

A Comparative Study of the Variables in Construction Project Briefing/ Architectural Programming

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Abstract: Briefing is the process by which client requirements are identified, clarified and articulated in the early design stage of construction projects. It is crucial to the successful delivery of construction projects. Considerable research has been conducted in briefing during the past two decades. However, current briefing practices are considered inadequate by many researchers and little research has been done in sufficient depth to explore briefing variables in the construction industry. This paper introduces a comprehensive framework of the variables that have an impact on construction project briefing. A questionnaire survey was conducted to validate these variables among project managers and architects in Hong Kong, the UK and the USA. The results indicated that while there were no significant differences between the samples in the UK and the USA on the variables for construction project briefing, the views of the samples in Hong Kong deviated from the two Western countries. The Western professionals have more positive answers to most of the statements in the questionnaire. The findings have significant implications for industry practitioners to produce their guidelines for the briefing process and for the authors to draft a “how-to” briefing guide for construction projects.

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Introduction

Briefing (known as architectural programming in the USA) is the process by which a client informs others of his or her needs, aspirations and desires, either formally or informally, and a brief is a formal document which sets out a client's requirements in detail (CIB, 1997). Hershberger (1999) defines architectural programming as the first stage of the architectural design process in which the relevant values of the client, users, architect, and society are identified; important project goals are articulated; facts about the project are uncovered; and facility needs are made explicit.

The briefing process is both crucial to the successful delivery of construction projects as well as the satisfaction of clients (Shen et al., 2004; Yu et al., 2005). Many problems in construction projects can be traced back to briefing. The famous Pruitt Igoe project in the USA, which solved the financial and image problems of public housing, was demolished in 1976 because it did not respond to the behavioral and social needs of the users (Duerk, 1993). This incident illustrates well that a systematic identification of client requirements during the briefing process is a prerequisite to project success. In the past two decades, briefing has received a great deal of attention from researchers and practitioners. Many briefing guides have been developed to improve existing briefing practices (CIDA, 1993; Duerk, 1993; CIB, 1997; Salisbury, 1998; Hershberger, 1999; CRC, 2001; Pena and Parshall, 2001). Despite these efforts, the current briefing practice is still considered as inadequate by many researchers (Smith et al., 1998; Barrett and Stanley, 1999; Kamara et al., 2002, Yu et al., 2005). Many project briefs may not truly reflect client requirements.

Kamara et al. (2002) indicate there are limitations in current practice and in the framework for briefing. Yu et al. (2005) pointed out that a lack of a comprehensive framework is one of the problems associated with briefing. The limitations in the existing framework for briefing can shift the focus away from the requirements of the client, and can result in problems in briefing practice (Kamara and Anumba, 2001). However, to date, little attention has been devoted to develop a comprehensive framework for investigating the variables of construction project briefing. Whereas there have been many studies on briefing in the construction industry, little research has been done to develop a theoretical framework and subsequently produce a practical framework for construction project briefing/ architectural programming.

In this paper, the perceptions of the variables in construction project briefing in Hong Kong, the UK and USA were investigated. A comparative study on the perceptions of clients and architects on briefing variables between Hong Kong and the Western nations (the United Kingdom and United States) was conducted. Discussions of the implications of the findings across 13 briefing variables for practicing industry professionals were provided. These findings are useful for the industry practitioners to produce their own policies in the briefing process. Moreover, the findings can serve as a base for the authors to draft a common and comprehensive briefing guide for construction projects.

Research Methodology

Brainstorming Session and Literature Review

The research project was approached through an initial brainstorming session to identify variables likely to be significant in a theoretical framework for briefing. The

session was carried out among two professors in building construction and a PhD student with over ten years' experience in the construction industry. This was followed by a comprehensive literature review which confirmed or rejected the variables as significant, and included other variables initially not identified. Eleven variables were identified initially and confirmed following the literature review. This was then expanded to sixteen variables including risk management, conflict management, flexibility, facilitation, stages of briefing and, process and the importance of road mapping. Facilitation was deleted as this would be investigated in the value management process used in construction project briefing. After grouping some of the variables, thirteen variables (see section under the Thirteen Variables in Briefing) were identified as having an impact from a theoretical perspective and became the theoretical foundation for the project. These thirteen variables were investigated in detail to identify their impact (if any) on the briefing process of construction projects. The variables identified were included in a working document (Yu et al., 2007a) which included a detailed description of each. This research document concluded with those variables most likely to influence how the process is undertaken and to develop a theory behind the variables involved in the briefing process.

Questionnaire Survey

A questionnaire survey was conducted to identify missing variables (if any) of briefing and validate the established theoretical framework. Questions were designed with reference to the aforesaid working research document.

Design and layout of the questionnaire

There are four sections in the questionnaire. The first section collects the background information of the respondents. The second section is designed to collect opinions from respondents on the briefing practices. The thirteen variables of briefing are tested and verified in the third section. In the last section, an open-ended question is asked to identify the critical success factors (CSFs) of briefing.

The questionnaire was designed in a simple 'tick-it' format to facilitate easy completion. A Likert scale was generally adopted. This is a widely used instrument for measuring opinions, beliefs, and attitudes. Five possible responses used were: "strongly agree", "agree", "neutral", "disagree" and "strongly disagree".

As part of a pilot study, the preliminary questionnaire was sent to three experienced architects and two academics in Hong Kong for comments. The questionnaire was then revised based on the comments collected. The improved questionnaire was again sent to four experienced architects in Hong Kong, two academics and one director of an architectural firm in the UK as well as two experienced and senior architects in the USA for review in the second pilot study. The final questionnaire is attached in Appendix A.

Sample selection and profile of the respondents

The target population of the survey includes all client's project managers and architects in Hong Kong, the UK and the USA. In Hong Kong, the questionnaire was mailed and emailed to 150 experienced professionals including 21 public and quasi-public clients, 25 private clients and 104 architects. Names of these samples were obtained from the HKIA (Hong Kong Institute of Architects) Directory 2003 and the

Builder Directory 2003. They were either directors, senior project managers, associates or senior architects. Considering the size of the Hong Kong construction industry where, as an illustration, there are only about 160 architectural firms in the territory, the sample size is significant enough for the survey purposes. A reminder letter was sent to those who had not returned the questionnaire three weeks after it was sent, and subsequent telephone calls were made. There were 51 valid responses out of 144 questionnaires, after deducting the six undelivered mail, this concludes a response rate of 35%.

