

**University of Peterborough  
Project Phase 2**

**for**

**Cambridgeshire & Peterborough  
Combined Authority**

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**Report on Interim Accommodation Options**

**ISSUE DATE: 13<sup>TH</sup> MARCH 2018**

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# CONTENTS

|  |    |
|--|----|
| Introduction.....                                      | 3  |
| Outline Costs for Interim Accommodation Options .....  | 9  |
| Desk Based Survey Information .....                    | 13 |
| Operational Costs.....                                 | 15 |
| Appendix A - Cost Estimate Options 1 - 3 .....         | 19 |
| Appendix B - Operating Costs .....                     | 23 |
| Appendix C - Benchmarking Reports.....                 | 27 |
| Appendix D – Assumed Location on Embankment Site ..... | 65 |

# 01

**Introduction**

## Executive Summary

In the context of RIBA Stage 0 cost estimates and the scope as defined within the Combined Authority University of Peterborough Phase 2: Interim Accommodation Options, Student Amenities and Facilities and Programme Management Appraisal Gleeds have undertaken three capital cost estimates. These estimates being for a 1,080m<sup>2</sup> facility within the University Centre Peterborough site, a building of the same size on the Embankment Site and a building to service twice the number of students also located on the embankment site.

The construction cost estimates are as shown below for a turnkey solution. The area requirements for the number of students is as defined in the Phase 2 Report, we strongly recommend that the authority re-visits this at the next stage.

| Option   | Construction Cost (excl. fees and contingency) | Development Cost (incl. fees and contingency) | Gross Internal Floor Area (GIFA) |
|--|--|---|----------------------------------|
| Option 1 – University Centre Site – 1,000 Students | £3,980,000                                     | £5,180,000                                    | 1,080m <sup>2</sup>              |
| Option 2- Embankment Site – 1,000 Students         | £4,400,000                                     | £5,720,000                                    | 1,080m <sup>2</sup>              |
| Option 3 – Embankment Site – 2,000 Students        | £7,490,000                                     | £9,740,000                                    | 1,980m <sup>2</sup>              |

In relation to operational costs an assessment has been undertaken on the three options, these costs include hard and soft facilities management, energy and costs associated with the student experience across both sites, the latter scope being defined by the university establishment team.

| Option   | £m <sup>2</sup> |
|--|-----------------|
| Option 1 – University Centre Site – 1,000 Students | £179.65         |
| Option 2- Embankment Site – 1,000 Students         | £280.10         |
| Option 3 – Embankment Site – 2,000 Students        | £192.12         |

For options 2 and 3, should the facility be located where assumed in this report is likely to impose a cost in the region of £10,000 per annum on the project from start of construction as estimated by Peterborough City Council for loss of income from the existing car park.

# 1. Introduction

As part of the early stages of establishing a new university in Peterborough, the Cambridgeshire and Peterborough Combined Authority released their University of Peterborough Phase 2: Interim Accommodation Options, Student Amenities and Facilities and Programme Management Appraisal.

Gleeds were appointed to the Combined Authority in order to undertake a costing exercise in relation to the new build modular construction element of this Phase 2 Management Appraisal. This showed a new build modular construction as being a viable option in the when located on the site of University Centre Peterborough (UCP).

This costing exercise was to provide the following:

1. Provision of outline costs for locating the interim facilities on the North embankment of the River Nene providing the facilities as described in the Phase 2 Management Appraisal. This being an option which was considered not viable within the report.
2. Provision of outline costs for locating the interim facilities on the same embankment site to house double the number of students to meet a 2022/23 projected occupancy.
3. Undertake a review of the existing estimates for new build modular facilities within the University Centre Peterborough Site. In this case having reviewed the cost variance of £1.9m to £3.4m for this option within the Phase 2 report Gleeds have undertaken an independent estimate for the site.
4. Provide an appraisal of differing operational costs of operating an interim university facility either wholly on the UCP site or with a split site between this and the embankment site.

## **Basis of the Appraisal**

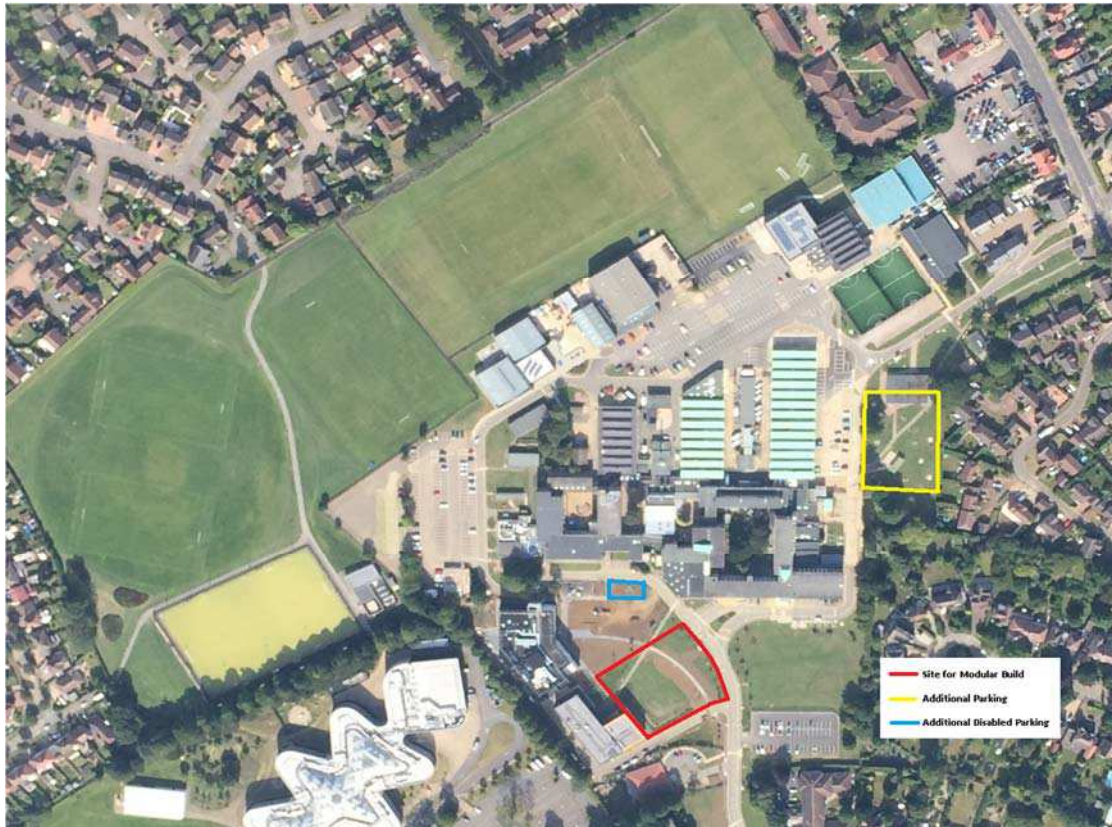
All building occupancy levels and accommodation areas are based on those within the Phase 2 Management Appraisal. In summary this report requests; occupancy for an initial 1,000 students growing to 2,000 students by the 2022/23 academic year and states a building gross internal floor area of 900m<sup>2</sup> for the initial 1,000 students with a 180m<sup>2</sup> Student Union. We strongly suggest that this assumption on area is revisited as part of a full feasibility study.

When undertaking the operational cost exercise this is based on higher student numbers where:

1. All facilities are based on the UCP site.
2. Facilities are split between the UCP and embankment site.
3. All facilities are based on the embankment site.

The assumed location of the new build modular facility within the UCP site is based on the location plan as shown below:





In relation to the embankment site there has been no probable location identified for the interim facilities. We have engaged with Peterborough City Council in relation to area allocations for this site, in April 2017 the City Council undertook a master planning exercise for the embankment site. This exercise shows potential massing for a full university, from discussion with the City Council estimations within this report are based on locating the interim facility on the footprint of the easterly most car park accessed of Bishops Road. No options appraisal has been undertaken for this however this location does have an existing vehicular access limiting S278 costs and would allow the new facility a street presence. Taking the interim accommodation further south into the site would increase costs associated with access and servicing.

This assumed area is as shown in the diagram below and outlined in red.



This site in the context of the masterplan can be found in Appendix D, the assumed location is shown in orange.





# 02

## Outline Costs for Interim Accommodation Options

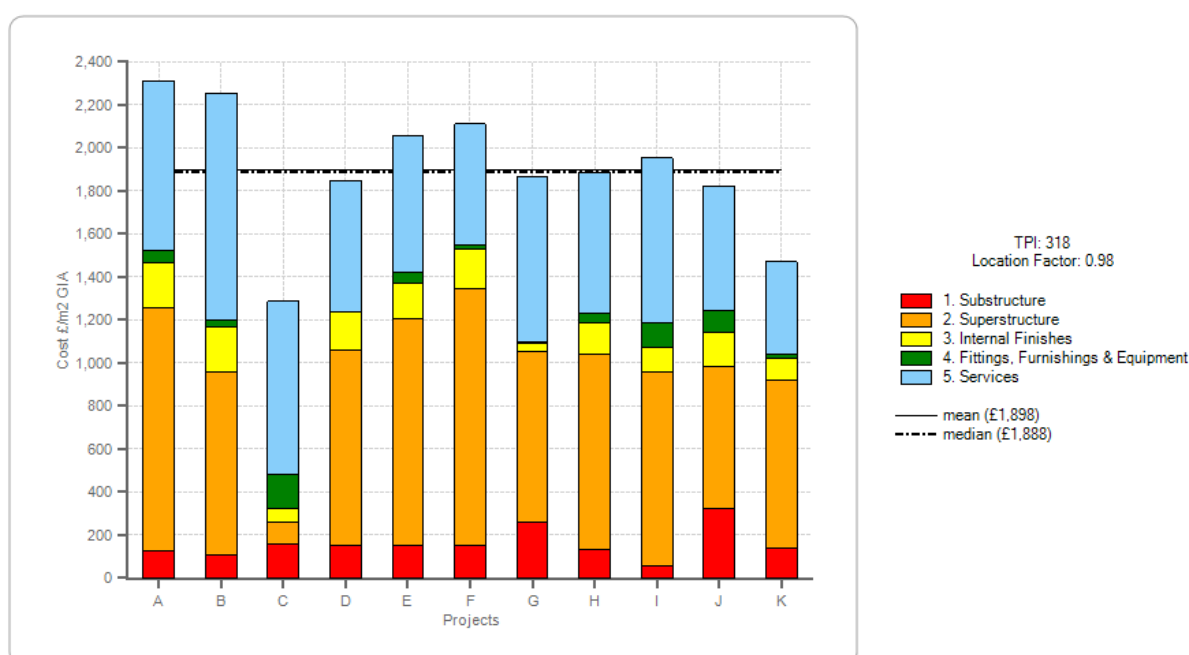
# 1. Outline Costs for Interim Accommodation Options

1. The table below provides outline strategic cost estimates for the siting of interim teaching facilities and student facilities at the University Centre Site and at the Embankment site, Student numbers and specifications for the proposed buildings are as defined in the business case.
  - Option 1 provides a cost estimate for siting of the new facilities at the UCP site
  - Option 2 provides an estimate for the same facility to be provided at the Embankment site.
  - Option 3 estimates the cost of a facility accommodating 2,000 students on the embankment site (done on a pro-rata basis from the occupancy which is contained in the business case).

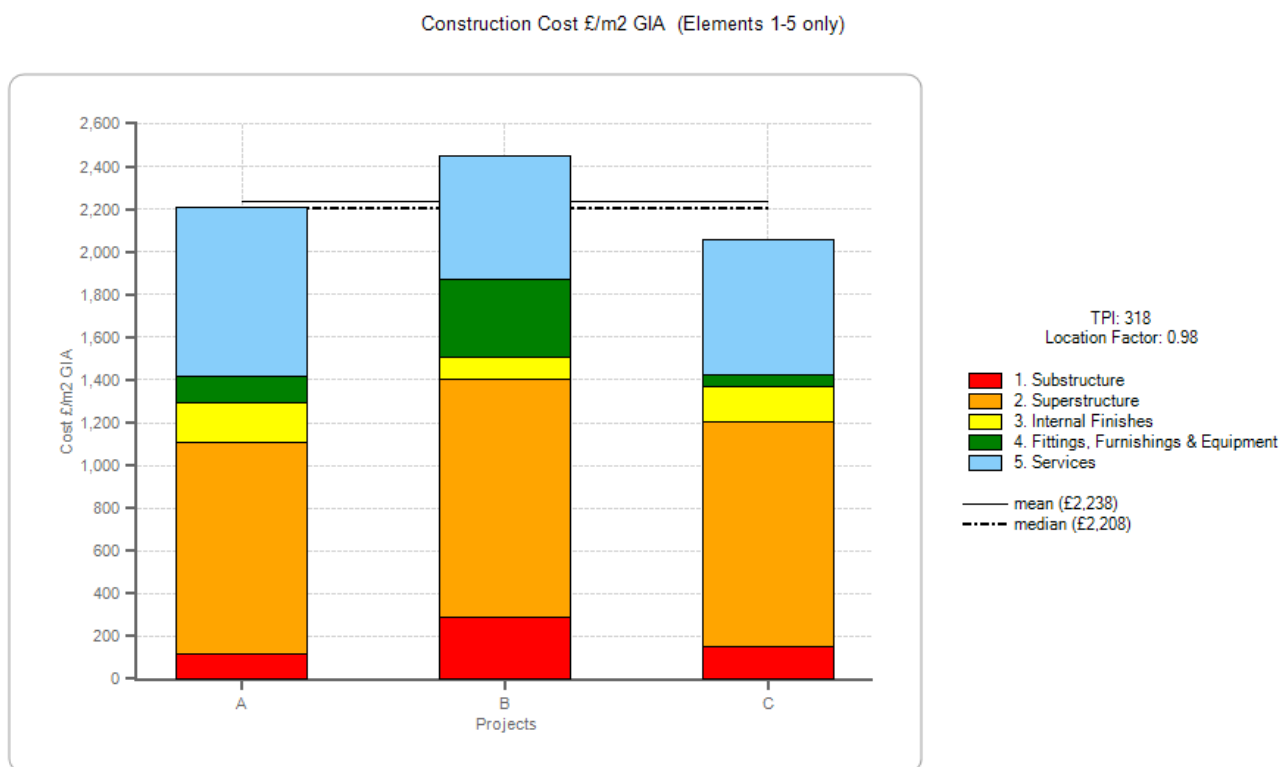
| Option   | Construction Cost (excl. fees and contingency) | Development Cost (incl. fees and contingency) | Gross Internal Floor Area (GIFA) |
|--|--|---|----------------------------------|
| Option 1 – University Centre Site – 1,000 Students | £3,980,000                                     | £5,180,000                                    | 1,080m <sup>2</sup>              |
| Option 2- Embankment Site – 1,000 Students         | £4,400,000                                     | £5,720,000                                    | 1,080m <sup>2</sup>              |
| Option 3 – Embankment Site – 2,000 Students        | £7,490,000                                     | £9,740,000                                    | 1,980m <sup>2</sup>              |

2. These costs include for general site preparation works, deemed to be more extensive at the Embankment site due its current land use and proximity to the river; and we have included an extra over allowance for enhanced structural requirements for the Embankment Site options. This is to cover a deep foundation solution and suspended slabs as identified within WYG's Phase 1 Geo-Environmental Desk Study dated March 2018.
3. A list of risk items/assumptions and exclusions associated with the costs is provided for each site in the cost estimates provided in Appendix A.
4. Whilst we understand that the preferred construction method is to be modular construction, our recent experience has shown that the cost differential between traditional and modular construction is minimal. The main benefit of the modular construction is the potential reduction in programme, if design development is carried out in a coordinated manner. Therefore, for these estimates we have assumed that either option is possible and is to be explored in more detail in the RIBA Stage 1 feasibility study.

5. We have calculated the costs based on the RICS (Royal Institution of Chartered Surveyors), New Rules of Measurement for Cost Planning and Estimating (Volume 1). This is the industry standard rules for producing Cost Estimates and Cost Plans.
6. The status of the project, as defined by RIBA (Royal Institute of British Architects), is Stage 0, which is known as Strategic Definition. This corresponds with the RICS Rough Order of Cost Estimates, which is the methodology used to inform the Cost Estimates in Appendix A. It must be noted that this is an extremely early stage in the project process and as such the presented costs must be treated with caution due to the minimal amount of information which the costs are based on. We recommend that a full design team is engaged to enable a full feasibility to be undertaken and more accurate costs to be undertaken.
7. We have assumed a base rate of £2,250/m<sup>2</sup> for the teaching spaces based on our Research and Development (R&D) department's benchmarking data for similar projects. Our data has been rebased to allow for current day costs and for the Peterborough location. The graph below shows the distribution of the source data which informs our rate of £2,250 (Calculated by taking the mean £1,898/m<sup>2</sup> and allowing 20% addition for Preliminaries and Overhead and profit = £2,277/m<sup>2</sup> **ROUNDED to £2,250/m<sup>2</sup>**)

Construction Cost £/m<sup>2</sup> GIA (Elements 1-5 only)

8. For the student union we have assumed a base rates of £2,750/m<sup>2</sup> based on our R&D Department's benchmarked data. The graph below shows the distribution of the source data which informs our rate of £2,238 (Calculated by taking the mean £2,238/m<sup>2</sup> and allowing 20% addition for Overhead and profit = £2,685/m<sup>2</sup> **ROUNDED to £2,750/m<sup>2</sup>**)



9. It should be noted that the construction industry is currently experiencing continually changing market conditions with the supply chain becoming increasingly selective in the opportunities they pursue. This is leading to some pricing volatility, with projects being considered by contractors based on procurement route, risk apportionment, programme and the robustness of tender documentation. The number of 'major' tier one contractors who are both suitable and available for sizeable and/or complex schemes is becoming more limited with projects tending to be favoured where price and programme risk are fairly shared. In addition, the lack of contractor in-house resources coupled with the potential cost of tendering may also dissuade contractors from tendering. This is having a knock-on effect generally across projects. Projects with potential pitfalls, inappropriate risk transfer and non standard contract conditions may result in tendering opportunities being declined or they may attract a pricing premium. It is therefore essential that all aspects of the project profile are fully considered by the client and project team in light of this current volatility. This should help ensure that project procurement is appropriate, project documentation is comprehensive and risk is effectively addressed.

