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Realizing Sustainability through Stakeholder Management

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A main driver in the creation of sustainable value is the need to satisfy stakeholders in the process of the delivery of the functional unit through the project or service. Clients may well be satisfied when the project is delivered but if users, occupants and suppliers are poorly consulted new ideas and improvements will not be produced and the project may fail to meet local needs. Each construction project has its own stakeholders who have often different and conflicting interests associated with the project objectives. Moreover, insufficient stakeholder consultation and management frequently leads to conflicts and controversies about the implementation of construction projects and the achievement of best value in that projects. Thus, the management of vested interests of stakeholders is very paramount for the successful of the project. This paper provides a methodology for stakeholder analysis during strategic briefing to help implement sustainable construction. It integrates value management and sustainability in one study and utilises tools and techniques of value management to realise the principles of sustainability in a projects.

Keywords: construction projects, stakeholder analysis, strategic briefing

1. Introduction

A main driver in the creation of sustainable developments is the need to satisfy stakeholders in the process of the project delivery. Clients may well be satisfied when the project is delivered but if users, occupants and suppliers are poorly consulted new ideas and improvements will not be produced and the project may fail to meet local needs. It is therefore essential to consider the impact of any development on key (local) stakeholders' quality of life (Charter 1998). To achieve this, the project manager (or facilitator) should need to ensure that: the concerns of all stakeholders are taken into account; and conflicting interests are aligned through negotiation (Olander, Landin 2005).

Each construction project has its own stakeholders who often have different and conflicting interests associated with the project objectives (PMI 2004). To manage these stakeholders, it is fundament to ensure that their alignment with the project's objectives and how much power and influence they have (Dallas 2006). Insufficient consultation and management of stakeholders' interests frequently leads to conflicts and controversies about the project implementation. This paper provides a methodology for stakeholder analysis during strategic briefing to help implement sustainable construction. It integrates value management and sustainability in one study and utilises tools and techniques of value management to realise the principles of sustainability in a projects.

2. Methodology

This research adopted a qualitative approach to deeply investigate the subject of the study. Qualitative research is a systematic, empirical strategy for eliciting responses from people in a special social context (Locke, Spirduso et al. 2000). It is often referred to as 'idealistic' and is

concerned with information about things that are less easily understood by numerical analysis. It seeks to understand how people see and interact with 'the world' (Fellows, Liu 2003). This study intends to: explore; explain; and describe stakeholders in terms of sustainable construction implementation; and develop a robust methodology for stakeholder analysis at strategic level during the implementation of sustainable construction principles in construction projects.

The data used in this paper were obtained through a review of related literature, reinforced with information distilled from interviews conducted with twelve experts possessing significant experience in value management and/or sustainable construction practice. These semi-structured expert interviews were conducted as part of an in-depth investigation of the impact of stakeholder on the implementation of sustainable construction. Their experience in sustainability was on average 13 years. The qualifications of interviewees were: three of them held a PhD; seven held an MSc; and five held a BSc. The interviewees were Fellow of the Institution of Civil Engineers (FICE), Member of the Royal Institution of Chartered Surveyors (MRICS), Member of the Chartered Institute of Building (CIOB), Member of Chartered Institution of Building Services Engineers (MCIBSE), Member of Royal Incorporation of Architects in Scotland (MRIAS), Member of the Royal Institution of Chartered Surveyors (MRICS), Member of Association of Project Management (MAPM), Professional in Value Management (PVM) and Certified Value Specialist (CVS). The interviewees are highly qualified practitioners and occupying high positions in their organisations. They have also performed many studies and delivered training on sustainability.

An interview protocol for asking questions and recording information during the qualitative interviews was designed. This protocol comprised a heading, instructions to the interviewer, key research questions, probes to support key questions, space for recording the interviewer's comments, and space for the researcher records reflective notes. The interviews were audio taped and the collected data were analysed to identify and describe perceptions on stakeholder management in addition to the value and impact on health and well-being resulting from sustainability implementation. The data were transcribed, prepared for analysis, organised categorically and chronologically, reviewed repeatedly and continually coded. The transcribed data were then sorted and categorised into a number of themes under several headings (Miles and Huberman 1994). The process yielded data with a high degree of reliability and viability.

