A framework for achieving whole life value of healthcare facilities through briefing and optioneering

A framework for Achieving Whole Life Value of Healthcare Facilities through Briefing and Optioneering

by

Ruth Sengonzi

A Doctoral Thesis

Submitted in Partial Fulfilment of the Requirements for the Award of

Doctor of Philosophy of Loughborough University

June 2011

CERTIFICATE OF ORIGINALITY

This is to certify that I am responsible for the work submitted in this thesis, that the original work is my own except as specified in acknowledgments or in footnotes, and that neither the thesis nor the original work contained therein has been submitted to this or any other institution for a degree.

…………………………………………. (Signed)

…………………………………………. (Date)

Abstract

Since its inauguration in 1948, the National Health Service (NHS) has been providing "free at the point of delivery" healthcare to all UK citizens. However, lately, there has been unprecedented concern over the capability of most NHS hospitals to demonstrate best value in providing non-clinical service to NHS Trust customers. Demonstrating value is particularly important because of the current multi-billion pound expenditure towards modernising the healthcare service estate. Consequently, the present research aimed to respond to the need to demonstrate satisfactory Whole Life Value (WLV) delivery of healthcare facilities. This has been achieved by focusing on the improvement of front-end processes of construction briefing and optioneering, where most value can be embedded before progressing onto design and construction. The study reviewed extant literature in an attempt to construct a theoretical linkage between the three concepts of WLV, strategic briefing and optioneering. In addition, through a qualitative empirical study comprising interviews, workshops observations and a detailed case study, the same concepts were investigated within the context of NHS healthcare facilities. Key findings indicated that having a specific project strategy is vital to WLV delivery; and that selecting the right project and design options is dependent on first agreeing and clarifying a clinical service model/plan with clinicians. It was also found that improved construction briefing and optioneering involves adequately defining a customised whole life solution informed through purposeful communication and engagement with relevant stakeholders in contributing towards issues that directly affect how they use a healthcare facility. Another key finding was that WLV of healthcare facilities is defined through a whole life solution which is directly linked to its usefulness or utility value realisable by service users in achieving expected clinical outcomes over the facility's design life. Therefore, through briefing and optioneering, a healthcare facility's project strategy must be directly linked with specific needs and requirements (among other things) in order to reflect exactly what the stakeholders and end-users value in a healthcare built environment in the long term. These research findings were applied to inform the formulation of a better briefing and optioneering guidance framework applicable during project definition for satisfactory WLV delivery of healthcare schemes.
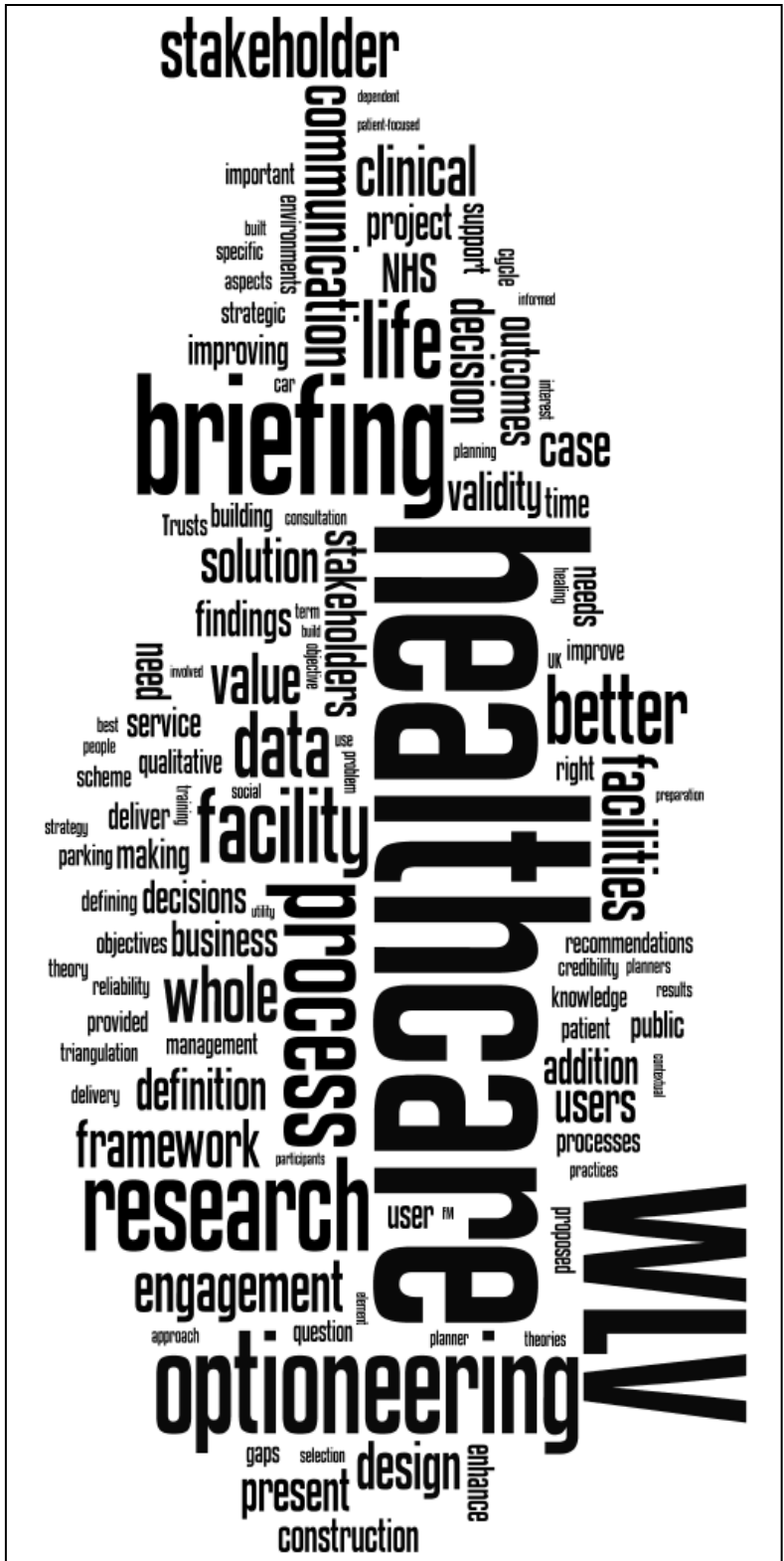
Keyword tag cloud[1]

Acknowledgements

*"At times our own light goes out and is rekindled by a spark
from another person. Each of us has cause to think with deep
gratitude of those who have lighted the flame within us."*
-Albert Schweitzer

This dissertation would never have been possible without the support and dedication of many people.