# 03

**Desk Based Survey Information**

### 3. Desk Based Survey Information

1. We have received WYG's Phase 1 Geo-Environmental Desk Study which has identified the following remediation strategies which may be required to the Embankment Site:
  - Site clearance and demolition of existing structures
  - Localised contamination hotspot remediation by removal through targeted excavation
  - Provision of a clean cover capping layer for soft landscaping/garden areas
  - Provision of ground gas protection measures in all new structures
2. Whilst we have excluded any costs in association with abnormal ground conditions including contaminated ground (as the quantum is unknown at this stage), we have included allowances for the enhanced structural requirements identified within WYG's report. This includes deep piled foundations and suspended floor slabs to deal with the significant thickness of made ground and the risk of significant differential settlement between it and alluvial deposits beneath.



# 04

## Operational Costs

## 4. Operational Costs

1. The Operational Cost assessment has been reviewed against four main headings of service delivery
  - Total Facilities Management
    - i. Cleaning
    - ii. Grounds
    - iii. Waste
    - iv. Planned M&E Maintenance
    - v. Lifecycle
  - Energy
  - Service Management
    - i. Contract Management
    - ii. Security
  - Student Experience
    - i. Site Management
    - ii. Pastoral Care
    - iii. Reception
    - iv. Librarian
    - v. Administration

The principle is to provide three options against three main building and site considerations.

Option 1 – Additional building for 1000 students adjoining existing site

Option 2 – Additional building for 1000 students on remote site

Option 3 – Additional building for 2000 students on remote site

Each consideration uses the same principle in standards of delivery but varies based on size, the provision of stand-alone services where Options B and C are utilising a remote site

2. The prime operational costs are based on delivering compliant and legislative services to all key estate assets. All services deliverables and labour analysis have been based upon best practice, industry guidelines and similar operational set-ups within Education.
3. The financial evaluation and provision of the benchmark has used industry average costs assessed at GBP per square meter for similar services.
4. Energy has been estimated using average kWh per square meter of total areas to provide a guide as to current energy costs, using similar University delivery costs for comparison.
5. Lifecycle has been assessed against estimated capital costs and provides an indicative recommended figure for the accrual of average capital and reactive lifecycle spend over a 25-year cycle of operations.
6. Areas have been estimated for additional FM operations as well as the provision of student space to provide enhanced facilities for education and pastoral care.
7. Based upon 1,000-student head count comparing existing site utilisation against remote site development Option A, providing a 1,000-student educational facility adjoining existing facilities, creates a joined-up delivery model that sharing student experience management

and facilities so delivering value in the creation of additional space. Predominantly the values created in Option A are because of shared services and management with the existing site.

8. Option B delivers a new facility on a remote site and as such demands additional labour for service delivery, increased student experience space requiring dedicated student experience management so increasing labour and management costs accordingly. As a remote site delivery some premises for only 1,000-students this option does not represent the best value because of the need to duplicate and delivery stand-alone managed services.
9. Option C delivers a 2,000-student head count facility on the embankment site and as such utilises the economies of scale of the increased labour and student experience being delivered to twice as many students. This option provides comparable values with Option A based purely on building for a larger student number.
10. Fig:1 Provides the costs comparisons in GBP per student per annum for each service line including the student care management
11. Conclusion:
  - Option 1 shares facilities and student experience management therefore delivering better value for a smaller student premises.
  - Option 2 is a standalone site but must accommodate the student experience dedicated management and independent services so creating a higher pro-rata delivery model
  - Option 3 is comparable with Option A based on pro-rata high student numbers whilst still delivering dedicated student experience.
12. Appendix B provides the total estimated operational cost comparator, a summary of which can be found below.

| Average Annual FM, Energy and Lifecycle Costs + Student Experience |          |                                       |                   |          | OPTION 1            |  |          | OPTION 2            |  |          | OPTION 3            |
|--|----------|---------------------------------------|-------------------|----------|---------------------|--|----------|---------------------|--|----------|---------------------|
|  |          |                                       |                   | £/m²     | £/Student/<br>Annum |  | £/m²     | £/Student/<br>Annum |  | £/m²     | £/Student/<br>Annum |
|  |          |                                       | Size m² ➡         |          | 1,000.00            |  |          | 1,000.00            |  |          | 2,000.00            |
| TFM Estimates  | £/m² ↓   | Detail                                |                   |          |                     |  |          |                     |  |          |                     |
| Cleaning   | £ 15.00  | Standard - Daily                      |                   | £ 15.00  | £ 16.50             |  | £ 15.00  | £ 16.50             |  | £ 15.00  | £ 15.08             |
| Grounds  | Varies   | A - Shared                            | B - Stand Alone   | £ 2.27   | £ 2.50              |  | £ 4.55   | £ 5.00              |  | £ 3.73   | £ 3.75              |
| Waste  | Varies   | Average Waste 3 x Weekly Collection   |                   | £ 3.64   | £ 4.00              |  | £ 5.45   | £ 6.00              |  | £ 3.98   | £ 4.00              |
| PPM  | £ 16.00  | Heat & Vent only: Compliance and Sub- |                   | £ 15.71  | £ 17.28             |  | £ 15.71  | £ 17.28             |  | £ 15.76  | £ 15.84             |
| Lifecycle  | £ 20.00  | Repairs and Capital Annual Average    |                   | £ 20.00  | £ 22.00             |  | £ 20.00  | £ 22.00             |  | £ 20.00  | £ 20.10             |
|  |          |                                       | SUB-TOTAL         | £ 56.62  | £ 62.28             |  | £ 60.71  | £ 66.78             |  | £ 58.47  | £ 58.77             |
| Energy   | kWh/m² ↓ | p/kWh ↓                               | Detail            |          |                     |  |          |                     |  |          |                     |
| Elec   | 140.00   | £ 0.119                               | UoL Average Costs | £ 16.66  | £ 18.33             |  | £ 16.66  | £ 18.33             |  | £ 16.66  | £ 16.74             |
| Gas  | 30.00    | £ 0.035                               | UoL Average Costs | £ 1.05   | £ 1.16              |  | £ 1.05   | £ 1.16              |  | £ 1.05   | £ 1.06              |
| Water  | £ 3.50   | Average £/m²                          |                   | £ 3.50   | £ 3.85              |  | £ 3.50   | £ 3.85              |  | £ 3.50   | £ 3.52              |
|  |          |                                       | SUB-TOTAL         | £ 21.21  | £ 23.33             |  | £ 21.21  | £ 23.33             |  | £ 21.21  | £ 21.32             |
| FM Management  |          |                                       |                   |          |                     |  |          |                     |  |          |                     |
| Management   | Varies   | Mobile TFM Management                 |                   | £ 5.45   | £ 6.00              |  | £ 9.09   | £ 10.00             |  | £ 5.97   | £ 6.00              |
| Security   | Mobile   | Daily evening drive-by security       |                   | £ 3.64   | £ 4.00              |  | £ 5.45   | £ 6.00              |  | £ 3.98   | £ 4.00              |
| FM Ops Man   | Varies   | Mobile Contract Management            |                   | £ 3.64   | £ 4.00              |  | £ 5.45   | £ 6.00              |  | £ 4.98   | £ 5.00              |
|  |          |                                       | SUB-TOTAL         | £ 12.73  | £ 14.00             |  | £ 20.00  | £ 22.00             |  | £ 14.93  | £ 15.00             |
|  |          |                                       |                   |          |                     |  |          |                     |  |          |                     |
|  |          |                                       | GRAND TOTAL FM    | £ 90.56  | £ 99.61             |  | £ 101.92 | £ 112.11            |  | £ 94.61  | £ 95.08             |
| Student Experience   |          |                                       |                   |          |                     |  |          |                     |  |          |                     |
| Site   | FTE X1.0 | A - Shared 50:50 B&C Site Based 100%  |                   | £ 22.73  | £ 25.00             |  | £ 45.45  | £ 50.00             |  | £ 24.88  | £ 25.00             |
| Pastoral Care  | FTE X1.0 | A - Shared 50:50 B&C Site Based 100%  |                   | £ 20.45  | £ 22.50             |  | £ 40.91  | £ 45.00             |  | £ 22.39  | £ 22.50             |
| Reception  | FTEX2.0  | 09.00-21.00 Mon-Fri                   |                   | £ 20.00  | £ 22.00             |  | £ 40.00  | £ 44.00             |  | £ 21.89  | £ 22.00             |
| Admin  | X1.0 FTE | 08.00-17.00 Mon-Fri Receptionist      |                   | £ 10.00  | £ 11.00             |  | £ 20.00  | £ 22.00             |  | £ 10.95  | £ 11.00             |
| Labrarian  | X1.0 FTE | A - Shared 50:50 B&C Site Based 100%  |                   | £ 15.91  | £ 17.50             |  | £ 31.82  | £ 35.00             |  | £ 17.41  | £ 17.50             |
|  |          | SUB-TOTAL STUDENT EXPERIENCE          |                   | £ 89.09  | £ 98.00             |  | £ 178.18 | £ 196.00            |  | £ 97.51  | £ 98.00             |
|  |          |                                       |                   |          |                     |  |          |                     |  |          |                     |
|  |          | GRAND TOTAL FM & STUDENT              |                   | £ 179.65 | £ 197.61            |  | £ 280.10 | £ 308.11            |  | £ 192.12 | £ 193.08            |

# A

## Appendix A - Cost Estimate Options 1 - 3

12th March 2018

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**ROUGH ORDER OF COST ESTIMATE**  
**UNIVERSITY OF PETERBOROUGH PROJECT PHASE 2**  
**FOR**  
**CAMBRIDGESHIRE & PETERBOROUGH COMBINED AUTHORITY**  
**OPTION 1**

|    | <i>Element</i>   | <i>Quantity</i> | <i>Rate<br/>£</i> | <i>Total<br/>£</i> |
|----|--|-----------------|-------------------|--------------------|
|    | <b><u>University Centre Peterborough - 1,080m2</u></b>   |                 |                   |                    |
| 1  | Allowance for general site clearance and preparation for modular building  | 2,080 m2        | 150               | 312,000            |
| 2  | Allowance for modular teaching accommodation   | 900 m2          | 2,250             | 2,025,000          |
| 3  | Allowance for modular student union  | 180 m2          | 2,750             | 495,000            |
| 4  | Allowance for fixtures, fittings and equipment   | 1,000 nr        | 500               | 500,000            |
| 5  | Allowance for ICT/ AV  | 1,000 nr        | 250               | 250,000            |
| 6  | Allowance for external works   | 1,000 m2        | 350               | 350,000            |
| 7  | Allowance for extending existing services to serve new building (assume provision of existing utilities is sufficient) | 1 item          | 50,000            | 50,000             |
|    | <b>Constuction Costs</b>   | <b>1,080 m2</b> | <b>3,687</b>      | <b>3,982,000</b>   |
| 8  | Design Development Risk  |                 | 7.5%              | 298,650            |
| 9  | Construction Risk  |                 | 7.5%              | 298,650            |
| 10 | Professional Fee Allowance (includes surveys and legal fees)   |                 | 15%               | 597,300            |
|    |  |                 |                   | <b>5,176,600</b>   |

**SUGGESTED BUDGET ALLOWANCE AT CURRENT DAY COSTS £ 5,180,000**

**EXCLUSIONS**

|   |  |
|---|--|
| VAT   | Finance Charges                                  |
| Employers Change Risk (i.e scope change) and Employers Other Risk | Asbestos Surveys & Removal                       |
| Inflation   | Services Diversions / Lowering                   |
| Rights of Light & Oversailing                                     | Section 106 / 278 Works & Payments/CIL           |
| Works to Party Walls / Adjoining Boundaries                       | Service upgrades beyond the boundary of the site |
| Abnormal Ground Conditions Including Contaminated Ground          | Major statutory facilities upgrades              |
| Any bespoke fixtures and fittings                                 | Staff costs                                      |
| Operation and maintenance costs                                   | Provision of car parking                         |

**NOTES**

The pricing basis of this cost estimate is current market conditions and should be reviewed at regular intervals of no longer than 3 months.

This cost estimate is based on a Gross Internal Floor Area of 1,080m2 as included within the Cambridgeshire & Peterborough Combined Authority document entitled 'Interim Accommodation Options, Student Amenities and Facilities and Programme Management Appraisal' Seventh Draft dated 25/01/18. This comprises of a three storey modular building containing 900m2 teaching space and 180m2 of student union. This accommodation is for 1,000 students.

This cost estimate allows for the development of the area identified in Appendix 4 of the above document; predominantly greenfield site with minimal site preparation works required. In addition to the 1,080m2 of new building, we have assumed 1,000m2 of associated external areas.

Allowance for FF&E based on advised allowance of £500 per student (included within Appraisal document).

We strongly advise that consultants are appointed to develop the brief further before any irrevocable financial commitment is entered into by the Client



12th March 2018

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| <b><u>ROUGH ORDER OF COST ESTIMATE</u></b><br><b><u>UNIVERSITY OF PETERBOROUGH PROJECT PHASE 2</u></b><br><b><u>FOR</u></b><br><b><u>CAMBRIDGESHIRE &amp; PETERBOROUGH COMBINED AUTHORITY</u></b><br><b><u>OPTION 2</u></b>  |  |                   |                    |
|--|--|-------------------|--------------------|
| <i>Element</i>   | <i>Quantity</i>                                  | <i>Rate<br/>£</i> | <i>Total<br/>£</i> |
| <b><u>Embankment Site - 1,080m<sup>2</sup></u></b>   |  |                   |                    |
| 1 Allowance for general site clearance and preparation for modular building (including allowance to capture potential additional land risks)   | 2,080 m <sup>2</sup>                             | 250               | 520,000            |
| 2 Allowance for modular teaching accommodation   | 900 m <sup>2</sup>                               | 2,250             | 2,025,000          |
| 3 Allowance for modular student union  | 180 m <sup>2</sup>                               | 2,750             | 495,000            |
| 4 Extra over allowance for deeper foundations/suspended slabs  | 1,080 m <sup>2</sup>                             | 100               | 108,000            |
| 5 Allowance for fixtures, fittings and equipment   | 1,000 nr   | 500               | 500,000            |
| 6 Allowance for ICT / AV   | 1,000 nr   | 250               | 250,000            |
| 7 Allowance for external works   | 1,000 m <sup>2</sup>                             | 350               | 350,000            |
| 8 Allowance for extending existing services to serve new building (assume provision of existing utilities is sufficient)   | 1 item   | 150,000           | 150,000            |
| <b>Constuction Costs</b>   | <b>1,080 m<sup>2</sup></b>                       | <b>4,072</b>      | <b>4,398,000</b>   |
| 9 Design Development Risk  |  | 7.5%              | 329,850            |
| 10 Construction Risk   |  | 7.5%              | 329,850            |
| 11 Professional Fee Allowance (includes surveys and legal fees)  |  | 15%               | 659,700            |
|  |  |                   | <b>5,717,400</b>   |
| <b>SUGGESTED BUDGET ALLOWANCE AT CURRENT DAY COSTS £ 5,720,000</b>   |  |                   |                    |
| <b><u>EXCLUSIONS</u></b>   |  |                   |                    |
| VAT  | Finance Charges                                  |                   |                    |
| Employers Change Risk (i.e scope change) and Employers Other Risk  | Asbestos Surveys & Removal                       |                   |                    |
| Inflation  | Services Diversions / Lowering                   |                   |                    |
| Rights of Light & Oversailing  | Section 106 / 278 Works & Payments/CIL           |                   |                    |
| Works to Party Walls / Adjoining Boundaries  | Service upgrades beyond the boundary of the site |                   |                    |
| Abnormal Ground Conditions Including Contaminated Ground   | Major statutory facilities upgrades              |                   |                    |
| Any bespoke fixtures and fittings  | Staff costs                                      |                   |                    |
| Operation and maintenance costs  | Provision of car parking                         |                   |                    |
| <b><u>NOTES</u></b>  |  |                   |                    |
| The pricing basis of this cost estimate is current market conditions and should be reviewed at regular intervals of no longer than 3 months.   |  |                   |                    |
| This cost estimate is based on a Gross Internal Floor Area of 1,080m <sup>2</sup> as included within the Cambridgeshire & Peterborough Combined Authority document entitled 'Interim Accommodation Options, Student Amenities and Facilities and Programme Management Appraisal' Seventh Draft dated 25/01/18. This comprises of a three storey modular building containing 900m <sup>2</sup> teaching space and 180m <sup>2</sup> of student union. This accommodation is for 1,000 students. |  |                   |                    |
| This cost estimate allows for the development of an area adjacent to Bishop's Road; land currently being used as car park. In addition to the 1,080m <sup>2</sup> of new building, we have assumed 1,000m <sup>2</sup> of associated external areas.   |  |                   |                    |
| Allowance for FF&E based on advised allowance of £500 per student (included within Appraisal document).  |  |                   |                    |
| We strongly advise that consultants are appointed to develop the brief further before any irrevocable financial commitment is entered into by the Client.  |  |                   |                    |

