



International Arrivals

Heathrow

Heathrow

Strategic Capital Business Plan

April 2018

Heathrow

Making every journey better

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Introduction and context

1 Foreword

2017 was a record year at Heathrow during which we made excellent progress toward delivering our vision: to give passengers the best airport service in the world. We maintained strong momentum across the four priorities underpinning our vision: making Heathrow a great place to work, transforming our service to passengers and airlines, beating the business plan over the current regulatory period and operating and growing Heathrow sustainably today and in the future.

Safety and wellbeing is at the heart of everything we do. Our aim is that everyone goes home or gets to their destination safe and well every day.

We delivered an outstanding service to our passengers during our busiest year on record. We achieved an excellent 4.18 out of 5.0 score in the global Airport Service Quality survey in Q4 2017 while we achieved record levels of baggage connections and departures punctuality. Passengers voted Heathrow 'Best Airport in Western Europe' for the third year running and 'Best Airport for Shopping' globally for the eighth consecutive year at the 2017 Skytrax World Airport Awards. Lastly, we were named the world's best airport for security in the inaugural awards from International Airport Review.

Heathrow's expansion really moved into delivery mode in 2017 following the Government's backing for our plans in late 2016. We are already making good progress toward delivering this once-in-a-generation boost for Britain's economy, one that will help secure the country's economic future as an outward looking nation. The government considers Heathrow expansion as strategically important for the UK and intends to submit its Airports National Policy Statement, the key legislative enabler for expansion, to a vote in Parliament in the first half of 2018. We continue engaging with our regulator and airline stakeholders to define the regulatory framework that will enable expansion that is affordable, sustainable and financeable. Finally, in January 2018, we launched our first planning consultation. The consultation outlines our emerging proposals and options to deliver an expanded Heathrow while keeping our commitments to local communities and meeting strict environmental tests. It is the opportunity for our local community and the broader public to help us shape Heathrow's future.

I look forward to building upon our joint successes to ensure continued safe and efficient delivery of our Q6 Capital Portfolio, working together to give our passengers the best airport service in the world.

John Holland-Kaye
CEO, Heathrow Airport

Introduction and context

2 Introduction and context

2.1 Purpose

Heathrow Airport's Strategic Capital Business Plan (SCBP) is delivered annually in accordance with the Capital Investment Protocol.

The SCBP originally looked at the Quinquennium 6 (hereafter known as Q6) regulatory period April 2014 to December 2018, to inform the Airport Community of Heathrow's Capital Investment Plan and to facilitate consultation and engagement.

Towards the end of 2016, the CAA extended Q6 by one year so the regulatory period will end in December 2019. This Plan reflects the ongoing work and formal engagement with the Airline Community to agree the quantum and contents of the Portfolio for 2019. In June 2017, the CAA committed to a further extension of the price control by at least 12 months (to end 2020).

This report covers the period from January 2017 to December 2017 with a look ahead to 2018.

The content of the SCBP is as set out in the Capital Investment Protocol agreed with the Airline Community, published on the 30th September 2014.

Where airlines require further information to understand proposed investments, Heathrow will respond to these requests.

The SCBP 2018 is a document for consultation. Heathrow encourages the Airline Community and other stakeholders to submit their views on the Strategic Capital Business Plan by 30th June 2018 to tracey.meechan@heathrow.com

Heathrow would like to thank the Airline Community for their responses to the SCBP 2017, which we have considered in developing this document.

Heathrow short-term plan

3 Strategy and vision

3.1 Heathrow's vision and priorities

Our Q6 plans were developed in line with the joint airline and Heathrow vision to be 'The UK's direct connection to the world and Europe's Hub of choice by making every journey better'.

Heathrow and the Airline Community developed four specific joint priorities for Q6: Passenger Experience, Hub Capacity and Resilience, Efficient Airline operations and a competitive cost of operation, through Constructive Engagement. These continue to shape and guide our thinking.

3.1.1 Heathrow's Vision, Purpose, Priorities and Values

Heathrow recognises that, in an industry dominated by global airline groups and alliances, Heathrow can compete for passengers' business with airports globally by giving the best airport service in the world. Consequently, we expanded Heathrow's long-term ambition, and in 2014 revised our corporate vision:

"To give passengers the best airport service in the world"

Our vision places the passenger at the heart of what we do and reflects our heightened ambition to deliver a level of service competitive with the best hubs in the world.



Figure 3.1 Heathrow's Vision, Purpose, Priorities and Values

Heathrow short-term plan

4 Heathrow short-term plan

4.1 Transforming Customer Service

In 2017, we continued to deliver a world-class passenger service achieving a record annual average score of 4.16 out of 5.0 and an excellent 4.18 out of 5.0 score in the fourth quarter in the global Airport Service Quality ('ASQ') survey. Heathrow has been ranked first among major European hub airports for service quality in this survey for thirteen successive quarters. In addition, 82% of passengers surveyed rated their Heathrow experience 'Excellent' or 'Very Good' (2016: 84%).

The 2018 Skytrax World Airport Awards were announced in March and Heathrow has been named the 'Best Airport in Western Europe' for the fourth consecutive year, 'Best Airport for Shopping' for the ninth consecutive time, and Terminal 2 has been named as the 'World's Best Airport Terminal'.

Improving passengers' journeys through the airport remains one of our key priorities. Passengers continue to enjoy efficient queuing to pass through security, passing through central security within the five minute period prescribed under the Service Quality Rebate ('SQR') scheme 97.3% of the time (2016: 97.0%) compared with a 95% service standard. The service quality regime penalty threshold was not triggered in 2017 in respect of any performance standard and for the first time in the current regulatory period, we earned a modest level of bonuses under the SQR scheme.

Punctuality improved with a record 80.2% of flights departing within 15 minutes of schedule (2016: 78.8%). Baggage performance improved significantly with the misconnect rate down to 10 bags per 1,000 passengers (2016: 14), reflecting our enhanced operational resilience. Heathrow achieved its best ever monthly baggage performances of 7 bags per 1,000 passengers in February 2017 and 8 bags per 1,000 passengers in 3 other separate months, beating the previous record of 9 bags per 1,000 passengers set in October 2016.

Over a million passengers with reduced mobility travelled through Heathrow in 2017. Last summer, we agreed new service levels with our supplier that took effect in January 2018; they will enhance our performance and transform these passengers' experience. In September 2017, we also launched an improvement plan which includes steps we are now taking to better monitor and report our performance, conduct accredited disability awareness training and engage with disability groups going forward.

Heathrow short-term plan

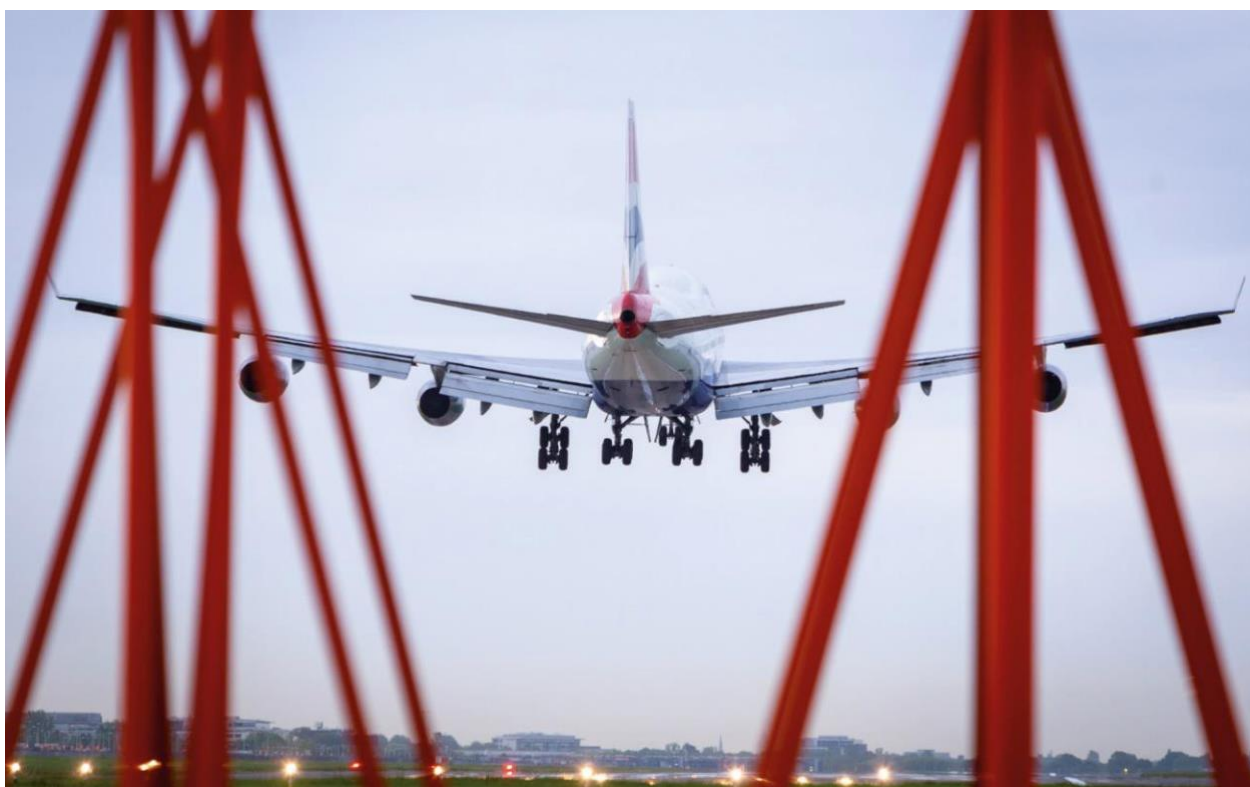
4.2 Status of Capital Portfolio

In last year's Strategic Capital Business Plan the planned Q6 capital investment was forecast to be £3.0bn. It was noted that this could increase up to £3.3bn, subject to further scoping of remaining projects and corresponding approvals of the business cases.