In the UK, 100 e-cards were sent to the members of Royal Institute of Architects (RIBA) across different cities. Their names and email addresses were obtained from the RIBA website. Initially, the e-cards were sent in two bulks and blind carbon copied to conceal the distribution list. Three weeks later, the response rate was disappointing and therefore a first reminder letter was sent to the 100 RIBA members alerting them to the briefing questionnaire web link. Five weeks later, the response rate was still disappointing and therefore the second reminder letter was sent to the 100 RIBA members with a hard copy of the questionnaire enclosed, with three options to complete the questionnaire: (1) to access web link, (2) to return the completed questionnaire by post, or (3) to facsimile back the completed questionnaire. There were 18 valid responses, indicating a response rate of 18%.

In the USA, 150 e-cards were sent to the members of the American Institute of Architects (AIA) across different cities whose names and email addresses were obtained from the AIA website. Initially, the e-cards were sent in three bulks and blind carbon copied to conceal the distribution list. Three weeks later, the response

rate was disappointing and therefore 150 personal ecards were sent to remind the AIA members to complete the questionnaire. There were 20 valid responses received, representing a response rate of 13%.

The responses obtained were clear because the majority of questions requested the respondent to check the boxes and the responses for the open-ended questions were in point forms or short simple sentences. In Hong Kong, telephone calls were made to clarify any queries whereas in the UK and USA, emails were sent as follow-up actions. Incomplete questionnaires and responses from other regions (obtained as a result of the web based questionnaire) apart from Hong Kong, the UK and USA constituted an invalid survey since the study was focused in these three regions.

Statistical Analyses

Non-parametric tests, the Mann-Whitney tests were undertaken to assess whether there were statistically significant differences or divergences between groups. The matched parametric testing methods were not employed in this study since the parametric assumptions were not fulfilled and the variables were measured using an ordinal scale of measurement (Abdel-Kader, 2001; Love et al., 2004). The Mann-Whitney test is used to investigate the differences between two groups (the UK and the USA, and Hong Kong in this study).

Testing the hypotheses:

Null hypothesis: There is no difference between the two populations, so they have the same mean

$$H_0: \mu_1 = \mu_2$$

Alternative hypothesis: There is a difference between the two populations; in particular, they have different means

$$H_1: \mu_1 \neq \mu_2$$

Level of significance for testing these hypotheses:

$$\alpha = 0.05$$

In the test, the results are interpreted by the Z and p value. If the p-value is less than 0.05, H_0 is rejected. It can be concluded that there is a significant statistical difference between the groups.

The Thirteen Variables in Briefing

From the initial brainstorming and comprehensive literature review, thirteen variables that have an impact on the briefing process were identified. It was realised that some of the variables require consideration at particular points in the briefing cycle whereas others are present throughout the life cycle of a facility from the commencement of the briefing stage. The variables are as follows:

1. Projects

A project is a change orientated event defined as ‘an enterprise comprising physical and non-physical activities that include a pre-project stage to ensure effective planning and a post project stage to ensure successful absorption into core business.’

Therefore a project is a separate, temporary activity from the organization’s core business but one which will make a change. A brief for a project requires the initiator of the brief to accept change. The brief is ideally compiled during the first stage of a project, pre-project planning and will encapsulate and make explicit decisions taken at the pre-project planning stage. It is important to spend time planning at the pre-

project stage to ensure a comprehensive definition of the project as decisions made in the early stages will influence the rest of the project (Yu et al., 2007b)

2. Stakeholder Management

Stakeholders are defined as ‘those groups or individuals with whom the organization interacts or has interdependencies’ and ‘any individual or group who can affect or is affected by the actions, decisions, policies, practices or goals of the organization’ (Carroll, 1993). In the briefing process, it is necessary to consider the interests of stakeholders, both primary and secondary, and maintain a balance between different stakeholder interests. Those with responsibility for the briefing process should strive to maintain a good working relationship among all stakeholders. Primary stakeholders have a legal contractual relationship to the project. This group includes the project owner, suppliers, functional groups, investors and those from the public domain (such as communities and institutions) that provide infrastructures and markets, whose laws and regulations must be obeyed, and to whom taxes and other obligations are owed. Secondary stakeholders are those who influence, or who are influenced or affected by, the project but are not regularly engaged in transactions with it and may not be essential for its survival (Pinto, 1998). In order to understand the various interested parties in the project, all types of stakeholders should be identified and represented during the early stages of the project. The stakeholders’ commitment, interest and power should be assessed before the briefing exercise. Much time and effort should be devoted to the key players in the briefing process.

3. Teams and Team Dynamics

The briefing team is project focused and interacting; comprised of individuals willing to sacrifice individualism for collectivism. An important objective of team building is to break down the barriers to effective communications, encouraging listening and understanding of the project (Blyth and Worthington, 2001). Team membership should be effective and balanced as indicated by the ACID test. Members of teams should be chosen based upon their ability to contribute information, enable or undertake decision taking.

The ACID test is a useful aid to selecting team members.

- A** Authorise – include those having the authority to take decisions during the workshop process.
- C** Consult – include those to be consulted during the workshop process and without whose consultation the workshop would be suspended.
- I** Inform – exclude those who merely have to be informed of the outcome of the workshop.
- D** Do – include those who have to translate the outcomes of the workshop into action.

4. Client Representation

A client is considered as the sponsoring organization or the initiator, who is directly responsible for the production and development of the project (Bresnen, 1990). There are many different types of clients: Large Owner/Occupier, Public Sector, Developer, Refurbishing Retailers and Small owner/occupier who all have different requirements and ways of going about projects. The client type will influence the decision to build as to whether it is part of a long term strategic plan, a response to unanticipated changes, or if it is opportunistic. MacPherson et al. (1992) identified that

one of the problem areas of briefing was the representation of the client interest groups such as incomplete identification of all the interest groups and how they should be represented in the decision making unit. Therefore, it is important to ensure adequate representation of client groups to address client needs and to prevent distortion of the brief.