12th March 2018

gleeds<sup>G</sup>

| <b><u>ROUGH ORDER OF COST ESTIMATE</u></b><br><b><u>UNIVERSITY OF PETERBOROUGH PROJECT PHASE 2</u></b><br><b><u>FOR</u></b><br><b><u>CAMBRIDGESHIRE &amp; PETERBOROUGH COMBINED AUTHORITY</u></b><br><b><u>OPTION 3</u></b>  |                            |  |                    |
|--|----------------------------|--|--------------------|
| <i>Element</i>   | <i>Quantity</i>            | <i>Rate<br/>£</i>                                | <i>Total<br/>£</i> |
| <b><u>Embankment Site - 1,980m<sup>2</sup></u></b>   |                            |  |                    |
| 1 Allowance for general site clearance and preparation for modular building (including allowance to capture potential additional land risks)   | 2,980 m <sup>2</sup>       | 250  | 745,000            |
| 2 Allowance for modular teaching accommodation   | 1,800 m <sup>2</sup>       | 2,250  | 4,050,000          |
| 3 Allowance for modular student union  | 180 m <sup>2</sup>         | 2,750  | 495,000            |
| 4 Extra over allowance for deeper foundations/suspended slabs  | 1,980 m <sup>2</sup>       | 100  | 198,000            |
| 5 Allowance for fixtures, fittings and equipment   | 2,000 nr                   | 500  | 1,000,000          |
| 6 Allowance for ICT / AV   | 2,000 nr                   | 250  | 500,000            |
| 7 Allowance for external works   | 1,000 m <sup>2</sup>       | 350  | 350,000            |
| 8 Allowance for extending existing services to serve new building (assume provision of existing utilities is sufficient)   | 1 item                     | 150,000  | 150,000            |
| <b>Constuction Costs</b>   | <b>1,980 m<sup>2</sup></b> | <b>3,782</b>                                     | <b>7,488,000</b>   |
| 9 Design Development Risk  |                            | 7.5%   | 561,600            |
| 10 Construction Risk   |                            | 7.5%   | 561,600            |
| 11 Professional Fee Allowance (includes surveys and legal fees)  |                            | 15%  | 1,123,200          |
|  |                            |  | <b>9,734,400</b>   |
| <b>SUGGESTED BUDGET ALLOWANCE AT CURRENT DAY COSTS £ 9,740,000</b>   |                            |  |                    |
| <b><u>EXCLUSIONS</u></b>   |                            |  |                    |
| VAT  |                            | Finance Charges                                  |                    |
| Employers Change Risk (i.e scope change) and Employers Other Risk  |                            | Asbestos Surveys & Removal                       |                    |
| Inflation  |                            | Services Diversions / Lowering                   |                    |
| Rights of Light & Oversailing  |                            | Section 106 / 278 Works & Payments/CIL           |                    |
| Works to Party Walls / Adjoining Boundaries  |                            | Service upgrades beyond the boundary of the site |                    |
| Abnormal Ground Conditions Including Contaminated Ground   |                            | Major statutory facilities upgrades              |                    |
| Any bespoke fixtures and fittings  |                            | Staff costs                                      |                    |
| Operation and maintenance costs  |                            | Provision of car parking                         |                    |
| <b><u>NOTES</u></b>  |                            |  |                    |
| The pricing basis of this cost estimate is current market conditions and should be reviewed at regular intervals of no longer than 3 months.   |                            |  |                    |
| This cost estimate is based on a Gross Internal Floor Area of 1,980m <sup>2</sup> as included within the Cambridgeshire & Peterborough Combined Authority document entitled 'Interim Accommodation Options, Student Amenities and Facilities and Programme Management Appraisal' Seventh Draft dated 25/01/18. This comprises of a three storey modular building containing 1,800m <sup>2</sup> teaching space and 180m <sup>2</sup> of student union. This accommodation is for 2,000 students. |                            |  |                    |
| This cost estimate allows for the development of an area adjacent to Bishop's Road; land currently being used as car park. In addition to the 1,980m <sup>2</sup> of new building, we have assumed 1,000m <sup>2</sup> of associated external areas.   |                            |  |                    |
| Allowance for FF&E based on advised allowance of £500 per student (included within Appraisal document).  |                            |  |                    |
| We strongly advise that consultants are appointed to develop the brief further before any irrevocable financial commitment is entered into by the Client.  |                            |  |                    |

# B

## Appendix B - Operating Costs

## Option 1

| Average Annual FM, Energy and Lifecycle Costs + Student Experience |          |                                       |                   | 1: Site 1 - UCP |                          |              |           |          |                 | OPTION 1 |
|--|----------|---------------------------------------|-------------------|-----------------|--------------------------|--------------|-----------|----------|-----------------|----------|
|  |          |                                       |                   | Main            | Ancillary Student Accom. | Ops FM Space | TOTALS    | £/m²     | £/Student/Annum |          |
|  |          |                                       | Size m² ➡         | 900.00          | 180.00                   | 20.00        | 1,100.00  |          | 1,000.00        |          |
| TFM Estimates  | £/m² ↓   | Detail                                |                   |                 |                          |              |           |          |                 |          |
| Cleaning   | £ 15.00  | Standard - Daily                      |                   | £ 13,500        | £ 2,700                  | £ 300        | £ 16,500  | £ 15.00  | £ 16.50         |          |
| Grounds  | Varies   | A - Shared                            | B - Stand Alone   | £ 2,500         | £ -                      | £ -          | £ 2,500   | £ 2.27   | £ 2.50          |          |
| Waste  | Varies   | Average Waste 3 x Weekly Collection   |                   | £ 4,000         | £ -                      | £ -          | £ 4,000   | £ 3.64   | £ 4.00          |          |
| PPM  | £ 16.00  | Heat & Vent only: Compliance and Sub- |                   | £ 14,400        | £ 2,880                  | £ -          | £ 17,280  | £ 15.71  | £ 17.28         |          |
| Lifecycle  | £ 20.00  | Repairs and Capital Annual Average    |                   | £ 18,000        | £ 3,600                  | £ 400        | £ 22,000  | £ 20.00  | £ 22.00         |          |
|  |          |                                       | SUB-TOTAL         | £ 52,400        | £ 9,180                  | £ 700        | £ 62,280  | £ 56.62  | £ 62.28         |          |
| Energy   | kWh/m² ↓ | p/kWh ↓                               | Detail            |                 |                          |              |           |          |                 |          |
| Elec   | 140.00   | £ 0.119                               | UoL Average Costs | £ 14,994        | £ 2,999                  | £ 333        | £ 18,326  | £ 16.66  | £ 18.33         |          |
| Gas  | 30.00    | £ 0.035                               | UoL Average Costs | £ 945           | £ 189                    | £ 21         | £ 1,155   | £ 1.05   | £ 1.16          |          |
| Water  | £ 3.50   | Average £/m²                          |                   | £ 3,150         | £ 630                    | £ 70         | £ 3,850   | £ 3.50   | £ 3.85          |          |
|  |          |                                       | SUB-TOTAL         | £ 19,089        | £ 3,818                  | £ 424        | £ 23,331  | £ 21.21  | £ 23.33         |          |
| FM Management  |          |                                       |                   |                 |                          |              |           |          |                 |          |
| Management   | Varies   | Mobile TFM Management                 |                   | £ -             | £ -                      | £ 6,000      | £ 6,000   | £ 5.45   | £ 6.00          |          |
| Security   | Mobile   | Daily evening drive-by security       |                   | £ 4,000         | £ -                      | £ -          | £ 4,000   | £ 3.64   | £ 4.00          |          |
| FM Ops Man   | Varies   | Mobile Contract Management            |                   | £ -             | £ -                      | £ 4,000      | £ 4,000   | £ 3.64   | £ 4.00          |          |
|  |          |                                       | SUB-TOTAL         | £ 4,000         | £ -                      | £ 10,000     | £ 14,000  | £ 12.73  | £ 14.00         |          |
|  |          |                                       |                   |                 |                          |              |           |          |                 |          |
|  |          |                                       | GRAND TOTAL FM    | £ 75,489        | £ 12,998                 | £ 11,124     | £ 99,611  | £ 90.56  | £ 99.61         |          |
| Student Experience   |          |                                       |                   |                 |                          |              |           |          |                 |          |
| Site   | FTE X1.0 | A - Shared 50:50 B&C Site Based 100%  |                   | £ 25,000        | £ -                      | £ -          | £ 25,000  | £ 22.73  | £ 25.00         |          |
| Pastoral Care  | FTE X1.0 | A - Shared 50:50 B&C Site Based 100%  |                   | £ 22,500        | £ -                      | £ -          | £ 22,500  | £ 20.45  | £ 22.50         |          |
| Reception  | FTEX2.0  | 09.00-21.00 Mon-Fri                   |                   | £ 22,000        | £ -                      | £ -          | £ 22,000  | £ 20.00  | £ 22.00         |          |
| Admin  | X1.0 FTE | 08.00-17.00 Mon-Fri Receptionist      |                   | £ 11,000        | £ -                      | £ -          | £ 11,000  | £ 10.00  | £ 11.00         |          |
| Labrarian  | X1.0 FTE | A - Shared 50:50 B&C Site Based 100%  |                   | £ 17,500        | £ -                      | £ -          | £ 17,500  | £ 15.91  | £ 17.50         |          |
|  |          | SUB-TOTAL STUDENT EXPERIENCE          |                   | £ 98,000        | £ -                      | £ -          | £ 98,000  | £ 89.09  | £ 98.00         |          |
|  |          |                                       |                   |                 |                          |              |           |          |                 |          |
|  |          | GRAND TOTAL FM & STUDENT              |                   | £ 173,489       | £ 12,998                 | £ 11,124     | £ 197,611 | £ 179.65 | £ 197.61        |          |



## Option 2

| Average Annual FM, Energy and Lifecycle Costs + Student Experience |          |                                       |                   | 2: Site 2 - Embankment 1,000 |                          |              |           |          | OPTION 2         |
|--|----------|---------------------------------------|-------------------|------------------------------|--------------------------|--------------|-----------|----------|------------------|
|  |          |                                       |                   | Main                         | Ancillary Student Accom. | Ops FM Space | TOTALS    | £/m²     | £/Student/ Annum |
|  |          |                                       | Size m² ➡         | 900.00                       | 180.00                   | 20.00        | 1,100.00  |          | 1,000.00         |
| TFM Estimates  | £/m² ↓   | Detail                                |                   |                              |                          |              |           |          |                  |
| Cleaning   | £ 15.00  | Standard - Daily                      |                   | £ 13,500                     | £ 2,700                  | £ 300        | £ 16,500  | £ 15.00  | £ 16.50          |
| Grounds  | Varies   | A - Shared                            | B - Stand Alone   | £ 5,000                      | £ -                      | £ -          | £ 5,000   | £ 4.55   | £ 5.00           |
| Waste  | Varies   | Average Waste 3 x Weekly Collection   |                   | £ 6,000                      | £ -                      | £ -          | £ 6,000   | £ 5.45   | £ 6.00           |
| PPM  | £ 16.00  | Heat & Vent only: Compliance and Sub- |                   | £ 14,400                     | £ 2,880                  | £ -          | £ 17,280  | £ 15.71  | £ 17.28          |
| Lifecycle  | £ 20.00  | Repairs and Capital Annual Average    |                   | £ 18,000                     | £ 3,600                  | £ 400        | £ 22,000  | £ 20.00  | £ 22.00          |
|  |          |                                       | SUB-TOTAL         | £ 56,900                     | £ 9,180                  | £ 700        | £ 66,780  | £ 60.71  | £ 66.78          |
| Energy   | kWh/m² ↓ | p/kWh ↓                               | Detail            |                              |                          |              |           |          |                  |
| Elec   | 140.00   | £ 0.119                               | UoL Average Costs | £ 14,994                     | £ 2,999                  | £ 333        | £ 18,326  | £ 16.66  | £ 18.33          |
| Gas  | 30.00    | £ 0.035                               | UoL Average Costs | £ 945                        | £ 189                    | £ 21         | £ 1,155   | £ 1.05   | £ 1.16           |
| Water  | £ 3.50   | Average £/m²                          |                   | £ 3,150                      | £ 630                    | £ 70         | £ 3,850   | £ 3.50   | £ 3.85           |
|  |          |                                       | SUB-TOTAL         | £ 19,089                     | £ 3,818                  | £ 424        | £ 23,331  | £ 21.21  | £ 23.33          |
| FM Management  |          |                                       |                   |                              |                          |              |           |          |                  |
| Management   | Varies   | Mobile TFM Management                 |                   | £ -                          | £ -                      | £ 10,000     | £ 10,000  | £ 9.09   | £ 10.00          |
| Security   | Mobile   | Daily evening drive-by security       |                   | £ 6,000                      | £ -                      | £ -          | £ 6,000   | £ 5.45   | £ 6.00           |
| FM Ops Man   | Varies   | Mobile Contract Management            |                   | £ -                          | £ -                      | £ 6,000      | £ 6,000   | £ 5.45   | £ 6.00           |
|  |          |                                       | SUB-TOTAL         | £ 6,000                      | £ -                      | £ 16,000     | £ 22,000  | £ 20.00  | £ 22.00          |
|  |          |                                       |                   |                              |                          |              |           |          |                  |
|  |          |                                       | GRAND TOTAL FM    | £ 81,989                     | £ 12,998                 | £ 17,124     | £ 112,111 | £ 101.92 | £ 112.11         |
| Student Experience   |          |                                       |                   |                              |                          |              |           |          |                  |
| Site   | FTE X1.0 | A - Shared 50:50 B&C Site Based 100%  |                   | £ 50,000                     | £ -                      | £ -          | £ 50,000  | £ 45.45  | £ 50.00          |
| Pastoral Care  | FTE X1.0 | A - Shared 50:50 B&C Site Based 100%  |                   | £ 45,000                     | £ -                      | £ -          | £ 45,000  | £ 40.91  | £ 45.00          |
| Reception  | FTEX2.0  | 09.00-21.00 Mon-Fri                   |                   | £ 44,000                     | £ -                      | £ -          | £ 44,000  | £ 40.00  | £ 44.00          |
| Admin  | X1.0 FTE | 08.00-17.00 Mon-Fri Receptionist      |                   | £ 22,000                     | £ -                      | £ -          | £ 22,000  | £ 20.00  | £ 22.00          |
| Labrarian  | X1.0 FTE | A - Shared 50:50 B&C Site Based 100%  |                   | £ 35,000                     | £ -                      | £ -          | £ 35,000  | £ 31.82  | £ 35.00          |
|  |          | SUB-TOTAL STUDENT EXPERIENCE          |                   | £ 196,000                    | £ -                      | £ -          | £ 196,000 | £ 178.18 | £ 196.00         |
|  |          |                                       |                   |                              |                          |              |           |          |                  |
|  |          | GRAND TOTAL FM & STUDENT              |                   | £ 277,989                    | £ 12,998                 | £ 17,124     | £ 308,111 | £ 280.10 | £ 308.11         |

## Option 3

| Average Annual FM, Energy and Lifecycle Costs + Student Experience |          |  |                   | 3: Site 2 - Embankment 2,000 |                           |              |           |          | OPTION 3        |
|--|----------|--|-------------------|------------------------------|---------------------------|--------------|-----------|----------|-----------------|
|  |          |  |                   | Main                         | Ancilliary Student Accom. | Ops FM Space | TOTALS    | £/m²     | £/Student/Annum |
|  |          |  | Size m² ➡         | 1,800.00                     | 180.00                    | 30.00        | 2,010.00  |          | 2,000.00        |
| TFM Estimates  | £/m² ↓   | Detail                                   |                   |                              |                           |              |           |          |                 |
| Cleaning   | £ 15.00  | Standard - Daily                         |                   | £ 27,000                     | £ 2,700                   | £ 450        | £ 30,150  | £ 15.00  | £ 15.08         |
| Grounds  | Varies   | A - Shared                               | B - Stand Alone   | £ 7,500                      | £ -                       | £ -          | £ 7,500   | £ 3.73   | £ 3.75          |
| Waste  | Varies   | Average Waste 3 x Weekly Collection      |                   | £ 8,000                      | £ -                       | £ -          | £ 8,000   | £ 3.98   | £ 4.00          |
| PPM  | £ 16.00  | Heat & Vent only: Compliance and Sub-Cor |                   | £ 28,800                     | £ 2,880                   | £ -          | £ 31,680  | £ 15.76  | £ 15.84         |
| Lifecycle  | £ 20.00  | Repairs and Capital Annual Average       |                   | £ 36,000                     | £ 3,600                   | £ 600        | £ 40,200  | £ 20.00  | £ 20.10         |
|  |          |  | SUB-TOTAL         | £ 107,300                    | £ 9,180                   | £ 1,050      | £ 117,530 | £ 58.47  | £ 58.77         |
| Energy   | kWh/m² ↓ | p/kWh ↓                                  | Detail            |                              |                           |              |           |          |                 |
| Elec   | 140.00   | £ 0.119                                  | UoL Average Costs | £ 29,988                     | £ 2,999                   | £ 500        | £ 33,487  | £ 16.66  | £ 16.74         |
| Gas  | 30.00    | £ 0.035                                  | UoL Average Costs | £ 1,890                      | £ 189                     | £ 32         | £ 2,111   | £ 1.05   | £ 1.06          |
| Water  | £ 3.50   | Average £/m²                             |                   | £ 6,300                      | £ 630                     | £ 105        | £ 7,035   | £ 3.50   | £ 3.52          |
|  |          |  | SUB-TOTAL         | £ 38,178                     | £ 3,818                   | £ 636        | £ 42,632  | £ 21.21  | £ 21.32         |
| FM Management  |          |  |                   |                              |                           |              |           |          |                 |
| Management   | Varies   | Mobile TFM Management                    |                   | £ -                          | £ -                       | £ 12,000     | £ 12,000  | £ 5.97   | £ 6.00          |
| Security   | Mobile   | Daily evening drive-by security          |                   | £ 8,000                      | £ -                       | £ -          | £ 8,000   | £ 3.98   | £ 4.00          |
| FM Ops Man   | Varies   | Mobile Contract Management               |                   | £ -                          | £ -                       | £ 10,000     | £ 10,000  | £ 4.98   | £ 5.00          |
|  |          |  | SUB-TOTAL         | £ 8,000                      | £ -                       | £ 22,000     | £ 30,000  | £ 14.93  | £ 15.00         |
|  |          |  |                   |                              |                           |              |           |          |                 |
|  |          |  | GRAND TOTAL FM    | £ 153,478                    | £ 12,998                  | £ 23,686     | £ 190,162 | £ 94.61  | £ 95.08         |
| Student Experience   |          |  |                   |                              |                           |              |           |          |                 |
| Site   | FTE X1.0 | A - Shared 50:50 B&C Site Based 100%     |                   | £ 50,000                     | £ -                       | £ -          | £ 50,000  | £ 24.88  | £ 25.00         |
| Pastoral Care  | FTE X1.0 | A - Shared 50:50 B&C Site Based 100%     |                   | £ 45,000                     | £ -                       | £ -          | £ 45,000  | £ 22.39  | £ 22.50         |
| Reception  | FTEX2.0  | 09.00-21.00 Mon-Fri                      |                   | £ 44,000                     | £ -                       | £ -          | £ 44,000  | £ 21.89  | £ 22.00         |
| Admin  | X1.0 FTE | 08.00-17.00 Mon-Fri Receptionist         |                   | £ 22,000                     | £ -                       | £ -          | £ 22,000  | £ 10.95  | £ 11.00         |
| Labrarian  | X1.0 FTE | A - Shared 50:50 B&C Site Based 100%     |                   | £ 35,000                     | £ -                       | £ -          | £ 35,000  | £ 17.41  | £ 17.50         |
|  |          | SUB-TOTAL STUDENT EXPERIENCE             |                   | £ 196,000                    | £ -                       | £ -          | £ 196,000 | £ 97.51  | £ 98.00         |
|  |          |  |                   |                              |                           |              |           |          |                 |
|  |          | GRAND TOTAL FM & STUDENT                 |                   | £ 349,478                    | £ 12,998                  | £ 23,686     | £ 386,162 | £ 192.12 | £ 193.08        |



