

Brunel university uncovered footbridge project: procurement options report



**ASSIGN
BUSTER**

Construction Contracts, Business and Management.

EXECUTIVE SUMMARY

PURPOSE AND CONTEXT

The Brunel University London sustainable procurement guidelines state the commitment to furthering sustainable development throughout the University. As stated by the Brundtland Commission, sustainable development 'meets the needs of the present without compromising the ability of future generations to meet their own needs,' (Brunel. ac. uk, 2018). Therefore it is imperative to ensure the chosen procurement strategy successfully delivers the Brunel University Uncovered Footbridge Project in keeping with current procurement objectives, in order to provide the best end result possible whilst maintaining the commitment to sustainable development.

A key element of the Brunel University procurement process is adopting and implementing purchasing policies that embrace sustainable procurement. The procurement strategy must involve identifying the optimal procurement options, as a result all feasible procurement options should be considered and adopted in order to deliver the project. The purpose of this report is to compare the procurement processes in order to determine which option is best suited to the project.

APPROACH

Several procurement options are feasible for this project, common procurement pathways that were identified for this project given the Brunel

University procurement guidelines and from other such projects are as follows:

- General/traditional Contracting: Otherwise known as the separation of contractors between design and construction, this is generally considered when the employer has already procured a design and seeks a contractor for the building works.
- Design and build: The main contractor is appointed to both design and construct the project, this can be done by using in-house engineers or by appointing sub-contractors or consultant designers.
- Management contracting: The client employs separate Consultants and Management Contractors, this procurement pathway is used to address the shortcomings in the traditional contracting method. The management contractor enters directly into contract with any sub-contractors with the expectation that sub-contractors work as partners with the employer.
- Construction Management: An alternative procurement method, the employer enters directly into separate individual contracts with Consultants, construction managers and sub-contractors. This results in all contracting terms being formed by the employer, hence it is the employer's responsibility to ensure that no problems arise due to the terms of management or contractual complications. (R. Champion. 2018).

SCOPE ELEMENTS

New footbridge: The design and construction of a new footbridge connecting the 2nd floor level of Brunel University library and lecture centre. This will <https://assignbuster.com/brunel-university-uncovered-footbridge-project-procurement-options-report/>

improve the ease of access from building to building, increasing accessibility and adding a much desired link between educational facilities. The sustainable development of this bridge is paramount, ensuring the Brunel University procurement guidelines are satisfied.

Drainage solution: The design and construction of a sufficient drainage system on the bridge is required in order to prevent water pouring into the lecture centre (the lower end of the footbridge).

Library lobby access to footbridge: The current design of the Brunel library does not easily allow for structural adaptations. The proposed lobby must provide a sufficient barrier from the outside environment, ensuring good thermal and sound insulation. The existing lobby/stairwell area will need to be changed in order to incorporate the new footbridge, the stairwell will be redesigned to take into account the increased footfall.

Lecture centre lobby access to footbridge: The external wall will need to be removed in order to form a 'lobby' area with a thermal and sound insulation barrier in order to optimise educational practices. The lobby area should be located next to the stairwell on floor two, the stairwell area will need to be widened to accommodate the increase volume of traffic.

Operations and maintenance (O&M):

-Sustainable procurement: The design and construction of the project must consider Brunel University sustainable procurement guidelines, ensuring that materials are sourced locally and the work required to complete the project is minimal.

<https://assignbuster.com/brunel-university-uncovered-footbridge-project-procurement-options-report/>

-Improvements: Upon completion there will be maintenance, routine checks/operations and lifecycle rehabilitation. Ensuring the bridge is well maintained is essential due to the uncovered nature of the design.

PROCUREMENT CONSIDERATIONS

Geotechnical/Structural risk: The existing foundations are not designed for the additional loading applied due to the footbridge. The bridge is supported only on each end by the adjacent structure, therefore a foundation and beam analysis **MUST** be completed in order to ensure both the structure and the foundation can withstand additional loading.

Disruption: Educational practices **MUST** remain un-disrupted by the construction process, as a result minimal construction work should take place during study times. Construction must not obstruct local businesses, allowing for safe access and trade.

Latent defects: Primarily a focus on pre-fabricated and construction work, ensuring the quality of work is sufficiently high. Warranty period and retentions to be considered.

SCHEDULE

To ensure the project is completed within the allocated year a detailed construction schedule should be completed. Any scope elements that do not require sequencing can be constructed concurrently. The design and construction of the bridge and amendments to the existing structures **MUST** be completed before 1 year has surpassed.

PROCUREMENT OPTIONS

Traditional private sector procurement options for a small scale project are determined based on the anticipated scope of the project. The two main procurement options for this project include general contracting (GC) and construction management (CM), these forms of contracting are typically used on a smaller infrastructure project to due to the relative simplicity of the contract.

-General contracting:

The client forms two types of contracts; firstly with the consultants and secondly with the main contractor. It is the job of the main contractor to employ any sub-contractors required for the project.

Brunel University should appoint consultants to design the project in detail, including drawings, work schedules (including critical pathways) and bills of quantities. It is the responsibility of the consultants to prepare tender documentation for the project. Due to the relative simplicity of the project Brunel University can employ its own design team or enter a contract with other consultants.

