 For the purpose of analysing the location of historical capex delivery, we divided the airport in the following areas/locations: T2&T3, T4, T5, South side, and Airfield. We adopt the same areas/locations as in HAL’s H8 programme by location, using the information provided in HAL’s H8 Business Plan submission. About 40% of total H8 proposed capex corresponds to projects that are airport-wide. We have allocated these proportionally to the capex already assigned to each area/location.

3.33 The table below provides HAL’s H8 capex allocated by area/location, with the colour reflecting the following categorisation:

- **Green:** Annual capex below £0.2bn (2024 prices).
- **Amber:** Annual capex between £0.2bn and £0.4bn (2024 prices).
- **Red:** Annual capex above £0.4bn (2024 prices).

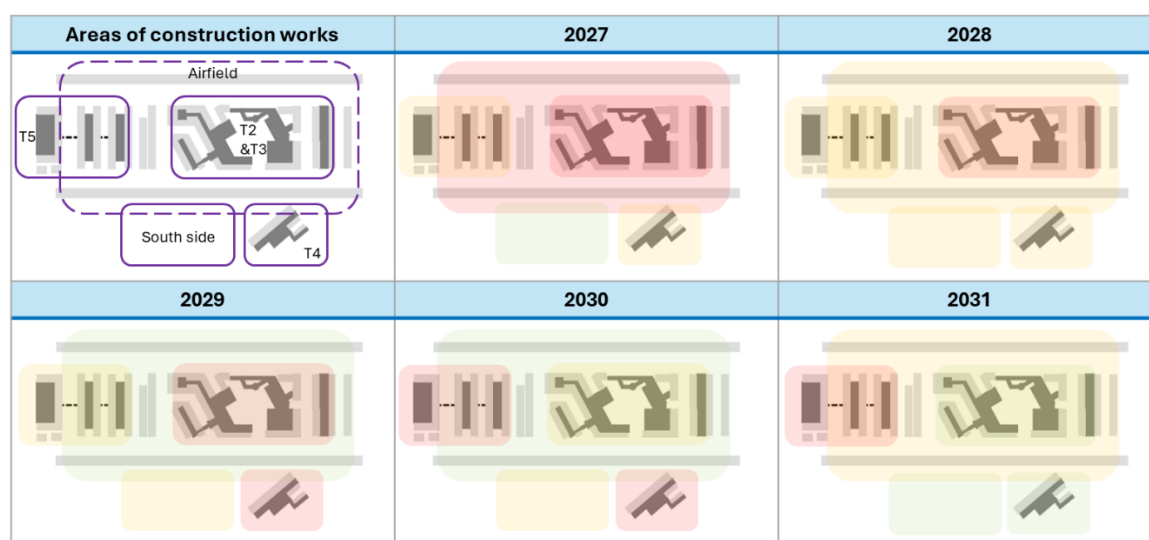
Table 3.3: Capex allocated by location, H8, £bn, 2024 prices

	2027	2028	2029	2030	2031	H8
T2&T3	0.6	0.7	0.6	0.4	0.2	2.5
T4	0.2	0.4	0.6	0.5	0.1	1.8
T5	0.3	0.3	0.3	0.8	1.0	2.8
South side	0.2	0.3	0.2	0.2	0.2	1.1
Airfield	0.4	0.3	0.1	0.1	0.3	1.4
TOTAL	1.7	2.0	1.9	2.0	1.8	9.5

Source: Steer. Note: there could be small differences linked to rounding adjustments

3.34 The visuals below also represent the level of capex per location for each of the years of H8, consistently with the table above.

Figure 3.8: Heat map of the concentration of projects in H8 by airport location



Source: HAL, Steer

3.35 Based on the level of capex delivered historically by location, we have defined two scenarios:

- Capping the annual capex per annum and per location to £0.2bn (2024 prices); and
- Capping it to £0.4bn (2024 prices).

3.36 The H8 capex in these two scenarios are £4.5bn and £7.3bn (2024 prices), respectively, as shown in the tables below.

Table 3.4: Capex allocated by area with a cap of £0.2bn, H8, £bn, 2024 prices

	2027	2028	2029	2030	2031	H8
T2&T3	0.2	0.2	0.2	0.2	0.2	0.9
T4	0.2	0.2	0.2	0.2	0.1	0.9
T5	0.2	0.2	0.2	0.2	0.2	0.9
South side	0.2	0.2	0.2	0.2	0.2	0.9
Airfield	0.2	0.2	0.1	0.1	0.2	0.8
TOTAL	0.9	1.0	0.9	0.9	0.9	4.5

Source: Steer

Table 3.5: Capex allocated by area with a cap of £0.4bn, H8, £bn, 2024 prices

	2027	2028	2029	2030	2031	H8
T2&T3	0.3	0.4	0.4	0.4	0.2	1.7
T4	0.2	0.4	0.4	0.4	0.1	1.5
T5	0.3	0.3	0.3	0.4	0.4	1.7
South side	0.2	0.3	0.2	0.2	0.2	1.1
Airfield	0.3	0.3	0.1	0.1	0.3	1.3
TOTAL	1.4	1.7	1.5	1.5	1.2	7.3

Source: Steer

Capacity to deliver capex – summary of quantitative analysis

3.37 In this section, we use the three quantitative methods described above to assess the level of the capex that can be realistically delivered by HAL during H8. In the next section, we assess whether qualitative delivery considerations justify adjusting these quantitative results.

3.38 The results from the quantitative analysis indicate a disparity of possible values for the capex that can be delivered in H8. We combine these results in the form of a range, with a lower limit and an upper limit, indicating the level of difficulty to deliver certain amount of capex.

3.39 The lower limit of the capex range is a capex level that we assess can be delivered in a five-year period if there are no unusual constraints. We consider that, above

this level, the delivery of capex becomes **Challenging**. The upper limit is defined as the maximum level of capex that can be delivered, not without challenges, if the right resources and planning are in place, and external market conditions are favourable. Beyond this level, we consider the delivery of capex becomes **Exceptionally challenging**. In the past, HAL has delivered capex above this level only during the construction of T5 and T2. These projects were physically ringfenced from the rest of the airport operations during construction, which is not the case with the capex projects that HAL proposes for H8.

3.40 The proposed lower and upper limits of the range are, respectively, the average of the following parameters extracted from the analysis of the three quantitative methods detailed earlier in this section.

- Lower limit of the range (Challenging to deliver):
 - Method A: Historical average capex excluding T5&T2&One-offs&COVID. Annual capex multiplied times five.
 - Method B: Historical average capex excluding T5&T2&One-offs. 5-year rolling capex.
 - Method C: Maximum of £0.2bn per location of the airport per annum.
- Upper limit of the capex range (Exceptionally challenging to deliver):
 - Method A: Historical average capex excluding COVID. Annual capex multiplied times five.
 - Method B: Historical average capex excluding COVID, 5-year rolling capex.
 - Method C: Maximum of £0.4bn per location of the airport per annum.

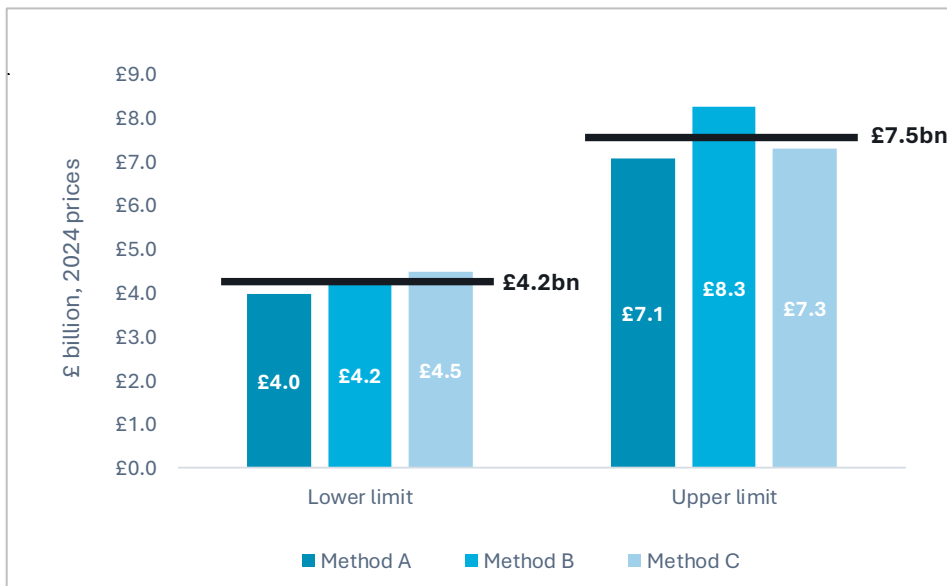
3.41 The table and chart below summarise the results that we have obtained.

Table 3.6: Capacity to deliver capex calculation, £bn, 2024 prices

	Lower limit of the range (Challenging) for H8		Upper limit of the range (Exceptionally challenging) for H8	
Method A	Historical average excluding T5&T2&One-offs&COVID	£4.0bn	Historical average excluding COVID	£7.1bn
Method B		£4.2bn		£8.3bn
Method C	Maximum of £0.2bn per location	£4.5bn	Limit of £0.4bn per location	£7.3bn
Limit levels (average of the three methods)		£4.2bn		£7.5bn

Source: Steer. Note: Method B includes the period until 2019 (i.e. before COVID).

Figure 3.9: Capacity to deliver capex calculation, £bn, 2024 prices



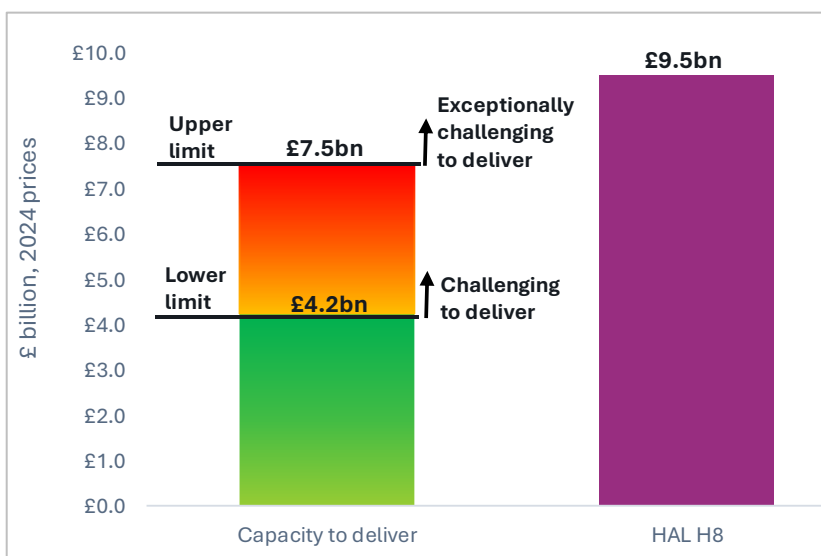
Source: Steer

3.42 The results indicate that the lower and upper limit of the H8 capex range are:

- Lower limit of the capex that can be delivered in H8 (Challenging): £4.2 billion (2024 prices); and
- Upper limit of the capex that can be delivered in H8 (Exceptionally challenging): £7.5 billion (2024 prices).

3.43 The chart below illustrates the comparison between HAL’s H8 capex proposal with the upper and lower limits of the capex that we assess can be delivered. The lower limit is 55% lower than HAL’s proposal, and the upper limit is 21% lower.

Figure 3.10: Capacity to deliver capex range vs. HAL H8 Capex, £bn, 2024 prices



Source: Steer

3.44 We acknowledge that HAL’s H8 capex programme includes certain projects that could be excluded from the comparison with the proposed capex range, such as certain security related initiatives (the full Security Business Case includes £348m of capex) and certain noise mitigation related initiatives (the full Noise mitigation Business Case includes £241m of capex), totalling a maximum of 6% of H8 capex. The comparability of the analysis with HAL’s H8 capex is still valid for the proposed capex range, as this already includes past ‘One-off’ projects between the lower limit and the upper limit. We also note that HAL’s programme does not include any major specific project that could be completely isolated and developed outside of the day-to-day operations of the airport and, therefore, cannot be compared with the historical peaks that were achieved with the construction of T5 and T2.

Qualitative considerations

3.45 There are some delivery considerations and risks that might put pressure on the capex delivery in H8, which could justify adjusting the lower and upper limits resulting from the quantitative analysis down in value. The two riskier considerations are the potential for supply chain constraints and the potential to overlap with the expansion of Heathrow Airport works. We discuss these two in turn below.

Construction supply chain: lack of resources and higher costs

3.46 The UK construction market has been suffering from lack of human resources since Brexit. Constraints to labour availability, coupled with increasing costs of materials, has tightened the construction market over the last years.

3.47 A larger capex programme at Heathrow will require an additional effort from HAL to attract more firms and resources, while aiming to maintain competitive prices.

3.48 The London Main Contractor Survey published by AECOM for 2025 provided a stable market status for the coming years. But it also highlighted some key risks. Some of the risks that could negatively impact the delivery of HAL’s capex programme are the following:

- Contractors’ margins need to increase.
- Contractors want to avoid competition.
- There is a large pipeline of projects.
- Labour costs are increasing.
- Tier 1 contractors¹⁹ are less willing to accept risk around contract terms.

¹⁹ Tier 1 contractors are the main or principal contractors responsible for delivering large-scale construction or infrastructure projects. They typically manage the entire project lifecycle and coordinate the work of subcontractors (Tier 2 and Tier 3).

3.49 While the above risks imply an increase in costs for HAL in nominal terms in the delivery of its capex programme, they also imply a high demand and the risk of lack of capacity in the construction supply chain, which might affect HAL’s ability to deliver.

Expansion of Heathrow

3.50 The Department for Transport has triggered the development of a new Airports National Policy Statement for the expansion of Heathrow, which includes the construction of a third runway and other major works.

3.51 Regardless of who the promoter and developer of the expansion programme is, HAL will need to play a major role in the preparation for the construction works and future operation of the airport. In this scenario, there will be a very high risk of diversion of focus and resources from the H8 capex programme to the Expansion programme.

3.52 Additionally, the construction works could start before the end of H8, which will put both capex programmes under a high risk of delays owing to resources constraints in the supply chain across the UK.

Conclusions of the capacity to deliver capex test

3.53 We set the capex envelope threshold range at £5.5 to £6.2 billion (2024 prices), which is within the lower and upper limits of capex that we assess HAL can deliver in H8. We note again that, if the UK construction market and/or HAL experiences additional constraints and pressures, the capacity to deliver will reduce.

Projects below the capex envelope threshold

3.54 In this section we present the list of projects ranked by the strength of the need cases, as measured by the need case scores reflective of the information available at this stage. We set the following colour code:

- **Dark green** projects are included in the Lower limit of the capex envelope threshold;
- **Light green** projects are within the Lower and Upper limit of the capex envelope threshold (i.e. the capex envelope threshold range); and
- **Red** projects are above the Upper limit of the capex envelope threshold.

3.55 In the table below, the capex of each project has been adjusted to include the Phasing adjustment and the Efficiency from HAL’s submission. We have also added a **blue** line indicating our proposed capex envelope threshold mid-point at £5,931 million (2024 prices) defined in the sections above.

Table 3.7: Projects ranked by the strength of their need case (£m, 2024 CPI prices)

Rank	ID	Label	Programme	Score (points)	Score out of 100%	H8 Capex (£m, CPI 2024p)	H8 Cumulative capex (£m, CPI 2024p)
Dark Green: projects in the lower limit of the capex envelope threshold:							
1	G015	PRJ-001800 - B73-015.00 - Tr3 - T1 Backbone Phase 2	T2 Baggage	Post-G3	Post-G3	5	5
2	G08	PRJ-001717 - B73-008.00 - Tr3 - T1 Backbone Phase 1	T2 Baggage	Post-G3	Post-G3	0	5
3	G06	PRJ-001713 - B73-006.00 - Tr3 - IT ICS Asset Refresh Phase 1	T2 Baggage	Post-G3	Post-G3	0	5
4	C025	PRJ-001868 - B7680.24 Major Equipment Procurement	Security	Post-G3	Post-G3	7	12
5	C014	PRJ-001716 - B7680.11 – T5 CSA	Security	Post-G3	Post-G3	12	24
6	C012	PRJ-001701 - B7680.08 - T2 CSA, CS & T2B	Security	Post-G3	Post-G3	7	31
7	H022	PRJ-001895 - B76-006.02 - Passenger Flow Monitoring (PFM) Deployment Wave 2	Efficient A.	Post-G3	Post-G3	2	33
8	K037	PRJ-001683 - B75-037.00 - ULEZ Park & Ride Car Park	Commercial	Post-G3	Post-G3	0	33
9	K013	PRJ-001856 - B75-058.00 CI Existing Products 2024-2026	Commercial	Post-G3	Post-G3	4	37
10	K02	PRJ-001043 - B6611.05 – GRD Replacement – MRI Horizon	Commercial	Post-G3	Post-G3	0	37
11	T08	PRJ-001654 - B74-005.01 ATM Efficiencies – Pairwise Departures (PWS)	C&S	Post-G3	Post-G3	0	37
12	A156	PRJ-001755 - B71-079.00 - Commercial Minor Works 2026 – Property	AMC	Post-G3	Post-G3	1	39
13	A150	PRJ-001749 - B71-071.03 - Central Minor Works	AMC	Post-G3	Post-G3	14	52
14	A149	PRJ-001748 - B71-071.02 - Central Minor Works 2025	AMC	Post-G3	Post-G3	19	72
15	A137	PRJ-001672 - B71-059.00 - Technology Capital Purchase H7	AMC	Post-G3	Post-G3	2	74
16	A135	PRJ-001669 - B71-056.00 - Commercial Minor Works 2023 - Property	AMC	Post-G3	Post-G3	-0	74
17	A126	PRJ-001644 - B71-041.00 - T4 HBS – Right Hand Side (RHS)	AMC	Post-G3	Post-G3	21	96
18	A111	PRJ-001600 - B71-030.00 - T4 Emergency Lighting CBUs	AMC	Post-G3	Post-G3	1	97
19	A110	PRJ-001596 - B71-029.00 - T4 Sewage Chamber Refurbishment	AMC	Post-G3	Post-G3	1	98

Rank	ID	Label	Programme	Score (points)	Score out of 100%	H8 Capex (£m, CPI 2024p)	H8 Cumulative capex (£m, CPI 2024p)
20	A096	PRJ-001573 - B71-007.00 - T2 Landside PRS Host Area Expansion	AMC	Post-G3	Post-G3	1	99
21	A073	PRJ-001422 - B7209.03 - MSCP4 Urgent Structural Works	AMC	Post-G3	Post-G3	1	99
22	A068	PRJ-001409 - B7231.01 - CP24A & Spout Lane	AMC	Post-G3	Post-G3	1	101
23	A067	PRJ-001408 - B7232 - Western Campus Baggage Obsolescence	AMC	Post-G3	Post-G3	2	103
24	A062	PRJ-001331 - B7227.00 Terminals Critical Asset Management and Compliance	AMC	Post-G3	Post-G3	2	105
25	A045	PRJ-000743 - B6361.02 Western Campus Logistics and Compliance	AMC	Post-G3	Post-G3	0	105
26	A026	PRJ-000465 - B6206.13 Rail OTN & PLC Replacement	AMC	Post-G3	Post-G3	10	115
27	A014	PRJ-000206 - Main Tunnel	AMC	Post-G3	Post-G3	8	124
28	A012	PRJ-000181 - B7216 AGL Reinforcement	AMC	Post-G3	Post-G3	1	125
29	T01	PRG-000074 - B74-000.00 - H7 Carbon Programme: Programme Initiation and Scoping	C&S	NA	NA	-5	120
30	C01	PRG-000072 - B7680 - Security Transformation Programme	Security	49	91%	15	135
31	C016	PRJ-001719 - B7680.13 - T4 CSA & CS	Security	49	91%	34	170
32	J01	Electricity network 11KV and 33KV upgrades	AMC	45	83%	174	343
33	G01	PRG-000073 - B7233 - T2 Baggage - Strategy and Scoping	T2 Baggage	41	76%	32	375
34	G011	PRJ-001789 - B73-011.00 - Tr4 - Demolitions North	T2 Baggage	41	76%	6	382
35	G017	PRJ-001816 - B73-017.00 Tr5 T2A Baggage System	T2 Baggage	41	76%	282	663
36	G021	PRJ-001884 - B73-021.00 Shell & Core	T2 Baggage	41	76%	53	716
37	G022	PRJ-001890 - B73-022.00 T2A Office and Welfare	T2 Baggage	41	76%	2	719
38	G023	Decommission T1 baggage system	T2 Baggage	41	76%	0	719
39	G024	Baggage P2 R&O's	T2 Baggage	41	76%	25	744

Rank	ID	Label	Programme	Score (points)	Score out of 100%	H8 Capex (£m, CPI 2024p)	H8 Cumulative capex (£m, CPI 2024p)
40	D03	PRJ-001901 - B71-152 Terminal 4 Front Door and Car Park - Tranche 34	AMC	37	69%	295	1,039
41	C024	PRJ-001864 - B7680.23 T5 BA crew L20 & Royal Suite	Security	36	67%	6	1,046
42	C041	In airport Cargo, OAA Upgrade to Southside CPSRA & Control Post 25 Phase 2	Security	34	63%	61	1,107
43	E01	T3 Standard 3 HBS Replacement	AMC	33	61%	86	1,193
44	M06	H8 Shell & Core x 45 (all terminals)	Commercial	33	61%	45	1,238
45	C031	PRJ-001920 - B7680.30 – High Complexity Control Posts	Security	32	59%	26	1,264
46	C039	PRJ-002005 - B7680.38 T5 BA Crew L20	Security	32	59%	3	1,267
47	F02	PRJ-001903 - B7320.01 Project 1 – T5 Pilz Obsolescence Phase 1	AMC	31	57%	4	1,271
48	F03	PRJ-001903 - B7320.01 Project 2	AMC	31	57%	6	1,277
49	F04	PRJ-001903 - B7320.01 Project 3	AMC	31	57%	10	1,287
50	F05	PRJ-001903 - B7320.01 Project 4	AMC	31	57%	32	1,318
51	F06	PRJ-001903 - B7320.01 Project 5	AMC	31	57%	55	1,373
52	C037	PRJ-001956 - B7680.36 CPC	Security	31	57%	79	1,452
53	C015	PRJ-001718 - B7680.12 T3 Non-Pax Search – Arrivals	Security	30	56%	3	1,455
54	C026	PRJ-001869 - B7680.25 T3 Non-Pax Search – Departures	Security	30	56%	9	1,464
55	C027	PRJ-001897 - B7680.27 – Control Posts 12 & 18	Security	30	56%	20	1,484
56	A169	PRJ-001770 - B7228.03 - Northern Runway	AMC	27	50%	28	1,512
57	A172	PRJ-001793 - B71-097.00 - FIDS and Media Screens - Low Complexity	AMC	27	50%	1	1,514
58	A192	PRJ-001827 - B71-120 Airside Specialist Vehicles	AMC	27	50%	41	1,554
59	T03	PRJ-001605 - B7239 - Airspace Modernisation – Airspace Change	C&S	27	50%	9	1,564
60	T04	PRJ-001606 - B7239 - Airspace Modernisation – Easterly Alternation Infrastructure	C&S	27	50%	102	1,666

Rank	ID	Label	Programme	Score (points)	Score out of 100%	H8 Capex (£m, CPI 2024p)	H8 Cumulative capex (£m, CPI 2024p)
61	T023	PRJ-001809 - B74-005.02 – ATM Efficiencies – Reduction of Departure Spacing (RODS)	C&S	27	50%	2	1,668
62	T024	PRJ-001810 - B74-005.03 ATM Efficiencies – Departure Management (DMAN)	C&S	27	50%	2	1,670
63	T025	PRJ-001941 - B74-022.00 Easterly Alternation Airspace Change Proposals (EA-ACP)	C&S	27	50%	1	1,671
64	T030	Airspace Change noise mitigation + minor G2 increase	C&S	27	50%	22	1,693
65	T034	B74-023.00 Intelligent Integrated Queue Project (IIQP)	C&S	27	50%	1	1,694
66	P03	T5 Capacity Optimisation Phase 1	MH	25	46%	214	1,908
67	A125	PRJ-001642 - B7231.02 - Waste Areas Incl Landside Sweeper Tip	AMC	23	43%	3	1,911
68	A147	PRJ-001736 - B71-030.01 - Rail UPS	AMC	23	43%	13	1,924
69	A190	PRJ-001822 - B71-115 FIDS and Media Screens - High Complexity	AMC	23	43%	10	1,933
70	C035	PRJ-001933 - B7680.34 - Tranche 2: Advanced Screening Algorithms	Security	22	41%	11	1,944
71	A066	PRJ-001337 - B7226 T2 chilled water	AMC	21	39%	17	1,961
72	A193	PRJ-001831 - B71-124 T4 Level Transfers	AMC	21	39%	5	1,966
73	A194	PRJ-001837 - B71-130 Airside Water Treatment Project	AMC	21	39%	3	1,969
74	A198	PRJ-001854 - B71-003.01 Wave 1 - Airside Roads Renewal	AMC	21	39%	6	1,975
75	A202	PRJ-001872 - B71-098.01 Stands 303/305/334	AMC	21	39%	8	1,983
76	A203	PRJ-001873 - B71-098.02 T5 Stand Replacements	AMC	21	39%	22	2,005
77	A204	PRJ-001874 - B71-098.03 Stands 307/336	AMC	21	39%	2	2,007
78	A205	PRJ-001875 - B71-098.04 Stand Entry Guidance System Replacement	AMC	21	39%	5	2,012
79	A206	PRJ-001876 - B71-098.05 T5 Stand Refurbishment	AMC	21	39%	3	2,016

Rank	ID	Label	Programme	Score (points)	Score out of 100%	H8 Capex (£m, CPI 2024p)	H8 Cumulative capex (£m, CPI 2024p)
80	A234	Asset Management & Compliance P2 R&O's	AMC	21	39%	48	2,063
81	A236	At height safety for Terminals and car parks - Suicide and accident prevention	AMC	21	39%	41	2,104
82	A275	Manchester Arena Inquiry	AMC	21	39%	6	2,110
83	N01	Occupancy Infrastructure	None	20	37%	368	2,478
84	A033	PRJ-000498 - B7205 M1/14 Firemain Controls	AMC	19	35%	1	2,479
85	A038	PRJ-000512 - B7221.00 PFOS (Trace contaminants – Fluorosurfactants (PFOS))	AMC	19	35%	37	2,516
86	A114	PRJ-001603 - B71-033.00 - Heart System Renewal	AMC	19	35%	20	2,537
87	A119	PRJ-001618 - B71-036.00 - CPSRA Strengthening	AMC	19	35%	1	2,538
88	A142	PRJ-001692 - B6214.09 - Southern Catchment	AMC	19	35%	45	2,583
89	A163	PRJ-001764 - B71-086.00 Cyber for Assurance - 2023	AMC	19	35%	6	2,589
90	A189	PRJ-001821 - B71-114 UPS & Vesda Systems Replacement	AMC	19	35%	14	2,603
91	A207	PRJ-001877 - B71-143 HRMS Replacement	AMC	19	35%	5	2,608
92	A278	Border Security Enhancement	AMC	19	35%	0	2,608
93	B03	Per and Polyfluoroalkyl Substances Remediation	AMC	19	35%	37	2,645
94	B04	Cyber Security Mitigation - Operational Technology and End Devices	AMC	19	35%	9	2,655
95	T06	PRJ-001619 - B74-003.00 PCA Improvements on Served Stands - Phase 1	C&S	18	33%	12	2,667
96	T011	PRJ-001703 - B74-008.00 Carbon - Data and insights	C&S	18	33%	2	2,669
97	T026	PRJ-001992 - B74-003.01 PCA Improvements on Served Stands - Phase 2	C&S	18	33%	26	2,695
98	T027	PRJ-001993 - B74-003.02 PCA Improvements on Served Stands - Phase 3	C&S	18	33%	80	2,775
99	R01	PRJ-001686 - B74-006 - Decarbonisation of Heat	C&S	18	33%	44	2,818
100	Q01	Next-Gen Passenger Services - Passenger Automation	Commercial	18	33%	149	2,968

Rank	ID	Label	Programme	Score (points)	Score out of 100%	H8 Capex (£m, CPI 2024p)	H8 Cumulative capex (£m, CPI 2024p)
101	G020	PRJ-001883 - B73-020.00 Essential Asset Replacement	T2 Baggage	18	33%	55	3,023
102	A085	PRJ-001531 - B71-069.00 - Minimum Energy Efficiency Standards (MEES) - EPC Compliance Property	AMC	17	31%	1	3,024
103	A092	PRJ-001569 - B71-003.00 Wave 1 - Landside Roads and Perimeter Fence Renewal	AMC	17	31%	12	3,036
104	A104	PRJ-001589 - B71-022.00 - T5 BMS Upgrade	AMC	17	31%	30	3,067
105	A105	PRJ-001590 - B71-023.00 - T4 BMS Upgrade	AMC	17	31%	24	3,091
106	A145	PRJ-001698 - B71-035.01 - Wave 1 NATS Asset Replacement Phase 2	AMC	17	31%	1	3,092
107	A146	PRJ-001700 - B71-064 - Runway Approach Lighting Renewal	AMC	17	31%	9	3,100
108	A213	PRJ-001893 - B71-150 Baggage Data Analytics	AMC	17	31%	2	3,103
109	A214	PRJ-001916 - B71-151.01 T3 LV Switchboard Replacement (Phase 2)	AMC	17	31%	25	3,128
110	A215	PRJ-001917 - B71-151.02 T4 LV Switchboard Replacement (Phase 1)	AMC	17	31%	10	3,138
111	A216	PRJ-001918 - B71-151.03 Estates LV Switchboard Replacement (Phase 1)	AMC	17	31%	12	3,150
112	A218	PRJ-001923 - B71-154.02 Airfield Pavements Rolling Lifecycle – Concrete 2026	AMC	17	31%	19	3,169
113	A219	PRJ-001924 - B71-154.03 Airfield Pavements Rolling Lifecycle – Asphalt	AMC	17	31%	34	3,203
114	A220	PRJ-001925 - B71-154.04 Airfield Pavements Rolling Lifecycle – Life Extension	AMC	17	31%	6	3,209
115	A245	Rail Stations - Tunnel Vent Fan, Dampers, Fan Drives & Rotork Valves	AMC	17	31%	7	3,216
116	A274	Street Lighting Renewals	AMC	17	31%	9	3,225
117	B012	Pedestrian crossings (airside phase 2)	AMC	17	31%	7	3,232
118	B015	Terminal Buildings EPC (Energy Efficiency Compliance)	AMC	17	31%	15	3,247

Rank	ID	Label	Programme	Score (points)	Score out of 100%	H8 Capex (£m, CPI 2024p)	H8 Cumulative capex (£m, CPI 2024p)
119	B020	HAL owned HV Network Renewals	AMC	17	31%	1	3,248
120	B021	Rolling renewal of HV cabling	AMC	17	31%	1	3,249
121	B022	CTA Sanitation Block	AMC	17	31%	4	3,253
122	B028	T4 Chilled Water Pipework Renewals	AMC	17	31%	1	3,254
123	B031	Pump Renewals - T5 Fire Main Pump Renewals (Energy Centre)	AMC	17	31%	1	3,255
124	B052	Calorifier Renewals	AMC	17	31%	1	3,256
125	B058	Replace 1km of network per year - Surface Water and Pollution	AMC	17	31%	3	3,259
126	B06	T4/5 HBS (Hold Baggage Screening) Bearing Replacement Phase 2	AMC	17	31%	3	3,262
127	B085	T4 Smoke Control - Replacement of Smoke Detection Equipment and Panels	AMC	17	31%	0	3,262
128	B09	HV Resilience Renewals (2025 Power Incident Review)	AMC	17	31%	9	3,271
129	B092	T5 Check-In Renewals	AMC	17	31%	1	3,271
130	B096	T4/T5 HBS (Hold Baggage Screening) Replacement	AMC	17	31%	5	3,277
131	B104	T4 Safe Walking Route	AMC	17	31%	0	3,277
132	K01	PRJ-001563 - B75-019.00 - Cargo Southside Transformation	Commercial	17	31%	55	3,332
133	L08	Additional changing places (accessible washrooms) provision	Commercial	17	31%	5	3,337
134	L09	Additional accessible toilets	Commercial	17	31%	9	3,346
135	L10	Terminal 3 arrivals Baggage reclaim buggy route	Commercial	17	31%	23	3,370
136	L13	Terminal 4 accessible route for remote operations	Commercial	17	31%	5	3,374
137	L17	Additional lift access for EMA handling	Commercial	17	31%	19	3,393
138	A249	MSCP4 - Repair	AMC	16	30%	27	3,420
139	A250	MSCP5 Expansion Joints	AMC	16	30%	10	3,430
140	B118	Airport Noise and Operations Monitoring (ANOMS)	AMC	16	30%	8	3,438

Rank	ID	Label	Programme	Score (points)	Score out of 100%	H8 Capex (£m, CPI 2024p)	H8 Cumulative capex (£m, CPI 2024p)
141	B125	Airport Operating to Plan (AOP)	AMC	16	30%	2	3,440
142	B126	TMS Stand Planning system	AMC	16	30%	2	3,442
143	B131	Crisplant Sort Controller (CSC) baggage platform and products	AMC	16	30%	9	3,450
144	B132	Baggage desktop and laptop client operating systems and hardware	AMC	16	30%	4	3,454
145	B133	Bag messaging for compliance with IATA 1755	AMC	16	30%	4	3,458
146	B136	Tech. component of refurb - Airport Ops Ctrl Centre, STAR & Compass Centers	AMC	16	30%	5	3,463
147	B144	Lighting Control System (LCS)	AMC	16	30%	1	3,463
148	B146	Archway Metal Detector (AMD Net)	AMC	16	30%	2	3,465
149	B155	Microsoft platform and connectors	AMC	16	30%	0	3,465
150	B158	Essential maintenance for Heathrow's ageing data centres	AMC	16	30%	19	3,485
151	B164	Counter Unmanned Aerial systems (C-UAS) and Perimeter Intrusion Detection system (PIDS)	AMC	16	30%	14	3,499
152	B172	Governance, risk and compliance solutions	AMC	16	30%	2	3,501
153	B185	Policy	AMC	16	30%	1	3,502
154	M16	Land optimisation - decking (LS 2 and LS4) - replace Pex/N4	Commercial	16	30%	75	3,577
155	M18	Perimeter parking opportunities	Commercial	16	30%	19	3,595
156	H01	PRG-000076 - B76-004.00 - Efficient Airport Programme: Programme Initiation and Scoping	Efficient A.	16	30%	3	3,598
157	H06	PRJ-001614 - B76-003 - Border Force Holding Rooms - T2, T4 and T5	Efficient A.	16	30%	1	3,600
158	H010	PRJ-001726 - B76-008 - PAX ID (Biometrics)	Efficient A.	16	30%	8	3,607
159	H021	PRJ-001894 - B76-006.00 - Passenger Flow Monitoring (PFM) - Futures	Efficient A.	16	30%	18	3,625