5. Change Management

Change management in this study refers to the task of managing change from a proactive posture in a project. A change project essentially involves three stages, understanding the status quo (as-is) situation, specifying the desired future (to-be) situation, and planning and implementing an effective migration path from 'as-is' to 'to-be'. The client should, during the briefing process, be made aware of the impact of change during the design and construction process (Kelly and Duerk, 2002). The most difficult change management occurs when change results from inaccuracies in design caused by incomplete, unclear or ambiguous project information generated at the early stage of the project process. This may result from, for example, the appropriate stakeholder's information not being incorporated at a particular stage in the development of the project (Kelly et al., 2004).

6. Knowledge Management

Knowledge is defined as 'information interpreted by the individual and applied to the purpose for which it is needed' (Bender and Fish, 2000). Knowledge management is an umbrella term for making more efficient use of human knowledge that exists within an organization. Fundamental to briefing therefore is the mapping of individuals' contributions to organizational project knowledge in order to determine

the membership of the project briefing team (Kelly and Duerk, 2002). Teamwork, collaboration, face-to-face contact and effective communication structures are essential in ensuring knowledge management is a success (McCampbell at al., 1999).

7. Risk and Conflict Management

The concept of risk is related to the activities that flow from decisions made by the client, where the outcomes of those activities may differ from expectations (Loosemore, 1999). These differences are the result of uncertainties that are inherent in the formation on which the client bases his or her decision-making. It is widely accepted that it is during the initial appraisal phase that risk management is most valuable as a great deal of flexibility in design and planning remains that allows consideration of ways in which various risks might be avoided or controlled (Thompson and Perry, 1992).

In the briefing process, conflict occurs whenever disagreements exist in a social situation over issues of substance or whenever emotional antagonisms create frictions between individuals or groups (Schermerhorn, 2003). It is most beneficial to construct conflict management plans during the pre-design stages of a project and such plans should incorporate preventative and reactive elements (Loosemore, 1999). Collaboration and problem solving is preferred to gain true conflict resolution during the briefing process.

8. Post-Occupancy Evaluation and Post-Project Evaluation (POE and PPE)

POE has been defined as ‘a diagnostic tool and system which allows facility managers to identify and evaluate critical aspects of building performance

systematically' (Preiser, 1995). POE and PPE are management tools within the broader context of facilities management, aiming to improve the performance and quality of buildings. Successes, failures and past experiences of what does and does not work well should be used to inform better decision making in the briefing process of subsequent projects. The more detailed a post-occupancy evaluation or post-project evaluation, the more likely they will support and influence the decisions made in the briefing process.

9. Critical Success Factors and Key Performance Indicators (CSFs and KPIs)

Critical success factors are the statements of how improved business practice must be achieved if an organization is to be able to attain its mission (McCabe, 2001). The CSFs in the briefing process range from clear objectives and requirements of the project to trust and involvement of key stakeholders (CIB, 1997). Key performance indicators are the means by which an organization can measure the progress being made to ensure that the CSFs are being achieved. KPIs generally include time, cost and quality as well as satisfaction of stakeholders.

10. Types of Business and Organizational Theory

The briefing process must take into account that the team may be formed of many different types of organizations with different success criteria. This success criterion is most influenced by stakeholder satisfaction. For example a government organisation or a not-for-profit organization will differ greatly in terms of success criteria from those in the team who aim to make a profit from the project.

11. Decision Making

Briefing involves a lot of decision making by individuals and by groups. Effective decision-making processes are the backbone of an effective briefing strategy. Knowing when and what kinds of decisions must be made are crucial to the success of any project (Blyth and Worthington, 2001). A good briefing team should not limit themselves to just one decision-making method and they should operate in contingency fashion by changing decision methods to best fit the problem and situation at hand.

12. Communications

The briefing process is essentially one of communication. Effective communications are needed between all parties in order to identify, clarify and represent the client requirements. It was found that the most important critical success factor of briefing was open and effective communication in the questionnaire survey of this study. Active listening should be encouraged in the briefing exercise to allow a free and complete flow of communication.

13. Culture and Ethics

Culture and ethics may affect decision making in the briefing process. In managing the briefing team, the influence of culture dimensions such as language, time orientation, use of space, religion, power distance, uncertainty avoidance, individualism-collectivism and masculinity-femininity may be taken into account. An 'ethical dilemma' is a situation in which a person must decide whether or not to do something that, although benefiting them or the organisation, or both, may be considered unethical (Schermerhorn et al., 2003). The briefing team may encounter ethical dilemmas which affect decision making in the briefing process.

These thirteen variables were validated subsequently by a questionnaire survey (see Appendix A) and formed the basis of the theoretical framework for investigating construction project briefing in this study.

Research Findings

Profile of the respondents

Of the 89 respondents, more than half of them were from Hong Kong (57%); the others were from the UK (20%) and the USA (23%) (refer to Fig. 1). Fig. 2 provides a breakdown of the valid responses by professional groups. The majority of them were architects (62%), the remaining were project managers (26%), architectural programmers, mainly from the USA (6%) and others including surveyors, engineers and contractors (6%). Regarding the respondents' experience in briefing in the past five years (measured by number of projects), 16% of the respondents have both co-ordinated (written) and contributed (has not written), of this 47% have co-ordinated and 37% have contributed only in the briefing process. In addition, 40% of the respondents have co-ordinated briefing and 21% of the respondents have contributed to briefing for more than six projects in the past five years.

Results

In order to investigate whether there were significant differences between the UK and the USA perceptions on the variables of construction project briefing, a Mann-Whitney Test was conducted. The results in Table 1 revealed that there was no significant statistical difference between the UK and the USA except that American professionals strongly believed that consensus building is a vital component of the

briefing process. Two similar tests were carried out between Hong Kong and the UK as well as Hong Kong and the USA. It was found that there were significant statistical differences in both tests. Since there was no significant statistical difference between the UK and USA, these two regions were grouped as the ‘Western’ group to examine the difference between Hong Kong and Western perceptions on the variables of construction project briefing. In addition, for the sake of comparison, the UK and the USA are taken to represent the West in the discussion because the UK and the USA are in the same cultural cluster – Anglo, and have been classified as typical developed Western nations (Chen and Partington, 2004; Gupta et al., 2002; Ronen and Shenkar, 1985). Table 2 shows the means of the three regions and the results of the Mann-Whitney Test between Hong Kong and the Western group. The results revealed that the views between Hong Kong and the Western group were statistically significantly different. The major findings are summarized in Table 3.

