



gardiner&theobald

# **PANSHANGER AIRFIELD**

**For**

**Welwyn Hatfield Borough Council**

Review of Cost Plan Report

26 April 2016



<b>CONTENTS</b>	<b>PAGE</b>
1. INTRODUCTION.....	2
2. EXECUTIVE SUMMARY .....	3
3. DOCUMENTATION FORMING BASIS OF REPORT .....	8
4. REVIEW OF CONSTRUCTION COSTS .....	9
5. BENCHMARKING OF £/m <sup>2</sup> RATES .....	17

## **APPENDICES**

**APPENDIX A      BENCHMARKING**

## **1. INTRODUCTION**

- 1.1** This report is addressed to and is intended for the sole use of Welwyn Hatfield Borough Council. It should not be reproduced in whole or in part nor further distributed without the prior consent of Gardiner & Theobald LLP.
- 1.2** As requested by Welwyn Hatfield Borough Council, Gardiner & Theobald LLP (G&T) has carried out a review of the Costs Plan Report for Panshanger Airfield prepared by Gleeds Cost Management Ltd, dated 7th August 2015.
- 1.3** This review focuses on construction costs only of the Panshanger Aviation Centre and Grass Runway, as identified in the Cost Plan Report.
- 1.4** Gardiner & Theobald LLP have endeavoured to identify quantum and/or costs that appear excessive or insufficient pertaining to the works and to provide a commentary accordingly. The review does not attempt to provide a comparable order of cost for the works.
- 1.5** The review commenced following receipt of the Cost Plan Report on 14th April 2016.
- 1.6** The information that has been received for review is limited to the Cost Plan Report and Annexes thereto. No further documents, drawings, specifications, or the like have been provided.
- 1.7** The review has been carried out in isolation by Gardiner & Theobald LLP without recourse to the report's author.
- 1.8** As such and without the benefit of either drawings or a complete scope of works, where this review has made comment on quantum or cost this should broadly be taken as an indication for consideration.

## 2. EXECUTIVE SUMMARY

### 2.1 Generally

The Gleeds Cost Plan provides estimated costs for the Panshanger Aviation Centre. These costs have been reviewed by Gardiner & Theobald LLP.

The Gardiner & Theobald review is based upon our understanding of the design, methodology, and construction requirements from the limited information made available.

The review of these documents has identified a number of issues within the Cost Plan that appear incorrect, a number of which might have a potential cost impact.

The more significant of these issues are highlighted in this Executive Summary. Further detail can be found in Section 4 hereafter.

We have grouped the issues under three headings as follows:

- Quantum
- Rate or cost allowance
- Scope

### 2.2 Issues of Quantum

2.2.1 On the Summary page of the Cost Plan Report, we have found incorrect reporting of costs per square metre. This is described in greater detail later in our review at paragraphs 4.6.1 to 4.6.3, but in summary:

- The hanger building with offices are stated separately as 1,500m<sup>2</sup> and 360m<sup>2</sup>, totalling 1,860m<sup>2</sup>, but G&T assess that this as should be 1,680m<sup>2</sup>,
- The Café / Shop, etc., plus link has been calculated as 605m<sup>2</sup> (but see later comments (4.10.2 – 4.10.4) that question this calculation).
- Based upon the above assumptions, the gross floor area of the proposed buildings is therefore 2,285m<sup>2</sup> (1,680m<sup>2</sup> + 605m<sup>2</sup>).
- The sub-total excluding external works of £1,284,200 indicates a cost per square metre of £1,752/m<sup>2</sup>, but this should be £562/m<sup>2</sup>.

Thereafter in the summary, whilst no gross floor area is stated, we deduce that the rates per square metre stated have been based upon an area of 1,880m<sup>2</sup>. The area used to calculate the cost per square metre should be 2,285m<sup>2</sup> as discussed above. This indicates that all further £/m<sup>2</sup> figures stated are incorrect. The overall rate, based upon the stated total cost of £2.7 million, should be calculated as £1,182/m<sup>2</sup> rather than £1,436/m<sup>2</sup> as stated in the report.

Whilst this in itself does not affect the gross cost of £2.7 million, it does affect comparison with and benchmarking against other schemes and buildings. Comparison and benchmarking is discussed below, and further in Section 5 of this review.

2.2.2 At item 4 i) of the Summary, the parking area is noted as being presumed for 20 spaces. An allowance of 440m<sup>2</sup> has been made, equating to 22m<sup>2</sup> per space. In our experience, an allowance closer to 30m<sup>2</sup> per space is more likely, which would generate a parking area of 600m<sup>2</sup>.