Rank	ID	Label	Programme	Score (points)	Score out of 100%	H8 Capex (£m, CPI 2024p)	H8 Cumulative capex (£m, CPI 2024p)
160	H025	PRJ-001936 - B76-019.00 Seating Improvements	Efficient A.	16	30%	11	3,636
161	H026	PRJ-001937 - B76-020.00 Digital Screen Optimisation	Efficient A.	16	30%	1	3,637
162	H028	PRJ-001945 - B76-003.01 - Border Force Holding Rooms - T3	Efficient A.	16	30%	0	3,637
163	H040	PRJ-001985 - B76-033.00 Additional Coaching Gate T5	Efficient A.	16	30%	6	3,643
164	H043	EA P2 R&O's	Efficient A.	16	30%	54	3,697
165	A083	PRJ-001525 - B6672.04 - Blast Protection - Terminals	AMC	15	28%	21	3,718
166	A191	PRJ-001825 - B71-118 Airside Pedestrian Crossings	AMC	15	28%	11	3,729
167	A195	PRJ-001838 - B71-131 External Potable Water Project	AMC	15	28%	40	3,769
168	A243	T5D Attenuators Overhaul	AMC	15	28%	6	3,775
169	A246	TTS Train Control - (Regional Automatic Train Operation & Regional Automatic Train Protection)	AMC	15	28%	10	3,785
170	A266	Traffic Signals (Urban Traffic Control) - Systems	AMC	15	28%	13	3,799
171	B016	Rolling programme for pavements and stands	AMC	15	28%	51	3,850
172	B02	Continued Passive Fire Protection Renewals	AMC	15	28%	1	3,851
173	B034	Installation and renewal of UPS for Critical Assets	AMC	15	28%	3	3,854
174	B036	T5 Fuel Farm Fire Water Deluge Pumping Station Renewals (Pumps and Valves)	AMC	15	28%	2	3,856
175	B038	Control Tower Refurbishment	AMC	15	28%	24	3,880
176	B044	Potable Water Network Renewals (1km of network per year)	AMC	15	28%	3	3,883
177	B05	Airfield Stand Flood Towers	AMC	15	28%	19	3,901
178	B055	AGL DC Cable Replacement	AMC	15	28%	1	3,902
179	B061	T2 - Internal Potable Renewal	AMC	15	28%	0	3,902

Rank	ID	Label	Programme	Score (points)	Score out of 100%	H8 Capex (£m, CPI 2024p)	H8 Cumulative capex (£m, CPI 2024p)
180	B062	T4 - Internal Potable Renewal	AMC	15	28%	0	3,902
181	B064	T3 - Internal Potable Renewal	AMC	15	28%	0	3,902
182	B065	T5 - Internal Potable Renewal	AMC	15	28%	0	3,902
183	B067	UPS Renewals – roads, baggage tunnels	AMC	15	28%	0	3,903
184	B068	T5 UPS Renewals	AMC	15	28%	0	3,903
185	B069	T2 UPS Renewals	AMC	15	28%	0	3,903
186	B073	APPROACH 27L Renew of LEDs	AMC	15	28%	1	3,904
187	B076	Computer Room Air Conditioning Unit Renewals (CRAC)	AMC	15	28%	1	3,904
188	B078	T5 Chilled Water Pipework Renewals	AMC	15	28%	1	3,905
189	B080	Low Voltage Network Distribution Board Renewals	AMC	15	28%	1	3,906
190	B081	Baggage PLC Replacement - Eastern Campus S7-400	AMC	15	28%	2	3,908
191	B082	T3 Baggage - Controls replacement	AMC	15	28%	3	3,911
192	B084	TTS - UPS Equipment Rooms	AMC	15	28%	0	3,911
193	B087	Fire Detection Equipment and Panel Renewals	AMC	15	28%	0	3,911
194	B095	Cooling Towers Renewals	AMC	15	28%	3	3,915
195	B098	Stand Infrastructure Renewals	AMC	15	28%	17	3,932
196	B100	Heavy Rail Tunnel - Re-Railing Rolling Lifecycle	AMC	15	28%	0	3,932
197	B103	Copper 50 Pair Network Cable Migration	AMC	15	28%	0	3,932
198	B106	Cargo Tunnel Renewals	AMC	15	28%	1	3,934
199	B110	Potable water tanks and plant rooms renewals	AMC	15	28%	2	3,936
200	B112	Main Tunnel Renewals	AMC	15	28%	3	3,939
201	B115	Property: T3 Interior	AMC	15	28%	9	3,948
202	H04	PRJ-001608 - B76-001.00 - Airfield Optimisation	Efficient A.	15	28%	2	3,950
203	H013	PRJ-001733 - B76-015 - TMS Stand Planning integration	Efficient A.	15	28%	1	3,952
204	H016	PRJ-001865 - B76-017.00 - Manual Handling Aids	Efficient A.	15	28%	3	3,955
205	H017	PRJ-001885 - B76-016.02: T2 LED Replacement	Efficient A.	15	28%	3	3,958
206	H027	PRJ-001943 - B76-021.00 VCF Enhancements	Efficient A.	15	28%	20	3,978
207	H029	PRJ-001950 - B76-022.00 EDM T4 LED Replacement	Efficient A.	15	28%	0	3,978

Rank	ID	Label	Programme	Score (points)	Score out of 100%	H8 Capex (£m, CPI 2024p)	H8 Cumulative capex (£m, CPI 2024p)
208	H031	PRJ-001952 - B76-024.00 EDM T5 LED Replacement Wave 2	Efficient A.	15	28%	0	3,978
209	H032	PRJ-001953 - B76-025.00 - EDM Estates and Rail LED Replacement	Efficient A.	15	28%	0	3,979
210	H033	PRJ-001954 - B76-026.00 EDM IE5 Motor Upgrade (Phase 1)	Efficient A.	15	28%	4	3,983
211	H034	PRJ-001955 - B76-027.00 EDM Phase 2 Futures	Efficient A.	15	28%	11	3,994
212	H041	APOC Systems, Tools and Processes inc Punctuality	Efficient A.	15	28%	9	4,002
213	H042	Baggage Improvement Scope	Efficient A.	15	28%	40	4,043
214	A244	Heavy Rail Tunnel - Re-Railing	AMC	14	26%	4	4,047
215	B137	HEART infrastructure monitoring system	AMC	14	26%	3	4,050
216	B142	Stand Entry Guidance system (SEGS)	AMC	14	26%	8	4,058
217	B145	Urban Traffic Control (UTC)	AMC	14	26%	2	4,060
218	B154	Health and Safety Incident Management system	AMC	14	26%	8	4,068
219	B157	Security technology replacements and upgrades	AMC	14	26%	16	4,083
220	B159	Secure data and file transfer solution upgrade	AMC	14	26%	23	4,107
221	B174	Zero trust identity and access management	AMC	14	26%	9	4,116
222	B175	Embed security awareness and training into culture of org	AMC	14	26%	2	4,117
223	B186	Immutable Backups	AMC	14	26%	3	4,121
224	B187	Cyber resilience and recoverability	AMC	14	26%	9	4,130
225	K021	PRG-000075 - B75-035.00 - Commercial Revenue Programme: Programme Initiation and Scoping	Commercial	14	26%	2	4,132
226	K047	PRJ-001899 - B75-042.01 - Land Opt - Long Stay 2/3	Commercial	14	26%	9	4,141
227	K065	Commercial P2 R&O's	Commercial	14	26%	51	4,193
228	V01	T5 Early Bag Store	None	14	26%	47	4,239
229	A056	PRJ-001254 - B7651.00 Safety & Resilience	AMC	13	24%	1	4,240
230	A176	PRJ-001802 - B71-100 H7 Main Tunnel Renewals	AMC	13	24%	24	4,264
231	A183	PRJ-001812 - B71-106 - LEPC Rolling Lifecycle Phase 1	AMC	13	24%	12	4,277

Rank	ID	Label	Programme	Score (points)	Score out of 100%	H8 Capex (£m, CPI 2024p)	H8 Cumulative capex (£m, CPI 2024p)
232	A184	PRJ-001813 - B71-107 - LEPC Rolling Lifecycle Phase 2	AMC	13	24%	20	4,297
233	A186	PRJ-001817 - B71-110 Landside Safety Project	AMC	13	24%	11	4,307
234	A187	PRJ-001818 - B71-111 Longford Link Bridge Project	AMC	13	24%	0	4,308
235	A188	PRJ-001819 - B71-112 Colleague Car Parking Project	AMC	13	24%	1	4,309
236	A227	PRJ-001960 - B71-163 LifeX Test System and Mobile Data Terminals	AMC	13	24%	0	4,309
237	A238	T4 PAVA System	AMC	13	24%	2	4,311
238	A251	Airside Roads Renewal	AMC	13	24%	18	4,329
239	A276	Landside Roads Renewal	AMC	13	24%	9	4,338
240	B010	Airside/Landside Security Fencing - Rolling Renewals	AMC	13	24%	10	4,348
241	B011	Substation Roofs	AMC	13	24%	4	4,352
242	B013	RAAC Structural Elements	AMC	13	24%	8	4,360
243	B014	West Ramp Coach Park- Renewal Work	AMC	13	24%	9	4,368
244	B017	Western Campus Inter-Terminal Baggage Transport Asset Replacement (DCV)	AMC	13	24%	78	4,446
245	B018	RAAC External Cladding	AMC	13	24%	14	4,460
246	B019	Engineering Spares and Emergencies	AMC	13	24%	22	4,482
247	B023	Pioneer Data Centre power supply, UPS and support facilities	AMC	13	24%	1	4,483
248	B024	NATS - DME FERNAU 2020 - South	AMC	13	24%	1	4,484
249	B025	NATS - EFPS Hardware & Software refresh HATCT & VCF	AMC	13	24%	1	4,484
250	B026	NATS - UPS HATCT	AMC	13	24%	1	4,485
251	B027	NATS - SIM Upgrade	AMC	13	24%	1	4,485
252	B029	NATS - SMR Terma 2000 N/S/E/W	AMC	13	24%	1	4,487
253	B030	NATS - SENSIS MLAT	AMC	13	24%	1	4,488
254	B032	Rolling Maid Reader Asset Renewal 610e & 620 (2000 units across 6 years)	AMC	13	24%	1	4,489
255	B033	NATS - Instrument Landing System Indra Navia	AMC	13	24%	2	4,492
256	B035	NATS - SDPS HATCT & VCF	AMC	13	24%	4	4,495

Rank	ID	Label	Programme	Score (points)	Score out of 100%	H8 Capex (£m, CPI 2024p)	H8 Cumulative capex (£m, CPI 2024p)
257	B037	Southern Runway - Western Section Resurfacing	AMC	13	24%	15	4,510
258	B039	T3 Overhead height barriers to protect external RAAC cladding	AMC	13	24%	1	4,511
259	B040	T4 Cladding Replacement (airside)	AMC	13	24%	5	4,517
260	B041	MSCP5 Expansion Joints phase 2	AMC	13	24%	9	4,526
261	B042	TTS - Train Control - RATP (Regional Automatic Train Protection) & RATO (Regional Automatic Train Operation)	AMC	13	24%	21	4,546
262	B047	Main Tunnel North Plant Room Sump	AMC	13	24%	0	4,546
263	B048	T4 Public Address Voice Alarm Replacement	AMC	13	24%	0	4,546
264	B056	Fire Main Valve Replacement Strategy	AMC	13	24%	1	4,547
265	B057	Traffic Signals	AMC	13	24%	2	4,550
266	B059	Heavy Rail Tunnel - Mobile Communication System (GSM-R) Battery (UPS) Replacement	AMC	13	24%	0	4,550
267	B060	Internal Potable Renewal - Non Terminal Buildings	AMC	13	24%	0	4,550
268	B063	TTS - Power Distribution System PLC and Controls	AMC	13	24%	0	4,550
269	B066	Airside Generator change over panels renewals	AMC	13	24%	0	4,550
270	B07	Fire Main Network and System Renewals	AMC	13	24%	15	4,565
271	B071	Rail Stations - T5 Fire System Replacement	AMC	13	24%	0	4,565
272	B072	Western Interface Building Baxorter M&E Renewal	AMC	13	24%	0	4,565
273	B074	T3IB 4 x Pre and Final Sorter Renewal	AMC	13	24%	1	4,566
274	B077	T5 DCV (Destination Coded Vehicle) Unloader EOL and Track Replacement	AMC	13	24%	1	4,567
275	B08	Pump Renewals – M1-14 Fire Main Pumping Station	AMC	13	24%	6	4,572
276	B086	TTS - Power Distribution System Switch Gear	AMC	13	24%	0	4,573
277	B089	Fire Damper Replacements	AMC	13	24%	0	4,573
278	B090	Heavy Rail Tunnel - Replacement of Overhead Wires	AMC	13	24%	0	4,573

Rank	ID	Label	Programme	Score (points)	Score out of 100%	H8 Capex (£m, CPI 2024p)	H8 Cumulative capex (£m, CPI 2024p)
279	B091	Heavy Rail Tunnel - Switches and Crossings	AMC	13	24%	0	4,574
280	B094	Radio System (emergency)	AMC	13	24%	1	4,574
281	B099	BA - Renewal Work	AMC	13	24%	0	4,574
282	B102	CCR (Constant Current Regulators) replacement (12 to 6.6 AMPs)	AMC	13	24%	0	4,575
283	B109	UKPNS NAMP Works (H8)	AMC	13	24%	2	4,576
284	B113	MSCP (all) Fire Detection and Evacuation Systems	AMC	13	24%	5	4,581
285	B135	Handheld baggage scanners and location codes used by VIBES and BRS scanners	AMC	13	24%	2	4,583
286	B139	Lift renewal	AMC	13	24%	6	4,589
287	B147	Flight Information Display Systems (FIDS)	AMC	13	24%	6	4,595
288	A112	PRJ-001601 - B71-031.00 - Wave 1 Tunnel Improvements in ART, SAR, NAR	AMC	12	22%	96	4,691
289	A160	PRJ-001759 - B71-060.02 - HV NAMP 2024	AMC	12	22%	1	4,692
290	A162	PRJ-001761 - B71-060.04 - HV NAMP 2026	AMC	12	22%	4	4,696
291	A231	B71-138 - T3 Pier 7 Structural	AMC	12	22%	98	4,794
292	A232	T3 Refurbishment of Pier 7 and Connector (EXTERNAL)	AMC	12	22%	305	5,099
293	A233	T3 Refurbishment of Pier 7 and Connector (INTERNAL)	AMC	12	22%	12	5,111
294	A235	Colleague car parking Access Control	AMC	12	22%	2	5,113
295	A239	Passive Fire Protection Renewals	AMC	12	22%	11	5,124
296	A240	Fire Station (East & Headquarters Buildings) Uninterruptible Power Supply Communications Room Remediation	AMC	12	22%	1	5,124
297	A252	Fire Door Renewals	AMC	12	22%	1	5,126
298	A277	ATP Enhancements CAA Enforcement and Operational Efficiency	AMC	12	22%	0	5,126
299	B163	CCTV re-refresh	AMC	12	22%	16	5,141
300	B165	Physical access control re-refresh	AMC	12	22%	8	5,149

Rank	ID	Label	Programme	Score (points)	Score out of 100%	H8 Capex (£m, CPI 2024p)	H8 Cumulative capex (£m, CPI 2024p)
301	B167	End user computing, including laptops, desktops, phones and multi-functional devices	AMC	12	22%	16	5,165
302	B183	Cyber threat intelligence platform enhancements	AMC	12	22%	1	5,165
303	B184	Extended attack surface management	AMC	12	22%	1	5,166
304	J02	Electricity network 132KV new network	AMC	12	22%	310	5,476
305	U02	Climate Adaptation to Flood risk	C&S	12	22%	59	5,535
Light Green: projects in the lower and upper limit of the capex envelope threshold:							
306	A080	PRJ-001514 - B7237 MSCP3 Intumescent Paint, MSCP3 Civils Rehabilitation and Safety Improvements	AMC	11	20%	20	5,555
307	A091	PRJ-001568 - B71-002.00 - Wave 1 Non-Terminal Buildings Rehab and Emergency Lighting Renewal	AMC	11	20%	3	5,558
308	A113	PRJ-001602 - B71-032.00 - T4 PLC and Check-in Asset Replacement	AMC	11	20%	27	5,585
309	A124	PRJ-001641 - B7231.03 - UKPNS HVAC System	AMC	11	20%	2	5,588
310	A262	Chiller Renewals	AMC	11	20%	9	5,596
311	A263	Water Treatment for Cooling Towers	AMC	11	20%	2	5,599
312	A272	WeCa Inter Terminal Baggage Transport Asset Replacement DCV	AMC	11	20%	43	5,642
313	B01	Continued Chiller Renewals	AMC	11	20%	3	5,645
314	B053	Potable Water Pumping Stations Renewal Programme	AMC	11	20%	1	5,645
315	B101	Terminal stand-alone toilet facilities	AMC	11	20%	0	5,646
316	B114	Terminal Public Toilets and Welfare Rolling Renewals	AMC	11	20%	12	5,658
317	B117	Aerodrome Live Fault Reporting (ALFRED)	AMC	11	20%	8	5,666
318	B130	Sort Allocation Computer (SAC) and Supervisory Control And Data Acquisition (SCADA) baggage platform and products obsolescence.	AMC	11	20%	39	5,705

Rank	ID	Label	Programme	Score (points)	Score out of 100%	H8 Capex (£m, CPI 2024p)	H8 Cumulative capex (£m, CPI 2024p)
319	B140	DTS Servers	AMC	11	20%	2	5,707
320	B143	Common Data Environment (M-Files)	AMC	11	20%	2	5,709
321	B148	Operational Performance Measurement (OPM)	AMC	11	20%	6	5,715
322	B149	SSBD replacement	AMC	11	20%	16	5,730
323	B156	Minor Capital Works for corporate systems	AMC	11	20%	9	5,740
324	B160	Database standardisation to migrate apps and systems from Oracle to Microsoft SQL	AMC	11	20%	4	5,743
325	B161	Network asset re-fresh - access switches, wireless LAN points, firewalls, telephony	AMC	11	20%	23	5,767
326	B162	Server estate - incl. op system and database upgrade, plus H/W and virtualisation upgrade	AMC	11	20%	16	5,782
327	B166	Shared storage re-fresh	AMC	11	20%	14	5,796
328	B168	Radio network consolidation	AMC	11	20%	8	5,804
329	B169	Centrally held provision for technology equipment not covered by a Capital budget	AMC	11	20%	6	5,810
330	B170	End User Compute devices and Identities cloud migration to Entra ID	AMC	11	20%	12	5,822
331	B177	Modernisation of end point protection	AMC	11	20%	2	5,824
332	B178	Cloud workload protection platform	AMC	11	20%	2	5,826
333	B179	Network microsegmentaion for zero trust	AMC	11	20%	7	5,833
334	B180	Operational Technology protection	AMC	11	20%	5	5,837
335	B181	Multi cloud cloud security posture management solutions	AMC	11	20%	2	5,839
336	Q03	Intelligent Operations and Optimisation	Commercial	11	20%	89	5,927
337	M08	T2 Towers Upgrade (Advertising)	Commercial	11	20%	4	5,931
338	A178	PRJ-001804 - B71-102 Rail Fire System (2023)	AMC	10	19%	6	5,938
339	A247	Building Sustainability and Energy Performance	AMC	10	19%	19	5,956

Rank	ID	Label	Programme	Score (points)	Score out of 100%	H8 Capex (£m, CPI 2024p)	H8 Cumulative capex (£m, CPI 2024p)
340	A248	Joint and bearing replacement T4 on and off ramp	AMC	10	19%	10	5,966
341	K027	PRJ-001529 - B75-068.00 BA Crew Car Park	Commercial	10	19%	18	5,984
342	M01	T3 Pier 6 Lounge	Commercial	10	19%	37	6,021
343	M02	T5 Level 30 & 40 Lounge	Commercial	10	19%	99	6,120
344	M14	VIP Phase 4	Commercial	10	19%	35	6,156
345	M15	Retail New Scope : T4 IDL	Commercial	10	19%	19	6,174
Red: projects above the upper limit of the capex envelope threshold:							
346	A177	PRJ-001803 - B71-101 Landside Roads H7 Rolling Life Cycle - Project 1 - 2023 Resurfacing - Tranche 33	AMC	9	17%	0	6,175
347	A241	Rehabilitation of non terminal buildings	AMC	9	17%	49	6,223
348	A259	B71-139 - T3 Pier 5 Roof	AMC	9	17%	30	6,254
349	A261	Water Treatment - Closed loop systems - Terminal 2	AMC	9	17%	2	6,256
350	B046	Stations - Switchgear and Transformer replacement (CTA & T4)	AMC	9	17%	0	6,256
351	B049	Central Battery Units - Renewals	AMC	9	17%	0	6,256
352	B051	AGL Fitting Replacements	AMC	9	17%	1	6,257
353	B070	Grooved Type Joints Replacements	AMC	9	17%	0	6,257
354	B075	Boiler Renewals	AMC	9	17%	1	6,258
355	B079	T5 Switchboard replacement	AMC	9	17%	1	6,259
356	B088	TTS - Station Doors Overhaul	AMC	9	17%	0	6,259
357	B093	T4 - Sanitation block renewals	AMC	9	17%	1	6,260
358	B097	T5 Baggage - Controls Replacement (S7-400 & Profibus)	AMC	9	17%	8	6,267
359	B105	Remote Sites Welfare Toilet Renewals	AMC	9	17%	1	6,268
360	B108	T3 Canopy replacement (either side of T3 East Wing)	AMC	9	17%	2	6,270
361	B111	T3 Renewal of Pier 5 and 7 Gate Rooms and Stairwells	AMC	9	17%	2	6,272
362	B121	Baggage Data Analytics (Merlin & ADMRIS)	AMC	9	17%	6	6,278
363	B127	Passenger Flow Monitoring, Xovis	AMC	9	17%	2	6,280

Rank	ID	Label	Programme	Score (points)	Score out of 100%	H8 Capex (£m, CPI 2024p)	H8 Cumulative capex (£m, CPI 2024p)
364	B141	MAXIMO asset management system	AMC	9	17%	2	6,282
365	B171	Asset Lifecycle Management	AMC	9	17%	9	6,291
366	K028	PRJ-001534 - B75-005.00 - Car Park Proposition	Commercial	9	17%	1	6,291
367	K039	PRJ-001688 - B75-040 - T5C Airline Lounge	Commercial	9	17%	4	6,295
368	A237	Flight Information Display Screens Renewals	AMC	8	15%	23	6,318
369	A242	Engineering Female Toilets	AMC	8	15%	3	6,321
370	A260	Toilet Block Rolling Refurbishment T2-T5	AMC	8	15%	32	6,354
371	B123	Documented Operations Reporting and Information Systems (DORIS)	AMC	8	15%	4	6,358
372	B134	Vanderlande Trafficlite remote baggage IT monitoring and management system	AMC	8	15%	2	6,359
373	B151	Azure Active Directory Business to Consumer	AMC	8	15%	2	6,361
374	B153	BACS payment system	AMC	8	15%	1	6,362
375	T07	PRJ-001620 - B74-004.00 - EV Charging Stations	C&S	8	15%	7	6,369
376	T014	PRJ-001743 - B74-004.02 - EV Back Office	C&S	8	15%	0	6,370
377	T015	PRJ-001745 - B74-011.02 - CBS eBus Charging	C&S	8	15%	9	6,379
378	T016	PRJ-001746 - B74-011.03 - Bus + Coach eBus Charging	C&S	8	15%	3	6,382
379	T038	eBus Charging Depot (HAL)	C&S	8	15%	14	6,395
380	U05	Zero Waste	C&S	8	15%	43	6,438
381	Q06	Predictive and Proactive Asset Management	Commercial	8	15%	5	6,443
382	M19	Onwards travel proposition	Commercial	8	15%	9	6,452
383	A029	PRJ-000487 - B6214.02 Pollution Infrastructure Renewal	AMC	7	13%	11	6,464
384	A093	PRJ-001570 - B71-004.00 - T3 Roofing structural renewal	AMC	7	13%	13	6,477
385	A099	PRJ-001578 - B71-013.00 - IDAHO Roadmap	AMC	7	13%	4	6,481
386	A103	PRJ-001588 - B71-021.00 - Wave 1 Heavy Rail Tunnel Water Ingress & Fire Compliance	AMC	7	13%	1	6,483

Rank	ID	Label	Programme	Score (points)	Score out of 100%	H8 Capex (£m, CPI 2024p)	H8 Cumulative capex (£m, CPI 2024p)
387	A108	PRJ-001594 - B71-027.00 - TTS Switch Overhauls and Replacements	AMC	7	13%	1	6,484
388	A182	PRJ-001808 - B7205.08 T3 Service Subways - remedial works - 2024 works (FINAL)	AMC	7	13%	2	6,485
389	A271	B71-164 - TBS SAC Obsolescence	AMC	7	13%	15	6,500
390	B043	T3 Cladding Panel Replacement (including East Wing)	AMC	7	13%	0	6,501
391	B045	DTS (Data Transmission System) Servers	AMC	7	13%	0	6,501
392	B050	T4 Cladding Replacement (landside)	AMC	7	13%	1	6,502
393	B054	Control Post Barrier Renewals	AMC	7	13%	1	6,502
394	B083	Engineering Minor Works	AMC	7	13%	112	6,614
395	B107	Non-Terminal Buildings - Roofs	AMC	7	13%	2	6,616
396	B119	Foreign Object Debris (FOD) application and hardware	AMC	7	13%	7	6,623
397	B150	HEX Enterprise Resource Planning System	AMC	7	13%	1	6,624
398	B152	Quantum Treasury system	AMC	7	13%	1	6,625
399	B173	Vulnerability management and remediation	AMC	7	13%	4	6,629
400	B176	Strengthening of data loss prevention controls	AMC	7	13%	4	6,633
401	B182	Next gen Sec Incident & Event Management and Sec Orchestration, Automation & Response modernisation and upgrade	AMC	7	13%	1	6,634
402	T010	PRJ-001687 - B74-007 - CTA Active Travel Project	C&S	7	13%	2	6,635
403	T019	PRJ-001777 - B74-002.09 - Active Travel – East	C&S	7	13%	12	6,647
404	R02	Heat Decarbonisation (Energy Hub, Easy wins, Temp Reduction, Energy Hub)	C&S	7	13%	254	6,901
405	K056	PRJ-001967 - B75-074.00 Consent Project (Compliance)	Commercial	7	13%	3	6,904
406	B116	Keyboard Video Monitor (KVM) system in Control Centre	AMC	6	11%	9	6,913
407	B120	Automated Public Address system (APA)	AMC	6	11%	6	6,920

Rank	ID	Label	Programme	Score (points)	Score out of 100%	H8 Capex (£m, CPI 2024p)	H8 Cumulative capex (£m, CPI 2024p)
408	B122	Airport Community APP	AMC	6	11%	6	6,926
409	B124	Heathrow Roster Management System (HRMS)	AMC	6	11%	3	6,929
410	B128	Telematics System, Journeo	AMC	6	11%	1	6,930
411	B129	Better Suite applications, Copenhagen Optimisation	AMC	6	11%	4	6,934
412	B138	ArcGIS (Heathrow Explorer)	AMC	6	11%	3	6,937
413	T036	Bus Priority	C&S	6	11%	8	6,945
414	K019	Public and Private 5G Infrastructure	Commercial	6	11%	16	6,961
415	K044	PRJ-001771 - B75-018.02 - VIP Diplomatic Product	Commercial	6	11%	16	6,976
416	K045	PRJ-001892 - B75-059.00 HCC Capacity	Commercial	6	11%	2	6,978
417	K049	PRJ-001909 - B75-063.00 T2 Space Opt - T2 L20 AS - Retail Units at Connections	Commercial	6	11%	2	6,981
418	K051	PRJ-001911 - B75-065.00 T5 Space Opt - L20 AS - Retail & F&B inc BOH	Commercial	6	11%	3	6,984
419	K052	PRJ-001912 - B75-066.00 T5 Space Opt - L20 AS- F&B in Ex-Lounge	Commercial	6	11%	4	6,988
420	K053	PRJ-001913 - B75-067.00 VIP Communal Lounge	Commercial	6	11%	10	6,998
421	K055	PRJ-001942 - B75-071.00 T2 Space Opt – T2 L10 – LS Retail and F&B Changes	Commercial	6	11%	2	7,000
422	Q02	Next-Gen Passenger Services - Commercial Revenues	Commercial	6	11%	140	7,140
423	M10	Retail New Scope : T5 IDL	Commercial	6	11%	73	7,213
424	M11	Retail New Scope : T3 IDL	Commercial	6	11%	37	7,250
425	J03	National Grid Connection - Connecting Cable	AMC	5	9%	47	7,297
426	T018	PRJ-001775 - B74-002.07 - Active Travel - Secure Cycle Parking	C&S	5	9%	1	7,298
427	U03	eGSE	C&S	5	9%	66	7,364
428	U04	Nature Positive	C&S	5	9%	25	7,389
429	L01	Additional washroom capacity in Terminal 5 and general	Commercial	5	9%	15	7,404
430	L02	Cleaning	Commercial	5	9%	7	7,411
431	L03	Water refill stations	Commercial	5	9%	2	7,413
432	L04	Seating and Digital signage	Commercial	5	9%	47	7,460
433	L05	Multi faith prayer rooms	Commercial	5	9%	7	7,467

Rank	ID	Label	Programme	Score (points)	Score out of 100%	H8 Capex (£m, CPI 2024p)	H8 Cumulative capex (£m, CPI 2024p)
434	L06	Family proposition & provision	Commercial	5	9%	13	7,480
435	L07	Premium proposition & provision	Commercial	5	9%	17	7,496
436	L11	Creation of quiet spaces for sensory needs	Commercial	5	9%	9	7,506
437	L12	Enablement Hub Upgrades	Commercial	5	9%	5	7,510
438	L14	Support and integration for Air Passenger Assist App	Commercial	5	9%	5	7,515
439	L15	Autonomous wheelchairs full rollout	Commercial	5	9%	3	7,518
440	L16	Provision of alternative mobility equipment	Commercial	5	9%	3	7,521
441	L18	Digital proposition development	Commercial	5	9%	8	7,529
442	L19	Enhanced border experience	Commercial	5	9%	56	7,585
443	L20	Connections	Commercial	5	9%	9	7,595
444	L21	Airport look and feel – Exteriors (painting, cleaning, decorating facades)	Commercial	5	9%	3	7,598
445	L22	Airport look and feel – Passenger long distance walkways (decoration, intelligent lighting)	Commercial	5	9%	6	7,604
446	L23	Airport look and feel – Gate areas Terminals 3, 4 and 5	Commercial	5	9%	7	7,611
447	L24	Airport look and feel – T3 specific targeted improvements (including IDL and Pier flooring)	Commercial	5	9%	7	7,618
448	C040	Data Insight – Dashboards & Reporting, Pro-active Service and Support Model & Prescriptive Maintenance Algorithms	Security	5	9%	31	7,648
449	A228	PRJ-001986 - B71-167 CC Remob - MEP	AMC	4	7%	7	7,655
450	A229	PRJ-001987 - B71-168 CC Remob - Working Areas, Meeting Rooms, Safety & Security	AMC	4	7%	2	7,657
451	A230	PRJ-001988 - B71-169 CC Remob - Welfare	AMC	4	7%	5	7,662
452	A253	T3 Facility Asset Plan	AMC	4	7%	2	7,665
453	A254	T2 Cladding Remedial Works	AMC	4	7%	6	7,671

Rank	ID	Label	Programme	Score (points)	Score out of 100%	H8 Capex (£m, CPI 2024p)	H8 Cumulative capex (£m, CPI 2024p)
454	A258	T3 INTERNAL Pier 7 & Connector structural rehabilitation - Stairwell	AMC	4	7%	4	7,675
455	A268	Station Digital Mobile Radio Network	AMC	4	7%	2	7,677
456	A269	Picopass Card and Card Reader Replacement	AMC	4	7%	35	7,712
457	A270	New Integrated Test Facility (ITF) Project	AMC	4	7%	42	7,754
458	A273	Surface Movement Radar gearbox	AMC	4	7%	13	7,767
459	T022	PRJ-001780 - B74-002.03 - Bus/Coach Waiting Facilities	C&S	4	7%	3	7,770
460	T029	Active Travel North	C&S	4	7%	9	7,779
461	T040	Hatton Cross Bus Capacity	C&S	4	7%	7	7,787
462	K09	PRJ-001696 - B75-043 - Marketing e-commerce (WeChat)	Commercial	4	7%	1	7,787
463	K010	PRJ-001697 - B75-044 - 3rd Party Distribution (B2B)	Commercial	4	7%	2	7,789
464	K018	PRJ-001983 - B75-084.00 CI Retail Manager	Commercial	4	7%	0	7,790
465	K020	Tr7 SSO/Loyalty	Commercial	4	7%	0	7,790
466	K035	PRJ-001638 - B75-019.01 - Airside Transshipment Centre	Commercial	4	7%	2	7,792
467	K046	PRJ-001896 - B75-060.00 T5 Luxury	Commercial	4	7%	1	7,793
468	K061	T5 Satellites Space Optimisation	Commercial	4	7%	2	7,796
469	K063	Tr7 C&C	Commercial	4	7%	0	7,796
470	K064	Tr7 VIP	Commercial	4	7%	1	7,797
471	Q08	Enterprise operational systems and data enablement	Commercial	4	7%	37	7,834
472	M04	T2 IDL	Commercial	4	7%	9	7,844
473	M07	Advertising - Interior LED	Commercial	4	7%	5	7,849
474	M09	Mass Advertising Digitalisation & Removal	Commercial	4	7%	19	7,867
475	M17	Carpark revolution	Commercial	4	7%	19	7,886
476	M05	T5 Satellites	Commercial	3	6%	3	7,889
477	T021	PRJ-001779 - B74-002.02 - Heathrow Travel Wallet	C&S	2	4%	1	7,889
478	T028	Taxi + Private Hire	C&S	2	4%	4	7,893
479	T031	AVA enhancements	C&S	2	4%	7	7,900
480	T037	Colleague Car Parking	C&S	2	4%	3	7,903
481	M13	VIP Cars	Commercial	2	4%	2	7,905

Rank	ID	Label	Programme	Score (points)	Score out of 100%	H8 Capex (£m, CPI 2024p)	H8 Cumulative capex (£m, CPI 2024p)
482	M21	Poyle	Commercial	1	2%	21	7,926
483	S01	Noise Mitigation (linked to capacity restrictions)	C&S	0	0%	225	8,151
484	Q07	Modernising Corporate Processes	Commercial	0	0%	5	8,155
485	P02	Development Consent order	MH	0	0%	173	8,329
486	P04	T5 Capacity Optimisation Phase 2	MH	0	0%	716	9,045
487	P05	Enabling Modernising Heathrow	MH	0	0%	322	9,367
488	P06	Ancillary Projects	MH	0	0%	239	9,606
NA	U01	People and Planet prioritisation adjustment (labelled as 'carbon programme efficiencies/phasing' in CAA Data Tables)	C&S	NA	NA	-104	9,502

Source: HAL, Steer analysis. Note: a score of 54 equals 100%. Programme legend: Asset Management and Compliance (AMC), Efficient Airport (Efficient A.), Carbon and Sustainability (C&S), Modernising Heathrow (MH).

