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Optimising healthcare facility value through better briefing and optioneering

Abstract:

There have been concerns over the capability of most National Health Service (NHS) hospitals to demonstrate best value in providing non-clinical service to NHS trust customers. In response to the need to demonstrate the Whole Life Value (WLV) of healthcare facilities, the briefing and project optioneering processes need to be tackled. This paper investigates the role of strategic briefing and optioneering (option selection) in creating and delivering WLV for both first and future generation stakeholders. Effective construction briefing relies on, among others, effective capture, analysis and use of information (needs and requirements) from all stakeholders to inform project options. It is also believed that project and facility strategy must be directly linked with the specific needs and requirements (among other things) in order to reflect exactly what the stakeholders and end-users value in a built environment. The paper reviews the underlying philosophies and attempts to make sense of a probable theoretical linkage between the three concepts: WLV, strategic briefing and optioneering. Building on the available literature, the paper introduces a research in progress which is reviewing WLV of healthcare facilities and how to improve it. The results from WLV and briefing literature are pointing towards the early involvement of stakeholders, including end-users as a way forward to achieving long-lasting value.

Keywords:

NHS, optioneering, stakeholders, strategic briefing, value-optimisation

1 Introduction

The sixty year old National Health Service (NHS) is at the centre of UK healthcare. Since its inception, and most especially in the past decade, the NHS has experienced social, economic and technological change as well as political (administrative and government policy) change (Hackney *et al.*, 1997; HPERU, 2008). Recent changes, combined with Britain's consumerist society (Douglas *et al.*, 2003) have further increased the level of awareness amongst the public and NHS stakeholders (Glanville, 2003). Some recent reforms in the NHS that reflect stakeholder awareness are the 'Strengthening accountability - involving patients and the public' (DH, 2003b) and the 'Patient and Public Involvement' (PPI) initiatives (DH, 2008). These organisational changes compounded by other national and global agendas like 'Value for Money' (VfM) (Building, 2000; Saxon, 2005) and sustainability (WCED, 1987) imply that planning of hospital buildings now has to respond accordingly to the changes.

It is argued that the planning of hospitals has all the problems associated with the planning of other buildings types and more (Goodman, 1972). The basis of this argument is that functioning parts of hospitals are complex, the environmental services (electro-mechanical) are critical while changes in medical and nursing management techniques are considerable and unpredictable. Moreover, by virtue of the medical technological functions carried out inside them, healthcare buildings or hospitals are usually complex, specialised, purpose-made buildings.

This paper presents a theoretical account seeking to establish whether a linkage exists between WLV of healthcare buildings, strategic briefing and option selection as seen in the early stages of project formulation (Stage A, RIBA Plan of work, 2007). Based on a review of relevant literature, the account is founded on the premise that WLV for a

facility ‘owner-occupier’, in this case NHS, is tightly knit with the satisfaction delivered to the healthcare facility end-users through sustained use across the facility’s whole life (Bordass and Leaman, 1997; Holt, 2001; Vischer, 2008). The most fundamental aspect is the *use value* of the facility; the core of our research project. The paper begins with providing the background and rationale for the research, followed by theory on the concepts of WLW, strategic briefing, and optioneering. Overarching findings from literature are presented. The paper closes with a conclusion indicating the advantages of having a conscientious value strategy contributed to by stakeholders, and laid out in the early stages of briefing and optioneering processes. It is hoped that, a balanced solution capable of standing the test of time while simultaneously being satisfactory to the users of the facility over its design life, will result from this strategy thereby enhancing WLW.

1.1. Research background and justification

One key issue arising from the recent healthcare sector dynamics is the issue of stakeholder engagement. Specifically, the PPI initiative (DH, 2008) is a direct reflection of the Government’s commitment to empowering both individuals and communities so that they can play a greater role in shaping health and social care services that affect them. Treasury Procurement No.7 (OGC, 2003) mandates that all public sector construction must be procured based on VfM in terms of the optimum combination of whole life costs and quality which meet stakeholder requirements. VfM when corroborated with ‘public value’ (Kelly *et al.*, 2002; Albert and Passmore, 2008) and PPI leads to the necessity for accountable decision-making and public involvement in the process of acquisition of public sector capital assets.

