



**Review of Dublin Airport Authority
Capital Expenditure Programme
(CIP 04)**

For

**The Commission for Aviation
Regulation**

**Report No. 3 – Review of DAA
Capital Investment Programme
(CIP-04)**

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project, construction and cost managers



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Note: This document has been prepared by Rogerson Reddan & Associates Ltd, in conjunction with Vector Management Ltd., (RR&V), in accordance with the terms of RR&V's appointment to the Commission for Aviation Regulation. This document is prepared for the sole use and reliance of the Commission for Aviation Regulation. RR&V accepts no liability for any use of this document other than by it's Client, and only for the purposes for which it was prepared.

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1. Introduction / Scope:

Rogerson Reddan & Associates Ltd., in conjunction with Vector Management Ltd. (RR&V) have been commissioned by the Commission for Aviation Regulation, to undertake a review of the Dublin Airport Authority Capital Investment Programme 2006 – 2009, (the CIP) in the context of the Commissions' interim review of the determination of airport charges at Dublin Airport.

The review is based on an analysis of the projects in the CIP where the projected total project expenditure exceeds €5m.

This brief has been further clarified in correspondence and discussions with the Commission as follows:

- To be limited to a review of the information contained in the DAA's October 2006 CIP submission, together with responses to queries from the DAA (which would similarly be limited to such information as was available at October 2006)
- Not to include a review of the requirement (need) for the projects in question
- Not to involve a review of alternative options available in respect of proposed projects (i.e. "optioneering" exercises)
- In cases where CIP projects comprise large numbers of sub-projects (e.g. CIP 8.003, 8.005, 8.008) to be limited to a review of the projects in overall terms and in particular a comparison with the comparable project(s) from the DAA 2005 CIP.

This review was undertaken based on the information provided by the DAA to the Commission, and directly to RR&V which consisted principally of:

- CIP Project Sheets – Dated October 2006
- CIP Report Commentary dated October 2006
- Cost Estimate for Terminal 1 extension prepared by Bruce Shaw Partnership
- DAA Cost Benchmarking Report dated January 2006

- Responses to queries provided by DAA at a meeting with RR&V on 13th April 2007 and follow up responses received from DAA on 19th April 2007
- DAA responses to RR&V queries dated 24th April 2006. (responses received in various e-mail correspondences up to and including 30th April 2007).

RR&V were appointed in early April 2007, with a timescale requiring completion of the review and reporting by end of April 2007 (subsequently extended to 8th May 2007). The extent of the review undertaken was necessarily constrained by the timescale for completion of the report (c. 4 weeks). Specifically, in this regard, we would note that the only significant information at the start of the review process were the DAA project sheets for each project. This was significantly less information than was available at the start of the comparable 2005 review, which was completed over a similar time period. Based on an initial review of these documents a schedule of queries / requests for further information was issued on 6th April 2007. While some clarification was provided by the DAA, at a meeting on 13th April, a substantial response and additional information was only provided on 19th April 2007. On review of this information, it was evident that further clarification would be required in relation to much of the information provided. A schedule of requests for further clarification was issued on 24th April 2007, noting that clarifications provided up to, and including, 26th April 2007 would be taken into account in this report. The DAA responded with clarifications incrementally up to and including 30th April 2007. At this date, having regard to the requirement to issue a draft report by 3rd May 2007, RR&V advised the DAA that it would not be possible to consider any information received after this date, or to seek further clarification (should it be required) in advance of completing this report.

During the review of information provided by the DAA, further queries have arisen, and anomalies have become apparent, which should, if more time were available, be clarified with the DAA, to facilitate a more comprehensive analysis. However, this was not practical within the timescale of the review. Consequently such anomalies are identified within this report as they occur, and we have proceeded with our analysis in each case, based on our assumption as to what is considered to be the most likely scenario. Some of the conclusions reached may therefore require review and revision in light of further information and clarification which the DAA might subsequently present.

The DAA noted that many of the initial queries raised by RR&V sought updates on developments on various projects subsequent to the October 2006 submission date of the CIP. The DAA expressed the view that only information available at the October 2006 submission dates should be considered as part of this review. The CAR agreed that RR&V should proceed in this manner, and this report has been prepared on this basis.

Notwithstanding this, we would note that as the CIP Programme is proceeding at a rapid pace, there are numerous projects where significantly more accurate and reliable information would be available at this stage. In some cases, for example where projects have been tendered since October 2006, significantly different cost projections may now be available. Similarly where projects have had detailed designs develop in the intervening period, we would expect more defined cost estimates to be available. In particular, we note that there appears to be significantly better value obtainable in the current market for airfield apron / taxiway projects, based on the comparison between the projects where tenders were available in October 2006, and other projects which were at cost estimate / benchmark at that stage. We would suggest that this issue might benefit from further examination, in due course.

Many of the projects included within the CIP are at feasibility or concept stages, and limited information is available. In these cases, we have applied appropriate caution when reviewing the projects, as many factors can arise as a project develops which would influence levels of cost, relative to cost norms and benchmarks. This approach, while appropriate, necessarily restricts the level of precision which can be applied to any review of these early stage projects.