It was also noted the portfolio would continue to evolve over Q6 to meet the needs of passengers and airlines, and Heathrow could invest above £3.0bn in Q6 where strong business cases existed including essential asset replacement, resilience projects, capacity projects and projects that would deliver good returns.

The £3.3bn capital portfolio to the end of 2018 (Q6) has now been increased to a value of £3.95bn covering the period 1st April 2014 to 31st December 2019 (Q6+1). This excludes Category B planning costs or any other investment on Expansion.

We will continue to work with all the relevant parties to achieve successful outcomes. In December 2017, the forecast Q6 outturn being worked through the Capital Portfolio Board was estimated at £3.0bn.



Heathrow short-term plan

4.3 Annual status of business cases by programme

4.3.1 Passenger Experience

The Passenger Experience Programme's objective is to use customer insight to ensure that everyone who travels through Heathrow will experience the best that modern Britain has to offer; seamless operations that make travelling more effortless and stress-free, with enticing and inspirational experiences that grow commercial revenue and realise operational cost efficiencies. Focus areas include the ongoing evolution of the on-airport proposition, increasingly intertwined with realising the opportunities presented by technology. Passenger Experience outcomes will be tracked and measured through aligned business KPIs and indicators. The Passenger Experience Programme is made up of the Business Cases shown in the table below – note the Settlement Baseline is the Outturn value and December 2017 columns now include Q6+1 values: below:

Business Case	Settlement Description (where relevant)	Settlement Baseline (£m)	Dec 17 Baseline (£m)	Dec 17 EAC (£m)
B008 Crossrail	Allowance - Heathrow must ensure that Crossrail services are able to operate on Heathrow infrastructure	5.5	5.4	5.4
B009 Northern Perimeter	Estimate - Increased capacity to the car parking estate to satisfy passenger demand. Solutions are focused on opportunities to improve the T5 campus and create opportunity for incremental growth in car parking revenue. Half of the project has been delivered.	9.7	3.1	5.0
B010 CTA Redevelopment	Allowance - for Phase 1 of the CTA Masterplan targeted at enhancing the experience of passengers using the CTA and to complement the quality of the new Terminal 2.	14.2	0.9	0.9
B018 T5 Connections Security Capacity	Estimate - to provide a new route via escalator to south security, and additional lanes.	23.5	38.9	37.9
B020 Commercial IT & Telecoms	Allowance - Targeted investment in income generating Commercial IT & Telecoms to enable the continued development of products that keep pace with technology advancements, and the needs of the Airport community and passenger.	15.0	17.1	17.0
B023 E-Business Development for Heathrow	Allowance - Scope includes a number of initiatives that build on Q5 success to launch and develop a multi-channel communication strategy. Digital channels enable greater personalised service making it easier for passengers to use Heathrow and generating additional revenue through new ways of marketing Heathrow's commercial offering.	8.3	12.0	12.0
B024 Commercial Advertising and Sponsorship	Estimate - Refresh and enhance the media estate in Q6. Scope is a mix of asset enhancements, end of life replacements, and new infrastructure to protect income and drive incremental revenue from direct advertising & sponsorship of 'assets'.	34.2	23.3	21.8
B025 Premium Passenger Products & Services	Allowance -Differential investment in support of lead passenger segments (Premium & UK Business). The objective is to identify and generate incremental revenue streams which also enhance the premium passenger experience.	6.6	3.2	3.2
B026 Security Fixed Post Modernisation	Estimate - Targeted initiatives that maximise the efficiency of the security operation through deployed technology. Capital investment is necessary to reduce the reliance on fixed post security officers to protect passenger routes and boundaries and deliver cost savings.	10.2	17.8	18.0

Heathrow short-term plan

Business Case	Settlement Description (where relevant)	Settlement Baseline (£m)	Dec 17 Baseline (£m)	Dec 17 EAC (£m)
B030 T1 Closure	Estimate - Phased closure of Terminal 1 (excluding the baggage system which is required to support T2).	8.4	6.5	6.0
B036 VIP Strategy - Commercial and Facility	Estimate - To maintain the existing suites.	7.4	0.1	0.1
B037 Airline Moves	Estimate - Terminal 1's airlines will be relocated to other Terminals per the agreed move sequence.	23.6	19.8	19.4
B038 Ops Efficiency and Continuous Improvement	Allowance - Set of workforce initiatives focused on continuous improvement and reducing the operational cost base.	6.0	6.0	6.0
B041 Commercial BAU fund	Allowance - High volume, low value (capex) investments, invested tactically over the Q as opportunity or need arises. Supports Retail, Commercial Passenger Services and Property teams.	32.8	41.4	39.3
B044 Commercial Systems Replacements and Upgrades	Estimate - Investment in retail concessions systems providing real time sales data. The solution facilitates improved decision-making and the accuracy of concession fee payments through the transition to automatic sales reporting. The system has been installed in Terminal 2. This investment extends the system to all retailers in Terminals 3, 4 and 5.	2.8	2.8	2.7
B045 Enhanced Terminal Facilities for Passengers	Allowance - Investment in hosting facilities to meet the growing expectations of passengers (in particular connections) that do not have access to airline lounges.	20.6	35.5	36.8
B068 Security SQR Harmonisation	Estimate - The CAA Licence Condition includes a harmonised security waiting time standard for direct and transfer passengers of 99% of passengers waiting less than 10 minutes. The technology to enable per passenger queue measurement will be implemented in all Heathrow terminals.	3.8	6.0	6.0
B081 T4 IDL Masterplan Phase 4 and enhancements	Estimate - Final element of the redevelopment of the T4 Independent Departure Lounge solution commenced in 2012. Drives commercial income through the creation of additional retail space and new merchandising opportunities.	8.2	7.5	7.4
B082 T5 CIP Expansion	Allowance - The capacity of existing CIP Lounge space in T5A is at capacity at peak. Facilities are not well placed to support British Airways' growth and lounge product strategy in their current configuration.	5.4	5.4	5.4
B092 UKBF Accommodation	Estimate - Investment is required to bring holding rooms up to a consistent standard in line with UKBF's national standards.	5.2	8.6	7.8
B094 Crossrail Contribution	Allowance - Heathrow's contribution to Crossrail is as determined by the CAA.	86.7	86.7	86.7

Heathrow short-term plan

Business Case	Settlement Description (where relevant)	Settlement Baseline (£m)	Dec 17 Baseline (£m)	Dec 17 EAC (£m)
B116 T3 Connections Security Capacity	Estimate - expansion of transfers security capacity.	39.9	83.3	86.6
B129 Automation of the Passenger Journey	Estimate - replacement of CUSS Kiosks.	9.7	0.5	0.5
B156 Surface Access Development Fund	Allowance - to protect Heathrow's interests during the consultation and planning for Southern Rail access and development of other Surface Access initiatives.	2.0	2.0	2.0
B204 Passenger Experience Programme Rollover (TR+M)	Rollover - items include T3 CIP Lounge, T3 Refurbishment, Premium security Fast Track, T4 Independent Departures Lounge and T5 Gate Luxury & T5 concessions.	20.2	36.9	35.5
B316 T3 Refurbishment and Enhancement	Estimate - scope include improvements to Zones B-G, T3 Façade, International Departure Lounge, HEX tunnel.	47.0	42.3	41.4
B329 Automation of the Passenger Journey	Allowance - Aligned to aviation industry led initiatives to deliver a simplified and streamlined end-to-end journey. Automated solutions being considered are self-service bag drop and self-boarding.	58.3	58.3	57.0
B400 T4 CSA Expansion (formerly B210)	Estimate - expansion of security capacity.	0.0	5.8	5.9
B411 T5 Additional Fast Track Capacity	Estimate - two additional lanes and a new route for premium passengers.	0.0	15.6	14.2
B416 Road Access Congestion	Allowance - to improve flow on the roads and resolve congestion areas.	0.0	0.5	0.4
B427 Security Scanner & ETD Regulation Changes	Estimate - additional security equipment to meet new requirements.	0.0	14.6	12.4
B429 E-Gates	Estimate - installation of additional e-gate in T3, T4 and T5.	0.0	8.4	7.2
B434 T5 Connections	Allowance - to reduce queueing and congestion, and introduce automatic ticket presentation gates.	0.0	8.9	8.0
B451 4G Cellular Estate	Estimate - to upgrade the cellular infrastructure deploying common infrastructure in T3 & T4, as well as replacing life expired assets.	0.0	21.0	21.0
B455 T2 Check-in Enhancements	T2 Check-in Enhancements.	0.0	5.0	5.0

Heathrow short-term plan

Key activities in 2018

- **Improvements to security**

The work involved in rolling out the further body scanners to support the additional DfT requirements will continue throughout the year. Construction of the new T3 Flight Connections Centre is ongoing and will complete and go into operation in the summer 2018. The dismantling and removal of the temporary flight connections centre will then be carried out from July to December 2018.

- **Commercial advertising and sponsorship**

Delivery of a number of upgrades and enhancements to a number of media sites across the campus will be undertaken during 2018, including the media estate in the CTA Rail Station and the External Heathrow Welcome site.

- **Passenger journey automation**

We plan to continue deploying Self-Boarding Gates in T2 & T5 and introduce Self Bag Drops in T2, T3 and T5 in 2018. It is anticipated that an initial biometric passenger identification system will also be developed ready for deployment across Heathrow initially in T5.

- **T3 Refurbishment and Modernisation**

Work will continue upgrading the T3 IDL, creating new flooring, seating, food and beverage and retail space. The T3 check-in area will be modified to remove stand-alone check-in desks at the hammerheads, rearrange self-service kiosks and replace flooring. External modifications will include new terminal signs attached to the façade, replacement information screens and modifications to the entrance portals.

- **Hotel development across the campus**

Third-party developers are constructing a new hotel adjacent to T4, continuing the new hotel development adjacent to the T2 multi storey car park and completing the fit out a new hotel in the East Wing of T3.