I am indebted to the following:

To Professor Stephen Emmitt and Doctor Peter Demian, my supervisors and mentors over the course of the study, thank you for the many hours you have freely given. Your guidance and support have been invaluable as have your insights in the field of Construction Management.

To the Engineering and Physical Sciences Research Council (EPSRC) for funding this research through the Health and Care Infrastructure Research and Innovation Centre (HaCIRIC) based at Loughborough University. Sincere gratitude to Professor Andrew Price for giving me the opportunity to be part of this research.

To the organisations and individuals that provided the empirical data. Your contribution was priceless.

To my research colleagues within HaCIRIC Loughborough University for their support.

To my dear husband, no words can express my deepest gratitude.

To my family and friends, the project would not have been completed without your support, love and compassion.

And to my parents, thanks for the inspiration and sacrifices. Ebenezer.

Special thanks to my dear children, what understanding little souls you have been!

Table of Contents

List of Figures

List of Tables

List of Boxes

List of Equations

A&E	Accident and Emergency
ADB	Activity Data Base
AHP	Analytical Hierarchy Process
BREEAM	BRE Environmental Assessment Method
CIM	Capital Investment Manual
DDA	Disability Discrimination Act
DH	Department of Health
EBS	Electronic Brainstorming
FBC	Full Business Case
E&FM	Estates and Facilities Management
FM	Facilities Management
FTF	Face-to-Face
HAIs	Hospital (health environment associated) Acquired Infections
HBN	Health Building Notes
HTM	Health Technical Memoranda
LIFT	Local Improvement Financial Trust
LIFTco.	Local Improvement Finance Trust company
MADM	Multi Atrribute Decision Making
MCDM	Multi Criteria Decision Making
NAO	National Audit Office
NGT	Nominal Group Technique
NHS	National Health Service
NSF	National Service Framework
OBC	Outline Business Case
OJEC/U	Official Journal of European Community/Union
PCC	Primary Care Contracting
PCE	Post Contract Evaluation
PCT	Primary Care Trusts
PESTEL	Political, Economic, Social, Technological, Environmental, Legal
PFI	Private Finance Initiative
POE	Post Occupancy Evaluation

PPE	Post Project Evaluation
PPI	Patient Public Investment
PPP	Public Private Partnerships
PSCP	Principal Supply Chain Partner
PSCP	Principal Supply Chain Partners
QDA	Qualitative Data Analysis
RIBA	Royal Institute of British Architects
SHA	Strategic Health Authority
SOC	Strategic Outline Case
SPV	Special Purpose Vehicle
SSDP	Strategic Service Development Plan
VfM	Value for Money
VM	Value Management
WLCC	Whole Life Cycle Costing/ Whole Life Cycle Costs
WLV	Whole Life Value

Chapter One: Introduction

1.0   Chapter Introduction

This chapter is a general introduction to the present research. It begins by providing context for the research through an introductory background on the UK construction industry and the National Health Service (NHS) drivers for change. In addition, the relevance of investigating construction briefing and optioneering in relation to improved healthcare facility Whole Life Value (WLV) is presented. The research aim and objectives, and the research questions are also discussed. The chapter further discusses the research scope, context and assumptions for the present study. The chapter closes with a presentation of the thesis structure.

1.1   Introductory background

There have been calls on the UK construction industry to devote more effort and resources towards definition of project requirements as well as understanding the client's needs (for example, Banwell, 1964; Latham, 1994; Egan, 1998). The 'Accelerating Change' report (Egan, 2002), highlighted qualities that would enable the construction industry to realise maximum value and exceed the expectations for all clients, end-users and stakeholders. The report posited that through the consistent delivery of world class products and services, such an industry would be characterised by a process, among others, that helps clients describe their needs so that as a minimum, the project delivers their requirements.

Client needs and requirements play a vital role in decision making and options-selection. They are the basis upon which clients judge their satisfaction with project outcomes. Although for some clients these needs and requirements may be undefined or transient, they still expect construction producers to

achieve them (Chinyio *et al.*, 1998). Therefore, in order to ensure that client needs are met, it is fundamental that they are understood early and always referred to throughout the project development process. A process is defined as a set of interrelated or interactive activities that uses resources to transform inputs into outputs (ISO 9000, 9001 and 9004). This research project therefore sought to advocate for a better early understanding of healthcare facility client needs and correlating the same with options selection and the achievement of WLV.

The research presents a theoretical and empirical account establishing a linkage between WLV of healthcare buildings, strategic briefing and options selection. The activities accounted for are founded on, and bounded by Stage A/B, *RIBA Plan of Work* (RIBA, 2007) applicable to early stage project formulation processes. The account is founded on the premise that: WLV for a facility 'owner-occupier' client, in this case the NHS Trusts, is tightly knit with the satisfaction delivered to the end-users through sustained use across the facility's whole life (Bordass and Leaman, 1997; Holt, 2001; Vischer, 2008). Hence, the premise advocates for having a conscientious value delivery strategy. Such a strategy is informed by direct contributions from stakeholders and is clearly defined during the early stages of briefing and optioneering processes.

1.2   The UK Healthcare Sector

The term healthcare facilities (also synonymous with healthcare buildings), is used in reference to any built environment that supports healthcare service delivery.

The UK healthcare sector is predominantly a tax funded public sector service. Central to this service is the NHS. The NHS was set up in 1948 integrating into an organised healthcare service, hospitals, General Practitioners (GPs), opticians, dentists and other services for the whole population (DH, 2007). The

NHS is essentially a national partnership between the citizens and those who work in it (Welsh and Pringle, 2001). Moreover, NHS Trusts currently have a clinical and business duty of care to their service customers (patients, visitors and staff) and other stakeholders (Okoroh *et al.*, 2002). NHS services are managed separately for England, Scotland, Wales and Northern Ireland. The Department of Health (DH) exists to improve health and wellbeing of people in England (DH, 2007). Consequently, DH is responsible for policy about England only although it takes a lead on behalf of the UK (Scotland, Wales and Northern Ireland) in a few areas where national coordination or leadership is required, such as EU agreements and negotiations. DH does not directly deliver health and social care service to the public but works through various delivery partners such as the NHS; local government; other public services such as education; the private and third sector as well as international organisations (DH, 2007; NHS Choices, 2009). Its two distinct roles are to carry all responsibility of a department of state and to provide leadership for the NHS, social care and public health agendas (DH, 2007). DH controls the NHS through England's 10 Strategic Health Authorities (SHAs) (DH, 2007; NHS Choices, 2009; Heap, 2010).