Safety, security, performance and availability are recognized as key characteristics to be addressed in the provision of airport assets. Their quality is a key factor over time in providing uninterrupted safe airport operations and in the achievement of service standards. Consequently consideration has been given to the levels of investment necessary to achieve recognised standards befitting an international airport with adequate life cycles. Specifically, our review of the capital expenditure programme is based on the underlying assumption that Dublin Airport will be developed and maintained in a manner, and to a standard which is appropriate to an international airport of this type. Our comparisons are made with facilities of similar standard, as opposed to those with wholly low cost facilities, which may not be appropriate in the context of Dublin Airport.

It should be noted that in any review such as this, carried out to a tight timescale, we are dependant on being provided with comprehensive and accurate information by the parties involved. We have relied in the performance of our services upon information and documentation provided to us by The DAA and other parties engaged by the DAA. We have relied on the DAA to check properly beforehand that any information provided is complete, current, true, fair and accurate and not misleading. We have, as far as it remains within our expertise, considered and relied upon such information provided by the DAA, the content of which we have reviewed in the context of our role under this appointment. However it is not possible to warrant that such information is correct. In certain cases relatively little information has been made available and consequently this report should be read on the strict understanding that it is issued on that basis.

2. Executive Summary:

In the context of the Commission's interim determination of airport charges at Dublin Airport, Rogerson Reddan & Associates in conjunction with Vector Management Ltd. have been commissioned to undertake cost evaluation of major infrastructural projects proposed by the DAA.

The projects selected for review comprise twenty-seven capital investment projects where total projected expenditure exceeds €5m, with the exception of Terminal 2, which is the subject of separate reviews. The total estimated cost for the projects reviewed is €516m, and these projects have a projected expenditure of [.....] during the period 2006 – 2009. The CIP projects total expenditure of [.....] during the period 2006 – 2009. When Terminal 2 is excluded, the total for other projects is [.....]. The projects reviewed in this report represent c. 83% of this total.

This review of the DAA's capital investment programme, as set out in more detail hereunder and in the supporting appendices, is based solely on the information submitted to the Commission by the DAA, together with DAA responses to queries arising from our initial review of this information.

In other circumstances it may be appropriate to seek additional information / clarification from the DAA to allow a more detailed review of certain projects to be undertaken.

In the majority of cases, the estimated costs for the majority of projects reviewed are realistic, and fall within the parameters which would be expected for projects of this nature, bearing in mind the varying stages of design development of the individual projects.

In general, many of the projects are active and progressing through the procurement phase. There are a number of projects, where significantly more accurate cost is likely to be available at this stage, compared to the information which would have been available at October 2006. This report does not review developments since October 2006.

There are a number of projects, where, based on the information provided, it is either not possible to definitively explain the estimated costs, or where the estimated costs for all or part of the project appear to exceed what would be expected for such projects. These projects require further clarification to explain the estimated costs. The relevant projects, as described in more detail herein, are:

CIP 6.018	Parallel Runway Fees
CIP 7.002	Terminal 1 - Extension
CIP 7.012	Pier D
CIP 7.025	Central Immigration - Pier A&D
CIP 7.027	Customs & Border Protection
CIP 7.034	Area 14 Check In Facilities

The following projects could not be reviewed or commented on in any significant manner due to insufficient information being available.

CIP 6.043	Remedial works and diversion to support 6.035
CIP 7.028	Temporary Forward Lounge - P2
CIP 9.004	Electricity Distribution System Enhancements, HV (38 KV and 110kv)
CIP 9.005	Electricity Distribution System Enhancements, MV (10KV)

Subject to any clarification emerging in relation to these projects, our reviews of these projects, as noted herein, may require revision.

3. Methodology

The approach adopted in compiling this report was to undertake a high level review of the relevant project, with a view to determining whether the costs stated by the DAA would be considered reasonable for a project as described. Generally, this comprised the following in relation to each project, insofar as the information provided allowed:

- a. Review and verification, where possible, of the scope and extent of the project, (typically by comparing stated total floor areas to general arrangement drawings provided).
- b. Review of the costs stated to determine if in overall terms the cost is reasonable relative to the project as described (typically by reference to the cost per sqM of floor area or functional unit).
- c. Review of the type and detail of cost information provided to determine if it is consistent with the stated project stage.
- d. Review of the cost breakdowns provided by the DAA to determine if the costs as presented are logically calculated, and include the elements which would be expected in relation to the type of project in question.
- e. Where detailed cost breakdowns are provided, further investigation (by way of queries to DAA) in relation to specific elements which appear to differ from what would be expected for the particular cost heading.

Note: Within this report, references to the **DAA Report** and **the DAA**, should be taken as including both the DAA and their programme managers Healy Kelly Turner & Townsend (HKTT) who acted on the DAA's behalf in liaising with Rogerson Reddan & Vector in relation to this issue.

