Economic regulation of Heathrow: working paper on efficiency of HAL's capital expenditure during Q6 (CAP1964)

Heathrow's response CAA-H7-402

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Executive Summary

- 1. We welcome the CAA's working paper on the efficiency of Heathrow's capital expenditure during Q6, which draws on the work carried out by Arcadis and the Independent Fund Surveyor (IFS).
- 2. We support the CAA in its view that there is a scale of judgement that must be applied by the CAA to assess the level of efficiency across the Q6 portfolio of £3.2bn (in 2019 prices), which has undergone extensive airline and IFS scrutiny through the agreed governance framework. It is a testament to the airline governance process that 720 projects were agreed to proceed and its collective cost coming within 0.5%1 against budget.
- 3. We reject the assertion by the CAA that it considers the ex-post review to be "challenging and controversial" and this forms part of the justification to move away from the current ex-post basis in H7.
- 4. Conversely, the capital portfolio during Q6 was constantly subject to expert review throughout the period. We make clear in our response to CAP1951 that the IFS regularly reviews cost efficiency, on time delivery and outcomes of Heathrow's capital portfolio. This allows a constant review through the period which is part of the agreed governance framework with stakeholders. This agreed process provides a substantial body of evidence, which allows the CAA to make its ex-post assessment.
- 5. We are concerned that the CAA has moved from the established process to assess capital efficiency that was agreed at the start of Q6, and is now introducing an additional layer to the framework, the Demonstrably Inefficient or Wasteful expenditure (DIWE).
- 6. Heathrow welcomes the CAA's view that in its sampled projects of T3IB and T5WBU there is nothing to warrant that there is any inefficiency. Nor is there any evidence of inefficiency across the non-IFS projects reviewed by Arcadis. We are surprised and alarmed that the CAA is requesting further information on the Main tunnel, given that the real time reporting from the IFS and the Arcadis review did not find any inefficiencies. It is therefore clear this project was properly and efficiently managed.
- 7. The CAA is correct in its statement that projects cannot be judged with the benefit of hindsight. An approach which is not consistent with this is likely to lead to adverse consequences for the delivery of consumer benefits, such as diminished innovation and collaboration. However we reject the CAA's view that the Cargo tunnel may have inefficiency of up to £12.7 million. All stakeholders including Heathrow recognise this has been a challenging and complex project. There is no evidence that the actions of Heathrow may have directly attributed to wasted spend or lost benefits. Heathrow has managed this project proactively with the best information available at that time. Using the benefit of hindsight to cross examine decisions that were consulted with stakeholders and which were right for that moment is misplaced.
- 8. We provide detailed response to each sampled project to demonstrate that the projects were delivered efficiently and based on decisions that were right at that moment in time. The sections of our response follow the structure of the CAA's document for ease of reading.

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¹ excluding the tunnels, HBS and T3IB projects

Assessing the sample projects for inefficiency

- 9. We are pleased to note that, on the sample of non-IFS projects selected for review by Arcadis, it did not identify any areas considered appropriate for classifying as Inefficient. We welcome the opportunity to consider the wider performance of the overall Portfolio as afforded to us by the questions raised from the DfT study in the Broader Issues section.
- 10. The wider performance of the Portfolio has been previously presented to the CAA, Arcadis, and the airline community.