4 Efficiency assessment

Our approach to efficiency assessment

4.1 Following the capex assessment methodology, our next stage is to undertake the efficiency assessment. This process is done in three steps, as follows.

Step 1: Removal of duplications

4.2 In this step, we have reviewed HAL’s projects and have removed scopes which we identified as being included in several projects or several times in the same project, in order to ensure that our proposed H8 capex envelope does not contain duplications.

Step 2: Alternative scopes

4.3 In this step, we propose an alternative scope for HAL projects where we identified these projects could be scoped more efficiently.

Step 3: Cost benchmarking

4.4 Finally, we apply the cost benchmarking of project costs in order to ensure that the costs provided by HAL are reasonable.

Project selection for cost benchmarking

4.5 The number of projects included in the capex envelope threshold ranges between 305 and 345. Benchmarking the costs of each project would not be practical. Therefore, we have selected a sample of projects for benchmarking, based on the materiality of their capex during H8.

4.6 We started by selecting all the projects included in the upper limit of the capex envelope threshold of £6.2 billion (2024 CPI prices) post-adjustment (i.e. including the Phasing adjustment and the Efficiency), which is equivalent to £6.6 billion (2024 CPI prices) pre-adjustment. We then narrowed the set of projects for benchmarking by considering only projects with a minimum capex of £50 million (2024 CPI prices) during H8. This resulted in a set of 28 projects (out of the 345) selected for cost benchmarking. We assess that this number of projects is a representative sample of projects to be benchmarked, as it accounts for £3.7 billion (2024 CPI prices) of H8 capex, corresponding to 57% of the capex within the capex envelope threshold upper limit, as shown in the table below.

Table 4.1: Projects categorised by minimum capex at H8, £m, 2024 CPI prices

Minimum H8 capex per project with a strong need case (£m)	No. of projects included	H8 capex of the projects included (£m)	Share of the upper limit of the capex envelope threshold
All projects	345	6,612	100%
10	124	5,937	90%
20	74	5,216	79%
30	48	4,587	69%
40	38	4,226	64%
50	28	3,771	57%
60	20	3,319	50%
70	18	3,191	48%
80	17	3,111	47%
90	14	2,857	43%
100	12	2,670	40%

Source: HAL, Steer analysis

4.7 In order to provide evidence of efficient costs, in its submission, HAL provides, for each of the 488 projects, either:

- **A cost plan:** i.e. a dedicated cost plan report in pdf of several pages; or
- **A basis of estimate:** i.e. an explanation of how the costs have been estimated (with varying degrees of detail across projects).

4.8 The document *A2 - 2. CAA Cost Plan and Basis of Estimate Tracker* provided by HAL acts as a document register for the cost plans and basis of estimates, and provides additional information and guidance on the cost estimation approach.

4.9 Of these 28 projects that we have selected for the cost benchmarking analysis, HAL has provided the following evidence of cost efficiency: for 17 projects HAL has provided a basis of estimate, and for 11 projects HAL has provided more detailed cost plans. Of these 11 cost plans, seven are at an early P2/P2T stage of maturity and four are at a more developed G1/G2 stage of maturity.

4.10 Therefore, we are satisfied that we are benchmarking costs of a broad range of projects at different levels of maturity. The full list of projects selected for benchmarking is provided in the table below.

Table 4.2: List of projects selected for cost benchmarking, £m, 2024 CPI prices

ID	Label	Gateway as of July-25	Capex (£m)		Cost efficiency evidence
			H8	Project total *	
A112	PRJ-001601 - B71-031.00 - Wave 1 Tunnel Improvements in ART, SAR, NAR	P2T	103	108	Cost plan

ID	Label	Gateway as of July-25	Capex (£m)		Cost efficiency evidence
			H8	Project total *	
A231	B71-138 - T3 Pier 7 Structural	P2	105	107	Basis of estimate
A232	T3 Refurbishment of Pier 7 and Connector (EXTERNAL)	P2	326	333	Basis of estimate
A234	Asset Management & Compliance P2 R&O's	P2	51	59	Basis of estimate
B016	Rolling programme for pavements and stands	Pre P1	55	175	Basis of estimate
B017	Western Campus Inter-Terminal Baggage Transport Asset Replacement (DCV)	Pre P1	83	265	Basis of estimate
C037	PRJ-001956 - B7680.36 CPC	P2T	85	125	Cost plan
D03	PRJ-001901 - B71-152 Terminal 4 Front Door and Car Park - Tranche 34	P2	316	348	Basis of estimate
E01	T3 Standard 3 HBS Replacement	P2	92	102	Basis of estimate
G017	PRJ-001816 - B73-017.00 Tr5 T2A Baggage System	G2	302	469	Cost plan
G020	PRJ-001883 - B73-020.00 Essential Asset Replacement	P2T	59	69	Cost plan
G021	PRJ-001884 - B73-021.00 Shell & Core	P2T	57	62	Cost plan
H043	EA P2 R&O's	P2	58	77	Basis of estimate
J01	Electricity network 11KV and 33KV upgrades	P2T	186	186	Cost plan
J02	Electricity network 132KV new network	Pre P1	332	524	Basis of estimate
K01	PRJ-001563 - B75-019.00 - Cargo Southside Transformation	P2T	59	151	Cost plan
K065	Commercial P2 R&O's	NA	55	55	Basis of estimate
M02	T5 Level 30 & 40 Lounge	G1	106	106	Cost plan
M16	Land optimisation - decking (LS 2 and LS4) - replace Pex/N4	Pre P1	80	80	Basis of estimate
P03	T5 Capacity Optimisation Phase 1	P1	229	229	Basis of estimate
Q03	Intelligent Operations and Optimisation	Pre P1	95	95	Basis of estimate
T027	PRJ-001993 - B74-003.02 PCA Improvements on Served Stands - Phase 3	G2	86	97	Cost plan
T04	PRJ-001606 - B7239 - Airspace Modernisation – Easterly Alternation Infrastructure	G2	109	133	Cost plan
Q01	Next-Gen Passenger Services -Passenger Automation	Pre P1	160	160	Basis of estimate
U02	Climate Adaptation to Flood risk	Pre P1	63	63	Basis of estimate
N01	Occupancy Infrastructure	Pre P1	394	482	Basis of estimate
C041	In airport Cargo, OAA Upgrade to Southside CPSRA & Control Post 25 Phase 2	P2	65	65	Basis of estimate

ID	Label	Gateway as of July-25	Capex (£m)		Cost efficiency evidence
			H8	Project total *	
F06	PRJ-001903 - B7320.01 Project 5	P2T	58	74	Cost plan
	Total		3,771	4,800	

Source: HAL (A2 - 2. CAA Cost Plan and Basis of Estimate Tracker), Steer analysis. Note: (*) Project total capex can differ from other HAL documents due to inconsistencies of scope inclusions. However, Project capex during H8 is consistent across all the documents, and it is the one that matters in defining the H8 capex envelope.

Benchmarking data

- 4.11 We have used benchmarking data from other relevant airports, which we drew from confidential sources. The confidential benchmarking data is derived from airports in the UK and other parts of Europe with a few projects undertaken at large airports outside these geographies.
- 4.12 We have applied different approaches to benchmarking projects for which we received cost plans and for projects for which we received only a higher-level basis of estimate. We describe the approach used in each case at the beginning of each respective chapter.
- 4.13 Our benchmarking data has been adjusted to be as comparable to Heathrow as possible using the approach described in the section below.

Macroeconomic adjustments

- 4.14 To perform a benchmarking exercise as like-for-like as possible, we have adjusted our benchmarking information to account for macroeconomic factors related to: (1) the time period that cost data was attributed to; and (2) the geographical location of the airport benchmark.
- 4.15 For time period adjustments, we have used construction cost indexes from the relevant geographies in order to adjust our benchmarking information to a common price base using 2024 prices. Then we have used published industry forecasts to project costs to the mid-point of construction. Available forecasts from BCIS Construction Industry Forecast (2024) and Arcadis UK Market View (2024) indicate construction cost inflation of approximately 2.5% to 3.5% per annum, equivalent to 14% to 17% cumulative to 2030 under typical scenarios.
- 4.16 For geographical location adjustments, we have used the International Construction Cost (ICC) Index 2025 which provides indexes on the relative cost of building in major cities for the year 2024.
- 4.17 HAL has submitted the project costs at a total level in two price bases: (1) nominal, which makes allowances for inflation during the estimated duration of the project; and (2) converted into 2024 CPI prices. We have conducted our cost benchmarking in nominal prices. This is because HAL has submitted its

supporting cost efficiency evidence (cost plan or basis of estimate) in nominal prices, as it is usually the case in the construction industry. For comparability purposes, we present our cost benchmarking results in both 2024 CPI prices and nominal prices.

- 4.18 The CPI forecast used for conversion nominal to 2024 CPI (and vice versa) is the same that HAL uses in its Business Plan submission. HAL indicates in the CAA Data Tables that its CPI forecast comes from the ONS, but the ONS does not produce a CPI forecast. However, in its Business Case Framework, it indicates that it has used the CPI forecast from Oxford Economics. The date of the forecast is not specified but we assume that it is the latest version before its Business Plan submission on the 10 July 2025. While this is not the latest CPI forecast available at the time of writing this report, it is very close to the latest November 2026 OBR forecast, as shown on the below table.

Table 4.3: HAL CPI forecast vs latest forecast

	Source	2025	2026	2027	2028	2029	2030	2031
HAL CPI forecast	Oxford economics as of 10 July 2025	3.2%	2.5%	2.0%	2.0%	2.0%	2.0%	2.0%
Latest CPI forecast	OBR, November 2025	3.4%	2.5%	2.0%	2.0%	2.0%	2.0%	2.0%

Source: HAL, OBR, Steer analysis. Note: The latest years have been assumed as equal to the last forecasted year.

Removal of duplications

- 4.19 In order to mitigate risks of scope duplications among projects included in HAL’s H8 Business Plan, Steer has set up workshops between the different lead assessors of the different projects to deep dive into project information and identify scope elements that might be duplicated. Where there were still doubts as to whether a scope element was duplicated or not, we have requested further information from HAL through the Q&A process. In total we have requested further information for 11 projects, out of the 488 projects included in the Business Plan. The list of these projects is provided below.
- 4.20 The responses that we have received were satisfactory. Therefore, we have not identified any scope duplications within HAL’s Business Plan.

Table 4.4: Projects where we have asked additional information from HAL to clear the risk of duplication

ID	Project Name	Business Case	H8 cost (£m 2024 CPI)
A067	PRJ-001408 - B7232 - Western Campus Baggage Obsolescence	BC03.01 Asset Management & Compliance Programme	2.1
A272	WeCa Inter Terminal Baggage Transport Asset Replacement DCV	BC03.01 Asset Management & Compliance Programme	46.0
B017	Western Campus Inter-Terminal Baggage Transport Asset Replacement (DCV)	BC04.00 H8 new asset renewal scope	83.4

ID	Project Name	Business Case	H8 cost (£m 2024 CPI)
B020	HAL owned HV Network Renewals	BC04.00 H8 new asset renewal scope	1.3
B021	Rolling renewal of HV cabling	BC04.00 H8 new asset renewal scope	1.6
B06	T4/5 HBS (Hold Baggage Screening) Bearing Replacement Phase 2	BC04.00 H8 new asset renewal scope	3.0
B09	HV Resilience Renewals (2025 Power Incident Review)	BC04.00 H8 new asset renewal scope	9.4
B096	T4/T5 HBS (Hold Baggage Screening) Replacement	BC04.00 H8 new asset renewal scope	5.8
F02	PRJ-001903 - B7320.01 Project 1 – T5 Pilz Obsolescence Phase 1	BC03.04 T5 Pilz Obsolescence	4.0
Q03	Intelligent Operations and Optimisation	BC14.00 Digital	95.0
H021	PRJ-001894 - B76-006.00 - Passenger Flow Monitoring (PFM) - Futures	BC16.00 Efficient Airport programme	19.6

Source: HAL, Steer analysis

Alternative scopes

- 4.21 Many of the projects submitted by HAL are at pre-G2 maturity stage and, therefore, the optioneering process and the selection of a preferred option at project level has not taken place. Without the results of this process, it is generally challenging to identify alternative scopes for projects, unless HAL has made an obvious oversight. And we have not identified such oversights in HAL’s projects.
- 4.22 The only exception we found was project *T04 – PRJ-001606 - B7239 - Airspace Modernisation – Easterly Alternation Infrastructure*, where **we did identify a part of the scope to be reclassified as opex**. The CAA has indicated that HAL’s proposed reclassification of noise related costs from opex to capex is not accepted for H8. Therefore, we propose to exclude the noise mitigation scope from this project. The adjustment that we propose is to remove £-37.7m (2024 CPI prices) from this project in H8. The analysis of this project is presented below.

T04 – PRJ-001606 - B7239 - Airspace Modernisation – Easterly Alternation Infrastructure

- 4.23 The table below recaps the scope and cost of this project, followed by our discussion of our view of an alternative scope.

Table 4.5: T04 – PRJ-001606 - B7239 - Airspace Modernisation – Easterly Alternation Infrastructure - Summary table

Category	Content
Unique ID	T04
Project Name	PRJ-001606 - B7239 - Airspace Modernisation - Easterly Alternation Infrastructure
Scope	This project is part of the wider Heathrow’s airspace modernisation initiative which intends to re-design all routes into

Category	Content			
	and out of Heathrow; configure ground infrastructure to allow full runway alternation; and eliminate the need for a bespoke procedure for departures using the Compton route for Easterly wind operations. This project includes the ground infrastructure changes to enable runway alternation on easterly operations as well as the associated noise mitigation measures.			
Business Case	BC08.00 – T04 – PRJ – 001606			
H7 Rollover/ New H8	H7 Rollover			
Programme	Carbon & Sustainability			
Tranche	TR2 – Tranche 2 – Airspace Modernisation			
Gateway as of July 2025	G2			
Cost information submitted	Cost plan			
Capex (£m)	Pre-H8*	H8	Post-H8*	Total
2024 CPI	23.6	109.5	0	133.1
Nominal	24.4	120.2	0	144.6

Source: HAL (A2 - 2. CAA Cost Plan and Basis of Estimate Tracker), Steer analysis. Note: (*) Pre-H8 and Post H8 costs can differ from other HAL documents due to inconsistencies of scope inclusions.

- 4.24 The total cost submitted by HAL in A2 - 2. CAA Cost Plan and Basis of Estimate Tracker for this project is £49.8m (nominal) higher than the cost plan provided. HAL indicates that this variance is due to the transfer from Operating Expenditure (opex) to Capital Expenditure (capex) of the noise mitigation scope and “CHG-000032” (which indicates a change in the status of the project), which were not included in the cost plan.
- 4.25 The CAA has indicated that HAL’s proposed reclassification of noise related costs from opex to capex is not accepted for H8. Therefore, we propose to exclude the noise mitigation scope from this project.
- 4.26 Therefore, we assess that the cost estimate for this alternative project scope is equal to £144.6m-£49.8m= £94.8m, i.e. a variance of -34.4% from the original cost submission. It is likely that the noise mitigation component of this project would have been delivered alongside the remaining project scope on a similar timeline, so, we do not envisage our proposed alternative scope to have a significant impact on the project spend profile. Therefore, we have applied the percentage variance of -34.4% to the costs at H8 and pre-H8 of this project to estimate the alternative cost submission for this project. **This implies a reduction of the capex for H8 attributed to this project of £-41.4m in nominal prices and £-37.7m in 2024 CPI prices.**

Table 4.6: T04 – PRJ-001606 - B7239 - Airspace Modernisation – Easterly Alternation Infrastructure – Alternative cost submission

Capex (£m)	Pre-H8	H8	Post-H8	Total
2024 CPI	15.5	71.8	0.0	87.3

Capex (£m)	Pre-H8	H8	Post-H8	Total
Nominal	16.0	78.8	0.0	94.8

Source: HAL, Steer analysis

Our approach to cost benchmarking – projects with cost plans

- 4.27 This section presents our cost benchmarking approach for the selected projects where HAL has provided a cost plan report.
- 4.28 It is important to note that these cost plan reports only include a summary table of costs per category. They do not include Bills of Quantities (BoQ) where quantities and unit rates are used to develop the cost estimate. As a consequence, we have limited understanding of the unit rates used by HAL to build the cost estimates. This has led us to rely on our own benchmarks rather than on validating HAL’s cost estimates. Also, we sometimes had limited understanding of the scope and the quantities underpinning HAL’s cost estimates. This information was sometimes only referenced as included in other documents which HAL has not provided as part of the Business Plan submission. However, for some projects, HAL has provided these additional documents through the Q&A process. For some others, we had to make our own assumptions due to insufficient information provided by HAL in their cost plan reports.
- 4.29 The cost plans provided by HAL include:
- Direct costs, which are indicated in the category “Building works”; and
 - Indirect costs, which are estimated mark ups on top of the Building works.
- Direct costs**
- 4.30 Our approach for benchmarking the direct costs has been specific to each project and has considered the quantities of the works required and the unit/rate for those quantities. This is further detailed in each project section below.
- Indirect costs**
- 4.31 The indirect costs include:
- Preliminaries;
 - Overheads and Profit (OHP);
 - Design; and
 - Other costs such as:
 - HAL owned risks;
 - Inflation; and
 - HAL Logistics and Leadership (L&L).
- 4.32 For all of these costs, our approach is described in the sections below.

Preliminaries

- 4.33 At this stage of development, preliminaries typically reflect the costs of site establishment, logistics, phasing, temporary works, and interface management within a live operational environment.
- 4.34 Benchmarks for preliminaries in UK infrastructure typically range from 10% to 20% of direct construction cost (source: Building Cost Information Service BCIS, 2024). However, projects undertaken within live airport operations or similarly complex operational environments often experience higher site logistics, access restrictions, and safety requirements.
- 4.35 HAL’s average preliminaries cost of 27% of direct cost is consistent with airside or operational airport projects. Therefore, we are aligned with HAL in the preliminaries cost uplift as it is within our benchmarks.

Overheads and Profit (OHP)

- 4.36 Overheads and Profit allowances represent standard market profit margins applied by contractors. Typical contractor overheads in the UK range between 2.5% and 10% of direct construction cost (source: Designing Buildings, 2023; Gleeds, 2024). Average profit margins across sectors vary between 3% and 7%, depending on contract type and market conditions.
- 4.37 HAL’s average Overheads of 5.78% and average Profit of 3.29% fall within standard UK benchmarks. Therefore, we are aligned with HAL in the uplift for overheads and profits as these are within our benchmarks.

Design

- 4.38 According to RIBA and BCIS guidance (RIBA, 2021; BCIS, 2023), Design and engineering fees in infrastructure projects typically account for 5% to 10% of the construction cost, which is referred to as “Building costs” in HAL cost plans. In airport environments, multidisciplinary coordination, systems integration, and regulatory compliance can increase these costs to as much as 15%.
- 4.39 HAL’s average of around 6% to 7% is within the expected range for projects of moderate maturity. Therefore, we are aligned with HAL in the uplift for design costs as this is within our benchmarks.

HAL owned risks

- 4.40 This cost category is an unallocated sum included to cover the cost of risks and opportunities which are borne by HAL for a given project.
- 4.41 For H7, HAL’s approach to risk management was reviewed by the Independent Fund Surveyor (IFS), which concluded very positively on the approach²⁰. However,

²⁰ H7 Process Review, Leadership & Logistics, Risk Management, Cost Assurance and Procurement Review, 7th March 2025, 10000-XX-WP-XXX-002656

the review did not seem to cover whether the risk allowances in HAL’s cost estimates when projects are still in design development were appropriate or not.

- 4.42 We have reviewed the allowance proposed by HAL for owned risks against typical benchmarks. Contingency and risk allowances for UK infrastructure projects generally fall in the range of 10% to 15% of direct construction cost, according to Infrastructure and Projects Authority (IPA), 2022 and SP Energy Networks, 2021. However, the HM Treasury Green Book and DfT TAG guidance note that “non-standard” civil works may require optimism bias uplifts of 44% to 66% at early stages of development. Taking the upper end of the optimism bias uplift range (i.e. 66%), the contingency and risk allowances range increases to 17% to 25% of direct construction cost.
- 4.43 HAL projects are large-scale airport infrastructure projects undertaken within live operational environments, where there is significant interface with existing assets, third parties, and regulatory bodies. Such projects typically require a higher risk allowance to reflect uncertainties in design development, enabling works, phasing, and operational constraints. Therefore, the percentage proposed by HAL (20% to 35%) can be considered reasonable for this stage of development, subject to continued refinement as scope definition and cost certainty improve through subsequent planning stages.

Inflation

- 4.44 HAL has used the BCIS all-in tender price index for the inflation rates proposed and embedded in HAL’s cost plans. This is a reliable source for forecasting construction costs and is widely used on construction projects in the UK.
- 4.45 The overall approach and applied rates are deemed reasonable for benchmarking purposes and appropriate for the level of cost maturity at this stage.

Logistics and Leadership

- 4.46 This cost category captures all HAL internal costs related to project management, logistics, regulation, governance (including IFS), IT costs, accommodation, and insurance. HAL indicates in its Business Plan that it adds, on average, 13.4% for L&L expenditure to the costs of its programmes. This percentage is of similar magnitude to the one which was applied during H7, and the IFS concluded that it was “fit for purpose”²¹. Therefore, we are aligned with these indirect costs in our benchmarks.

²¹ H7 Process Review, Leadership & Logistics, Risk Management, Cost Assurance and Procurement Review, 7th March 2025, 10000-XX-WP-XXX-002656

A112 - PRJ-001601 - B71-031.00 - Wave 1 Tunnel Improvements in ART, SAR, NAR

Project summary

4.47 The table below summarises the project information provided by HAL in its Business Plan submission or through the Q&A.

Table 4.7: A112 - PRJ-001601 - B71-031.00 - Wave 1 Tunnel Improvements in ART, SAR, NAR - Summary table

Category	Content
Unique ID	A112
Project Name	PRJ-001601 - B71-031.00 - Wave 1 Tunnel Improvements in ART, SAR, NAR
Scope	The project involves a comprehensive upgrade of critical tunnel infrastructure and safety systems in the Airside Road Tunnel (ART). It includes the replacement of ventilation, lighting, communications, and control systems, as well as installation of new safety and monitoring equipment to ensure continued operational reliability and compliance with modern standards.
Business Case	BC03.01 Asset Management & Compliance Programme
H7 Rollover/ New H8	H7 Rollover
Programme	Asset Management & Compliance
Tranche	Tranche 1 – Wave 1
Gateway as of July 2025	P2T
Cost information submitted	Cost plan
Capex (£m)	Pre-H8* H8 Post-H8* Total
2024 CPI	4.8 103.2 0 108.0
Nominal	5.0 114.9 0 119.9

Source: HAL (A2 - 2. CAA Cost Plan and Basis of Estimate Tracker), Steer analysis. Note: (*) Pre-H8 and Post H8 costs can differ from other HAL documents due to inconsistencies of scope inclusions.

Quality of the cost information submitted

4.48 We note that the cost plan has a variance of -£0.5m in nominal prices with the cost submitted in A2 - 2. CAA Cost Plan and Basis of Estimate Tracker which HAL consider acceptable.

Cost benchmarking

4.49 We have benchmarked the cost plan provided by HAL. The table below summarises the costs that HAL presented in the cost plan and our assessment of those costs. In the paragraphs that follow we explain the rationale for our benchmarks.

Table 4.8: A112 - PRJ-001601 - B71-031.00 - Wave 1 Tunnel Improvements in ART, SAR, NAR – Cost benchmark

Item	HAL cost (£000, nominal)	Our benchmark (£000, nominal)	Variance	
			Absolute (£000)	Relative (%)
BUILDING WORKS				
Facilitating works	360	348	-119	-4%
Substructure	-	-	-	-
Superstructure	-	-	-	-
Internal finishes	-	-	-	-
Fittings, furnishings and equipment	-	-	-	-
Services	44,886	37,679	-7,206	-16%
Prefabricated buildings and building units	-	-	-	-
Work to existing structure	-	-	-	-
External works	818	790	-28	-4%
Baggage Handling Systems	-	-	-	-
SUB TOTAL - BUILDING WORKS	46,064	38,817	-7,247	-16%
PRELIMINARIES, OVERHEADS & PROFIT				
Main contractor's preliminaries	15,089	12,715	-2,374	-16%
Main contractor's overheads	3,900	3,387	-614	-16%
Main contractor's profit	2,778	2,341	-437	-16%
DESIGN				
Other project / design team fees	-	-	-	-
Programme Designers' fees	2,143	1,806	-337	-16%
Main contractor's design fees incl. OHP	4,708	3,967	-741	-16%
CONSTRUCTION BASE COST	74,681	62,932	-11,749	-16%
Other development / project costs	471	471	-	-
Contractor/DI owned risks incl. OHP	-	-	-	-
HAL owned risks	24,049	20,265	-3,784	-16%
Inflation	4,157	3,503	-654	-16%
HAL Logistics and Leadership	15,989	13,474	-2,516	-16%
TOTAL MOST LIKELY EAC	119,347	100,645	-18,744	-16%
Variance vs submission	542			
GRAND TOTAL	119,889	100,645	-19,244	-16%

Source: HAL, Steer analysis. Note: The total cost of the cost plan has a small variance with the cost submitted by HAL in A2 - 2. CAA Cost Plan and Basis of Estimate Tracker. We compare our benchmark against the cost submitted for consistency.

4.50 The following sections provide the rationale for our benchmarks above.

Building works

4.51 Building works are based on the scope included in the cost plan, i.e.:

- Jet Fan like for like replacement (52 units)
- Luminaire and related lighting control equipment replacement (1029 units)
- Emergency telephones replacement (72 units)
- Emergency exit (wayfinding) signages and lighting (866 units)
- Portal lane control signals (4 units) and variable message signs (7 units)
- Smoke control equipment's replacement
- Tunnel control system (TCS) replacement
- Automatic incident detection system (AID) replacement
- Plant monitoring and control (Understanding is BMS) replacement
- 60kVA like for like Uninterruptable power supplies (UPS) replacement (4 units)
- AC unit, luminaire and smoke detection system replacements in the plant rooms
- Digital CCTV system replacement
- Radio rebroadcast equipment replacement
- Public Address Voice Evacuation (PAVA) System installation
- Water ingress prevention for Airside Road Tunnel (ART) (30 locations)

4.52 Additional works as described in the documents for complementary allowances have been considered.

4.53 Based on the cost assessment carried out, the building cost benchmarking is below the cost provided by HAL by around 16%.

Preliminaries, overheads & profit

4.54 HAL has estimated these costs as a percentage of the other costs. We assess that these percentage allowances appear reasonable for a project of this nature.

Design

4.55 HAL has estimated these costs as a percentage of the other costs. We assess that these percentage allowances appear reasonable for a project of this nature.

Others

4.56 HAL has estimated these costs as a percentage of the other costs. We assess that these percentage allowances appear reasonable for a project of this nature.

Our proposed H8 capex

4.57 Our benchmark is lower than HAL's submitted cost by -£19.2m, i.e. a variance of -16%. We have applied this percentage variance to the HAL cost of the project during H8 to provide our proposed H8 cost in both 2024 CPI prices and nominal prices.

Table 4.9: A112 - PRJ-001601 - B71-031.00 - Wave 1 Tunnel Improvements in ART, SAR, NAR – H8 Capex

Category	HAL H8 capex (£m)	Our proposed H8 capex (£m)	Variance (£m)
2024 CPI	103.2	86.6	-16.6
Nominal	114.9	96.5	-18.4

Source: HAL, Steer analysis

C037- PRJ-001956 - B7680.36 CPC

Project summary

4.58 The table below summarises the project information provided by HAL in its Business Plan submission or through the Q&A.

Table 4.10: C037 - PRJ-001956 - B7680.36 CPC - Summary table

Category	Content
Unique ID	C037
Project Name	PRJ-001956 - B7680.36 CPC
Scope	The Control Post Central (CPC) consolidates the existing two control posts in the Central Precinct into one location. The scope includes two new buildings to accommodate screening equipment, control post vehicle lanes entry/exit with equipment, campus security office, welfare accommodation, and enabling scope (baggage handlers' relocation, etc.).
Business Case	BC01.00 Security
H7 Rollover/ New H8	H7 Rollover
Programme	Regulated Security
Tranche	Tranche 1
Gateway as of July 2025	P2T
Cost information submitted	Cost plan
Capex (£m)	Pre-H8* H8 Post-H8* Total
2024 CPI	40.5 84.5 0 125.0
Nominal	41.6 93.0 0 134.6

Source: HAL (A2 - 2. CAA Cost Plan and Basis of Estimate Tracker). Note: (*) Pre-H8 and Post H8 costs can differ from other HAL documents due to inconsistencies of scope inclusions.

Quality of the cost information submitted

4.59 A cost plan report was provided by HAL on this project; however, it provides limited information of the scope of works.

4.60 The cost submitted by HAL is £72m higher than the cost plan. The reason for this variance provided by HAL is that an additional building to be delivered has not been included in the cost plan. Through the Q&A, HAL has clarified the scope of this additional building.

Cost benchmarking

4.61 We have benchmarked the cost plan provided by HAL. The table below summarises the costs that HAL presented in the cost plan and our assessment of those costs. In the paragraphs that follow we explain the rationale for our benchmarks.

Table 4.11: C037 - PRJ-001956 - B7680.36 CPC – Cost benchmark

Item	HAL cost (£000, nominal)	Our benchmark (£000, nominal)	Variance	
			Absolute (£000)	Relative (%)
BUILDING WORKS				
Facilitating works	1,790	3,800	2,010	112%
Substructure	63	134	71	112%
Superstructure	2,500	5,307	2,807	112%
Internal finishes	-	-	-	-
Fittings, furnishings and equipment	-	-	-	-
Services	5,294	11,237	5,944	112%
Prefabricated buildings and building units	2,250	4,776	2,526	112%
Work to existing structure	-	-	-	-
External works	16,375	34,759	18,384	112%
Baggage Handling Systems	-	-	-	-
SUB TOTAL - BUILDING WORKS	28,272	60,013	31,741	112%
PRELIMINARIES, OVERHEADS & PROFIT				
Main contractor's preliminaries	7,869	16,702	8,834	112%
Main contractor's overheads	945	2,006	1,061	112%
Main contractor's profit	945	2,006	1,061	112%
DESIGN				
Other project / design team fees	-	-	-	-
Programme Designers' fees	1,155	2,452	1,297	112%
Main contractor's design fees incl. OHP	816	1,732	916	112%
CONSTRUCTION BASE COST	40,001	84,912	44,910	112%
Other development / project costs	-	-	-	-
Contractor/DI owned risks incl. OHP	-	-	-	-
HAL owned risks	10,800	22,925	12,125	112%
Inflation	3,353	7,117	3,764	112%
HAL Logistics and Leadership	8,378	17,784	9,406	112%
TOTAL MOST LIKELY EAC	62,532	132,738	70,205	112%
Variance vs submission	72,038			
GRAND TOTAL	134,570	132,738	-1,832	-1%

Source: HAL, Steer analysis. Note: The total cost of the cost plan has a variance with the cost submitted by HAL in A2 - 2. CAA Cost Plan and Basis of Estimate Tracker. We compare our benchmark against the cost submitted for consistency.

4.62 The following sections provide the rationale for our benchmarks above.

Building works

4.63 Given the change of scope between the development of the cost plan and the Business Plan submission, our cost estimate for the building works also includes the additional scope which is captured under the row “Variance vs submission” for HAL cost in the above table.

4.64 Therefore, we have based our cost benchmark on the following requirements provided by HAL in its cost plan and through the Q&A:

- Two buildings of 3,500 sqm each; and
- Re provisioning costs: relocation of displaced operations to other parts of the airfield.