2.2.3 In the Hangar estimate, item 0.1 is an allowance for site clearance to hilly fields meadow. From the limited information provided we have assessed the area in which the buildings are sited is close to 45,000m<sup>2</sup> rather than the 30,400m<sup>2</sup> in the cost plan.

2.2.4 In the Café estimate, the gross floor area of the café shop and link is stated as 605m<sup>2</sup>. The link seems to be single storey and 10m x 8m, 80m<sup>2</sup>. The footprint area (= ground floor area) of the café / shop has been assumed by Gleeds at 20m x 15m, 300m<sup>2</sup>. This leaves 225m<sup>2</sup> for the upper floor(s) of the café / shop.

We can find no costs or items indicating the circular second floor part of this building, which is indicated on the proposals sketch. We assess the area of this part to be about 25m<sup>2</sup>.

Setting aside this circular second floor portion, our own assessment of the first floor area, based upon the proposals sketch, is about 112m<sup>2</sup> (14m x 8m), contributing to a total area of café / shop plus link of 492m<sup>2</sup> (300 + 112 + 80). If our assessment proves correct, an excessive quantity will have been used for a number of elements

2.2.5 In the Café estimate at item 4.1, the area for flat roof construction is stated as 605m<sup>2</sup>, but should be 380m<sup>2</sup> (300m<sup>2</sup> café + 80m<sup>2</sup> link).

2.2.6 In the Café estimate at item 6.2, 140m of staircase balustrade has been included; this quantity is excessive.

## 2.3 Issues of Rate or Cost Allowance

2.3.1 In the Executive Summary at paragraph 1 (and elsewhere), we note that construction costs have been based at “3 Qtr 2015” price levels. It should be noted that Gardiner & Theobald would expect current tender costs, at 2nd Quarter 2016, to be a little over 4% higher than those in the Cost Plan Report.

In the next paragraph, Gleeds comment on noticing “recent” signs of an upturn in the construction market. Gardiner & Theobald also noted this upturn, but a little earlier, probably commencing in 3rd or 4th Quarter 2014, and G&T are currently forecasting higher than average tender price inflation until 1st Quarter 2017.

Whilst no potential construction programme dates are mentioned in the report, it will be important to make adequate allowance for the impact of this high tender inflation level through the period from the estimate base date until the anticipated start on site of the proposed works.

2.3.2 In Section 4 Basis of Cost Plan, paragraph 4.10.1 outlines risk allowances included in the cost plan. The included allowance compounds to 10.25%, which

we feel is low when considered against the current lack of design and survey information.

- 2.3.3 In the Hangar estimate, item 0.1 is an allowance for site clearance to hilly fields meadow. We have commented above (2.2.3) on the assessed quantum, but we also consider the rate of £2/m<sup>2</sup> slightly low when considering how much of that area (up to 15,000m<sup>2</sup>) is wooded and requires clearing.

## 2.4 Issues of Scope

- 2.4.1 In Section 2 Description of Project in the list of proposed works in paragraph 2.2, reference is made to aviation fuel. We have found nothing in the cost plan to indicate allowances for either underground fuel tanks or above ground secure storage, nor for fuel dispensing equipment.
- 2.4.2 In the external works section of the Summary, at item 4, there is the stated assumption that local drainage connections are available for foul and surface water drainage. Our general inspection of the proximity of the proposed site for the buildings of the Aviation Centre to Hems Lane suggests that the likelihood of foul sewers in the road should not be so presumed, as nearby residential development does not generally appear to face or use this road.
- 2.4.3 Furthermore, notwithstanding the potential proximity of a surface water sewer, the proposed buildings and hardstandings cover an area of over 5,000m<sup>2</sup>, and we would expect a requirement from the Environment Agency to attenuate surface water discharge to the sewer at green field run off rates. We can find no allowance for surface water attenuation in the cost plan.
- 2.4.4 We are not clear if the access road at item 4 ii) of the Summary needs to be suitable for use by emergency service vehicles or refuse trucks. If so, we consider the proposed width and specification to be inadequate. There may also be a need for a turning head for the aforementioned vehicles.
- 2.4.5 Within the External Works section of the Summary, we can find no allowance for the formation of a junction onto Hems Lane.
- 2.4.6 Whilst the apron has been accounted within the External Works, we can find no allowance for other paving indicated around the buildings, including the café terrace, nor for any paved link to the car park that may be required.
- 2.4.7 In the Key Exclusions from Estimate (page 2 of 5), item 2 excludes M&E services other lighting and small power to the hangar. We would question if, as a minimum, frost protection heating is required, or perhaps fire detection, alarm and suppression systems.
- 2.4.8 In the Key Exclusions from Estimate (page 2 of 5), item 8 excludes upgrades to incoming services. We do not expect that there are any services on the site of the facilities, so costs for incoming services would appear inevitable.
- 2.4.9 In the Key Exclusions from Estimate (page 2 of 5), item 14 excludes car park barriers. Whilst these may not be required, we can find no inclusion of fences or

gates, which are surely required.