- **Lounges**

The shell and core delivery of the Qatar Lounge, the Amex Lounge and the No. Traveller lounge will be completed, ready for third party fit-out.

- **Key commercial projects**

There are a wide variety of commercial projects being delivered across the airport to drive incremental revenue. These include new passenger catering facilities within T3, the introduction of further airline and independent lounge facilities across the terminals, and a number of new shops.



Heathrow short-term plan

4.3.2 Airport Resilience

The Programme vision is to provide 'A resilient airport with capability to meet demand and recover quickly', enabling Heathrow to meet the challenge of delivering higher service standards and lower costs.

This Programme will achieve its vision through objectives that include:

- Creating 'headroom' through the efficient use of technology, enhanced processes and airport infrastructure
- Accommodating future demand for a new generation of wide-bodied aircraft
- Building greater resilience to adverse weather and other events, enabling a quick and safe recovery of the airport operation
- Driving resilience and efficiency improvements in our operational facilities and processes, while maintaining the highest safety standards.

The Airport Resilience Programme is made up of the Business Cases shown in the table below:

Business Case	Settlement Description (where relevant)	Settlement Baseline (£m)	Dec 17 Baseline (£m)	Dec 17 EAC (£m)
B015 OSCAR	Estimate - To rationalise, update and optimize the IT estate. Protect the operational use and functions of the seven critical IT systems utilised by HAL and the airport community e.g. IDAHO.	22.6	26.9	26.1
B033 Additional Fuel Infrastructure	Allowance - the CAA determination of capex. To increase fuel resilience at Heathrow.	160.3	6.2	6.8
B035 Aircraft De-Icing Infrastructure & Process	Allowance - for enhancing de-icing capabilities.	54.9	15.0	17.8
B039 Noise Compliance	Estimate - To provide an improved and automated system for the management of aircraft noise data, which will enable Automatic aircraft noise reporting, an increased horizon, near live data, ground movement monitoring, monitor/analyse Time Based Separation, and directly supports airspace changes.	2.5	4.1	4.1
B043 APOC	Rollover - for completion of APOC.	10.0	10.8	10.2
B062 Cargo Centre Southside	Estimate - Support the cargo community with improved access to the airfield and cargo facilities, by redesigning the control post infrastructure and operational controls in the cargo area.	16.1	8.0	8.0
B073 Air Quality - Vehicle Charging	Allowance - Provision of vehicle charging infrastructure enabling HAL and 3rd parties to utilise alternative fuels.	5.3	5.3	5.5
B098 Kilo Taxilane and Stands 234/5	Estimate - Removal of Europier and existing stands, construct the kilo taxilane and stands 234/5 along with safeguarded tunnels infrastructure below.	113.3	99.0	99.0
B111 Enabling New Generation of Wide Body Aircraft - Airfield	Estimate - Stand 255, Northern CTA taxiways, Sierra A and Sierra C taxiways.	85.0	120.4	124.0

Heathrow short-term plan

Business Case	Settlement Description (where relevant)	Settlement Baseline (£m)	Dec 17 Baseline (£m)	Dec 17 EAC (£m)
B112 Airfield Efficiency & Resilience	Allowance - To enable consistent and cost effective delivery of the forecast aircraft schedule (including next generation aircraft) by operating to plan, increased precision of arrivals and maintaining departures punctuality. Work includes: Time Based Separation, airspace changes, independent arrivals, and new approach aids.	32.0	32.0	32.2
B117 T4 Infrastructure Improvement	Estimate - provision of additional Code F stands, and joining of reclaim belts 7A and 7B.	26.7	17.5	16.9
B134 PCA Additional Infrastructure	Allowance - provision and installation of pre-conditioned air units for long haul stands that do not currently have the Scope has been consolidated here from B334 and B317.	2.1	13.8	12.7
B206 Airport Resilience Programme Rollover (COP)	Rollover - includes T4 baggage reclaim hall, T5 TTS Enhancement, T3 and T4 loading Bay, and Airside Operations Facility.	25.1	47.4	47.1
B211 AGL Control System & Primary Cabling	Estimate - replacement of airfield lighting control system.	0.0	48.7	48.0
B243 Kilo Apron Development	Estimate - consolidation of T1 Opportunity Stands and Kilo Taxiway works.	0.0	105.3	114.8
B311 Enabling New Generation... - RAT, RETs Remote Stands and FEGP	Estimate - Removal of Cranford (RAT, Noise wall), 4 additional RETS, CTA remote stands, FEGP provision for new aircraft types.	111.4	2.0	2.0
B312 Airfield Efficiency and Resilience	Allowance - in addition to B112.	19.4	12.0	12.0
B317 T4 Infrastructure Improvement - HV and Arrivals	Allowance - Provision and installation of new high voltage electrical infrastructure in T4. This also includes improvements to T4 arrivals forecourt.	20.0	1.0	1.0
B409 MSCP 4	Estimate - to alleviate short term congestion issues.	0.0	0.3	0.4
B415 A320 Sharklet Strategy	Allowance - modification to stand infrastructure to accommodate larger wingspans.	0.1	0.1	0.1
B421 Airport Efficiency and Performance	Estimate - further works in APOC to improve operational performance.	0.0	16.9	16.9
B428 EASA Clearance Opportunities	Estimate - to utilise the revised EASA clearance to improve the performance of the airfield.	0.0	0.2	0.2
B433 T2 DtS Option 7	Estimate - change priority from domestic to international operations.	0.0	0.8	0.9

Heathrow short-term plan

Key activities in 2018

- **Kilo Cul-de-Sac Apron Development**
Construction of a further 3 fully serviced remote stands on Kilo (211, 212 and 213), including all services and safeguarding for future pier service and Head of Stand roads. Construction of the vertical circulation core steel frame for Gate 234 and T2B Remote Coaching Facility within the building. Commencement of piling activity, service relocation and excavation for a new substructure beneath Kilo to house future baggage and Track Transit System.
- **Airfield Ground Lighting (AGL)**
The third and fourth tranches of AGL cabling will be undertaken, as well as reinforcing the AGL control system.
- **More sustainability measures will be adopted**
Electric Vehicle charging points will continue to be installed throughout 2018 to enable HAL and third parties (airlines, handlers and suppliers) to adopt zero emission road and ramp vehicles. In 2017 trials were commenced with electric buses, facilities were installed to support the London black taxis and numerous chargers were provided around HAL Engineering and operational areas to support new electric vehicle fleets. Work also started (and will complete in early 2018) to install power supplies on all BA's short-haul stands around T5A to enable them to introduce electric aircraft push-back tugs. A trial of improved PCA (Pre-conditioned air) delivery systems was completed in 2017. An investment decision will be taken in early 2018 to determine whether to proceed with the installation of the equipment. This decision will be based on product selection (in January 2018) and determination of the benefits the new equipment will provide.
- **Resilience of the airfield operation will improve (09L)**
The second phase of the demand capacity balancing tool will go on line in 2018 to improve punctuality and reduce stack times. Further punctuality improvements will be delivered incrementally through our "Strive for 5" initiative.
- **Runway infrastructure**
Through 2017 modelling has been undertaken to determine whether there is a business case for the construction of any rapid exit taxiways (RETs) before Expansion. A decision is planned for Q1 of 2018 as to whether the project will proceed in Q6 or consideration of RETS will be dependent upon Expansion plans.
- **Airspace Management**
Key airspace management systems will continue to be reviewed as part of an asset replacement activity.



Heathrow short-term plan

4.3.3 Asset Management

The Asset Management Programme will deliver assets at the best whole life value, while reducing risk and optimising performance. This will be carried out for each of the Engineering, IT and Rail parts of our business.

The Programme will deliver its vision through objectives that include:

- Harm no-one that builds, maintains, operates or uses our assets
- Meet 100% of our licencing and legislative requirements
- Reduce total expenditure (Opex and Capex) over the long term by optimising cost, risk and performance and working towards the 'Asset Management Blueprint'
- Enable the flight schedule to be fully complete every day
- Understand and manage asset-related risks so that we continuously improve operational resilience
- Understand, define and meet the performance that our customers (including colleagues, passengers and airlines) want from our assets, making sure there are no surprises
- Deliver the Masterplan as efficiently as possible and provide capacity just ahead of planned demand
- Meet our environmental and sustainability targets
- Ensure our assets are adaptable and can efficiently meet our customers' future needs

The Asset Management Programme is made up of the Business Cases shown in the table below:

Business Case	Settlement Description (where relevant)	Settlement Baseline (£m)	Dec 17 Baseline (£m)	Dec 17 EAC (£m)
B028 Metering & Energy Demand Management	Allowance - Provide improved energy consumption analytics for HAL Engineering to reduce costs and achieve the target set for carbon emissions reduction. This will be enabled through Automatic meter reading technology installation across Heathrow. Delivery of a range of projects to reduce energy consumption through introduction of new technology, on-demand assets and optimisation of set point controls.	14.0	40.0	40.0
B047 Consolidated HAL landside Ops/Eng facility	Estimate - to consolidate multiple buildings to enable the full benefits of the engineering Change programme.	5.5	0.6	0.6
B066 Energy and Utilities Management - Supply	Estimate - to convert the CTA heat exchangers from High Temperature Hot Water to Low Temperature Hot Water, and associated work to the district heating pipework.	21.6	46.2	43.8
B101 Engineering Asset Replacement	Estimate - Asset replacement or refurbishment aligned to the principal Asset Management objectives to reduce opex and optimise for risk and performance.	595.1	493.1	473.6
B102 Rail Asset Replacement	Estimate - Refurbish and replace key Rail Operating and Infrastructure assets. This will be done to sustain current operational performance levels, to deliver Heathrow Express service throughout Q6 and ensure assets are fit for purpose when Crossrail commences.	52.8	52.8	67.1