Framework for assessing whether projects involved significant inefficiency

- 11. Firstly, we disagree with the inefficiently that the CAA has highlighted. Heathrow is of the firm view that all projects were delivered efficiently. Around 720 projects passed the Gateway 3 process with a total value of £2.9 billion. These projects were completed within 0.5%² to budget. This is clear evidence to demonstrate the efficient delivery and the project management and stakeholder engagement Heathrow has followed during Q6.
- 12. Moreover, in its document the CAA sets out the process it has used to assess Heathrow's efficiency. While much of this is consistent with the Q6 framework the CAA has chosen to retrospectively add an additional layer of requirements.
- 13. During the Q6 price control process, the Capital Efficiency Handbook was confirmed as the source for detail on the capex governance framework and associated processes. The CAA's initial proposals document (CAP1027) notes that "An extensive handbook has been developed to set out how efficiency will be delivered in Q6 capital projects." This handbook was then codified into Part C of the Licence, where governance arrangements refer to the "arrangements set out in the Q6 Capital Efficiency Handbook".
- 14. Whilst the CAA notes the importance of the Capital Efficiency Handbook in assessing whether projects involved significant efficiencies, it is clear that the use of the Demonstrably Inefficient or Wasteful Expenditure (DIWE) framework is an additional layer on top of the established approach.
- 15. In CAP1964, the CAA notes that it has considered "good practice in assessing efficiency across the regulated sectors" in developing its approach and the inclusion of DIWE. However the CAA does not appear to demonstrate the good regulatory practice of consistency. With this in mind, we are concerned that the CAA is departing from fulfilling its statutory duties that "regulatory activities should be carried out in a way which is transparent, accountable, proportionate and consistent" 5
- 16. The CAA's draft policy statement may be appropriate to implement for the assessment of NERL's capital efficiency as part of its RP3 framework, and may well be appropriate to implement for Heathrow's H7 framework. But retrospective application to Heathrow's Q6 framework is not consistent or transparent. If used, the DIWE framework should only be applied from a time when it would be reasonable for Heathrow to have complied.
- 17. The CAA's document sets out where tests are implicitly or explicitly shared by the two frameworks.⁶ Examples of DIWE criteria include:

² excluding the tunnels, HBS and T3IB projects

³ P.41 CAP1027

⁴ P.19 CAP1964

⁵ CAA2012

⁶ CAP1964, Table 2

- "6. the extent to which any expenditure was increased by any material error or mistake on the part of HAL and/or its third-party contractors."
- "7. the extent to which any expenditure was increased by any avoidable delay on the part of HAL and/or its third-party contractors."
- "8. the extent to which any expenditure was proportionate to the outputs which that expenditure was intended to, and/or did, deliver."
- 18. As there have not been agreed definitions of key words such as "material", "avoidable" and "proportionate", which are all considered by the CAA as implicit in the Capital Efficiency Handbook, it would be inappropriate for Heathrow to be assessed against them. It also goes against better regulation principles of consistency and transparency.
- 19. For the reasons above we do not support the inclusion of this retrospectively fitted test for the assessment of the efficiency of Heathrow's capital expenditure during Q6 nor is it evidenced based.

Cargo tunnel

- 20. The cargo tunnel has been a challenging project but Heathrow has managed the project proactively with the best information available at the time. There is no clear evidence that the actions of Heathrow may have directly attributed to wasted spend or lost benefits.
- 21. Arcadis noted that the project was fit to start, on the balance of the information reviewed. With these major operational assets there will always be elements of asset condition that are unknown until the project commences on site. To do full invasive surveys and investigations in advance in some areas would in effect lead to a major additional project to assess the condition of the tunnel in detail. This would allow a better cost estimate, however the need to access the tunnel twice would result in substantially higher overall project costs and greater consumer detriment arising from additional time taken.
- 22. Heathrow took the decision to separate the cargo tunnel from the main tunnel after the learnings accumulated on the main tunnel. This was a positive management decision and likely avoided additional cost increases. After reviewing the supplied materials from Heathrow and the IFS Arcadis notes 'the removal of scope...and change in form of contract...was the right thing to do⁷".
- 23. The suggested areas of inefficiency are made up of the Surveys, Design and Planning spend of £12.25 million and the Standback Review of £0.49 million. These were demonstrable positive measures taken by Heathrow to manage the project and rectify the situation. The £12.25 million includes £0.75 million of asbestos-related removal and assurance costs that should be considered separately from the other survey, design and planning spend.
- 24. As noted by Arcadis "The value, if any, that has and can in the future be gained from the work carried out was not readily available at the time of the Arcadis review. This would require a detailed breakdown of the figures identifying those works which have been taken forward to provide a benefit against those works now considered to be abortive. Until such a stage has been reached it would not be possible to develop any meaningful assessment of the quantum of any inefficiency".⁸
- 25. The project is going through a pseudo gateway process at the moment and one of the success criteria is to enable the "Reuse of existing materials and design where appropriate." A general