Against a backdrop of all the aforementioned complexities, the current Government is undertaking a multi-billion pound hospital building programme, the largest in the history of the NHS (DH, 2007). When central government, through the NHS, embarks on such a building programme, huge sums of money are at stake. Moreover, from the large sums of money invested in buildings, clients hope to maximise the value they obtain (Best and de Valence, 1999). Literature on construction briefing reveals that most decisions that will impact the rest of the facility’s life are made here (for example Goodacre *et al.*, 1982; Duerk, 1993; Kelly *et al.*, 2003).

For these reasons, briefing and early option selection for healthcare buildings have to be carefully thought out. The challenge for the NHS and the construction industry (as suppliers of buildings) is to discount concerns regarding the inability of the NHS to obtain VfM when procuring healthcare facilities (NAO, 2001). Notably: investment decisions based on lowest initial capital investment and not whole life costs; in addition to, the inability to manage the early stages of projects to ensure that users are properly engaged in the process to avoid later changes to the functional requirements for healthcare facilities.

Achieving WLW as well as better management of the pre-design stages to yield better engagement with users of healthcare facilities is central to the research project of which this paper is part. The basic hypothesis for this descriptive exploratory study is that ‘achieving better WLW of healthcare buildings can be realized through better understanding of the needs and requirements of the end-user stakeholders. WLW is believed to accrue from making the right decision(s) at the right time when faced with competing or multiple alternatives. As noted above, healthcare building-related decisions are based on balancing competing issues of: what stakeholders need, efficient use of limited resources and a myriad external issues, in order to achieve a “best”

solution. This is what optimising healthcare facility value is about. The premise for the need to optimise this value is based on Tam and Price's (2008) definition of optimisation in which they posit that optimisation involves finding the best results for an objective with given restraints and relationships.

2 Literature Review

2.1.1 Briefing

There have been calls on the UK construction industry to devote more effort and resources to, definition and articulation of project requirements, and to understanding the client's needs (Banwell, 1964; Latham, 1994). Sir John Egan (1998) called on the industry to focus more on the customer [either the client or the consumer] and on systematic research on what the end-user actually wants. In the subsequent '*Accelerating Change*' report (Egan, 2002), the forum suggested to the construction industry a need to be characterised by a process that helps clients describe their needs so that as a minimum, the project delivers their requirements thereby realising maximum value for all clients (end-users and stakeholders).

Client needs and requirements play a vital role in decision making and option selection since they are the basis upon which clients will judge their satisfaction with project outcomes. As O'Reilly (1987) notes, defining client requirements as well as communicating them to other stakeholders are key to the successful delivery of a project. This is because, defined requirements will lead to defined objectives which will provide a basis for appraisal as well as help identify available building and organisational options. Hence, in order to ensure that client needs are met and satisfied, it is important that they are understood right from the onset and always referred to in the project development process.

In the construction industry, client's needs and requirements are normally presented in form of a 'brief' document produced as an output to the briefing process. Briefing (architectural programming in the USA and some other countries) is the process through which client requirements are identified and defined, and through which others are informed of client needs, aspirations and desires for a project (CIB, 1997). Pena and Parshall (2001:14) view it as "a process leading to the statement of an architectural problem and the requirements to be met in offering a solution". Blyth and Worthington (2001:3) define it as "the process by which options are reviewed and requirements articulated with the 'brief' as the product of that process" as well as an evolutionary process of understanding an organisation's needs and resources and matching these to its objective and its mission. In summary, the process involves gathering, analysing and synthesising information needed in the building process and using it to inform decision-making and decision implementation (Kelly, 2002).

Briefing is the first tangible step in any facility's life-cycle. It is one of the most important since it sets the agenda for the remainder of the facility's life-cycle right from inception through to completion and use/operation even perhaps its disposal. There has been considerable research and guidance for improving the construction briefing process in the industry (for example Goodacre *et al.*, 1982; Duerk, 1993; ISO 9699:1994/BS 7832:1995; Salisbury, 1998; Pena and Parshall, 2001). For healthcare projects, briefing and design guidance has come in the form of notes and standards, for example, Health Building Notes (HBN) series; the Best Client Manual (NHS Estates,

2002), AEDET Evolution (2008); and, ASPECT (2008). Despite all this the briefing process generally remains problematic and inadequate (Kelly *et al.*, 2003; Shen, 2004). Some recent ideologies for improving the briefing process are of interest in this paper. These include the proactive involvement of all stakeholders (Barrett and Stanley, 1999), and, less concern with detail at an early stage but more with articulating client aspirations and stimulating the design team by providing relevant information at the appropriate stage of the project (Blyth and Worthington, 2001).

