

19th December 2006

Mr. Shane Boyd
Boyd Creed & Sweet
Anglesea Buildings
Upper George's Street
Dun Laoghaire
Co. Dublin

As you may know, the Commission for Aviation Regulation (CAR) is engaged in an analysis of Dublin Airport and of the Dublin Airport Authority's (DAA) 2006 Capital Investment Plan (CIP).

I understand that your firm has verified the costs and the specifications of the proposed second terminal (T2) on behalf of the Department of Transport. The Department has recently sent the Commission a copy of your report.

The Commission is interested to discuss with you the technical analysis that underlies your verification exercise, and thus to understand how your firm evaluated the DAA's costs and project specifications.

We would therefore be grateful if your company could assist the Commission to clarify the verification work that has been carried out. I will phone you before the end of this week to see how we might pursue these matters.

Yours sincerely,



Cathal Guiomard
Commissioner

Our ref: PPWINLIT: PROJECTS\1240\01\01\CAR0100L

Attn: Mr. Cathal Guiomard
Commission for Aviation Regulation
3rd Floor
Alexandra House
Earlsfort Terrace
Dublin 2



Verification Report for T2 Development at Dublin Airport
for the Department of Transport
Information Required

Dear Sirs,

Further to your letter dated 20th December 2006, we attach the following that we understand meets your information requirements. We apologise for the delay in responding. It has taken some time longer than anticipated to collate the information requested and the individual member of staff charged with these duties has only just returned from leave.

- (a) 1. Project Management and Design Commission Briefing Document issued by the Dublin Airport Authority.
- 2. Initial brief report reference T2.SW.PM.001
- 3. Cost Consultants report
- 4. Benchmarking report
- 5. Risk register
- (b) We can confirm that global quantity checks were applied to the cost plan issued by Davis Langdon PKS to verify that areas were consistent throughout all elements of the cost plan.
- (c) Specialist equipment costs were provided to Davis Langdon PKS by Davis Langdon Mott Green Wall and Engineering Services Cost Consultant division of Davis Langdon.
- (d) We are not in a position to comment on the adequacy or otherwise of these provisions as we have no means of establishing the absolute quantities.

Directors: Shane H. Boyd, B.Sc., Dip. Proj. Man.; A.S.C.S., M.R.I.C.S.; Peter A. Kerrash, F.S.C.S., F.R.I.C.S.; Paul V. Maguire, A.S.C.S., M.R.I.C.S.; John P. Trischler, F.S.C.S., F.R.I.C.S.;
Neil Colin, B.Sc., Adv. Dip. Q.S. Eng., A.S.C.S., M.R.I.C.S.; Peter Williams, B.Sc., A.S.C.S., M.R.I.C.S.; Dean Webster MBA, B.Sc., M.R.I.C.S., M.A.P.M. (UK); Alan Manuel, M.R.I.C.S., MaPS (UK)
Associates: Christopher Mullins, B.Sc., M.R.I.C.S.
Colin Cleary, B.Sc., A.S.C.S., M.R.I.C.S., Dip. Bus. Mgt.; Dendra McNamara, B.Sc., A.S.C.S., M.R.I.C.S.

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- (e) We were advised by Davis Langdon PKS that a five percent contingency has been included within the construction costs of each component of the development and advise that a further €74,119,000 have been included as an overall project contingency.
- (f) Boyd Creed Sweett approached our colleagues in the UK and Europe to establish a benchmark for comparative purposes, we further reviewed the BCIS database for comparators
- (g) We are not quite clear as to what this request relates, perhaps you can clarify and we will provide the requisite details in due course.

We trust the attached deals with the issues you have raised, if we can be of further assistance, please let me know.

Yours faithfully,

Peter Williams
Director

Encl.

20th December 2006

Mr. Shane Boyd
Boyd Creed & Sweet
Anglesea Buildings
Upper George's Street
Dun Laoghaire
Co. Dublin

Dear Shane

Further to my letter of 19th December, I now attach a list of the information needed by the Commission in connection with your firms' verification of the costs of Dublin airports T2 project.

I will phone you to discuss the best way for the Commission to obtain this information.

Yours sincerely,



Cathal Guiomard
Commissioner

- a. Copies of the following documents referred to in BCS report:
 - i. DAA Briefing document (para 5.1)
 - ii. Initial Brief Report (para 6.1.5)
 - iii. Cost Consultant's Report dated March 2006 (para 13.1.3)
 - iv. Benchmarking report as presented to DAA (para. 13.2.2)
 - v. Risk Register (para 13.8.4)
- b. Details of any verification applied to quantities in the cost plan – (para 13.4)
- c. Detail of the basis of cost estimates for specialist equipment services (para 13.5)
- d. BCS views on the level of "lump sum" allowances included in respect of enabling & external works (para 13.6.2)
- e. Clarify the total amount of contingency included in the Cost Plan (para 13.8)
- f. Details of the independent verification process applied to the benchmarking exercise (para 13.10)
- g. Details of the verification process applied to the DAA's consultants sizing process.