4.65 We have also made the following assumptions:

- ICS/ UPKNS/ Equipment work is based on updated ICS costs, including ancillary equipment and furniture for the control post.
- The number of security lanes will be equivalent to 3 CPC of 4 lanes each.

Table 4.12: C037 - PRJ-001956 - B7680.36 CPC – Building works

Item	Description	Quantity	Unit Cost (£)	Cost (£)
Demolition		12,500	182	2,275,000
Building	Substructure/groundworks, frame, envelope, internal fit-out (offices, welfare, control rooms)	7,000	2,420	5,808,000
MEP S Services	HVAC/ventilation, electrical distribution, lighting, plumbing, fire systems, UPS in control areas	7,000	1,320	3,168,000
ICT	LAN network, access control, CCTV, intercom, integration	7,000	1,321	3,170,640
Security Lanes	Barriers, vehicle scanning, controls & lane automation	12	1,000,000	12,000,000
External Works	CP entry/exit lanes civils, drainage, lighting, kerbs, fencing, signage	6,000	385	1,925,000
Re provisioning costs		NA	NA	4,000,000
ICS/ UKPNS/Equipment		NA	NA	4,000,000
TOTAL		NA	NA	60,012,700

Source: Steer

4.66 For comparison purposes, the calculated cost above has been distributed among the items considered by HAL in its cost plan.

4.67 Our cost benchmarking is below the cost provided by HAL by around 8%.

Preliminaries, overheads & profit

4.68 HAL has estimated these costs as a percentage of the other costs. We assess that these percentage allowances appear reasonable for a project of this nature.

Design

4.69 HAL has estimated these costs as a percentage of the other costs. We assess that these percentage allowances appear reasonable for a project of this nature.

Others

4.70 HAL has estimated these costs as a percentage of the other costs. We assess that these percentage allowances appear reasonable for a project of this nature.

Our proposed H8 capex

4.71 Our benchmark is lower than HAL’s submitted cost by -£1.3m, i.e. a variance of -1.4%. We have applied this percentage variance to the costs of the project during H8 to provide our proposed H8 cost.

Table 4.13: C037 - PRJ-001956 - B7680.36 CPC – H8 Capex

Category	HAL H8 capex (£m)	Our proposed H8 capex (£m)	Variance (£m)
2024 CPI	84.5	83.3	-1.2
Nominal	93.0	91.7	-1.3

Source: HAL, Steer analysis

G017- PRJ-001816 - B73-017.00 Tr5 T2A Baggage System

Project summary

4.72 The table below summarises the project information provided by HAL in its Business Plan submission or through the Q&A.

Table 4.14: G017 - PRJ-001816 - B73-017.00 Tr5 T2A Baggage System - Summary table

Category	Content			
Unique ID	G017			
Project Name	PRJ-001816 - B73-017.00 Tr5 T2A Baggage System			
Scope	<p>The scope includes:</p> <ul style="list-style-type: none"> • Construction of a new baggage link bridge (DfMA, Design for Manufacture and Assembly, 2 conveyor solution). • Internal structural works including penetrations through floor slab and walls as required to facilitate the new T2A baggage system, including any associated MEP services and diversions. • Installation of new steel mezzanine floors at apron and level 25 (balcony). • New MEP services and any diversions, or modifications to support baggage infrastructure to Level A0 - Basement. • New MEP services and any diversions, or modifications to support baggage infrastructure to Level 00 - Apron and Level 05 Mezzanine. • Construction of new T2A operational baggage system to replace existing baggage system currently operating within T1. 			
Business Case	BC02.00 T2 Baggage			
H7 Rollover/ New H8	H7 Rollover			
Programme	T2 Baggage			
Tranche	TR5 - Tranche 5			
Gateway as of July 2025	G2			
Cost information submitted	Cost plan			
Capex (£m)	Pre-H8*	H8	Post-H8*	Total
2024 CPI	167.2	301.8	0	469.0
Nominal	173.9	333.0	0	506.9

Source: HAL (A2 - 2. CAA Cost Plan and Basis of Estimate Tracker). Note: (*) Pre-H8 and Post H8 costs can differ from other HAL documents due to inconsistencies of scope inclusions.

Quality of the cost information submitted

4.73 The cost plan provided by HAL does not provide detailed information for the complete scope of work. Works for the development of the BHS are defined in a general way and there is lack of specific information for the other related works.

Cost benchmarking

4.74 We have benchmarked the cost plan provided by HAL. The table below summarises the costs presented and our assessment of those costs.

Table 4.15: G017 - PRJ-001816 - B73-017.00 Tr5 T2A Baggage System – Cost benchmark

Item	HAL cost (£000, nominal)	Our benchmark (£000, nominal)	Variance	
			Absolute (£000)	Relative (%)
BUILDING WORKS				
Facilitating works	148	142	-6	-4%
Substructure	755	723	-31	-4%
Superstructure	17,983	17,236	-747	-4%
Internal finishes	1,185	1,136	-49	-4%
Fittings, furnishings and equipment	368	353	-15	-4%
Services	50,772	48,663	-2,109	-4%
Prefabricated buildings and building units	-	-	-	-
Work to existing structure	4,243	4,067	-176	-4%
External works	1,279	1,226	-53	-4%
Baggage Handling Systems	176,846	169,500	-7,346	-4%
SUB TOTAL - BUILDING WORKS	253,578	243,045	-10,533	-4%
PRELIMINARIES, OVERHEADS & PROFIT				
Main contractor's preliminaries	34,048	32,634	-1,414	-4%
Main contractor's overheads	4,901	4,697	-204	-4%
Main contractor's profit	2,175	2,085	-90	-4%
DESIGN				
Other project / design team fees	2,304	2,209		-4%
Programme Designers' fees	4,223	4,048	-175	-4%
Main contractor's design fees incl. OHP	11,507	11,029	-478	-4%
CONSTRUCTION BASE COST	312,736	299,746	-12,990	-4%
Other development / project costs	26,884	25,767	-1,117	-4%
Contractor/DI owned risks incl. OHP	-	-	-	-
HAL owned risks	60,385	57,877	-2,508	-4%
Inflation	41,243	39,530	-1,713	-4%
HAL Logistics and Leadership	68,261	65,426	-2,835	-4%
TOTAL MOST LIKELY EAC	509,509	488,345	-21,164	-4%
Variance vs submission	-2,630			
GRAND TOTAL	506,879	488,345	-18,534	-3.7%

Source: HAL, Steer analysis. Note: The total cost of the cost plan has a small variance with the cost submitted by HAL in A2 - 2. CAA Cost Plan and Basis of Estimate Tracker. We compare our benchmark against the cost submitted for consistency.

Building Works

4.75 Main scope of works defined in the cost plan is as follows:

- Construct baggage offices and baggage staff welfare facilities in T2A;
- Clear the T2A basement and apron areas;
- Divert external services to enable works for T2A link bridge construction;
- Construct new baggage system in T2A with consolidated HBS and remove all links to the T1 System;
- Provide tug charging and spillage for new BHS;
- Provision of MEP, IT and Civil works associated with the new system; and
- Provide Connectivity from level 20 to apron.

4.76 We have estimated the cost of the BHS based on the following assumptions:

- £15 M/Km per BHS system, considering 11 Km;
- Sort Capacity of 5,400 bph; and
- Provision of 7 EDS machines.

4.77 There is information regarding the BHS scope of works but not related to the other activities, such as facilitating works, substructure, superstructure, services etc, which correspond to the cost of the rest of the activities not related to the BHS system itself. We have therefore assumed that these works have the same proportion of the BHS system costs as in HAL cost plan.

4.78 Based on the cost assessment carried out, the building cost benchmarking is below the cost provided by HAL by around a 4%.

Preliminaries, overheads & profit

4.79 HAL has estimated these costs as a percentage of the other costs. We assess that these percentage allowances appear reasonable for a project of this nature.

Design

4.80 HAL has estimated these costs as a percentage of the other costs. We assess that these percentage allowances appear reasonable for a project of this nature.

Others

4.81 HAL has estimated these costs as a percentage of the other costs. We assess that these percentage allowances appear reasonable for a project of this nature.

Our proposed H8 capex

4.82 Our benchmark is lower than HAL's submitted cost by -£18.5m, i.e. a variance of -3.7%. We have applied this percentage variance to the cost of the project during H8 to provide our proposed H8 cost.

Table 4.16: G017 - PRJ-001816 - B73-017.00 Tr5 T2A Baggage System – H8 Capex

Category	HAL H8 capex (£m)	Our proposed H8 capex (£m)	Variance (£m)
2024 CPI	301.8	290.8	-11.0
Nominal	333.0	320.8	-12.2

Source: HAL, Steer analysis

G020 - PRJ-001883 - B73-020.00 Essential Asset Replacement

Project summary

- 4.83 The table below summarises the project information provided by HAL in its Business Plan submission or through the Q&A.

Table 4.17: G020 - PRJ-001883 - B73-020.00 Essential Asset Replacement - Summary table

Category	Content
Unique ID	G020
Project Name	PRJ-001883 - B73-020.00 Essential Asset Replacement
Scope	The tranche of this project includes asset replacement to keep the T1 building safe and secure and to protect the T2 baggage operation until the T2A baggage system is operational. The scope of the project covers the replacement of elements of the T1 building fabric, mechanical, electrical and public health (MEP) and life safety systems that are necessary for the ongoing access, egress and maintenance of T1, which are considered at the end of life or degraded to a point that deems them not operationally acceptable.
Business Case	BC02.00 T2 Baggage
H7 Rollover/ New H8	H7 Rollover
Programme	T2 Baggage
Tranche	TR1 - Tranche 1
Gateway as of July 2025	P2T
Cost information submitted	Cost plan
Capex (£m)	Pre-H8* H8 Post-H8* Total
2024 CPI	9.4 59.2 0 69.0
Nominal	9.8 65.1 0 74.9

Source: HAL (A2 - 2. CAA Cost Plan and Basis of Estimate Tracker). Note: (*) Pre-H8 and Post H8 costs can differ from other HAL documents due to inconsistencies of scope inclusions.

Quality of the cost information submitted

- 4.84 A cost plan is available for this project; however, the information provided is limited as the areas of works and quantities considered are not described.
- 4.85 The cost submitted by HAL was £13.7m higher than the cost plan. The reason for this variance provided by HAL was that the T1 Main roof works has been transferred to this project after the development of the cost plan. We have asked HAL to clarify the scope of the works, but we have not received a response.

Cost benchmarking

4.86 We have benchmarked the cost plan provided by HAL. The table below summarises the costs that HAL presented in the cost plan and our assessment of those costs. In the paragraphs that follow we explain the rationale for our benchmarks.

Table 4.18: G020 - PRJ-001883 - B73-020.00 Essential Asset Replacement – Cost benchmark

Item	HAL cost (£000, nominal)	Our benchmark (£000, nominal)	Variance	
			Absolute (£000)	Relative (%)
BUILDING WORKS				
Facilitating works	5,025	5,628	603	12%
Substructure	-	-	-	-
Superstructure	1,507	1,688	181	12%
Internal finishes	-	-	-	-
Fittings, furnishings and equipment	-	-	-	-
Services	18,020	20,181	2,161	12%
Prefabricated buildings and building units	-	-	-	-
Work to existing structure	-	-	-	-
External works	642	719	77	12%
Baggage Handling Systems	-	-	-	-
SUB TOTAL - BUILDING WORKS	25,194	28,215	3,021	12%
PRELIMINARIES, OVERHEADS & PROFIT				
Main contractor's preliminaries	5,040	5,645	604	12%
Main contractor's overheads	1,560	1,747	187	12%
Main contractor's profit	692	775	83	12%
DESIGN				
Other project / design team fees	-	-	-	-
Programme Designers' fees	1,512	1,693	181	12%
Main contractor's design fees incl. OHP	2,295	2,570	275	12%
CONSTRUCTION BASE COST	36,294	40,646	4,352	12%
Other development / project costs	-	-	-	-
Contractor/DI owned risks incl. OHP	-	-	-	-
HAL owned risks	12,393	13,879	1,486	12%
Inflation	4,312	4,829	517	12%
HAL Logistics and Leadership	8,199	9,182	983	12%
TOTAL MOST LIKELY EAC	61,198	68,536	7,338	12%
Variance vs submission	13,745	13,745	-	-

Item	HAL cost (£000, nominal)	Our benchmark (£000, nominal)	Variance	
			Absolute (£000)	Relative (%)
GRAND TOTAL	74,942	82,281	7,338	10%

Source: HAL, Steer analysis. Note: The total cost of the cost plan has a variance with the cost submitted by HAL in A2 - 2. CAA Cost Plan and Basis of Estimate Tracker. We compare our benchmark against the cost submitted for consistency.

Building works

- 4.87 We have considered that the modifications will be carried out in 30% of the total area included for the project in the same tranche (*PRJ-001882 - B73-019.00 Critical Asset Replacement*).
- 4.88 We have applied a ratio to consider an additional cost allowance for selective asset replacement within a live operational building, including MEP, safety systems, ICT systems, and enabling/fabric works.
- 4.89 Based on the cost assessment carried out, the building cost benchmarking is higher than the cost provided by HAL by around 12%. This may be due to variations in the assumptions of the areas of the activities.

Preliminaries, overheads & profit

- 4.90 HAL has estimated these costs as a percentage of the other costs. We assess that these percentage allowances appear reasonable for a project of this nature.

Design

- 4.91 HAL has estimated these costs as a percentage of the other costs. We assess that these percentage allowances appear reasonable for a project of this nature.

Others

- 4.92 HAL has estimated these costs as a percentage of the other costs. We assess that these percentage allowances appear reasonable for a project of this nature.

Variance vs submission

- 4.93 With the limited information that we have and the limited impact that the additional cost element has, we have accepted HAL's cost estimate for this additional scope of works.

Our proposed H8 capex

- 4.94 Our benchmark is higher than HAL's submitted cost by £7.3m, i.e. a variance of +10%. We have applied this percentage variance to the cost of the project during H8 to provide our proposed H8 cost.

Table 4.19: G020 - PRJ-001883 - B73-020.00 Essential Asset Replacement – H8 Capex

Category	HAL H8 capex (£m)	Our proposed H8 capex (£m)	Variance (£m)
2024 CPI	59.2	65.1	5.9
Nominal	65.1	71.6	6.5

Source: HAL, Steer analysis

G021 – PRJ-001884 - B73-021.00 Shell & Core

Project summary

- 4.95 The table below summarises the project information provided by HAL in its Business Plan submission or through the Q&A.

Table 4.20: G021 – PRJ-001884 - B73-021.00 Shell & Core - Summary table

Category	Content			
Unique ID	G021			
Project Name	PRJ-001884 - B73-021.00 Shell & Core			
Scope	Several areas have been identified within T1 as non-essential by HAL and can be decommissioned and stripped out, in accordance with HAL T1 Fire Strategy, whilst maintaining critical baggage operations. The scope of this project will allow >60% of Terminal 1 to become Shell & Core and includes minor asset replacements.			
Business Case	BC02.00 T2 Baggage			
H7 Rollover/ New H8	H7 Rollover			
Programme	T2 Baggage			
Tranche	TR1 – Tranche 1			
Gateway as of July 2025	P2T			
Cost information submitted	Cost plan			
Capex (£m)	Pre-H8*	H8	Post-H8*	Total
2024 CPI	5.0	56.7	0	61.7
Nominal	5.2	61.9	0	67.2

Source: HAL (A2 - 2. CAA Cost Plan and Basis of Estimate Tracker), Steer analysis. Note: (*) Pre-H8 and Post H8 costs can differ from other HAL documents due to inconsistencies of scope inclusions.

Quality of the cost information submitted

- 4.96 A cost plan is available for this project and it provides information on the quantities considered for the works.
- 4.97 The cost submitted by HAL is £1.7m higher than the cost plan. HAL considers this variance to be acceptable and has not provided specific justifications.

Cost benchmarking

- 4.98 We have benchmarked the cost plan provided by HAL. The table below summarises the costs presented and our assessment of those costs. In the paragraphs that follow we explain the rationale for our benchmarks.

Table 4.21: G021 – PRJ-001884 - B73-021.00 Shell & Core – Cost benchmark

Item	HAL (£000, nominal)	Benchmark (£000, nominal)	Variance	
			Absolute (£000)	Relative (%)
BUILDING WORKS				

Item	HAL (£000, nominal)	Benchmark (£000, nominal)	Variance	
			Absolute (£000)	Relative (%)
Facilitating works	26,909	23,398	-3,511	-13%
Substructure	-	-	-	-
Superstructure	403	350	-53	-13%
Internal finishes	-	-	-	-
Fittings, furnishings and equipment	-	-	-	-
Services	-	-	-	-
Prefabricated buildings and building units	-	-	-	-
Work to existing structure	-	-	-	-
External works	-	-	-	-
Baggage Handling Systems	-	-	-	-
SUB TOTAL - BUILDING WORKS	27,312	23,748	-3,563	-13%
PRELIMINARIES, OVERHEADS & PROFIT			-5,462	-
Main contractor's preliminaries	5,462	4,750	-713	-13%
Main contractor's overheads	1,691	1,470	-221	-13%
Main contractor's profit	751	653	-97	-13%
DESIGN				
Other project / design team fees	-	-	-	-
Programme Designers' fees	1,639	1,425	-214	-13%
Main contractor's design fees incl. OHP	1,321	1,149	-171	-13%
CONSTRUCTION BASE COST	38,175	33,195	-4,980	-13%
Other development / project costs	-	-	-	-
Contractor / DI owned risks incl. OHP	-	-	-	-
HAL owned risks	13,361	11,618	-1,743	-13%
Inflation	5,179	4,505	-675	-13%
HAL Logistics and Leadership	8,774	7,628	-1,146	-13%
TOTAL MOST LIKELY EAC	65,490	56,947	-8,543	-13%
Variance vs submission	1,710	-	-1,710	-100%
GRAND TOTAL	67,200	56,947	-10,253	-15.3%

Source: HAL, Steer analysis. Note: The total cost of the cost plan has a small variance with the cost submitted by HAL in A2 - 2. CAA Cost Plan and Basis of Estimate Tracker. We compare our benchmark against the cost submitted for consistency.

4.99 The following sections of this report summarise our findings above.

Building works

4.100 Our benchmark has been developed based on the following information included in the cost plan:

- The soft strip and structural demolition areas have been calculated based on the usable floor area across levels 00, 05, 10, 20, and 30 within T1, using an interpretation of the general arrangement drawings provided by HAL. Areas planned for demolition as part of other projects of the T2 baggage programme (T2BP) have not been included in these calculations.
- It is assumed that all of the IT, data, and communications assets in the area to be demolished have previously been removed
- All costs related to the operation of the baggage handling systems have been excluded, as it is assumed these works will be undertaken elsewhere within the T2BP.
- Shell and core works will proceed without full knowledge of the existing services in the area. Visual and intrusive surveys will be required to define the detailed scope of works.
- A combination of replacement and new electrical boards will be necessary to support both existing and new MEP services within T1, for instance providing new or additional lighting to support walking routes and maintenance activities. The current assumption is that many of the existing electrical boards serve only the baggage system and are monitored by Vanderlande. Additionally, some of the electrical boards will be aging and spares may not be readily available; by replacing some of the boards, the removed units can be used to increase the stock of spare parts for the remaining existing boards.
- The BMS (Building Management System) in T1 is operational, but its condition has not yet been investigated in detail. It is assumed that some work will be required on the BMS infrastructure.
- The updated fire strategy will not alter the fire suppression or detection systems, nor their current mode of operation.
- No modifications to the sprinkler system are required.

4.101 The cost plan indicates that the total work area measures 78,793 square metres.

4.102 We have also made the following assumptions:

- Soft strip works: Assumes the removal of fixtures, fittings, ceilings, floors, partitions, and accessible MEP elements. The scope also includes segregation of materials and appropriate waste disposal.
- Structural demolition (localised): Covers partial slab openings, removal of redundant stairs or walls, and only non-loadbearing structures.
- Service diversions / mains isolation: Includes the isolation and/or diversion of all mains services (electrical, water, etc.) based on the assumed demolition scenario.
- Electrical boards: Encompasses the replacement or renewal of ageing electrical panels, with some reconfigured to supply retained systems. Spare panels are also accounted for in inventory.
- Lighting: Provision of either temporary or permanent lighting to ensure safe access, walking routes, and maintenance zones.

- **BMS system:** Covers a condition assessment and any necessary remedial works, including basic reconfiguration of the control and monitoring network.
- **Shell & Core make-safe works:** Includes fire-stopping, sealing of openings, installation of signage and barriers, temporary partitions, and safe closures to secure the building.
- **Facilitating works:** Accounts for temporary access, protection measures, waste management, segregation, logistics, and additional preliminaries beyond the standard scope.

4.103 The detail of our calculations is included below.

Table 4.22: G021 – PRJ-001884 - B73-021.00 Shell & Core – Facilitating works

Activities	% of total work area	Area (sqm)	Unit Cost (£)	Cost (£)
Soft strip works (removal of fixtures, partitions, ceilings, finishes, accessible MEP)	100%	78,793	64.00	5,042,752
Structural demolition (localised)	20%	15,759	192.00	3,025,651
Service diversions / mains isolation	100%	78,793	40.96	3,227,361
Electrical boards (replacement + reuse for spares)	100%	78,793	35.84	2,823,941
Lighting for access & maintenance routes	100%	78,793	19.20	1,512,826
BMS system (investigation & remedial works)	100%	78,793	19.20	1,512,826
Shell & Core make – safe works (fire – stopping, sealing, signage)	65%	51,215	76.80	3,933,347
Facilitating works (logistics, access, protection, waste mgmt.)	100%	78,793	29.44	2,319,666
TOTAL				23,398,369

Source: Steer

Preliminaries, overheads & profit

4.104 HAL has estimated these costs as a percentage of the other costs. We assess that these percentage allowances appear reasonable for a project of this nature.

Design

4.105 HAL has estimated these costs as a percentage of the other costs. We assess that these percentage allowances appear reasonable for a project of this nature.

Others

4.106 HAL has estimated these costs as a percentage of the other costs. We assess that these percentage allowances appear reasonable for a project of this nature.

Variance vs submission

4.107 It does not seem that the variance between HAL submitted cost and its cost plan is related to a change in scope, so we do not see reasons to add this cost to our benchmark and have therefore not added it.

Our proposed H8 capex

4.108 Our benchmark is lower than HAL’s submitted cost by -£10.3m, i.e. a variance of -15.3%. We have applied this percentage variance to the cost of the project during H8 to provide our proposed H8 cost.

Table 4.23: G021 – PRJ-001884 - B73-021.00 Shell & Core – H8 Capex

Category	HAL H8 capex (£m)	Our proposed H8 capex (£m)	Variance (£m)
2024 CPI	56.7	48.1	-8.6
Nominal	61.9	52.5	-9.4

Source: HAL, Steer analysis

J01 – Electricity network 11KV and 33KV upgrades

Project summary

- 4.109 The table below summarises the project information provided by HAL in its Business Plan submission or through the Q&A.

Table 4.24: J01 – Electricity network 11KV and 33KV upgrades - Summary table

Category	Content			
Unique ID	J01			
Project Name	Electricity network 11KV and 33KV upgrades			
Scope	<p>This project aims to upgrade the 11KV secondary network to improve network resilience, capacity and load distribution with new substation transformer capacity and new pit and duct cable distribution around the terminals to provide additional 11kV distribution capacity.</p> <p>The project also addresses the need to upgrade the 33KV primary network upgrades, activating unused capacity, enhancing resilience and enabling better fault response. This will involve installation of new pit and cable ducting networks for the 11KV/ 33KV distribution networks, and will future proof the 33KV primary network for future 132KV operations. The upgraded 33KV cabling will be capable of operating at 132KV and will form the initial part for the 132KV mesh network to support future power demands and growth.</p>			
Business Case	BC05.00 Electrical network			
H7 Rollover/ New H8	H8 New			
Programme	Asset Management & Compliance			
Tranche	None			
Gateway as of July 2025	P2T			
Cost information submitted	Basis of estimate			
Capex (£m)	Pre-H8*	H8	Post-H8*	Total
2024 CPI	0	186.0	0	186.0
Nominal	0	211.5	0	211.5

Source: HAL (A2 - 2. CAA Cost Plan and Basis of Estimate Tracker), Steer analysis. Note: (*) Pre-H8 and Post H8 costs can differ from other HAL documents due to inconsistencies of scope inclusions.

Quality of the cost information submitted

- 4.110 The information submitted by HAL for this project provides general details on the scope considered for costing the project. The cost plan provided by HAL also includes some information regarding the quantities considered.
- 4.111 The cost submitted by HAL has a variance of +£24.7m with the most likely EAC estimated in the cost plan. This variance does not seem to be related to a change in scope of the project, but the reason for this variance is unclear.

Cost benchmarking

4.112 We have benchmarked the cost plan provided by HAL. The table below summarises the costs that HAL presented in the cost plan and our assessment of those costs. In the paragraphs that follow we explain the rationale for our benchmarks.

Table 4.25: J01 – Electricity network 11KV and 33KV upgrades – Cost benchmark

Item	HAL (£000, nominal)	Benchmark (£000, nominal)	Variance	
			Absolute (£000)	Relative (%)
BUILDING WORKS				
Facilitating works	-	-	-	-
Substructure	-	-	-	-
Superstructure	-	-	-	-
Internal finishes	-	-	-	-
Fittings, furnishings and equipment	-	-	-	-
Services	-	-	-	-
Prefabricated buildings and building units	-	-	-	-
Work to existing structure	-	-	-	-
External works	58,883	60,602	1,719	2.9%
Baggage Handling Systems	-	-	-	-
SUB TOTAL - BUILDING WORKS	58,883	60,602	1,719	2.9%
PRELIMINARIES, OVERHEADS & PROFIT				
Main contractor's preliminaries	16,714	17,202	488	2.9%
Main contractor's overheads	5,294	5,449	155	2.9%
Main contractor's profit	3,025	3,113	88	2.9%
DESIGN				
Other project / design team fees	2,937	3,023	86	2.9%
Programme Designers' fees	-	-	-	-
Main contractor's design fees incl. OHP	6,251	6,433	182	2.9%
CONSTRUCTION BASE COST	93,104	95,822	2,718	2.9%
Other development / project costs	865	890	25	2.9%
Contractor / DI owned risks incl. OHP	7,982	8,215	233	2.9%
HAL owned risks	31,759	32,686	927	2.9%
Inflation	28,089	19,164	-8,924	-31.8%
HAL Logistics and Leadership	25,030	25,761	731	2.9%
TOTAL MOST LIKELY EAC	186,828	182,538	-4,290	-2.3%
Variance vs submission	24,672	-	-24,672	-100%
GRAND TOTAL	211,500	182,538	-28,962	-13.7%

Source: HAL, Steer analysis. Note: The total cost of the cost plan has a variance with the cost submitted by HAL in A2 - 2. CAA Cost Plan and Basis of Estimate Tracker. We compare our benchmark against the cost submitted for consistency.

Building works

4.113 The only element in HAL's cost plan on the Building works is the External works. To estimate the External works, we have used the following scope information provided in the cost plan:

- Area A:
 - Installation of Pit and Duct for 11 kV from substation 260 across to head of stand 307.
 - Installation of Pit and Duct for 132 kV from substation 260 across to head of stand 307.
 - Installation 4 No. head of stand substations with 1.5 MVA transformers.
 - 900m of new Pit and Duct.
- Area B:
 - Installation of Pit and Duct for both 33 & 132 kV from Grass Area 15C across to stand 414.
 - Installation of Pit and Duct around T4 stands.
 - Installation of 20nr head of stands substations with 1.5 MVA transformers.
 - Build a new primary substation with 20 panels for future connection.
 - Build the civil elements of the new 132kV substation and install temporary 33kV transformers on these.
 - Install 33kv cabling from South Intake across to this new substation and back creating a ring.
 - Install new rings from this substation to feed approximately 33 T4 stands for PCA, Area EV charging and terminal heating and cooling.
- Area D:
 - Installation of Pit and Duct for both 11 & 132kV from site of new intake to Grass Area 21e.
 - Build a new primary substation with 20 panels for future connection.
 - Build the civil elements of the new 132kV substation.
- Area E:
 - Installation of Pit and Duct for both 11 & 132kV from substation 228 across to Terminal 3, Pier 5.
 - Build a new primary substation with panels for future connection.
 - Build the civil elements of the new 132kV substation.
 - Install 11kv cabling from Sub 228 across to this new substation and back creating a ring.
 - 33kV Section1.
 - Installation of 132kv Pit and Duct for 33kV.
 - Install new 33/11kv substation with 20 panels for future connection to feed EV in the car hire sites and to bring Compass centre onto the HAL network.
 - Connect new installed cables into Sub 123, closing the North section of the ring.

4.114 Based on the cost assessment carried out, the building cost benchmark is above the cost provided by HAL by around 3%.

Preliminaries, overheads & profit

4.115 HAL has estimated these costs as a percentage of the other costs. We assess that these percentage allowances appear reasonable for a project of this nature.

Design

4.116 HAL has estimated these costs as a percentage of the other costs. We assess that these percentage allowances appear reasonable for a project of this nature.

Others

4.117 While the applied percentages are generally consistent with industry practice, it should be noted that the inflation allowance proposed appears high for an investment limited to the H8 period. Based on current market forecasts, a cumulative inflation of around 20 % over the H8 investment horizon would represent a more proportionate assumption and we have made this adjustment in our cost estimate.

Our proposed H8 capex

4.118 Our benchmark is lower than HAL’s submitted cost by -£29.0 m, i.e. a variance of -13.7%.

Table 4.26: J01 – Electricity network 11KV and 33KV upgrades – H8 Capex

Category	HAL H8 capex (£m)	Our proposed H8 capex (£m)	Variance (£m)
2024 CPI	186.0	160.5	-25.5
Nominal	211.5	182.5	-29.0

Source: HAL, Steer analysis

K01 – PRJ-001563 - B75-019.00 - Cargo Southside Transformation

Project summary

- 4.119 The table below summarises the project information provided by HAL in its Business Plan submission or through the Q&A.

Table 4.27: K01 – PRJ-001563 - B75-019.00 - Cargo Southside Transformation - Summary table

Category	Content
Unique ID	K01
Project Name	PRJ-001563 - B75-019.00 - Cargo Southside Transformation
Scope	This project aims to support HAL customers and the airline community to grow trade through Heathrow. The project replaces life expired assets increasing first line processing capacity by approximately 300,000 square feet and increase cargo handling capacity by 600,000 tonnes per annum.
Business Case	BC12.00 Commercial Programme
H7 Rollover/ New H8	H7 Rollover
Programme	Commercial Revenues
Tranche	Tranche 4 – Cargo
Gateway as of July 2025	P2T
Cost information submitted	Cost plan
Capex (£m)	Pre-H8* H8 Post-H8* Total
2024 CPI	9 59.2 83.3 151.5
Nominal	9.1 65.4 99.3 173.8

Source: HAL (A2 - 2. CAA Cost Plan and Basis of Estimate Tracker), Steer analysis. Note: (*) Pre-H8 and Post H8 costs can differ from other HAL documents due to inconsistencies of scope inclusions.

Quality of the cost information submitted

- 4.120 A cost plan is available for this project and it provides general details on the scope considered for costing the project. The cost plan provided by HAL also includes some general drawings defining the scope of works.

Cost benchmarking

- 4.121 We have benchmarked the cost plan provided by HAL. The table below summarises the costs that HAL presented in the cost plan and our assessment of those costs. In the paragraphs that follow we explain the rationale for our benchmarks.

Table 4.28: K01 – PRJ-001563 - B75-019.00 - Cargo Southside Transformation – Cost benchmark

Item	HAL (£000, nominal)	Benchmark (£000, nominal)	Variance	
			Absolute (£000)	Relative (%)
BUILDING WORKS				

Item	HAL (£000, nominal)	Benchmark (£000, nominal)	Variance	
			Absolute (£000)	Relative (%)
Facilitating works	111	119	7	7%
Substructure	-	-	-	-
Superstructure	-	-	-	-
Internal finishes	-	-	-	-
Fittings, furnishings and equipment	-	-	-	-
Services	20,821	21,579	758	4%
Prefabricated buildings and building units	-	-	-	-
Work to existing structure	523	535	12	2%
External works	38,125	39,538	1,413	4%
Baggage Handling Systems	-	-	-	-
SUB TOTAL - BUILDING WORKS	59,580	61,770	2,190	4%
PRELIMINARIES, OVERHEADS & PROFIT				-
Main contractor's preliminaries	18,471	19,150	679	4%
Main contractor's overheads	3,799	3,938	140	4%
Main contractor's profit	1,784	1,850	66	4%
DESIGN		-	-	-
Other project / design team fees	3,584	3,716	132	4%
Programme Designers' fees	9,154	9,490	337	4%
Main contractor's design fees incl. OHP	-	-	-	-
CONSTRUCTION BASE COST	96,372	99,914	3,543	4%
Other development / project costs	-	-	-	-
Contractor / DI owned risks incl. OHP	-	-	-	-
HAL owned risks	24,039	24,923	884	4%
Inflation	30,133	31,241	1,108	4%
HAL Logistics and Leadership	23,289	24,145	856	4%
TOTAL MOST LIKELY EAC	173,833	180,223	6,390	4%
Variance vs submission	-3	-	-	-
GRAND TOTAL	173,830	180,223	6,393	4%

Source: HAL, Steer analysis. Note: The total cost of the cost plan has a small variance with the cost submitted by HAL in A2 - 2. CAA Cost Plan and Basis of Estimate Tracker. We compare our benchmark against the cost submitted for consistency.

Building Works

4.122 To develop our cost benchmark, we have considered the following information included in the cost plan:

- **Facilitating works** includes stand works, temporary enabling activities and a lump-sum allowance for airside security requirements.
- **Services** includes utility and technical system diversions and connections: electrical, fuel and water networks, drainage, and IT/communications systems. Also covers commissioning, connection allowances, contingencies, and airside operational premiums.
- **Structures** includes Substation 41 façade works, protection of Building 526, junction improvements at Stirling Road, reinstatement along the Southern Perimeter Road, and modifications to existing stand infrastructure.
- **External works** includes stand and pavement works, carriageway and access road upgrades, boundary fencing, external lighting, signage and landscaping, as well as temporary reinstatements, site logistics and stand equipment modifications.