2.1.2 The client organisation

Usually, when the construction industry refers to ‘the client’ a sense of singular-identity hides an over-simplified complexity of internal structures and processes (Tavistock Institute, 1996 cited Woodhead, 2000). This is exemplified in Kamara *et al.*’s (2002:2) definition of clients’ roles as “the initiators and the financiers of projects”. Nevertheless, it is increasingly being recognised that a client is not necessarily one single point of contact. In fact for organisations like the NHS, clients are often multi-faceted in nature, comprising several different interest groups or stakeholders (Figure 1), whose objectives and expectations differ, and may well be in conflict (Green, 1996).

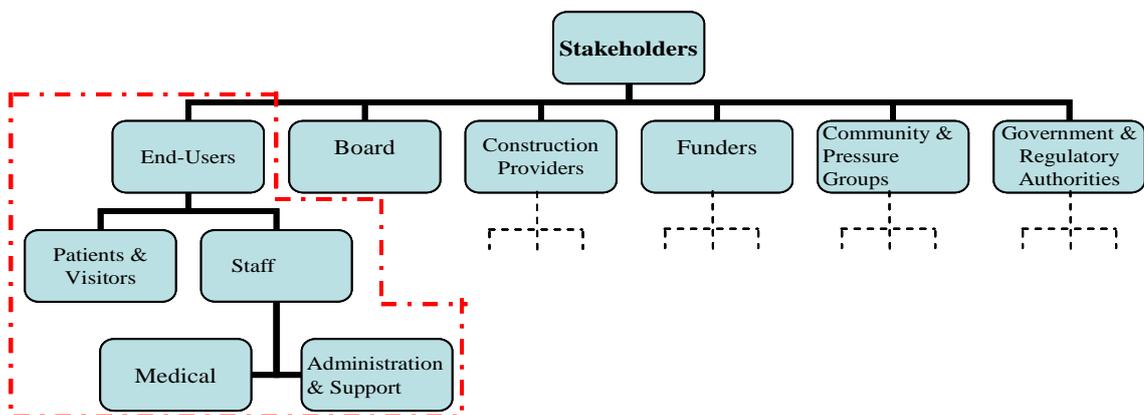


Figure 1: Healthcare facility stakeholders

Recent briefing research advocates for recognising the needs and requirements of end-users as early as possible in the project process (Pena and Parshall, 2001; Barrett and Stanley, 1999; Blyth and Worthington, 2001). In recognising the plurality of the NHS as a client organisation, this paper supports this recent development. However, the challenge of engaging early with stakeholders (end-users) not only on construction projects (Boyd and Chinyio, 2006; Emmitt, 2007) but elsewhere too (Earl and Clift, 1999; Stoyell *et al.*, 2001; Ulrich and Eppinger, 2001) has been raised before. But Pena and Parshall (2001) perceive that end-users, unlike any other stakeholder group, are experts in the use of the building therefore their needs should be fully researched and they should be contributing members of the project team. Ridley and Jones (2002:6-7) further suggest that “ideally, users should be involved from the earliest stages of planning as this offers the best chance that more responsive and user-led services will be developed”. Implicitly, the best opportunity to ensure that the right building is built can result from engaging directly with the end-users at the point of ‘appraisal of need’ (Stage A, RIBA Plan of work, 2007) during the briefing process.

2.1.3 Strategic briefing

The briefing process comprises two stages: ‘strategic (initial) briefing’ and ‘project (detailed) briefing’ (CIB, 1997; Kelly, 2002; Kamara *et al.*, 2002). A strategic brief is

formulated at the end of the pre-project phase upon concluding the project option selection (optioneering) process (Figure 2) but before formulating the detailed project brief. Strategic briefing takes a ‘long-term’ view of the project and considers both the ‘short-term’ project needs as well as the operational needs of the completed facility. It takes a whole life view of the facility. Ryd and Fristedt (2007:186) perceive that “strategic briefing springs from the current operational needs, but also takes a longer perspective and focuses on the operation’s strategic development plans, its prospects, and the building’s potential for adaptation for other uses”.