# C

## **Appendix C - Benchmarking Reports**

**BENCHMARKING REPORT – 10879 New Build High End University Teaching Spaces**

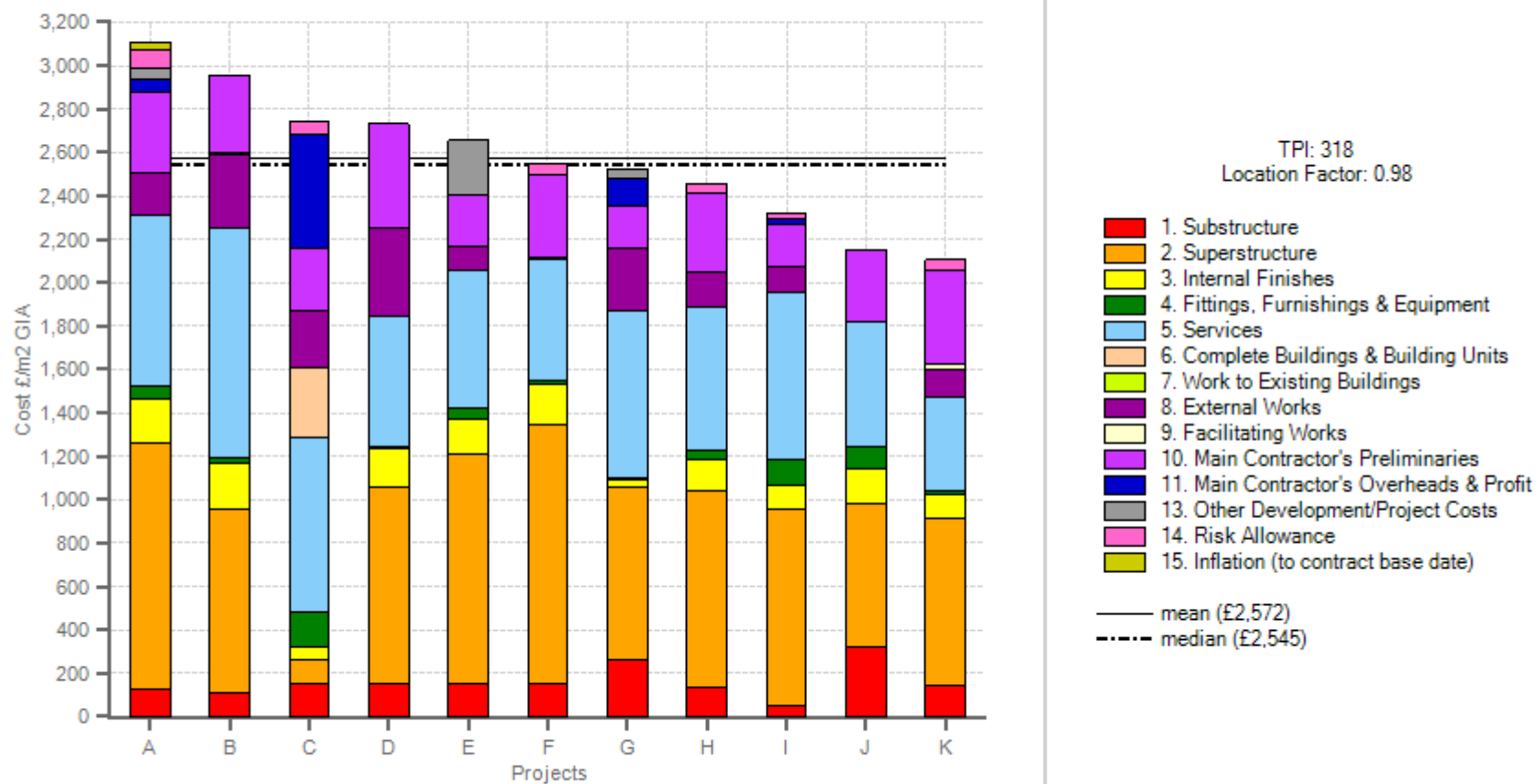
All in TPI used: 318 - 1Q2018 (BCIS indices published 2<sup>nd</sup> March 2018)

Location factor: 0.98 - Peterborough

Data used in the benchmarking exercise are as follows:

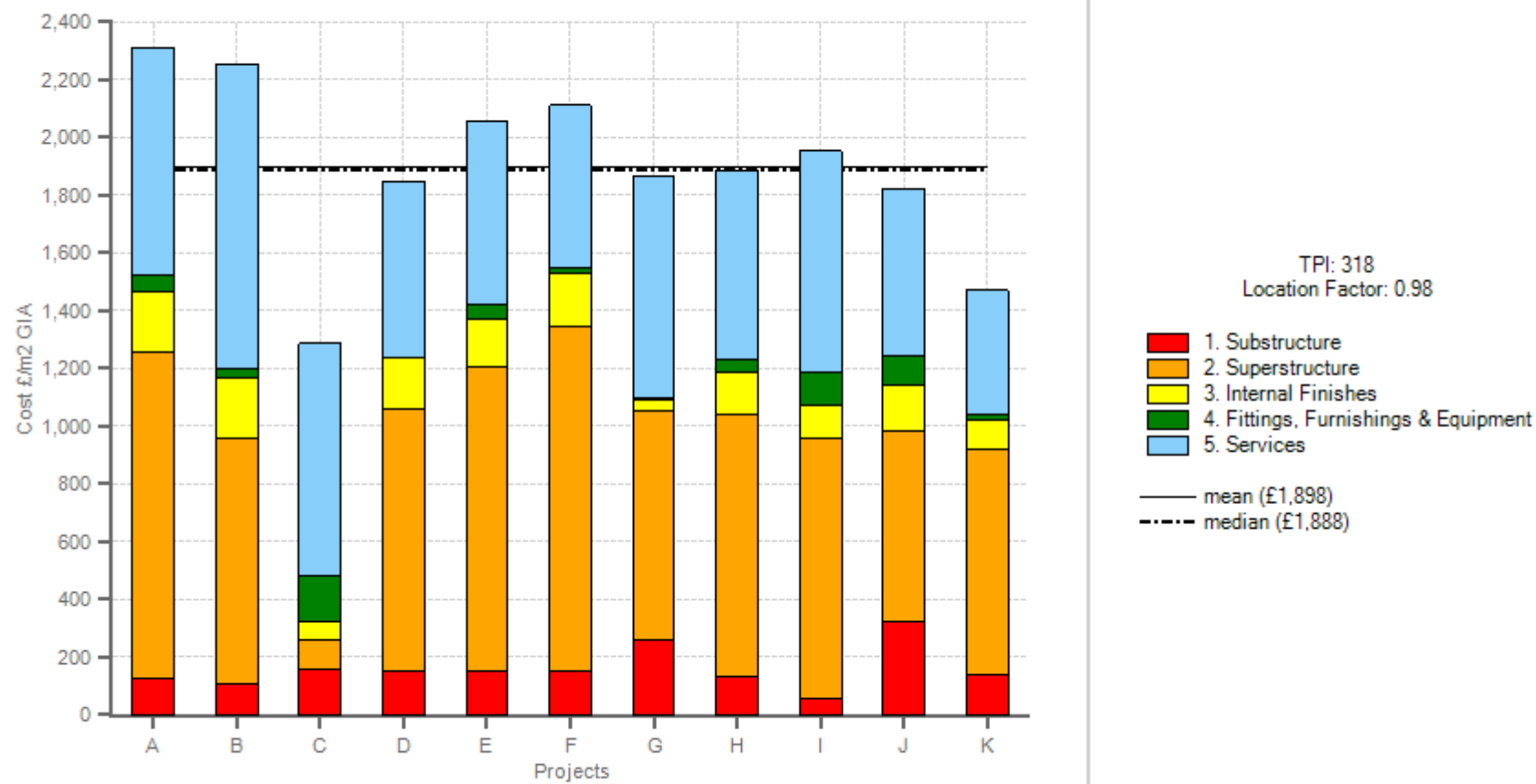
| Key | Project Number | Base Date  | Project Description  |
|-----|----------------|------------|--|
| A   | SOCM0080       | 30/05/2014 | Construction of new four-storey academic building including seminar spaces, agile rooms and 3nr lecture theatres.  |
| B   | NTQG0262       | 10/02/2009 | The works comprise the construction of a new three-storey building including associated external works, external services and drainage and the demolition of existing industrial buildings. The facilities include conference rooms, training suites, corporate hospitality, offices, internet cafe, break-out/learning spaces and an 'Innovation Zone' for start-up businesses. |
| C   | OXCM0097       | 01/06/2017 | Construction of modular buildings for use as teaching/laboratory facilities.   |
| D   | WAQS0234       | 21/08/2006 | The construction of a new three-storey business school and IT centre with associated external works, car parking and landscaping.  |
| E   | NTMS0518       | 01/05/2015 | New build amenities building for university campus. The development comprises a dining hall, bar, restaurant, conference facilities and teaching areas.  |
| F   | NTQS1029       | 01/08/2006 | Design and construction of an extension to an existing university faculty to provide a lecture theatre and seminar rooms with associated break-out and refreshment areas together with open plan and cellular office accommodation.  |
| G   | BMCM0143       | 20/07/2015 | The works comprise the design and build of a new engineering workshop facility on a university campus. New steel framed workshop building including  |

|   |          |            |   |
|---|----------|------------|---|
|   |          |            | M&E services, internal fit out and external works.  |
| H | ABQS0467 | 01/02/2005 | Six-storey plus basement, university teaching block together with external works including precast concrete and block paving, services and drainage.  |
| I | NTQS1124 | 23/04/2010 | New build four-storey university teaching facility including laboratories, ICT and general teaching areas, offices, lecture theatre.  |
| J | ABQS0239 | 01/11/2002 | A self-contained teaching and research building for humanities department, developed in a constricted, brownfield urban site. The development includes lecture theatres, seminar rooms and cellular space for academics and researchers.  |
| K | NTQS0890 | 01/05/2005 | The construction of a two/three storey university faculty building with associated external works, external services and drainage; the demolition of existing buildings, Japanese Knotweed remediation works and the refurbishment of the external envelope to an existing workshop building. |

Construction Cost £/m<sup>2</sup> GIA

| Profile | 1.<br>Substructure | 2.<br>Superstructure | 3.<br>Finishings | 4.<br>FF&E | 5.<br>Services | 6.<br>Bldgs/Bldg<br>Units | 7.<br>Extg<br>Bldgs | 8.<br>External<br>Works | 9.<br>Facilitating<br>Works | 10.<br>Preliminaries | 11.<br>OH&P | 13.<br>Other<br>Costs | 14.<br>Risk | 15.<br>Inflation | Total<br>Cost |
|---------|--------------------|----------------------|------------------|------------|----------------|---------------------------|---------------------|-------------------------|-----------------------------|----------------------|-------------|-----------------------|-------------|------------------|---------------|
| A       | £126.22            | £1,132.68            | £208.04          | £54.01     | £792.92        | £0.00                     | £0.00               | £194.04                 | £0.00                       | £372.70              | £58.00      | £50.60                | £82.65      | £35.46           | £3,107.31     |
| B       | £105.87            | £853.34              | £210.98          | £27.59     | £1,056.41      | £0.00                     | £0.00               | £335.02                 | £13.88                      | £349.44              | £0.00       | £2.89                 | £0.00       | £0.00            | £2,955.42     |
| C       | £155.99            | £106.64              | £58.55           | £162.43    | £803.88        | £318.60                   | £0.00               | £263.36                 | £0.00                       | £291.18              | £518.77     | £0.00                 | £64.47      | £0.00            | £2,743.87     |
| D       | £150.62            | £911.44              | £176.66          | £2.26      | £605.50        | £0.00                     | £0.00               | £405.95                 | £0.00                       | £479.19              | £0.00       | £0.00                 | £0.00       | £0.00            | £2,731.62     |
| E       | £149.28            | £1,057.76            | £162.59          | £54.20     | £633.31        | £0.00                     | £0.00               | £108.80                 | £0.00                       | £235.77              | £0.00       | £254.56               | £0.00       | £0.00            | £2,656.27     |
| F       | £150.12            | £1,198.59            | £180.82          | £17.91     | £564.11        | £0.00                     | £0.00               | £1.88                   | £0.00                       | £383.06              | £0.00       | £0.00                 | £48.10      | £0.00            | £2,544.60     |
| G       | £259.56            | £794.70              | £38.58           | £8.22      | £766.60        | £0.00                     | £0.00               | £290.24                 | £0.00                       | £199.65              | £120.97     | £43.15                | £0.00       | £0.00            | £2,521.67     |
| H       | £133.18            | £909.22              | £145.90          | £41.10     | £658.67        | £0.00                     | £0.00               | £159.26                 | £0.00                       | £364.75              | £0.00       | £0.00                 | £43.95      | £0.00            | £2,456.03     |
| I       | £54.31             | £902.14              | £114.42          | £118.52    | £764.80        | £0.00                     | £0.00               | £117.42                 | £0.00                       | £195.51              | £29.03      | £0.00                 | £19.45      | £0.00            | £2,315.61     |
| J       | £325.85            | £655.59              | £160.93          | £102.18    | £577.90        | £0.00                     | £0.00               | £0.00                   | £0.00                       | £331.44              | £0.00       | £0.00                 | £0.00       | £0.00            | £2,153.88     |
| K       | £142.40            | £775.07              | £106.98          | £18.33     | £429.57        | £0.00                     | £0.00               | £124.46                 | £32.25                      | £430.03              | £0.00       | £0.00                 | £46.73      | £0.00            | £2,105.81     |

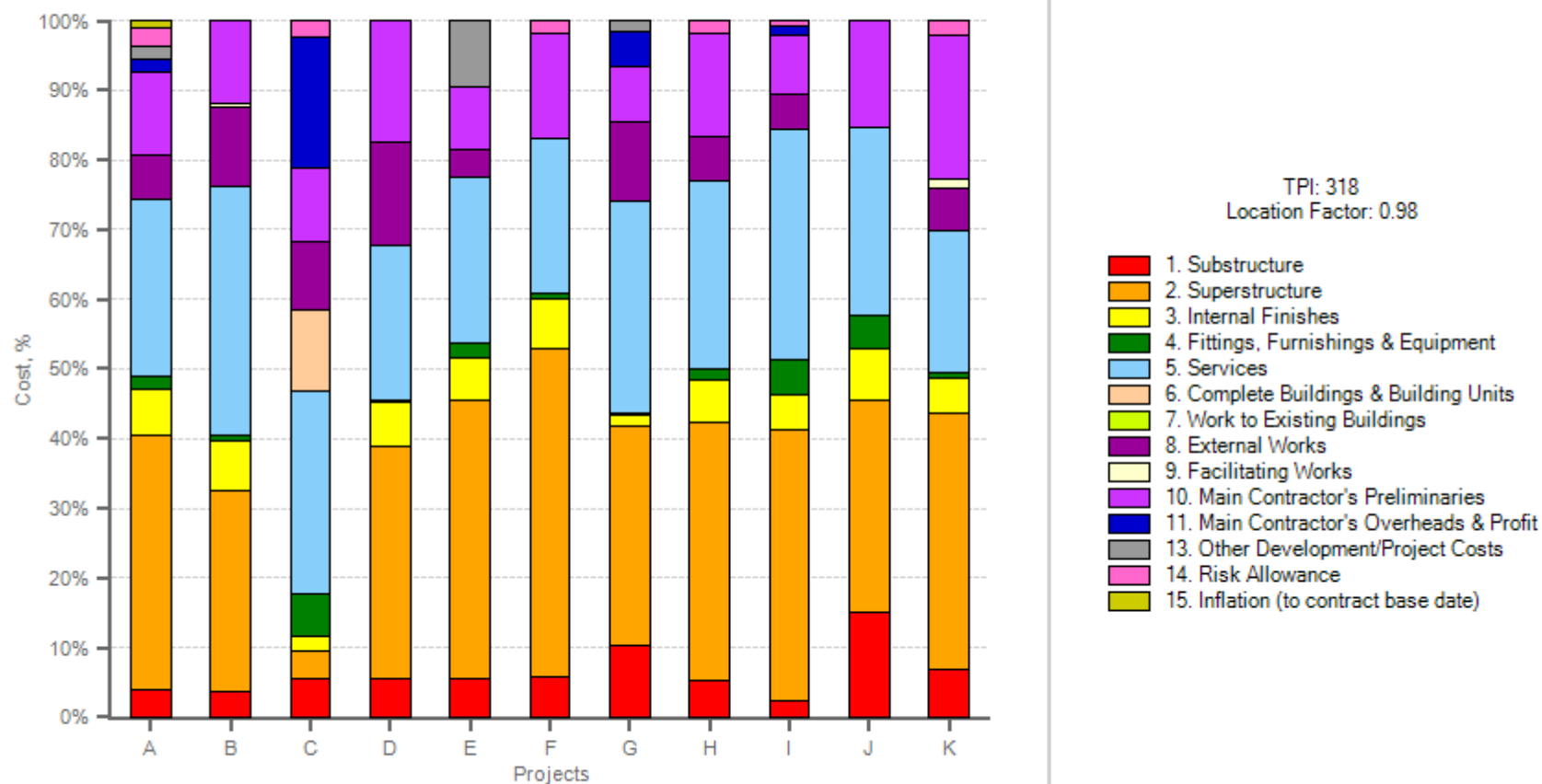
Construction Cost £/m2 GIA (Elements 1-5 only)