- 2.4.10 In the Hangar estimate within Item 1, we can find no allowance for foundations to support the structural steel frame.
- 2.4.11 In the Hangar estimate, we can find no allowance for the windows that are indicated on the proposals sketch.
- 2.4.12 In the Runway Estimate, item 2.1 Geotextile matting to runway and taxiway has been quantified and a rate applied, but the cost has been excluded from the total price. This item has not been separately excluded.
- 2.4.13 In the Runway Estimate, we can find no allowance for fencing to the runway and taxiway.

## 2.5 Benchmarking

- 2.5.1 The issues noted at 2.2 to 2.4 above contain topics from our review, some of which would add cost to the cost plan total, whilst other items would act to reduce the cost plan. In the absence of drawings at this stage, it is impossible to be definitive about the overall impact of these issues.

Therefore, in an attempt to give a more general comment on the overall cost, we have attempted to benchmark the proposals against similar projects for which cost data is available.

- 2.5.2 For benchmarking purposes, The scheme can be considered in three parts, and for two of these parts benchmarking information is available:

- Hangar with offices
- Café / Shop

Benchmarking information is not available for the External Works, Runway, etc.

- 2.5.3 Our benchmarking assessment is set out in Section 5, hereafter, but can be summarised as follows:

- The cost plan totals £2,700,000.
- Based upon cost plan areas, benchmarking indicates a range of costs from £2,711,957 to £3,423,307, showing the cost plan total to be lower than might be expected.
- Based upon areas assessed by G&T, benchmarking indicates a range of costs from £2,507,457 to £3,136,101, showing the cost plan total to fall within a range that might be expected.

Notwithstanding the above, the aspect that has not been benchmarked, the apron, runway and other external works, is subject to a number of concerns about scope, which, if accepted, would increase this section of the cost plan.

## 2.6 Conclusion

There is very little design information upon which to base an opinion on the Cost Plan Report.

However, we have found a large number of issues in a relatively short report, some being cosmetic and insignificant in terms of cost, but others being cost significant. There are a number of issues where we disagree with quantities and/or rates used in the cost plan, or where we have questioned the scope that has been covered.

In the absence of drawings at this stage, it is impossible to be definitive about the overall impact of these issues.

Furthermore, we are mindful that Gleeds will have had the opportunity to discuss the proposals with their client and his architect. This review has been carried out in isolation by Gardiner & Theobald LLP without recourse to the report's author.

Therefore, consideration of Gleeds greater project knowledge and involvement has to be considered in any opinion on the level of cost.

However, one of the more concerning issues appears to be the calculation of gross floor areas. This is of significance when attempting to benchmark the proposals.

To provide a further view on the cost plan total, we have prepared some benchmark analysis in Section 5 hereafter. This shows that based upon the areas used in the cost plan, the total cost falls below expected levels. However, if Gardiner & Theobald's interpretation of floor areas proves to be correct, the £2.7 million total falls within the range expected.

It appears to Gardiner & Theobald that further clarification of the issues noted in this review would allow a greater level of cost certainty to be achieved.

### **3. DOCUMENTATION FORMING BASIS OF REPORT**

**3.1** This review is based upon the following relevant documents:

- Cost Plan Report prepared by Gleeds Cost Management Ltd, dated 7<sup>th</sup> August 2015,

**3.2** Scope has been generally ascertained from:

- Gleeds Mark up of Assumed Scope, as Annex B of the Cost Plan Report,
- “Proposed Panshanger Aviation Centre” sketch from page 6 of British European Aviation Limited’s Outline Business Plan for Panshanger Airfield, within Annex A of the Cost Plan Report.

## 4. REVIEW OF CONSTRUCTION COSTS

Gardiner & Theobald's review of construction costs for the scheme has been considered under each section of the Cost Plan Report. Our comments are by exception rather than on every paragraph or item.

### 4.1 Executive Summary

4.1.1 In paragraph 1, we note that construction costs have been based at "3 Qtr 2015" price levels, the report having been issued in August 2015. It should be noted that Gardiner & Theobald would expect current tender costs, at 2nd Quarter 2016, to be a little over 4% higher than those in the Cost Plan Report.

4.1.2 In paragraph 2, Gleeds comment on noticing "recent" signs of an upturn in the construction market. Gardiner & Theobald also noted this upturn, but a little earlier, probably commencing in 3rd or 4th Quarter 2014, and G&T are currently forecasting higher than average tender price inflation until 1st Quarter 2017.