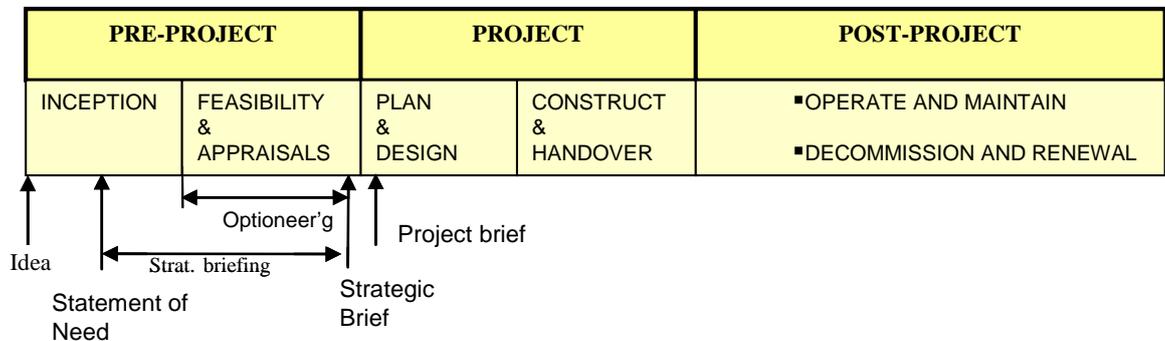


Figure 2: Whole Life cycle depicting key points in the early stages

Strategy

Johnson *et al.* (2008:3) define strategy as “the *direction* and scope of an organisation over the long term, which takes *advantage* in a changing *environment* through its configuration of *resources* and *competences* with the aim of fulfilling stakeholder expectations”. They further posit that strategy and strategic decisions are associated with such issues as the long-term direction of an organisation expressed in terms of the organisation’s mission. Accordingly, Mintzberg *et al.*, (2004) are of the view that strategy is the pattern that links the organisation’s major goals, policies and actions into a cohesive whole. Inferring from these definitions, every undertaking (action) including facility acquisition (design and construction) should have a specific strategy.

Linking strategy and strategic briefing

It is only those healthcare facilities that can attract many patients that will be able to survive competition. The ‘*Patient Choice*’ initiative (DH, 2004) and the ‘*Payment by Results*’ (PbR) - (money follows patient’) scheme (DH, 2003a), are leading to a trend whereby hospitals no longer choose patients, patients choose hospitals (Miller and May, 2006). This implies that the NHS is increasingly becoming a competitive organisation. Consequently, in order to improve the services that attract patients and staff, it is now even more important than ever that healthcare organisations consult early with the facility and service-users about what they value in the built environment. That way the information generated from the consultation (through the strategic briefing process) can be used to guide decision-making especially in defining overarching facility-design and procurement strategies over the long term.

Recent studies are increasingly associating healthcare built environments with patient and staff well-being (Malkin, 2003; Lawson and Phiri, 2003). In addition, the role of buildings in supporting other key organisational resources has been highlighted before (Bordass and Leaman, 1997; Nutt, 2004). Therefore, a conscientious strategy for healthcare facility procurement to meet long-term survival needs as well as the needs of the users (patients and staff) is very pertinent. Such a strategy is what strategic briefing is about. The very essence of a strategic approach being decision-making in changing, uncertain, unpredictable and competitive circumstances (Nutt, 2000).

2.2 Optioneering

The early stages of construction projects, and indeed, most other projects, are characterised by making critical decisions (Duerk, 1993; Agouridas, 2006; Bruce and Cooper, 2000). Optioneering involves making high level decisions which normally affect the success or failure of the whole ensuing life-cycle of the facility. Some decision issues identified from literature (for example Nutt, 1993; Woodhead, 2000; Standing, 2001) are presented in Figure 3. Decision-making involves selecting between alternatives. It may therefore rightly be deduced that optioneering (option-selection) is about the key issue of decision-making. However, Barton and Pretorius (2004) note that most economic decision-making is about the application of limited resources. Also, most buildings have a unique permanency resulting from both their physical fixity and their often long design lives therefore making it paramount that optioneering is done 'right first time' (Crosby, 1979). Moreover, it has been noted that, problems in buildings (Smith *et al.*, 2001; Shen *et al.*, 2004); costliest mistakes (Duerk, 1993); and the making of a pyramid of decisions regarding setting the scope and characteristics of the project (Kelly, 2002), are associated with the briefing (optioneering) stage.