4. General Principles

This review is undertaken based on the following general principles, which we understand are appropriate in the context of the capital expenditure plan:

- All costs are calculated at mid 2006 levels, and do not include any allowance for future inflation.
- All costs exclude VAT.

The DAA's costs include the estimated construction cost, together with an allowance in respect of "soft costs", typically relating to Design Team fees, including as appropriate Project Management, Architectural Design, Engineering Design, Quantity Surveying, Construction Management, Site Supervision, etc. This was further clarified by the DAA, in response to queries, where it was noted that these percentages do not generally include for Programme Management Services, which are the subject of a separate CIP project. The typical allowances for soft costs included by the DAA are in the range of 10% to 15% of construction costs. In general these are not unreasonable allowances. We have not generally been provided with, or sought detailed breakdowns of the fee allowances included against individual projects.

Many of the DAA's estimates for projects refer to benchmark costs derived from previous projects completed by the DAA. Details of these completed projects are generally not provided. As part of this review, and except where specifically noted otherwise, these reference costs are accepted as being correct, on the understanding that should verification of same be required, this will be available from the DAA.

5. Review of Individual Projects:

The summary text hereunder should be read in conjunction with the individual project review sheets set out in Appendix B, which describes each project, and summarises the findings of the review in relation to each project.

These project review sheets also summarise the following in relation to each project:

- General description of project
- Stage of development of project
- DAA projected timescale for project
- DAA stated driver for each project, together with summary of DAA justification for project.
- DAA estimated cost
- Summary of level of information provided by DAA
- Summary of level of detail provided in relation to costs by DAA.

This general background information for each project is therefore not reproduced in the text hereunder.

The text hereunder should be regarded as a summary of our principal findings in relation to each project, together with a more detailed description of specific issues arising in relation to certain projects.

CIP 1.006 – MSCP Short-term Car-Parking

This project comprises the construction of a new multi-storey car park and associated links to the proposed new terminal, etc. The total cost noted in the DAA CIP is [.....] which, in response to our queries, has been broken down as follows:

	Qty	Rate	Total
Car Park Structure	1,500 spaces	[.....]/space	[.....]
Passenger Links	1,440sqM	[.....]/sqm	[.....]
Abnormals			[.....]
Design & Management Fees	15% of construction costs		[.....]
		Total	[.....]

Our comments on the proposed costs are as follows:

- **Car Park Structure:** The cost noted for the car park structure at [.....] per space is at the lower end of the expected costs for projects such as this.
- **Passenger Links:** The DAA advise that the estimated cost is based on two enclosed links, to the terminal building with a total length of 480m. We note that the distance from the car park to the terminal is approximately 60m. Therefore we believe, based on current information, that this element of the cost may be overstated.
- **Abnormals.** The DAA have provided a breakdown of this figure. In general the items appear reasonable. However an amount of [.....] noted for “car rental facilities in the car park” appears unusually high, subject to clarification on the extent of car rental facilities to be provided. Separately, the abnormal costs include [.....] for access roadways. Based on our understanding of the extent of roads provided under other projects, there would appear to be limited requirements for roads associated with this project. This element of the cost estimate therefore appears to be overstated.
- **Design & Management Fees:** The allowance noted at 15% of the construction costs is not unreasonable.

While the costs for the passenger links, and some element of the abnormal costs appear high, this is partly offset by the costs for the car park structure, which are at the lower end of the expected costs for a project such as this. In overall terms the total cost for this project does not appear to be unreasonable.

CIP 2.006 Car Hire Facilities Eastlands

This project comprises the provision of surface parking spaces, and office / valet and car wash facilities for use of car hire companies. The estimated cost is [.....].

Apart from a site location plan, no drawings were available to allow verification of the extent of work. A cost model form was provided to support the estimated costs. This is based on costs per sqM / functional unit for the various elements of the project, together with an allowance of c. 8% for contingency and c. 11% for design and management fees. All elements of the cost breakdown appear reasonable.

CIP 3.009 – Internal Campus Roads (Excluding Western Approach)

This project comprises the construction of new roads, and overlay of existing paving to provide the new road layout to the airport campus (excluding those roads to be provided as part of the T2 project). The total estimated cost is [.....].

An overall layout drawing and a cost model summary were provided. We have checked the major quantities from the drawing, and apart from minor variances, find the quantities noted in the cost estimate to be realistic. In general the rates used in the cost estimate are reasonable. The cost estimate includes an allowance of [.....] (20% of construction cost) in respect of site access and working constraints, which is appropriate given the location and nature of the work. Design and management fees are included at 11.25% which are not unreasonable. In overall terms the estimated costs for this project appear to be reasonable.

CIP 5.013 – Retail Refurbishments

This project comprises numerous small retail refurbishment projects.

The DAA advise that total project expenditure is anticipated at [.....], but that expenditure in the period 2006 – 2009 is estimated to be [.....].