3. Value Management and Sustainable Construction

The application of Value Management and Sustainable Construction aims to achieve high value for money resulting from a development or construction project. Sustainable Construction is associated with delivering better long-term value for clients, users and other stakeholders. It means balancing value, risk and waste within project parameters, taking into account factors such as land use, materials selection, construction methods, regeneration and community needs. Sustainable development was defined as 'development that meets the needs of the present generations without compromising the ability of the future generations to meet their own needs' (WCED 1987), whereas Sustainable Construction was defined as 'a holistic process aiming to restore and maintain harmony between the natural and built environments, and create settlements that affirm human dignity and encourage economic equity' (Du Plessis 2002)

The construction industry concentrates on the three aspects of sustainability: environmental, social and economic. Environmental issues cover the use of natural resources, waste

minimisation, and energy and water efficiency to avoid a harmful effect on the environment. Social factors encompass taking the stakeholders into account which include employees, suppliers and the community, and economic factors include the construction industry's contribution to economic growth and employment (Adetunji and Price et al. 2003).

Value Management is a powerful tool that has the potential to promote and support sustainable construction through: multidisciplinary teamwork; forums for all stakeholders to exchange ideas and thoughts; systematic process to monitor sustainability schema, its tools and techniques which facilitate decisions taking and identify and solve problems, its strategic timing application during the early stages of a project and its aptitude to eliminate unnecessary costs, thus, implementing sustainability via VM is viable and advisable (Abidin and Pasquire 2003). Value Management was defined as 'a style of management which aims to reconcile multiple stakeholders' differing needs and enable an organisation to achieve the greatest progress towards its stated goals with the minimum use of resources' (BS-EN 12973:2000)

4. Defining Stakeholders

Stakeholders were defined by Cleland (1998) as 'people or groups that have, or believe they have, legitimate claims against the substantive aspects of the project. A stake is an interest or share or claim in a project; it can range from informal interest in the undertaking, at one extreme, to a legal claim of ownership at the other extreme'.

The European Value Management Standard states that 'Stakeholders, internal and external customers may all hold differing views of what represents value. The aim of Value Management is to reconcile these differences and enable an organisation to progress towards its stated goals with the use of minimum resources' (BS EN 12973 2000).

Grimble (1998) stated that the greatest distinction between stakeholders is likely to be between those who affect or take a decision or action, and those who are influenced positively or negatively by the work or its outcomes. Stakeholder analysis also differentiates between conflicts and trade-offs. Conflicts concern the state of competition and prospective disagreement between two or more stakeholder groups in terms of execution and completion of the project. A trade-off is the procedure of balancing conflicting objectives within a single stakeholder group.

5. Timing of Stakeholder Analysis

The timing of stakeholder consultation and analysis timing is an influential factor within the project life cycle. Doing this at the strategic briefing phase enables the facilitator and team members to understand stakeholders' requirements, expectation, and objections against the project at an early stage. It will also ensure the identification of project objectives and draw the attention of affected stakeholders to consideration of Sustainable Construction and Value Management implementation in the project. This paper suggests that Stakeholder Analysis should be conducted at the planning stage. In early stages of developing strategic briefing, Stakeholder Analysis can help measure the possible acceptance of innovative ideas integrated with Sustainable Construction and Value Management themes so as to achieve value for money in the project.

The Value Management and Sustainable Construction study will significantly help the facilitator and design team satisfy the project objectives and identify issues that need to be included in the workshop to develop a strategic brief. The use of Stakeholder Analysis at the right time, in conjunction with other techniques such as Value Management and Sustainable

Construction assessments, can increase the success of the project and achieve best value in addition to overcoming opposition, building coalitions, and changing information and resources to promote and sustain the proposed strategic briefing.