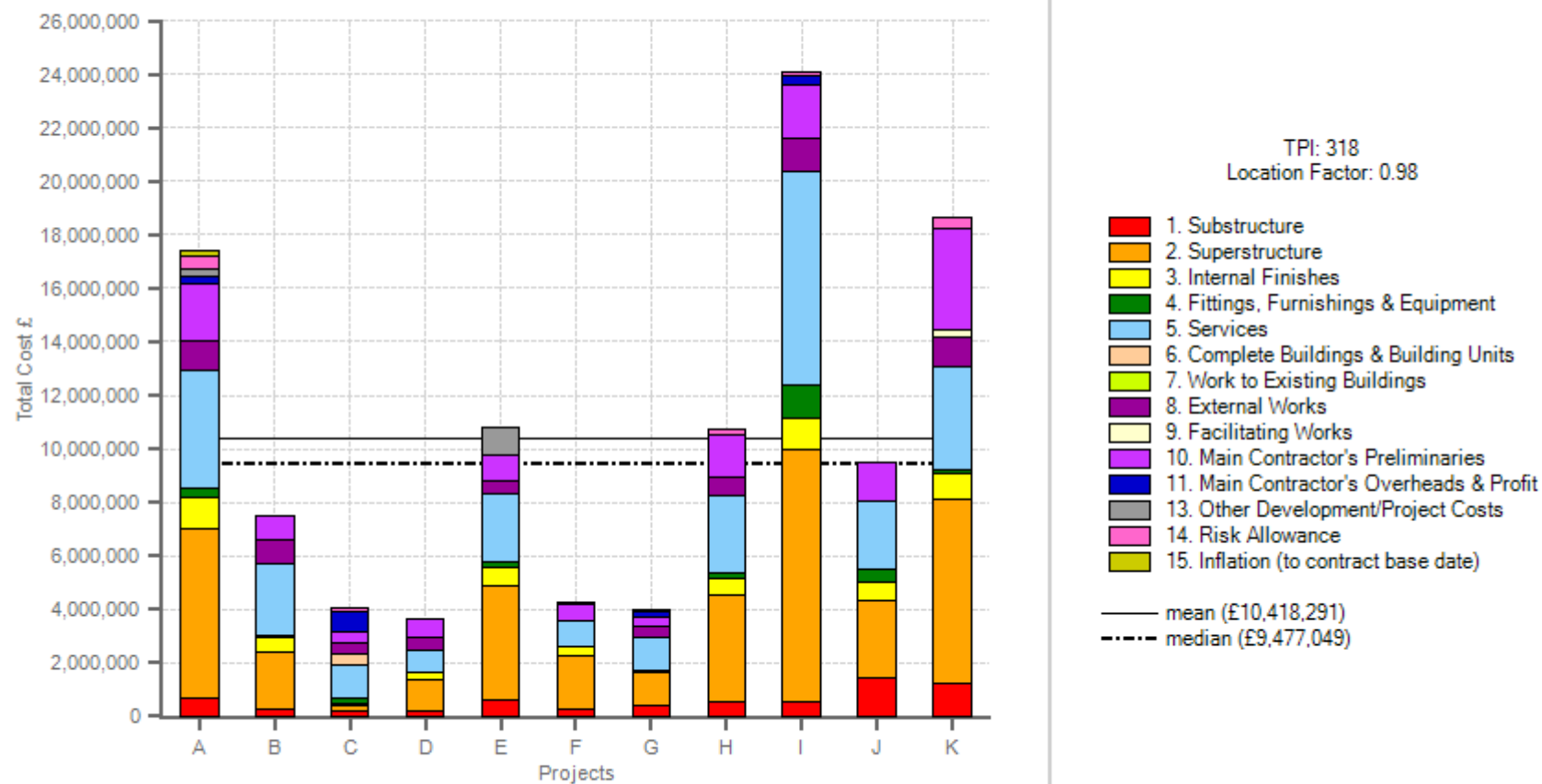
| Profile | 1.<br>Substructure | 2.<br>Superstructure | 3.<br>Finishings | 4.<br>FF&E | 5.<br>Services | Total Cost |
|---------|--------------------|----------------------|------------------|------------|----------------|------------|
| A       | £126.22            | £1,132.68            | £208.04          | £54.01     | £792.92        | £2,313.87  |
| B       | £105.87            | £853.34              | £210.98          | £27.59     | £1,056.41      | £2,254.20  |
| C       | £155.99            | £106.64              | £58.55           | £162.43    | £803.88        | £1,287.49  |
| D       | £150.62            | £911.44              | £176.66          | £2.26      | £605.50        | £1,846.49  |
| E       | £149.28            | £1,057.76            | £162.59          | £54.20     | £633.31        | £2,057.15  |
| F       | £150.12            | £1,198.59            | £180.82          | £17.91     | £564.11        | £2,111.56  |
| G       | £259.56            | £794.70              | £38.58           | £8.22      | £766.60        | £1,867.66  |
| H       | £133.18            | £909.22              | £145.90          | £41.10     | £658.67        | £1,888.07  |
| I       | £54.31             | £902.14              | £114.42          | £118.52    | £764.80        | £1,954.20  |
| J       | £325.85            | £655.59              | £160.93          | £102.18    | £577.90        | £1,822.44  |
| K       | £142.40            | £775.07              | £106.98          | £18.33     | £429.57        | £1,472.35  |

Distribution of Cost



| Profile | 1.<br>Substructure | 2.<br>Superstructure | 3.<br>Finishings | 4.<br>FF&E | 5.<br>Services | 6.<br>Bldgs/Bldg<br>Units | 7.<br>Extg<br>Bldgs | 8.<br>External<br>Works | 9.<br>Facilitating<br>Works | 10.<br>Preliminaries | 11.<br>OH&P | 13.<br>Other<br>Costs | 14.<br>Risk | 15.<br>Inflation |
|---------|--------------------|----------------------|------------------|------------|----------------|---------------------------|---------------------|-------------------------|-----------------------------|----------------------|-------------|-----------------------|-------------|------------------|
| A       | 4.06%              | 36.45%               | 6.70%            | 1.74%      | 25.52%         | 0.00%                     | 0.00%               | 6.24%                   | 0.00%                       | 11.99%               | 1.87%       | 1.63%                 | 2.66%       | 1.14%            |
| B       | 3.58%              | 28.87%               | 7.14%            | 0.93%      | 35.74%         | 0.00%                     | 0.00%               | 11.34%                  | 0.47%                       | 11.82%               | 0.00%       | 0.10%                 | 0.00%       | 0.00%            |
| C       | 5.68%              | 3.89%                | 2.13%            | 5.92%      | 29.30%         | 11.61%                    | 0.00%               | 9.60%                   | 0.00%                       | 10.61%               | 18.91%      | 0.00%                 | 2.35%       | 0.00%            |
| D       | 5.51%              | 33.37%               | 6.47%            | 0.08%      | 22.17%         | 0.00%                     | 0.00%               | 14.86%                  | 0.00%                       | 17.54%               | 0.00%       | 0.00%                 | 0.00%       | 0.00%            |
| E       | 5.62%              | 39.82%               | 6.12%            | 2.04%      | 23.84%         | 0.00%                     | 0.00%               | 4.10%                   | 0.00%                       | 8.88%                | 0.00%       | 9.58%                 | 0.00%       | 0.00%            |
| F       | 5.90%              | 47.10%               | 7.11%            | 0.70%      | 22.17%         | 0.00%                     | 0.00%               | 0.07%                   | 0.00%                       | 15.05%               | 0.00%       | 0.00%                 | 1.89%       | 0.00%            |
| G       | 10.29%             | 31.51%               | 1.53%            | 0.33%      | 30.40%         | 0.00%                     | 0.00%               | 11.51%                  | 0.00%                       | 7.92%                | 4.80%       | 1.71%                 | 0.00%       | 0.00%            |
| H       | 5.42%              | 37.02%               | 5.94%            | 1.67%      | 26.82%         | 0.00%                     | 0.00%               | 6.48%                   | 0.00%                       | 14.85%               | 0.00%       | 0.00%                 | 1.79%       | 0.00%            |
| I       | 2.35%              | 38.96%               | 4.94%            | 5.12%      | 33.03%         | 0.00%                     | 0.00%               | 5.07%                   | 0.00%                       | 8.44%                | 1.25%       | 0.00%                 | 0.84%       | 0.00%            |
| J       | 15.13%             | 30.44%               | 7.47%            | 4.74%      | 26.83%         | 0.00%                     | 0.00%               | 0.00%                   | 0.00%                       | 15.39%               | 0.00%       | 0.00%                 | 0.00%       | 0.00%            |
| K       | 6.76%              | 36.81%               | 5.08%            | 0.87%      | 20.40%         | 0.00%                     | 0.00%               | 5.91%                   | 1.53%                       | 20.42%               | 0.00%       | 0.00%                 | 2.22%       | 0.00%            |

Total Construction Cost

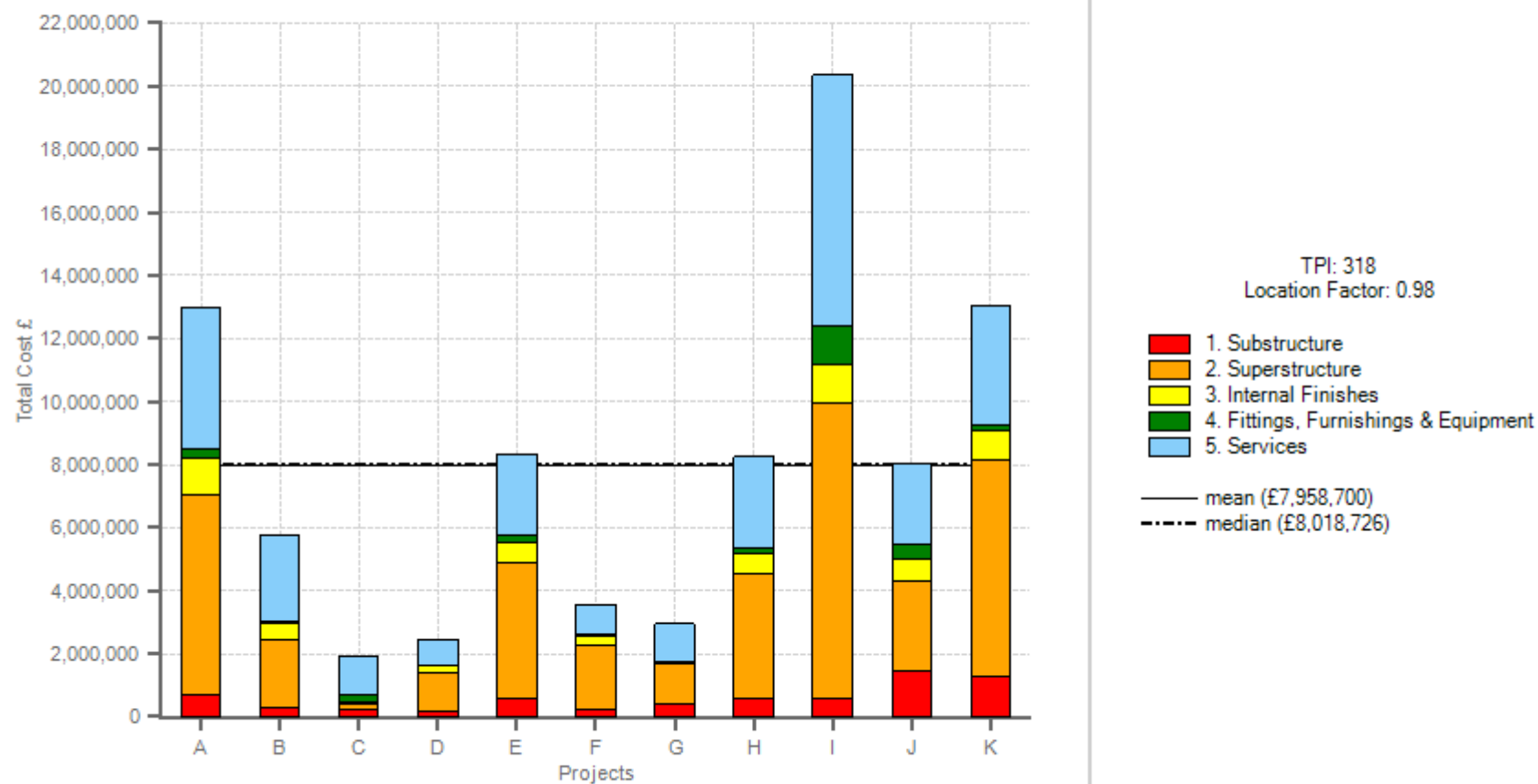


| Profile | 1. Substructure | 2. Superstructure | 3. Finishing | 4. FF&E   | 5. Services | 6. Bldgs/Bldg Units | 7. Extg Bldgs | 8. External Works | 9. Facilitating Works | 10. Preliminaries | 11. OH&P | 13. Other Costs | 14. Risk | 15. Inflation | Total Cost  |
|---------|-----------------|-------------------|--------------|-----------|-------------|---------------------|---------------|-------------------|-----------------------|-------------------|----------|-----------------|----------|---------------|-------------|
| A       | £706,854        | £6,342,994        | £1,165,030   | £302,453  | £4,440,337  | £0                  | £0            | £1,086,617        | £0                    | £2,087,112        | £324,784 | £283,355        | £462,820 | £198,585      | £17,400,940 |
| B       | £269,327        | £2,170,908        | £536,743     | £70,195   | £2,687,518  | £0                  | £0            | £852,283          | £35,305               | £888,965          | £0       | £7,355          | £0       | £0            | £7,518,599  |
| C       | £229,926        | £157,183          | £86,305      | £239,423  | £1,184,922  | £469,613            | £0            | £388,198          | £0                    | £429,194          | £764,673 | £0              | £95,034  | £0            | £4,044,470  |
| D       | £199,722        | £1,208,574        | £234,248     | £3,002    | £802,895    | £0                  | £0            | £538,288          | £0                    | £635,402          | £0       | £0              | £0       | £0            | £3,622,132  |
| E       | £605,024        | £4,287,111        | £658,969     | £219,680  | £2,566,824  | £0                  | £0            | £440,960          | £0                    | £955,577          | £0       | £1,031,722      | £0       | £0            | £10,765,870 |
| F       | £253,258        | £2,022,017        | £305,049     | £30,214   | £951,662    | £0                  | £0            | £3,175            | £0                    | £646,215          | £0       | £0              | £81,146  | £0            | £4,292,736  |
| G       | £408,546        | £1,250,855        | £60,727      | £12,936   | £1,206,626  | £0                  | £0            | £456,842          | £0                    | £314,253          | £190,414 | £67,916         | £0       | £0            | £3,969,113  |
| H       | £581,861        | £3,972,370        | £637,427     | £179,572  | £2,877,729  | £0                  | £0            | £695,795          | £0                    | £1,593,614        | £0       | £0              | £192,009 | £0            | £10,730,380 |
| I       | £565,396        | £9,391,323        | £1,191,14    | £1,233,76 | £7,961,55   | £0                  | £0            | £1,222,37         | £0                    | £2,035,249        | £302,22  | £0              | £202,52  | £0            | £24,105,55  |

|   |            |            |          |          |            |    |    |            |          |            |    |    |          |    |             |
|---|------------|------------|----------|----------|------------|----|----|------------|----------|------------|----|----|----------|----|-------------|
|   |            |            | 1        | 1        | 1          |    |    | 5          |          |            | 9  |    | 2        |    | 0           |
| J | £1,433,720 | £2,884,574 | £708,073 | £449,593 | £2,542,766 | £0 | £0 | £0         | £0       | £1,458,323 | £0 | £0 | £0       | £0 | £9,477,049  |
| K | £1,262,787 | £6,873,300 | £948,685 | £162,556 | £3,809,452 | £0 | £0 | £1,103,737 | £286,007 | £3,813,468 | £0 | £0 | £414,369 | £0 | £18,674,360 |