⁷ CAP1964A 4.4.7.1 para 10

⁸ CAP1964A 4.4.7.3 final para

- principle is that the existing design will be retained unless it is determined that it would diminish the benefit of the updated DfMA delivery strategy.
- 26. On the Standback Review element Arcadis appear to be applying hindsight "if the project was being delivered efficiently the need to stop the project and undertake the stand back review would not have been necessary and this could also be included in the pot for inefficient spend". Heathrow had to manage the issues as they developed and did not have the benefit of hindsight.
- 27. On the factors identified by the CAA c); "given that the project has stalled and required a fresh review, whether HAL ought to have been able to control its expenditure through having and applying appropriate resources" this is what Heathrow did. We proactively responded to the evolving situation and undertook measures to control the overall costs of the scheme.
- 28. On e) "unnecessary duplication" the works undertaken were required to establish an updated position. The design and survey works in that period are still a factor in the ongoing work.
- 29. With regard to f); "mistakes" the reviews have found that Heathrow acted appropriately in the management of the project.
- 30. Finally h) and I) the delivery of proportionate outputs to customers and consumers. The key output is the continued use of the already existing Cargo tunnel, rather than a step change with the delivery of a brand new facility or additional capability. Therefore there is minimal impact.

Main tunnel

- 31. We are surprised that the CAA has called for further evidence and views on the main tunnel given that the real time reporting from the IFS and the Arcadis review did not find any inefficiencies. As is apparent from the Appendix in the Arcadis report, a great deal of evidence has already been supplied with at least 18 Heathrow documents and 50 IFS reports already submitted. We are therefore concerned that the CAA's proposals regarding potential inefficiency in the delivery of this project are unevidenced and that the process it has taken to get to this initial conclusion is not transparent.
- 32. It is noted that Arcadis reviewed the consistency of tender amounts from all four tenders and that the sums received indicated a common understanding and that it provided assurance of the completeness of the tenderers. The process of procuring and selecting the contractor was identified as robust and acceptable.
- 33. The costs have increased. Arcadis questioned the appropriateness of the risk provision. Heathrow allowed what it determined was the appropriate amount at the time. We have not taken the approach of putting a standalone large provision on every project as this in all likelihood will not deliver benefits for the consumer. The approach in Q6 has been to manage risk collectively across the portfolio with savings on some projects expected to cover off increases on other projects. The performance on the tunnel has outweighed the savings on others but to put in such a large risk provision is a view taken with hindsight.
- 34. Arcadis note the use of a new contractor to the airport. The project was competitively tendered and was taking place landside therefore more comparable to worksites elsewhere. It was the winning tender in the round although a background consideration was that it would be beneficial to bring in more competition to the airport. Indeed at times the airline community have

⁹ CAP1964 4.4.7.3 p56

- commented on the restricted number of contractors that Heathrow utilised with concerns over lack of competition.
- 35. On the DIWE criteria c) cost overrun, the CAA has proposed that applying the cost overrun criterion is relevant. Cost overruns are not evidence of inefficiency, the efficient cost to deliver a particular scheme is not always known in advance and under estimation for a specific scheme does not mean that accurate estimation would have resulted in different outturn costs.
- 36. On e) duplication, no unnecessary duplication of effort was identified by any of the consultant reviews. Where this has occurred such as the fire main system on the cargo tunnel it has been flagged and identified as part of normal process.
- 37. On f) mistakes, the ongoing review by the IFS identified that Heathrow managed the contract and took the appropriate measures.
- 38. On h) and i) outputs, the project has been delayed. However there has been no loss to consumers. The project was about relifeing the existing access route into the central terminal area and this route has continued to be available to support passenger and colleague journeys. Heathrow should not be penalised for acting proactively when the project performance started to cause concern. These proactive actions minimised the amount of capital incurred on the project.
- 39. The judgement from Arcadis is clear "In summary Arcadis considers the project to have been properly and efficiently managed during the period post the Deed of Amendment and HAL did not contribute to any capital inefficiency." Therefore we see no evidence to suggest otherwise.