6. Reasons behind Stakeholder Management

It is important to know beforehand the objectives for early stakeholder engagement. In addition to knowing the key stakeholders who have great interest in and power to affect or be affected by the works and/or outcomes of the project, the following points associated with stakeholder analysis were elicited from the study findings to help the facilitator and study team in analysing stakeholders.

- Knowing and agreeing the objectives of the stakeholder analysis.
- Identifying and understanding needs and expectations of the key stakeholders.
- Understanding how the stakeholders might affect or be affected by the implementation of Sustainable Construction and works and its outcomes.
- Understanding and managing the relationships between stakeholders including any potential conflicts of interest in relation to considering Sustainable Construction in the project or any other issues.
- Obtaining better understanding of who and how the various stakeholders can be involved in the project and contribute directly or indirectly to support achieving best value, including considering Sustainable Construction at early stages of the project.
- Raising awareness of the key stakeholders about benefits and drivers of considering Sustainable Construction and Value Management into the project.
- Exerting influence on stakeholders who are not supportive of considering Sustainable Construction in the project.
- Identifying sustainable value criteria in addition to CSFs and KPIs for selecting sustainable options and innovative ideas as well as monitoring and measuring progress in the project.
- Establishing opportunities to reconcile the stated needs of each of the stakeholders and explore trade-offs to optimise the outcome for all.
- Building shared understanding between stakeholders, illustrating the project objectives and targeting the sponsoring client body (possibly comprising several organisations).
- Identifying potential supporters of and opponents to the consideration of Sustainable Construction and Value Management implementation.

7. Stakeholders' methodology

This section illustrates steps of stakeholders' analysis which is illustrated in Figure 1. It defines each step and its importance in terms of objectives of the project.



Figure 1: Stakeholder Methodology

7.1 Step 1: Identify project stakeholders

The identification of the key stakeholders and their needs are the most important steps to: ensure the process is effective and well targeted; reduce conflict and discrepancies (PMI 2004); and boost decision support and implementation throughout the participative group process of Value Management (Thiry 2004). The implementation of Sustainable Construction and Value Management principles, and achieving value for money thus depend on obtaining the support of key stakeholders at early stages of the project.

The interviews with five of the key project members (see Table 1) at the planning stage and before starting conducting the Value Management and Sustainable Construction workshops, can help to precisely identify stakeholders. All possible stakeholders need to be identified to ensure that all needs and requirements are covered in the project. Moreover, similar projects and literature could help to identify key stakeholders. It was concluded from the study that the key stakeholders for building projects could be owner, sponsor or financier, users or occupants, facilitator, study team including multi-disciplines, facility manager, developer, project manager, financier and design team, contractor, subcontractors, local authorities, knowledgeable people with public amenities, the water board, electricity supply, the regulator and planner and other related authorities.

There are many stakeholder analysis tools which help to determine the key stakeholders associated with the project. This methodology could help to discover potential opponents who may have misconceptions about the project which may arise as problems later on in the project but need to be considered during Sustainable Construction implementation. Potential opponents if dealt with appropriately can be used to challenge and improve the project. The opposition to the project can be reduced effective communication of: the drivers and benefits of the project; the sustainability characteristics of the project; and the benefits of changing thinking from cost to value, short-term to long-term, shareholder to stakeholder. Table 1 illustrates the range of stakeholders that might be involved in any construction project. This

table will help in the identification and listing of the key stakeholders when it is necessary to engage them as part of the project planning process.

Table 1: A number of project stakeholders (Adapted from Winch 2004)

Internal Stakeholders		External Stakeholders	
Demand Side	Supply Side	Private	Public
Client	Consulting engineers	Local residents	Regulatory agencies
Sponsor	Principal contractors	Local landowners	Local government
Financiers	Trade contractors	Environmentalists	National government
Client's employees	Materials suppliers	Conservationists	
Client's customers	Employees of the above	Archaeologists	
Client's tenants			
Client's suppliers			

7.2 Step 2: Identify needs and expectations

Having identified stakeholders, it is important to define their needs and expectations within the project. Quality Function Deployment (QFD) can be used as a sequence of matrices to collect, understand and deploy the requirements of the client or users throughout a project. It ensures obtained requirements and expectation are reflected throughout the project design developments, materials production, installation, service and demolition of a project. The most common arrangement of these matrices is known as the House of Quality (LeBlanc 2004). The following questions were elicited from interviews to help identifying the requirements and expectation of stakeholders.