Due to the nature of the projects, the DAA are not in a position to provide definitive drawings or cost estimates for individual projects, but have advised that in the period 2006 – 2009, it is intended to refurbish 75% of the DAA operated retail space in the airport, and 30% of the space operated by concessionaires. The rates per sqM used by the DAA are [.....] per sqM for DAA operated space, (to include full fit-out & fittings) and [.....]/sqM for concessionaire space. Rates for retail refurbishment including fit-out are highly variable depending on the quality of finishes proposed, and while [.....] would be at the upper end of potential costs, (and exceeds the DAA noted out-turn costs for previous projects), it is not necessarily unreasonable.

Separately we would note that the intention to refurbish 75% of DAA operated retail space in the period 2006 – 2009 can not be verified at this time.

CIP 5.036 External Retail Delivery Facility

The project is a proposed remote central warehouse and distribution facility for retail activities at the airport. The estimated cost is [.....]. No drawings or details of the proposed scheme are available.

The estimated costs are based on the stated floor area with a construction cost rate of [.....]/sqM applied. An allowance of 15% is included for Fees. While no details of the proposed scheme are available, the cost per sqM rate used is within the range of likely costs for a project such as this, on the assumption that a proportion of the facility will require to be environmentally controlled / secured.

CIP 6.017 – Overlay Runway 10/28

This project relates to the upgrading of pavement to the existing main runway. The total projected expenditure is [.....], of which it is only intended to spend c. [.....] on preliminary investigative works etc in the period 2006 – 2009. The substantive work on this project is not expected to commence prior to 2009. On this basis the project is not reviewed as part of this report, as the extent of expenditure in the period 2006 – 2009 is minimal.

CIP 6.018 – Parallel Runway Fees

This project is described as “planning, design and procurement work in preparation for the construction of Parallel Runway” The total estimated costs are [.....].

The DAA Project sheets notes that costs were based on “Actual Tenders” We requested details of the tenders, and details of the proportion of the overall cost which related to tenders and any proportion which is an estimate. The DAA provided in response a document describing the procurement process adopted in relation to consultancy services, but did not provide any details of actual tender in this case. The DAA also clarified that of the expenditure projected for 2006 – 2009 [.....], approximately [.....] had been tendered. This equates to approximately 11% of the total estimated expenditure.

The DAA also confirmed that the current estimated cost for the runway project is [.....]. (runway project not reviewed as part of this study), and that the costs indicated against this project (parallel runway fees) did not include for design and management services in relation to the post procurement phase of the project.

On this basis, by our approximation, the noted cost for this project (parallel runway fees) equates to 8% of the capital cost of the runway project. This appeared to us to be high, in particular on the basis that no post procurement services were included. We sought the DAA's comment on this point. In response the DAA noted that in addition to fees this project included "enabling works associated with the runway plus any works required as part of any potential planning award. These works are currently not defined".

Therefore it appears that notwithstanding the description on the project sheets, this project does not relate solely to Fees, but also covers enabling works, etc. Furthermore, a relatively small proportion of the works have actually been tendered.

It is not possible to verify the appropriateness of the overall cost estimate, as the DAA have advised that a significant part of the works to which these costs relate have not yet been defined. On this basis, and subject to any further clarification which the DAA might provide, it would seem that the expenditure of [.....] in the period 2006 – 2009 may be an ambitious target.

CIP 6.026 – South Apron Infill Phase 5B

This project comprises the construction of c. 17,000 sqM of new apron and taxiway pavement.

The total DAA estimated cost is [.....]. The DAA advise that costs are based on 17,000 sqM at an all in rate of [.....]/sqM. This equates to [.....] and allowing for fees etc. the total cost of [.....] is credible.

We would note that our check of areas based on the drawings provided indicated a total area of 21,000 sqM for this project. We queried this variance with the DAA, who advised that the quantity of 17,000 sqM was used for budget purposes at the time the CIP was being developed. The DAA have not clarified what the correct area for this project is.

The cost per sqM of [...] compares to the equivalent mean rate of €366/sqM from the DAA cost benchmarking report, although recent DAA tendering (project 6.030) would suggest tenders for such works are currently more competitive than expected.

Based on the information provided, the estimated cost for this project appears credible.

CIP 6.030 – Taxiway P2 bypass for Phase 6 – MIKE 2

This project comprises the construction of c. 33,000sqM of new taxiway pavement.

The total DAA estimated cost is [.....]. The DAA advise that costs are based on the outcome of a tendering process. A copy of the tender report was provided which confirms that the recommended tender total is [.....]. Allowing for lighting, fees etc, the estimated cost of [.....] appears realistic.

The net cost per sqM equates to [.....]/sqM which is significantly less than the equivalent mean rate of €366/sqM from the DAA cost benchmarking report. We have not, in the time available, discussed this variance with the DAA, however, whilst there may be factors such as technical simplification or simpler working arrangements, this would suggest that on taxiway and apron projects, significantly better value can be achieved at tender stage, in the current market, relative to benchmark figures.