T3IB and T5WBU

40. We welcome the finding that the issues with these two projects were not sufficient for any finding of inefficiency. Furthermore it is recognised that the projects were complex and challenging and involved innovative technology. It would not be in the interests of consumers to stifle innovation, by making a finding against this project. Indeed the benefits of these projects can now be seen in the improved numbers of bags travelling with passengers. The success in overcoming the complexity and challenges was recognised by the Association of Project Management in the 2015/16 awards.

Non IFS projects

- 41. We welcome the finding from Arcadis that all six projects were delivered efficiently.
- 42. Arcadis, in their analysis, identified two common issues, on which we have the following comments.
- 43. On the apparent lack of clarity of scope at the point of time Heathrow entered into contract with its contractors, we would note that there is a balance that needs to be struck. Sometimes the drivers for the project are such that the decision needs to be made with some items still undetermined one example being B066 Energy and Utilities Management. This was a project to alleviate safety concerns around the High Temperature Hot Water System. The works could only be undertaken during summer months when the terminal heating was not required. If the opportunity had not been taken during summer 2015 the risks would have remained live for another 12 months and to the detriment of consumers. Arcadis note 'the project was

¹⁰¹⁰ CAP1964A 4.4.7.1 Final para

- commenced, when levels of risk and uncertainty was high, due to safety concerns. Despite this it was delivered under budget and in accordance with the planned schedule".¹¹
- 44. Another example of an external factor dictating the entry into contract was on the Standard 3 Hold baggage screening project where the critical success factor was complying with the DfT dates. This was the key consideration.
- 45. The differing driving pressure of each individual project is covered in the Capital Efficiency handbook where under section 16 it notes "The juxta-positioning of the influence of these drivers will vary depending on the business case. An operational project need for compliance or safety may have time as an overriding driver; for the construction of a new stand cost may be more prominent".
- 46. Another consideration is the avoidance of duplication of works. In a number of locations the exact nature and condition of the asset only becomes apparent once works commence. Intrusive surveys could be done in advance but in many cases this would mean in reality having to do the works twice once for the survey and again when construction commences. One such example was the quantum of services on the B101 T3 Pier 7 main Roof Works. As Arcadis note "After being shown photographic records of the area Arcadis agrees that carrying out an intrusive survey would have been very difficult". 12
- 47. The second issue Arcadis noted was the use of an inappropriate contract model. Arcadis took the view that the contract did not incentivise contractors to the degree required and other contract forms may have been better suited. Heathrow, along with other major infrastructure clients, is an advocate of the NEC contracts forms as they support the application of good project management principles and practices and stimulate good working relationship between the two parties to the contract. Throughout Q6 Heathrow has taken great pains to select the right commercial option for not only the specific project but also the phase of the project.
- 48. We note the CAA's concerns about the apparent existence of common issues. With regard to the cost overruns this has been limited in the main to the more complex projects. Heathrow has not employed the approach of 'not to be exceeded' P95 fixed lump sum type provisions as that would be inefficient and not in the interests of consumers. We have priced each project at a P50 level. Further details on the cost performance is covered in the next section Broader Issues.
- 49. On material delays to projects the ones with the largest impact were asset replacement projects where the key benefit was risk avoidance due to unplanned availability. This did not have a material impact on the consumer.
- 50. The schedule performance of the majority of the rest of the portfolio was as predicted. The summary of the trigger performance clearly shows the bulk of triggers have been completed on time. These typically complex projects were selected for triggers as they were key for delivery to the airlines and in the interest of consumer. Therefore there is no compelling evidence that project benefits are delivered later than initially planned.

¹¹ CAP1964A 4.5.3 Conclusion 1st para.

¹² CAP1964A 4.6.2 Para 3.

