CONTENTS

1 Introduction

This report is prepared to provide a framework for guiding the Head of Heriot Watt University (HWU), Dubai Campus in selecting a procurement method to build a new 800 seats auditorium with air conditioning, comfortable tiered seating and utilizing high specification technology, featuring multimedia theatre with a full size interactive screen and computer driven presentation facilities, perfect for conferences, lectures and presentations.

In light of the above, it is essential to have a review of theory and practice of procurement underpinning this report.

Building procurement determines the overall framework of responsibilities and authorities for parties involved in the building process. It is considered as an important aspect that determines the overall client satisfaction and project success and thus, selecting the most appropriate procurement method is crucial to all the parties involved in the project (Love et al., 1998, p.221).

A project can be considered successful if it is accomplished on time, on budget and with appropriate quality standards, and providing the client with satisfaction. Selection of procurement method is considered influential on this aspect and as a result of that, there is a consensus that there is one procurement method that is considered better than all others for a given project, but not likely to be better than others for any other project (Love et al., 1998, p.221, p.222).

2 A Strategic Approach to Procurement

The concept of strategic approach to procurement is developed to offer a framework solution for construction procurement and has been considered as a prerequisite for the improvement of project success (Morledge, Smith and Kashiwagi, 2006, p.31).

In order for that approach to be effective, it has to provide a framework that will be able to address the project objectives required by the client. This approach should be better viewed as the sum of a set of processes rather than a predetermined set of solutions (Morledge, Smith and Kashiwagi, 2006, p.34).

According to Morledge, Smith and Kashiwagi (2006, p.34), the basic set of processes will include the following:

- **The functional needs analysis**

  The functional needs are set in the client's brief. Complex projects require time and thoughtful effort in order to have an acceptable brief.

- **Development of an overall procurement methodology**

  The client's brief should provide set of project objectives along with sets of key performance indicators defining measurement of project success.

- **Components of a collaborative relationship**

  The success of a collaborative relationship depends upon alignment of objectives of the parties involved in the project. The objectives must be measurable and accordingly, they need to be supported by a set of key

performance indictors. Equally important is to develop dispute resolution methodology aimed at resolving potential problems before escalation.

- **Detailed design of the procurement approach to be used**

  Further to the development of an overall procurement methodology, the development of the detailed procurement approach design will comprise the most suitable tools to achieve the project objectives.

- **Formalization of contractual relationships**

  It is essential that the selected contractual arrangement should supplement and support the adopted procurement route.

- **Selection of the most appropriate partners**

  Selection of the most appropriate partners i.e. contractors and consultants, is considered as a key aspect of project delivery success.

- **Implementation**

  The successful selection and implementation of procurement strategy require a skilled process that has highlighted the need of specialty in this area.

3 Procurement Strategies

3.1 Procurement strategy

A procurement strategy is established to identify and prioritize project objectives and highlight aspects of risk and act as a guideline of how the process will be managed (Morledge, Smith and Kashiwagi, 2006, p.100).

Based on the strategic brief, the procurement strategy can be developed to set basis of how the team will be selected and how the project will be designed and delivered (Morledge, Smith and Kashiwagi, 2006, p.101).

According to Morledge, Smith and Kashiwagi (2006), certain key factors have to be considered in the procurement strategy. Identification and analysis of these factors are as following:

- **The project objectives**

  To provide 800 seats auditorium with air conditioning, comfortable tiered seating and utilizing high specification technology, featuring multimedia theatre with full size interactive screen and computer driven presentation facilities, perfect for conferences, lectures and presentations.

- **Constraints**

  Time will be a constraint, as the Dubai Campus needs the auditorium in a timely manner to expand its business and maintain its prestigious presence in the region.

- **Cultural factors**

  The new project should be in line with the principles of HWU Dubai Campus in terms of encompassing students coming from all over the world with different backgrounds and cultures and thus, it should be designed to facilitate the way academic staff and students work.

- **Risks**

  The project objectives are precise in terms of the importance of quality and time and hence, risk factors attributed to quality and time, have to be dealt with extreme diligence and should be allocated to the organization best able to manage.

- **The client's capabilities**

  The HWU Dubai Campus has been recently constructed (2010 -2011) and accordingly, the client has fair exposure to the process and experience in the local market. The School of the Built Environment academic staff has vast experience and can contribute in providing a comprehensive good quality brief and hence, minimizing changes to project scope.

3.2 Procurement options review

Procurement routes are different from each other in terms of the client exposure to risk, whether the design is combined with construction or separated, the involvement of the contractor in design and the information required at the time of construction (Morledge, Smith and Kashiwagi, 2006, p.103).