Heathrow short-term plan

Business Case	Settlement Description (where relevant)	Settlement Baseline (£m)	Dec 17 Baseline (£m)	Dec 17 EAC (£m)
B103 IT Asset Replacement	Estimate - Provide Heathrow with a reliable and performing IT estate that will continue to efficiently support, at minimum operating cost, the operations of the airlines and the wider airport community.	81.3	102.2	102.6
B127 Surface Water Management Infrastructure	Estimate - Improve the performance of the surface water pollution control system across the Eastern catchment.	16.1	21.7	25.8
B131 CTA and Cargo Tunnels	Rollover - Tunnels compliant with appropriate legislation and best practice, this includes: Refurbishing and replacing the tunnel asset systems; ventilation system; fixed fire suppression; structural fire protection; lighting; electrical and water systems; and, emergency sign and closure systems.	117.3	131.0	170.8
B169 Asset Management Programme	Estimate - To embed good practice asset management capability throughout our business, by introducing a management system for the asset base built on industry best practice; process changes; and, organisational change.	12.3	17.5	17.4
B207 Asset Management Programme Rollover (POP)	Rollover - main items include runway rehabilitation, core electrical distribution upgrades, sweeper tip, T3 roof works, and replacement of HV intake cables.	33.5	47.3	46.7
B303 IT Asset Replacement	Allowance - Provide Heathrow with a reliable and performing IT estate that will continue to efficiently support, at minimum operating cost, the operations of the airlines and the wider airport community.	25.9	17.9	17.9
B327 Surface Water Management Infrastructure - southern	Estimate - Improve the performance of the surface water pollution control system across the Southern catchment.	7.8	0.0	0.0
B401 Rapid Goods Screening Relocation (formerly B212)	Estimate - relocation of RGS from southside to Colnbrook Logistics Centre.	0.0	2.8	2.7
B439 - Perimeter Fence	Estimate - upgrade of perimeter fence.	0.0	4.2	3.8

Key activities in 2018

- CTA and Cargo Tunnels**
 The main tunnel works will be progressed by BAM Nuttall. Morgan Sindall will be refurbishing the cargo tunnel.
- Engineering Asset Replacement**
 T3 Roof Replacement located above the South Wing Extension, East Wing, Immigration & Baggage Reclaim, Pier 5 Extension, Pier 6, and toilets on Pier 7 is required before the asset degrades beyond levels of acceptable risk and to avoid any unplanned intervention. T4 Roof-light Replacement will replace life expired glazing located landside above check-in and airside above security / IDL in T4. Airside Taxiways will involve the full depth reconstruction in PQ of Block 21 (outer), including replacement of AGL pots, drainage and primary cabling

Heathrow short-term plan

located within the works zone. HEC T2/HEC T5 Link focuses on the optimisation of the Heathrow Energy Centre by linking T5 and improving resilience to support future capacity requirements and growth ambition to the CTA.

- **Energy Supply Management**

B066 Package 7 Life Safety - this phase of works will ensure that the T3 service tunnel provides a safe and compliant environment with a fully implemented fire strategy and critical asset protection system. The scope includes: fire detection, protection, compartmentation, means of escape, access, fire strategy, emergency signage, water ingress, sump pumps, emergency lighting and controls.

- **Energy Demand Management**

This project will develop and deliver scope to further reduce energy consumption and carbon levels. Energy Demand Management (B028) involves the continued reduction of energy consumption by a further 28GWhrs per annum which also assists with risk to Heathrow's overall grid capacity.

- **Rail Asset Replacement**

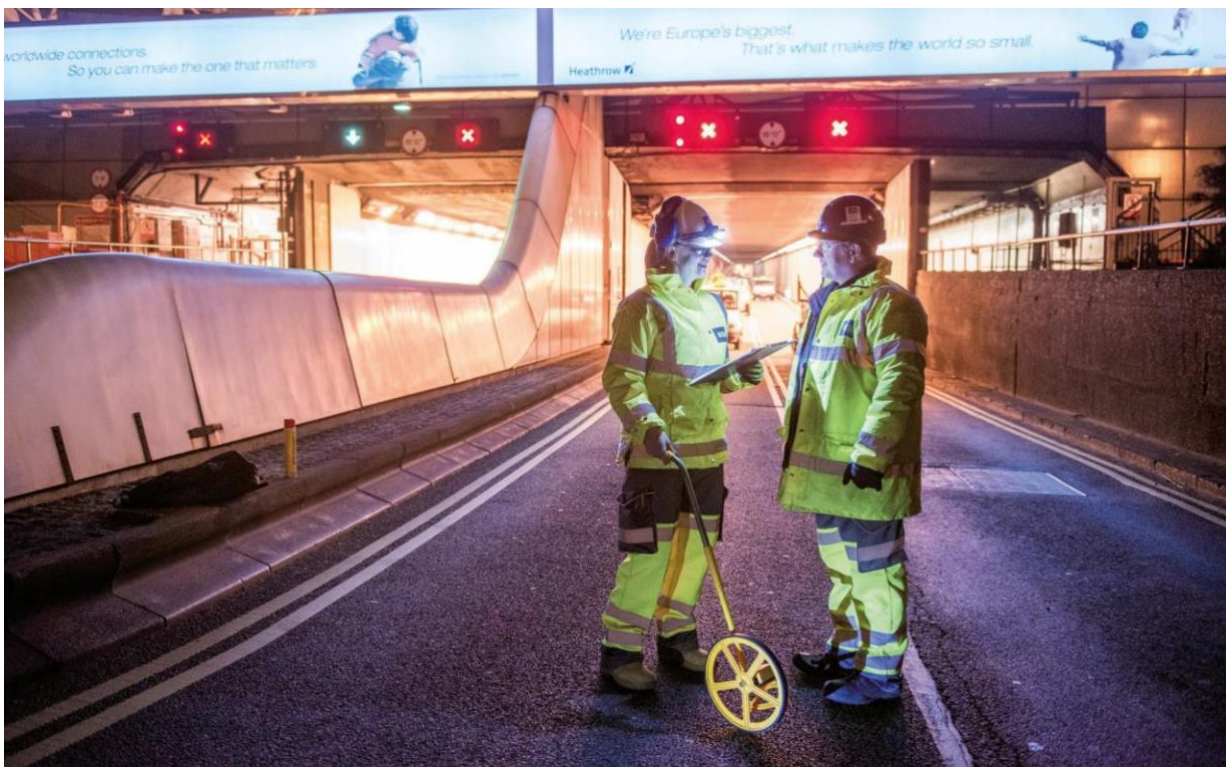
The statutory mechanical overhaul of the Heathrow Express Class 332 rolling stock trailer bogies will be completed this year. We will also be replacing the atmosphere side attenuators of the emergency ventilation fans at Terminal 5 and installing new oyster ticket gates at all of the Heathrow rail stations.

- **IT Asset Replacement**

Data Centre Network Enhancement and the Radio Upgrade Programme will be delivered throughout 2018.

- **Surface Water Management**

The in-pond works were completed in 2017 and the assets are in service. Stage 2 Wastewater Treatment Plant construction commenced January 2018 and completion is due at year end.



Heathrow short-term plan

4.3.4 Baggage

The vision for the Baggage Programme is, 'to deliver leading end-to-end baggage performance amongst European Hubs, at a competitive cost, by working safely together as a community'.

The Baggage Programme's objectives are:

- To comply with Department for Transport hold baggage screening requirements
- To reduce the baggage misconnect rate
- To simplify and consolidate systems to deliver efficiencies
- To reduce the rate of injuries associated with baggage operations
- To enable growth in passenger numbers.

The Baggage Programme is made up of the Business Cases shown in the table below:

Business Case	Settlement Description (where relevant)	Settlement Baseline (£m)	Dec 17 Baseline (£m)	Dec 17 EAC (£m)
B006 Improved Baggage Capacity & Resilience	Estimate - A number of elements are being considered, including: T5 Early Bag Store; T5C ULD storage (power); T5 dual off load; T5 sorter to/from reclaim; and T5 bag check units.	38.9	43.3	42.8
B051 T3IB Rollover	Rollover - for completion of T3IB.	90.3	89.2	129.7
B097 T1 Baggage Resilience	Allowance - to provide a transfer break and pre-sort facility close to the T1 baggage system with sufficient capacity to handle the T1&T2 inbound transfer traffic during contingency.	11.8	21.8	21.8
B099 T3 Baggage Enhancements	Estimate - addition loop will provide resilience to Baggage operations. The Arrivals Road will also be upgraded to current standards.	9.1	8.7	9.4
B205 Baggage Programme Rollover (Baggage)	Rollover - includes HIBS (T5WBW moved to B238).	15.3	19.9	17.9
B216 HBS and Asset Replacement	Estimate - Targeted asset replacement or refurbishment aligned to the principal Asset Management objectives and installation of new standard 3 HBS machines.	508.4	483.9	532.4
B238 Western Baggage Upgrade	Estimate - replacement high level control.	0.0	20.7	25.9
B423 Baggage Resilience	Allowance - to respond to the finding of the baggage review and to improve resilience.	0.0	22.9	24.3
B442 T4 Baggage Out of Gauge Reclaim	Allowance - to improve the Out of Gauge facilities in T4.	0.0	8.7	8.0
B464 Baggage Improvements	New business case - baggage improvements.	0.0	14.6	14.6

Heathrow short-term plan

Business Case	Settlement Description (where relevant)	Settlement Baseline (£m)	Dec 17 Baseline (£m)	Dec 17 EAC (£m)
B465 Baggage IT Resilience	New business case - baggage IT resilience.	0.0	18.5	18.5
B466 T5 Fast Track	New business case - T5 Fast Track.	0.0	14.7	14.7

Key activities in 2018

- HBS Standard 3 & Asset Replacement**
 The major focus remains on the installation of the Standard 3 Screening machines across the Heathrow campus and associated changes to the physical system infrastructure and software taking place immediately adjacent to the live operational areas.
- T5 Early Bag Store**
 The project is focused on introducing increased capacity to enable more efficient working and an improved passenger experience. Step 1 was successfully completed in 2017 and Step 2 is planned to be complete before Summer 2018.
- T1 Central Out of Gauge and Baggage Recovery Capability**
 The project will deliver a facility providing dual functionality. Works are due to commence February 2018 and will continue throughout the year.
- Baggage Resilience**
 The Baggage Programme will continue to work with stakeholders to identify key initiatives and required facilities.