- What are stakeholders' expectations and needs from the project?
- What stakeholder benefits would be gained by considering Sustainable Construction and Value Management in the project?
- What resources will be used or avoided by each stakeholder in the project?
- What are the reasonable and realistic roles and requirements of the stakeholders assumed to implement the principle of sustainable construction into the project?
- What negative or positive responses are likely to occur for the stakeholder as a result of considering Sustainable Construction and Value Management in the project?
- What are the power relationships and how weak players can have an influence?

7.3 Step 3: Prioritise stakeholders

This step aims to prioritise the stakeholders identified in previous stages in order to classify them to four groups, namely, key players, potentially influential, affected and marginal (Thiry 2004) according to Figure 2. The prioritisation depends on the influence and importance of each stakeholder in addition to the objectives of the project.

Influence is the power of stakeholders to instruct change to the project, control decision-making, exert influence which negatively or positively affects or is affected by the work and outcomes in addition to the consideration of Sustainable Construction and Value Management or any other techniques in the project. The suitable definition of influence is the extent to which people, groups or organisations are able to persuade others to make decisions, and

follow certain courses of action associated with Sustainable Construction implementation in the project.

Influence can derive from the nature of stakeholders in terms of their organisations, or positions in relation to other stakeholders or organizations. It is also necessary to consider stakeholders whose influence will increase due to resources used by the project (Overseas Development Administration 1995). Importance indicates the priority given to satisfying stakeholders' needs, interests and requirements through the project. It usually becomes noticeable when stakeholder's interests in a project align directly with the project objectives. There are often stakeholders who have only a weak capacity to participate in the project, and limited power to influence decision making (Overseas Development Administration 1995).

The stakeholder power/interest matrix illustrated in Figure 1 can help to evaluate stakeholders' relative power and influence, importance to the project, and possible contributions to the success of the project.

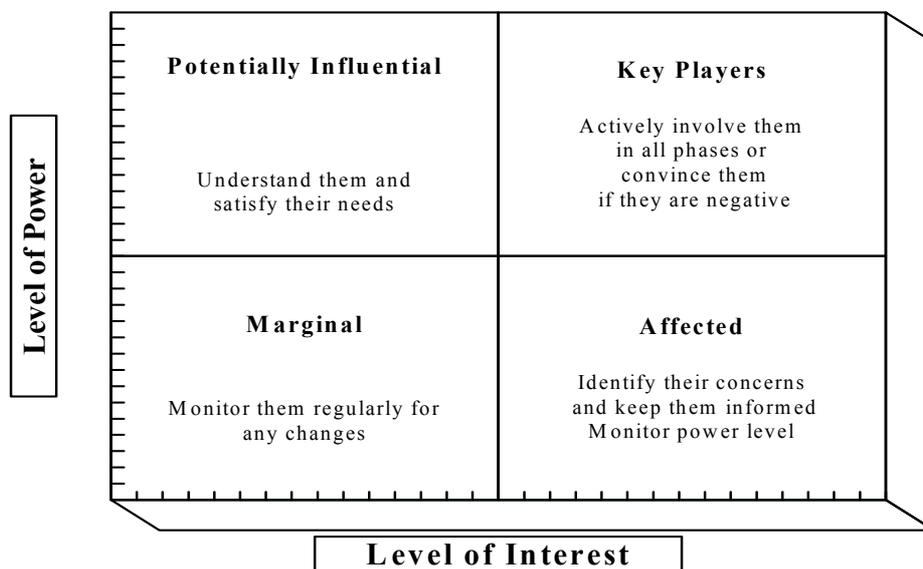


Figure 2: Stakeholder mapping, the power/interest matrix (adapted from Thiry 2004)