Commonly adopted basic routes are traditional, design-build, management contracting and construction management. These routes can be adapted to form more advanced routes to suit specific situations.

There are advanced procurement routes like novation and two-stage tendering. And there are even more sophisticated routes like develop and construct, design and manage and partnering.

Further to the development of the procurement strategy, procurement routes have to be analyzed and examined to identify potential benefits and thus, select the most suitable procurement route for the proposed project.

The Traditional procurement route

Traditional procurement route is probably the most commonly adopted route. It is known for certainty of design, cost and duration. Changes are relatively easy to arrange in this route to accommodate changes in client's requirements or technology. However, the sequential nature of this route has resulted in a relatively slow pre-construction period (Morledge, Smith and Kashiwagi, 2006, p.108, p.110).

This route involves the separation of construction from design and requires a complete design and bill of quantities prior to construction, which is not in favor of buildability and time that are considered as main objectives of the proposed project (Murdoch and Hughes, 2007, p.27, p.28).

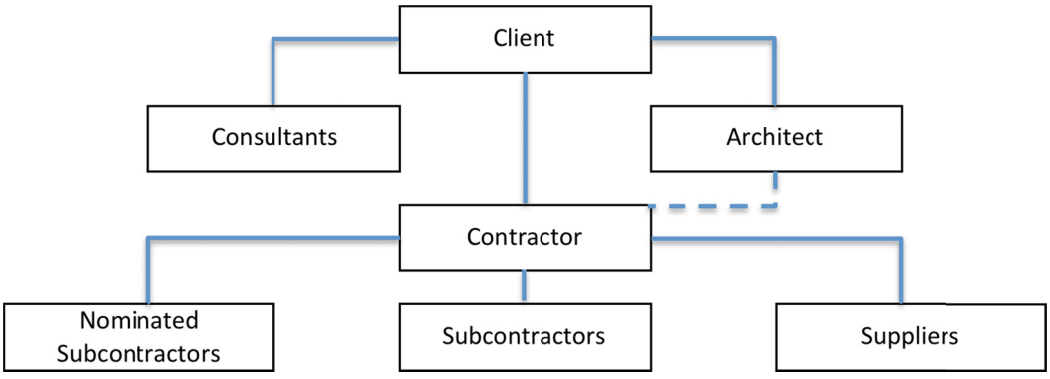

Figure 1: Project structure – Traditional procurement route

The Design and Build procurement route

On the other side, in the design and build procurement route, the contractor is responsible for design and construction and thus, design and construction processes are overlapped which can allow early start on site. This route is providing a single point responsibility to the client and is also known for price certainty and buildability.

Once the design is set, this route is not flexible for making changes, which in turn can cause serious cost and time implications. However, a good quality, concise and unequivocal brief is sufficient to overcome this problem (Murdoch and Hughes, 2007, p.44).

Quality is known to suffer under this procurement route, which is the major objective of the proposed project. However, this issue has been handled in variants of this route.

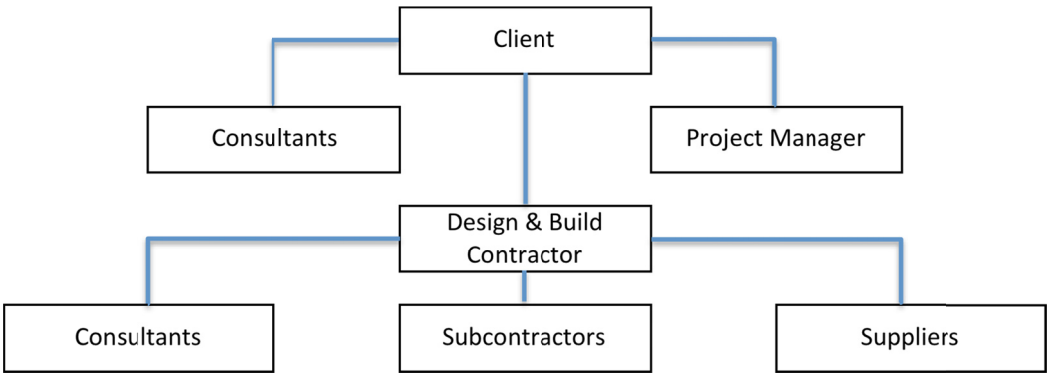

Figure 2: Project structure – Design and Build procurement route

The Management Contracting procurement route

In this route, a management contractor is involved early in the process, providing design and buildability advice. The management contractor is not appointed to undertake any of the works but only for managing it (Murdoch and Hughes, 2007,

p.59). However, due to the reduced risk allocated to the management contractor, greater risk is transferred to the client.