4.123 Based on the cost assessment carried out, the building cost benchmarking is above the cost provided by HAL by around 4%.

Preliminaries, overheads & profit

4.124 HAL has estimated these costs as a percentage of the other costs. We assess that these percentage allowances appear reasonable for a project of this nature.

Design

4.125 HAL has estimated these costs as a percentage of the other costs. We assess that these percentage allowances appear reasonable for a project of this nature.

Others

4.126 HAL has estimated these costs as a percentage of the other costs. We assess that these percentage allowances appear reasonable for a project of this nature.

Our proposed H8 capex

4.127 Our benchmark is higher than HAL’s submitted cost by £6.4m, i.e. a variance of +3.7%. We have applied this percentage variance to the cost of the project during H8 to provide our proposed H8 cost.

Table 4.29: K01 – PRJ-001563 - B75-019.00 - Cargo Southside Transformation – H8 Capex

Category	HAL H8 capex (£m)	Our proposed H8 capex (£m)	Variance (£m)
2024 CPI	59.2	61.4	2.2
Nominal	65.4	67.8	2.4

Source: HAL, Steer analysis

M02 – T5 Level 30 & 40 Lounge

Project summary

- 4.128 The table below summarises the project information provided by HAL in its Business Plan submission or through the Q&A.

Table 4.30: M02 – T5 Level 30 &40 Lounge - Summary table

Category	Content			
Unique ID	M02			
Project Name	T5 Level 30 & 40 Lounge			
Scope	This project aims to enhance the premium passenger experience at Heathrow Terminal 5A by consolidating all British Airways Club Galleries lounges into a single, expanded facility. The project scope includes: <ul style="list-style-type: none"> Maximising lounge space by expanding Level 40; and Integrating the existing Level 30 BA lounge, including the Vagabond F&B space, into the new lounge. 			
Business Case	BC13.00 – H8 new – Commercial scope			
H7 Rollover/ New H8	H8 New			
Programme	N/A			
Tranche	Programme Level			
Gateway as of July 2025	G1			
Cost information submitted	Cost Plan			
Capex (£m)	Pre-H8*	H8	Post-H8*	Total
2024 CPI	0	106.3	0	106.3
Nominal	0	118.0	0	118.0

Source: HAL (A2 - 2. CAA Cost Plan and Basis of Estimate Tracker), Steer analysis. Note: (*) Pre-H8 and Post H8 costs can differ from other HAL documents due to inconsistencies of scope inclusions.

Quality of the cost information submitted

- 4.129 A cost plan is available for this project and it provides information on the main quantities considered for costing purpose.
- 4.130 The cost submitted by HAL has a variance of -£7.4m with the most likely EAC estimated in the cost plan. This variance does not seem to be related to a change in scope of the project, but the reason for this variance is unclear.

Cost benchmarking

- 4.131 We have benchmarked the cost plan provided by HAL. The table below summarises the costs that HAL presented in the cost plan and our assessment of those costs. In the paragraphs that follow we explain the rationale for our benchmarks.

Table 4.31: M02 – T5 Level 30 &40 Lounge – Cost benchmark

Item	HAL (£000, nominal)	Benchmark (£000, nominal)	Variance	
			Absolute (£000)	Relative (%)
BUILDING WORKS				
Facilitating works	1,131	1,042	-89	-8%
Substructure	-	-	-	-
Superstructure	16,494	15,194	-1,300	-8%
Internal finishes	2,901	2,672	-229	-8%
Fittings, furnishings and equipment	292	269	-23	-8%
Services	19,769	18,210	-1,559	-8%
Prefabricated buildings and building units	-	-	-	-8%
Work to existing structure	1,158	1,067	-91	-8%
External works	-	-	-	-
Baggage Handling Systems	-	-	-	-
SUB TOTAL - BUILDING WORKS	41,746	38,454	-3,291	-8%
PRELIMINARIES, OVERHEADS & PROFIT				-8%
Main contractor's preliminaries	13,731	12,649	-1,083	-8%
Main contractor's overheads	1,540	1,419	-121	-8%
Main contractor's profit	1,540	1,419	-121	-8%
DESIGN				-8%
Other project / design team fees	376	346	-30	-8%
Programme Designers' fees	3,818	3,517	-301	-8%
Main contractor's design fees incl. OHP	7,689	7,083	-606	-8%
CONSTRUCTION BASE COST	70,440	64,886	-5,554	-8%
Other development / project costs	241	222	-19	-8%
Contractor / DI owned risks incl. OHP	-	-	-	-8%
HAL owned risks	21,204	19,532	-1,672	-8%
Inflation	16,705	15,388	-1,317	-8%
HAL Logistics and Leadership	16,799	15,474	-1,324	-8%
TOTAL MOST LIKELY EAC	125,388	115,502	-9,886	-8%
Variance vs submission	-7,388	-	7,388	100%
GRAND TOTAL	118,000	115,502	-2,498	-2%

Source: HAL, Steer analysis. Note: The total cost of the cost plan has a small variance with the cost submitted by HAL in A2 - 2. CAA Cost Plan and Basis of Estimate Tracker. We compare our benchmark against the cost submitted for consistency.

4.132 The following sections of this report summarise our findings above.

Building works

4.133 To estimate the Building works, we have considered the following scope information and assumptions mentioned in the cost plan and have used our own benchmarks of similar projects for the unit costs.

Table 4.32: M02 – T5 Level 30 &40 Lounge – Building works

Item	Quantity	Unit Cost	Cost
Extension to the west by cantilever of 828 sqm	828	7,500	6,210,000
1,576 sqm with L30 F&B Vagabond incorporated into the new lounge	1,576	5,625	8,865,000
230 sqm, contributing to a lounge area at L30	230	5,625	1,293,750
The existing L40 structure will be strengthened to facilitate construction of the lounge at L40 (3,482 sqm).	3,482	1,500	5,223,000
It is assumed 6 new discharge points are required to L40, factored based on revised lounge area. An allowance of £71k/discharge point has been made.	6	112,500	675,000
An allowance of £425k/lift has been made for the extension of 5 existing lifts from L30 to L40. These lifts include the three extended fire cores and the back of house and catering lifts.	5	625,000	3,125,000
An allowance of £678k/lift has been allowed for each of the four new lifts servicing L40, this includes the cost associated with breaking out the existing floor and ceiling and strip out of MEP, steelwork to form the lift shaft, internal partitions to the forming of the lifts, installation of the new lifts, service reconfiguration, electricity supply to the lifts and temporary works requirements	4	1,000,000	4,000,000
An allowance of £146k/fire core has been made for the extension of three of the existing firefighting stair cores from L30 to L40, based on engagement with MACE.	3	250,000	750,000
Summary of structural components: 5nr new columns to L30, 35nr new columns to L40 and the associated primary, secondary beams and bracing requirements. A new transfer truss is required at L30 measuring 27m due to the revised column formation.	1	2,500,000	2,500,000
An allowance of 12% of building works cost has been made for HAL IT, this sums to £4.5m.	1	5,625,000	5,625,000
An allowance of £89k has been made for Building Management System (BMS) to the new level 40 lounge area.	1	187,500	187,500
TOTAL			38,454,250

Source: HAL, Steer analysis

4.134 Based on the cost assessment carried out, the building cost benchmarking is below the cost provided by HAL by around 8%

Preliminaries, overheads & profit

4.135 HAL has estimated these costs as a percentage of the other costs. We assess that these percentage allowances appear reasonable for a project of this nature.

Design

4.136 HAL has estimated these costs as a percentage of the other costs. We assess that these percentage allowances appear reasonable for a project of this nature.

Others

4.137 HAL has estimated these costs as a percentage of the other costs. We assess that these percentage allowances appear reasonable for a project of this nature.

Our proposed H8 capex

4.138 Our benchmark is lower than HAL’s submitted cost by -£2.5m, i.e. a variance of -2.1%.

Table 4.33: M02 – T5 Level 30 &40 Lounge – H8 Capex

Category	HAL H8 capex (£m)	Our proposed H8 capex (£m)	Variance (£m)
2024 CPI	106.3	104.1	-2.2
Nominal	118.0	115.5	-2.5

Source: HAL, Steer analysis

T027 – PRJ-001993 - B74-003.02 PCA Improvements on Served Stands - Phase 3

Project summary

4.139 The table below summarises the project information provided by HAL in its Business Plan submission or through the Q&A.

Table 4.34: T027 – PRJ-001993 - B74-003.02 PCA Improvements on Served Stands - Phase 3 - Summary table

Category	Content			
Unique ID	T027			
Project Name	PRJ-001993 - B74-003.02 PCA Improvements on Served Stands - Phase 3			
Scope	<p>This project aims to improve/upgrade the PCA provisions at Heathrow to:</p> <ul style="list-style-type: none"> • Provide heating, cooling and ventilation to the aircraft’s cabin to maintain passenger comfort while the aircraft is parked on stand; • Address issues with the current bridge mounted PCA units causing damage to Passenger Boarding Bridges (PBB’s); and • Ensure accuracy of metering. <p>The project is the phase 3 of the works and is going to upgrade PCA provisions at 40 stands, including 7 code E stands, 8 code F stands and 25 code C/D stands.</p>			
Business Case	BC08.00 Carbon and Sustainability Programme			
H7 Rollover/ New H8	H7 Rollover			
Programme	Carbon & Sustainability			
Tranche	Tr6 - Tranche 6 - PCA			
Gateway as of July 2025	G2			
Cost information submitted	Cost plan			
Capex (£m)	Pre-H8*	H8	Post-H8*	Total
2024 CPI	10.9	85.7	0	96.6
Nominal	11.5	96.7	0	108.2

Source: HAL (A2 - 2. CAA Cost Plan and Basis of Estimate Tracker). Note: (*) Pre-H8 and Post H8 costs can differ from other HAL documents due to inconsistencies of scope inclusions.

Quality of the cost information submitted

4.140 A cost plan is available for this project. While it provides assumptions of the unit cost per stand, it does not provide information on the numbers of stands which are upgraded. However, we have obtained this information through the Q&A process.

4.141 The cost submitted by HAL for this project has a variance of +£22.1m with the most likely EAC estimated in the cost plan. This variance does not seem to be related to a change in scope of the project and HAL has indicated in its

submission that the cost of this project “*may come back in line with the cost plan as it nears G3*”.

Cost benchmarking

4.142 We have benchmarked the cost plan provided by HAL. The table below summarises the costs that HAL presented in the cost plan and our assessment of those costs. In the paragraphs that follow we explain the rationale for our benchmarks.

Table 4.35: T027 – PRJ-001993 - B74-003.02 PCA Improvements on Served Stands - Phase 3 – Cost benchmarking

Item	HAL cost (£000, nominal)	Our benchmark (£000, nominal)	Variance	
			Absolute (£000)	Relative (%)
BUILDING WORKS				
SUB TOTAL - BUILDING WORKS	26,541	24,825	-1,716	-7%
PRELIMINARIES, OVERHEADS & PROFIT				
Main contractor's preliminaries	15,501	14,499	-1,002	-7%
Main contractor's overheads	1,261	1,180	-82	-7%
Main contractor's profit	2,039	1,907	-132	-7%
DESIGN				
Other project / design team fees	2,981	2,788	-193	-7%
Programme Designers' fees	-	-	-	-
Main contractor's design fees incl. OHP	5,177	4,842	-335	-7%
CONSTRUCTION BASE COST	53,500	50,041	-3,459	-7%
Other development / project costs	-	-	-	-
Contractor/DI owned risks incl. OHP	-	-	-	-
HAL owned risks	10,700	10,008	-692	-7%
Inflation	10,355	9,685	-670	-7%
HAL Logistics and Leadership	11,534	10,788	-746	-7%
TOTAL MOST LIKELY EAC	86,088	80,522	-5,566	-7%
Variance vs submission	22,105	-	-22,105	-100%
GRAND TOTAL	108,193	80,522	-27,671	-25.6%

Source: HAL, Steer analysis. Note: The total cost of the cost plan has a small variance with the cost submitted by HAL in A2 - 2. CAA Cost Plan and Basis of Estimate Tracker. We compare our benchmark against the cost submitted for consistency.

4.143 The following sections of this report summarise our findings above.

Building works

- 4.144 To estimate the building works we have benchmarked the unit cost per stand based on similar projects at other airports.

Table 4.36: T027 – PRJ-001993 - B74-003.02 PCA Improvements on Served Stands - Phase 3 – Building works

Item	Quantity	Unit Cost (£)	Total Cost (£)
Code E	7	640,660	4,484,619
Code F	8	557,096	4,456,764
Code C/D	25	545,058	13,626,450
TOTAL			22,567,833

- 4.145 Based on the cost assessment carried out, the building cost benchmarking is below the cost provided by HAL by around 7%

Preliminaries, overheads & profit

- 4.146 HAL has estimated these costs as a percentage of the other costs. We assess that these percentage allowances appear reasonable for a project of this nature.

Design

- 4.147 HAL has estimated these costs as a percentage of the other costs. We assess that these percentage allowances appear reasonable for a project of this nature.

Others

- 4.148 HAL has estimated these costs as a percentage of the other costs. We assess that these percentage allowances appear reasonable for a project of this nature.

Our proposed H8 capex

- 4.149 Our benchmark is lower than HAL’s submitted cost by -£27.7m, i.e. a variance of -25.6%. We have applied this percentage variance to the costs of the project during H8 to provide our proposed H8 cost.

Table 4.37: T027 – PRJ-001993 - B74-003.02 PCA Improvements on Served Stands - Phase 3 – H8 Capex

Category	HAL H8 capex (£m)	Our proposed H8 capex (£m)	Variance (£m)
2024 CPI	85.7	63.8	-21.9
Nominal	96.7	72.0	-24.7

Source: HAL, Steer analysis

T04 – PRJ-001606 - B7239 - Airspace Modernisation – Easterly Alternation Infrastructure

Project summary

4.150 The table below summarises the project information provided by HAL in its Business Plan submission or through the Q&A.

Table 4.38: T04 – PRJ-001606 - B7239 - Airspace Modernisation – Easterly Alternation Infrastructure - Summary table

Category	Content
Unique ID	T04
Project Name	PRJ-001606 - B7239 - Airspace Modernisation - Easterly Alternation Infrastructure
Scope	This project is part of the wider Heathrow’s airspace modernisation initiative which intends to re-design all routes into and out of Heathrow, configure ground infrastructure to allow full runway alternation and eliminate the need for a bespoke procedure for departures using the Compton route for Easterly wind operations. This project includes the ground infrastructure changes to enable runway alternation on easterly operations as well as the associated noise mitigation measures.
Business Case	BC08.00 – T04 – PRJ – 001606
H7 Rollover/ New H8	H7 Rollover
Programme	Carbon & Sustainability
Tranche	TR2 – Tranche 2 – Airspace Modernisation
Gateway as of July 2025	G2
Cost information submitted	Cost plan
Alternative Capex* (£m)	Pre-H8 H8 Post-H8 Total
2024 CPI	15.5 71.8 0.0 87.3
Nominal	16.0 78.8 0.0 94.8

Source: HAL (A2 - 2. CAA Cost Plan and Basis of Estimate Tracker), Steer analysis. Note: The capex considered for the cost benchmarking differs from the capex submitted by HAL. This is because we have identified a scope alternative for this project and have adjusted the capex accordingly.

Quality of the cost information submitted

- 4.151 The cost plan provides detailed information on the scope and quantities considered to develop the cost estimate.
- 4.152 Furthermore, the cost submitted by HAL is £49.8m higher than the cost plan. However, given the alternative scope proposed for this project, the variance between the alternative cost submitted and the cost plan is now null (further details in section “Alternative scopes”).

Cost benchmarking

4.153 We have benchmarked the cost plan provided by HAL. The table below summarises the costs that HAL presented in the cost plan and our assessment of those costs. In the paragraphs that follow we explain the rationale for our benchmarks.

Table 4.39: T04 – PRJ-001606 - B7239 - Airspace Modernisation – Easterly Alternation Infrastructure – Cost benchmark

Item	HAL cost (£000, nominal)	Our benchmark (£000, nominal)	Variance	
			Absolute (£000)	Relative (%)
BUILDING WORKS				
Facilitating works	-	-	-	-
Substructure	-	-	-	-
Superstructure	-	-	-	-
Internal finishes	-	-	-	-
Fittings, furnishings and equipment	-	-	-	-
Services	-	-	-	-
Prefabricated buildings and building units	-	-	-	-
Work to existing structure	-	-	-	-
External works	35,654	31,936	-3,719	-10%
Baggage Handling Systems	-	-	-	-
SUB TOTAL - BUILDING WORKS	35,654	31,936	-3,719	-10%
PRELIMINARIES, OVERHEADS & PROFIT				
Main contractor's preliminaries	12,479	11,177	-1,302	-10%
Main contractor's overheads	3,278	2,936	-342	-10%
Main contractor's profit	958	858	-100	-10%
DESIGN				
Other project / design team fees	641	574	-67	-10%
Programme Designers' fees	2,997	2,684	-313	-10%
Main contractor's design fees incl. OHP	1,858	1,664	-194	-10%
CONSTRUCTION BASE COST	57,865	51,830	-6,035	-10%
Other development / project costs	596	534	-62	-10%
Contractor/DI owned risks incl. OHP	-	-	-	-
HAL owned risks	15,091	13,517	-1,574	-10%
Inflation	8,579	7,684	-895	-10%
HAL Logistics and Leadership	12,706	11,381	-1,325	-10%

Item	HAL cost (£000, nominal)	Our benchmark (£000, nominal)	Variance	
			Absolute (£000)	Relative (%)
TOTAL MOST LIKELY EAC	94,837	84,946	-9,891	-10%
Variance vs submission*	-	-	-	-
GRAND TOTAL	94,837	84,946	-9,891	-10%

Source: HAL, Steer analysis. Note: (*) Given the alternative scope proposed for this project, the variance between the alternative cost submitted and the cost plan is now null.

4.154 The following sections of this report summarise our findings above.

External works

4.155 To estimate the external works, the following cost assessment have been carried out according to the scope information provided in the cost plan.

Table 4.40: T04 – PRJ-001606 - B7239 - Airspace Modernisation – Easterly Alternation Infrastructure – External works

Description	Location	Quantity	Units	Unit Cost (£)	Cost (£)
Cut and fill	Northern Runway	55,300	m ³	27.5	1,520,750
New PQC pavement area	Northern Runway	30,500	m ²	550	16,775,000
New composite pavement	Northern Runway	4,600	m ²	440	2,024,000
Existing PQC pavement to be rebuilt	Northern Runway	17,700	m ²	385	6,814,500
Redundant pavement to be removed	Northern Runway	35,100	m ²	66	2,316,600
New grass areas to be constructed	Northern Runway	35,100	m ²	22	772,200
Existing Composite pavement to be rebuilt	Northern Runway	870	m ²	407	354,090
New composite pavement	Northern Runway	30	m ²	440	13,200
Existing PQC pavement to be rebuilt	Northern Runway	200	m ²	385	77,000
Existing pavement to be inlaid	Northern Runway	500	m ²	220	110,000
Noise Wall	Northern Runway	585	m	1980	1,158,300
TOTAL					31,935,640

4.156 Based on the cost assessment carried out, the building cost benchmarking is below the cost provided by HAL by around 10%.

Preliminaries, overheads & profit

4.157 HAL has estimated these costs as a percentage of the other costs. We assess that these percentage allowances appear reasonable for a project of this nature.

Design

4.158 HAL has estimated these costs as a percentage of the other costs. We assess that these percentage allowances appear reasonable for a project of this nature.

Others

4.159 HAL has estimated these costs as a percentage of the other costs. We assess that these percentage allowances appear reasonable for a project of this nature.

Variance vs submission

4.160 As indicated above, this additional cost was included in HAL’s submission but should be treated as opex and, therefore, we have not undertaken a cost benchmark within this project.

Our proposed H8 capex

4.161 Our benchmark is lower than HAL’s submitted cost of -£9.9m, i.e. a variance of -10%. We have applied this percentage variance to the cost of the project during H8 to provide our proposed H8 cost.

Table 4.41: T04 – PRJ-001606 - B7239 - Airspace Modernisation – Easterly Alternation Infrastructure – H8 Capex

Category	HAL H8 capex (£m)*	Our proposed H8 capex (£m)	Variance (£m)
2024 CPI	71.8	64.6	-7.2
Nominal	78.8	70.9	-7.9

Source: HAL, Steer analysis. Note: (*) This is actually the alternative HAL H8 capex based on the alternative scope proposed for this project. Further details in section “Alternative scopes”.

Our approach to cost benchmarking – projects with basis of estimate

- 4.162 This section presents our assessment of projects where HAL has only provided a basis of estimate as evidence for the project costs.
- 4.163 Given that HAL has not provided cost plans for these projects, its cost estimates are only provided at the total cost level and are not disaggregated between direct and indirect costs. Therefore, in our benchmark, we have assumed the proportions of direct costs and various indirect costs that HAL has assumed in the cost plans we reviewed for the benchmarking analysis. We have attempted to use as reference, the cost plans of projects of a comparable nature and for which we found no concerns in our assessment. For reporting consistency with the projects with cost plans, we have split HAL’s total costs using these same proportions.

A231 - B71-138 - T3 Pier 7 Structural

Project summary

- 4.164 The table below summarises the project information provided by HAL in its Business Plan submission or through the Q&A.

Table 4.42: A231 - B71-138 - T3 Pier 7 Structural - Summary table

Category	Content			
Unique ID	A231			
Project Name	B71-138 - T3 Pier 7 Structural			
Scope	Pier 7 structural work aimed at ensuring compliance with fire and safety regulations, addressing structural issues related to steelwork, drainage, water ingress, and general deterioration including glass.			
Business Case	BC03.01 Asset Management & Compliance Programme			
H7 Rollover/ New H8	H7 Rollover			
Programme	Asset Management & Compliance			
Tranche	Tranche 29			
Gateway as of July 2025	P2			
Cost information submitted	Basis of estimate			
Capex (£m)	Pre-H8*	H8	Post-H8*	Total
2024 CPI	1.1	104.8	1.0	108.0
Nominal	1.2	118.9	1.2	120.6

Source: HAL (A2 - 2. CAA Cost Plan and Basis of Estimate Tracker), Steer analysis. Note: (*) Pre-H8 and Post H8 costs can differ from other HAL documents due to inconsistencies of scope inclusions.

Quality of the cost information submitted

- 4.165 The information provided by HAL in its submission does not clearly define the specific scope or areas that need to be refurbished as part of the project. Although a general capex reference is included in the documentation, there is no breakdown of the total capex amount, nor indication of the measurements underpinning the cost estimate. Through the Q&A, HAL has explained that the “B71-138 - T3 Pier 7 Structural” project remains at a P2 level of maturity and, therefore, such detailed information is not yet available.
- 4.166 Furthermore, the basis of estimate was prepared collectively for projects A231, A232, A233, and A258, which limits clarity on the assumptions and cost allocation specific to this project (A231).

Cost benchmarking

- 4.167 The table below summarises our benchmark assessment which is disaggregated between direct and indirect costs. Although the HAL cost was only provided at a total level, we have disaggregated it using the same proportions as in our benchmark. In the paragraphs that follow we explain the rationale for our benchmark.

Table 4.43: A231 - B71-138 - T3 Pier 7 Structural – Cost benchmark

Item	Assumed %	HAL cost (£000, nominal)	Our benchmark (£000, nominal)	Variance	
				Absolute (£000)	Relative (%)
BUILDING WORKS					
Facilitating works		34,615	34,497	-117	-0.3%
Substructure		-	-	-	-
Superstructure		1,566	1,561	-5	-0.3%
Internal finishes		-	-	-	-
Fittings, furnishings and equipment		-	-	-	-
Services		11,126	11,088	-38	-0.3%
Prefabricated buildings and building units		-	-	-	-
Work to existing structure		-	-	-	-
External works		692	690	-2	-0.3%
Baggage Handling Systems		-	-	-	-
SUB TOTAL - BUILDING WORKS		47,999	47,836	-163	-0.3%
PRELIMINARIES, OVERHEADS & PROFIT					
Main contractor's preliminaries	28%	13,440	13,394	-46	-0.3%
Main contractor's overheads	5%	2,477	2,468	-8	-0.3%
Main contractor's profit	2%	1,099	1,095	-4	-0.3%
DESIGN					
Other project / design team fees		-	-	-	-
Programme Designers' fees	6%	2,880	2,870	-10	-0.3%
Main contractor's design fees incl. OHP	7%	3,509	3,497	-12	-0.3%
CONSTRUCTION BASE COST		71,403	71,161	-242	-0.3%
Other development / project costs		3,499	3,487	-12	-0.3%
Contractor/DI owned risks incl. OHP		-	-	-	-
HAL owned risks	26%	19,279	19,213	-65	-0.3%
Inflation	13%	12,139	12,097	-41	-0.3%
HAL Logistics and Leadership	13%	14,281	14,232	-48	-0.3%
TOTAL MOST LIKELY EAC		120,600	120,191	-409	-0.3%

Source: HAL, Steer analysis

4.168 The following sections of this report summarise our findings above.

Building works

4.169 For the consideration of the Building works, specific cost elements have been taken into account. These include Facilitating Works, Superstructure, External Works, and Services.

- 4.170 We have considered a total working surface of 2,100 sqm, derived from 1,600 sqm, which we understand as being the building footprint of Pier 7, and an additional 500 sqm to address critical structural and water infiltration issues in the connection area to the terminal.
- 4.171 For the Facilitating Works, our costs are based on a cost rate of £15,000 per square metre to account for airside site preparation requirements, including scaffolding and night working.
- 4.172 For the Superstructure, we have assumed a rate of £3,500 per square metre. This reflects the cost of a steel frame structure for the pier.
- 4.173 For the External Works, Apron-Pier linkages have been considered, with a ratio of £300 per square metre.
- 4.174 Furthermore, for the cost estimate of the Services, three main sub-elements have been considered, and the cost estimate has been assessed as follows:

Table 4.44: A231 - B71-138 - T3 Pier 7 Structural – Services Estimation

Description	% of total Services	Cost (£)
Embedded Electrical Conduits	70	7,761,875
Embedded Water Pipes	20	2,217,678
Coordination & Minor Structural Adjustments of Services	10	1,108,839

Our proposed H8 capex

- 4.175 The benchmark is lower than the cost plan submitted by HAL by -£0.4m, representing a -0.3% variance. This percentage variance has been applied to the HAL project cost during H8 to provide the proposed H8 cost.

Table 4.45: A231 - B71-138 - T3 Pier 7 Structural – H8 Capex

Category	HAL H8 capex (£m)	Our proposed H8 capex (£m)	Variance (£m)
2024 CPI	104.8	104.4	-0.4
Nominal	118.9	118.5	-0.4

Source: HAL, Steer analysis

A232 - T3 Refurbishment of Pier 7 and Connector (EXTERNAL)

Project summary

4.176 The table below summarises the project information provided by HAL in its Business Plan submission or through the Q&A.

Table 4.46: A232 - T3 Refurbishment of Pier 7 and Connector (EXTERNAL) - Summary table

Category	Content			
Unique ID	A232			
Project Name	T3 Refurbishment of Pier 7 and Connector (EXTERNAL)			
Scope	The structural component of the works is mainly compliance with fire and safety issues and also structural issues with steelwork, drainage, water ingress and general deterioration including glass. The fabric component of the works relates to bitumen felt roof replacement, roof lights, under croft soffit board replacement, ladder replacements (compliance), and glazing replacement.			
Business Case	BC03.01 Asset Management & Compliance Programme			
H7 Rollover/ New H8	H7 Rollover			
Programme	Asset Management & Compliance			
Tranche	Tranche 29			
Gateway as of July 2025	P2			
Cost information submitted	Basis of estimate			
Capex (£m)	Pre-H8*	H8	Post-H8*	Total
2024 CPI	3.5	326.4	3.2	333.1
Nominal	3.8	368.2	3.8	375.8

Source: HAL (A2 - 2. CAA Cost Plan and Basis of Estimate Tracker), Steer analysis. Note: (*) Pre-H8 and Post H8 costs can differ from other HAL documents due to inconsistencies of scope inclusions.

Quality of the cost information submitted

4.177 The cost information submitted by HAL for this project provides very limited detail on the scope considered in the cost estimates. The reference to 63% of Terminal 3 assets classified as “fair, poor, or very poor” reflects the scale of future investment rather than a specific scope of works to refurbish such areas. The scope of the project is still under development, and the total square meters to be refurbished have not been defined.

Cost benchmarking

4.178 The table below summarises our benchmark assessment which is disaggregated between direct and indirect costs. Although the HAL cost was only provided at a total level, we have disaggregated it using the same proportions as in our benchmark. In the paragraphs that follow we explain the rationale for our benchmark.

Table 4.47: A232 - T3 Refurbishment of Pier 7 and Connector (EXTERNAL) – Cost benchmark

Item	Assumed %	HAL cost (£000, nominal)	Our benchmark (£000, nominal)	Variance	
				Absolute (£000)	Relative (%)
T3 Refurbishment of Pier 7 and Connector		223,591	234,100	10,509	4.7%
SUB TOTAL - BUILDING WORKS		223,591	234,100	10,509	4.7%
PRELIMINARIES, OVERHEADS & PROFIT					
Main contractor's preliminaries	15%	33,539	35,115	1,576	4.7%
Main contractor's overheads	5%	10,062	10,535	473	4.7%
Main contractor's profit	4%	7,826	8,194	368	4.7%
DESIGN					
Other project / design team fees	5%	10,062	10,535	473	4.7%
Programme Designers' fees	6%	12,298	12,876	578	4.7%
Main contractor's design fees incl. OHP	2%	4,472	4,682	210	4.7%
CONSTRUCTION BASE COST		301,847	316,035	14,188	4.7%
Other development / project costs					
Contractor/DI owned risks incl. OHP					
HAL owned risks	6%	18,111	18,962	851	4.7%
Inflation	5%	15,093	15,802	709	4.7%
HAL Logistics and Leadership	12%	40,750	42,665	1,915	4.7%
TOTAL MOST LIKELY EAC		375,800	393,464	17,664	4.7%

Source: HAL, Steer analysis

Building works

- 4.179 For the assessment of this project, we have assumed a unit cost benchmark for terminal refurbishments of £12,000 per sqm, reflecting the complexity (including asbestos removal) and depth of the intervention. This unit cost has been applied to the estimated gross floor area of c.19,500 sqm to estimate the Building Works cost. The costs have been broken down into sub-totals for Building Works and Construction Base Cost.

Our proposed H8 capex

- 4.180 The benchmark shows a £17.7m higher cost compared to the HAL's capex in nominal prices, representing a 4.7% variance. This percentage variance has been applied to the HAL project cost during H8 to provide the proposed H8 cost.

Table 4.48: A232 - T3 Refurbishment of Pier 7 and Connector (EXTERNAL) – H8 Capex

Category	HAL H8 capex (£m)	Our proposed H8 capex (£m)	Variance (£m)
2024 CPI	326.4	341.7	15.3
Nominal	368.2	385.5	17.3

Source: HAL, Steer analysis

A234- Asset Management & Compliance P2 R&O's

Project summary

- 4.181 The table below summarises the project information provided by HAL in its Business Plan submission or through the Q&A.

Table 4.49: A234- Asset Management & Compliance P2 R&O's - Summary table

Category	Content			
Unique ID	A234			
Project Name	Asset Management & Compliance P2 R&O's			
Scope	This project is a contingency allowance which includes costs associated with risks and opportunities of Asset Management and Compliance (AMC) projects which are at P2 or P2T stages. HAL indicates that it hold these Risks and Opportunities (R&O's) centrally rather than on individual projects as it only uplifts a project risk once it has been through formal change control (both externally and internally). HAL also mentions that holding these R&O's centrally allows to reflect the latest view of the programme whilst driving risks down and materialising the opportunities, and continuing to challenge projects and the supply chain to deliver on/under budget.			
Business Case	BC03.01 Asset Management & Compliance Programme			
H7 Rollover/ New H8	H7 Rollover			
Programme	Asset Management & Compliance			
Tranche	Tranche X			
Gateway as of July 2025	P2			
Cost information submitted	Basis of estimate			
Capex (£m)	Pre-H8*	H8	Post-H8*	Total
2024 CPI	2.0	51.3	5.5	58.8
Nominal	2.1	58.1	6.6	66.8

Source: HAL (A2 - 2. CAA Cost Plan and Basis of Estimate Tracker), Steer analysis. Note: (*) Pre-H8 and Post H8 costs can differ from other HAL documents due to inconsistencies of scope inclusions.

Quality of the cost information submitted

- 4.182 HAL did not provide any cost information on this project. Given that this project is actually a risk budget, we have asked through the Q&A if it could provide the Expected Monetary Value or Quantitative Cost Risk Analysis (QCRA) details which could potentially have been used to develop the cost estimate of this project. HAL did not provide this information, but it indicated that *“this scope is under development and the programme holds a general risk allocation to reflect that this scope is immature and continues to be developed.”*

Cost benchmarking

- 4.183 Through the Q&A, HAL indicates that *“there is £2.2bn at P2/P2T stage of maturity that was submitted as part of the H8 plan for AMC.”* and that *“£58m represents a*

small 2.7% risk pot associated with the cost of this scope going up as the scope becomes more defined”.

- 4.184 We have not been able to reconcile the £2.2bn mentioned by HAL, as we are not clear whether this risk allowance includes all P2/P2T projects of the AMC programme, or only the ones included in the Business Case *BC03.01 Asset Management & Compliance Programme*, or a mix of the two. However, based on HAL’s submission, we assess that this risk allowance includes between £2,012m and £2,810m of capex (nominal) for H8, which represents a risk allowance uplift of 2.1% to 2.9%.
- 4.185 We also note, as explained earlier in the report, that the IFS has been very positive on the risk management approach that HAL undertakes and has not flagged any concerns with HAL’s approach of holding risks and opportunities centrally rather than at a project level. Given this consideration and the relatively modest risk allowance uplift estimated by HAL, we agree with HAL’s cost estimate.