Heathrow short-term plan

4.3.5 Terminal 2

The objective of this Programme is to complete the works commenced in Q5 on Terminal 2. The opening of T2 has enabled us to improve the overall Heathrow passenger experience.

An allowance has been made to start with the planning application and enabling works for the expansion of Terminal 2 in future regulatory periods.

The Terminal 2 Programme is made up of the Business Case shown in the table below:

Business Case	Settlement Description (where relevant)	Settlement Baseline (£m)	Dec 17 Baseline (£m)	Dec 17 EAC (£m)
B150 T2 Phase 1 completion	Rollover - for completion of T2 A phase 1 and moving in of airlines.	58.9	93.4	97.6



Heathrow short-term plan

4.3.6 Q6 Realisation Programme

The Objective of the Programme is to 'Integrate and optimise Heathrow's plan to deliver the settlement and our vision'.

The Programme seeks to achieve this objective through continuously aligning our strategy with our portfolio to achieve our vision.

The Q6 Realisation Programme is made up of the Business Cases shown in the table below:

Business Case	Settlement Description (where relevant)	Settlement Baseline (£m)	Dec 17 Baseline (£m)	Dec 17 EAC (£m)
B077 Hillingdon Community Trust	Estimate - This reflects commitments made as part of the planning processes for T5 and T2.	2.8	2.8	1.8
B078 LACC Project Manager	Estimate - provision of Project Management services to aid with airline community engagement and consultation.	0.6	0.6	0.6
B154 T2A Phase 2 and T2C	Allowance for design and enabling works for the extension of T2A and the construction of T2C. As at December 2017, the proposal is to use the Baseline in 2018 to progress the commencement of T5+, T1/T2 baggage system, and other Heathrow additional capacity scope to be developed throughout 2018.	4.8	15.0	15.0
B164 Back Office IT	Estimate - Provide Heathrow with a reliable and performing IT estate that will continue to efficiently support, at minimum operating cost, the operations of the airlines and the wider airport community. In addition, as a result of the refresh activity, the IT estate will have been further rationalised, optimised and updated.	31.8	29.7	29.1
B176 Funds for Independent Funds Surveyor	Allowance - This business case will facilitate the implementation of Gardiner and Theobald as the IFS.	3.2	6.8	6.8
B208 Q6 Realisation Rollover (Q6 Realisation)	Rollover - includes CCTV work; document management; and, treasury accounting.	3.4	4.6	4.4
B241 Portfolio Balance	Allowance - holding business case.	0.0	287.3	287.3
B376 Funds for Independent Funds Surveyor	Allowance - This business case will facilitate additional implementation of Gardiner and Theobald as the IFS.	3.5	0.0	0.0
B900 Q6 + 1 Balance	Allowance - holding business case for development of Q6+1 scope.	0.0	484.1	484.1

Heathrow short-term plan

4.4 Independent Fund Surveyor update

The objective of the Independent Fund Surveyor (IFS) is to provide an on-going assessment of the reasonableness of all key decisions made on key projects and to ensure that capital is being used effectively to deliver the outcomes determined by the Business Case. The IFS is not a responsible party in the delivery of the projects.

In 2013, Heathrow and the Airline Community agreed the terms of IFS appointment as a joint appointment by Heathrow AOC Limited and Heathrow Airport.

Gardiner & Theobald (G&T) have been appointed to provide the IFS services.

The IFS are reporting at Gateways and on a monthly basis during the development and delivery phases of the projects. They present a summary of their monthly reports at the Capital Portfolio Board (CPB).

The key benefits of the IFS are to:

- Focus on the processes being followed, the assumptions being made and the overall appreciation of the risks being managed
- Enhance the current system by providing real time reviews / reporting through the gateway lifecycle process
- Add value to the delivery of the Q6 portfolio by providing an increased level of confidence to all parties
- Significantly simplify regulatory capex efficiency reviews

The IFS have so far been deployed to monitor 24 key projects. During early 2018, we will engage with the community regarding the scope of IFS deployment on the emerging Q6+1 portfolio.

Heathrow short-term plan

4.5 Updated list of key projects, triggers and IFS deployment

The list of projects which are either key, triggered or monitored by the IFS is below. This list has been updated during 2017 following consultation with the Airline Community.

Key Projects / Business Cases	Trigger(s)	Trigger Scope	IFS	IFS Scope
B051 T3IB Q5 Rollover	1 - Trigger complete	Q6 rollover trigger agreed (Cut-ins complete and system operational)	Y	T3IB Rollover spend IFS Review complete
B117 T4 Infrastructure Improvement	1 - Trigger complete	Q6 rollover trigger complete (stand 410)	Y	T4 Code F Stands (410, 411, 412) IFS Review complete
B207 Asset Management Programme Rollover	1 - Trigger complete	Q6 rollover trigger complete (Northern runway)	Y	Northern Runway IFS Review complete
B018 T5 Connections Security Capacity	1 - Trigger complete	Transfers security escalator	Y	T5 Transfer Security Capacity IFS Review complete
B101 Engineering Asset Replacement - T3 Pier 7 Roof, HVAC, Chillers and Boilers	1 - Trigger complete	T3 Pier 7 roof - permanent M&E services to be fully operational and temporary plant removed (Roof triggered instead of T3 Life Safety System)	Y	T3 Life Safety Systems
B101 Engineering Asset Replacement - Airbridges, FEGP, PCA	1 - Trigger complete	T3 Airbridge Replacement (including modifications to foundations)	Y	T3 Airbridge Replacement
B111 Enabling New Generation of Wide Body Aircraft - Airfield	1 - Trigger complete	Bravo Taxiway Open for Code F Operations	Y	Alpha Bravo taxiways
				Sierra C taxiway IFS Review complete
				Sierra A taxiway IFS Review complete
B411 T5 Additional Fast Track Capacity	1 - Trigger complete	New fast track facility ready for operational readiness	N	-
B006 Improved Baggage Capacity and Resilience	1 - Trigger defined - project on site	Completion of the conversion of 4 racks to 6 racks in the existing T5 bag store	Y	T5 Early Bag Store
B101 Engineering Asset Replacement Electrical Power Infrastructure	1 - Trigger defined - project on site	T4 LV Electrical Infrastructure - power on to the replaced final Switchboard	Y	T4 LV Electrical Infrastructure
B116 T3 Connections Security Capacity	1 - Trigger defined - project on site	To deliver a new Permanent Flight Connections Centre to T3 and demolish the Interim Facility on Stand 323	Y	T3 Connections Security Capacity
B131 CTA & Cargo Tunnels	1 - Trigger defined - project on site	Main Tunnel Life Safety Systems	Y	Main and Cargo Tunnel

Heathrow short-term plan

Key Projects / Business Cases	Trigger(s)	Trigger Scope	IFS	IFS Scope
B216 Combined Baggage Standard 3 and Asset Replacement	3 -Triggers defined - projects on site	HBS Std 3 machines installed in T2; Proposed % of HBS Std 3 machines installed and in use in T5; HBS Std 3 machines & asset replacement works in T4	Y	HBS & Asset Replacement in T1/2/4; HBS & Asset Replacement in T5
B243 Kilo Apron Development	2 Triggers: 2 defined - projects on site	Delivery of Stands 211, 212 and 213 into operational use; Completion of the project - delivery of the final stand (of 4) into operational use	Y	Formerly B098 Kilo taxi lane and stands 234/5; B311 Enabling New Generation of Wide Body Aircraft - T1 Opportunity Stands
B451 Commercial Telecon - Cellular 4G Estate	1 -Trigger defined - project on site	New Cellular platform available for MNO connection (G5)	N	-
B033 Additional Fuel Infrastructure	1 - project pre G3	To be defined	Y	To be defined
B035 Aircraft De-Icing Infrastructure & Process	1 - project pre G3	To be defined	N	-
B097 T1 Baggage Resilience	1 - project pre G3	Out of Gauge and Resilience Recovery	Y	Out of Gauge and Resilience Recovery
B112 Airfield Efficiency and Resilience	1 - project pre G3	To be defined	Y	To be defined
B154 T2A Phase 2 and T2C	1 - project pre G3	To be defined	Y	To be defined
B317 T4 Infrastructure Improvement - HV and Arrivals	1 - project pre G3	To be defined	Y	T4 HV
B329 Automation of the Passenger Journey	1 - project pre G3	To be defined	Y	T2 and T5 Self Boarding Gates; T2, T3 and T5 Self Bag Drop
B037 Airline Moves	N/A	-	Y	Review of EIA IT4 move G3 cost only - Completed
B101 Engineering Asset Replacement - Life Safety Systems	N/A	-	Y	Firemain Replacement
B103 IT Asset Replacement	N/A	-	Y	Data Centre; Radio Network
B238 Western Baggage Upgrade	N/A	-	Y	WBU IFS Review complete
B030 T1 Closure	N/A	-	N	-
B150 Terminal 2 Phase 1 Completion	N/A	-	N	-
B312 Airfield Efficiency and Resilience	N/A	-	N	-
B316 - T3 Refurbishment and Enhancement - Facades, IDL, and Arrivals Concourse	N/A	-	N	-

Heathrow short-term plan

4.6 Portfolio concept list

A number of new ideas have been identified since the start of Q6 for consideration by the Capital Portfolio Board and new business cases have been introduced into the plan during 2017 based on the benefits they would deliver. These include:

- B464 Baggage Improvements
- B465 Baggage IT Resilience
- B466 T5 Fast Track

As part of the preparation for the extensions to Q6, and also for H7, a Future Portfolio pipeline has been developed and this will be developed further with the Airline Community.