CIP 6.035 – Apron Phases 6A, 6B & 6C

This project comprises the construction of 177,200sqM of new apron and taxiway pavement, in three phases.

The total DAA estimated cost is [.....]. The DAA advise that costs are based on a Consultant’s cost estimate.

As part our review we noted that the costs for phase 6b were significantly higher than the two other phases, as follows:

Apron Phase	Total Cost	All-in Cost / SqM
6A	[.....]	[.....]/sqM
6B	[.....]	[.....]/sqM
6C	[.....]	[.....]/sqM

The DAA have clarified that costs for phase 6b are higher than the other phases to reflect the fact that this phase will be constructed “out of sequence” to facilitate the relocation of a MET station in this area.

The average cost for all phases equates to an all in rate per sqM of [.....]/sqM which compares to the mean benchmark rate of €308/sqM for this type of project. However, we would note that project CIP 6.030 involves the construction of new taxiway adjacent to this area, and has been tendered, with contracted costs equivalent to [.....]/sqM. While the projects are not directly comparable, this does suggest that notwithstanding the benchmarks, significantly better value may be achieved for this project, when tendered. We understand the project has been tendered since the October 2006 cut-off date, however we have not been provided with details of the tender outcome.

Subject to these comments, based on the information provided, the cost estimate as noted appears credible.

We would note that project CIP 6.043 is related to this project (enabling works to facilitate)

CIP 6.039 – North Apron Infill – Phase 5E

This project comprises the construction of c. 37,000sqM of new taxiway pavement.

The total DAA estimated cost is [.....]. The DAA advise that costs are based on a Consultant's cost estimate. This equates to [.....]/sqM, which is comparable with the equivalent mean rate of €366/sqM from the DAA cost benchmarking report, but is significantly more expensive than the all in cost which similar works have recently been contracted at (ref CIP 6.030).

We queried the level of cost with the DAA who provided a breakdown and advised that costs were high due to the elongated works site, and that the project would require significant night works for operational reasons. While such costs are difficult to accurately determine at overview level, this appears to be credible based on the nature and location of the works.

We understand the project has been tendered since the October 2006 cut-off date. However we have not been provided with details of the tender outcome. We would note that notwithstanding the above, significantly better value may be achieved for this project, when tendered.

Subject to these comments, based on the information provided, the cost estimate as noted appears credible.

CIP 6.043 – Remedial Works and Divisions to Support CIP 6.035

This project relates to remedial works and temporary diversions required to facilitate the works to construct aprons phases 6a, b & c. The DAA project sheet notes a total estimated cost of [.....]. However no details are provided of the scope of works, or the basis of this cost estimate. It is not therefore possible to comment on this project.

CIP 6.047 – Apron 5A

This project comprises the construction of c. 65,000sqM of new apron pavement. The total DAA estimated cost is [.....]. This equates to [.....] /sqM.

This compares to the equivalent mean rate of €308/sqM from the DAA cost benchmarking report. Based on the information provided, the estimated cost for this project appears credible.

CIP 7.002 Terminal 1 Extension

This project comprises the construction of a two storey plus mezzanine extension to the existing terminal. The Information provided for review comprises an order of magnitude cost estimate prepared by the DAA’s consultants Bruce Shaw Partnership (BSP), together with floor plans for the proposed extension.

We have measured the floor areas from the drawings provided, and it is not possible to reconcile these with the areas noted on the cost estimate (the drawings indicate 12,350 sqM, whereas the cost plan notes 7,453 sqM).

We have reviewed the cost estimate together with responses to various queries, and comment as follows:

- The cost estimate indicates a range of costs. DAA advise they have taken a mid-point in the range for inclusion in the project sheet.
- The value included in the project sheet at [.....] would, on this basis, appear to include an amount of c. [.....] in respect of a projection for future (post 2006) inflation. This is not appropriate in the context of the CIP.

- The DAA have clarified in response to queries that the cost per sqM for comparison with benchmarks calculates at [.....]. The DAA note that they would ordinarily expect this project to cost [.....], and that the difference is accounted for by specific features of the project, including the constrained operational site. However, in this regard we would note that the cost estimate, and total included in the project sheet, includes a separate allowance for “abnormal costs” of [.....], which is in addition to the [.....] cost per sqM noted above. We note that the abnormal costs include significant costs which would be attributable to the operational nature of the site, such as maintaining existing services, maintenance of passenger thoroughfares, and in particular, a premium for out of hours working. We therefore do not believe that it is appropriate to discount the [.....]/sqM by 20% in respect of site specifics.
- We requested details of the out-turn cost for the previous “6 bay” extension for comparison with this project. The DAA initial response noted a cost of [.....]/sqM and noted that this was below the cost for the current project due to the large area of baggage handling space, (in the “6 bay” project). In response to subsequent queries, the quoted out-turn cost for this project was revised to [.....]/sqm and was noted as being high due to: (a) large basement, (b) significant baggage handling, (c) complex project, and (d) contractual claim included. Based on these variances we can not regard this as a valid comparison with the current project.