Discussions

Perceptions on the variables of construction project briefing

1. Projects

According to Tables 2 and 3, the UK, USA and Hong Kong’s professionals agreed that the brief should act as a reference document which should be available to all project parties. The mean shows that the USA was inclined towards ‘strongly agree’. All three regions disagreed that the brief document is for use by the design team only. This was in line with HM Treasury (1997) that states that the project brief should be included in the project execution plan and used by all parties for reference when requiring project information. The project execution plan is the key management

document that encompasses all activities related to the project. The project manager ensures that the project is progressing according to the brief and focuses on areas that need direction and control. The brief can also be used at the post project review stage to audit project success.

2. Stakeholder Management

The Western professionals considered that the individual stakeholder's commitment, interest and power should be assessed prior to the briefing process. It coincides with Boddy (2002) in which he proposes to carry out a stakeholder analysis during the early stages of the project and present it to the team. Important tasks for the project manager therefore include; identify stakeholders in a project; assess their commitment; assess their power to help and hinder the change; assess their interests and how this will affect what they think and do about the change; manage relations with them to gain support, minimize opposition and generally create favourable attitudes to the change.

3. Teams and Team Dynamics

The three regions' professionals reckoned that an understanding of team dynamics is crucial for working effectively within the stakeholder group in the briefing process. The Western professionals agreed that the stakeholder group should be empowered by the client within precisely defined limits while the Hong Kong's professionals were neutral to this. It was not surprising to discover that the three regions' professionals understand that team dynamics is important in order to work effectively in the briefing process. The Western professionals have more understanding that the client should empower the stakeholder group within precisely defined limits.

4. Client Representation

All three groups agreed that strict control by the brief writer is needed to avoid the brief becoming a 'wish list'. Kelly and Duerk (2002) indicated the wish-list syndrome as one of the hazards commonly observed in the briefing process. It has been found that user groups tend to maximize their wish list in anticipation of being bargained down from this. The problem confronting the brief writer is then to understand the priorities of the user groups such that high-priority 'needs' are not sacrificed for lower-priority 'wants'. In this context, 'needs' are the fundamental requirements that the project must possess to serve the client's basic intentions and 'wants' are the embellishments which it would be nice to have but are not necessarily needed.

The UK, USA and Hong Kong professionals were neutral towards agreed that the client should determine the time at which the brief becomes fixed. If the brief is fixed, they prefer it to be fixed before detail design commences rather than before sketch design commences. The literature review indicates that there are basically two schools of thought relating to briefing. One considers the brief as an entity in itself, which should be frozen after a critical period; and briefing becomes a stage or stages in the design process (Hershberger, 1999; RIBA, 2000; Hynams, 2001; Yu et al., 2006). The other regards the brief as a live and dynamic document that develops iteratively from an initial global brief in a series of stages; and briefing is deemed as an ongoing activity that evolves during the design and construction process (Barrett and Stanley, 1999; Blyth and Worthington, 2001; Kamara et al., 2002; Othman, et al.,

2004 and 2005). The authors support the former such that redesign and abortive works due to late change of client requirements in the brief could be avoided.

5. Change Management

The Western professionals agreed that the brief should be sufficiently flexible to reflect changing client requirements. Problems occur in change management when change results from inaccuracies in design caused by incomplete, unclear or ambiguous project information generated at any stage of the project process. This may result from, for example, the appropriate stakeholder's information not being incorporated at a particular stage in the development of the project (Kelly et al., 2004). Notwithstanding the type of change, management structures must be in place to deal with change. Ideally, changes to client requirements should bring benefits all parties engaged in the project.

The UK and USA's professionals perceived that the brief should describe the potential changes to the client organization resulting from the construction project. This is discussed under the section on 'Knowledge Management'.

6. Knowledge Management

Western professionals considered that briefing is the integration of the skills, knowledge and experience of different stakeholders. The mapping of individuals' contributions to organisational project knowledge and experience is used to determine the membership of the project briefing team (Kelly and Duerk, 2002). Furthermore, Hong Kong, the UK and USA's professionals agreed that successful briefing is dependent on understanding the client's strategic goals. The authors

reckoned that a brief must capture client strategic goals, and detail changes to the way in which the client organization must do things to meet organizational needs and to reap the benefits of quality improvement, increased productivity and enhanced competitiveness which are a necessary part of the project.

7. Risk and Conflict Management

Western professionals believed that consensus building is a vital component of the briefing process. Although this statement is true to an extent, briefing should remain focused on the needs of the client. The client representatives should actively participate in the process and articulate their values and requirements. One of the benefits of using a workshop approach to briefing is that it enables the team to build consensus decisions considering a number of views and constructing a solution which is better than that proposed by any individuals within the workshop (Dallas, 2006). The first step in achieving consensus is to ensure that each participant's views have been heard fairly and taken into account. The second step is to achieve consensus through discussion between the project stakeholders in the workshop guided by facilitators.

8. Post Occupancy Evaluation and Post Project Evaluation

The three regions' professionals agreed that consultation with facility managers and end-users benefits the briefing process. Successes, failures and past experiences of what does and does not work well should be used to inform better decision making in the briefing process (Blyth and Worthington, 2001). POE should ensure the client requirements are being met and that the project team is clear of what these are. The information should be documented in the project brief and communicated to the team.

PPE should be implemented throughout the building life cycle to ensure that no lessons are lost or forgotten. Previous experience and lessons learned from past PPE should be reviewed in the briefing process to improve project performance.

9. Critical Success Factors and Key Performance Indicators

The Western's professionals considered that the construction project brief should include the key performance indicators by which the success of the project will be measured. There are ten KPIs that are currently being used (CBPP, 2003). They are; client satisfaction – product, client satisfaction – service, defects, safety, predictability – cost, predictability – time, construction time, construction cost, productivity and profitability. The success of a project can be measured and feedback used to improve the performance of subsequent projects.