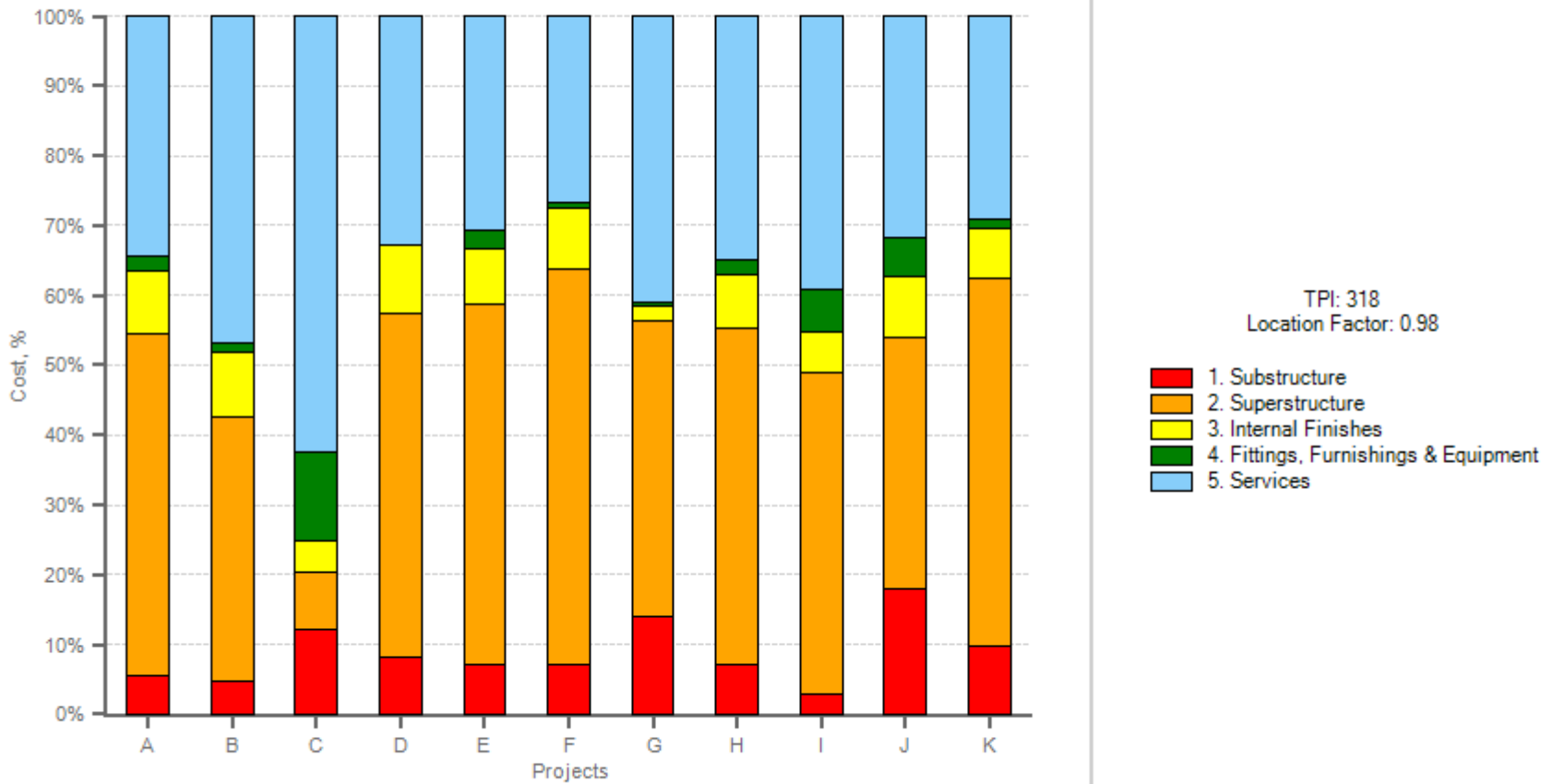


Total Construction Cost Building Works (Elements 1-5 only)



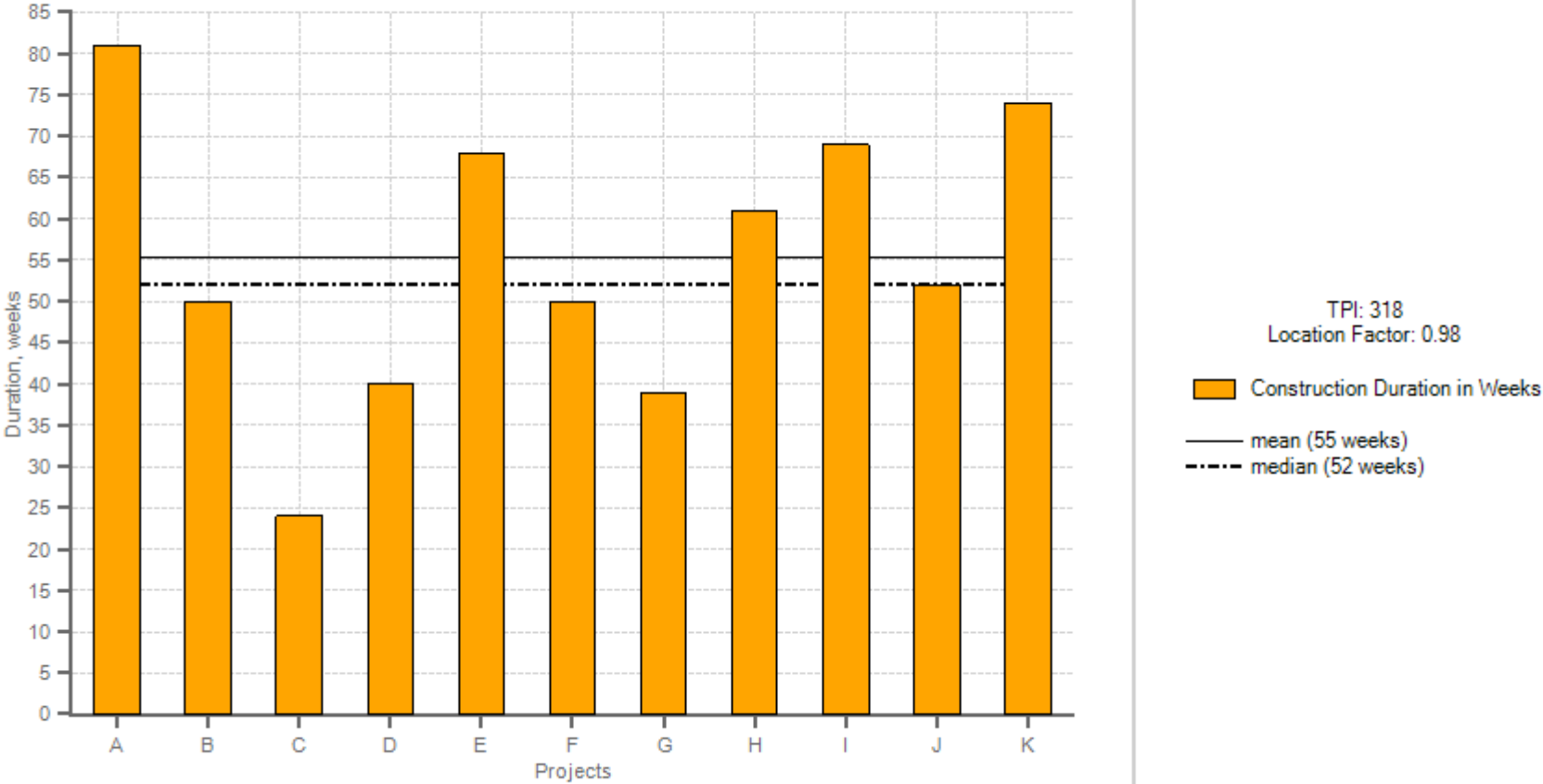
| Profile | 1.<br>Substructure | 2.<br>Superstructure | 3.<br>Finishings | 4.<br>FF&E | 5.<br>Services | Total Cost  |
|---------|--------------------|----------------------|------------------|------------|----------------|-------------|
| A       | £706,854           | £6,342,994           | £1,165,030       | £302,453   | £4,440,337     | £12,957,670 |
| B       | £269,327           | £2,170,908           | £536,743         | £70,195    | £2,687,518     | £5,734,692  |
| C       | £229,926           | £157,183             | £86,305          | £239,423   | £1,184,922     | £1,897,759  |
| D       | £199,722           | £1,208,574           | £234,248         | £3,002     | £802,895       | £2,448,441  |
| E       | £605,024           | £4,287,111           | £658,969         | £219,680   | £2,566,824     | £8,337,611  |
| F       | £253,258           | £2,022,017           | £305,049         | £30,214    | £951,662       | £3,562,199  |
| G       | £408,546           | £1,250,855           | £60,727          | £12,936    | £1,206,626     | £2,939,689  |
| H       | £581,861           | £3,972,370           | £637,427         | £179,572   | £2,877,729     | £8,248,963  |
| I       | £565,396           | £9,391,323           | £1,191,141       | £1,233,761 | £7,961,551     | £20,343,170 |
| J       | £1,433,720         | £2,884,574           | £708,073         | £449,593   | £2,542,766     | £8,018,726  |
| K       | £1,262,787         | £6,873,300           | £948,685         | £162,556   | £3,809,452     | £13,056,780 |

Distribution of Cost Building Works (Elements 1-5 only)



| Profile | 1.<br>Substructure | 2.<br>Superstructure | 3.<br>Finishings | 4.<br>FF&E | 5.<br>Services |
|---------|--------------------|----------------------|------------------|------------|----------------|
| A       | 5.46%              | 48.95%               | 8.99%            | 2.33%      | 34.27%         |
| B       | 4.70%              | 37.86%               | 9.36%            | 1.22%      | 46.86%         |
| C       | 12.12%             | 8.28%                | 4.55%            | 12.62%     | 62.44%         |
| D       | 8.16%              | 49.36%               | 9.57%            | 0.12%      | 32.79%         |
| E       | 7.26%              | 51.42%               | 7.90%            | 2.63%      | 30.79%         |
| F       | 7.11%              | 56.76%               | 8.56%            | 0.85%      | 26.72%         |
| G       | 13.90%             | 42.55%               | 2.07%            | 0.44%      | 41.05%         |
| H       | 7.05%              | 48.16%               | 7.73%            | 2.18%      | 34.89%         |
| I       | 2.78%              | 46.16%               | 5.86%            | 6.06%      | 39.14%         |
| J       | 17.88%             | 35.97%               | 8.83%            | 5.61%      | 31.71%         |
| K       | 9.67%              | 52.64%               | 7.27%            | 1.24%      | 29.18%         |

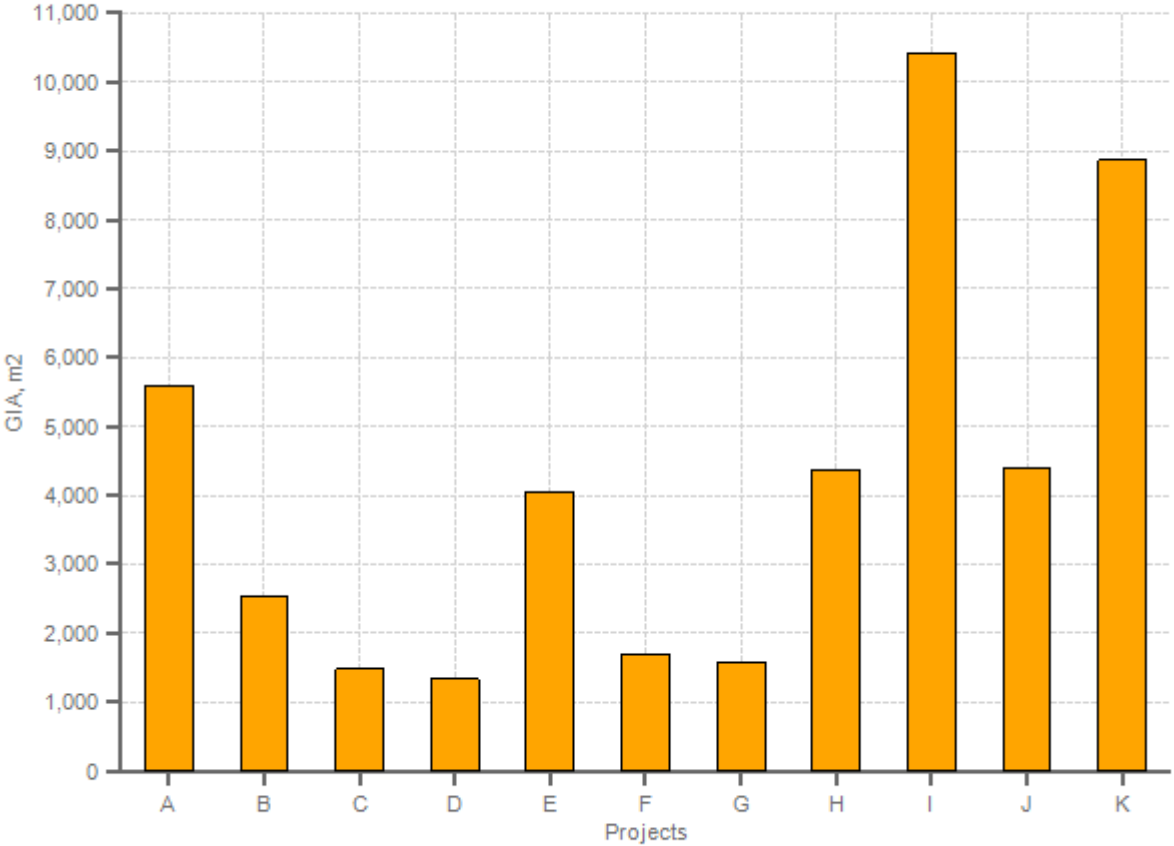
Construction Duration



| Profile | Duration | Prelim Cost   | Prelim Cost Per Week |
|---------|----------|---------------|----------------------|
| A       | 81 weeks | £2,087,112.04 | £25,766.82           |
| B       | 50 weeks | £888,964.68   | £17,779.29           |
| C       | 24 weeks | £429,193.55   | £17,883.06           |
| D       | 40 weeks | £635,402.37   | £15,885.06           |
| E       | 68 weeks | £955,576.73   | £14,052.60           |
| F       | 50 weeks | £646,215.33   | £12,924.31           |
| G       | 39 weeks | £314,252.61   | £8,057.76            |
| H       | 61 weeks | £1,593,613.64 | £26,124.81           |
| I       | 69 weeks | £2,035,248.57 | £29,496.36           |
| J       | 52 weeks | £1,458,322.89 | £28,044.67           |
| K       | 74 weeks | £3,813,467.89 | £51,533.35           |



Gross Internal Area (GIA)



| Profile | GIA m2 |
|---------|--------|
| A       | 5,600  |
| B       | 2,544  |
| C       | 1,474  |
| D       | 1,326  |
| E       | 4,053  |
| F       | 1,687  |
| G       | 1,574  |
| H       | 4,369  |
| I       | 10,410 |
| J       | 4,400  |
| K       | 8,868  |

**BENCHMARKING REPORT – 10879 New Build High End Student Union Bar**

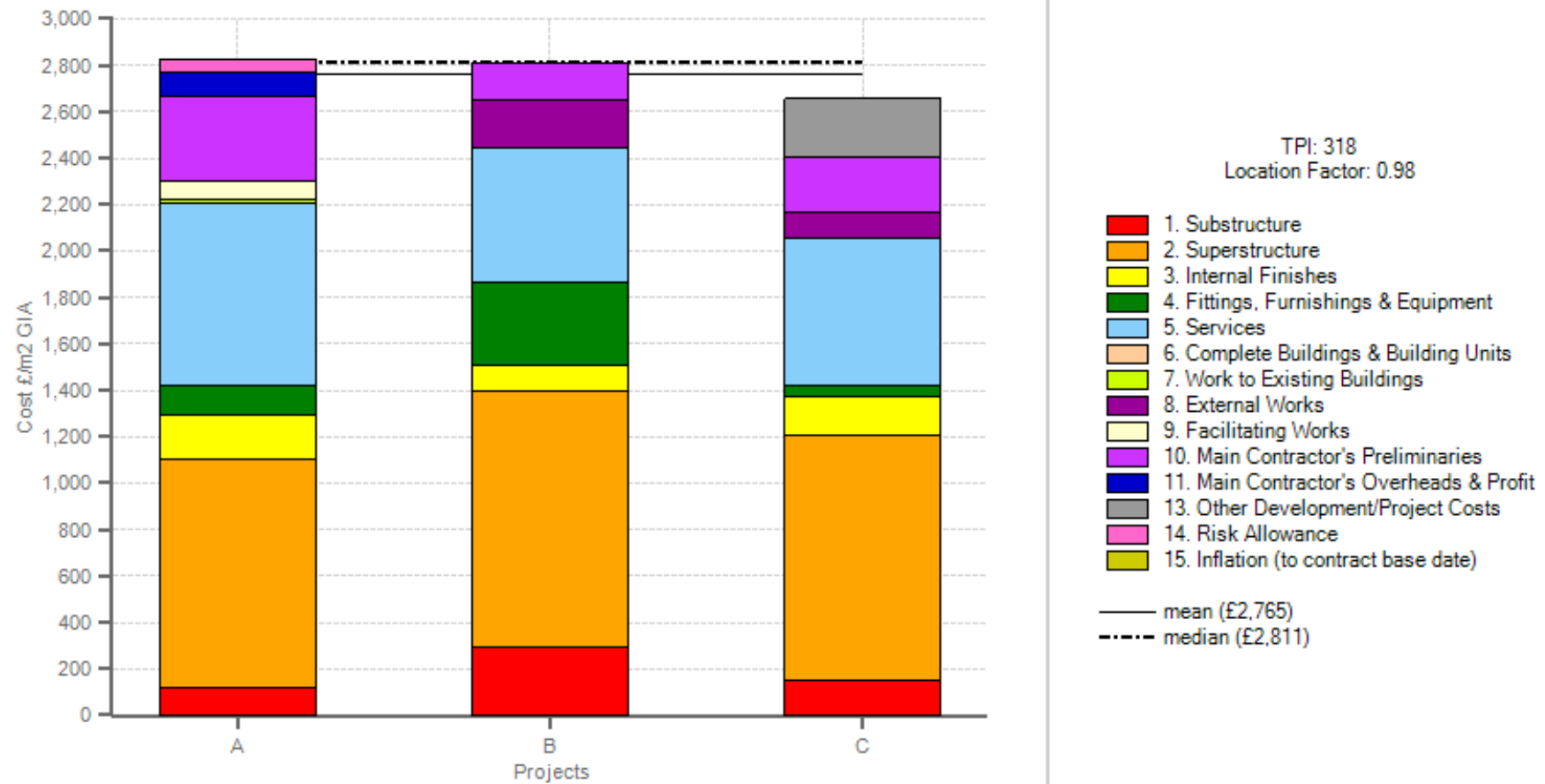
All in TPI used: 318 - 1Q2018 (BCIS indices published 2<sup>nd</sup> March 2018)