From our review of the above, we believe the cost for this scheme should not be quoted at [.....], but should be reduced by c. [.....] in respect of future inflation to [.....]. We believe the cost per sqM for comparison with benchmarks should be [.....], and not [.....] as noted by the DAA. At this level the cost /sqM is some [...] above the comparable mean benchmark value. Separately the overall floor areas for this project have not been reconciled based on the information provided.

CIP 7.012 - Pier D

This project includes Pier D works, Apron realignment works, walkway and bridge access link to Pier D, and works within the existing terminal building. Following queries and clarifications we understand the following to be an approximate breakdown of the overall costs.

Description	Cost	Area (Sq M)
Pier D	[.....]	14,800
Apron Works	[.....]	95,000
Walkway	[.....]	3,156
Bridge	[.....]	752
Existing Building	[.....]	1,105
Contingency within Contract cost report	[.....]	
Sub total	[.....]	
Additional Client direct contingency	[.....]	
Fees	[.....]	
Additional fees for OCTB route	[.....]	
Site supervision	[.....]	
Capital Contribution & Planning fees	[.....]	
Total	[.....]	

Floor areas noted in the above table and within the DAA information provided appear consistent with the drawings provided, with the exception of existing building and Apron works areas, where RR&V did not have the required drawings to verify areas. Both have unexpected costs / sqM and would benefit from further scrutiny.

RR&V have been provided with a "contract cost report" summary dated October '06, and with a location cost analysis dated December '05 which appears to be in the format of cost plan summary sheet. The total on the cost plan summary sheet from December '05 appears to match the contracted construction cost. We have not, in the time available, had an opportunity to verify the relationship between these cost plan costs, and the contracted construction costs.

The costs for the individual sections of this project are reviewed hereunder. The costs noted are based on the table above, with a proportionate allocation of the overall contingency allocation, included. The overall contingency allocation is c. [.....] and equates to c. 12% of net construction cost.

Pier D – Main Pier Building

The current cost breakdown provided by DAA in relation to Pier D includes [.....] for the construction works to Pier D. The overall floor area referred to in the DAA cost breakdown is 14,800 Sq M. This appears consistent with the drawings provided to RR&V.

The overall cost per Sq M equates to [.....]/ Sq M. This is lower than the mean benchmark value from the DAA benchmark report of [.....].

Pier D – Apron Works

The current cost breakdown provided by DAA includes [.....] for the construction works to the apron. The overall area referred to in the DAA cost breakdown is 95,000 Sq M. RR&V do not have drawings to enable a check on this area. Based on this area the overall cost equates to [.....]/ Sq M which appears unusually low, subject to clarification on the precise scope of works included.

Pier D – Walkway

The current cost breakdown provided by DAA in relation to the walkway includes [.....] for the construction works to the walkway. The overall floor area of the walkway referred to in the DAA cost breakdown is 3,156 Sq M. This appears consistent with the drawings provided to RR&V. The overall cost per Sq M equates to [.....]/ Sq M. This cost appears high, however it is not readily comparable with other building types due to its unique form and structure.

Pier D – Bridge

The current cost breakdown provided by DAA in relation to the bridge includes [.....] for the construction works to the bridge.

The overall floor area of the bridge referred to in the DAA cost breakdown is 752 Sq M. This appears consistent with the drawings provided to RR&V. The overall cost per Sq M equates

to [.....]/ Sq M. This cost appears high on a cost per square metre basis, however this is effectively a bridge structure with appropriate suspension requirements, therefore building cost norms would not apply.

Pier D – Works in Existing Building

The current cost breakdown provided by the DAA in relation to Pier D includes an amount of [.....], for works in existing buildings. RR&V queried the extent and location of this work. DAA provided GA drawings of these works. It is difficult to ascertain from these drawings the extent of works to be carried out within the existing building. From an overview of the drawings provided however, the amount of [.....] appears high relative to the extent and scope of the works that can be reasonably identified from the drawings provided. It is also difficult to confirm that there is no duplication between this project cost, and CIP 7.025 Central Immigration Pier A&D, which includes c. [.....] in respect of works to the existing terminal building in the same general area.

Pier D – Fees & Site Supervision

The current cost breakdown provided by DAA in relation to Pier D includes [.....] for design team fees and [.....] for site supervision. This amounts to 12.6% of the overall Pier D costs, including contingency. While we have not sought detailed verification, these amounts for fees and site supervision are consistent with the level of fees which would be expected.

Pier D - Contingency

The current Pier D cost breakdown provided by DAA to RR&V includes an amount of [.....] for contingency. An amount of [.....] of this contingency is contained within the contract cost report for Pier D, with the remainder of [.....] of contingency contained outside the contract cost report as Client reserve.

RR&V requested detail to the build-up of the project contingency amount of [.....].

DAA provided details of the risk analysis process used to calculate this figure.

The output of this process indicates a contingency amount of [.....]. It is not clear how this relates to the [.....] contingency amount included within the current costs.