7.4 Step 4: Involve stakeholders

The engagement of the key stakeholders in one place will enhance the overall strategic briefing and consequently the project design. All stakeholders will interact during the Value Management and Sustainable Construction study, which should help to develop strong working relationships, effective communication, understanding and mutual consensus between the various stakeholders. The findings should be used to develop: a working plan concerning the implementation of Sustainable Construction and Value Management; the objectives and intended outputs; the relevant decision-makers and key stakeholders; how to achieve best value in the project; and how outputs will be measured. These will form the basis for developing a good strategic briefing.

The identification and selection of stakeholders to participate in the Briefing Stage from the integrated approach should be at the Planning Stage. Further stages and information obtained from the study may reveal previously unrecognised stakeholders, or show how significant each stakeholder is. It is strongly recommended that verification and possible update of the list of stakeholders identified should be kept in mind throughout the study of the integrated

approach to value management and sustainable construction during briefing stage. These findings from a stakeholder analysis need to be included in the project brief depending on the nature of the stakeholders' positions regarding implementation of Sustainable Construction within strategic briefing to next stages of the integrated approach to value management and sustainable construction.

The purpose of participation of each stakeholder should be clearly defined and could be either for direct engagement during the project process developments or for learning if the stakeholder has a lack of awareness of Value Management and Sustainable Construction and/or their drivers and benefits achieved.

The purpose of their participation is to introduce the benefits and drivers and added value that could be achieved from the consideration of Sustainable Construction and then convert opposition to considering Value Management and Sustainable Construction into support through negotiation, raising awareness, information and/or coalition building, including offering trade-offs. By the end, it is very important to ensure commitment of the key stakeholders in the project. This step also provides an opportunity for stakeholders to understand the needs of other stakeholders and the constraints the project is under. It also helps to create a feeling of ownership of the project if stakeholders are appropriately engaged and consulted early on in the project.

7.5 Step 5: Synthesise information

The success of developing robust strategic briefing depends on obtaining sufficient information from the project's stakeholders. The collection of information is crucial for the design team and the key stakeholders in order to understand the project objectives. This information could include budgets, project inclusions, starting and finishing times for the construction of new facilities, demographics, policies, location and regulations, needs, requirements and expectations. The proper way to compile this information is to interview the people previously identified, in addition to examining related documents. Suitable methods needed to collect this information are: conducting interviews face-to-face, telephone conversation, responses to questionnaires exchange of emails, historical data and similar projects.

The facilitator should also gather any relevant information with regards to similar projects, Sustainable Construction and Value Management guidance and the obligations of all participants. The information collected during stakeholder analysis, should be sorted and organised before being circulated to the participants in the study prior to the workshop stage with enough time to give all participants a quick brief about the project and what is required from them in the study. This method should enhance the effectiveness and efficiency of the Value Management and Sustainable Construction study performance to develop vigorous strategic briefing.

8. Conclusions

A main driver in the creation of sustainable value is the need to satisfy stakeholders in the process of the delivery of the functional unit through the project or service. Clients may well be satisfied when the project is delivered but if users, occupants and suppliers are poorly consulted new ideas and improvements will not be produced and the project may fail to meet local needs or its objectives. Moreover, each construction project is unique and has its own stakeholders who have often different and conflict interests associated with the project

objectives. Furthermore, the consideration of sustainable construction often faces resistance by a number of stakeholders whose views is not long-term value or whole life value. Thus, this paper provides a systematic methodology for stakeholders' consultation and management at early stages of a project to help the achievement of sustainable construction principles in construction projects to satisfy stakeholders of that project. It integrates both value management and sustainability in one study and utilises tools and techniques of value management to realise the principles of sustainability. It provides suitable place to bring stakeholders in then educate them and identify their needs and expectations. The proposed methodology comprises on five steps, namely, the identification of stakeholders, finding out their requirements and expectations, prioritising them, involving them and finally synthesising the required information to develop the client strategic briefing.

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