1.2.1 The NHS structure and Estate

The NHS is said to be one of the world's biggest organisation in the world and employs 1.7 Million people (NHS PASA 2008; NHS Choices, 2009), The NHS in England is the biggest part of the system, catering for a population of 51 million people. Of the £100 Billion budget received for 2008/9, 60% was used for staff pay, a further 20% paid for drugs while the remaining 20% was split between buildings, equipments and training costs in addition to catering and cleaning.

The NHS structure comprises 'primary' and 'secondary' care. A detailed representation of the NHS structure showing the various components of primary and secondary care is shown in Figure 1.1. Primary care (represented by the blue semi-circle) is usually the first point of contact for most patients while

secondary care (also known as acute care and shown in red semi-circle) usually follows a referral from a primary care health professional. More than 90% of contact with the NHS is said to occur in the primary sector (Rawlinson, 2005). Primary care is delivered in GP's, or dentist's surgeries, opticians, Walk-in-Centres, multi-service hospitals, community hospitals, pharmacies, or other local health facilities. Secondary care is delivered in specialised acute hospitals run by Acute Trusts. Some Acute hospitals are regional or national centres for more specialised care and others are attached to universities for training health professionals (DH, 2007)
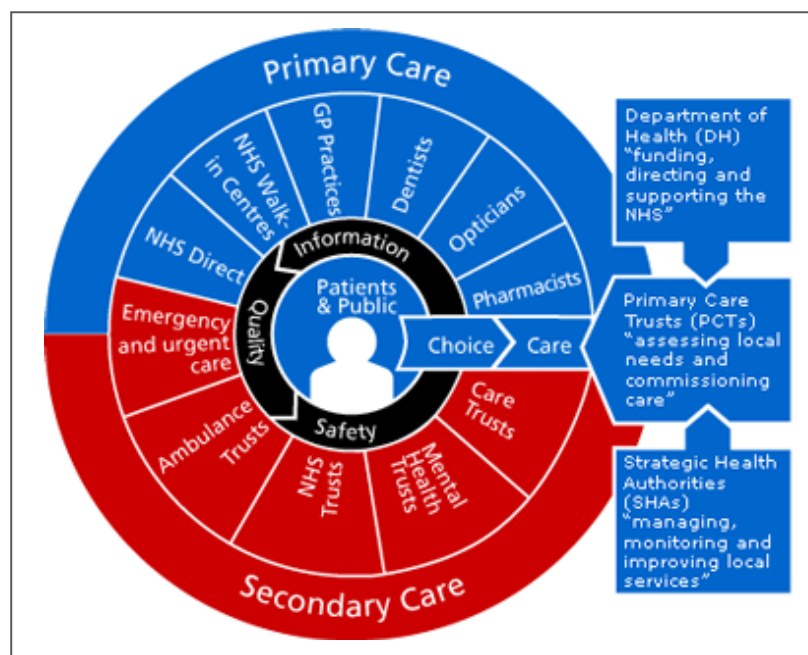
Figure 1.1: The NHS Structure
(source NHS Choices, 2009)

Strategic Health Authorities (SHAs)

SHAs manage the local NHS on behalf of the secretary of state and link the Department of Health (DH) and the NHS. Through their relationship with PCTs, SHA's ensure that patients have access to sustainable primary, secondary and tertiary healthcare that is equitable (DH, 2007). In addition to the roles shown in Figure 1.1, SHAs' responsibilities include developing plans for improving health services in their local area; ensuring local health services are of high quality; and, ensuring national priorities are integrated into local health service plans. There are 10 SHAs in England (DH, 2007; NHS Choices, 2009).

4

Primary Care Trusts (PCTs) and Care Trusts

There are 152 PCTs in England, 6 of which are Care Trusts (DH, 2009; NHS Choices, 2009). PCTs are local organisations responsible for primary care and ensuring that health and social care provider organisations are effective. In addition, they are responsible for local strategic planning and are accountable to SHAs. According to NHS Choices (2009), PCTs are central to the NHS and control 80% of the budget. PCTs own community hospitals, clinics, some Accident and Emergencies (A&E) Walk-in-Centres and some GP surgeries (Heap, 2010). There are a few Care Trusts; their role is to provide care in both health and social fields.

Acute, Foundation and Mental Health Trusts

Acute NHS Trusts and Mental Health NHS trusts oversee about 1,600 NHS hospitals and specialist care centres. Acute Trusts ensure that hospitals provide high quality healthcare and spend efficiently; in addition, they decide how a hospital will develop in order to improve service. NHS Mental Health services Trusts provide mental health care in England and are overseen by the local PCT. Foundation trusts are a new type of NHS hospital introduced in 2004 to devolve decision-making from central government control to local organisations and communities, so they are more responsive to the needs and wishes of their local people (NHS Choices, 2009). Foundation Trusts have more financial and operational freedom than other NHS Trusts although they remain within the NHS and its performance and inspection system. There are 129 Foundation Trusts in England (NHS Choices, 2009).

Ambulance trusts

The NHS is responsible for providing emergency transport for getting patients to hospital for treatment. Ambulance Trusts provide NHS emergency vehicles. There are 12 Ambulance services in England (NHS Choices, 2009).

The NHS estate is said to be the largest and most complex estate in Europe (Innovations4healthcare, 2010). Its buildings range from state of art healthcare facilities, to buildings dating back to the 19th century (Rawlinson, 2005; Innovation4health, 2010). The estate's value was estimated at £36 Billion worth of buildings and equipment (Heap, 2010; Innovation4healthcare, 2010) Between 2009-10, the total NHS estate was reported to be 28.4 million square metres of measured floor area (DH, 2010b, Ellis *et al.*, 2010). Of this, PCTs occupy approximately 4.9 million square metres, Acute Trusts take up 19.1 million square metres, with Mental Health and Care Trusts occupying 4.2 million square metres.

The DH focuses on policy and strategic development of a patient-focused, flexible and responsive environment for health and social care, improving health outcomes through high quality built environments and innovative estates and facilities (Rawlinson, 2005).

1.3   Healthcare drivers for change

Planning of hospitals has all the problems associated with the planning of other buildings types and more (Goodman, 1972). The 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.