From reviewing further detail provided by the DAA, there is a further contingency amount of [.....] (provisional dayworks items) contained within the contract sum amount for Pier D, bringing the total contingency amount for Pier D to [.....] (12% of construction cost or 10% of the overall project budget). The DAA note that this level of contingency is required due to particular features of this project including “location (particularly walkway element), Client Risk Responsibility (design development, security, passenger protection), programme (opening date is critical), Client business requirements (likely to change working methods/ access requirements)”. While we accept these points in principle, we would nonetheless be of the view that the overall contingency provision appears particularly high given the advanced stage of the works on site (due for completion Autumn '07).

Pier D – Additional Fees for Original Central Terminal Building (OCTB) route

The current cost breakdown provided by DAA for Pier D includes an amount of [.....] for additional fees in relation to exploration of the use of Pier D access through OCTB. The DAA explain that “the fee represents work carried out (in response to repeated requests from users) reviewing an alternative route for the link to Pier D via the OCTB thereby negating the need for the walkway. Access via the OCTB was subsequently deemed undeliverable due to planning issues (OCTB is a listed building). Value is as agreed with PM. Level reflects both duration of exercise and options appraised and includes significant re-work.”

The DAA 2005 CIP included an amount of [.....] (including contingency) or [.....] when updated to mid 2006 costs, for the construction works associated with access route through OCTB. The amount noted in the 2005 CIP for fees relating to this work was 15%. Therefore, based on the 2005 CIP, the total fees due upon completion of the construction works related to access through the OCTB (had this option proceeded) would have been [.....]. This amount is significantly less than the [.....] of fees which are currently included within the Pier D costs associated for investigating the OCTB as a possible access route to Pier D (excluding detail design, and construction phase).

While it is not possible for RR&V to determine the extent of re-work that may have been required with the review of the OCTB access option, it is difficult to reconcile the amount of [.....] included within the current Pier D costs.

CIP 7.020 – Temporary Forward Lounge

This project is complete. Costs have been advised by the DAA based on the agreed final account for the construction works, together with allowances for demolition on completion of use, Design fees, Local Authority Fees, and a contingency allowance. We have reviewed the noted construction costs by reference to costs for previously completed similar work, and informal advice from specialist suppliers. Based on this, we conclude that the construction costs, which comprise c. 81% of the total noted cost for this project, are generally realistic.

We had queried with the DAA the inclusion of a contingency allocation of [.....] within this project budget, having regard to the fact that the project is effectively complete. The DAA advised that the contingency was required for the following reasons (our comments in brackets):

- Final Account was not agreed at October '06 (*we note that the budget breakdown originally provided stated that the final account was agreed*)
- A possible requirement to relocate / extend the lounge to further areas on the apron (*we note that the CIP includes a separate project for a further, phase 2 temporary forward lounge*)

Having regard to the above, and in particular our comments noted above, we would note that the rationale for the inclusion of the contingency allowance of [.....] at this stage in the project is debatable.

CIP 7.025 – Central Immigration – Pier A & D

We understand this project relates to modifications to the existing buildings at the junction between the existing terminal building and the new Pier D link bridge, primarily to improve the immigration facilities.

The DAA project sheet notes that this project was at "Outline Design" Stage in October 2006. However no drawings were provided to allow verification of the precise location or extent of works. DAA advise in response to a query that "at the time of the CIP drawn areas did not exist". This is not consistent with the indication that the project was at Outline Design stage at the date of the CIP.

The costs are defined by the DAA in the form of a cost model, based on the operational area requirements. Generally the rates and costings used in this document appear credible. However a number of minor anomalies exist, as follows:

- The cost model is titled “Pier D Link Bridge”, which is not the correct title.
- The cost benchmark rate noted on the DAA project sheet was €1,600/sqM. DAA have confirmed that this is superseded by the cost model which equates to a cost per sqM of [.....].
- The cost model provided includes an allowance of [.....] in respect of Programme Manager fees. DAA have confirmed in response to our query that this is an error, and should not have been included (Programme Manager fees are covered by a separate CIP project – CIP 8.010).

The absence of drawings in relation to this project makes it impossible to comment on cost relative to the actual scope of work. It also makes it impossible to confirm that there is no duplication between this project and CIP 7.012, which includes c. [.....] in respect of works to the existing terminal building in the same general area.

CIP 7.027 – Customs & Border Protection

This project represents the construction of a 4,500sqM facility to provide primary and secondary screening of passengers, etc. The DAA advise that this will be located adjacent to T2, and “delivered as an integral part of T2”.

The DAA project sheet notes that the estimated cost of [.....] is based on cost benchmarks as per the T2 cost plan, but no further details are provided. In this regard, we would note the following:

- If the benchmark rate per sqM for terminals as per the DAA benchmark report is applied, and allowing 15% for soft costs, the cost would be expected to be in the region of [.....].
- If the cost plan cost per sqM from T2 is applied, and allowing the T2 rate for fees of 10% together with contingency provision as per the T2 cost plan, we estimate that the cost of this facility should be [.....].