Whilst no potential construction programme dates are mentioned in the report, it will be important to make adequate allowance for the impact of this high tender inflation level through the period from the estimate base date until the anticipated start on site of the proposed works.

4.1.3 In paragraph 6, a list of items for which no costs have been included is provided. Whilst these are commonly noted exclusions, separate allowances should be made for these topics.

In this list, the third topic reads "Other development and project costs (i.e. non-costs in connection with the project)". There may be a typographical error in this item, which is otherwise not understood.

4.1.4 In paragraph 7, it is suggested that the project team should review costs once the detailed design has been completed. G&T would recommend that the costs be continually monitored as the design develops to ensure that the design is not allowed to "grow" into a scheme that will be more expensive than available funds, and thereby avoid abortive re-design which can affect both time and cost.

4.1.5 In paragraph A of the Recommendations on page 4, reference is made in the third item listed to making allowances for demolition works. From our investigation of the scope, we have found no requirement for demolition works, presuming that the existing airfield buildings to the south east of the current proposals will be addressed with the associated residential development costs.

### 4.2 1.0 Introduction

4.2.1 In paragraph 1.1 (and elsewhere in the report), reference is made to the relocation of the existing runway. Gardiner & Theobald have presumed that a new runway is to be created with no relocation works involved.

Furthermore, we understand that Panshanger Airfield is near Welwyn, and not Warwick as stated.

#### **4.3 2.0 Description of the Project**

4.3.1 In the list of proposed works in paragraph 2.2, reference is made to aviation fuel. We have found nothing in the cost plan to indicate allowances for either underground fuel tanks or above ground secure storage, nor for fuel dispensing equipment.

#### **4.4 3.0 Cost Plan Summary**

4.4.1 This summary is repeated in Section 5 and our comments are made in that section.

#### **4.5 4.0 Basis of Cost Plan**

4.5.1 In paragraph 4.1.3, we note that the reference to inflation should be to paragraph 4.11 and not 4.12.

4.5.2 In paragraph 4.3.1, reference is made to the outline specification being in Annex A to the report. G&T have found no such specification; rather just a “picture” of the proposed facility is noted at pages 3 and 6 of the Annex, and indications of the runway, taxiway and clearway at page 4.

4.5.3 The assumptions referenced in Annex B amount to indicative building and facility sizes only.

4.5.4 Paragraph 4.4.1 states that the “detailed” cost plan describes the building works, but we have not found from where these descriptions have been taken, and presume they are generally assumptions made by Gleeds.

4.5.5 In paragraph 4.5.2, it is stated that unit rates include design fees, yet elsewhere in the report design fees are excluded, e.g. in Executive Summary paragraph 6 and Recommendation A, and in paragraph 4.8.1(5). G&T are of the opinion that the rates do not include for design fees.

4.5.6 Paragraph 4.9.1 lists a number of topics for which no allowance has been made in the cost plan. Of particular note is the exclusion of fittings furnishings and equipment, which can sometimes be expected to be included in the building works estimates. This applies specifically to the fit out of the café kitchen, which we presume has been left to the chosen catering company to supply and install.

4.5.7 Paragraph 4.10.1 outlines risk allowances included in the cost plan. The included allowance compounds to 10.25%, which we feel is low when considered against the current lack of design and survey information.

4.5.8 In paragraph 4.10.4, we note that the reference to risk allowances should be to

paragraph 5.10 and not 5.12.

#### 4.6 5.0 Detailed Cost Plan - Summary (Page 1 of 6)

4.6.1 Notwithstanding our comments hereafter on the costs of construction, the costs calculated by Gleeds for each building are arithmetically correct and have been correctly transferred to the Summary from the detail pages. However, there is incorrect reporting of costs per square metre:

- The hanger building:
  - comprises the hangar (1,500m<sup>2</sup>) itself plus the integral offices (totalling 360m<sup>2</sup>)
  - The ground floor offices, which we believe equate to half of the total integral office area (180m<sup>2</sup>), are already counted as part of the hangar area.
  - The first floor offices count as additional gross floor area (180m<sup>2</sup>).
  - Therefore, the gross floor area of the hangar building with offices is 1,680m<sup>2</sup> (1,500m<sup>2</sup> + 180m<sup>2</sup>).
- The Café / Shop, etc., plus link has been calculated as 605m<sup>2</sup> (but see later comments (4.10.2 – 4.10.4) that question this calculation).
- Based upon the above assumptions, the gross floor area of the proposed buildings is therefore 2,285m<sup>2</sup> (1,680m<sup>2</sup> + 605m<sup>2</sup>).
- The sub-total excluding external works of £1,284,200 indicates a cost per square metre of £1,752/m<sup>2</sup>, but this should be £562/m<sup>2</sup>.