Our ref: SHB\NLIT: PROJECTS\1240\01\01\CAR0101L

Attn: Mr. Cathal Guiomard
Commissioner for Aviation Regulation
3rd Floor
Alexandra House
Earlsfort Terrace
Dublin 2

COMMISSION FOR
AVIATION REGULATION

22 FEB 2007

RECEIVED

21st February 2007

**Verification Report for T2 Development at Dublin Airport
for the Department of Transport
Information Required**

Dear Sirs,

We refer to your letter of the 14th February.

We are surprised that the letter we sent you on the 19th January 2007 is undated as our file copy (which is a photocopy of the original) is dated. You might check again for the date on the top right hand side of the letter underneath our address.

In response to the issues raised in your letter we reply as follows:-

The conclusion referred to in your paragraph 4, was reached based on a number of factors including the attached independent benchmarking exercise.

The figure of €609 million referred to in your letter includes for the estimated construction and other related costs such as fees etc.

In order to ensure the use of like for like figures in both the DAA's and our own benchmarking exercise the figures included therein exclude site variables i.e. site development works, external works etc, the cost of which are dependant on local site conditions, enabling works, works to pier C, the energy centre, public art, planning fees, design fees, DAA direct costs, capital contributions and contingency all of which are included in the figure of €609 million.

The benchmarking exercise purely compares the cost of terminal buildings with the equivalent estimated cost for Terminal 2. The DLPKS estimated cost of T2 only, at 1st quarter 2005 rates is €290 million, the area is 74,119m² resulting in an estimated VAT exclusive construction cost of €3,912 / m². We deemed the difference between this figure and the DLPKS figure of €3,928 on the benchmark chart as insignificant in the overall costings.

Directors: Shane H. Boyd, B.Sc., Dip. Proj. Man.; A.S.C.S., M.R.I.C.S.; Peter A. Kemash, F.S.C.S., F.R.I.C.S.; Paul V. Maguire, A.S.C.S., M.R.I.C.S.; John P. Tritschler, F.S.C.S., F.R.I.C.S.;
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Associates: Christopher Mullins, MBA, B.Sc. M.R.I.C.S.;
Colin Gleary, B.Sc., A.S.C.S., M.R.I.C.S. Dip. Bus. Mgr.; Deirdre McNamara, B.Sc. A.S.C.S. M.R.I.C.S.

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The above explains the "wide difference between the benchmark figure in the PKS chart and the Terminal 2 cost plan of €609m".

We did not place any reliance on the PKS Terminal buildings benchmark in terms of our own work to independently verify.

We verified the benchmark work produced by DLPKS by production of our own benchmark costings (see attached).

Our verification process did not verify the reasons for the choice of airport facilities as Terminal 2 benchmarks as produced by DLPKS.

We confirmed with DLPKS that all costings of their benchmarks were on a like for like basis as explained herein before.

We did not verify the cost definition on which the cost comparisons were generated.

We did not verify the source of the information relating to the quantities and costs for the benchmarking exercise.

Regarding your query "what independent assessment and by what methodology did Boyd Creed Sweett establish to its satisfaction that the size of the facility had been optimised", section 6.2 of our report deals specifically with sizing. Our brief was to independently verify the methodology and approach in the production of the terminal design; therefore we did not independently assess the sizing of the terminal. We did independently verify that methodology and approach to the terminal sizing and reported that, "through development of the brief and design, size of the facility has been optimised by refinement of planning data and development user and stakeholder requirements".

Please note that we have confirmed with the Department of Transport that our work in replying to your queries is not included in our commission with them. Therefore, we will be invoicing you directly for works to date in responding to your queries. Our current hourly charge out rates are:-

- ☺ Director: £150 per hour plus VAT at 21%
- ☺ Associate Director: £120 per hour plus VAT at 21%

We trust this deals satisfactorily with your queries.

Yours faithfully,

Peter Williams
Director

Encl.

**Benchmark rates from other construction cost consultants benchmarks
for airport terminal buildings (1999)**

	Higher End		Mid Range	
	STG £	STG £	STG £	STG £
Shell and core				
Substructure	110		90	
Structure	250		190	
Envelope	375	735	310	590
Fit out				
Interior	450		325	
Furniture fitting and equipment	130		70	
Services	450		400	
Specialist systems	150	1,180	110	905
Cost at 1999 prices		1,915		1,495
Inflation adjustment				
SCS construction cost index				
Index 4th QTR 1998	170.80			
Index 1st QTR 2005	260.00	152.22%		152.22%
Therefore adjusted benchmark		2,915		2,276
Conversion rate @ 1.47		€4,285		€3,345