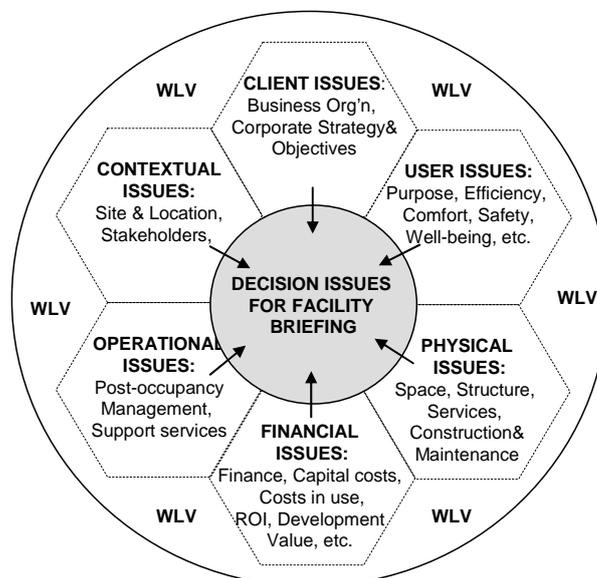


Figure 3: Decision issues for facility briefing and optioneering

Optioneering encompasses the processes of selecting an optimum solution that best meets the needs and requirements of stakeholders. It is a dominant and crucial aspect of the pre-project phase (Stage A, RIBA plan of work, 2007). Optioneering is conducted simultaneously with strategic briefing of the construction briefing process (Figure 2). It is advised that before committing to strategic project direction the client team (including stakeholders) review the possibilities, evaluate them and then make a decision that can be documented (Smith and Jackson, 2000). This is the basis of the optioneering process.

2.3 Whole Life Value (WLV)

WLV of an asset represents the optimum balance of stakeholders aspirations, needs and requirements, and whole life costs (Bourke *et al.*, 2005). It encompasses economic, social and environmental aspects associated with design, construction, operation and decommissioning, and where necessary the re-use of the asset or its component parts at the end of its useful life (Bourke *et al.*, 2005; Mootanah, 2005). A WLV approach considers planning of a facility through a WLC approach – from 'cradle to grave'. This

approach embodies the need to make decisions based on WLV thereby requiring an optimum balance of stakeholder aspirations, needs and requirements, whole life costs, (Bouchlaghem *et al.*, 2000; Bourke *et al.*, 2005) as well as, contextual social and environmental aspects associated with a specific project.

3 Findings and Discussion

There is substantial work published on briefing most especially in the form of guidance and checklists. However, there is less that focuses on value delivery in relation to strategic briefing nor to options selected in the pre-design stages. Neither is there much information on issues raised and concepts used when selecting project options (solutions) in the pre-design stages. Shen (2006) has noted that to date, problems of traceability of requirements, identification of stakeholders and management of potentially conflicting requirements during briefing remain unresolved in current practice. Moreover, it has been noted by Earl and Clift (1999) that complex investment decisions are increasingly being created and made emotive by a plethora of stakeholder expectations. The solution to this conundrum may lie in the timing of the requirements acquisition and in when stakeholders are actually engaged in the process. Early engagement (before design) and investigation into the real needs of stakeholders especially the end-users may provide the answer.

Conversely, it is important that the right decision choices are made at the right time. This is so because the cost of construction, operation and maintenance of buildings, especially specialised healthcare buildings, is very high. Previous sections have shown that the most important decisions are made in the briefing stage. It has been found that currently a capital paradigm (initial capital cost) dominates the pre-project stage, and is the main influence on the structure and sequence of analysis, considerations and decisions in construction projects (Woodhead, 2000; Mootanah, 2005).

Furthermore, the project life cycle has traditionally been considered to start at inception and end at feedback after completion, exemplified by RIBA plan of work (1997). But a new paradigm is emerging which requires that a Whole Life Cycle (WLC) approach is taken when planning facilities. Some proponents of this approach are of the view that unlike traditional approaches, it focuses on the front-end activities of identification, definition and evaluation of client requirements in order to identify suitable solutions (Kagioglou *et al.*, 2000). Previously, pursuance of a WLC approach has been based on economic grounds based upon comparing low initial capital costs, to the high cost of running and maintaining a facility over its (long) useful life (for example OGC, 2003; Kishk *et al.*, 2003). This view has further been enhanced by the Royal Academy of Engineering (RAE) 1:5:200 (capital:maintenance:operating) ratio (Evans *et al.*, 1998).