Our proposed H8 capex

- 4.186 Given the reasons mentioned above, we agree with HAL’s cost estimate.

Table 4.50: A234- Asset Management & Compliance P2 R&O's – H8 Capex

Category	HAL H8 capex (£m)	Our proposed H8 capex (£m)	Variance (£m)
2024 CPI	51.3	51.3	-
Nominal	58.1	58.1	-

Source: HAL, Steer analysis

B016 – Rolling programme for pavements and stands

Project summary

- 4.187 The table below summarises the project information provided by HAL in its Business Plan submission or through the Q&A.

Table 4.51: B016-Rolling programme for pavements and stands - Summary table

Category	Content			
Unique ID	B016			
Project Name	Rolling programme for pavements and stands			
Scope	This project encompasses the management, maintenance, and renewal of the airport's pavement and stands infrastructure			
Business Case	BC04.00 H8 asset renewal			
H7 Rollover/ New H8	H8 New			
Programme	Asset Management & Compliance			
Tranche	N/A			
Gateway as of July 2025	Pre P1			
Cost information submitted	Basis of estimate			
Capex (£m)	Pre-H8*	H8	Post-H8*	Total
2024 CPI	0	55.1	119.9	175.0
Nominal	0	64.0	143.0	207.0

Source: HAL (A2 - 2. CAA Cost Plan and Basis of Estimate Tracker), Steer analysis. Note: (*) Pre-H8 and Post H8 costs can differ from other HAL documents due to inconsistencies of scope inclusions.

Quality of the cost information submitted

- 4.188 The basis of estimate provided by HAL does not provide clarity on the approach to costing this project. There is also no detailed information available regarding the specific scope of the proposed actions, such as the depth of the interventions.

Cost benchmarking

- 4.189 The table below summarises our benchmark assessment which is disaggregated between direct and indirect costs. Although the HAL cost was only provided at a total level, we have disaggregated it using the same proportions as in our benchmark. In the paragraphs that follow we explain the rationale for our benchmark.

Table 4.52: B016-Rolling programme for pavements and stands – Cost Benchmark

Item	Assumed %	HAL cost (£000, nominal)	Our benchmark (£000, nominal)	Variance	
				Absolute (£000)	Relative (%)
BUILDING WORKS					
Pavement rehabilitation		82,536	79,560	-2,976	-4%
SUB TOTAL - BUILDING WORKS		82,536	79,560	-2,976	-4%
PRELIMINARIES, OVERHEADS & PROFIT					
Main contractor's preliminaries	27%	22,285	21,481	-803	-4%
Main contractor's overheads	6%	4,952	4,774	-179	-4%
Main contractor's profit	4%	3,301	3,182	-119	-4%
DESIGN					
Other project / design team fees	2%	1,651	1,591	-60	-4%
Programme Designers' fees	6%	4,952	4,774	-179	-4%
Main contractor's design fees incl. OHP	7%	5,778	5,569	-208	-4%
CONSTRUCTION BASE COST		125,455	120,931	-4,523	-4%
Other development / project costs		-	-	-	-
Contractor/DI owned risks incl. OHP		-	-	-	-
HAL owned risks	28%	35,127	33,861	-1,267	-4%
Inflation	13%	20,073	19,349	-724	-4%
HAL Logistics and Leadership	15%	26,345	25,396	-950	-4%
TOTAL MOST LIKELY EAC		207,000	199,536	-7,464	-4%

Source: HAL, Steer analysis

Building Works

4.190 For the definition of the scope of works, we have made the following assumptions:

- Based on the H8 Business Plan document, Chapter 5.1, p130, HAL maintains 4 million square metres of pavements across the campus.
- Light to medium maintenance activities (sealing, cleaning, crack repair) typically range from £5 to £20 per square metre, with major resurfacing works added periodically. We have adopted a unit cost close to £20 per square metre to reflect standard light to medium maintenance activities on all pavements.

4.191 Based on the cost assessment carried out, the building cost benchmarking is below the cost provided by HAL by around 4%.

Our proposed H8 capex

4.192 Our benchmark is lower than HAL's submitted cost of -£7.5m (a variance of -4%). We have applied this percentage variance to the cost of the project during H8 to provide our proposed H8 cost.

Table 4.53: B016-Rolling programme for pavements and stands – H8 Capex

Category	HAL H8 capex (£m)	Our proposed H8 capex (£m)	Variance (£m)
2024 CPI	55.1	53.1	-2.0
Nominal	64.0	61.7	-2.3

Source: HAL, Steer analysis

B017 – Western Campus Inter-Terminal Baggage Transport Asset Replacement (DCV)

Project summary

- 4.193 The table below summarises the project information provided by HAL in its Business Plan submission or through the Q&A.

Table 4.54: B017 – Western Campus Inter-Terminal Baggage Transport Asset Replacement (DCV) - Summary table

Category	Content			
Unique ID	B017			
Project Name	Western Campus Inter-Terminal Baggage Transport Asset Replacement (DCV)			
Scope	This project involves the renewal of an old Destination Coded Vehicle (DCV) tunnel system connecting key terminal areas.			
Business Case	BC04.00 H8 asset renewal			
H7 Rollover/ New H8	H8 New			
Programme	Asset Management & Compliance			
Tranche	None yet			
Gateway as of July 2025	Pre P1			
Cost information submitted	Basis of estimate			
Capex (£m)	Pre-H8*	H8	Post-H8*	Total
2024 CPI	0	83.4	181.6	265.0
Nominal	0	97.0	216.5	313.5

Source: HAL (A2 - 2. CAA Cost Plan and Basis of Estimate Tracker), Steer analysis. Note: (*) Pre-H8 and Post H8 costs can differ from other HAL documents due to inconsistencies of scope inclusions.

Quality of the cost information submitted

- 4.194 The basis of estimate provided by HAL does not provide clarity on the approach to costing this project. There is also no detailed information available regarding the specific scope of the proposed actions, such as DCV meters, areas in-scope, affected services and throughput.
- 4.195 However, through the Q&A, HAL has provided more information on the scope and its approach to cost estimation.

Cost benchmarking

- 4.196 The table below summarises our benchmark assessment which is disaggregated between direct and indirect costs. Although the HAL cost was only provided at a total level, we have disaggregated it using the same proportions as in our

benchmark. In the paragraphs that follow we explain the rationale for our benchmark.

Table 4.55: B017 – Western Campus Inter-Terminal Baggage Transport Asset Replacement (DCV) – Cost Benchmark

Item	Assumed %	HAL cost (£000, nominal)	Our benchmark (£000, nominal)	Variance	
				Absolute (£000)	Relative (%)
BUILDING WORKS					
DCV Replacement		125,000	119,600	-5,400	-4.0%
SUB TOTAL - BUILDING WORKS		125,000	119,600	-5,400	-4.0%
PRELIMINARIES, OVERHEADS & PROFIT					
Main contractor's preliminaries	27%	33,750	32,292	-1458	-4.0%
Main contractor's overheads	6%	7,500	7,176	-324	-4.0%
Main contractor's profit	4%	5,000	4,784	-216	-4.0%
DESIGN					
Other project / design team fees	2%	2,500	2,392	-108	-4.0%
Programme Designers' fees	6%	7,500	7,176	-324	-4.0%
Main contractor's design fees incl. OHP	7%	8,750	8,372	-378	-4.0%
CONSTRUCTION BASE COST		190,000	181,792	-8208	-4.0%
Other development / project costs		-	-	-	-
Contractor/DI owned risks incl. OHP		-	-	-	-
HAL owned risks	28%	53,200	50,902	-2298	-4.0%
Inflation	13%	30,400	29,087	-1313	-4.0%
HAL Logistics and Leadership	15%	39,900	38,176	-1,724	-4.0%
TOTAL MOST LIKELY EAC		313,500	299,957	-13,543	-4.0%

Source: HAL, Steer analysis

- 4.197 The proposed Western Campus Inter-Terminal Baggage Transport Asset Replacement (DCV) involves the renewal of an old Destination Coded Vehicle (DCV) tunnel system connecting key terminal areas within the airfield. The work is technically complex, combining underground civil works, mechanical/electrical upgrades, and full integration with live baggage handling operations under highly constrained conditions.
- 4.198 Benchmark data from comparable DCV / ICS installations at major international hubs indicate a typical out-turn cost range of £280m to £320m for projects of comparable configuration and interface complexity. The reported capital cost of £313m is within the expected benchmark range, reflecting both the underground works and the extensive operational constraints.

4.199 The existing Heathrow Transfer Baggage Tunnel serves as the closest benchmark for the Western Campus DCV replacement project. The £250m project involved a fully automated DCV tunnel constructed below live taxiways and runways, integrating around 960 carts with a handling capacity of 3,000 bags per hour. Indexed to current construction prices, the cost increases to £310m. Based on this information, we could estimate a unit cost for the DVC replacement of £119.6m.

Our proposed H8 capex

4.200 Our benchmark is lower than HAL’s submitted cost of -£13.5m (a variance of -4%). We have applied this percentage variance to the cost of the project during H8 to provide our proposed H8 cost.

Table 4.56: B017 – Western Campus Inter-Terminal Baggage Transport Asset Replacement (DCV) – H8 Capex

Category	HAL H8 capex (£m)	Our proposed H8 capex (£m)	Variance (£m)
2024 CPI	83.4	79.8	-3.6
Nominal	97.0	92.8	-4.2

Source: HAL, Steer analysis

D03 - PRJ-001901 - B71-152 Terminal 4 Front Door and Car Park - Tranche 34

Project summary

4.202 The table below summarises the project information provided by HAL in its Business Plan submission or through the Q&A.

Table 4.57: D03 - PRJ-001901 - B71-152 Terminal 4 Front Door and Car Park - Tranche 34 - Summary table

Category	Content			
Unique ID	B083			
Project Name	Asset Management & Compliance			
Scope	<p>The project aims to deliver a replacement of Terminal 4 (T4) multi-storey short-stay car park (MSCP4). It envisages the provision of a facility that meets modern safety standards, including the requirements set out in Aviation Security in Airport Development (ASIAD). The scope of this project includes the delivery of:</p> <ul style="list-style-type: none"> • New car park with optimised structure, 883 spaces and 42 accessible parking bays; • Vertical expansion to Level 6, with dedicated arrivals forecourt and additional lanes; and • New access via redesigned ramp road with segregated access for the MSCP4 users and drop-off cars to improve the vehicle access flows. 			
Business Case	BC03.02 Terminal 4 Front Door and Car Park			
H7 Rollover/ New H8	H7 Rollover			
Programme	Asset Management & Compliance			
Tranche	Tranche 34			
Gateway as of July 2025	P2			
Cost information submitted	Basis of estimate			
Capex (£m)	Pre-H8*	H8	Post-H8*	Total
2024 CPI	28.3	316.4	3.3	348.0
Nominal	30.0	356.1	3.9	390.0

Source: HAL (A2 - 2. CAA Cost Plan and Basis of Estimate Tracker), Steer analysis. Note: (*) Pre-H8 and Post H8 costs can differ from other HAL documents due to inconsistencies of scope inclusions.

Quality of the cost information submitted

4.203 The documentation submitted by HAL for this project provide details on the scope of this project but no information on assumptions used for cost estimation purposes.

Cost benchmarking

4.204 The table below summarises our benchmark assessment which is disaggregated between direct and indirect costs. Although the HAL cost was only provided at a total level, we have disaggregated it using the same proportions as in our

benchmark. In the paragraphs that follow we explain the rationale for our benchmark.

Table 4.58: D03 - PRJ-001901 - B71-152 Terminal 4 Front Door and Car Park - Tranche 34 – Cost benchmark

Item	Assumed %	HAL cost (£000, nominal)	Our benchmark (£000, nominal)	Variance	
				Absolute (£000)	Relative (%)
BUILDING WORKS					
Demolition			7,061		
Accessible parking bays			86		
New parking bays			10,193		
Passenger Bridges			2,017		
Services			73,437		
External works			37,117		
SUB TOTAL - BUILDING WORKS		155,502	129,911	-25,591	-17%
PRELIMINARIES, OVERHEADS & PROFIT					
Main contractor's preliminaries	27%	41,986	35,076	-6,909	-17%
Main contractor's overheads	6%	9,330	7,794	-1,535	-17%
Main contractor's profit	4%	6,220	5,197	-1,023.19	-17%
DESIGN					
Other project / design team fees	2%	3,110	2,598	-512.155	-17%
Programme Designers' fees	6%	9,330	7,794	-1,535	-17%
Main contractor's design fees incl. OHP	7%	10,885	9,093	-1,792	-17%
CONSTRUCTION BASE COST		236,364	197,466	-38,898	-17%
Other development / project costs		-	-		
Contractor/DI owned risks incl. OHP		-	-		
HAL owned risks	28%	66,182	55,290	-10,892	-17%
Inflation	12%	37,818	31,594	-6,223	-17%
HAL Logistics and Leadership	15%	49,636	41,468	-8,169	-17%
TOTAL MOST LIKELY EAC		390,000	325,818	-64,182	-17%

Source: HAL, Steer analysis.

Building works

4.205 In the document BC03.02 Terminal 4 Front Door and Car Park business case, it is stated that the multi-storey short-stay car park outside T4 (MSCP4) was opened in 1986. Consequently, the structure does not meet modern safety standards, and the proposed solution is to demolish the existing infrastructure and build a new one.

- 4.206 We have assumed an existing area of 11,500 square meters. Considering that it has three levels, this results in a total demolition area of 34,500 square metres. The new construction area is approximately 7,914 square meters. According to the Business Case, the new building includes a vertical expansion up to Level 6.
- 4.207 Works of demolition, MEP services, and passenger bridges connection with the terminal have been also considered.

Our proposed H8 capex

- 4.208 Our benchmark is lower than HAL’s submitted cost by -£64m (a variance of -16.5%). We have applied this percentage variance to the cost of the project during H8 to provide our proposed H8 cost.

Table 4.59: D03 - PRJ-001901 - B71-152 Terminal 4 Front Door and Car Park - Tranche 34 – H8 Capex

Category	HAL H8 capex (£m)	Our proposed H8 capex (£m)	Variance (£m)
2024 CPI	316.4	264.3	-52.1
Nominal	356.1	297.5	-58.6

Source: HAL, Steer analysis

E01 - T3 Standard 3 HBS Replacement

Project summary

4.209 The table below summarises the project information provided by HAL in its Business Plan submission or through the Q&A.

Table 4.60: E01 - T3 Standard 3 HBS Replacement - Summary table

Category	Content			
Unique ID	E01			
Project Name	Asset Management & Compliance			
Scope	This project is about the replacement of the existing Hold Baggage Screening (HBS) equipment in the T3 Baggage system. The T3 HBS equipment is at its end of life and HAL claims that it has a reduced reliability with increased faults and equipment failures. The HBS equipment manufacturer has stated that it will no longer provide spare equipment or technical support after 2028.			
Business Case	BC03.03 T3 Hold Baggage Screening (T3IB)			
H7 Rollover/ New H8	H7 Rollover			
Programme	Asset Management & Compliance			
Tranche	Tranche 20			
Gateway as of July 2025	P2			
Cost information submitted	Basis of estimate			
Capex (£m)	Pre-H8*	H8	Post-H8*	Total
2024 CPI	9.5	92.4	0	102.0
Nominal	10.0	104.8	0	114.8

Source: HAL (A2 - 2. CAA Cost Plan and Basis of Estimate Tracker), Steer analysis. Note: (*) Pre-H8 and Post H8 costs can differ from other HAL documents due to inconsistencies of scope inclusions.

Quality of the cost information submitted

4.210 HAL’s documentation provides limited information on the scope used for the cost estimation of the project. From the Q&A process, the following scope has been defined:

- Replacement of eight in-gauge extra-large bore (XLB) examiner units;
- Replacement of two direct out-of-gauge units; and
- Replacement of two transfer out-of-gauge units.

Cost benchmarking

4.211 The table below summarises our benchmark assessment which is disaggregated between direct and indirect costs. Although the HAL cost was only provided at a total level, we have disaggregated it using the same proportions as in our benchmark. In the paragraphs that follow we explain the rationale for our benchmark.

Table 4.61: E01 - T3 Standard 3 HBS Replacement – Cost benchmark

Item	Assumed %	HAL cost (£000, nominal)	Our benchmark (£000, nominal)	Variance	
				Absolute (£000)	Relative (%)
BUILDING WORKS					
Replacement of eight in-gauge extra-large bore (XLB) examiner units			12,000		
Replacement of two direct out-of-gauge units			2,400		
Replacement of two transfer out-of-gauge units			2,400		
Structural Works			5,544		
BHS Works			5,544		
HBS Matrix and Control			5,544		
Electrical Works			4,620		
Commissioning			2,772		
Affected services			2,772		
SUB TOTAL - BUILDING WORKS		45,754	43,596	-2,158	-5%
PRELIMINARIES, OVERHEADS & PROFIT					
Main contractor's preliminaries	27%	12,354	11,771	-583	-5%
Main contractor's overheads	6%	2,745	2,616	-129	-5%
Main contractor's profit	4%	1,830	1,744	-86	-5%
DESIGN					
Other project / design team fees	2%	915	872	-43	-5%
Programme Designers' fees	6%	2,745	2,616	-129	-5%
Main contractor's design fees incl. OHP	7%	3,203	3,052	-151	-5%
CONSTRUCTION BASE COST		69,546	66,266	-3,280	-5%
Other development / project costs		-	-	-	-
Contractor/DI owned risks incl. OHP		-	-	-	-
HAL owned risks	28%	19,472	18,554	-918	-5%
Inflation	13%	11,128	10,603	-525	-5%
HAL Logistics and Leadership	15%	14,604	13,916	-688	-5%
TOTAL MOST LIKELY EAC		114,750	109,339	-5,411	-5%

Source: HAL, Steer analysis

Our proposed H8 capex

4.212 Our benchmark is lower than HAL's submitted cost of -£5.4 million (a variance of -5%). We have applied this percentage variance to cost the project during H8 to provide our proposed H8 cost for this project.

Table 4.62: E01 - T3 Standard 3 HBS Replacement – H8 Capex

Category	HAL H8 capex (£m)	Our proposed H8 capex (£m)	Variance (£m)
2024 CPI	92.4	88.0	-4.4
Nominal	104.8	99.9	-4.9

Source: HAL, Steer analysis

H043- EA P2 R&O's

Project summary

- 4.213 The table below summarises the project information provided by HAL in its Business Plan submission or through the Q&A.

Table 4.63: H043- EA P2 R&O's – Summary table

Category	Content			
Unique ID	H043			
Project Name	H043-EA P2 R&O's			
Scope	This project is a contingency allowance which includes costs associated with risks and opportunities of projects within the Efficient Airport programme which are at P2 or P2T stages. HAL indicates that it hold these Risks and Opportunities (R&O's) centrally rather than on individual projects as it only uplifts a project risk once it has been through formal change control (both externally and internally). HAL also mentions that holding these R&O's centrally allows it to reflect the latest view of the programme whilst driving risks down and materialising the opportunities, and continuing to challenge projects and the supply chain to deliver on/under budget.			
Business Case	BC16.00 Efficient airport Programme			
H7 Rollover/ New H8	H7 Rollover			
Programme	Efficient Airport			
Tranche	PRG - Programme Spend			
Gateway as of July 2025	P2			
Cost information submitted	Basis of estimate			
Capex (£m)	Pre-H8*	H8	Post-H8*	Total
2024 CPI	19.1	57.6	0	76.7
Nominal	20.1	64.3	0	84.4

Source: HAL (A2 - 2. CAA Cost Plan and Basis of Estimate Tracker), Steer analysis. Note: (*) Pre-H8 and Post H8 costs can differ from other HAL documents due to inconsistencies of scope inclusions.

Quality of the cost information submitted

- 4.214 HAL's documentation provides limited information on the scope used for the cost estimation. The documentation does not clearly define the underlying assumptions and criteria applied in the identification and evaluation of risks and opportunities.
- 4.215 We asked through the Q&A if HAL could provide the Expected Monetary Value or Quantitative Cost Risk Analysis (QCRA) details which could potentially have been used to develop the cost estimate of this project. HAL did not provide this information.

Cost benchmarking

- 4.216 As explained above, this project is a contingency allowance which includes costs associated with risks and opportunities of projects within the Efficient Airport programme which are at P2 or P2T stages. Therefore, based on HAL’s submission, it quantifies £221.7m of capex at H8 (nominal) for H8, which represents a risk allowance uplift of 26.0% at H8. As explained at the beginning of Chapter 10345021, we consider this percentage allowance to be reasonable.
- 4.217 We also note, as explained in the same section as well, that the IFS has been very positive on the risk management approach that HAL undertakes. It has also not flagged any concerns with HAL’s approach of holding risks and opportunities centrally rather than at a project level.
- 4.218 Given these considerations, we agree with HAL’s cost estimate.

Our proposed H8 capex

- 4.219 Based on the above, our H8 cost assessment is equal as the one provided by HAL.

Table 4.64: H043- EA P2 R&O's – Cost benchmarking –H8 Capex

Category	HAL H8 capex (£m)	Our proposed H8 capex (£m)	Variance (£m)
2024 CPI	57.6	57.6	0
Nominal	64.3	64.3	0

Source: HAL, Steer analysis

J02 - Electricity network 132KV new network

Project summary

4.220 The table below summarises the project information provided by HAL in its Business Plan submission or through the Q&A.

Table 4.65: J02 - Electricity network 132KV new network - Summary table

Category	Content
Unique ID	J02
Project Name	Electricity network 132KV new network
Scope	<p>This project aims to deliver the 33KV network upgrades to a 132KV specification. It is a deliberate design choice by Heathrow to align with Heathrow’s longer-term energy transformation objectives.</p> <p>While these assets will initially operate within the 33KV network, they will form the foundation of a future 132KV ‘mesh’ system, which is critical to enabling the planned connection to the National Grid by 2037.</p> <p>By building in 132KV capability now, HAL aims to avoid costly future retrofitting and ensure the investments made during H8 remains fit for purpose over the long term.</p>
Business Case	BC05.00 Electrical network
H7 Rollover/ New H8	New H8
Programme	Asset Management & Compliance
Tranche	None
Gateway as of July 2025	Pre P1
Cost information submitted	Basis of estimate
Capex (£m)	Pre-H8* H8 Post-H8* Total
2024 CPI	0 332.0 192.1 524.1
Nominal	0 380.5 229.1 609.6

Source: HAL (A2 - 2. CAA Cost Plan and Basis of Estimate Tracker), Steer analysis. Note: (*) Pre-H8 and Post H8 costs can differ from other HAL documents due to inconsistencies of scope inclusions.

Quality of the cost information submitted

4.221 HAL’s documentation provides limited information regarding the scope used for cost estimation. The BC 05.00 Electrical Network document states that the main scope is to upgrade the 33kV network to 132kV. The project covers the following areas: 33kV Section 1, Area B & 33 kV Section 2, and Area D.

4.222 For our estimates, we have used the areas specified in BC 05.00 – J01 Electricity Network Upgrades.

Cost benchmarking

4.223 The table below summarises our benchmark assessment which is disaggregated between direct and indirect costs. Although the HAL cost was only provided at a total level, we have disaggregated it using the same proportions as in our

benchmark. In the paragraphs that follow we explain the rationale for our benchmark.

Table 4.66: J02 - Electricity network 132KV new network – Cost benchmark

Item	Assumed %	HAL (£000, nominal)	Benchmark (£000, nominal)	Variance	
				Absolute (£000)	Relative (%)
BUILDING WORKS					
132 kV Network		243,062	249,986	6,924	3%
SUB TOTAL – BUILDING WORKS		243,062	249,986	6,924	3%
PRELIMINARIES, OVERHEADS & PROFIT					
Main contractor's preliminaries	27%	65,627	67,496	1,870	3%
Main contractor's overheads	6%	14,584	14,999	415	3%
Main contractor's profit	4%	9,722	9,999	277	3%
DESIGN					
Other project / design team fees	2%	4,861	5,000	138	3%
Programme Designer's fees	6%	14,584	14,999	415	3%
Main contractor's design fees incl. OHP	7%	17,014	17,499	485	3%
CONSTRUCTION BASE COST		369,455	379,979	10,525	3%
Other development / project costs		-	-	-	-
Contractor / DI owned risks incl. OHP		-	-	-	-
HAL owned risks	28%	103,447	106,394	2,947	3%
Inflation	13%	59,113	60,797	1,684	3%
HAL Logistics and Leadership	15%	77,585	79,796	2,210	3%
TOTAL		609,600	626,966	17,366	3%

Source: HAL, Steer analysis.

Building Works

- 4.224 For the cost estimation of the 132 kV network, we have used the publicity available prices from SP Energy Networks. For each area, we have defined the perimeter and assumed the use of one transformer and one Single Busbar Bay per area.
- 4.225 The unit prices used in our assessment are as follows:

Table 4.67: J02 - Electricity network 132KV new network – Unit Cost

Item	Unit Cost (£k)
Single Busbar Bay	1,659
Double Circuit Steel Tower (per km)	1,966
Transformer Cables, per 100m (including Sealing Ends)	1,425
132/33 kV 90 MVA Transformer	4,038

Source: Steer

Our proposed H8 capex

4.226 Our benchmark shows a higher cost than submitted by HAL of £17.4 million, i.e. a variance of 3%. We have applied this percentage variance to the cost of the project during H8 to provide our proposed H8 cost.

Table 4.68: J02 - Electricity network 132KV new network – H8 Capex

Category	HAL H8 capex (£m)	Our proposed H8 capex (£m)	Variance (£m)
2024 CPI	332.0	341.5	+9.5
Nominal	380.5	391.3	+10.8

Source: HAL, Steer analysis

K065- Commercial P2 R&O's

Project summary

4.227 The table below summarises the project information provided by HAL in its Business Plan submission or through the Q&A.

Table 4.69: K065- Commercial P2 R&O's - Summary table

Category	Content			
Unique ID	K065			
Project Name	K065- Commercial P2 R&O's			
Scope	This project is a contingency allowance which includes costs associated with risks and opportunities of Commercial projects which are at P2 or P2T stages. HAL indicates that it holds these Risks and Opportunities (R&O's) centrally rather than on individual projects as it only uplifts a project risk once it has been through formal change control (both externally and internally). HAL also describes that holding these R&O's centrally allows it to reflect the latest view of the programme whilst driving risks down and materialising the opportunities, and continuing to challenge projects and the supply chain to deliver on/under budget.			
Business Case	BC12.00 Commercial Programme			
H7 Rollover/ New H8	Commercial Revenues			
Programme	Asset Management & Compliance			
Tranche	Programme Level			
Gateway as of July 2025	N/A			
Cost information submitted	Basis of estimate			
Capex (£m)	Pre-H8*	H8	Post-H8*	Total
2024 CPI	0	55.1	0	55.1
Nominal	0	61.5	0	61.5

Source: HAL (A2 - 2. CAA Cost Plan and Basis of Estimate Tracker), Steer analysis.

Quality of the cost information submitted

4.228 HAL's documentation provides limited information on the risks considered for the cost estimation. The documentation does not clearly define the underlying assumptions and criteria applied in the identification and evaluation of risks and opportunities.

4.229 We asked through the Q&A if HAL could provide the Expected Monetary Value or Quantitative Cost Risk Analysis (QCRA) details which could potentially have been used to develop the cost estimate of this project. HAL did not provide this information, as it indicated that Expected Monetary Value or Quantitative Cost Risk Analysis (QCRA) are not run at a programme level. It also indicated that, of the £55m of costs at H8 (2024 CPI) for this project, £44m is for K01 - PRJ-001563 - B75-019.00 - Cargo Southside Transformation risks and opportunities and that

this amount is within the P2T tolerance range of the project. It also indicated “£8m for Digital scope that was in the P2 estimate but not yet launched.”

- 4.230 We are not clear about the latter statement from HAL and why there is still a £3m gap with the project total cost in its explanation. However, on the former, the Project Maturity Assessment presented in the Cargo Southside (K01) cost plan assesses that a pessimistic cost estimate for this project can be 30% higher than the cost estimate which was submitted by HAL in its Business Plan for this project, i.e. an increase in costs of £45m (2024 CPI), which is very close to the £44m described by HAL in its response.

Cost benchmarking

- 4.231 Despite HAL’s response to our question, we are not fully clear of the basis for HAL’s estimate of the risk allowance. However, we note, as explained earlier in the report, that the IFS has been very positive in its H7 review on the risk management approach that HAL undertakes and has not flagged any concerns with HAL’s approach of holding risks and opportunities centrally rather than at a project level. Given this consideration, we agree with HAL’s cost estimate.

Our proposed H8 capex

- 4.232 Based on the above, our H8 cost assessment is equal as the one provided by HAL.

Table 4.70: K065- Commercial P2 R&O’s – Estimation

Category	HAL capex (£m)	Our proposed capex (£m)	Variance (£m)
2024 CPI	55.1	55.1	0
Nominal	61.5	61.5	0

Source: HAL, Steer analysis

M16 – Land optimisation – decking (LS2 and LS4) – Replace Pex / N4

Project summary

4.233 The table below summarises the project information provided by HAL in its Business Plan submission or through the Q&A.

Table 4.71: M16 Land optimisation – decking (LS2 and LS4) – Replace Pex / N4 – Summary table

Category	Content			
Unique ID	M16			
Project Name	Land optimisation – decking (LS2 and LS4) – Replace Pex / N4			
Scope	This project is about increasing car parking capacity by 2,000 spaces with a decked parking solution on the current LS 2/3 car park. This will become the centralised location for storing Meet and Greet (M&G) and Park and Ride (P&R) cars for the Central Terminal Area (CTA) passengers.			
Business Case	BC13.00 – H8 new – Commercial scope			
H7 Rollover/ New H8	H8 New			
Programme	Land optimisation – decking (LS2 and LS4) – Replace Pex / N4			
Tranche	N/A			
Gateway as of July 2025	Pre P1			
Cost information submitted	Basis of estimate			
Capex (£m)	Pre-H8	H8	Post-H8	Total
2024 CPI	0	80.0	0	80.0
Nominal	0	91.1	0	91.1

Source: HAL (Cost tracker shortlist), Steer analysis.

Quality of the cost information submitted

4.234 HAL’s documentation provides high-level information on the scope of the project. However, the basis of estimate explanation provided for this project cannot be reconciled with the cost submitted.

Cost benchmarking

4.235 The table below summarises our benchmark assessment which is disaggregated between direct and indirect costs. Although the HAL cost was only provided at a total level, we have disaggregated it using the same proportions as in our benchmark. In the paragraphs that follow we explain the rationale for our benchmark.

Table 4.72: M16 Land optimisation – decking (LS2 and LS4) – Replace Pex / N4 – Cost benchmark

Item	Assumed %	HAL (£000, nominal)	Benchmark (£000, nominal)	Variance	
				Absolute (£000)	Relative (%)
BUILDING WORKS					
New parking spaces		.	29,000	29,000	NA
Services		-	6,000	6,000	NA
SUB TOTAL – BUILDING WORKS		36,324	35,000	-1,324	-4%
PRELIMINARIES, OVERHEADS & PROFIT					
Main contractor's preliminaries	27%	9,807	9,450	-357	-4%
Main contractor's overheads	6%	2,179	2,100	-79	-4%
Main contractor's profit	4%	1,453	1,400	-53	-4%
DESIGN					
Other project / design team fees	2%	726	700	-26	-4%
Programme Designer's fees	6%	2,179	2,100	-79	-4%
Main contractor's design fees incl. OHP	7%	2,543	2,450	-93	-4%
CONSTRUCTION BASE COST		55,212	53,200	-2,012	-4%
Other development / project costs		-	-	-	-
Contractor / DI owned risks incl. OHP		-	-	-	-
HAL owned risks	28%	15,459	14,896	-563	-4%
Inflation	13%	8,834	8,512	-322	-4%
HAL Logistics and Leadership	15%	11,595	11,172	-423	-4%
TOTAL		91,100	87,780	-3,320	-4%

Source: HAL, Steer analysis.

Building Works

- 4.236 We have established a unit cost of £14,500 per car parking space based on benchmarking of similar projects.
- 4.237 For the services cost estimate, we assume that each car parking space occupies an area of 25 square metres. Given a total of 2,000 car parking spaces, the overall area measures 50,000 square metres. A unit cost of £120 per square metre has been applied.

Our proposed H8 capex

- 4.238 Our benchmark shows a lower cost than HAL submitted of -£3.3 million (a variance of -4%).

Table 4.73: M16 Land optimisation – decking (LS2 and LS4) – Replace Pex / N4) – H8 Capex

Category	HAL H8 capex (£m)	Our proposed H8 capex (£m)	Variance (£m)
2024 CPI	80.0	77.1	-2.9
Nominal	91.1	87.8	-3.3

Source: HAL, Steer analysis

P03 – T5 Capacity Optimisation Phase 1

Project summary

4.239 The table below summarises the project information provided by HAL in its Business Plan submission or through the Q&A.

Table 4.74: P03 – T5 Capacity Optimisation Phase 1- Summary table

Category	Content			
Unique ID	P03			
Project Name	T5 Capacity Optimisation Phase 1			
Scope	Phase 1 of the T5 Capacity Optimisation project aims to deliver +2 million passengers per annum (mppa) capacity. This includes three new remote stands on Grass Area 20 (GA20) and resilience enhancements, covering improvements to baggage reclaim, immigration, lounges, and security.			
Business Case	BC10.00 Modernising Heathrow			
H7 Rollover/ New H8	Modernising Heathrow			
Programme	Modernising Heathrow			
Tranche	Tranche 5: T5 Capacity Optimisation Phase 1			
Gateway as of July 2025	P1			
Cost information submitted	Basis of estimate			
Capex (£m)	Pre-H8	H8	Post-H8	Total
2024 CPI	0	229.4	0	229.4
Nominal	0	253.3	0	253.3

Source: HAL (A2 - 2. CAA Cost Plan and Basis of Estimate Tracker), Steer analysis.