4.7 Development and Core Capex, and relationship to airport charges

The CAA's settlement for 2017 included an allowance for capex of £642m (2018 prices). At the time of setting 2018 Aeronautical charges Heathrow anticipated a value of £713m development and core capex for 2017, which was more than the settlement. The difference was adjusted through 2018 Aeronautical charges. The actual development and core capex value for 2017 was £665m. The difference will be incorporated in the Aeronautical charges for 2019.

The cumulative value of Core capital approved by the Capital Portfolio Board by the end of 2017 was £2.79bn.

Heathrow short-term plan

4.8 Q6 portfolio, programme and project process

This methodology recognises that the Portfolio is a balance between strategic benefits, the resources invested, and the business risks. The objectives of the Portfolio are fully aligned to the four priorities for Q6 – passenger experience; Hub capacity and resilience; efficient airline operations and total cost of operation.

While the emphasis has switched in 2016 from Portfolio Definition to Portfolio Delivery, the Portfolio is still reviewed on a regular basis, to ensure the Portfolio is optimised. New ideas and concepts can be introduced in this manner, as well as capturing changes in the existing base plan.

The Q6 portfolio comprises of business cases aligned to the four priorities. These have been allocated to Heathrow’s Strategic Programmes.

The Strategic Programmes approach has continued into Q6 via four main Programmes:

- Passenger Experience
- Airport Resilience
- Asset Management
- Baggage

Programmes provide the structural framework to ensure that the business cases are delivered within defined time, cost and quality parameters. Also they deliver the outputs required to enable the Programme to deliver its agreed outcome and benefits for passengers and airlines.

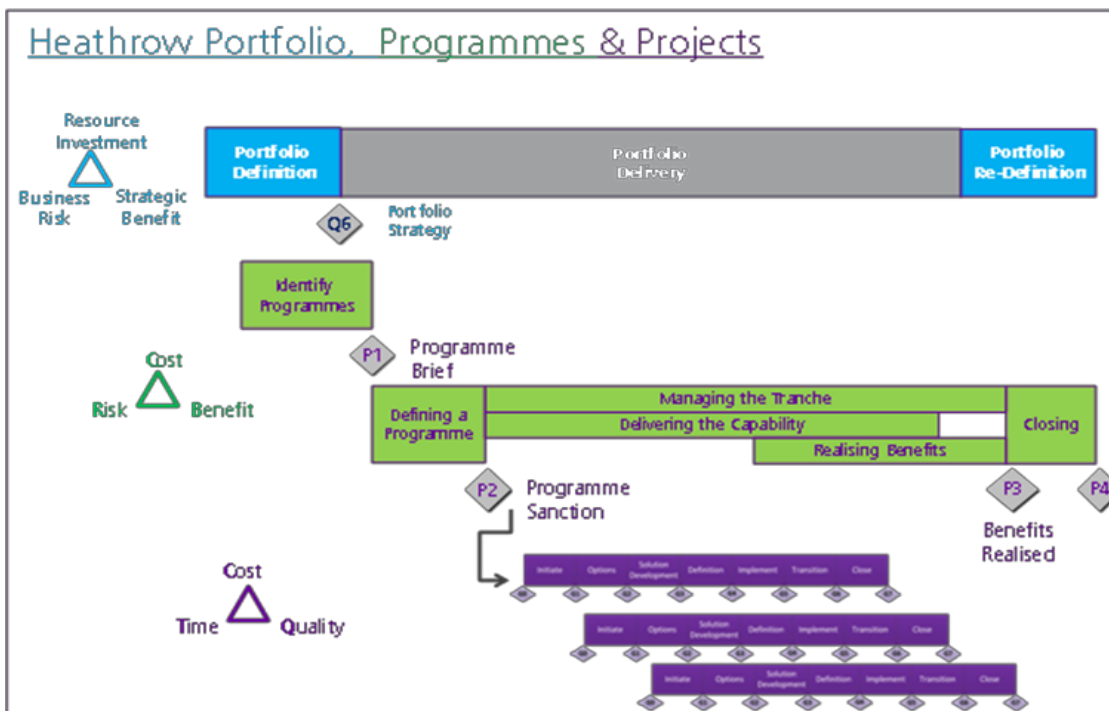


Figure 4.1 Heathrow Portfolio, Programme & Project Process

It is intended that all business cases and projects within should progress at the appropriate pace through the Gateway Lifecycle process. We are reviewing and revising the early stages of the process following learning to date and in readiness for Q6+1.

Heathrow short-term plan

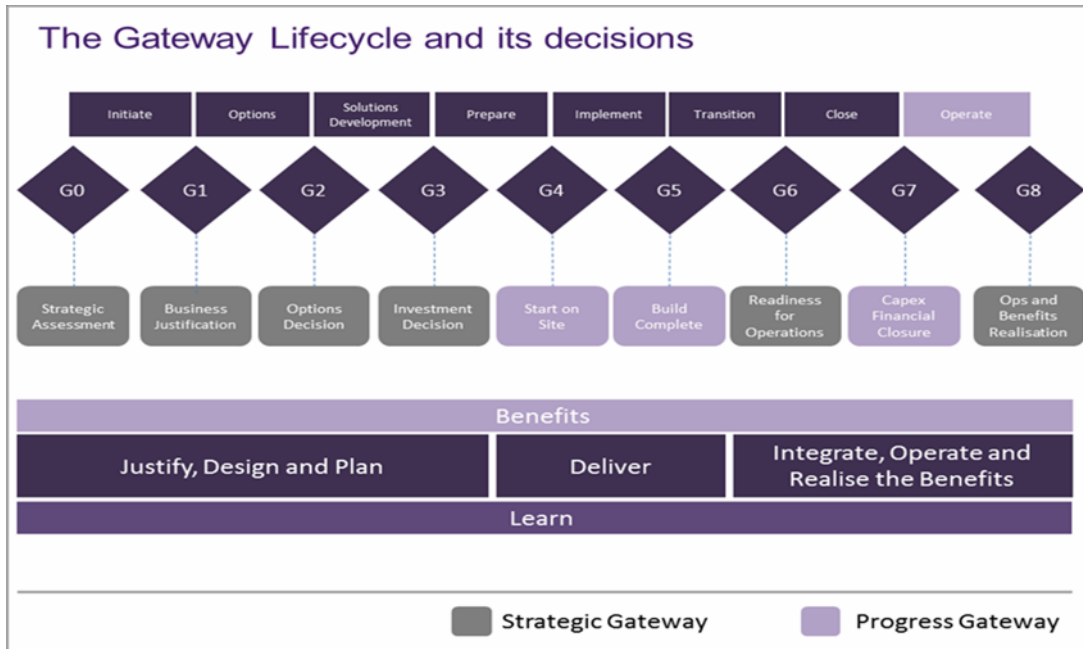


Figure 4.2 Heathrow Gateway Lifecycle

Gateway 0 to Gateway 3 is known as the Development Stage. Development Capital Expenditure (Capex) projects will have a lower definition of scope, schedule, risk and cost than Core Capex projects (post Gateway 3), and may not necessarily have a clearly understood method of delivery.

Gateway 3 is the critical investment decision point, as at this point in the lifecycle, it may be jointly agreed between Heathrow and the Airline Community for the Business Case not to go ahead, as there now may not be a requirement for the investment. In this scenario, any investment money not spent may either be given back to the Airline Community via a rebate, or, the money may be spent on a new Business Case.

In addition;

- It is the transition point at which Capex passes from Development to Core, via the Capital Portfolio Board
- It is the point of transition where the Business Case goes from the Programme, into Delivery. For this to take place there should be confidence in the schedule, cost and risks prior to awarding a contract to the Delivery Integrator
- It is the point at which Regulatory Triggers are set (if required).

Heathrow medium-term plan

5 Heathrow medium-term plan

5.1 H7 Portfolio

Using current CAA timelines, the initial H7 Business Plan (IBP) will be submitted at the end of 2018. Constructive engagement will then follow.

5.2 Heathrow's traffic forecast

Ensuring an accurate forecast is hugely important and benefits the whole Heathrow community, enabling businesses to plan their activities and tailor their resources in accordance with the expected demand.

5.2.1 Settlement traffic forecast

The table below shows the CAA's Q6 forecast of 347.7 million passengers, using the econometric model.

Reg. Year	Total (Millions)	Short Haul (Millions)	Long Haul (Millions)	Q6 Total (Millions)
2014 (Apr - Dec)	55.4	27.0	28.4	347.7
2015	72.0	34.9	37.1	
2016	72.7	34.9	37.8	
2017	73.4	35.0	38.4	
2018	74.2	35.1	39.1	

Table: Passenger forecast (millions) based on CAA's Q6 Settlement

Heathrow's current traffic forecast

The table below shows Heathrow's current traffic forecast, where 2014, 2015, 2016 and 2017 are the actual outturn and the additional year for Q6+1 is included.

Reg. Year	Total (Millions)	Q6 + 2019 Extension Year (Millions)
2014 (Apr - Dec)	57.3	442.4
2015	75.0	
2016	75.7	
2017	78.0	
2018	78.8	
2019	77.7	

*2014, 2015, 2016 and 2017 are actuals, 2018 is an unshocked forecast and 2019 is a shocked forecast

Table: Heathrow's current passenger forecast (millions)

The passenger traffic for the Regulatory year 1st January 2017 - 31st December 2017 was 78.0 million passengers. The latest forecast for the original Q6 period is 364.7 million.

For short-term planning, forecasts do not include shock events, which is consistent with Heathrow's approach to traffic forecasting. Medium or long-term forecasts, in this case 2019 onwards, make an allowance for potential shocks given that historically they have impacted Heathrow's traffic by an average of 1.07%.