Globally, the healthcare sector is believed to be one of the most volatile (for example, Hildrey, 2003). The sector is rife with frequent changes stemming from volatile politics, complex issues and daunting economics (Miller and Swensson, 2002). The NHS is always undergoing change; it has been said that the only constant thing about the NHS is change (Boyd and Chinyio, 2006; Darzi, 2008). Since its inception in 1948, and most especially in the past two

decades, the NHS has undergone social, economic, technological as well as political change (Hackney *et al.*, 1997; HPERU, 2008). Some changes are driven by external factors like national and global policies and regulations (for example, sustainability), while others are driven by changing demographics: a predominantly aging population and longer life expectancies; and, patient needs tending from short-term towards more chronic illnesses. Moreover, ever changing medical and nursing technologies as well as advances in ICTs, further affect the way the NHS operates clinically. Change in the NHS is further driven by the current consumerist culture characterised by 'customers' who are more demanding than ever before (Douglas *et al.*, 2003; Glanville, 2003).

The *NHS Plan* (DH, 2000) set out ambitious targets of how to create a modern health service that is responsive to the citizens who pay for it and the patients who use it. Further to that, the Government announced its plan to devolve power from '*Whitehall*' to NHS frontline organisations and staff: to the Strategic Health Authorities and Primary Care Trusts (Milburn, 2001). Frontline organisations were henceforth empowered to plan and be actively involved in all matters pertaining to service design. Towards the end of this research project, on 12th July 2010, health secretary Andrew Lansley set out the Government's plan to reform the health service. Through the NHS White Paper, *Equity and Excellence: Liberating the NHS*, the biggest plans involve axing PCTs and SHAs by 2013 (DH, 2010a). Other reforms such as '*Strengthening accountability - involving patients and the public*' (DH, 2003a) and the '*Patient and Public Involvement*' (PPI) initiatives (DH, 2008) put stakeholders at the forefront of involvement in the planning of services that affect them. Other national and global agendas include '*Value for Money*' (VfM) (Building, 2000; Saxon, 2005) and sustainability (WCED, 1987).

Furthermore, current agendas for NHS healthcare built environments are specifically being developed around the aspects of *consumerism, design quality* and *sustainability* (PCC, 2008). NHS' *consumerism* agenda focuses on improving the patient experience by addressing their needs, emphasising on the individual rather than patients in general (PCC, 2008). The *design quality*

agenda is related to the increasing awareness of the linkage between design of the physical environment, patient recovery, work performance and job satisfaction of clinical staff (also parallels research by Ulrich, 2000; Lawson and Phiri, 2003; Lawson, 2005 and Carr, 2011). The *sustainability agenda* entails that, healthcare facility planning and design must now demonstrate sustainable development awareness. These three recently introduced agendas impinge on healthcare facility planning and design strategies which must now reflect all the individual patient and staff needs and requirements.

It has been said that, radical and ongoing changes in society create an uncertain environment, which in turn impacts on the functions of the whole organisation (Tsiakkiros, 2002). As such, most of the changes have far-reaching effects and implications on the infrastructure supporting delivery of NHS services. In order to respond to the changes, the added implication is that the NHS has got to scrutinise the way healthcare facilities are planned, built and managed over the long term. Best and de Valence (1999) noted that for the large sums of money they invest in building procurement, clients such as UK's NHS, who commission the design and construction of buildings, hope to maximise the value they obtain. However, there have long been concerns that when the NHS is procuring healthcare facilities, it is not obtaining VfM (Okoroh *et al.*, 2001). Concerns stem from reasons such as, investment decisions based on lowest initial capital investment and not whole life costs; 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; and, the lack of an effective project evaluation process throughout the life of schemes that enabled the NHS as a whole to benefit from lessons learned (NAO, 2001).

In addition, post Egan reports on the UK construction industry indicated that, amongst others, major barriers for improving construction outcomes include poor needs identification, poor briefing and requirements definition and lack of focus on the business case (NAO 2004a, 2004b; NAO, 2005). Specific recommendations for improving VfM included, greater emphasis on

'programme management', with greater attention accorded to value and whole life issues; spending more time at the front end; and, embedding project learning (NAO, 2005).

Delivering modern healthcare facilities, within limited resources, under today's dynamics and demands is an undisputable challenge. NHS needs to reinvent the way it arrives at its design goals within the given constraints. As a fundamental starting point in the quest for improving the understanding and achievement of WLV within healthcare facilities, these findings pointed towards the need to focus improvements towards front-end planning processes encompassed within briefing and optioneering processes.

1.4   Research context and assumptions

This research was set in a general context of healthcare facilities without particular emphasis on a given facility typology. The context has been dictated partly by a general dearth of academic research specific to healthcare construction practices and by data access/availability, as discussed in *Chapter Six*. Theoretically, the research was based first on the generic context of construction industry pre-design practices, later converging onto the healthcare sector.

The construction industry has been reported to often rush into projects without adequate understanding of the importance of the early phases (Emmitt, 2007). The industry has also been known to make decisions predominantly based on the capital (initial) cost of a facility (Woodhead, 2000). However, it is in the less-emphasised pre-design stages (briefing and optioneering) that fundamental strategic decisions regarding major issues in the life cycle of the facility are made (Duerk, 1993; Yu *et al.*, 2007); and consequently, where WLV is created.

The research project presumed that, correlating effective briefing practices and optimum solution selection based on the need to deliver WLV, bearing in mind

the diverse issues raised by stakeholders, may lead to better *VfM*. This is the premise of this research. The research challenge was then to identify the best means through which to deliver WLV through focusing on improving briefing and optioneering processes for healthcare facilities. Improvement was directed at the processes because as Deming (2000) suggested, in 94% of cases, it is the process that is to blame for errors or mistakes and not the person or people. Therefore, the study needed to identify the component interrelated activities within briefing and optioneering processes in order to explore any deficiencies therein. And having identified them, address them to deliver WLV.

1.5   Research aim and objectives

This research project therefore investigated the underlying philosophies enshrined within strategic briefing and optioneering (option selection) processes and their role in creating and delivering WLV for both first and future generation healthcare sector stakeholders. The research project explored mechanisms through which to enhance healthcare facility briefing and optioneering processes in order to attain WLV delivery.

The aim of this work was to develop a briefing and optioneering process improvement framework for enabling WLV delivery of NHS healthcare facilities. The objectives for attaining this aim included:
- Exploring construction briefing and optioneering theory;
- Investigating the generic meaning of Whole Life Value and its linkage to briefing and strategic options selection;
- With reference to healthcare projects: investigating perspectives on briefing, optioneering and WLV;
- Identifying gaps and areas for improvement in both theory and practice;
- Designing a best practice framework for effective process improvement towards WLV delivery;
- Testing, refining and recommending the framework as a guidance tool for satisfactory WLV delivery of NHS healthcare facilities.