Benchmark data from in house sources July 2006

1Q03 Prices			Inflation	Currency	
Benchmark project	Number (£)	Unit	238.00	1.47	Unit
			260.00		
			109.24%		
Piers & satellites			£	€	
Pier	1,373	£/m2	1,500	2,205	€/m2
Pier	2,660	£/m2	2,906	4,271	€/m2
Pier	4,320	£/m2	4,719	6,938	€/m2
Pier	3,251	£/m2	3,551	5,220	€/m2
Satellite	2,765	£/m2	3,020	4,440	€/m2
Pier	4,337	£/m2	4,738	6,964	€/m2
Terminal extensions					
Extn	3,702	£/m2	4,044	5,945	€/m2
Departure Lounge	3,207	£/m2	3,504	5,151	€/m2
New Domestic Facilities	4,092	£/m2	4,470	6,571	€/m2
Terminal Redevelopment	3,284	£/m2	3,588	5,274	€/m2
Terminal Extn + Offices	2,901	£/m2	3,170	4,659	€/m2
Domestic Arrivals Reconfig	3,600	£/m2	3,933	5,782	€/m2
Terminal Redevelopment	5,005	£/m2	5,467	8,037	€/m2
Departure Lounge	3,604	£/m2	3,937	5,788	€/m2
Departure Lounge	3,726	£/m2	4,071	5,984	€/m2
Departure Lounge	6,154	£/m3	6,723	9,882	€/m2

14 February 2007.

Mr. Peter Williams
Director
Boyd Creed & Sweet
Anglesea Buildings
Upper George's Street
Dun Laoghaire
Co. Dublin

Dear Mr. Williams

I am in receipt of your (undated) letter, which we received on 19th January 2007, in response to our requests of 19th and 20th December 2006 for materials that would allow us to understand the technical basis of your firm's verification report, for the Department of Transport, of the costs and size of the proposed T2 at Dublin Airport.

On 10th January 2007, I received a phone call from a colleague of yours, in which he apologised for the delays in Boyd Creed Sweett's provision of data to the Commission and in which he explained that, in order to access the benchmarking data (which he said had been "consumed online" by Boyd Creed Sweett), it would be necessary to reactivate a dormant intranet website. Your colleague indicated that on reactivating that web site, statistical materials would be available to him, which would then be provided to the Commission in hard copy.

However, no statistical substantiation of your firm's verification work was provided to the Commission in your January 2007 letter or since. As a result, the Commission does not yet understand the basis on which Boyd Creed Sweet reached the following conclusion:

"The Gateway 3 estimated cost of Terminal Two on a cost per square metre basis, lies at the mid point range of the UK terminal buildings benchmarking study carried out by the DAA's team of consultants. The verification team has independently verified the benchmarking exercise and the cost plan and concludes that the estimated cost is within industry norms for this type of project in a European capital city." (page 4, Independent Verifier's Report).

Your letter merely restates the conclusion as follows:

"Boyd Creed Sweett approached our colleagues in the UK and Europe to establish a benchmark for comparative purposes, we further reviewed the BCIS database for comparators" (para f)

The Commission remains keen to understand the technical analysis, and to receive the promised statistical data, that underlay your verification exercise, and also to understand its extent.

For the avoidance in doubt, can you confirm that your verification exercise excluded:

- The lump sum allowances (para d of your letter) in the T2 project; and
- The contingencies in the T2 project (para e of your letter) and was therefore limited to the construction costs of T2? If not, to what aspects of the cost of T2 did the Boyd Creed Sweett work relate?

One of the reasons for my putting this question to you is the wide difference between the benchmark figure in the PKS chart¹ (that accompanied your January letter) for "Dublin" (3,928) - which, if multiplied by the 100,000 square meterage for the combined T2 and Pier E, gives a value of €392.8 million - and the T2 cost plan of €609 million. Can your firm explain this difference?

In terms of Boyd Creed Sweett's work to "independently [verify] the benchmarking exercise and the cost plan" what reliance did your firm place on the PKS 'terminal buildings benchmarking - UK and Ireland' chart? How did you verify that benchmarking work? Did that verification include any or all of the following considerations:

- the reasons for the choice of airport facilities as T2 benchmarks;
- the adjustments necessary to make the comparisons meaningful;
- the cost definition on which the cost comparison were generated; and
- the source of the information relating to the quantities and costs?

¹ "Terminal buildings benchmarking - UK and Ireland" Davis Langdon PKS.

Regarding the sizing verification (question G of my letter of 20th December) our query relates to the following statement from the verification report:

"the size of the facility has been optimised" (para 6.2.1, Independent Verifier's Report)

What independent assessment, and by what methodology, did Boyd Creed Sweett establish to its satisfaction that the size of the facility had been optimised?

I look forward to your assistance with the above enquiries.

Yours sincerely



Cathal Guiomard
Commissioner