Broader issues

The use of a sample of projects

- 51. We agree with the approach that extrapolation from the small number of projects across the whole entirety of the capital programme would not be appropriate for the reasons identified the projects selected were those which had experienced some challenges. Arcadis did not identify any inefficiency in the sample of non-IFS projects.
- 52. Further evidence of the efficient delivery of the Portfolio was provided during the recent Constructive Engagement (CE) sessions where it was demonstrated that the majority of projects were delivered very close to the G3 value. The analysis, excluding the tunnels, HBS and T3IB projects is represented below.

Table 1

Project Spend Category	No. of projects over budget	No. of projects under budget	Total No. of projects	G3 total (£m)	EAC total (£m)	Variance - G3 vs EAC (£m)	Overspend (%)
>£50m	4	1	5	507	515	8	2
£10-50m	23	42	65	1105	1070	-35	-3
£5-10m	21	53	74	514	508	-6	-1
£2-5m	51	113	164	551	553	3	0
<£2m	127	285	412	232	251	19	8
Total	226	494	720	2908	2897	-11	0

- 53. This performance was the intent of setting the P50 cost at G3 when the Development and Core approach was developed for Q6 and demonstrates the current approach works.
- 54. Furthermore looking at the ability to estimate costs is one narrow analysis of the performance of the portfolio over the period. A wider representation was represented in the End of Q presentation given to the CAA, Arcadis and the airline community. As described this portfolio of work was quite different from previous Quinquennia where there was a mega project T5, T2. The bulk of work in Q6 was delivered in live operational environments which were running at full capacity with record passenger volumes.
- 55. A key consideration was delivering the work safely and the team set new records in increasing the numbers of safe days worked without incident. Of importance to consumers was the reduction in incidents which could impact the passenger journey be it service strikes, fires or fire alarm activations. The plan also contained many new innovative solutions and resulted in record numbers of passengers and record levels of passenger satisfaction.

Capital overhead costs

56. As noted the topic was subject to discussion during the CE process and will be a topic for ongoing discussion over the coming months, as both the Portfolio and the Capital Incentives develop.

Wider Issues

57. The Transport Study referenced is a relevant way in which to consider capital intensive industries and there is a lot of commonality between airports, road and rail. We have always looked for ways to boost productivity, drive efficiency and therefore deliver greater benefits to the consumer. The overall position of Q6 and the outputs evidenced show there has been great performance across the portfolio utilising industry best practise.

- 58. In terms of the relevant questions the first one listed is "Did HAL undertake appropriate project cost optioneering, judging choices on whole life cycle costs."
- 59. Optioneering is part of the gateway process and this does indeed take into account whole life cycle costs. One such example was Utilities Demand Management where tranches of works were considered, with the primary driver being that there was a positive business case contribution in that the capital expended would result in knock on opex reductions. This example was highlighted in the recent CE workstream where benefits were covered.
- 60. The overall costs of asset replacement in a whole life cycle were considered and developed during the period. The intervention points for airfield pavements were considered with regard to the overall lifecycle. This approach was to determine the optimum intervention points when considering capex, opex and service. As a link back to the examples in the DfT document, the paper notes at the end that this approach is comparable to that used on Highways. Furthermore it is consistent with ISO 55001 Asset Management to which Heathrow is accredited.
- 61. Another example of how the consideration of the whole life cycle where innovation is deployed is maintaining airside roads. Previously the short possession times meant that a quick setting concrete mix was used which impacted on the overall lifespan. The new solution of precast slabs delivers both a short period of outage as well as a longer life.
- 62. Relevant question "Is there evidence of improved cost/schedule estimating over time?"
- 63. As already covered the overall cost and schedule performance has been very good over the Portfolio. As highlighted above, with one or two exceptions, the project costs have come in at or around the G3 values.
- 64. The vast majority of trigger projects have delivered on time.
- 65. This performance has come about through continuous feedback and learning with regards to the processes. There was been joint work with our suppliers and the IFS. This is summarised in the IFS End of regulatory Period report for the CAA.