Heathrow medium-term plan

5.2.2 Risks and assumptions

Risks

Our forecast values come with some risks; aviation is a cyclical industry, exposed to both the overall business cycle and aviation-specific events. The key assets, namely aircraft, are mobile and deployed in a global context for Heathrow's airlines.

We have reflected this uncertainty in the numbers discussed above. However, this does not account for dramatic changes to core assumptions. These might include:

- Fleet upgrade plans - most of the growth for Q6 comes from airline fleet upgrades. Therefore, there are risks – for example that A380 fleet upgrades could be delayed.
- Economic crises – our forecasts are occurring at a time of great uncertainty in the world economy, and the potential impact of Brexit is still unknown. Growth assumptions and the stability of growth cannot be assumed, with impacts on demand and airline investment decisions.
- Fares - oil price and carbon impacts on fares have the potential to diverge dramatically from what currently appears to be a reasonable range. This can be seen in historical in the oil price.
- Security - forecasts are at risk from major changes in the overall level of security in global aviation and security screening rules.

Assumptions

Airport capacity constraints

This plan assumes that the annual cap of 480,000 ATMs at Heathrow will continue throughout Q6 and that any use of tactical measures will not lead to an increase in capacity, but rather improves resilience of the airport.



Heathrow medium-term plan

5.3 Asset Disposals

The Capital Investment Protocol requires that any asset disposals in the current regulatory period are included in the Strategic Capital Business Plan.

No such asset disposals are currently planned. However, long term leases are being utilised for the development of hotels. The commercial structure for these deals is typically that Heathrow grants a long ground lease of up to 150 years to a third party developer or operator, who funds and operates the hotel. The ground leases would be structured to provide for annual ground rent payments to Heathrow, channelled through the single till.

We have completed such contracts on sites at T2 & T4 with the Arora Group. They plan to operate both hotels – with T4 offering c750 rooms (split between Holiday Inn Express and Crowne Plaza brands) and T2 offering 360 rooms (under Hilton Garden Inn brand). The T4 hotel is targeted to open in Summer 2018 and the T2 Hotel in Q1 2019. On both projects, the Heathrow enabling works (site clearance and service provision) are being undertaken at the developer's cost. Due to the sensitivity of the CTA, the lease granted to Arora on the T2 hotel contains an option to break in HAL's favour should the site be needed after year 30 for operational purposes

A third hotel project near T3 (on the CTA Boiler House site) is much earlier in its project life. We have partnered with the Arora Group to work on the feasibility assessment but work has not yet started on this or planning consent and airline consultation.



Figure 5.3.1 T4 Hotel



Figure 5.3.2 T2 Hotel

Heathrow medium-term plan

5.4 Heathrow 2.0 – Our plan for sustainable growth

A new approach (Heathrow 2.0) was launched in February 2017. Heathrow 2.0 is our strategy for sustainability leadership that takes us beyond simply reducing negative impacts to delivering positive impact in a way that enables others to thrive as we grow. It sets out a series of goals that will guide the future of our business as an expanded Heathrow, and will also guide us in the eight years before we plan to open a new northwest runway. Some of our ambitions for the future are only possible because of the extra revenue and opportunity that expansion creates. For example, many of the goals that are linked to the period after 2025 can only be delivered in the context of our new runway. Of course, we will continue to engage our stakeholders as we roll out Heathrow 2.0, evolving our strategy as we will gain more input and better insight into solving our challenges.

We've structured Heathrow 2.0 around four key stakeholder groups:

- A Great Place to Work is about helping our people fulfil their potential
- A Great Place to Live is about working better with our neighbours to improve their quality of life
- A Thriving Sustainable Economy focuses on creating opportunities for business (including SMEs and sustainable business) to deliver a stronger future for the UK
- A World Worth Travelling is all about working with our industry and regulator to deliver fair and sustainable air travel for future generations to enjoy.

There is a convincing practical and financial business case for sustainability at Heathrow. Our strategy directly supports more efficient operation, the growth of the airport, and the development of our people, which will benefit both the airlines and the passengers we serve. To take advantage of this opportunity – for our passengers and stakeholders as well as our business - we must implement our strategy as efficiently and cost-effectively as possible.

Operational expenditure to support this plan before 2019 has been absorbed within our existing business plan. We will talk to airlines through the appropriate engagement forums regarding affordability and any capital expenditure to support this plan. Over the next few years, we will build in gradual change as we replace assets and renew contracts. On top of this, following extensive stakeholder consultation, we have created a prioritised list of goals and strategies that will bring maximum value as soon as possible.

Looking further ahead, as we develop our business plan for the next regulatory cycle which starts in 2020, we will factor in our sustainability ambitions, and engage the airlines and CAA on those. We are also developing the tools that will help us better quantify the non-financial benefits of investment in sustainability, to help develop a more sophisticated approach to evaluating how and where we can best spend our money.

Sustainability is a big opportunity for Heathrow, and we're already taking steps to fulfil our potential. Heathrow 2.0 explicitly states that we will take a lead on climate change, with an aspiration to make growth from our new runway carbon neutral. We will push forward and work with airlines to reduce noise and we'll work to tackle air pollution, in part by working to increase the number of people travelling by public and sustainable transport. We'll partner with the other businesses that operate here to deliver a best-in-class, responsible and low-carbon supply chain. We'll help thousands of people begin and build their careers – near Heathrow and across the country. And we'll ensure that as we grow, we create opportunities for sustainable businesses to deliver a stronger future for the UK.

Heathrow long-term plan

6 Heathrow long-term plan

6.1 Heathrow Expansion

Our expansion plans remain on track to deliver a once-in-a-generation boost for Britain's economy in a way that is affordable, financeable and sustainable.

On 17 January 2018, Heathrow launched a 10-week consultation on options for expansion which will run until 28 March. The consultation is a major milestone in the delivery of an expanded Heathrow and is expected to be one of the largest consultations ever in the UK – including 40 events across areas close to Heathrow. The consultation is composed of two parts – the first relating to the physical options needed to deliver and operate an expanded Heathrow and the second on the design principles for the new airspace required to operate an expanded Heathrow. It is an opportunity for the public to help shape at an early stage how the future expanded airport will look and operate. The feedback from this consultation will help Heathrow determine a preferred masterplan which will be presented to the public for a second, statutory consultation in 2019 after which Heathrow will prepare a final planning application known as a Development Consent Order which is expected to be submitted to the Planning Inspectorate in 2020.



Heathrow long-term plan

6.2 Cargo

Heathrow's role in the cargo operation is to provide infrastructure that enables airlines and cargo handling companies to operate efficiently and competitively. Cargo facilities such as the Customs' approved Transit Sheds and other cargo warehouses are not owned by Heathrow.

In 2015 Heathrow launched its cargo strategy which sets the 2030 ambition of being Europe's leading large airport for cargo. The strategy was developed over a 12-month period and involved extensive engagement with the cargo industry locally, nationally and internationally. All stakeholders wanted Heathrow to be the best it could be and identified a range of measures and improvements they wanted in order to grow their business and improve their service. Through a number of focus groups, these measures and improvements were prioritised by industry and Heathrow commenced work on the high/medium priorities as part of Q6 Business Case 062 which sits in the Airport Resilience Programme.

We recognise the importance of cargo to our airlines and will work closely with our business partners – in particular the cargo forwarders and handlers – to make Heathrow a credible airport for cargo again. We take responsibility for our airport and whilst we're neither landlord of the Heathrow Cargo Centre nor provide (or contract for) cargo services, we will play our part.

The volume of cargo moving through Heathrow will continue to grow and we need to ensure there are sufficient facilities to handle that growth so will engage Airport Property Partnership (APP) alongside off-airport commercial property companies to ensure the airport has the capacity it needs.

Heathrow's cargo community have been very supportive during the strategy development and helped to determine the factors that are most important to our stakeholders. The value of cargo to our stakeholders is abundantly clear and Heathrow will continue to engage with the cargo and airline communities to refine plans to address their needs.



Heathrow long-term plan

6.3 Planning policy

The national policy position on airports and aviation is found in two key documents. The first is the 2013 Aviation Policy Framework (APF) which is the adopted Government position on aviation development. This is focused on operational improvements that make best use of existing capacity, and looks to improve surface access to airports, particularly by rail. The APF will be superseded in 2018 with a new Aviation Strategy which will update the Government's position on aviation development.

The second key national document is the draft Airports National Policy Statement (NPS) which, once adopted, will establish the decision-making framework for the expansion of Heathrow. The draft Airports NPS follows the Government's endorsement of the Airports Commission recommendation in favour of additional runway capacity in the south east of England being located at Heathrow. The final version of the Airports NPS is due for adoption in 2018.

At the regional level, the London Plan provides the relevant planning policy framework for London and must be in general conformity with national policy. Consultation on the new London Plan is currently underway until the 3rd of March 2018.

At the local level, planning policies for Heathrow are contained within the London Borough of Hillingdon Local Plan, which must also conform to the higher tier regional and national policies.

Local and regional planning policy specific to Heathrow is generally supportive of development which is contained within the limits of growth set down by Government in its decision to permit Terminal 5, and within the defined airport boundary.



Heathrow long-term plan

6.4 Airspace

The success of Heathrow's operation depends on the airport's resilience and capacity. This applies across all parts of the passenger journey, from the terminals, over the airfield, and into the airspace. To this end the airport is working with its industry partners (NATS, the Airline Community, CAA, and Eurocontrol) on major UK wide projects such as the Future Airspace Strategy (FAS). These projects are working to ensure the airport has sufficient airspace capacity to enable the airport to cope with future demand as well as crisis events while also improving the punctuality of our flights and reducing emissions and noise. These projects will draw on the work being carried out in the Single European Sky ATM Research programme (SESAR) and look to deploy the projects being validated in this Europe-wide project.