Location factor: 0.98 - Peterborough

Data used in the benchmarking exercise are as follows:

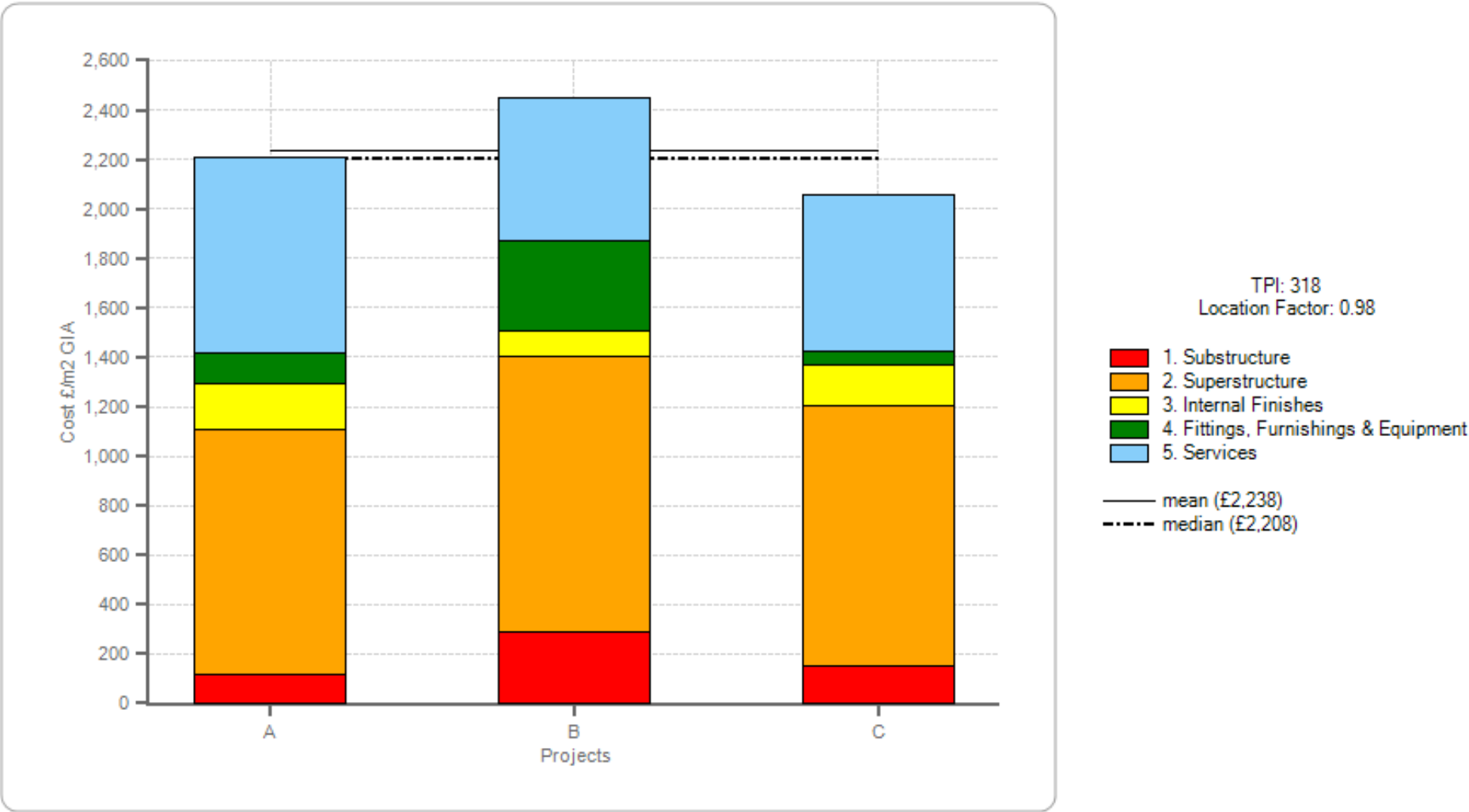
| Key | Project Number | Base Date  | Building Description   | Project Description  |
|-----|----------------|------------|--|--|
| A   | SOCM0002       | 15/05/2013 | New build Student Union  | New build Students Union over 7nr floors, including learning and leisure facilities, offices, social learning spaces, radio and media studios, a student advice centre, meeting space, accessible open-plan areas for student-focused services and a café. |
| B   | LVC00058       | 01/03/2015 | Two storey steel framed building with large first floor viewing terrace and commercial type kitchen. | New two-storey student social zone. Steel framed building with large first floor external viewing terrace and commercial kitchen.  |
| C   | NTMS0518       | 01/05/2015 | Amenities building   | New build amenities building for a university campus. The development comprises a dining hall, bar, restaurant, conference facilities and teaching areas.  |

## Construction Cost £/m2 GIA



| Profile | 1.<br>Substructure | 2.<br>Superstructure | 3.<br>Finishings | 4.<br>FF&E | 5.<br>Services | 6.<br>Bldgs/Bldg<br>Units | 7.<br>Extg<br>Bldgs | 8.<br>External<br>Works | 9.<br>Facilitating<br>Works | 10.<br>Preliminaries | 11.<br>OH&P | 13.<br>Other<br>Costs | 14.<br>Risk | 15.<br>Inflation | Total<br>Cost |
|---------|--------------------|----------------------|------------------|------------|----------------|---------------------------|---------------------|-------------------------|-----------------------------|----------------------|-------------|-----------------------|-------------|------------------|---------------|
| A       | £117.26            | £989.66              | £183.16          | £129.42    | £788.20        | £0.00                     | £16.87              | £0.00                   | £80.68                      | £358.00              | £103.65     | £0.00                 | £61.43      | £0.00            | £2,828.33     |
| B       | £290.47            | £1,109.49            | £108.26          | £360.39    | £579.41        | £0.00                     | £0.00               | £201.30                 | £0.00                       | £161.89              | £0.00       | £0.00                 | £0.00       | £0.00            | £2,811.21     |
| C       | £149.28            | £1,057.76            | £162.59          | £54.20     | £633.31        | £0.00                     | £0.00               | £108.80                 | £0.00                       | £235.77              | £0.00       | £254.56               | £0.00       | £0.00            | £2,656.27     |

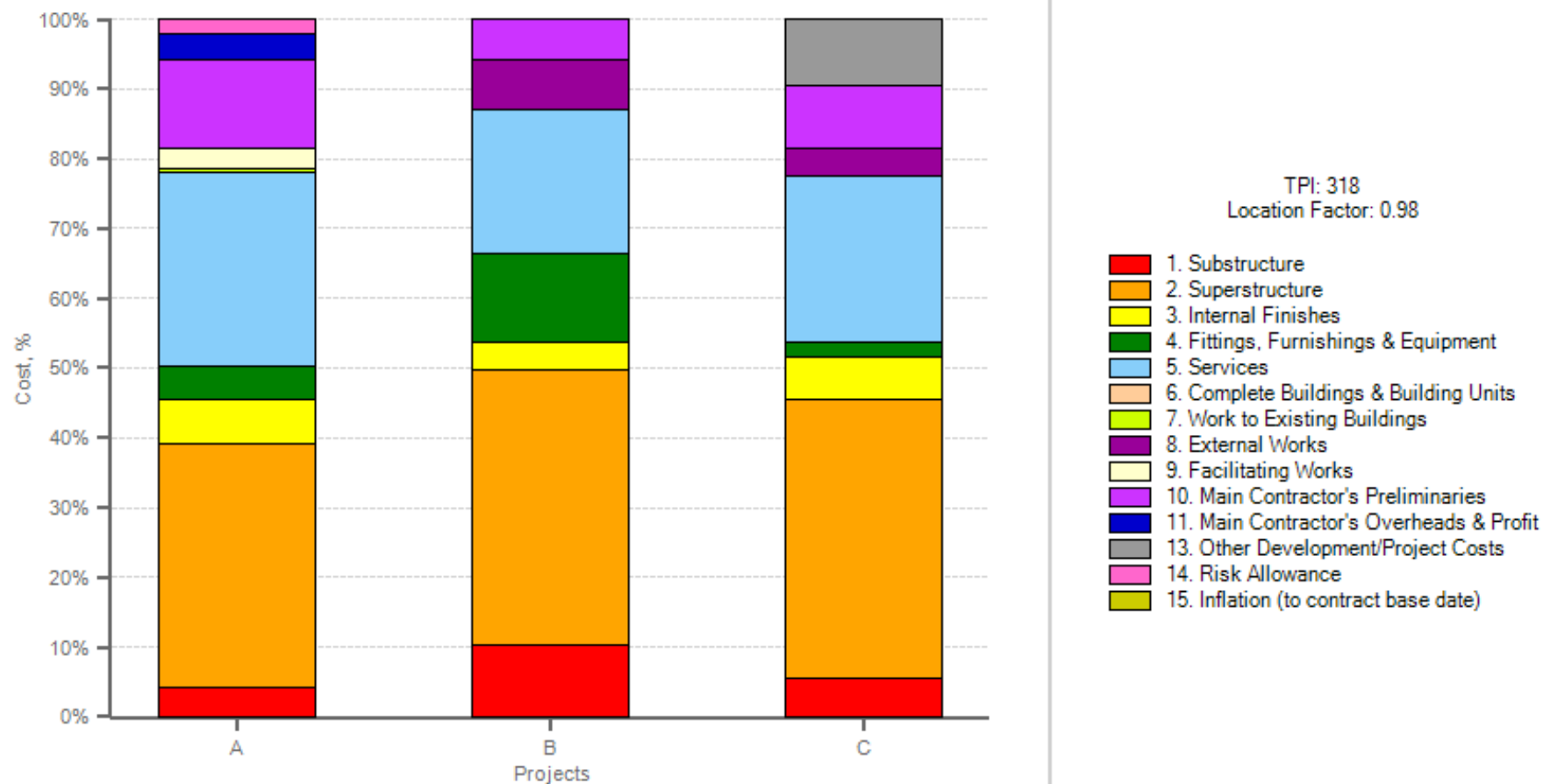
Construction Cost £/m2 GIA (Elements 1-5 only)





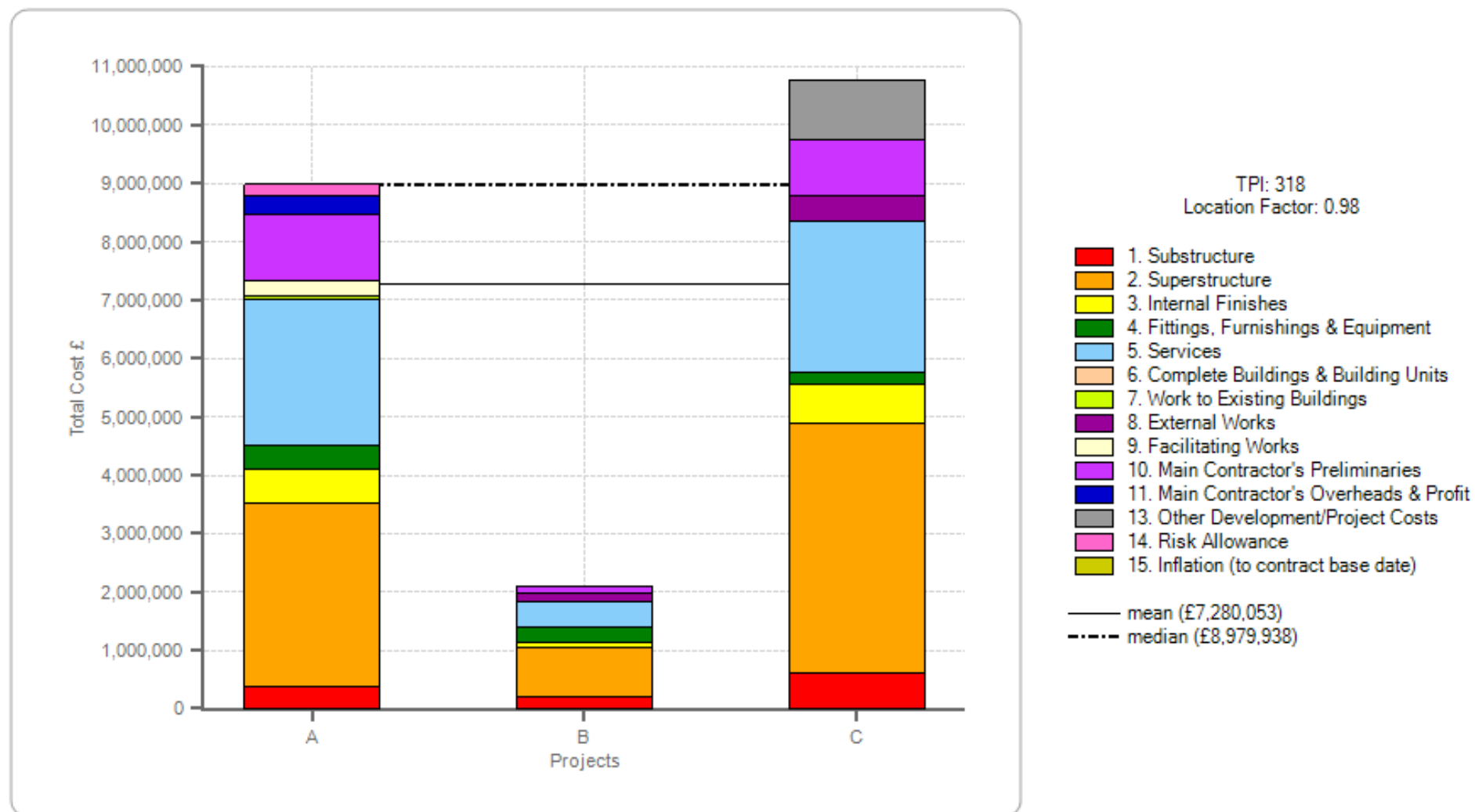
| Profile | 1.<br>Substructure | 2.<br>Superstructure | 3.<br>Finishings | 4.<br>FF&E | 5.<br>Services | Total Cost |
|---------|--------------------|----------------------|------------------|------------|----------------|------------|
| A       | £117.26            | £989.66              | £183.16          | £129.42    | £788.20        | £2,207.70  |
| B       | £290.47            | £1,109.49            | £108.26          | £360.39    | £579.41        | £2,448.02  |
| C       | £149.28            | £1,057.76            | £162.59          | £54.20     | £633.31        | £2,057.15  |