4.6.2 Thereafter in the summary, whilst no gross floor area is stated, we deduce that the rates per square metre stated have been based upon an area of 1,880m<sup>2</sup>. The area used to calculate the cost per square metre should be 2,285m<sup>2</sup> as discussed above. This indicates that all further £/m<sup>2</sup> figures stated are incorrect. The overall rate, based upon the stated total cost of £2.7 million, should be calculated as £1,182/m<sup>2</sup> rather than £1,436/m<sup>2</sup> as stated in the report.

4.6.3 Whilst this in itself does not affect the gross cost of £2.7 million, it does affect comparison with and benchmarking against other schemes and buildings. Comparison and benchmarking is discussed further in Section 5 of this review.

4.6.4 In the external works section of the summary, at item 4, there is the stated assumption that local drainage connections are available for foul and surface water drainage. Our general inspection of the proximity of the proposed site for the buildings of the Aviation Centre to Hems Lane suggests that the likelihood of foul sewers in the road should not be so presumed, as nearby residential development does not generally appear to face or use this road.

4.6.5 Furthermore, notwithstanding the potential proximity of a surface water sewer, the proposed buildings and hardstandings cover an area of over 5,000m<sup>2</sup>, and we

would expect a requirement from the Environment Agency to attenuate surface water discharge to the sewer at green field run off rates. We can find no allowance for surface water attenuation in the cost plan.

- 4.6.6 At item 4 i), the parking area is noted as being presumed for 20 spaces. An allowance of 440m<sup>2</sup> has been made, equating to 22m<sup>2</sup> per space. In our experience, an allowance closer to 30m<sup>2</sup> per space is more likely, which would generate a parking area of 600m<sup>2</sup>.
- 4.6.7 We are not clear if the access road at item 4 ii) needs to be suitable for use by emergency service vehicles or refuse trucks. If so, we consider the proposed width and specification to be inadequate. There may also be a need for a turning head for the aforementioned vehicles.
- 4.6.8 We can find no allowance for the formation of a junction onto Hems Lane.
- 4.6.9 Whilst the apron has been accounted, we can find no allowance for other paving indicated around the buildings, including the café terrace, nor for any paved link to the car park.
- 4.6.10 We can find no allowance for fuel storage or dispensing equipment.
- 4.6.11 We can find no allowance for fencing or gates around the buildings or runway and taxiway.

#### 4.7 **5.0 Detailed Cost Plan - Key Exclusions from Estimate (Page 2 of 6)**

- 4.7.1 Item 2 excludes M&E services other lighting and small power to the hanger. We would question if, as a minimum, frost protection heating is required, or fire detection, alarm and suppression systems.
- 4.7.2 Item 5 excludes demolition of existing buildings. From our investigation of the scope, we have found no requirement for demolition works, presuming that the existing airfield buildings to the south east of the current proposals will be addressed with the associated residential development costs.
- 4.7.3 Item 7 excludes upgrades to existing taxiways and airfield ground lighting (AGL). It is our understanding that a new runway and taxiway are proposed, so we presume that a new taxiway will be created and new AGL provided.
- 4.7.4 Item 8 excludes upgrades to incoming services. We do not expect that there are any services on the site of the facilities, so costs for incoming services would appear inevitable.
- 4.7.5 Item 12 excludes external lighting including external lighting to car park; however, we would expect this to be required.
- 4.7.6 Item 14 excludes car park barriers. Whilst these may not be required, we can find no inclusion of fences or gates, which are surely required.

#### **4.8 5.0 Detailed Cost Plan - Hangar Estimate (Page 3 of 6)**

- 4.8.1 Item 0.1 is an allowance for site clearance to hilly fields meadow. From the limited information provided we have assessed the area in which the buildings are sited is close to 45,000m<sup>2</sup> rather than the 30,400m<sup>2</sup> in the cost plan. We also consider the rate of £2/m<sup>2</sup> slightly low when considering how much of that area (up to 15,000m<sup>2</sup>) is wooded and requires clearing.
- 4.8.2 Within Item 1, we can find no allowance for foundations to support the structural steel frame.
- 4.8.3 The frame, roof and external walls are stated to be based upon a quotation by Prospan from 2013. No copy of the quotation nor a breakdown thereof has been provided, making review of these elements rather difficult.
- 4.8.4 We can find no allowance for the windows that are indicated on the proposals sketch.
- 4.8.5 Under item 7.1, there is an assumption of no finish to brickwork walls; however, no brickwork walls have been included in this section of the cost plan.
- 4.8.6 Under M&E services, only lighting has been included. We would question whether small power as a minimum would also be required, plus perhaps fire detection, alarms and suppression. We also note that the cladding is stated as single skin, and also that no wall finishes are allowed. We wonder therefore if frost protection heating might also be required.