Further to the WLC approach, the need to attain WLV has emerged. A WLV approach demonstrates that there is more to the whole life approach than cost or economic value. It takes a broader view of the issues surrounding a building project taking into consideration environmental, social as well as economic issues. Consequently, WLV influences the way decisions are made during the pre-project phase further broadening the issues that must be considered when selecting best options. Because the breadth of issues to consider when making a decision has increased, thorough problem analysis may lead to not pursuing a construction project at all (Smith and Love, 2004).

Previous research (Goodacre *et al.*, 1982) has revealed that clients do not invest sufficient time and resources in the early stages. Smith and Jackson (2000) agree that,

the identification of strategic needs of clients is a significant stage in the development process. Also that, if the strategic analysis of needs has been rigorously and conscientiously pursued, then it should result in a clear view of organisational goals, a better definition of real needs and the strategic decision should recommend the best means. Rigour and conscientious pursuance may spell more resources needed. A strategic briefing exercise involving engaging stakeholders and the various end-user groups of NHS facilities may indeed be resource-intensive. Even so, the benefits have been seen in the previous sections of this paper. Therefore, it is worthwhile spending some more time and money in the early project definition stages if only to accrue savings in the long term.

4 Conclusion and Further Research

Most of the past construction briefing research work has focused on project briefing sub-process. In this paper, focus is towards strategic briefing. Like Smith and Jackson's (2000) work on Strategic Needs Analysis (SNA), it is hoped that renewed emphasis on strategic briefing will change the client's frame of reference in defining projects during the pre-project phase. By focusing on the strategic briefing stage, it is envisaged that the client organisation (in this case NHS) will no longer look to prescriptive and standard responses, rather, that it will look out for a strategic view of their own organisation's true goals, objectives, needs and requirements (Smith and Jackson, 2000).

The most opportune stage in which to investigate, capture and account for value in a project is during the strategic briefing stage. It is believed that value attained and appreciated by the end-users is not a coincidence but a conscious effort accorded to embedding it during the delivery process. It is suggested that the strategic briefing stage be the centre of focus for eliminating probable and envisaged problems associated with project failure. By exploring and seeking to fix these problems at the earliest point in the project's life cycle, it will be a successful way to add value. Furthermore, strategic briefing offers an opportunity for total focus on the rationale of the construction project. By definition, a strategy provides a requirement to look farther than today (avoiding short-term fixes), into the future when dealing with the needs and requirements of stakeholders thereby offering a sustainable way for planning cost-intensive built healthcare facilities for both the present and future needs of the end-users.

The next step in this research will be to empirically ascertain briefing and optioneering best practice within NHS projects. Briefing is a process which is difficult to discuss in abstract and for this reason a case study approach would seem most appropriate (Hudson *et al.*, 1990). Results from this and on-going literature survey are pointing towards questions such as: what is the general understanding of WLW, briefing and optioneering for NHS construction projects? How are the processes carried out and what drives the decision-making? Who are the key participants and what is the current state of end-user engagement in the pre-design stages? What features of the dynamic health built environment would reflect long lasting value (WLW) to the healthcare stakeholders? Further work in the research will also seek to see how to make best use of the existing NHS briefing and option selection tools like AEDET Evolution (2008); ASPECT (2008); and others in order to enhance what is already available and to an extent avoid 're-inventing the wheel'.

The on-going research into improving WLW through focusing on strategic briefing and optioneering is hoped to bring about a better understanding of WLW and how to improve it. It seeks to improve methodology for early investigation and identification of

the real client needs, for both current and future use. The research advocates for understanding the NHS as a client organisation in terms of the context of its people (stakeholder groups), as well as the purpose of its existence (business function) that corresponds with the life of the facility in-use (end-use related issues). It is hoped, the result of this fundamental understanding should lead to decisions that match resources expended and the 'best' or optimum solution derived upon balancing conflicting issues that impact facility design, production, use, re-use and disposal. Hence through-life value-optimisation.

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