Quality of the cost information submitted

4.240 The information provided by HAL represented the total cost of the building works, but we have separated it into two sub – items: Terminal Rehabilitation and New Stands, since they are very distinct parts of the project scope.

Cost benchmarking

4.241 The table below summarises our benchmark assessment which is disaggregated between direct and indirect costs. Although the HAL cost was only provided at a total level, we have disaggregated it using the same proportions as in our benchmark. In the paragraphs that follow we explain the rationale for our benchmark.

Table 4.75: P03 – T5 Capacity Optimisation Phase 1– Cost benchmark

Item	Assumed %	HAL (£000, nominal)	Benchmark (£000, nominal)	Variance	
				Absolute (£000)	Relative (%)
BUILDING WORKS					

Item	Assumed %	HAL (£000, nominal)	Benchmark (£000, nominal)	Variance	
				Absolute (£000)	Relative (%)
Terminal Rehabilitation		-	85,323	85,323	N/A
New remote stands		-	7,796	7,796	N/A
SUB TOTAL – BUILDING WORKS		100,997	93,119	-7,878	-8%
PRELIMINARIES, OVERHEADS & PROFIT					
Main contractor's preliminaries	27%	27,269	25,142	-2,127	-8%
Main contractor's overheads	6%	6,060	5,587	-473	-8%
Main contractor's profit	4%	4,040	3,725	-315	-8%
DESIGN					
Other project / design team fees	2%	2,020	1,862	-158	-8%
Programme Designer's fees	6%	6,060	5,587	-473	-8%
Main contractor's design fees incl. OHP	7%	7,070	6,518	-551	-8%
CONSTRUCTION BASE COST		153,515	141,541	-11,974	-8%
Other development / project costs		-	-	-	-
Contractor / DI owned risks incl. OHP		-	-	-	-
HAL owned risks	28%	42,984	39,632	-3,353	-8%
Inflation	12%	24,562	22,647	-1,916	-8%
HAL Logistics and Leadership	15%	32,238	29,724	-2,515	-8%
TOTAL		253,300	233,543	-19,757	-8%

Source: HAL, Steer analysis

4.242 The following sections of this report summarise our findings above

Building Works

4.243 The scope specifies that the expansion must accommodate 2 mppa. Using a ratio of 11,500 sqm per mppa (which is applied to large terminal buildings with connecting operations), the total additional area required is 23,000 sqm. We have used a benchmark unit cost of £3,710 per sqm.

4.244 Three new remote stands are planned to be designed. For this purpose, we have assumed that the aircraft will be Code E. Knowing that each stand occupies an area of 8,000 sqm, the total area will be 24,000 sqm. We have used a benchmark unit cost of £325 per sqm.

Our proposed H8 capex

4.245 Our benchmark is lower than HAL's submitted cost by -£19.8m, i.e. a variance of -8%.

Table 4.76: P03 – T5 Capacity Optimisation Phase 1– H8 Capex

Category	HAL H8 capex (£m)	Our proposed H8 capex (£m)	Variance (£m)
2024 CPI	229.4	211.5	-17.9
Nominal	253.3	233.5	-19.8

Source: HAL, Steer analysis

Q03 - Intelligent Operations and Optimisation

Project summary

4.246 The table below summarises the project information provided by HAL in its Business Plan submission or through the Q&A.

Table 4.77: Q03 - Intelligent Operations and Optimisation- Summary table

Category	Content
Unique ID	Q03
Project Name	Intelligent Operations and Optimisation
Scope	<p>This initiative includes two key subprojects:</p> <ul style="list-style-type: none"> Optimisation of ramp operations through largely automation technologies. This could include Ramp Information Display Screens (RIDS), Turnaround Management, Auto Foreign Object Debris (FOD) detection and automated jet bridges. Application of core solutions to specific use cases such as passenger lane allocation and understanding passenger flow in retail areas.
Business Case	BC14.00 Digital
H7 Rollover/ New H8	H8 New
Programme	NA
Tranche	NA
Gateway as of July 2025	Pre P1
Cost information submitted	Basis of estimate
Capex (£m)	Pre-H8 H8 Post-H8 Total
2024 CPI	0 95.0 0 95.0
Nominal	0 106.8 0 106.8

Source: HAL (A2 - 2. CAA Cost Plan and Basis of Estimate Tracker), Steer analysis.

Quality of the cost information submitted

4.247 The information provided by HAL was insufficient to establish a cost benchmark. We requested additional details regarding the scope, specifically the areas to be considered, as well as the units and equipment included in the scope. We have not received a response yet.

Cost benchmarking

4.248 The table below summarises our benchmark assessment which is disaggregated between direct and indirect costs. Although the HAL cost was only provided at a total level, we have disaggregated it using the same proportions as in our benchmark. In the paragraphs that follow we explain the rationale for our benchmark.

Table 4.78: Q03 - Intelligent Operations and Optimisation – Cost Benchmark

Item	Assumed %	HAL (£000, nominal)	Benchmark (£000, nominal)	Variance	
				Absolute (£000)	Relative (%)
BUILDING WORKS					
Intelligent Operations and Optimisation		42,584	41,000	-1,584	-4%
SUB TOTAL – BUILDING WORKS		42,584	41,000	-1,584	-4%
PRELIMINARIES, OVERHEADS & PROFIT					
Main contractor's preliminaries	27%	11,498	11,070	-428	-4%
Main contractor's overheads	6%	2,555	2,460	-95	-4%
Main contractor's profit	4%	1,703	1,640	-63	-4%
DESIGN					
Other project / design team fees	2%	852	820	-32	-4%
Programme Designer's fees	6%	2,555	2,460	-95	-4%
Main contractor's design fees incl. OHP	7%	2,981	2,870	-111	-4%
CONSTRUCTION BASE COST		64,727	62,320	-2,407	-4%
Other development / project costs		-	-	-	-
Contractor / DI owned risks incl. OHP		-	-	-	-
HAL owned risks	28%	18,124	17,450	-674	-4%
Inflation	12%	10,356	9,971	-385	-4%
HAL Logistics and Leadership	15%	13,592	13,087	-505	-4%
TOTAL		106,800	102,828	-3,972	-4%

Source: HAL, Steer analysis

4.249 The following sections of this report summarise our findings above.

Building works

4.250 To determine the cost of the project we have made the following assumptions.

Table 4.79: Q03 - Intelligent Operations and Optimisation – Building works

Item	Activity/Use Case	Description	Cost (£)
Ramp Optimization (H8)	RIDS	Implementation of Ramp Information Display Screens	3,000,000
Ramp Optimization (H8)	Turnaround Management	System for turnaround optimization	800,000
Ramp Optimization (H8)	FOD Detection	Automated Foreign Object Debris detection system	2,000,000

Item	Activity/Use Case	Description	Cost (£)
Ramp Optimization (H8)	Automated Boarding Bridges	Deployment of automated passenger boarding bridges	23,000,000
Specific Use Cases (H8)	Automated Security Lane Allocation (PRJ – 001978)	Project for automated security lane allocation	800,000
Specific Use Cases (H8)	Commercial Areas Passenger Flow	Monitoring of passenger flow in commercial zones	3,200,000
Specific Use Cases (H8)	Other Use Cases	Prioritization as per Business Plan	8,200,000
Total most likely cost (EAC)			41,000,000

Source: Steer analysis

Our proposed H8 capex

4.251 Our benchmark is lower than HAL’s submitted cost by -£4m, i.e. a variance of -4%.

Table 4.80: Q03 - Intelligent Operations and Optimisation – H8 Capex

Category	HAL H8 capex (£m)	Our proposed H8 capex (£m)	Variance (£m)
2024 CPI	95.0	91.5	-3.5
Nominal	106.8	102.8	-4.0

Source: HAL, Steer analysis

Q01 - Next-Gen Passenger Services -Passenger Automation

Project summary

- 4.252 The table below summarises the project information provided by HAL in its Business Plan submission or through the Q&A.

Table 4.81: Q01 - Next-Gen Passenger Services -Passenger Automation- Summary table

Category	Content			
Unique ID	Q01			
Project Name	Next-Gen Passenger Services - Passenger Automation			
Scope	Includes renewal, replacement or extension of self-service units at physical touchpoints (CUSS, SSBD, e-gates, self-boarding) as well as introduction of new technologies (mobile enabled non-CUPPS equipment, digital identity management/ biometrics).			
Business Case	BC14.00 - Q01 - Next Gen Passenger Services			
H7 Rollover/ New H8	New H8			
Programme	NA			
Tranche	NA			
Gateway as of July 2025	PreP1			
Cost information submitted	Basis of estimate			
Capex (£m)	Pre-H8	H8	Post-H8	Total
2024 CPI	0	160.0	0	160.0
Nominal	0	179.8	0	179.8

Source: HAL (A2 - 2. CAA Cost Plan and Basis of Estimate Tracker), Steer analysis.

Quality of the cost information submitted

- 4.253 The cost information submitted by HAL was very limited. Through the Q&A, HAL provided the document *CAA – H8 – 053 – BC14.00 – Q281 – Next Gen Passenger Services*. However, the investment outlined in this document was higher than the one defined in “*A2 – 2. CAA Cost Plan and Basis of Estimate Tracker*”. We asked HAL to provide more detailed information regarding the scope to be considered, but its response is still pending.

Cost benchmarking

- 4.254 Based on the reference document *CAA – H8 – 053 – BC14.00 – Q281 – Next Gen*, the potential investment (taking the average between the low and the high range) is £316 million. However, for the H8 period HAL’s cost estimation is £160 million, which corresponds to half of the cost estimate. Consistent with this information, we have considered half of the scope included in the document *CAA – H8 – 053 – BC14.00 – Q281 – Next Gen*.
- 4.255 We have benchmarked the cost plan provided by HAL. The table below summarises the costs presented and our assessment of those costs.

Table 4.82: Q01 - Next-Gen Passenger Services -Passenger Automation – Cost Benchmark

Item	HAL (£000, nominal)	Benchmark (£000, nominal)	Variance	
			Absolute (£000)	Relative (%)
TOTAL	179,800	176,204	-3,596	-2.0%

Source: HAL, Steer analysis

Cost Assessment

4.256 The following table represent the cost assessment for the total scope of works included in CAA – H8 – 053 – BC14.00 – Q281 – Next Gen.

Table 4.83: Q01 - Next-Gen Passenger Services -Passenger Automation – Cost Assessment

Element	Description	Units	Unit Cost (£)	Total Cost
CUSS	Relocate existing CUSS kiosks in Terminals 2 and 3 (approximately 80 kiosks)	80	109,879	8,790,318
	Significantly reduce CUSS kiosks where no longer required due to mobile enabled non-CUPPS equipment	1	4,395,159	4,395,159
SSBD	Replace existing 307 SSBD units	307	155,123	47,622,839
	Extend current SSBD units to 587 (including 307 replacement per line above)	587	193,904	113,821,689
	Replace all 80 ATP gates	80	80,147	6,411,761
Self-boarding gates	Add additional 120 SBG gates for full airport coverage	120	258,539	31,024,651
	Replace 300 gates	300	168,050	50,415,058
Mobile enabled non-CUPPS equipment	Take forward mobile enabled non-CUPPS equipment (allocation only for initial pilot)	1	5,620,408	5,620,408
Digital identity enabled through biometrics	Take forward digital identity through biometrics	1	84,306,117	84,306,117
TOTAL				352,408,000

Source: Steer analysis

4.257 As commented before, to be consistent with HAL’s approach, we have considered that only half of the scope is included in the H8 cost estimate. Therefore, our cost assessment is half of £352,408,000, which is £176,204,000.

Our proposed H8 capex

4.258 Our benchmark is lower than HAL’s submitted cost by -£3.6m, i.e. a variance of -2%.

Table 4.84: Q01 - Next-Gen Passenger Services -Passenger Automation – H8 Capex

Category	HAL H8 capex (£m)	Our proposed H8 capex (£m)	Variance (£m)
2024 CPI	160.0	156.8	-3.2
Nominal	179.8	176.2	-3.6

Source: HAL, Steer analysis

U02 - Climate Adaptation to Flood risk

Project summary

4.259 The table below summarises the project information provided by HAL in its Business Plan submission or through the Q&A.

Table 4.85: U02 - Climate Adaptation to Flood risk- Summary table

Category	Content			
Unique ID	U02			
Project Name	Climate Adaptation to Flood risk			
Scope	The project aims to improve the airport’s resilience to flooding by upgrading drainage and protecting critical assets, reducing disruption and recovery time.			
Business Case	BC09.00 People & Planet			
H7 Rollover/ New H8	New H8			
Programme	NA			
Tranche	NA			
Gateway as of July 2025	PreP1			
Cost information submitted	Basis of estimate			
Capex (£m)	Pre-H8	H8	Post-H8	Total
2024 CPI	0	63.0	0	63.0
Nominal	0	70.8	0	70.8

Source: HAL (A2 - 2. CAA Cost Plan and Basis of Estimate Tracker), Steer analysis.

Quality of the cost information submitted

4.260 The information provided by HAL for this project in the initial submission is very limited. Additional information has been requested.

Cost benchmarking

4.261 HAL mentions that they have based their assumptions on a similar initiative carried out in Gatwick. The submission states: “The outline approach is guided by established practice and learning from the actions and investments made by Gatwick Airport to improve flood mitigation and resilience following a flood event in 2013.”

4.262 We understand the cost of the project is linked to the following scope of works:

- Enhancing the drainage systems to ensure it can operate to minimise flood events.
- Delivery of physical infrastructure to protect critical assets assessed to be impacted by flooding (for example electrical assets and data centres) to reduce impact and recovery time from any flooding incidents.

4.263 Following Gatwick’s flood event in 2013, the airport created an allowance of £30 million for a ‘resilience fund’, out of which £5 million was applied specifically to flood resilience²². The detailed scope of works that Gatwick carried out with this planned investment is unknown, similarly to the lack of detail of the scope of works that HAL plans to undertake in H8.

4.264 Using a very high-level approach, we have calculated Gatwick’s investment in H8 nominal prices (£55 million) and we have scaled up the investment based on the difference in surface between Heathrow and Gatwick (1,230ha versus 674ha), resulting in an equivalent investment for Heathrow of £100 million in nominal prices. With this reference investment as an approximation of HAL’s plans, we assess that the proposed capex could be within a reasonable range and, therefore, we are not proposing any variance to the proposal.

Our proposed H8 capex

4.265 Our benchmark shows no variance with HAL’s submitted cost plan.

Table 4.86: U02 - Climate Adaptation to Flood risk– H8 Capex

Category	HAL H8 capex (£m)	Our proposed H8 capex (£m)	Variance (£m)
2024 CPI	63.0	63.0	0
Nominal	70.8	70.8	0

Source: HAL, Steer analysis

²² [London Gatwick sets aside £30m resilience fund following Christmas eve flooding | News | Breaking Travel News](#)

N01 - Occupancy Infrastructure

Project summary

4.266 The table below summarises the project information provided by HAL in its Business Plan submission or through the Q&A.

Table 4.87: N01 - Occupancy Infrastructure - Summary table

Category	Content			
Unique ID	N01			
Project Name	Occupancy Infrastructure			
Scope	<p>The project’s objectives is to ensure Heathrow remains a competitive hub airport, maximises efficiencies and improves passenger experience whilst facilitating successful airline partnerships. The project involves infrastructure changes and enabling works along with costs associated with moving airlines. This project is at the very early stages of development and the exact requirements for lounge and office moves still depend on the selection of the preferred scenario. The scope includes:</p> <ol style="list-style-type: none"> 1. A new 3000 EBS at T4. 2. Addition of automated gate at border control in T4 and T2. 3. Two new FCC security lanes in T4. 4. Overall Lounge moves. 5. Overall Office Space moves. <p>Other infrastructure changes that may be required include coaching gates; kerbside drop off, additional Central Search Area lanes, and reclaim belts.</p>			
Business Case	BC11.00 Occupancy			
H7 Rollover/ New H8	New H8			
Programme	Occupancy			
Tranche	NA			
Gateway as of July 2025	PreP1			
Cost information submitted	Basis of estimate			
Capex (£m)	Pre-H8*	H8	Post-H8*	Total
2024 CPI	0	394.1	87.7	481.8
Nominal	0	444.6	104.6	549.2

Source: HAL (A2 - 2. CAA Cost Plan and Basis of Estimate Tracker), Steer analysis. Note: (*) Pre-H8 and Post H8 costs can differ from other HAL documents due to inconsistencies of scope inclusions.

Quality of the cost information submitted

4.267 The information provided by HAL is limited in terms of scope.

Cost benchmarking

4.268 The table below summarises our benchmark assessment which is disaggregated between direct and indirect costs. Although the HAL cost was only provided at a total level, we have disaggregated it using the same proportions as in our

benchmark. In the paragraphs that follow we explain the rationale for our benchmark.

Table 4.88: N01 - Occupancy Infrastructure – Cost benchmark

Item	Assumed %	HAL cost (£000, nominal)	Our benchmark (£000, nominal)	Variance	
				Absolute (£000)	Relative (%)
BUILDING WORKS					
Cost		218,979	190,814	-28,165	-13%
SUB TOTAL - BUILDING WORKS		218,979	190,814	-28,165	-13%
PRELIMINARIES, OVERHEADS & PROFIT					
Main contractor's preliminaries	27%	59,124	51,520	-7,605	-13%
Main contractor's overheads	6%	13,139	11,449	-1,690	-13%
Main contractor's profit	4%	8,759	7,633	-1,127	-13%
DESIGN					
Other project / design team fees	2%	4,380	3,816	-563	-13%
Programme Designers' fees	6%	13,139	11,449	-1,690	-13%
Main contractor's design fees incl. OHP	7%	15,329	13,357	-1,972	-13%
CONSTRUCTION BASE COST		332,848	290,037	-42,811	-13%
Other development / project costs		-	-	-	-
Contractor/DI owned risks incl. OHP		-	-	-	-
HAL owned risks	28%	93,198	81,210	-11,987	-13%
Inflation	13%	53,256	46,406	-6,850	-13%
HAL Logistics and Leadership	15%	69,898	60,908	-8,990	-13%
TOTAL MOST LIKELY EAC		549,200	478,561	-70,639	-13%

Source: HAL, Steer analysis

4.269 From the available information, the following scope of works have been defined:

- Early bag store: A new early bag store that holds 3,000 bags in T4;
- E-gates: Additional automated gates at border control across T4 and T2;
- Flight Connections Centre (FCC) lanes: Two new FCC security lanes in T4;
- Operational readiness;
- Other infrastructure;
- Overall lounge moves; and
- Overall office space moves.

Building works

4.270 The following table show the capex assessment carried out for building works.

Q01 - N01 - Occupancy Infrastructure – Cost Assessment

Element	Units	Unit Cost	Cost
A new early bag store that holds 3,000 bags in T4	1	40,813,875	40,813,875
Additional automated gates at border control across T4 and T2	20	187,500	3,750,000
Two new FCC security lanes in T4	2	937,500	56,250,000
Operational readiness	1	7,500,000	7,500,000
Other infrastructure	1	50,000,000	50,000,000
Overall lounge moves	1	25,000,000	25,000,000
Overall office space moves	1	7,500,000	7,500,000
TOTAL			190,813,875

Source: Steer

Our proposed H8 capex

4.271 Our benchmark is lower than HAL’s submitted cost by -£71m (a variance of -13%). We have applied this percentage variance to the cost of the project during H8 to provide our proposed H8 cost.

Table 4.89: N01 - Occupancy Infrastructure – H8 Capex

Category	HAL H8 capex (£m)	Our proposed H8 capex (£m)	Variance (£m)
2024 CPI	394.1	343.4	-50.7
Nominal	444.6	387.4	-57.2

Source: HAL, Steer analysis

C041 - In airport Cargo, OAA Upgrade to Southside CPSRA & Control Post 25 Phase 2

Project summary

4.272 The table below summarises the project information provided by HAL in its Business Plan submission or through the Q&A.

Table 4.90: C041 - Enhanced border experience - Summary table

Category	Content			
Unique ID	C041			
Project Name	In airport Cargo, OAA Upgrade to Southside CPSRA & Control Post 25 Phase 2			
Scope	<ul style="list-style-type: none"> Control Post 25 Phase 2 – Additional works to expand capacity and change the function of CP25 Royal Suite Opportunity Site – Development of a facility for body and bag screening of VIPs at the landside-to-airside boundary Other Airside Area (OAA) Upgrade to CPSRA: Redesignation of the Southern OAA to a Critical Part of the Security Restricted Area (CPSRA) 			
Business Case	BC01.00 Security			
H7 Rollover/ New H8	H7 Rollover			
Programme	Regulated Security			
Tranche	Tranche 4			
Gateway as of July 2025	P2			
Cost information submitted	Basis of estimate			
Capex (£m)	Pre-H8*	H8	Post-H8*	Total
2024 CPI	0.4	65.1	0	65.5
Nominal	0.4	72.0	0	72.4

Source: HAL (A2 - 2. CAA Cost Plan and Basis of Estimate Tracker), Steer analysis. Note: (*) Pre-H8 and Post H8 costs can differ from other HAL documents due to inconsistencies of scope inclusions.

Quality of the cost information submitted

4.273 The information provided by HAL is limited. Additional information was requested without success.

4.274 The project involves the following initiatives: Control Post 25 Phase 2, Royal Suite Opportunity Site, and Other Airside Area (OAA) Upgrade to CPSRA.

Cost benchmarking

4.275 The table below summarises our benchmark assessment which is disaggregated between direct and indirect costs. Although the HAL cost was only provided at a total level, we have disaggregated it using the same proportions as in our benchmark. In the paragraphs that follow we explain the rationale for our benchmark.

Table 4.91: C041 - Enhanced border experience – Cost Benchmark

Item	HAL cost (£000, nominal)	Our benchmark (£000, nominal)	Variance	
			Absolute (£000)	Relative (%)
TOTAL MOST LIKELY EAC	72,400	65,717	-6,682	-9.2%

Source: HAL, Steer analysis

Control Post 25 Phase 2

4.276 With the information provided by HAL in BC01.00 – C037 – PRJ – 001956, we have estimated the cost of Control Post 25.

Table 4.92: C041 - Enhanced border experience – Control Post 25 Phase 2 – Cost Benchmark

Item	Assumed %	HAL (£000, nominal)	Benchmark (£000, nominal)	Variance	
				Absolute (£000)	Relative (%)
BUILDING WORKS					
Facilitating works		-	-	-	-
Substructure		-	-	-	-
Superstructure		-	-	-	-
Internal finishes		-	-	-	-
Fittings, furnishings and equipment		-	-	-	-
Services		5,459	4,955	-504	-9%
Prefabricated buildings and building units		-	-	-	-
Work to existing structure		3,287	2,983	-303	-9%
External works		5,909	5,393	-546	-9%
Baggage Handling Systems		-	-	-	-
SUB TOTAL - BUILDING WORKS		14,654	13,301	-1,353	-9%
PRELIMINARIES, OVERHEADS & PROFIT					
Main contractor's preliminaries	34%	5,045	4,579	-466	-9%
Main contractor's overheads	4%	526	477	-49	-9%
Main contractor's profit	4%	526	477	-49	-9%
DESIGN					
Other project / design team fees		-	-	-	-
Programme Designers' fees	4%	551	500	-51	-9%
Main contractor's design fees incl. OHP	3%	390	354	-36	-9%
CONSTRUCTION BASE COST		21,691	19,689	-2,003	-9%
Other development / project costs		-	-	-	-
Contractor / DI owned risks incl. OHP		-	-	-	-
HAL owned risks	27%	5,857	5,316	-541	-9%
Inflation	7%	1,818	1,650	-168	-9%
HAL Logistics and Leadership	15%	4,543	4,123	-419	-9%
TOTAL MOST LIKELY EAC		33,909	30,778	-3,131	-9%

Source: HAL, Steer analysis

Royal Suite Opportunity Site

4.277 With the information provided by HAL in BC01.00 – C037 – PRJ – 001956, we have estimated the cost of Royal Suite Opportunity Site.

Table 4.93: C041 - Enhanced border experience – Royal Suite Opportunity Site – Cost Benchmark

Item	Assumed %	HAL (£000, nominal)	Benchmark (£000, nominal)	Variance	
				Absolute (£000)	Relative (%)
BUILDING WORKS					
Facilitating works		-	-	-	-
Substructure		-	-	-	-
Superstructure		-	-	-	-
Internal finishes		136	107	-29	-22%
Fittings, furnishings and equipment		-	-	-	-
Services		3,198	2,512	-686	-22%
Prefabricated buildings and building units		135	106	-29	-22%
Work to existing structure		354	278	-76	-22%
External works		1,500	1,178	-322	-22%
Baggage Handling Systems		1,400	1,100	-300	-22%
SUB TOTAL - BUILDING WORKS		6,722	5,280	-1,442	-22%
PRELIMINARIES, OVERHEADS & PROFIT					
Main contractor's preliminaries	28%	1,914	1,503	-411	-22%
Main contractor's overheads	3%	216	170	-46	-22%
Main contractor's profit	3%	216	170	-46	-22%
DESIGN					
Other project / design team fees		-	-	-	-
Programme Designers' fees	3%	228	179	-49	-22%
Main contractor's design fees incl. OHP	2%	161	127	-35	-22%
CONSTRUCTION BASE COST		9,457	7,428	-2,029	-22%
Other development / project costs		-	-	-	-
Contractor / DI owned risks incl. OHP		-	-	-	-
HAL owned risks	27%	2,553	2,006	-548	-22%
Inflation	7%	793	623	-170	-22%
HAL Logistics and Leadership	15%	1,981	1,556	-425	-22%
TOTAL MOST LIKELY EAC		14,784	11,612	-3,172	-22%

Source: HAL, Steer analysis

Other Airside Area (OAA) Upgrade to CPSRA

4.278 Our assessment of the cost of this initiative is provided in the table below.

Table 4.94: C041 - Enhanced border experience – OAA Upgrade to Southside CPSRA – Cost Benchmark

Item	Assumed %	HAL (£000, nominal)	Benchmark (£000, nominal)	Variance	
				Absolute (£000)	Relative (%)
BUILDING WORKS					
Cost		9,453	9,301	-152	-1.6%
SUB TOTAL - BUILDING WORKS		9,453	9,301	-152	-1.6%
PRELIMINARIES, OVERHEADS & PROFIT					
Main contractor's preliminaries	27%	2,552	2,511	-41	-1.6%
Main contractor's overheads	6%	567	558	-9	-1.6%
Main contractor's profit	4%	378	372	-6	-1.6%
DESIGN					
Other project / design team fees	2%	189	186	-3	-1.6%
Programme Designers' fees	6%	567	558	-9	-1.6%
Main contractor's design fees incl. OHP	7%	662	651	-11	-1.6%
CONSTRUCTION BASE COST		14,368	14,138	-230	-1.6%
Other development / project costs		-	-	-	-
Contractor / DI owned risks incl. OHP		-	-	-	-
HAL owned risks	28%	4,023	3,959	-64	-1.6%
Inflation	13%	2,299	2,262	-37	-1.6%
HAL Logistics and Leadership	15%	3,017	2,969	-48	-1.6%
TOTAL MOST LIKELY EAC		23,707	23,327	-380	-1.6%

Source: HAL, Steer analysis

Our proposed H8 capex

4.279 Our benchmark shows a lower cost than HAL submitted by -£6.7m, i.e. a variance of -9.2%. We have applied this percentage variance to the cost of the project during H8 to provide our proposed H8 cost.

Table 4.95: C041 - Enhanced border experience – H8 Capex

Category	HAL H8 capex (£m)	Our proposed H8 capex (£m)	Variance (£m)
2024 CPI	65.1	59.1	-6.0
Nominal	72.0	65.4	-6.6

Source: HAL, Steer analysis

F06 - PRJ-001903 - B7320.01 Project 5

Project summary

4.280 The table below summarises the project information provided by HAL in its Business Plan submission or through the Q&A.

Table 4.96: F06 - PRJ-001903 - B7320.01 Project 5 - Summary table

Category	Content			
Unique ID	F06			
Project Name	PRJ-001903 - B7320.01 Project 5			
Scope	This investment is to safeguard Heathrow’s operational resilience and safety by replacing the obsolete Pilz safety controllers in Terminal 5 Satellite A’s Baggage Handling System (BHS). Project 5 will focus on the following phases: <ul style="list-style-type: none"> Phase 4 (T5A South Departures, 12 areas); Phase 5 (TubTrax & Bag Store, 19 areas); and Phase 6 (T5A Removals, 16 PSS Areas for removal). 			
Business Case	BC03.04 T5 Pilz			
H7 Rollover/ New H8	H7 Rollover			
Programme	Asset Management & Compliance			
Tranche	TR1028 - Tranche 28 – Baggage Tranche			
Gateway as of July 2025	P2T			
Cost information submitted	Basis of estimate			
Capex (£m)	Pre-H8*	H8	Post-H8*	Total
2024 CPI	1.3	58.4	14.8	74.5
Nominal	1.3	64.9	17.7	83.9

Source: HAL (A2 - 2. CAA Cost Plan and Basis of Estimate Tracker), Steer analysis. Note: (*) Pre-H8 and Post H8 costs can differ from other HAL documents due to inconsistencies of scope inclusions.

Quality of the cost information submitted

4.281 The information provided by HAL was limited. We requested additional information without success.

Cost benchmarking

4.282 The table below summarises our benchmark assessment which is disaggregated between direct and indirect costs. Although the HAL cost was only provided at a total level, we have disaggregated it using the same proportions as in our benchmark.

Table 4.97: F06 - PRJ-001903 - B7320.01 Project 5 – Cost Benchmark

Item	Assumed %	HAL (£000, nominal)	Benchmark (£000, nominal)	Variance	
				Absolute (£000)	Relative (%)
BUILDING WORKS					
Baggage Handling Systems		33,475	30,663	-2,812	-8.4%
SUB TOTAL - BUILDING WORKS		33,475	30,663	-2,812	-8.4%
PRELIMINARIES, OVERHEADS & PROFIT					
Main contractor's preliminaries	27%	9,030	8,271	-759	-8.4%
Main contractor's overheads	6%	2,008	1,839	-169	-8.4%
Main contractor's profit	4%	1,339	1,227	-112	-8.4%
DESIGN					
Other project / design team fees	2%	669	613	-56	-8.4%
Programme Designers' fees	6%	2,008	1,839	-169	-8.4%
Main contractor's design fees incl. OHP	7%	2,343	2,146	-197	-8.4%
CONSTRUCTION BASE COST		50,872	46,599	-4,273	-8.4%
Other development / project costs		-	-	-	-
Contractor / DI owned risks incl. OHP		-	-	-	-
HAL owned risks	28%	14,247	13,050	-1,197	-8.4%
Inflation	13%	8,141	7,457	-684	-8.4%
HAL Logistics and Leadership	15%	10,685	9,787	-898	-8.4%
TOTAL MOST LIKELY EAC		83,945	76,894	-7,051	-8.4%

Source: HAL, Steer analysis

4.283 We have also based our cost assessment on the document *CAA-H8-059 - Q302 - BC03.04 T5 Pilz*.

Our proposed H8 capex

4.284 Our benchmark shows a lower cost than HAL submitted by -£7.1m (a variance of -8.4%). We have applied this percentage variance to the cost of the project during H8 to provide our proposed H8 cost.

Table 4.98: F06 - PRJ-001903 - B7320.01 Project 5 – H8 Capex

Category	HAL H8 capex (£m)	Our proposed H8 capex (£m)	Variance (£m)
2024 CPI	58.4	53.5	-4.9
Nominal	64.9	59.5	-5.4

Source: HAL, Steer analysis

Efficiency assessment – Summary and conclusions

4.285 This section summarises the results of our efficiency assessment and concludes on the adjustments that we propose to make to the capex envelope as a result of this assessment.

Removal of duplications

4.286 While we have challenged the lack of evidence about potential duplications in several projects of HAL’s submission, we have not identified any duplication of scope in HAL’s Business Plan, so we don’t propose any adjustment in that regard.

Alternative scopes

4.287 The CAA has indicated that HAL’s proposed reclassification of noise related costs from opex to capex is not accepted for H8. As result, the noise mitigation scope of the project *T04 – PRJ-001606 - B7239 - Airspace Modernisation – Easterly Alternation Infrastructure – Alternative* should be removed from the project costs. We estimate that this corresponds to a cost of £37.7m at H8 (2024 CPI prices) for this project. Therefore, **we suggest that the cost of this project should be reduced by £37.7m (2024 CPI prices) to reflect this new scope.**

4.288 We have not identified any other alternative scopes for other projects, and we don’t propose any other adjustments as a result.

Cost benchmarking

4.289 The results of our cost benchmarking exercise are summarised in Table 4.99 below. Overall, the sum of our benchmarks shows a cost estimate which is lower than HAL’s submitted project costs by £-212.9m, i.e. a variance of -5.7%. This is after the alternative scope adjustment for *T04 – PRJ-001606 - B7239 - Airspace Modernisation – Easterly Alternation Infrastructure – Alternative*.

4.290 However, as explained in Chapter 1, HAL’s Business Plan submission also includes some cost adjustments on top of project cost estimates, which should be put in perspective with our benchmark of efficient costs. Those adjustments, which apply to HAL’s benchmarked projects, are:

- Phasing adjustment: an adjustment of c.-1.7%, which we understand is an adjustment for deviations between plan and actuals.
- Efficiency adjustment: an adjustment of -5%, which we understand as being an efficiency commitment from HAL in reducing the cost of its capex programme.

4.291 The cumulative impact of these adjustments decreases the actual cost submitted by HAL by -6.6%. After adjustments, our benchmark is £34.0m (+1.0%) higher than HAL’s costs.