The aims of the airspace modernisation project are to:

- Improve capability and resilience by increasing operational 'headroom'
- Seek to reduce the environmental impact of Heathrow's operation
- Improve performance (we will work to improve punctuality, with 80% of flights arriving or departing within 15 minutes of their scheduled time).

These aims will serve to support Heathrow's role as the UK's Hub and its function as a critical lynchpin of the entire Air Traffic Management (ATM) network. Heathrow's performance has a material and significant impact on network performance, for example, the implementation of A-CDM here was widely recognised as fundamental to the ATM performance at a pan-European level.

Progress in these areas will be accomplished in collaboration with NATS, the CAA, and the Airline Community through advances in both policy and technology to ensure better tactical decisions are made and resources are used more efficiently. This includes:

- The real-time measurement and collaborative management of performance
- Addressing the lack of flexibility in the runway infrastructure
- Improving out-dated arrival and departure procedures through airspace change processes and new technology (e.g. independent parallel approaches).

Through such measures we aim to reduce the level of Air Traffic Flow Management (ATFM) delay at Heathrow usually attributable to weather disruption such as strong winds or low visibility. For example, one of the key projects out of SESAR that has already been delivered is Time Based Separations (TBS). The Enhanced Instrument Landing System (eILS) project is another example of where Heathrow is seeking to reduce delay related to weather.

This work is vital to support the airport's vision to be 'a resilient airport with the capability to meet demand and recover quickly' while maintaining Heathrow's high levels of operational intensity and decreasing susceptibility to mass disruption or 'red days'. In particular the work will ensure that the increase in wide-bodied aircraft, expected at Heathrow, can be accommodated at the airport and that the short-medium term recommendations of the Airport's Commission on Airport Capacity are implemented. You can see the list of Business Cases supporting this vision in the Airport Resilience Programme, in Section 4.3.2.

These airspace improvements aim to improve Heathrow's operation and will therefore serve to improve the passenger experience by reducing delays as well as by reducing the 'buffers' airlines place in the schedules to compensate for anticipated delays.

Appendix

7 Appendix – Equitable treatment metrics

Comparison of facilities by terminal

The table below sets out metrics related to facilities to allow airlines to make comparisons. Any potential investment decision to make facilities more equitable must also be subject to the usual business case test; including business benefits, financial appraisal, asset life, masterplan progress, cash constraints and agreed investment profiles.

		Measurement	Definition	Terminal 2	Terminal 3	Terminal 4	Terminal 5	Notes	
1.0	Traffic	1.1	MPPA	Million Passengers Per Annum (MPPA) - defined as quantum of total passengers served in each terminal per annum. Calculation based on an annual terminal throughput for last calendar year	17.8	18.7	9.2	32.3	Data from BOSS 2017 - General Aviation excluded (Flight types 1,3 used).
		1.2	ATMPA	Air Traffic Movements (ATMs) per annum - defined as quantum of aircraft movements in each terminal per annum. Calculation based on air traffic movements in each terminal for last calendar year	118,435	91,326	48,137	213,173	Data from BOSS 2017 - General Aviation excluded (Flight types 1,3 used).
		1.3	Peak hour departing flow - all pax	Peak Hour Passengers - number of passengers (including transfer passengers) served in each terminal counted as 30th peak hour (clock hour) of the last calendar year	2,801 (ATD) 2,443 (STD)	3,225 (ATD) 2,827 (STD)	2,249 (ATD) 2,029 (STD)	4,697 (ATD) 4,383 (STD)	Data from BOSS 2017 - General Aviation excluded (Flight types 1,3 used). Clock Hour ATD and STD figures used for 2017. Stand On/Off time used as ATD.

Appendix

		Measurement		Definition	Terminal 2	Terminal 3	Terminal 4	Terminal 5	Notes
2.0	Terminal area - total	2.1	Terminal, campus GFA (sqm)	<p>Terminal, campus GFA (Gross Flow Area) - floor area inside the building envelope, including the external walls, and excluding the roof.</p> <p>For terminal or campus it is calculated as a sum of GFAs for all levels and all piers and satellites.</p> <p>In case, there is an external building which process either passengers or baggage for particular terminal, but it is not a part of main terminal or satellite structure, then area of this building should be added to main terminal / campus area.</p>	297,900	222,760	132,400	526,000	<p>T3: GFA reduced due to closure of Connections facility & surrounding footprint</p> <p>Rounded to nearest 100m2. T2 includes T2A & T2B (walkway included), T5 includes T5A. B & C (T5 inclusive of escalator area under redevelopment)</p>
		3.0	Passenger Infrastructure	3.1	Number of check-in desks & bag drops	For each terminal sum of all check-in desks and bag drops which have connection to baggage system.	116	213	129
3.2	Number of self-service kiosks	For each terminal sum of all self-service units (either check-in or transfer)		91	100	56	74	T4 figure includes 4 self-service kiosks which are not in operation T5 desks managed by BA - unknown	
3.3	Number of security lanes (machines)	For each terminal sum of all security lanes (departure and transfer) which are used for passengers processing. Security machines dedicated for staff processing are not included.		31	29	22	37	Data from OPM.	
3.4	Number of ticket desks (total existing)			44	58	64	26	Data from Property Portfolio Managers, excludes 'Check in desks' that are being used as 'Ticketing/Assistance/ Upgrade desks'. Counts individual serving positions (landside only). T4 includes untenanted ticket desks. T3 data based on January 2018 - removal of hammerhead desks may impact ticket desks.	

Appendix

		Measurement	Definition	Terminal 2	Terminal 3	Terminal 4	Terminal 5	Notes	
3.0	Passenger Infrastructure	3.5	Number of immigration lanes + ACS	For each terminal sum of all immigration lanes and e-Gates (arrivals and transfer) which are used for passenger processing.	59	57	48	68	T5 --> Sourced from LHR database. Includes 5 eGates, 6 desks and 1 referral desks from connections redesign.
		3.6	Published intra-terminal MCT	Published intra-terminal MCT for each terminal. If there is a different MCT for different flows, then separate MCTs should be indicated for each flow.	60mins	60mins	60mins	60mins	MCT reflects both passenger and baggage processes. Note the T3 MCT changed to 60min since T3IB became functional.
		3.7	Distance to walk unaided from IDL to furthest aircraft gate (m)	Unaided walking distance measured from central security search exit to the furthest aircraft gate either in terminal building or satellite. All aids such as sidewalks, elevators, escalators, people mover systems are excluded. Distance for each terminal should be presented on drawings.	915	855	730	450	Rounded to nearest 5m. T5 includes TTS in calculation.
		3.8	Number of CIP Lounges available (total)		8	11	7	6	These numbers include the actuals / demand for both airline and independent lounges in departures and arrivals. The lounges in demand numbers include lounges that are currently under construction but have yet to open.
		3.9	Number of CIP Lounges requested		2	2	0	1	

Appendix

		Measurement		Definition	Terminal 2	Terminal 3	Terminal 4	Terminal 5	Notes
4.0	Baggage Infrastructure	4.1	Length of reclaim belts	For each terminal sum of re-claim belts' length (in meters) which is presentable to passengers; length of feeds to the belts is excluded; both domestic and international.	686	699	712	792	T5 increased to include extensions to belts 6 and 7
		4.2	Number of MUPs	Number of MUPs (make-up) positions in each baggage hall (both departures and transfer)	214	142	129	345	Only currently usable MUPs have been included, T2 uses T1 facilities
		4.3	ADP (avg time to input belt - arrivals)	Arrivals Delivery Performance for local baggage - percentage of flights delivered from chocks to docks within: 35 mins for small-size aircrafts, 45 mins for medium and 50 mins for large & A380s	LB ADP 89%	LB ADP 87%	LB ADP 80%	LB ADP 78%	Figures are 2017 actual performance metrics. Source: Merlin performance metrics for 2017 - Sarah Charsley
		4.4	ADP (avg time to input belt - transfers)	Arrivals Delivery Performance for Short Connect Transfer baggage – percentage of bags with 2 hours or less to connect delivered within 25mins chocks to docks	87% in 25mins	70% in 25mins	75% in 25mins	67% in 25mins	Figures are 2017 actual performance metrics. Source: Merlin performance metrics for 2017 - Sarah Charsley
5.0	Aircraft Infrastructure	5.1	Number of aircraft stands (centrelines)	For each terminal / campus sum of aircraft stands (both contact and remote) which are adjacent to terminal / campus area. MARS'ed (Multi Aircraft Ramp System) stands should be counted as one large stand	36	43	34	60	Declared physical stand supply for Summer 2018
		5.2	Number of pier served aircraft stands (centrelines)	For each terminal / pier / satellite sum of aircraft stands which are contact / pier served. MARS'ed (Multi Aircraft Ramp System) stands should be counted as one large stand.	28	28	21	45	Physical stand supply for Summer 2018

Appendix

		Measurement	Definition	Terminal 2	Terminal 3	Terminal 4	Terminal 5	Notes	
6.0	Terminal access	6.1	Number of car park spaces	Number of car park spaces in a car park which is adjacent and linked to each terminal.	1,481	1,564	885	3,469	Car park capacities 2018 - Short stay
		6.2	Walking distance (m) to check-in area from underground	For each terminal unaided walking distance from the platform to the closest entrance to the terminal building. All aids such as sidewalks, elevators, escalators, people mover systems are excluded. Distance for each terminal should be presented on drawings.	565	405	45	140	Rounded to nearest 5m
		6.3	Walking distance (m) to check-in area from HEX	For each terminal unaided walking distance from the platform to the closest entrance to the terminal building. All aids such as sidewalks, elevators, escalators, people mover systems are excluded. Distance for each terminal should be presented on drawings	310	185	120	80	Rounded to nearest 5m
		6.4	Walking distance (m) to check-in area from public bus	For each terminal unaided walking distance from the a bus stop to the closest entrance to the terminal building. All aids such as sidewalks, elevators, escalators, people mover systems are excluded. Distance for each terminal should be presented on drawings.	370	500	125	165	Rounded to nearest 5m