#### **4.9 5.0 Detailed Cost Plan - Integral Offices Estimate (Page 4 of 6)**

- 4.9.1 This section has been confusingly headed Cafe / Shop.
- 4.9.2 In item 3.1, reference is made to second floor, but we presume that there are only two floors of offices, ground and first.
- 4.9.3 In item 7.1, the lump sum allowance of emulsion paint to walls is considered low.
- 4.9.4 In item 8.2, the rate for internal doors is considered low.

#### **4.10 5.0 Detailed Cost Plan - Cafe Estimate (Page 5 of 6)**

- 4.10.1 This section has been confusingly headed Offices. We understand that this section additionally covers the shop and the link to the hangar.
- 4.10.2 The gross floor area of the café shop and link is stated as 605m<sup>2</sup>. The link seems to be single storey and 10m x 8m, 80m<sup>2</sup>. The footprint area (= ground floor area) of the café / shop has been assumed by Gleeds at 20m x 15m, 300m<sup>2</sup>. This leaves 225m<sup>2</sup> for the upper floor(s) of the café / shop.
- 4.10.3 We can find no costs or items indicating the circular second floor part of this

building, which is indicated on the proposals sketch. We assess the area of this part to be about 25m<sup>2</sup>.

- 4.10.4 Setting aside this circular second floor portion, our own assessment of the first floor area, based upon the proposals sketch, is about 112m<sup>2</sup> (14m x 8m), contributing to a total area of café / shop plus link of 492m<sup>2</sup> (300 + 112 + 80). If the second floor is considered, the total becomes 517m<sup>2</sup> (492 + 25).

If our assessment proves correct, an excessive quantity will have been used for the following elements:

- Rainwater goods
- Floor finishes
- Ceiling finishes
- Services

- 4.10.5 In item 4.1, the area for flat roof construction is stated as 605m<sup>2</sup>, but should be 380m<sup>2</sup> (300m<sup>2</sup> café + 80m<sup>2</sup> link).

- 4.10.6 In item 6.1, there is reference to staircase access to second floor, but based upon the rate used we presume this to be the staircase from ground to first floor.

- 4.10.7 In item 6.2, 140m of staircase balustrade has been included, this quantity is excessive.

- 4.10.8 It should be noted that catering equipment to the café has been excluded elsewhere in the cost plan. Furthermore, Fittings Furniture and Equipment are also excluded, so the costs allow for the café and shop to be delivered effectively in “shell” form, there being no allowance for tables and chairs, nor shop fittings.

#### 4.11 **5.0 Detailed Cost Plan - Runway Estimate (Page 6 of 6)**

- 4.11.1 This section has been confusingly headed Offices.

- 4.11.2 Item 2.1 Geotextile matting to runway and taxiway has been quantified and a rate applied, but excluded from the total price. This item has not been separately excluded.

- 4.11.3 We can find no allowance for fencing to the runway and taxiway.

#### 4.12 **Annex C – Other Development and Project Costs**

This Annex lists items “Excluded” from the Cost Plan. We have a few observations:

- 4.12.1 Item 3.2 excludes Building Control fees; “where not paid by the Main Contractor”. If so paid, no allowance appears to have been made in the Cost Plan.

- 4.12.2 Item 3.3 excludes Oversailing fees; “where not paid by the Main Contractor”. If so paid, no allowance appears to have been made in the Cost Plan.
- 4.12.3 Item 6.1 excludes Insurance of the works, where insurance taken out by the Employer; however, for this new build project we would expect the insurance to be taken out by the Contractor, and therefore included in normal overheads for a project of this size.
- 4.12.4 Items 9.1 – 9.3 exclude Decanting and Relocation costs, however, as the existing facility has been closed for some years we doubt there will be such costs.
- 4.12.5 Items 12.3 & 12.4 exclude “Show unit / marketing suites”, however, these are not considered likely for the proposed aviation facility.

#### 4.13 Significant Issues

Of the issues outlined above, many are cosmetic or will have little effect on the overall cost. Nevertheless, we have found what appear to be a number of issues that could affect the price, which we list below:

- 4.1.1 Inflation to current costs
- 4.1.2 Inflation to commencement of works
- 4.3.1 Fuel storage and dispensing (also under 4.6.10)
- 4.5.7 Risk allowances
- 4.6.1 Gross floor areas
- 4.6.4 Drainage connections
- 4.6.5 Surface water attenuation
- 4.6.6 Size of parking area
- 4.6.7 Road specification
- 4.6.8 Junction onto Hems Lane
- 4.6.9 Paving around buildings
- 4.7.1 M&E services to hangar (also under 4.8.6)
- 4.7.4 Upgrades to incoming services
- 4.7.6 Fencing and gates to buildings and site (also under 4.6.11)
- 4.8.1 Site clearance
- 4.8.2 Foundations to hangar
- 4.8.4 Windows to hangar
- 4.10.2 Gross floor area of Café / Shop
- 4.10.3 Circular second floor to Café / Shop
- 4.10.5 Area of flat roof to Café / Shop
- 4.10.7 Length of balustrade in Café / Shop
- 4.11.3 Fencing to runway and taxiway (also under 4.6.11)