10. Type of Business and Organizational Theory

The Western's professionals perceived that the briefing process must take into account that the stakeholder group may be formed of many different types of organizations with different success criteria. The briefing process should take into account the composition of the team. Corporate clients make decisions to change their facilities in order to be cost effective, enhance competitiveness and productivity and this should be considered in the briefing process (AIA, 2001). Government organizations or not-for-profit organizations seek to serve the societies or communities.

11. Decision Making

Hong Kong professionals were inclined towards 'agree' on the statement that effective decision making can only occur if the client representatives are senior managers. The UK and USA were neutral and disagreed with this statement respectively. This statement seems to simplify briefing situations. The authors agreed with Blyth and Worthington (2001) that there are three layers of decision making: corporate, departmental and individual. The corporate decision makers are more concerned with strategic decisions affecting the business such as whether to build and where. Senior managers are normally involved in the strategic briefing stage. Departmental and individual managers operate at a more tactical level, whilst they look for the detail project performance and technical requirements. Project managers or designers can manage the works in the project briefing stage. Senior managers are often prematurely faced with making decisions about detail at an early stage in the project when strategic decisions are required, and this problem should be avoided.

12. Communications

The Western professionals considered communication among stakeholders as being crucial to the success of the briefing process, and believed that a structured or facilitated workshop will improve communication amongst stakeholders. Hong Kong professionals were inclined towards 'agree' on these two statements. It coincides with the results of the open-ended questions in the questionnaire that open and effective communication is the most important critical success factor of the briefing process. The USA's professionals considered holding workshops for stakeholders as the second most important critical success factor. Yu et al. (2006) put forward facilitative briefing as a beneficial option for construction project briefing. In

facilitative briefing, a facilitator independent of the client and the design team guides the whole team through the briefing process largely using the techniques of value, risk and project management.

13. Culture and Ethics

The Western professionals believed that culture and ethics affect decision making in the briefing process. However, both Hong Kong and the Western's professionals disagreed that the stakeholder group be comprised of individuals of common cultural and ethical outlook. In managing the briefing team, especially for international construction projects, the influence of cultural dimensions such as language, time orientation, use of space and religion must be taken into account. Ethical decision making comes from personal values, company organization, trade/professional, government and society (Hong Kong Ethics Development Centre). The briefing team would encounter ethical dilemmas in their relationships with superiors, subordinates, customers, competitors, suppliers and regulators. Common issues underlying the dilemmas involve honesty in communications and contracts, gifts and entertainment, pricing practices and employee terminations.

Implications for industrial practitioners in briefing

The findings revealed in this paper may have implications for the practicing industry professionals to draft their own guidelines for the briefing process. The 13 briefing variables serve as a framework considering the factors that may have an impact on the process. The UK, USA and Hong Kong professionals may refer to the perceptions of their own regions on the 13 briefing variables. The Hong Kong

professionals may even look at the more positive answers from the UK and USA as a reference for briefing practices.

In terms of the stakeholders, the individuals' commitment, interest and power should be assessed prior to the briefing process. The individual stakeholder's contributions to organizational project knowledge and experience should be considered to determine the membership of the project briefing team. The briefing process should take into account that the stakeholder group may be formed of many different types of organizations with different success criteria. An understanding of team dynamics is also crucial for working effectively with the stakeholder group in the briefing process.

In terms of the briefing process, decisions should be made by the right person at the right level and time. Culture and ethics affect decision making in briefing. In addition, consultation with facility managers and end-users benefits the briefing process. Communication among stakeholders is also crucial to the success of the briefing process and a structured or facilitated workshop will improve communication amongst stakeholders. In addition, consensus building is a vital component in briefing.

Finally, the brief, as a product of the briefing process, should act as a reference document which should be available to all project parties rather than just the design team only. The client should determine the time at which the brief becomes fixed and the right timing may be prior to the detail design stage. The brief should be sufficiently flexible to reflect changing client requirements and it should describe the

potential changes to the client organization resulting from the construction project. The construction project brief should include key performance indicators by which the success of the project will be measured.

Limitations of this empirical study

There are, however, two limitations in this empirical study. First, the sample size of 89 respondents used in the study may not be entirely representative of the intended population in the UK or the USA. Nevertheless, every endeavour was tried to increase the responses within the time limit. It is anticipated that a more extensive study covering a much larger sample size could be conducted in the near future. Second, group sizes were not constant across the survey, and group size is a potential explanatory variable for the differences in the results. In order to facilitate and balance the comparisons between groups, the UK and USA were compared first and then combined to form the Western group (38 responses) because no major statistical differences exist between these two groups. This group was further compared with the Hong Kong group (51 responses).

Conclusions

In this study, a questionnaire survey was conducted to make a comparative, yet an exploratory study to understand the perceptions of project managers and architects on the 13 variables in construction project briefing in Hong Kong, the UK and the USA. The findings revealed that there was no significant difference between the results of the UK and the USA. However, the results obtained from Hong Kong were found to deviate from these two countries. In general, the Western professionals were more positive towards the proposed statements of briefing practice while Hong Kong

professionals were neutral to these suggestions. Although there are limitations in this study, the findings and implications are significant for the practicing industry professionals to produce their own guidelines for the briefing process as well as for the authors to draft a common “how-to” briefing guide for construction projects. It is anticipated that the variables could be categorized in a different way, for example, a factor or cluster analysis can be used to group the variables for further quantitative studies if the sample size can be extended to 100 or more.