A detailed specification of drawings and CAD models with specific dimensions and annotation should be obtained before a contract is formed with the main contractors.

Upon completion contractors are then invited to submit tendering documents for the construction of the project, for a project of this size a single-stage tendering process is recommended.

<https://assignbuster.com/brunel-university-uncovered-footbridge-project-procurement-options-report/>

-Construction management:

This type of contracting is typically appropriate on a project in which the employer desires the design to be completed by an independent design team. The works are constructed by a number of different sub-contractors. In construction management procurement the sub-contractors are directly contracted to the client, however are managed by a management contractor. The management contractor acts as an administrator and coordinates the works contracts.

The management contractor is employed during the early stages of the design process, this helps improve and ensure the fluidity of the construction proposal. The management contractor can enable some works contracts to be tendered early even before the design is completed. This allows for works such as piling or other groundworks to take place before the final design has been tendered, resulting in a reduced completion time.

This procurement option is suited for a project where there is a high priority on early completion and the likelihood of change during construction is high.

ALLOCATION OF RISK

-General contracting: Both parties are obliged to enable the other to complete their obligations under contract, the overall quality risk can be defined on a situation by situation premise and therefore is the responsibility of the contractor.

-Construction management: Financial risk tends to the client as do any default risks, completion risk is dependent upon the tendering terms;

<https://assignbuster.com/brunel-university-uncovered-footbridge-project-procurement-options-report/>

however they typically lie with the client. It is the responsibility of each party to enable the other to complete their obligations under the contract. The overall quality can be defined and therefore the risk is the contractors.

SELECTED PROCUREMENT PATHWAY

For the Brunel University Footbridge Project a general contracting procurement option should be applied. This method of contracting is low risk for Brunel University as the contractor accepts the financial risk of construction. It is essential however to ensure that design information is complete at tender, else this will result in additional costs. Single stage tenders for construction can be applied for on a competitive basis as a complete design tender has been produced. (Govbcca, 2018). This provides Brunel University with a range of option when choosing a contractor to employ for the construction process.

PROCUREMENT OBJECTIVES

CONTRACTUAL ARRANGEMENTS

- The employer must not hinder the contractor from undertaking their obligations and must take all measures in order enable the contractor to discharge their obligations;
- Provide a direct route via foot from Brunel University library (2nd floor) to the lecture centre, ensuring that it is structurally sound, and meets current standards for seismic vibrations;

- Ensure the Brunel University sustainable procurement guidelines are met, maximising the use of sustainable materials and optimising the construction process to reduce waste;
- Comply with all local authoritative construction guidelines as well as EUROCODE;
- Provide a secure link between the existing structure and the bridge, ensuring that the adjacent stairwells/lobbies are well insulated both for sound and thermal insulation;
- Provide reliable all weather access;
- Minimise all disruption to surrounding businesses and educational facilities during construction;
- Ensure suitable drainage systems are in place to prevent water accessing either pre-existing structure;
- Support local and regional suppliers during design, development and construction of the project;
- Minimise the impact to the natural environment;
- Minimise inconvenience for attendees at Brunel University;
- Ensure accessibility for everyone;

- Provide certainty in terms of the project implementation schedule, ensuring a critical pathway has been identified and milestones are set accordingly throughout the project;
- Ensure that the project is procured/tendered in the most cost effective manner, a lump sum contract will be used due to the relatively small budget of the project. The contractor enters a defects liability zone upon the presentation of a certificate of practical completion, during this period any faults that appear must be put right at the contractors expense;
- Compensation is awarded based on; rates and prices in contract documents, cost plus mark-up at a reasonable rate based on market prices and day work calculations;

TENDERING AGREEMENTS/KEY CONSIDERATIONS

KEY CONSIDERATIONS

This project should include detailed invitations to tender for the design; drawings and specification, the schedules of work, bill of quantities and contractor selection. (NEC. 2005).

Several types of tendering can be applied to the Brunel University Footbridge Project due to the relative small size and lack of complications of the project. Open tendering is likely the best option for this project, an open tender relies upon contractors/consultants applying to prepare tenders. This allows Brunel University to consider a wide range of contractors very quickly, this also gives a direct comparison between what each contractor has to offer. Open tendering offers the greatest competition and promotes new or emerging

suppliers/contractors to emerge, however some suppliers are unsuitable for the contract so additional research would be required.

Selective tendering is another option for this project, Brunel University can allow for tenders to be submitted by invitation. Suppliers can be selected based on their track record or previous history working with Brunel University, therefore the proposed tenders can be selected from a list of ‘approved’ suppliers.

REFERENCES

- Brunel. ac. uk. 2018. Brunel. ac. uk. [Online]. [11 November 2018]. Available from: <https://www.brunel.ac.uk/about/documents/pdf/Sustainable-Procurement-Guide-2014docx.pdf>
- R. Champion. 2018. Brunel. ac. uk. [Online]. [12 November 2018]. Available from: <https://blackboard.brunel.ac.uk/webapps/blackboard/execute/content/file?cmd=view>
- Govbcca. 2018. Govbcca. [Online]. [9 November 2018]. Available from: <https://engage.gov.bc.ca/app/uploads/sites/331/2018/02/Procurement-Options-Report.pdf>
- NEC. 2005. Procurement and Contract Strategies (Accessed 10 November 2018) – (free download)