1.6   Research questions

This explorative study sought to address the key question: **How can briefing and optioneering processes be improved to deliver satisfactory WLV of healthcare facilities?** Further questions arising were: What is the general understanding of all three concepts? Furthermore, concerning the current state of practice for briefing and optioneering process practices,

- How are the processes currently carried out?
- Who is involved or affected (stakeholders), when and to what extent?
- How do the processes work? Are they effective?
- What are the possible suggestions for improvement towards?
- How is WLV reflected in the built health environment?
- What are the Critical Success Factors for its achievement?

Finally, with reference to the main research question, how can the briefing and optioneering processes be improved individually and integrally to achieve these Critical Success Factors?

1.7   Significance of the research

The research is built on previous work on briefing in the construction industry. Research investigating the linkage between WLV delivery, strategic briefing and option selection practice in the context of complex UK healthcare sector as well as approaches to improving these processes has not been addressed before. Moreover, an approach that seeks to establish a guidance framework for NHS construction projects based on a cause-and-effect relationship between effective briefing, option selection and WLV is also novel.

1.8   Research Tasks

In order to meet this project's research aim and objectives, a multi-stage approach was designed. Provisional gaps in literature were revealed by a preliminary literature survey. These gaps were influential in informing and defining the ontological and epistemological basis for the research. Relevant research tasks were identified, scheduled and grouped stage-wise according to best logical fit. They are divided into three major stages 1, 2, and 3, and each stage broken down into sub-tasks as shown in Figure 1.2.
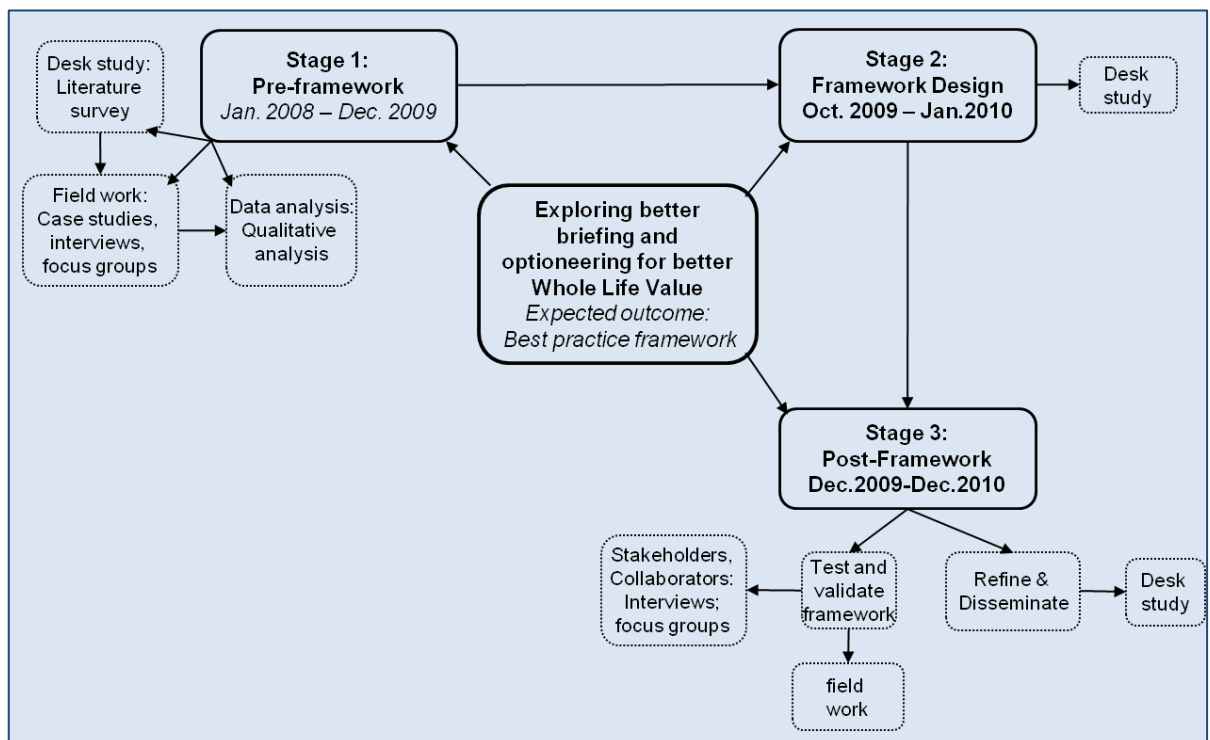
Figure 1.2: Research tasks and approximate timelines

1.9   Thesis Structure

The thesis is divided into ten chapters.

Chapter One - is the main introductory chapter to the report. It has covered the main introduction to the present study together with the background to the

research; significance of the research; and, the aim and objectives of the research. The main research questions to be addressed by the present research study were presented too, in addition to the research tasks and proposed plan for accomplishing them.

Chapters Two, Three and Four are a broad coverage of past and emerging trends in WLV; construction project briefing and optioneering. They are based on both generic industry perspectives and later get specific about healthcare perspectives.

Chapter Five presents the research methodology. It describes principles and approaches of generic research philosophy. The chapter also covers research styles and strategies, as well as specific research design and methodology for the present research.

Chapter Six presents an empirical insight into healthcare facility WLV delivery, briefing and option-selection processes within NHS projects. It is based on interviews and workshops observations.

Chapter Seven discusses the proceedings of a longitudinal primary care-based case study carried out over nearly 12 months.

Chapter Eight merges and discusses findings from Chapters *Six* and *Seven*; relating them to literature survey findings presented in earlier chapters. Chapter Eight also highlights gaps that need to be addressed for WLV improvement.

Chapter Nine responds to the gaps highlighted in the later sections of *Chapter Eight* by presenting the improvement framework. The issues considered during the framework's development process, together with key features of the framework's design and its operation, are presented in this chapter. The last section of the chapter discusses findings arising from the framework's evaluation and how the feedback was applied to improve on the original framework design.

Chapter Ten is the concluding section of the thesis. It draws upon other chapters in the thesis to present highlights of the research project including implications for practitioners, NHS management and future research. The final chapter also presents a critical analysis and final concluding remarks for the research the study.

Appendix 1.1 presents a list of publications delivered over the course of this study.

Chapter Two: Stakeholder Value for Money and Whole Life Value

2.0   Chapter Introduction

This chapter is based on a survey of relevant literature (*Stage 1, Figure 1.2*). It covers theoretical issues associated with project stakeholders, stakeholder VfM and WLV. The chapter commences by defining stakeholders, scoping healthcare stakeholders, and also discusses stakeholder VfM. In the chapter, drivers and key concepts on WLV are approached through generic value definition and later conceptualised to apply to the built environment perspective. In addition, the chapter delineates the benefits of considering value through a WLV perspective along with presents some key tools and techniques for supporting WLV delivery.