Subject to any clarification which the DAA may be in a position to provide, it is our view, based on the information provided that the costs for this facility would be in the region of [.....] to [.....], as opposed to the [.....] noted in the DAA report.

CIP 7.028 – Temporary Forward Lounge Phase 2

This project represents a provision for a potential additional forward lounge, which the DAA advise may be required, to facilitate further development work, particularly associated with T2 & Pier C.

The DAA advise that the estimated cost of [.....] is a provisional allowance, based on a broad comparison with the Phase 1 Temporary Forward Lounge project (CIP 7.020), but that details of precise size, location and timing are not known. The overall cost noted is comparable with the phase 1 project, which would suggest that the size of the facility would be similar to the recently completed temporary forward lounge. However, no details are available to allow further verification of the likely actual size and costs for this project.

We note that the DAA have advised that the estimated cost does not take any account of the potential for the re-use of some of the components from the phase 1 project.

CIP 7.034 – Area 14 Check In Facilities

This project involved the provision of additional passenger check in facilities in the lower ground floor area of the existing terminal. The noted project cost of [.....], which consists of construction contract projected final account of [.....], plus an allowance of [.....] for design fees.

General arrangement floor plans were provided from which we have measured the floor areas. We estimate a total floor area of 2,891 sqM, which if correct would suggest that the construction costs equate to [.....]/sqM. When baggage handling and other airport systems are excluded the construction / fit-out works cost is c. [.....]/sqM. This is relatively high for refurbishment work / fit-out work, but may well be justified by the extent of intervention required to the existing building and potential difficulties and consequent costs in providing services to the space. The level of drawn information provided does not allow verification of these issues.

CIP 8.003 Airport Development: [.....]**CIP 8.005 Airside Operations:** [.....]**CIP 8.008 Airport IT:** [.....]

These projects are similar in that each project heading relates to numerous small projects of an operational and / maintenance nature. The DAA have provided a full list of the actual expenditure for 2006 and the projected expenditure for 2007 in relation to these projects.

Actual expenditure during 2006 included 111 separate projects, with a total value of [.....]. Projected expenditure for 2007 includes 80 separate projects with a total value of [.....].

The project types are varied and includes such items as: Fleet replacement, provision of new GNIB booths, X Ray machines, redecoration, new fire appliance(s), replacement trolleys, etc.

Project values range from less than [.....] to [.....].

Given the multitude of individual projects it is not feasible to examine and comment in detail on the projected expenditure. The DAA advise that the comparable project in the 2005 CIP was entitled “General Provision ART and Local and IT” where the projected expenditure was [.....],[.....],[.....] and [.....], for 2006, 2007, 2008 & 2009 respectively. The current projections are [.....],[.....] and [.....] for 2007, 2008 & 2009 respectively. When adjusted for inflation, the variances between the 2005 CIP and the current CIP are not significant in the context of the nature and extent of work involved.

CIP 8.008 (a) Group IT & T: [.....]

This project relates to Group IT&T investment. The DAA have provided a full list of the actual expenditure for 2006 and the projected expenditure for 2007, 2008 & 2009 in relation to these projects.

There is a minor anomaly in the DAA documentation for this project. The project sheet indicates a total cost of [.....]. The total amounts noted on the breakdowns provided in response to queries totals [.....], some [.....] less than the project sheet total.

Based on the breakdowns provided by the DAA, actual expenditure during 2006 included 11 separate projects, with a total value of [.....]. Projected expenditure for 2007 – 2009 is presented based on 9 broad project types per year.

Project values range from less than [.....] to c. [.....].

It is not feasible to examine and comment in detail on the projected expenditure. There does not appear to be a comparable project in the 2005 CIP (subject to clarification from the DAA).

CIP 8.010 Programme Fees

This project relates to the appointment of a Programme Management Consultancy to lead and drive the planned Capital Investment Programme for a period of 5 years. The total projected expenditure is [.....]. The DAA note the appointment is on a cost reimbursement basis, with resource levels and associated costs the subject of ongoing review.

The DAA note the appointment follows a competitive tender process, but that for reasons of commercial sensitivity it is not possible to provide details of tenders etc. The DAA do however note that supporting information will be made available directly to the CAR, should it be so required.

The DAA have provided a schedule of rates for the relevant resources, together with an anticipated resource schedule. The rates noted, do not appear to be unreasonable, having regard to the calibre of experienced personnel who would be required to manage a programme such as this. The resource schedule provided is broadly consistent with the noted total cost.

CIP 9.004 Electricity Distribution System Enhancement - HV - [.....]

CIP 9.005 Electricity Distribution System Enhancement - MV - [.....]

These projects relate to proposed enhancements of the electricity distribution system. The DAA note that costs are based on “provisional sums”. No further cost details are provided. It is not, therefore, possible to comment on the costs noted.

APPENDIX A

SUMMARY OF PROJECTS REVIEWED

APPENDIX B

INDIVIDUAL PROJECT REVIEW SHEETS