4.292 Given the marginal difference between HAL’s costs and our cost benchmark, we conclude that HAL submitted costs for the selected projects that we have benchmarked are reasonably efficient. Therefore, **we propose not to make any adjustments to the capex envelope threshold as the result of our cost benchmarking.**

Table 4.99: Summary of cost benchmarking results (H8 capex only)

ID	Project Name	HAL cost (£m, 2024 CPI)	Steer benchmark (£m, 2024 CPI)	Variance	
				Absolute	Relative
A112	PRJ-001601 - B71-031.00 - Wave 1 Tunnel Improvements in ART, SAR, NAR	103.2	86.6	-16.6	-16.1%
A231	B71-138 - T3 Pier 7 Structural	104.8	104.4	-0.4	-0.4%
A232	T3 Refurbishment of Pier 7 and Connector (EXTERNAL)	326.4	341.7	+15.3	+4.7%
A234	Asset Management & Compliance P2 R&O's	51.3	51.3	-	-
B016	Rolling programme for pavements and stands	55.1	53.1	-2.0	-3.6%
B017	Western Campus Inter-Terminal Baggage Transport Asset Replacement (DCV)	83.4	79.8	-3.6	-4.3%
C037	PRJ-001956 - B7680.36 CPC	84.5	83.3	-1.2	-1.4%
D03	PRJ-001901 - B71-152 Terminal 4 Front Door and Car Park - Tranche 34	316.4	264.3	-52.1	-16.5%
E01	T3 Standard 3 HBS Replacement	92.4	88.0	-4.4	-4.7%
G017	PRJ-001816 - B73-017.00 Tr5 T2A Baggage System	301.8	290.8	-11.0	-3.6%
G020	PRJ-001883 - B73-020.00 Essential Asset Replacement	59.2	65.1	+5.9	+10.0%
G021	PRJ-001884 - B73-021.00 Shell & Core	56.7	48.1	-8.6	-15.2%
H043	EA P2 R&O's	57.6	57.6	-	-
J01	Electricity network 11KV and 33KV upgrades	186.0	160.5	-25.5	-13.7%
J02	Electricity network 132KV new network	332.0	341.5	+9.5	+2.9%
K01	PRJ-001563 - B75-019.00 - Cargo Southside Transformation	59.2	61.4	+2.2	+3.7%
K065	Commercial P2 R&O's	55.1	55.1	-	-
M02	T5 Level 30 & 40 Lounge	106.3	104.1	-2.2	-2.1%
M16	Land optimisation - decking (LS 2 and LS4) - replace Pex/N4	80.0	77.1	-2.9	-3.6%
P03	T5 Capacity Optimisation Phase 1	229.4	211.5	-17.9	-7.8%
Q03	Intelligent Operations and Optimisation	95.0	91.5	-3.5	-3.7%
T027	PRJ-001993 - B74-003.02 PCA Improvements on Served Stands - Phase 3	85.7	63.8	-21.9	-25.6%
T04	PRJ-001606 - B7239 - Airspace Modernisation – Easterly Alternation Infrastructure	71.8	64.6	-7.2	-10.0%

ID	Project Name	HAL cost (£m, 2024 CPI)	Steer benchmark (£m, 2024 CPI)	Variance	
				Absolute	Relative
Q01	Next-Gen Passenger Services - Passenger Automation	160.0	156.8	-3.2	-2.0%
U02	Climate Adaptation to Flood risk	63.0	63.0	-	-
N01	Occupancy Infrastructure	394.1	343.4	-50.7	-12.9%
C041	In airport Cargo, OAA Upgrade to Southside CPSRA & Control Post 25 Phase 2	65.1	59.1	-6.0	-9.2%
F06	PRJ-001903 - B7320.01 Project 5	58.4	53.5	-4.9	-8.4%
	Total	3,733.9	3,521.0	-212.9	-5.7%
	Total after cost adjustments *	3,487.0	3,521.0	+34.0	+1.0%

Source: HAL, Steer analysis. Note: (*) Cost adjustments refer to HAL's Phasing adjustment and Efficiency, having a cumulative effect of -6.6% on the pre-adjusted HAL's capex submission.

5 H8 capex envelope

5.1 After undertaking our need and efficiency assessments, we can define our proposed efficient capex envelope for H8. In chapter 3, we established our capex envelope threshold which has respectively a lower limit, mid-point and upper limit of £5,535m, £5,931m and £6,174m. In chapter 4, our efficiency assessment identified an alternative scope for *T04 – PRJ-001606 - B7239 - Airspace Modernisation – Easterly Alternation Infrastructure – Alternative* which results in a reduction of the H8 cost for this project of £-38m. However, after applying HAL’s Phasing and Efficiency adjustments, which we assess as reasonable, the reduction is indeed £-35m. This results in a proposed capex envelope of respectively £5,500m, £5,896m and £6,139m for the lower limit, the mid-point limit and the upper limit. The below table summarises the calculations.

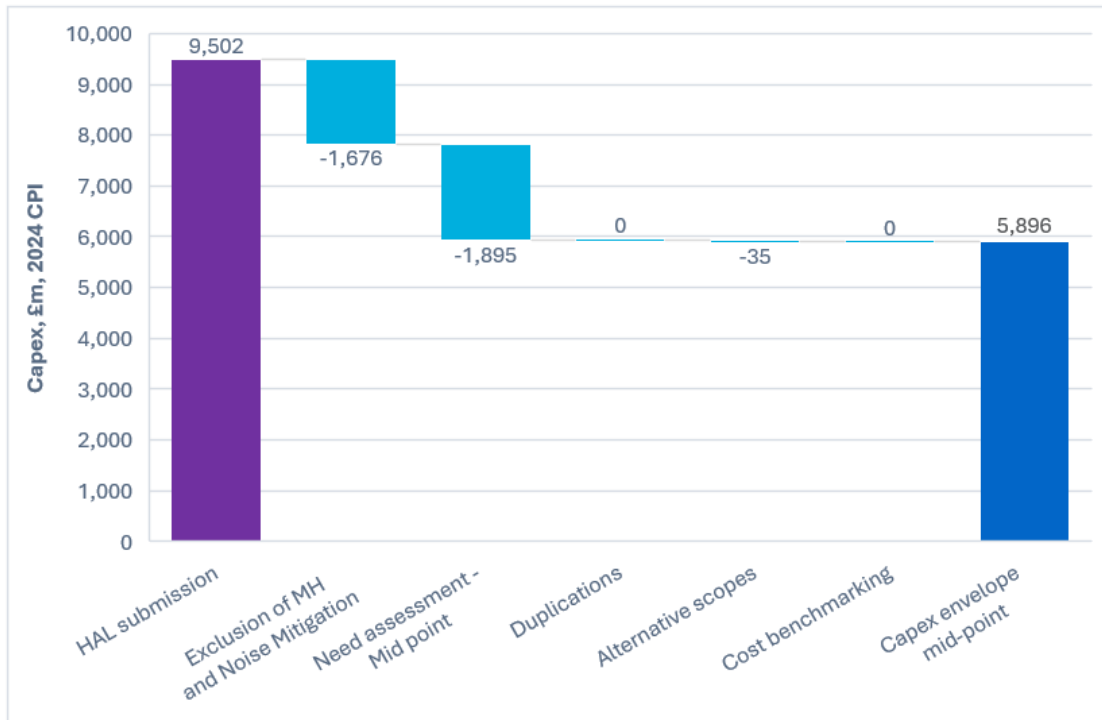
Table 5.1: Our proposed capex envelope, £m, 2024 CPI

£m, 2024 CPI	Capex envelope threshold	Efficiency adjustment	Capex envelope
Lower limit	5,535	-35	5,500
Mid-point	5,931		5,896
Upper limit	6,174		6,139

Source: Steer

5.2 The waterfall chart below summarises all the steps that led to the definition of the mid-point of this proposed efficient capex envelope. In a nutshell, after removing the projects from the Modernising Heathrow (MH) programme and the Noise Mitigation Business Case (which have been excluded from the scope of the H8 capex assessment), we assess that HAL revised capex submission is at £7,826m. From there, our need assessment exercise reduces the capex amount by -£1,895m, i.e. -24%. Our efficiency assessment identifies an alternative scope, as explained in the paragraph above, which reduces the mid-point of our capex envelope to £5,896m.

Figure 5.1: Step changes between HAL’s capex submission and Steer’s proposed capex envelope mid-point, £m, 2024 CPI prices



Source: Steer

5.3 Given the selection of HAL projects included in our proposed capex envelope, we can derive the capex profiles in H8 for the lower limit, mid-point and upper limit of the capex envelope using HAL capex profiles for each project. Those are presented in the below table in 2024 CPI prices and 2024 CPIH prices.

Table 5.2: Capex envelope annual spend profiles (Lower limit, Mid-point, and Upper limit)

	2027	2028	2029	2030	2031	H8 total
£m, 2024 CPI						
Lower limit	1,235	1,234	1,265	928	837	5,500
Mid-point	1,320	1,316	1,344	1,004	912	5,896
Upper limit	1,355	1,395	1,413	1,038	938	6,139
£m, 2024 CPIH						
Lower limit	1,223	1,221	1,251	917	826	5,439
Mid-point	1,307	1,303	1,329	992	900	5,831
Upper limit	1,343	1,381	1,397	1,025	925	6,072

Source: Steer

Appendices

A Need assessment techniques summary

Introduction

Before the HAL’s Business Plan submission in July 2025, we developed a summary of the techniques that we intended to use to assess the need of projects and a list of the pieces of evidence that we would have ideally liked to receive from HAL based on the principles of the CAA Business Plan Guidance.

This “Need assessment techniques document” was shared with HAL and the airlines who had the opportunity to provide feedback to us in written and through meetings. Their feedback got integrated into the document and the latest version of this document is available below and organised by the key themes we foresaw after the Constructive engagement sessions, i.e.:

- Asset Renewal;
- Security & Technology;
- Commercial;
- Baggage;
- Sustainability & Energy; and
- Capacity.

Asset Renewal

Specific methodologies and required evidence to assess the need of the identified Asset Renewal investments are included in the table below.

Table A.1: Asset Renewal – Need assessment techniques

Methodology	Evidence
Assets which are End of Lifecycle	
<ul style="list-style-type: none"> • Review of the Asset Renewals motivated by existing assets reaching the end of their lifecycle. • Enough evidence should be provided to justify that the design life of an infrastructure element has been reached and causes hindrance to Consumers or Airlines. This evidence will be 	<ul style="list-style-type: none"> • Corporate Risk Framework (CRF) scoring as evidence for the prioritisation of the project. • Original design life of the asset subject to renewal. • Benchmark/Sources for the asset life (e.g. manufacturer specifications or observed failures).

Methodology	Evidence
<p>reviewed to assess if the renewal is needed in H8.</p> <ul style="list-style-type: none"> Preventive maintenance strategies in place to extend the asset’s lifecycle will also be studied compared with other similar projects that had been undertaken at HAL and at other airports to evaluate the case for renewal. The renewal timeline and strategy to mitigate the risk of delivery capability constraints and optimise lifecycle costs will also be subject to evaluation. 	<ul style="list-style-type: none"> Historic condition reports as evidence for the CRF scoring and maintenance recommendations. Historic maintenance plans affecting the asset subject to renewal. Evidence of historic maintenance interventions based on condition reports or preventive maintenance strategy. Asset renewal timeline and procurement strategy to guarantee delivery capability and mitigate the risk of increased lifecycle costs. Comparison with other options that have been assessed (e.g., extending service life through refurbishment or enhanced maintenance). Comparison with similar projects at Heathrow and their outcomes.
<p>Compliance with technical requirements</p>	
<ul style="list-style-type: none"> Review of asset renewals motivated by compliance with updated technical requirements or standards. The assessment of the need for these renewals will focus on the particularities in the change of requirements (specific scope, timelines, effects of possible non-compliance), the evidence supporting the fact that a non-renewal of the current asset will cause a non-compliance issue, and the effectiveness of the planned intervention to guarantee compliance as its primary objective. 	<ul style="list-style-type: none"> Definition of the update in technical requirements motivating the renewal need and changes versus the previously applicable requirements, including evidence that updated technical requirements are mandatory (e.g., legal, safety-critical, regulatory). Applicable penalties in the case of non-compliance and other consequences of inaction, e.g., legal exposure, safety risk, reputational damage. Corporate Risk Framework (CRF) scoring as evidence for the prioritisation of the project. Optioneering of potential upgrades to the existing asset that could ensure compliance.

Methodology	Evidence
	<ul style="list-style-type: none"> • Technical specifications of the renewed asset against the updated technical requirement. • Asset renewal timeline and procurement strategy to guarantee delivery capability and timely compliance. • Comparison with similar projects at Heathrow and their outcomes.
Opex efficiency projects	
<ul style="list-style-type: none"> • Review of asset renewals aimed at reducing operating costs. • The need for these renewals in H8 will be assessed based on a comparison of the business plan of the planned renewal against the “do nothing” scenario and any other partial interventions. • For opex savings on airport users, more importance will be given to those which have been validated by the impacted parties. 	<ul style="list-style-type: none"> • Capex and opex versus a “do nothing” scenario. • Opex savings on airports users (e.g. airlines, ground handlers and retailers). • Benchmark/Sources for the opex. • Corporate Risk Framework (CRF) scoring as evidence for the prioritisation of the project. • Comparison with other options that have been assessed. • Asset renewal timeline and procurement strategy to guarantee delivery capability.

Source: Steer

Security & Technology

Specific methodologies and required evidence to assess the need of the identified Security & Technology investments are included in the table below.

Table A.2: Security & Technology – Need assessment techniques

Methodology	Evidence
Next Generation Security (NGS) projects	
<ul style="list-style-type: none"> • Benchmarking of scope compared to security innovation projects at other airports (e.g. AMS, DOH) • Review of the optioneering and synergies with other projects (including postponement to H9). 	<ul style="list-style-type: none"> • Project context in relation to overall security strategy. • Regulatory requirements for upgrade.

Methodology	Evidence
	<ul style="list-style-type: none"> Information on the number of screening equipment and areas of installation. Planned new processes and optimisations. Capacity needs (information on existing and needed future capacity). Opex savings resulting from the new technology Details on risk score and conditions for security asset renewals.
CT lane upgrade	
<ul style="list-style-type: none"> The need of the CT lane upgrade should be evaluated based on peak performance of the already upgraded search areas. 	<ul style="list-style-type: none"> Information on peak performance of the already installed CT lanes. Information on difference in scope versus NGS projects Overview on the project status and anticipated completion dates of all search areas. Layout drawings of search areas. Comparison with other options that have been assessed. Capex and opex versus a “do nothing” scenario.
One Stop Security (OSS)	
<ul style="list-style-type: none"> Projects should be evaluated based on number of positively affected passengers, planned processes and passenger flows as well as required technologies and construction measures. Review of the synergies with other projects which are planned in the same areas in the terminals (including postponement to H9). 	<ul style="list-style-type: none"> Information on which flight connections with how many annual OSS passengers will have an improved transfer journey. Considerations on the impact on non-OSS passengers. Information on which parts of the terminal infrastructure in each of the terminals are affected and which measures are required (as-is drawings of all involved terminal areas should be provided).

Methodology	Evidence
	<ul style="list-style-type: none"> • Process and passenger flow charts have to be made available to assess the required OSS investments. • Comparison with other options that had been assessed. • Capex and opex versus a “do nothing” scenario.
Technology projects (run, grow & transform)	
<ul style="list-style-type: none"> • Benchmarking of scope compared to technology upgrade or replacement and transformation projects at other airports and/or compared to industry guidance material & best practices. • Review of alternative scopes (technologies, systems). • Evaluation of potential for improvement of customer experience, operational efficiency, revenue generation, etc. • Review of the existing asset conditions. • Phasing and synergies with other projects (including postponement to H9). 	<ul style="list-style-type: none"> • Project context in relation to overall digital transformation strategy or other relevant business strategies. • Regulatory requirements and compliance. • Capacity needs (information on existing and needed future capacity). • Customer and staff needs (survey results, feedback, complaints, etc.). • Fulfilment of goals/policies (e.g. workplace improvements, sustainability, governance, business resilience). • Stakeholder support (e.g. airlines, retail concessionaires). • Details on risk score and conditions for technology asset renewals. • Comparison with other options that have been assessed. • Capex and opex versus a “do nothing” scenario.
Passenger automation	
<ul style="list-style-type: none"> • Benchmarking of scope compared to best-in-class airports (e.g. SIN, BLR) and ACI guidance material and recommended practices. 	<ul style="list-style-type: none"> • Information on the technology evaluation process ensuring a future-proof overall passenger automation solution.

Methodology	Evidence
<ul style="list-style-type: none"> Review of alternative scopes (technologies, processes). Evaluation of improvement of passenger experience, capacity and operational efficiency. Phasing and synergies with other projects (including postponement to H9). 	<ul style="list-style-type: none"> Project context in relation to overall strategy for a seamless passenger journey. Comparison with other options that have been assessed. Details on the chosen new equipment and technologies. Capacity needs (information on existing and needed future capacity). Planned new processes and optimisations. Customer/passenger needs (survey results, feedback, etc.). Stakeholder support (airlines). Capex and opex versus a “do nothing” scenario.

Source: Steer

Commercial

Specific methodologies and required evidence to assess the need of the identified commercial investments are included in the table below.

Table A.3: Commercial – Need assessment techniques

Methodology	Evidence
Commercial projects that mainly generate an increase in revenues	
<ul style="list-style-type: none"> Assessment of financial assumptions included in the business cases. The business case of a project should include sufficient information to determine if the project is going to deliver the expected outcome and is going to contribute positively to passengers by reducing future airport charges. The return on investment of a commercial project should be higher than the regulated WACC to have positive impact on airport charges. 	<ul style="list-style-type: none"> Depreciation period (asset life). Benchmark/Sources for the asset life. Revenues versus a “do nothing” scenario. Benchmark/Sources for the revenues. Capex and opex versus a “do nothing” scenario. Benchmark/Sources for the opex. Return on investment (IRR). Pay-back period (not discounted). Comparison with other options that have been assessed.

Methodology	Evidence
<ul style="list-style-type: none"> The evidence provided will be compared with other similar projects that have been undertaken at HAL and at other airports. 	<ul style="list-style-type: none"> Comparison with similar projects at Heathrow and their outcomes.
Commercial projects that have a material digital component	
<ul style="list-style-type: none"> Separation of the digital and physical components the project/programme. Assessment of the benefits and costs of the digital part. Comparison with other similar projects at HAL and at other airports. 	<ul style="list-style-type: none"> Impact on passengers. Impact on airlines. Other impacts. Links between the impacts and the financial assumptions (e.g. new CRM increases parking revenues). Comparison with other options that have been assessed. Comparison with similar projects at Heathrow and their outcomes.
Property and Cargo projects	
<ul style="list-style-type: none"> Assessment of the options for development or redevelopment. Assessment of the proposed business model for the development and for the operation of the asset(s). 	<ul style="list-style-type: none"> Financial assessment (including capex, asset life, revenues, opex, IRR, pay-back. period) for each of the evaluated options Pros and cons of each option. Evidence of engagement with potential tenants such as pre-let agreements, signed Heads of Terms or expressions of interest Market studies

Source: Steer

Baggage

Specific methodologies and required evidence to assess the need of the identified Baggage investments are included in the table below.

Table A.4: Baggage – Need assessment techniques

Methodology	Evidence
Existing BHS Assets Reaching End of Life	

Methodology	Evidence
<ul style="list-style-type: none"> Identify trends in the existing BHS operational performance and maintenance activities: Age of BHS Assets. BHS process reliability and downtime. Bag handling performance. Adherence to baggage service level agreements. Identify where, how and when End-of-Life Baggage asset replacement in H7 is differentiated from those in H8. 	<ul style="list-style-type: none"> BHS operational availability and reliability. Bag error handling rates for lost, late misconnecting bag rates. Evidence of increasing operating and maintenance costs. BHS compliance with baggage SLAs. Programme and schedule of proposed End of Life asset replacement. Benefits realised from End-of-Life asset replacement. Comparison with other options that have been assessed.
<p>BHS capacity and performance constraints</p>	
<ul style="list-style-type: none"> Review on how, where and when forecast demand, and BHS capacity provision create constraints in BHS capacity provision. Review how the project will address capacity constraints. 	<ul style="list-style-type: none"> Bag forecasts for originating, transfer and arriving Baggage. Gap analysis providing evidence to support identified capacity constraints. Analysis and evaluation of BHS capacity constraint solutions/options through provision of additional physical capacity or improvements to BHS asset utilisation. Proposals for any new/additional EBS capacity to address constraints through improved BHS asset utilisation. Impact analysis on interterminal baggage transfer systems. Comparison with other options that have been assessed.
<p>BHS technology refresh</p>	
<ul style="list-style-type: none"> Review the upgrade and improvement options for baggage control systems and baggage 	<ul style="list-style-type: none"> Requirements analysis and proposed solutions to baggage system operational management and control systems.

Methodology	Evidence
<p>operations management control solutions.</p> <ul style="list-style-type: none"> Review the approach to baggage handling sorting and logistic technology selection. Review the hold baggage screening technology selection. 	<ul style="list-style-type: none"> Evaluation and selection of suitable sorting and logistic handling technologies to support any technology refresh of End-of-life BHS equipment. Evaluation of BHS screening technologies needed to replace existing screening equipment.
Interfacing projects	
<ul style="list-style-type: none"> Review of the scope and impact of the proposed H8 BHS capacity and improved asset utilisation projects on interterminal transfers baggage system capacity using existing BHS tunnels and equipment. 	<ul style="list-style-type: none"> Forecast demand and capacity assessment of interterminal baggage transfer traffic when Terminal asset utilisation strategies are implemented. Evaluation of solutions and options proposed for interterminal baggage transfers.

Source: Steer

Sustainability & Energy

Specific methodologies and required evidence to assess the need of the identified Sustainability & Energy investments are included in the table below.

Table A.5: Sustainability & Energy – Need assessment techniques

Methodology	Evidence
Carbon emissions reduction projects	
<ul style="list-style-type: none"> Assessment of projects that will contribute to the reduction carbon emissions, assessing each initiative individually. As for other projects, they will be assessed based on their costs and benefits. Some energy projects also aim to achieve a reduction in carbon emissions. These are included in this category of projects; the remaining ones are under Energy projects. 	<ul style="list-style-type: none"> Carbon emissions reduction per scope (1, 2 and 3) per initiative. Capex and opex versus a “do nothing” scenario. Carbon emissions reduction achieved from all projects versus HAL’s Sustainability Strategy 2.0 targets. Public transport use achieved from all projects versus HAL’s Sustainability Strategy 2.0 targets. Comparison with other options that have been assessed.

Methodology	Evidence
<ul style="list-style-type: none"> Assessment of projects that aim to increase the use of public transport, reducing carbon emissions from small vehicles and reducing road congestion. 	
Energy projects	
<ul style="list-style-type: none"> Assessment of projects that aim to reduce the energy consumption and, therefore, reduce the energy supply cost. Assessment of projects that aim to increase the energy supply resilience, and increasing, at the same time, the operational resilience of the airport. This is subject to a first verification of non-duplication being undertaken with asset replacement type projects. 	<ul style="list-style-type: none"> Capex and opex versus a “do nothing” scenario. Benchmark/Sources for the opex. Power supply increase. Additional infrastructure and systems that contribute to the operational resilience (e.g. new independent supply source, new transmission ring). Comparison with other options that have been assessed.
Noise projects	
<ul style="list-style-type: none"> Assessment of the costs and contribution to the reduction of noise of each initiative. Assessment of the overall reduction by year and a comparison with the expected 10% reduction target set by the Government in 2030. 	<ul style="list-style-type: none"> Noise reduction per initiative, linking it to the number of people or households in the community that are impacted. Additional number of houses with insulation.

Source: Steer

Capacity

Specific methodologies and required evidence to assess the need of the identified Capacity investments are included in the table below.

Table A.6: Capacity – Need assessment techniques

Methodology	Evidence
Terminal processing areas	
<ul style="list-style-type: none"> The processing areas include departure and arrival halls, check-in, security screening, departure 	<ul style="list-style-type: none"> Comparison with other options that have been assessed.

Methodology	Evidence
<p>lounges, boarding rooms, immigration and baggage reclaim.</p> <ul style="list-style-type: none"> For these areas, we will assess the robustness of the demand and capacity assumptions reviewing the evidence provided and developing assumptions where there are gaps. The Airport Development Reference Manual (ADRM) 12th Edition is likely to be of use to fill these gaps. 	<ul style="list-style-type: none"> Capacity vs a “do nothing” scenario at the processing area level including considerations of: <ul style="list-style-type: none"> Passenger show up profile, dwell time, and peak demand. Hourly capacity, including assumptions on processing rate. Declared capacity including assumptions on space per passenger, assumptions on space per seated and standing passengers, number of seats, queueing time targets and constraints. Demand-driven and theoretical annual capacities. Revenues versus a “do nothing” scenario if revenue impact. Capex and opex versus a “do nothing” scenario if opex impact.
<p>Terminal non-processing areas</p>	
<ul style="list-style-type: none"> These are areas such as circulation spaces (e.g. corridors) and back-off house spaces (e.g. offices, storage, utility rooms). We will assess the need for those based on airport benchmarks on the size ratio between processing areas and non-processing areas and consider any specific information that HAL will provide. 	<ul style="list-style-type: none"> Comparison with other options that have been assessed. Floor plans. Any specific considerations. Capex and opex versus a “do nothing” scenario if opex impact.
<p>Stands</p>	
<ul style="list-style-type: none"> We will assess the robustness of the demand and capacity assumptions reviewing the evidence provided and developing assumptions where there are gaps. 	<ul style="list-style-type: none"> Comparison with other options that have been assessed. Capacity vs a “do nothing” scenario at the processing area level including considerations on: <ul style="list-style-type: none"> Flight schedule.

Methodology	Evidence
	<ul style="list-style-type: none"> • Declared capacity, including assumptions on aircraft turnaround time and constraints. • Demand-driven and theoretical annual capacities. • Aircraft taxiing time and fuel savings for airlines. • Revenues versus a “do nothing” scenario if revenue impact. • Capex and opex versus a “do nothing” scenario if opex impact.
Projects related to the relocation of airlines	
<ul style="list-style-type: none"> • Understanding the changes in passenger forecasts in each terminal before and after the relocation will be key to the assessments of these projects. • The nature of these projects is not fully known but it is likely to include enabling work for the relocation covering e-gates and additional security lanes. 	<ul style="list-style-type: none"> • Passenger forecast for each terminal impacted before relocation and after relocation, including: <ul style="list-style-type: none"> • Information on airlines and destinations relocated. • Utilisation. • Hourly Demand and Capacity • Constraints. • Capacity vs a “do nothing” scenario at the area level. • Revenues versus a “do nothing” scenario if revenue impact. • Capex and opex versus a “do nothing” scenario if opex impact.

Source: Steer

B Historical capex analysis by category

The information included in the Regulatory Accounts for the period 2014-2024 provides sufficient granularity to assess the average capex of certain types of works and compare them with the H8 capex plan. The analysis below on specific categories of capex has been used to validate the historical annual average capex excluding ‘One-offs’, i.e. Terminal 5, Terminal 2, Categories B and C costs, Next Generation Security, and the acquisition of the Compass Centre.

The table below explains the reclassification of certain capex categories that we have undertaken to enable a consistent analysis of the historical spend by category.

Table B.1: Reclassification of Regulatory Accounts capex categories

Labels in the Regulatory Accounts 2014-2024	Capex categories for the analysis
Asset Management and Compliance	Asset management, compliance, resilience
Airport resilience	
Security (not related to service improvement)	
IT	
Other	
Passenger experience	Passenger experience, efficiency, service, commercial, capacity
Improve Efficiency and Service	
Commercial	
Capacity	
Terminal 2	
Modernising Heathrow	Baggage
Baggage	
Terminal 2 Baggage System	
Carbon and Sustainability	Carbon and Sustainability
Next Generation Security	One-offs
Acquisition of Compass Centre	
Next Generation Security	
Category B	
Category C	

Source: Steer

The table below explains the reclassification of the Business Cases in the H8 Business Plan that we have undertaken to enable a comparison with the historical spend by category.

Table B.2: Reclassification of H8 Business Cases

H8 Business Cases	Capex categories for the analysis
BC01.00 Security Programme	One-off ²³
BC02.00 T2 Baggage Programme	Baggage
BC03.01 Asset Management & Compliance Programme	Asset management, compliance, resilience
BC03.02 Terminal 4 Front Door and Car Park	Asset management, compliance, resilience
BC03.03 T3 Hold Baggage Screening replacement (T3IB)	Baggage
BC03.04 T5 Pilz Obsolescence	Baggage
BC04.00 H8 new asset renewal scope	Asset management, compliance, resilience
BC05.00 Electrical network	Asset management, compliance, resilience
BC06.00 Heat decarbonisation	Carbon and Sustainability
BC07.00 Noise mitigation	Excluded from the analysis ²⁴
BC08.00 Carbon and Sustainability Programme	Carbon and Sustainability
BC09.00 People and Planet	Carbon and Sustainability
BC10.00 Modernising Heathrow Programme	Passenger experience, efficiency, service, commercial, capacity
BC11.00 Occupancy infrastructure	Passenger experience, efficiency, service, commercial, capacity
BC12.00 Commercial Programme	Passenger experience, efficiency, service, commercial, capacity
BC13.00 H8 new - commercial scope	Passenger experience, efficiency, service, commercial, capacity
BC14.00 Digital	Passenger experience, efficiency, service, commercial, capacity
BC15.00 T5 Early Bag Store front door	Baggage
BC16.00 Efficient Airport programme	Passenger experience, efficiency, service, commercial, capacity
BC17.00 H8 new - Passenger Experience	Passenger experience, efficiency, service, commercial, capacity

²³ Similarly to the reasons mentioned in paragraph 3.17, i.e. this Business Case is about the deployment of new security equipment. A large portion of the spend is related to the purchase of the equipment, and therefore the capex spent is not reflective of the volume of the works done on-site.

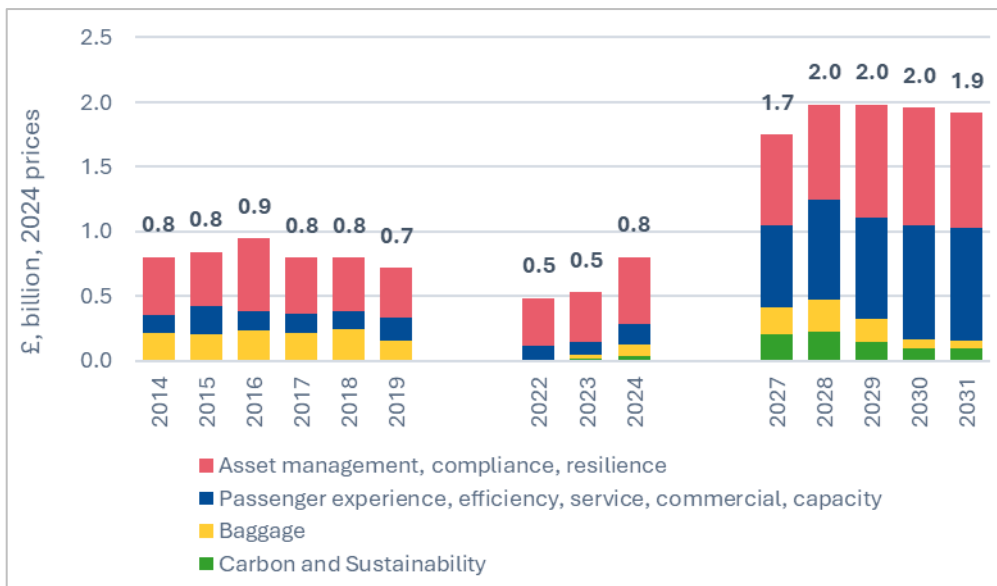
²⁴ Most of the noise mitigation initiatives that are included in this Business Case relate to activities that take place outside of the boundaries of the airport and, therefore, are considered to be independent of the amount of capex that HAL can execute. Additionally, these projects have not been capitalised in the past and, therefore, the comparison would not be like-for-like.

H8 Business Cases	Capex categories for the analysis
Carbon programme efficiencies/phasing	Carbon and Sustainability
Phasing	Excluded from the analysis
Efficiency	Excluded from the analysis

Source: Steer

The figure below shows the historical capex and the H8 programme for the categories that have been created to assess projects of the same nature. The following H8 capex categories are not included in the analysis: ‘One-offs’, noise mitigation projects, and ‘phasing’ and ‘efficiency’ adjustments.

Figure B.1: HAL Capex per category, excluding one-offs, 2014-2024 and H8, £m, 2024 prices



Source: HAL, Steer

The table below compares the average annual capex excluding one-offs and COVID-19 of the last 11 years (9 years excluding 2020 and 2021) for each of the main capex categories with the H8 programme.

Table B.3: HAL Capex annual average, 2014-2024 (excluding one-offs and Covid) and H8, £m, 2024 prices

Capex category	2014-2024 (annual average)	H8 (annual average)	H8 (annual average) vs. 2014-2024 (annual average)
Asset management, compliance, resilience	£438m	£821m	+87%
Passenger experience, efficiency, service, commercial, capacity	£146m	£790m	+443%
Baggage	£159m	£150m	-6%
Carbon and Sustainability	£6m	£157m	+2,527%
Total	£749m	£1,917m	+156%

Source: HAL, Steer. Note: H8 total Capex does not include the Security Business Case, the Noise Mitigation Business Case, and the ‘phasing’ and ‘efficiency’ adjustments.

The overall annual capex proposed for H8 is more than two times the 2014-2024 average (excluding one-offs and Covid-19 years). By capex category, the proposed ‘Asset management, compliance, resilience’ annual capex in H8 is 87% greater than the 2014-2024 average, and more than five times greater for ‘Passenger experience, efficiency, service, commercial, capacity’. These major differences, especially for the first category, indicate a major shift in HAL’s approach to capex delivery.

The H8 baggage annual average capex is broadly in line with the 2014-2024 average. ‘Carbon and Sustainability’ was a new investment area created in the recent past so comparison with historical average is not meaningful.

The sum of the capex by category for the 2014-2024 period provides an annual average capex of £749m (2024 CPI prices), which is of similar magnitude when compared with the £799m (2024 CPI prices) amount calculated using total capex for the period 2000-2024, validating the high-level calculation undertaken for the longer period.

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