Table 2

Efficiency

- Infrastructure Benchmarking assessments undertaken by both HAL (via Turner & Townsend, the Cost & Commercial Consultants) and the IFS throughout Q6 (Prelims, Design Costs, Cost Estimating Practice, IT projects etc) via Benchmarking Sub-Group has led to increased consistency and certainty in estimating of costs.
- Various presentations made to the IFS Working Group (IFSWG) by HAL Functional leads on areas of improvements collectively identified.
- 66. The Orange Partnership (who are Chartered Accountants that provide cost assurance on major open book contracts) undertook for Heathrow on how the Automation programme was being collaboratively delivered across two of our suppliers Mace and Balfour Beatty. The Orange partnership were asked to validate the work that had been done. They found the works had improved the time taken to deliver the works, better engagement with the second tier suppliers, less operational disruption in the terminals, and a better understanding of the cost drivers from which to base further work. This learning has been previously shared with the IFS.

- 67. Relevant guestion "Did HAL do enough to set up projects be successful from the start?"
- 68. As noted in the DfT study "It is critical to clarify requirements and objectives at the outset of a project to ensure successful outcomes, maintain control of costs and minimise design changes has been highlighted by past experiences". Heathrow has enhanced its procedures for the early stages of projects during Q6, and in particular to respond to the findings in the CEPA report in the middle of Q6. A much more rigorous portfolio entry process (the G0 gateway) was introduced. This involved investment opportunities being presented on a monthly basis to the Future Portfolio Group (a sub-group of the Capital Portfolio Board) in order to obtain agreement to progress the development of a business case (G1). This collaborative process with the airline community required the joint agreement on requirement objectives and benefits at G1.
- 69. As well as the initial stages described above a number of other actions were worked on collectively with the IFS and the airline community. This included studies on Risk Improvement Plan, Risk management and Portfolio Definition and Budget development Process. The IFS updated Capital Portfolio Board in June 18 on the progress of this work alongside the agreed response to the recommendations made by CEPA. A couple relevant to the specific question are reproduced below.

Table 3

Recommendation	Agreed response
2. HAL to implement quantified business case appraisal and report to the CAA and airlines on its approach to this as soon as practicable.	Airlines engaged much earlier through updated G0 to G1 phase of Heathrow's Gateway Lifecycle. Supporting project documentation requires quantification of benefits (Primary and Secondary) for which a plan needs to be put in place and the responsibility for measuring achievement now remains with the Development team rather than the operational area. Airlines have been briefed on the benefits achieved by Key IFS projects delivered in this regulatory period.
5. Extend the scope of the IFS role to include earlier involvement in project development and provision of support to business case development in line with recommendation 2.	The cost/benefit analysis at G1 with the Airline Community was one of the key things that had been discussed and agreed in principle at the IFSWG in 2017, and is included in the updated G0 to G1 process. The IFS are being engaged from these earlier Gateways and will follow the process from there, as required and agreed, through to project close out. The business case - including capex range and opex information is a key document that is available during these early phases and considers full life costing.

- 70. In addition to defining the requirements, on the larger projects we have also enabled projects to be successful from the start through investing in workshops and tools that enable the teams to collaborate and deliver better outcomes.
- 71. Relevant question "Did HAL do enough to exploit tech to drive efficiency?"
- 72. Heathrow has looked to exploit technology where feasible across the whole portfolio be it in consumer facing areas such as passenger automation, or during construction with new methods of surveys and data management. The automation of the passenger journey was one area of focus in Q6 and led to the development of a "Concept of Operations" aligned with IATA Fast Travel, One ID and NEXXT Programmes.