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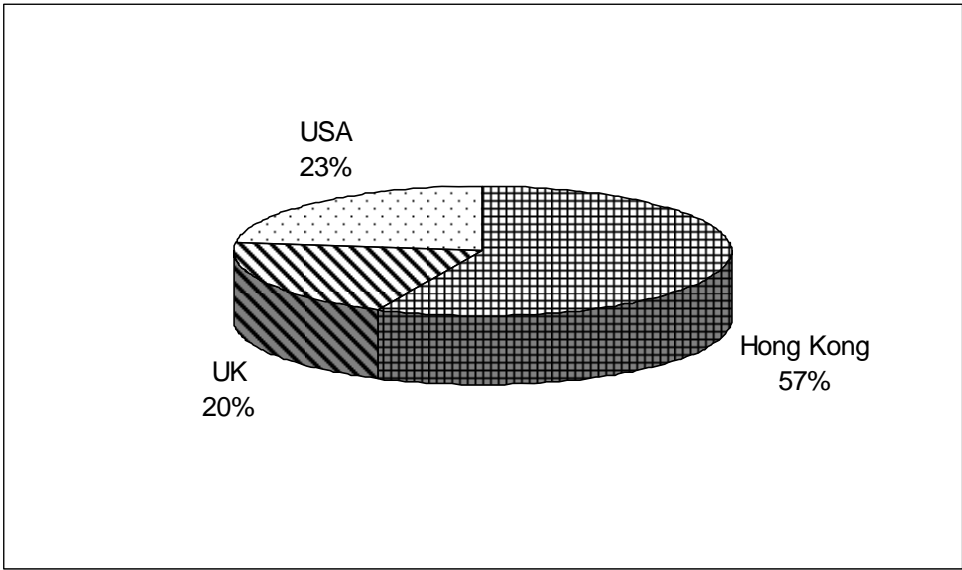


Fig. 1 Respondents by regions

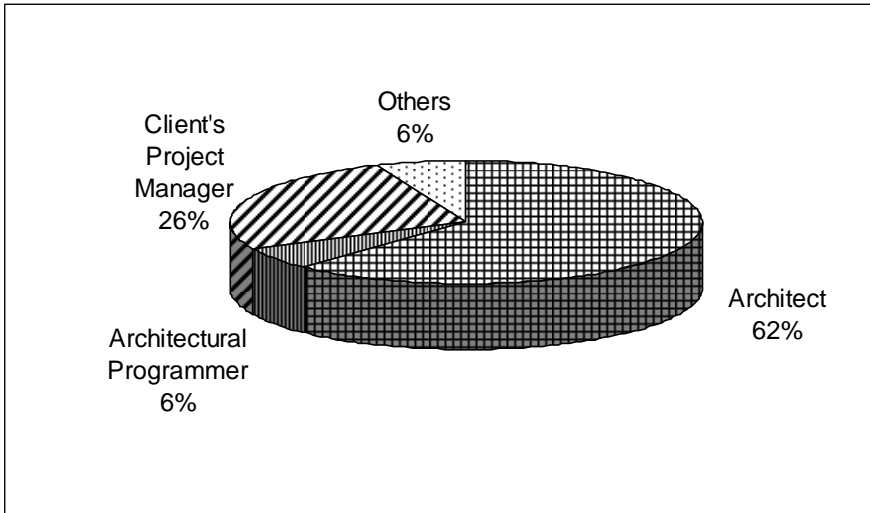


Fig. 2 Respondents by professional groups

Table 1. Results of Mann-Whitney Tests between UK and USA’s perceptions on variables of construction project briefing

Variables	Mean		Z	p-value
	UK	USA		
1. Projects				
The brief should act as a reference document which should be available to all project parties	4.39	4.65	-0.719	0.472
The brief documents is for use by the design team only	2.33	2.20	-0.346	0.729
2. Stakeholder Management				
The individual stakeholders commitment, interest and power should be assessed prior to the briefing process	3.83	4.10	-1.345	0.179
3. Teams and Team Dynamics				
The stakeholder group should be empowered by the client within precisely defined limits	3.94	4.05	-0.626	0.531
Understanding of team dynamics is crucial for working effectively within the stakeholder group in the briefing process	4.17	4.45	-1.042	0.297
4. Client Representation				
Strict control by the brief writer is needed to avoid the brief becoming a ‘wish list’	4.61	4.40	-0.859	0.390
The client should determine the time at which the brief becomes fixed	3.44	3.60	-0.527	0.598
The brief should be fixed before sketch design commences	2.89	3.20	-0.897	0.370
The brief should be fixed before detailed design commences	4.33	4.40	-0.132	0.895
5. Change Management				
The brief should be sufficiently flexible to reflect changing client requirements	4.17	4.35	-1.086	0.278
The brief should describe the potential changes to the client organization resulting from the construction project	3.61	3.85	-0.906	0.365
6. Knowledge Management				
Successful briefing is dependent on understanding the clients strategic goals	4.39	4.55	-0.980	0.327
Briefing is the integration of the skills, knowledge and experience of different stakeholders	4.17	4.35	-0.919	0.358

7. Risk and Conflict Management				
Consensus building is a vital component of the briefing process	3.94	4.40	-2.022	0.043*
8. Post Occupancy Evaluation and Post Project Evaluation				
Consultation with facility managers and end-users benefits the briefing process	4.35	4.60	-0.491	0.624
9. Critical Success Factors and Key Performance Indicators				
The construction brief should include the key performance indicators by which the success of the project will be measured	4.00	4.15	-0.663	0.507
10. Type of Business and Organizational Theory				
The briefing process must take into account that the stakeholder group may be formed of many different types of organizations with different success criteria	4.00	4.21	-1.356	0.175
11. Decision Making				
Effective decision making can only occur if the client representatives are senior managers	3.50	2.89	-1.524	0.128
12. Communications				
Communication among stakeholders is crucial to the success of the briefing process	4.18	4.45	-1.307	0.191
A structured or facilitated workshop will improve communication amongst stakeholders	4.31	4.50	-0.533	0.594
13. Culture and Ethics				
It is important that the stakeholder group be comprised of individuals of common cultural and ethical outlook	2.61	2.25	-1.307	0.191

Remarks: - A Likert Scale was used (1 to 5 represented 'strongly disagree', 'disagree', 'neutral', 'agree' and 'strongly agree' respectively)

* represents the p-value is less than 0.05 which indicates significant statistical differences

Table 2. Results of Mann-Whitney Test between Hong Kong and Western's perceptions on variables of construction project briefing