2.1   Stakeholders and stakeholder Value for Money

2.1.1   Defining Stakeholders

Freeman (1984) defined stakeholders as individuals or groups who may affect or be affected by the achievement of the organisation's objectives. His definition seems to portend organisational survival and success that is dependent on stakeholders. Johnson *et al.* (2008) affirm that an organisation depends on its stakeholders. While, Anderson (1982) suggested that managers ought to balance the interests of all stakeholders to optimise organisational effectiveness.

Stakeholders are further defined as groups or individuals who have a stake in the organisation, where, stakes are the stakeholder interests which can last either a short or long time, and may have cultural or political orientations (Mintzberg *et al.*, 2004). Stakeholders have also been viewed in terms of organisational success. Jonker and Foster (2002) posited that for any organisation, specific interest groups (stakeholders) exist in its business

environment and these have an impact on the success and effectiveness of the organisation. In a client briefing context, Blyth and Worthington (2010) typify stakeholders into two broad groups: the demand side (client organisation and users) and supply side (designers and contractors) stakeholders, where the demand side represents

2.1.2 The healthcare client organisation and facility stakeholders

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. For organisations like the NHS, clients are often multi-faceted in nature, comprising different interest groups or stakeholders. It has been noted that any new building will have an impact on a wide range of stakeholders and that each stakeholder will have different priorities among the outcomes sought from the project (Green 1996a; Newcombe, 2003; Macmillan, 2005). Bertelsen and Emmitt (2005) identified three interest groups who value different things at different times in the life of the building, the owner, the users and the society. For healthcare construction projects stakeholder groups could be categorised as shown in Figure 2.1. The red dotted line highlights the different sub-groups within 'end-users' stakeholder group.
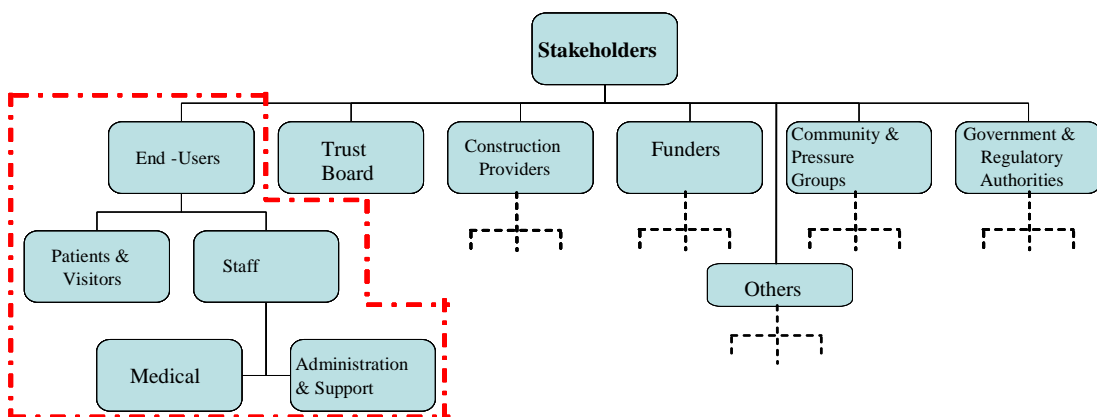
Figure 2.1: Typical healthcare facility stakeholders

2.1.3 Stakeholder Value for Money (VfM)

VfM is defined as the relationship between economy, efficiency and effectiveness (Audit Commission, 2010). Effectiveness is said to measure impact of spend against outputs; and, efficiency measures productivity, addressing how much you get out of what you put in. Economy assesses what goes into providing a service. A building offers VfM when the benefits derived from it significantly exceed its lifetime costs (Building, 2000; Kilner and Founds, 2007). Where, benefits are said to be derived from the functions that a building performs rather than from the building itself. Hence, in the event that the building is not performing as expected or when it becomes functionally obsolete then the project is judged as not being a VfM investment. Likewise, when a project is built cost-effectively (to budget) but falls short of the client's objectives it does not provide good VfM (Building, 2000).

The concept of VfM has dominated public sector policy of late. This is demonstrated by which mandates that all public sector construction must be based on VfM in terms of: the optimum combination of whole-life cost and quality which meets the stakeholders' requirements and must also address key considerations such as time, environmental and social sustainability (OGC, 2003). The implications of the '*Treasury Procurement No. 7*' mandate are that, in considering VfM over the whole life of the built asset, long term maintenance plans should be embedded as early as strategic briefing stage in order to guide favourable optioneering decisions for WLV.

2.2 Whole Life Value: key concepts and drivers

2.2.1 Defining value

In seeking to decipher WLV, the first step was to define value and then infer from these meanings what ultimately WLV of an asset may entail. Defining value is a contentious issue though. Perry (1914) was of the view that the fundamental problem in value theory is the problem of definition while Miles

(1961:3) concurred by saying, "value means a great many things to a great many people".

Classical economics theory perceives the value of an item to be related to its utility. The theory is subject to the law of diminishing marginal utility in which satisfaction gained from consumption of a good or service a person declines with acquiring an additional one, thereby leading to its declining demand. British Standards (BS EN 1325-1, 1997) defined value as "the relationship between the contribution of the function to the satisfaction of the need and the cost of the function". Similarly, the UK National Audit Office (NAO, 2004) described value as "the function of the relationship between the 'satisfaction of needs' (business benefits and requirements) and the resources needed to deliver them." A similar definition by the Institute of Value Management (IVM, 2010), perceived value as being a result of the way satisfaction of different needs is met by the resources used in creating the satisfaction. The Institute also posited that this value may have different meanings to all concerned, that is, stakeholders, internal and external customers but that in summary:

$$\textbf{Value =} \frac{Function/Objective}{Cost}$$

Equation 2.1: The concept of value
Source: IVM (2010)

That is: Function/Objective = getting what you require
Cost   = what you will pay

The *'Be Valuable'* guide to creating value in the built environment considers value to be the balance of benefits and sacrifices involved in a judgement of worth (Saxon, 2005). This relationship is depicted mathematically (Equation 2.2) similar to the one by Thomson *et al.* (2003).

$$Value = \frac{Benefits(WhatYouGet)}{Sacrifices(WhatYouPutIn)}$$

Equation 2.2: Benefits and Sacrifices
Source: Thomson *et al.* (2003)

The 'stakeholder value for money' research group of Loughborough University (HaCIRIC, 2008) build on the views of Thomson *et al.* (2003) and Saxon (2005) by defining value, as the summation of all the value components involved in a specific project's analysis (see Equation 2.3). Each component of value is represented as:

$$Value = \frac{Benefits - Sacrifices}{\mathrm{Re}\,sources}$$

where, $Total\ Value = \sum_{n=1}^{n} \frac{Benefits - Sacrifices\ i}{\mathrm{Re}source}$, the summation of all project value(s) and, n is the nth value.