This list contains topics from our review, some of which would add cost to the cost plan total, whilst other items would act to reduce the cost plan. However, in the absence of drawings at this stage, it is impossible to be definitive about the overall

impact of these issues.

Therefore, in an attempt to give a more general comment on the overall cost, we have attempted to benchmark the proposals against similar projects for which cost data is available.

## 5. BENCHMARKING OF £/m<sup>2</sup> RATES

5.1 For benchmarking purposes, the scheme can be considered in three parts:

- Hangar with Offices
- Café / Shop with Link
- External Works, Runway, etc.

Limited benchmarking information is available for the Hangar and the Café / Shop, but not for the External Works, Runway, etc.

It is then necessary to establish the cost per square metre of each building type for comparison with benchmark information.

5.2 We first need to establish “inclusive” costs for each building, as follows:

	Hangar Building	Café / Shop
	£	£
Basic Cost		570,000
Hangar	556,200	
Offices	<u>158,000</u>	
	714,200	
Add for:		
Preliminaries @ 12%	<u>85,704</u>	<u>68,400</u>
	799,904	638,400
Contractor's OHP @ 5%	<u>39,995</u>	<u>31,920</u>
	£839,899	£670,320

5.3 As previously noted, it is important to have the correctly ascertained gross floor area for each building to make the benchmarking meaningful.

We set out below the gross floor area assessments from the Cost Plan Report and our own assessment for comparison:

	Cost Plan Area	G&T Area
	m <sup>2</sup>	m <sup>2</sup>
Hangar with Offices		
(1,500 + 360)	1,860	
(1,500 + 180)		1,680
Café / Shop (including Link)	605	517

- 5.4** From these gross costs and gross floor areas, we are able to derive costs per square metre for each building for benchmark comparison.

	Cost Plan Assessment	G&T Assessment
Hangar with Offices		
Cost	£ 839,899	£ 839,899
Gross floor area	1,860m <sup>2</sup>	1,680m <sup>2</sup>
Cost per m <sup>2</sup>	£ 452/m <sup>2</sup>	£ 500/m <sup>2</sup>
Café / Shop (including Link)		
Cost	£ 670,320	£ 670,320
Gross floor area	605m <sup>2</sup>	517m <sup>2</sup>
Cost per m <sup>2</sup>	£ 1,108/m <sup>2</sup>	£1,297/m <sup>2</sup>

Note that the Cost Plan assessments are based upon Gardiner & Theobald's corrections to the stated £/m<sup>2</sup> rates.

- 5.5** To find comparable costs for benchmarking Gardiner & Theobald have interrogated the data collected by the Building Cost Information Service (BCIS) of the Royal Institution of Chartered Surveyors (RICS).

We are able to adjust figures within the BCIS database for both date (to 3<sup>rd</sup> Qtr 2015) and location (to Welwyn Hatfield).

The results are attached at Appendix A, but the significant data is summarised hereafter.

**5.6** For the Hangar with offices, we have not found any comparable aircraft storage / repair buildings, those recorded being significantly larger than the Panshanger proposal.

We have therefore considered Warehouses and stores with offices. For purpose built warehouses with a gross floor area in the range of 500 to 2,000m<sup>2</sup>, the following range of rates is available:

Mean	£709/m <sup>2</sup>
Lower quartile	£493/m <sup>2</sup>
Median	£590/m <sup>2</sup>
Upper quartile	£798/m <sup>2</sup>

We would normally expect to use rates between the median and upper quartile to offset the fact that some of the data is based upon older projects constructed to less stringent regulatory standards (e.g. Building Regulations).

However, these rates include for general external works so a small adjustment needs to be made, equating to about 7.5% on the Panshanger figures. This has been calculated as the cost of parking and access road compared to building cost (£26,400 + £70,000 = 96,400 on £1,284,000).