Variables	Mean			Z	p-value
	Hong Kong	Western UK	USA		
1. Projects					
The brief should act as a reference document which should be available to all project parties	3.96	4.39	4.65	-3.392	0.001*
The brief document is for use by the design team only	2.76	2.33	2.20	-2.714	0.007
2. Stakeholder Management					
The individual stakeholders commitment, interest and power should be assessed prior to the briefing process	3.49	3.83	4.10	-2.809	0.005*
3. Teams and Team Dynamics					
The stakeholder group should be empowered by the client within precisely defined limits	3.50	3.94	4.05	-2.755	0.006*
Understanding of team dynamics is crucial for working effectively within the stakeholder group in the briefing process	3.82	4.17	4.45	-3.198	0.001*
4. Client Representation					
Strict control by the brief writer is needed to avoid the brief becoming a 'wish list'	3.72	4.61	4.40	-4.221	0.000*
The client should determine the time at which the brief becomes fixed	3.55	3.44	3.60	-0.213	0.831
The brief should be fixed before sketch design commences	3.37	2.89	3.20	-1.348	0.178
The brief should be fixed before detail design commences	3.78	4.33	4.40	-3.294	0.001*
5. Change Management					
The brief should be sufficiently flexible to reflect changing client requirements	3.51	4.17	4.35	-4.004	0.000*
The brief should describe the potential changes to the client organization resulting from the construction project	2.90	3.61	3.85	-4.222	0.007*
6. Knowledge Management					
Successful briefing is dependent on understanding the clients strategic goals	4.10	4.39	4.55	-2.503	0.012*
Briefing is the integration of the skills, knowledge and experience of different stakeholders	3.69	4.17	4.35	-3.397	0.001*

7. Risk and Conflict Management					
Consensus building is a vital component of the briefing process	3.52	3.94	4.40	-3.418	0.001*
8. Post Occupancy Evaluation and Post Project Evaluation					
Consultation with facility managers and end-users benefits the briefing process	4.16	4.35	4.60	-2.816	0.005
9. Critical Success Factors and Key Performance Indicators					
The construction brief should include the key performance indicators by which the success of the project will be measured	3.55	4.00	4.15	-3.157	0.002*
10. Type of Business and Organizational Theory					
The briefing process must take into account that the stakeholder group may be formed of many different types of organizations with different success criteria	3.39	4.00	4.21	-4.974	0.000*
11. Decision Making					
Effective decision making can only occur if the client representatives are senior managers	3.84	3.50	2.89	-2.475	0.013*
12. Communications					
Communication among stakeholders is crucial to the success of the briefing process	3.82	4.18	4.45	-2.947	0.003*
A structured or facilitated workshop will improve communication amongst stakeholders	3.76	4.31	4.50	-4.099	0.000*
13. Culture and Ethics					
It is important that the stakeholder group be comprised of individuals of common cultural and ethical outlook	2.82	2.61	2.25	-2.436	0.015*
Culture and ethics affect decision making in the briefing process	3.39	3.50	4.20	-2.930	0.003*

Remarks: - A Likert Scale was used (1 to 5 represented 'strongly disagree', 'disagree', 'neutral', 'agree' and 'strongly agree' respectively)

* represents the p-value is less than 0.05 which indicates significant statistical differences

Table 3. Comparisons of the Perceptions between Hong Kong and Western’s professionals on variables of construction project briefing

Western professionals	Hong Kong professionals
1. Projects	
The brief should act as a reference document which should be available to all project parties.	Agree as Western professionals
Disagree that the brief document is for use by the design team only	Agree as Western professionals
2. Stakeholder Management	
The individual stakeholder’s commitment, interest and power should be assessed prior to the briefing process.	Towards neutral to this statement
3. Teams and Team Dynamics	
Understanding of team dynamics is crucial for working effectively within the stakeholder group in the briefing process.	Towards agree on this statement
The stakeholder group should be empowered by the client within precisely defined limits.	Less agreeable on this statement
4. Client Representation	
Strict control by the brief writer is needed to avoid the brief becoming a ‘wish list’.	Towards agree on this statement
Neutral to the statement that the client should determine the time at which the brief becomes fixed. Prefer the brief should be fixed before detail design than sketch design commences	Same as Western professionals
5. Change Management	
The brief should be sufficiently flexible to reflect changing client requirements.	Less agreeable on this statement
The brief should describe the potential changes to the client organisation resulting from the construction project.	Towards neutral to this statement
6. Knowledge Management	
Successful briefing is dependent on understanding the client’s strategic goals.	Agree as Western professionals
Briefing is the integration of the skills, knowledge and experience of different stakeholders.	Less agreeable to this statement
7. Risk and Conflict Management	
Consensus building is a vital component of the briefing process.	Less agreeable on this statement
8. POE And PPE	
Consultation with facility managers and end-users benefits the briefing process.	Agree as Western professionals
9. CSFs and KPIs	
The construction brief should include the key performance indicators by which the success of the project will be measured.	Less agreeable to this statement
10. Type of Business and Organizational Theory	
The briefing process must take into account that the stakeholder group may be formed of many different types of organisations with different success criteria.	Less agreeable on this statement
11. Decision Making	
UK and USA were less agreeable and disagree on this statement respectively	Towards agree on the statement that effective decision making can only occur if the client representatives are senior managers.
12. Communications	
Communication among stakeholders is crucial to the success of the briefing process	Towards agree on this statement.
A structured or facilitated workshop will improve communication amongst stakeholders	Towards agree on this statement.
13. Culture and Ethics	
Disagree that the stakeholder group be comprised of individuals of common cultural and ethical outlook	Same as Western professionals
UK and USA were agree and less agreeable to the statement that culture and ethics affect decision making in the briefing process	Towards neutral on this statement

Appendix A - Questionnaire on Construction Project Briefing/Architectural Programming

Construction Project Briefing/ Architectural Programming is the first and most important step in the construction cycle, where client requirements for a building project are defined. It is the procedure of gathering, analyzing, and synthesizing information needed to inform decision-making and decision implementation at the strategic and project planning stages of the development process. A brief/ program is a formal document which sets out a client's requirements in detail. In this questionnaire, the words "briefing" and "architectural programming" are synonymous.

This questionnaire forms part of an international research project, which studies briefing practice, variables of briefing and critical success factors for briefing in building projects.