Equation 2.3: Benefits, sacrifices and Resources

Best and de Valence (1999) cite a definition from Price (1993) in which value is defined as the amount of desirability obtainable from a product consumed. They explain desirability in the case of the building product to be appreciated through use to accommodate a set of activities that are important to the user or for the reasons of investment (source of revenue). Desirability may also be attributed to sentimental reasons, attachment or as a symbolic representation of either political, corporate and other reasons for which they argue that value will bear different meanings for different people. The *Lean Theory's* perspective on value is more philosophical in that value begins and ends with a customer (user or owner): where value is a capability provided to a customer at the right time at an appropriate price, as defined in each case by the customer (Womack and Jones, 2003).

2.2.2 Public Value

Public value provides a rough yardstick against which to gauge the performance of policies and public institutions, make decisions about allocating resources and selecting appropriate systems of delivery. Barnes (1997) asserts that it is important to measure the quality, effectiveness and equity of public

services. Public value has been defined by Kelly *et al.* (2002) as "'what the public values' and is willing to sacrifice resources and freedoms to achieve." Furthermore, "it is the value created by government through services, laws, regulations and other actions." They note that citizens tend to value things categorised as outcomes, services and trust. Although these might overlap to some extent, they provide a useful way of thinking about the dimensions of public value and its relevance to the NHS and the wider national agenda of VfM in the public sector.

2.2.3 Value categorisation

Best and De Valence (1999) further categorised value as either:
Exchange value: the amount of money that one party is willing to exchange for ownership of an asset.
Use value: is derived from the function of a product or from its usefulness. It is concerned with deriving maximum benefit for the end-user.
Esteem value: is derived from the appearance (attractiveness) of the product rather than from its performance.
Cost value: is derived from the resources spent in the production of an item. Resources include labour, materials, and all the other costs required for production.

Another value category identified from literature is residual value, the value of an asset at the end of its current use (Building, 2000). Residual value is useful for informing and assisting the client determine the need to invest and think about flexibility of the building in the long-term future. Allinson (1997) defined another category, operational value, as enhancement relative to business operations and the criteria which make or define their viability. He exemplified design operational value as design making the life and work of users easier and/or more productive; reducing operating and life cycle costs; or removing risk, amongst others.

2.2.4 Implications of value definitions on healthcare built environment

Raftery (1991) more or less summarised all the above views and categories by regarding value as a complex entity made up of the components of scarcity, utility, cost of production, value in use, value in exchange and marginal utility. Taking an economics stance, he further considered value to be influenced by conditions of demand and available quantity, arguing that if you wanted something desperately, then its value to you increased.

For a built asset, some of the above views (for example regarding value-subjectivity) may be pertinent. However, in most cases, the classical economics laws and other related to diminishing marginal utility may not be applicable. This is because in this case a built asset's utility is a combination of several components and features which contribute differently to the satisfaction or utility gained by the owner or users. The more of a value attribute a user has, say comfort and interior environment, the more one will want, thereby leading to increasing marginal utility. More value will be demanded thereby giving rise to the need for continuous improvement and perfection.

Most of the reviewed value definitions (for example Miles, 1961; Heller, 1971; Dell'Isola, 1997; Saxon, 2005) include an element of 'cost' or sacrifice and functionality together with implorations to keep the cost as low as possible in order to achieve higher value. It may be noted that most definitions of value comprise utility (usefulness) mostly considered in relation to cost and economic perspectives, giving the implication that value can be quantifiable and tangible. This may not be the case however because some aspects of value may not necessarily be measurable. The aspect of non-measurable intangible value leads to a discussion of '*values*'.

As noted earlier, the UK healthcare service is predominantly a public sector service and funded via taxation. It has also been highlighted that at least every citizen in the UK is a potential customer to the service (Okoroh *et al.*, 2002). Accordingly the healthcare sector is a cause for public interest, and therefore

procurement of its services and infrastructure may be subjected to concept of 'public value'.

2.2.5 *Values*

Keeney (1996) defined *values* as what we care about. He posited that they are the principles used for evaluation of actual or potential consequences of action or inaction hence they should be the driving force for our decision-making. Corroboratively, some authors have argued that different building types with the same issues require different design responses as a result of the *values* of different users (Kohler, 1966; Duerk, 1993; Thomson *et al.*, 2003). However, Barton and Pretorius (2004) noted that *values* are often neglected during analysis of the concept of value whereas in many respects it is the *values* that may determine what value is.

2.2.6 Value and values

In summary, most authors regard value as being affected by either all or some of the following factors: performance, expectations, utility, results, cost and quality. What is apparent here though is that value is a combination of both subjective as well as objective considerations; and that "value can only be attributed to something that is used or is useful to someone for some period" (Holt, 2001:149). *Values* represent the subjective perspective of value. As such, "when identifying the function or purposes of things, it is not simply about the discovery of objective, quantifiable facts …instead all stakeholders must explore values in order to 'construct' a statement of function or purpose, drawing together both the subjective and simultaneously, the objective" (Barton and Pretorius, 2004:19).

2.2.7 Cost and WLV

Cost is a useful configuration that allows the client to make informed judgement as a limit to functional or aesthetic aspiration (Porter, 1998). It has been said

that, a well structured cost estimate aids in understanding the VfM aspect of a project hence forming a basis of a project control model (Phillips, 2006). However, this does not imply that cost be the only basis for decision-making as dominated by current practice that focuses on initial capital cost as basis for judgement and decision-making in the pre-project stage (for example Woodhead, 2000). The concept of value should be perceived as being linked to effective and affordable function, over time, set within the boundaries of taste and considered form (Holt, 2001). Hence, in relating cost and value, considering whole life cycle costs (WLCC) would be a better basis to judge and make decisions. Moreover, in a discussion about the real costs of an asset, it is said that long-term costs over the life of the asset are more reliable indicators of VfM than initial construction costs (OGC, 2003).

Egan (1998) recognised that there is an obvious need to assess activities in terms other than lowest price (cost). In addition, Holt (2001) noted that WLCC models encourage consideration of facility integrity and service capacity as opposed to just the capital costs. However, he observed that these models are limited when considering the intangible concerns of preserving environmental, social and even economic sustainability.