Distribution of Cost



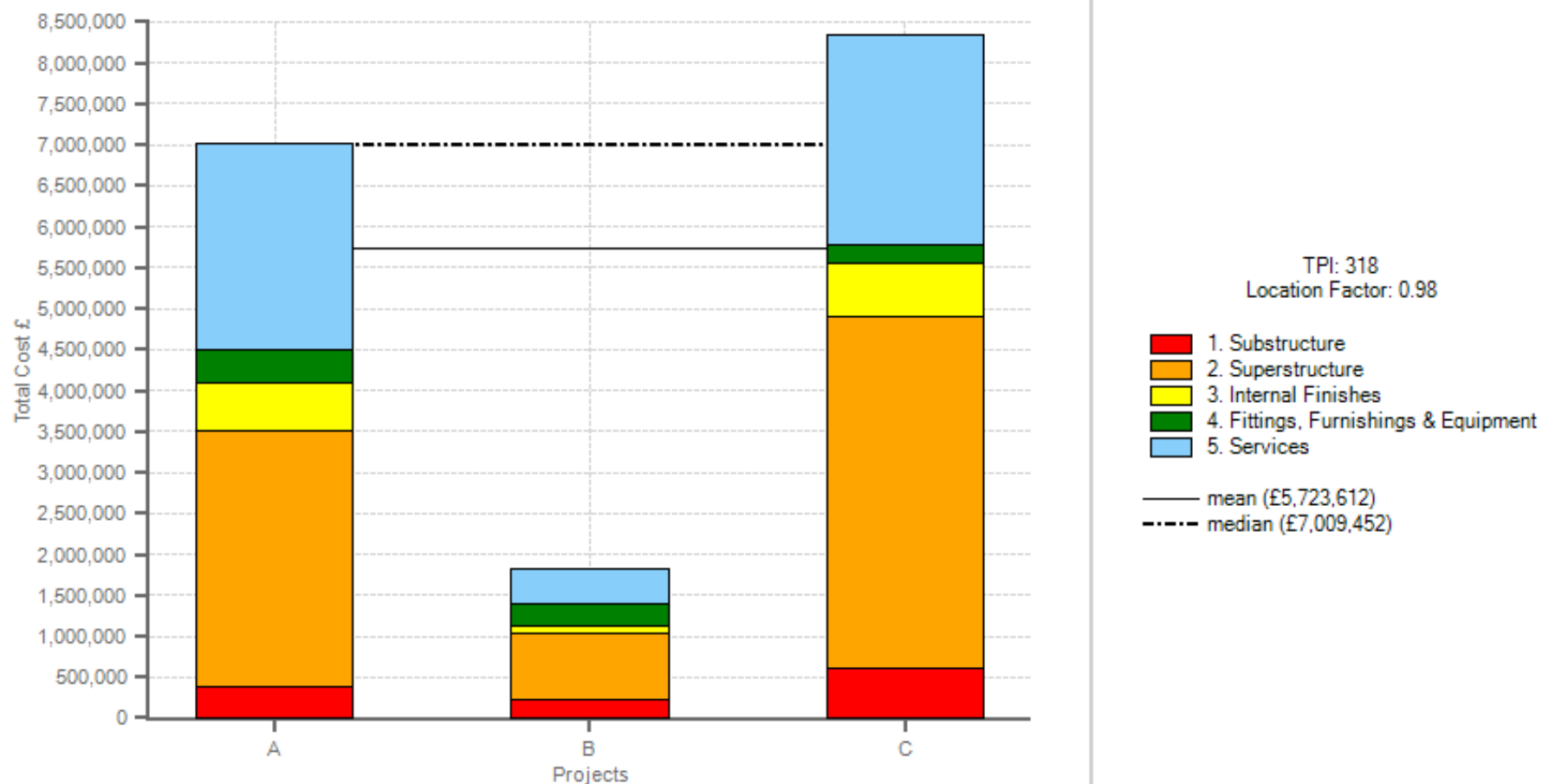
| Profile | 1.<br>Substructure | 2.<br>Superstructure | 3.<br>Finishings | 4.<br>FF&E | 5.<br>Services | 6.<br>Bldgs/Bldg<br>Units | 7.<br>Extg<br>Bldgs | 8.<br>External<br>Works | 9.<br>Facilitating<br>Works | 10.<br>Preliminaries | 11.<br>OH&P | 13.<br>Other<br>Costs | 14.<br>Risk | 15.<br>Inflation |
|---------|--------------------|----------------------|------------------|------------|----------------|---------------------------|---------------------|-------------------------|-----------------------------|----------------------|-------------|-----------------------|-------------|------------------|
| A       | 4.15%              | 34.99%               | 6.48%            | 4.58%      | 27.87%         | 0.00%                     | 0.60%               | 0.00%                   | 2.85%                       | 12.66%               | 3.66%       | 0.00%                 | 2.17%       | 0.00%            |
| B       | 10.33%             | 39.47%               | 3.85%            | 12.82%     | 20.61%         | 0.00%                     | 0.00%               | 7.16%                   | 0.00%                       | 5.76%                | 0.00%       | 0.00%                 | 0.00%       | 0.00%            |
| C       | 5.62%              | 39.82%               | 6.12%            | 2.04%      | 23.84%         | 0.00%                     | 0.00%               | 4.10%                   | 0.00%                       | 8.88%                | 0.00%       | 9.58%                 | 0.00%       | 0.00%            |

## Total Construction Cost



| Profile | 1.<br>Substructure | 2.<br>Superstructure | 3.<br>Finishing<br>s | 4.<br>FF&E | 5.<br>Services | 6.<br>Bldgs/Bld<br>g Units | 7.<br>Extg<br>Bldgs | 8.<br>Externa<br>l Works | 9.<br>Facilitatin<br>g Works | 10.<br>Preliminaries | 11.<br>OH&P | 13.<br>Other<br>Costs | 14.<br>Risk | 15.<br>Inflation | Total Cost  |
|---------|--------------------|----------------------|----------------------|------------|----------------|----------------------------|---------------------|--------------------------|------------------------------|----------------------|-------------|-----------------------|-------------|------------------|-------------|
| A       | £372,296           | £3,142,169           | £581,547             | £410,896   | £2,502,544     | £0                         | £53,555             | £0                       | £256,148                     | £1,136,650           | £329,102    | £0                    | £195,031    | £0               | £8,979,938  |
| B       | £216,397           | £826,573             | £80,656              | £268,487   | £431,660       | £0                         | £0                  | £149,969                 | £0                           | £120,610             | £0          | £0                    | £0          | £0               | £2,094,352  |
| C       | £605,024           | £4,287,111           | £658,969             | £219,680   | £2,566,824     | £0                         | £0                  | £440,960                 | £0                           | £955,577             | £0          | £1,031,722            | £0          | £0               | £10,765,870 |

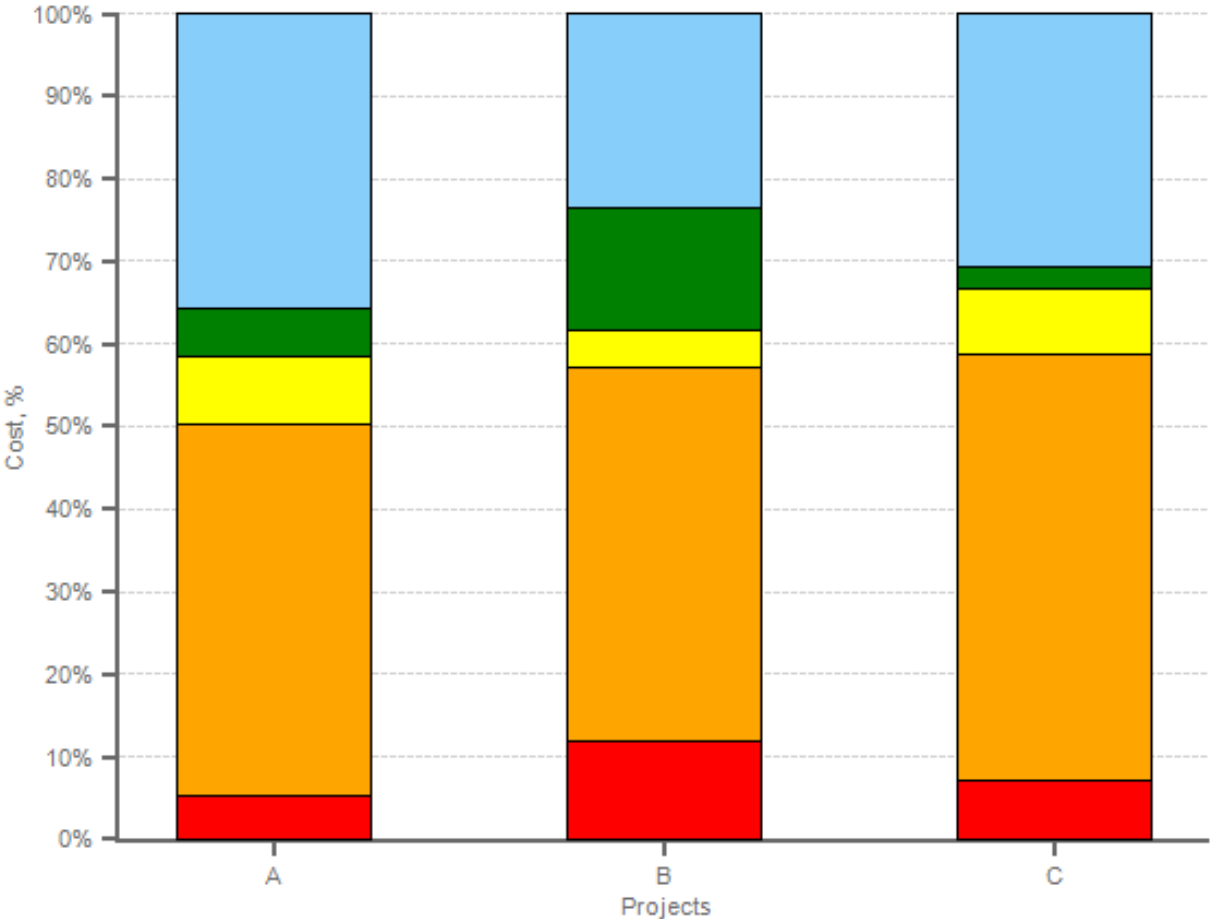
## Total Construction Cost Building Works (Elements 1-5 only)





| Profile | 1.<br>Substructure | 2.<br>Superstructure | 3.<br>Finishings | 4.<br>FF&E | 5.<br>Services | Total Cost |
|---------|--------------------|----------------------|------------------|------------|----------------|------------|
| A       | £372,296           | £3,142,169           | £581,547         | £410,896   | £2,502,544     | £7,009,452 |
| B       | £216,397           | £826,573             | £80,656          | £268,487   | £431,660       | £1,823,772 |
| C       | £605,024           | £4,287,111           | £658,969         | £219,680   | £2,566,824     | £8,337,611 |

Distribution of Cost Building Works (Elements 1-5 only)

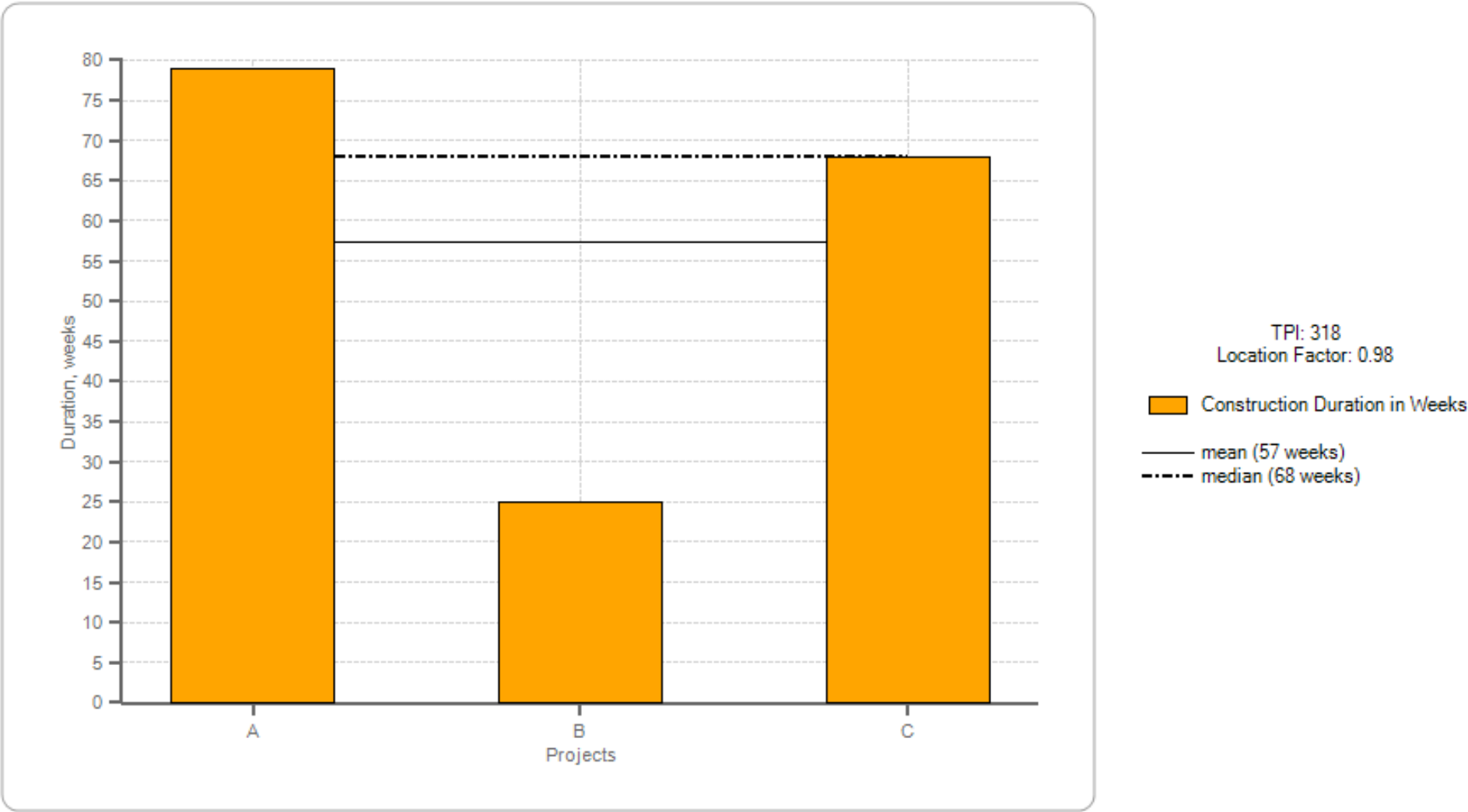


TPI: 318  
Location Factor: 0.98

- 1. Substructure
- 2. Superstructure
- 3. Internal Finishes
- 4. Fittings, Furnishings & Equipment
- 5. Services

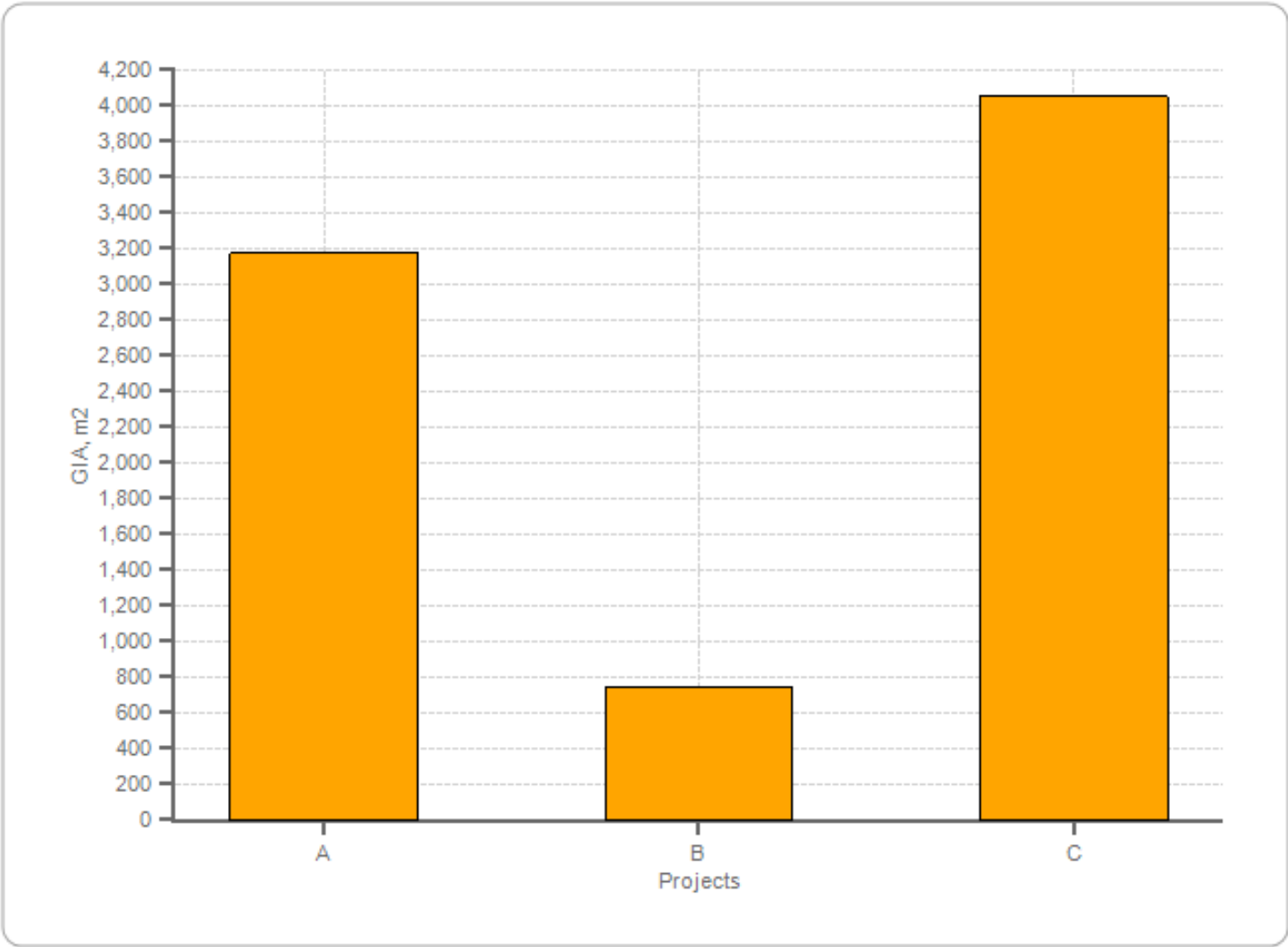
| Profile | 1.<br>Substructure | 2.<br>Superstructure | 3.<br>Finishings | 4.<br>FF&E | 5.<br>Services |
|---------|--------------------|----------------------|------------------|------------|----------------|
| A       | 5.31%              | 44.83%               | 8.30%            | 5.86%      | 35.70%         |
| B       | 11.87%             | 45.32%               | 4.42%            | 14.72%     | 23.67%         |
| C       | 7.26%              | 51.42%               | 7.90%            | 2.63%      | 30.79%         |

Construction Duration



| Profile | Duration | Prelim Cost   | Prelim Cost Per Week |
|---------|----------|---------------|----------------------|
| A       | 79 weeks | £1,136,650.11 | £14,387.98           |
| B       | 25 weeks | £120,610.39   | £4,824.42            |
| C       | 68 weeks | £955,576.73   | £14,052.60           |

Gross Internal Area (GIA)



| Profile | GIA m2 |
|---------|--------|
| A       | 3,175  |
| B       | 745    |
| C       | 4,053  |





# D

## **Appendix D – Assumed Location on Embankment Site**