With reference to your previous experience in the Briefing Process of one representative building project you have participated, please tick appropriate box(es) for the following questions:

Section A – Background Information

1. Project title:

(e.g. Queensway Government Office Building, Hong Kong)

2. Your role in the project

- Architect Architectural Programmer Project Manager Surveyor
 Engineer Contractor/Supplier Others, please specify _____

3. Sector of the client of the project

- Public (proceed to Q4)
 Private (proceed to Q5)
 Quasi-Public or Regulated Private (proceed to Q6)

4. Public

- Local Government Central / Federal Government State Government,
 Others, please specify _____

5. Private

- Industrial (Manufacturing/Process Engineering etc.) Consultancy Practice
 Commercial (Retail, Construction) Financial (Banking)
 Not-For-Profit/Charity Company Property Developer
 Others, please specify _____

6. Quasi-Public or Regulated Private

- Utility Company Transport Company Telecommunications Company
 Educational Institution Post Office Hospital Authority
 Others, please specify _____

7. Size of the client organisation

- number of employees 1-5 6-50 51-200 201+

8. Country / Region

- Hong Kong United Kingdom United States of America

9. Your experience of briefing in past 5 years (measured by number of projects)

- Co-ordinated / Written (proceed to Q10)
 Contributed only; did not write (proceed to Q11)

10. Co-ordinated / Written 0 1 2-5 6+

11. Contributed only; did not write 0 1 2-5 6+

Section B – Your opinion of the Briefing Process

12. Which of the following statements best describes the stages of briefing?

[The strategic brief is defined as the statement of the broad scope and purpose of the project and its key parameters including overall budget and programme (in USA read schedule), agreed at an early stage of the project; and project brief is defined as the full statement of the client's functional and operational requirements for the completed project.]

- The brief should recognize the distinction between the strategic brief as the mission of the project within the clients' core business and the project brief as the technical requirements of the project.
 It is not necessary to distinguish between the strategic brief and the project brief.

13. In your experience, to what extent are the following used to convey the client's requirements to the design team?

	Always	Frequently	50% of cases	Infrequently	Never
Room data sheets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Minutes of meetings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Letters/concise written instructions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Outline drawings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Full functional specification	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Verbal instruction from client	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Others, please specify _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

14. Which of the following statements best describes your briefing practice?

- I have an established procedure for briefing all projects
- I have several established procedures for briefing used with different projects
- I have no established procedure for briefing, in each project briefing is carried out as seems appropriate.

Section C – Variables of Construction Briefing

Those writing on the subject of briefing have made the following statements. Please indicate your level of agreement/disagreement for each statement.

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
15. Projects					
a) A brief should be compiled, completed and agreed prior to design commencing of a project	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Briefing is a process which continues until the completion of the sketch design	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) The construction project is an indication of change in the client's business	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) The brief should act as a reference document which should be available to all project parties	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) The brief should contain details of the procedures necessary to facilitate the absorption of the project into the clients' core business following completion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
16. Stakeholder Management					
A stakeholder is any person who is directly affected (i.e. client, government, neighbors, and general public etc.) by or who has an influence on the proposed project.					
a) Briefing is an investigation of the individual requirements of stakeholders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Briefing is a facilitated meeting which inputs the requirements of stakeholders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) The individual stakeholders commitment, interest and power should be assessed prior to the briefing process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Briefing should consider and balance the interests of all stakeholders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Only the requirements of client's stakeholders should be reflected in the brief	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Teams and Team Dynamics					
a) The stakeholder group is a temporary team formed for the project only	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) The client should define the composition of the stakeholder group	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) The stakeholder group should be empowered by the client within precisely defined limits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Understanding of team dynamics is crucial for working effectively within the stakeholder group in the briefing process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Client Representation					
a) It is necessary to ensure adequate representation of client groups to address client needs and to prevent distortion of the brief	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Strict control by the brief writer is needed to avoid the brief becoming a 'wish list'	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) The brief should be sufficiently flexible to reflect changing client requirements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) The brief should describe the contribution of the project to the clients core business	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) The client should determine the time at which the brief becomes fixed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) The brief should be fixed before sketch design commences	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) The brief should be fixed before detail design commences	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Change Management					
a) A brief for a construction project implies change in the client organization	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) The brief writer must be able to understand the operation of the client business	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) The brief should describe the potential changes to the client organization resulting from the construction project	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) The brief documents is for use by the design team only	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
20. Knowledge Management					
a) The brief is the primary vehicle for knowledge sharing amongst the project team	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Successful briefing is dependent on understanding the clients strategic goals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Briefing is the integration of the skills, knowledge and experience of different stakeholders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Risk and Conflict Management					
a) Anticipating and recording risks to the project is an important part of the briefing process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Consensus building is a vital component of the briefing process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Post Occupancy Evaluation and Post Project Evaluation					
a) The briefing process should review the findings of a POE of the clients last project of a similar type	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Incorporating the results of a POE of another clients project is hazardous	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Consultation with facility managers and end-users benefits the briefing process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Critical Success Factors and Key Performance Indicators					
a) The construction brief should include the key performance indicators by which the success of the project will be measured	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) The success of the project as a business unit is the sole responsibility of the client	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) The design team is only responsible for the technical performance of the project	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Type of Business and Organizational Theory					
a) Each stakeholder should have an equal input to the briefing process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Client input should be given a greater weighting than other project stakeholders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) The briefing process must take into account that the stakeholder group may be formed of many different types of organizations with different success criteria	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Decision Making					
a) Effective decision making can only occur if the client representatives are senior managers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) The brief writer should determine the appropriate decision making method in the briefing process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) The brief writer makes decisions based on information received from the stakeholders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) The stakeholder group must be empowered to make decisions as a team in the briefing process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
26. Communications					
a) Effective briefing is only possible if the client understands the construction process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Clients should appoint internal project managers to manage the briefing process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) The brief writer should operate within strict project constraints set by the client	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Communication among stakeholders is crucial to the success of the briefing process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) A structured or facilitated workshop will improve communication amongst stakeholders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Culture and Ethics					
a) The brief writer has to manage the different cultural and ethical characteristics of the individual stakeholders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) It is important that the stakeholder group be comprised of individuals of common cultural and ethical outlook	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Culture and ethics affect decision making in the briefing process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Others, please specify _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section D – Critical Success Factors for Construction Project Briefing

29. In your opinion, what are the critical success factors for the briefing process?

Please provide the following details to ensure a copy of the final report is sent to you:

Name: _____ Position: _____

Organization: _____

Address: _____

Telephone No.: _____ Fax No.: _____ Email address: _____

** End of Questionnaire **
**** Thank you very much for your contribution ****