- 73. Offsite manufacture has been utilised where possible as this brings a number of benefits. Examples include the T3 check in area, T3 Pier 7 roof and the 'baggage in a box solution deployed for the T5 Baggage Recovery Facility.
- 74. Examples of innovative use of technology are represented in many projects in the overall Portfolio summary.
- 75. Relevant question "Is there evidence that collaboration with suppliers has improved throughout the Q6 price control?"
- 76. One of the benefits of executing agreements with multiple suppliers is the opportunity to create both resilience and a balance of commercial tension and cooperation. Examples of effective cooperation are HS&E (where the supplier share learning, best practice and engage in reviews and inspections of the others' project sites); and, procurement (such as where Ferrovial and Morgan Sindall undertook a joint process to select a single asphalt provider Lafarge for their respective Bravo and Sierra taxiway projects)
- 77. An example of how collaboration with suppliers developed is in the level of innovation deployed with new solutions being developed. This required integrated working with Programme Designers and Delivery Integrators. One such example of DfMA was the development of a new technique for the replacement of FEGP. Rather than taking a stand out of use for prolonged period, the equipment was manufactured offsite and installed in a short possession period. This required careful work between the Programme Designer and Delivery Integrator.
- 78. Another example of engagement across the supply chain was in developing a new asphalt mix which performed better in resisting reflective cracking. The Programme Designers and Delivery Integrators worked together with Heathrow to develop the specification, and undertake trials before utilising it on the initial project Sierra A. This solution reduced the capex required compared to the previous standard of Marshall Asphalt and also improved the overall asset life.
- 79. Relevant question was an appropriate level of performance benchmarking undertaken through project delivery?"
- 80. Benchmarking has been undertaken continually throughout Q6 and regularly reviewed with the airline community and the IFS. An example has already been given of how Heathrow worked with suppliers to improve the performance of the installation of Self Boarding Gates.
- 81. A benchmarking sub group of the IFS Working Group reviewed benchmarks during Q6. One example of such a study presented to the IFS Working Group in July 2018 was undertaken by T&T of design costs. The minutes from the meeting record that the study was across UK Airport and other infrastructure, as well as airport projects across Europe. Heathrow benchmarked well across other airports and sectors.
- 82. This study is one of those captured in the IFS End of Q6 report for the CAA, which highlight the works done by themselves and Heathrow across a range of areas.

Table 4

Efficiency	 Infrastructure Benchmarking assessments undertaken by both HAL (via Turner & Townsend, the Cost & Commercial Consultants) and the IFS throughout Q6 (Prelims, Design Costs, Cost Estimating Practice, IT projects etc) via Benchmarking Sub-Group has led to increased consistency and certainty in estimating of costs. Various presentations made to the IFS Working Group (IFSWG) by HAL
	Functional leads on areas of improvements collectively identified.

- 83. With regard to the statement made in 2.18 regarding "we intend to assess any evidence of the level of support from key stakeholders for HAL's capital programme and spending on the projects we have assessed. In particular, we will consider any evidence from the Q6 capex governance process (e.g. minutes of meetings etc), where airline stakeholders have had a significant role to play in approving and monitoring capital projects."¹³
- 84. We are surprised the CAA has raised this comment and concerned on the level of understanding the CAA has on how the Q6 processes have worked. The airline community have been engaged across the whole portfolio throughout the journey from establishing the Q6 framework to managing the portfolio. Airline engagement and approval is obtained to gateways at the relevant Stakeholder Board and the transition from Development to Core is approved at the Capital Portfolio Board.
- 85. The process has worked well with active participation and involvement from all sides. Materials are typically issued in advance of meetings to allow airline community review. This allows the actual meetings to focus on the correct issues with other elements being approved in advance.
- 86. There has been extensive engagement throughout the period with the details recorded on the Development Information Portal. This is where the materials are stored both documents issued in advance or meeting minutes recording the decisions.
- 87. To give a sense of scale of the materials in just one area there have been over 650 IFS reports over the period 2014 to 2018. This commission is a joint appointment by Heathrow and the Airline community and is managed by joint co-ordinators.
- 88. As well as playing a significant role in approving and monitoring capital projects the airline community have also been able to bring forward requirements and issues to which the portfolio has responded. Example projects which were introduced to the Portfolio during Q6 included T5 Fast Track Capacity, T2 Domestics to South, and T5 Fast Track.
- 89. As well as approving and monitoring projects, we have engaged across the community with regard to the implementation of the projects. The portfolio has been more invasive into the existing terminal and operational areas than previous quinquennia. Extensive engagement and planning at working and operational level has enabled the operation to continue alongside the project delivery.

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¹³ CAP1964