**5.7** The benchmarking comparison for the hangar building is therefore as follows:

	Cost Plan Assessment	G&T Assessment
Net Cost per m <sup>2</sup> (as above)	£ 452/m <sup>2</sup>	£ 500/m <sup>2</sup>
Uplift for External Works	£ 34/m <sup>2</sup>	£ 38/m <sup>2</sup>
Gross Cost per m <sup>2</sup>	£ 486/m <sup>2</sup>	£ 538/m <sup>2</sup>
BCIS data:		
Median		£590/m <sup>2</sup>
Upper Quartile		£798/m <sup>2</sup>

**5.8** For the Café / Shop, we have found some broadly comparable data for shops, as follows:

Mean	£1,101/m <sup>2</sup>
Lower quartile	£691/m <sup>2</sup>
Median	£901/m <sup>2</sup>
Upper quartile	£1,328/m <sup>2</sup>

Again, these rates include for general external works so a small adjustment needs to be made, equating to about 7.5% on the Panshanger figures as shown above.

**5.9** The benchmarking comparison for the Café / Shop building is therefore as follows:

	Cost Plan Assessment	G&T Assessment
Net Cost per m <sup>2</sup> (as above)	£ 1,108/m <sup>2</sup>	£1,297/m <sup>2</sup>
Uplift for External Works	£ 83/m <sup>2</sup>	£ 97/m <sup>2</sup>
Gross Cost per m <sup>2</sup>	£ 1,191/m <sup>2</sup>	£1,394/m <sup>2</sup>
BCIS data:		
Median		£901/m <sup>2</sup>
Upper Quartile		£1,328/m <sup>2</sup>

**5.10** The Cost Plan can then be broken down as follows for comparison with benchmark data:

Hangar, net	£839,899	
External Works (~7.5%)	<u>£63,048</u>	
Hangar, gross	£902,947	£902,947
Café / Shop, net	£670,320	
External Works (~7.5%)	<u>£50,319</u>	
Café / Shop, gross	£720,639	£720,639
Non-Benchmarked elements:		
Apron	£195,000	
Runway	<u>£500,000</u>	
Sub-total	£695,000	
Preliminaries @ 12%	<u>£83,400</u>	
	£778,400	
OHP @ 5%	<u>£38,920</u>	
Apron & Runway	£817,320	<u>£817,320</u>
Total, excluding Inflation & Contingency		£2,440,906
Risk allowances		<u>£259,094</u>
TOTAL		<u>£2,700,000</u>

- 5.11** By applying the median and upper quartile benchmark rates to the gross floor areas discussed above, in paragraph 5.3, an indicative cost range for each building can be derived. We have shown this based upon both cost plan areas and areas assessed by G&T:

	Based Upon:	
	Cost Plan Areas	G&T Areas
Hangar Building:		
Gross Floor Areas	1,860m <sup>2</sup>	1,680m <sup>2</sup>
Median Rate		£590/m <sup>2</sup>
Upper Quartile Rate		£798/m <sup>2</sup>
Median Cost	£1,097,400	£991,200
Upper Quartile Cost	£1,484,280	£1,340,640
Café / Shop building:		
Gross Floor Areas	605m <sup>2</sup>	517m <sup>2</sup>
Median Rate		£901/m <sup>2</sup>
Upper Quartile Rate		£1,328/m <sup>2</sup>
Median Cost	£545,105	£465,817
Upper Quartile Cost	£803,440	£686,576

- 5.12** Now by summing the component parts, a range of prices can be obtained, based upon both cost plan areas and areas assessed by G&T, as follows:

Based upon Cost Plan Areas:		
	Median	Upper Quartile
Hangar	£1,097,400	£1,484,280
Café / Shop	£545,105	£803,440
Apron & Runway (same for each)	<u>£817,320</u>	<u>£817,320</u>
Benchmark Range	£2,459,825	£3,105,040
Risk @ 10.25% (as cost plan)	<u>£252,132</u>	<u>£318,267</u>
Totals for comparison	£2,711,957	£3,423,307

Based upon areas assessed by G&T:

	Median	Upper Quartile
Hangar	£991,200	£1,340,640
Café / Shop	£465,817	£686,576
Apron & Runway (same for each)	<u>£817,320</u>	<u>£817,320</u>
Benchmark Range	£2,274,337	£2,844,536
Risk @ 10.25% (as cost plan)	<u>£233,120</u>	<u>£291,565</u>
Totals for comparison	£2,507,457	£3,136,101

**5.13** So, in summary, the cost plan totals £2,700,000.

Based upon cost plan areas, benchmarking indicates a range of costs from £2,711,957 to £3,423,307, showing the cost plan total to be lower than might be expected.

Based upon areas assessed by G&T, benchmarking indicates a range of costs from £2,507,457 to £3,136,101, showing the cost plan total to fall within a range that might be expected.

Notwithstanding the above, the aspect that has not been benchmarked, the apron, runway and other external works, is subject to a number of concerns about scope, which, if accepted, would increase this section of the cost plan.

# APPENDIX A

## BENCHMARKING