This route is suitable for projects that require early completion and for projects with complex requirements. It also offers design flexibility and buildability (Hackett, Robinson and Statham, 2007, p.90). However, management contracting route is vulnerable to escalation of cost.

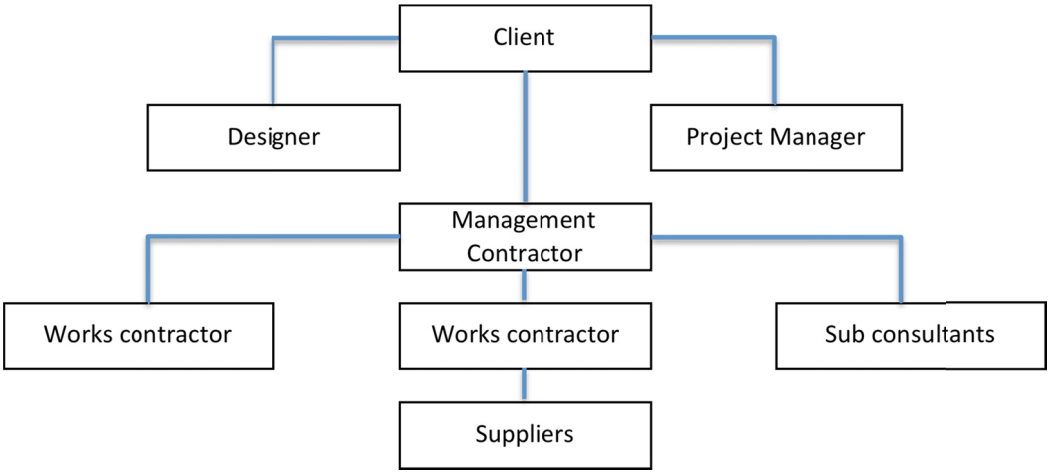

Figure 3: Project structure – Management Contracting procurement route

The Construction Management procurement route

The main difference between the construction management and management contracting is that the client under construction management route, is having direct contract with each works contractor while having a construction manager on board who acts as a consultant with no direct contractual link with the works contractors (Murdoch and Hughes, 2007, p.69).

Similar to the management contracting route, this route is suitable for the projects with complex requirements and fast track projects.

The client involvement is highly required in the process and hence, the client has to be familiar with construction.

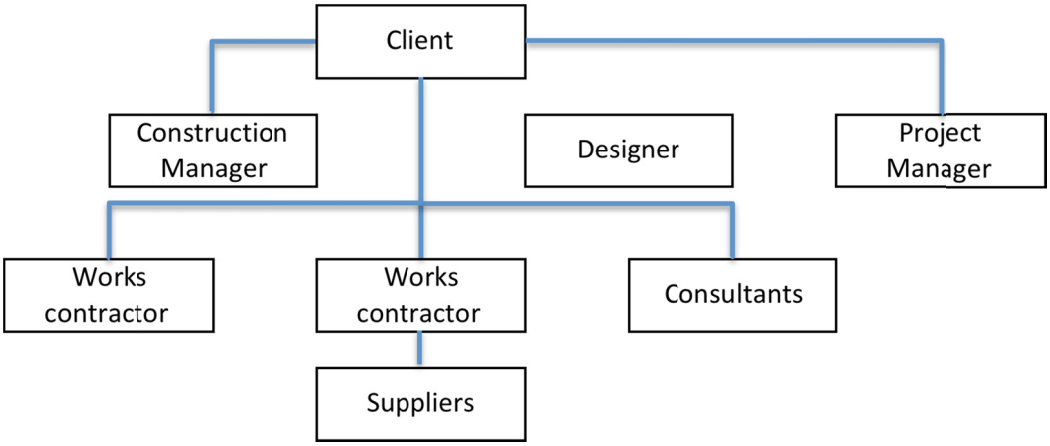

Figure 4: Project structure – Construction Management procurement route

Novation procurement route

Novation is a variant of design and build procurement route. It involves the replacement of the contract between the client and the consultant with a contract between the consultant and the contractor (Hackett, Robinson and Statham, 2007, p.99).

All the advantages of the design and build procurement route are inherited by novation route i.e. overlapping between design and construction, providing single point responsibility to the client, price certainty, buildability.

This route is able to overcome the quality concerns in the design and build route by the process of employing a designer to produce initial proposals that include the client's requirements and after reaching certain amount of clarity and client's satisfaction, the novation process will take place.

A good quality brief is a key aspect to this route to limit changes and as set in the procurement strategy, The School of the Built Environment academic staff contribution in providing a comprehensive good quality brief can significantly minimize changes to the project.

Novation is categorized under two types which are switch novation and novation *ab initio*.

Despite the nearly perfect outcome of this route, there are key problems that may arise from adopting this route. Switch novation can lead to conflict of interest as it creates two distinct periods of employment (Hackett, Robinson and Statham, 2007, p.102). And with the novation *ab initio*, there is a history of disputes e.g. Blyth & Blyth v. Carillion (2002), which was considered unfair to the contractor and thus, it is not favored by the construction practitioners.

Two-Stage Tendering procurement route

In the first stage of two-stage tendering route, the client appoints the contractor based on prequalification and competency and not price and accordingly, there will be more confidence in the contractor's performance and capabilities and thus, ensuring that the high quality objective of the project will not be compromised.

The client is able to choose package subcontractors and the contractors are informed about them at the tender stage and that will accordingly, facilitate a project tailored to the client's requirements.

The contractor at that stage is involved in design and planning which will ensure buildability, cost certainty, time certainty and relatively quicker start on site.

Having a sole contractor assigned at an early stage of the project and being involved in the design, planning and pricing of the project can come at cost when reaching the second stage of this route as the contractor can take advantage of being the only contractor contributing to the project. However there is a remedy for that by simply giving no obligation of awarding the main contract to the first stage appointed contractor and that the award of the final contract will be based on the performance of the contractor during the first stage and the client's satisfaction of the negotiation outcome. A service agreement can be signed with the contractor during the first stage to ensure his efficient contribution to the project.

Develop and Construct procurement route

The develop and construct route is considered as a sophisticated procurement route associated with design and build and adopting both two-stage tendering and novation routes to provide the client with effective control on both design and cost.

However, this route is more suited and practical to clients operating a framework that includes several prequalified contractors.

Design and Manage procurement route

The design and manage route is an adaptation of design and build procurement route with the management routes.

The key for this route's success is the right selection of the package contractors and to ensure their capabilities are sufficient to complete their packages.

This route is meant for large and complex projects. To use this route, the client's requirements must be set and prepared.

Partnering

Partnering is gaining popularity and an increase in utilization in construction projects. Partnering philosophy is to facilitate a construction project environment of trust and openness (C. Black et al., 2000, p.423).

Implementation of partnering requires certain criteria to succeed. Trust, effective communication, roles identification, positive and flexible attitude from all parties, these requirements are the core of partnering philosophy (C. Black et al., 2000, p.423).

A study done by C. Black et al. (2000) indicates that partnering can lead to fewer adversarial relationships and increased stakeholders satisfaction.

Partnering is a promising method of procurement but all the project participants must learn to modify their reactions and attitudes to work all together and contribute to an efficient and conflict free project (C. Black et al., 2000, p.433).

This method is not popular in the region and organizations will require time to get introduced to such philosophy and modify their thinking to work according to that approach.

3.3 Procurement selection criteria

In the procurement options review section, various procurement routes have been analyzed, examined and criticized against certain criteria as a process of evaluation to select the most appropriate procurement route for the proposed project.

In this section, the procurement selection criteria will be identified and objectives will be highlighted as a final process prior to the final selection process.

The typical procurement selection criteria are as following:

- Time certainty
- Cost certainty
- Changes
- Quality
- Complexity
- Risk
- Buildability
- Division of responsibility

The project objectives set in the procurement strategy require certain criteria in order to be achieved. By analyzing these objectives, quality and time are paramount. However, being able to achieve these main objectives and at the same time fulfill other criteria will definitely contribute to a successful project and the satisfaction of all key stakeholders.

4 Conclusion

It was obvious that there have been many problems associated with the traditional route and as a response for these traditional problems, the need for integrated solutions has arise where single point of responsibility is provided to the client and further on, several routes were introduced to balance the responsibilities and risks and following to that several variants were generated to encourage collaboration and a new philosophy intending to minimize conflicts.

Further to the review and analysis made to the procurement routes suitable to the project and examining them according to certain criteria against the project objectives, two-stage tendering procurement route is considered as the most appropriate procurement route for the proposed project.

The choice of the two-stage tendering route was based on several attributes. This route is providing the client with single point of responsibility, quicker start on site, buildability, time and certainty and at the same time a control over the design and quality which are all considered as main project objectives.

To ensure an effective utilization of this route certain arrangements are to be followed. It is recommended to sign a service agreement with the contractor at the first stage of the process to ensure his efficient contribution to the project. And also it has to be clear that there is no obligation to award the final contract with the contract appointed in the first stage and that it is conditional on the performance of the

contractor during the first stage and the client's satisfaction for the outcome of the second stage.

As a payment mechanism, lump sum payment method is recommended, as it will ensure lower financial risk to the client and that the contractor will have higher incentive to finish at the earliest.

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