Consequently, such arguments advocating for judging value on more holistic terms other than capital or lowest cost are the foundation of defining WLV of buildings.

2.2.8 Current theories and emerging trends on Whole Life Value

There is a dearth of extant literature exclusively covering the WLV concept. Literature surveys revealed only four credible sources, namely, Holt (2001); the seminal WLV guidance by Bourke *et al.* (2005); Green (2005); and, Mootanah (2005). Other resources are dominated by gray (and unreferenced) literature available from the internet, as well as prevailing views of WLV that tend more towards WLC perspectives. In addition to the above resources, by considering WLV of built environments within a more generic value paradigm, it is

definitions that emphasise value as satisfaction and worth (utility) to the user (value-in-use) (for example NAO, 2004; IVM, 2010) that were given precedence. This especially applies in the case of purpose-built environments (for owner-occupier clients such as the NHS), with a typical design-life spanning more than fifty years.

Therefore, it was considered pertinent to think about value from the perspective of the useful life of the facility, which is also the predominant part of its life-cycle. Focusing on value-in-use was envisaged as a more appropriate way of determining the facility's ability to satisfy the occupants over its period of existence and hence its ability to provide maximum WLV. As noted by Holt (2001), in order to achieve value, consideration has to be given to the idea of 'the life' of the facility and its potential users and stakeholders. Hence, such cases involving multiple stakeholders and more so, multiple users typical of healthcare buildings (*Section 2.1* and *Figure 2.1*), "it is the plurality of perceptions of value that needs to be captured in order for collectively informed decisions to be made" (Barton and Pretorius, 2004:18).

WLV of an asset is said to represent the optimum balance of stakeholders' aspirations, needs and requirements, and whole life costs (Bourke *et al.*, 2005). It is believed to encompass 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 Whole Life Cycle (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). Bourke *et al.* (2005) further posited that WLV encompasses economic, social and environmental aspects associated with acquisition, operation, and decommissioning, and where

appropriate the re-use of an asset or its constituent materials at the end of its useful life.

Jackson-Robbins (1998) observed that client value is the basis upon which contribution to project performance is measured. He observed that by making this value explicit in the project brief and by using this criterion to evaluate the whole life of a project, the construction project can be assured delivering what is needed: hence WLV.

2.3 Conceptualising value issues for healthcare facility projects

Sections 2.1.2 and *2.2.8* demonstrated the importance of correlating the whole life of a built asset to its utility/use-value. Corroborated by some definitions of use-value (for example, Building, 2000; Saxon, 2005), it may be argued 'use-value' is most beneficial value dimension for 'owner-occupier' organisations such as the NHS.

This research project focused on seeking ways to enhance 'value for the end-users'. End-users (synonymous with 'service users') are believed to be those individuals who use the facility on a day-to-day basis, for whose business- and service-need the facility is designed and built. Bertelsen and Emmitt (2005) observed that the time when the building is completed and taken into use is the predominant focus during the life cycle of the building; saying that, at this point each of the main three interest groups (the owner, users and the society) will consent to the same value perspectives of durability, usefulness and beauty. As depicted in Figure 2.2, stakeholder use varies from one group to another, from low to high. In order to inform the present investigation on WLV, the different stakeholders along the 'use' spectrum would need to be consulted in order to gain insight into their WLV issues. With reference to Figure 2.2, it is illustrated that amongst all interest groups, end-users interact most with the finished facility. Consequently, end-users are most susceptible to effects of the building's performance (for example Bordass and Leaman, 1997; Leaman *et*

al., 1997, Nutt, 1988) and are therefore best placed to provide practical information on operational functions and what considerations would enhance long term use-value of a given facility.
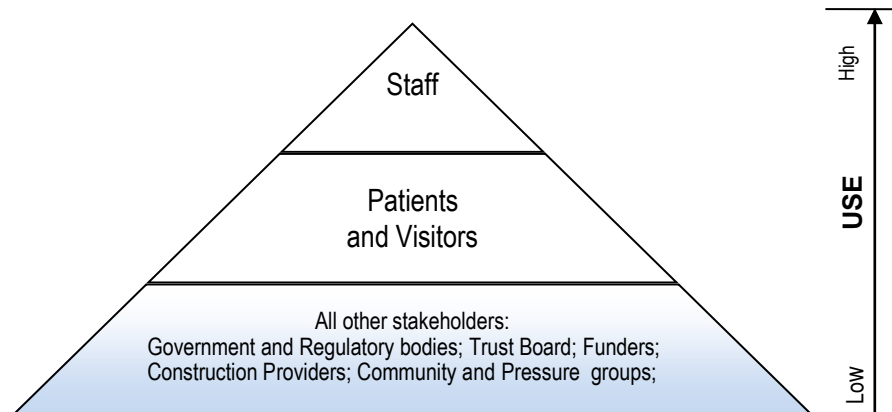
Figure 2.2: Healthcare facility use hierarchy

The present research therefore focused on end-users. Theory centred on users' experience of a built environment is supported by the fact that buildings exist to support the activities of users that it shelters (Vischer, 2008). In addition, users have been recognised as experts in the use of the buildings (Pena and Parshall, 2001). With reference to the foregoing arguments therefore, the question for any user-centred improvement initiative, and in this case in terms of WLV of healthcare facilities, was to find out from staff, clinicians and patients what aspects of the built environment are most valuable to them. Those aspects that seem invaluable from generation to generation and are capable of being embedded within total design life were the focus of the investigation. Such an investigation coupled with evidence-based theory on built healing environments (Malkin, 2003; Lawson, 2005) was envisaged to inform better delivery of WLV of healthcare facilities. Moreover, it was further envisaged that by focusing on end-users' WLV satisfaction results in 'knock-on' positive benefits shared by other stakeholder groups.

2.4   Tools and techniques for enhancing WLV delivery

This section reports on some tools and techniques that could be applied during pre-design to enhance WLV delivery. These include Value Management (VM), Soft Value Management (SVM) and Whole Life Cycle Costing (WLCC).

2.4.1   Value Management and Value Engineering

Originating during World War II North America, Value Management (VM) was devised and disseminated by Miles (1961) as Value Engineering (VE), a way of saving costs at planning stage. It has progressively evolved from being a minimum cost measure (modern day value analysis (VA) and VE), to a fully developed total-value practice aimed at realising best value but not necessarily minimum cost. VM is an organised approach towards defining client's value in meeting his needs and in delivering that value throughout the product delivery process. Green, (1994) defined VM as a structured process of dialogue and debate among a design team and decision-makers during an intense short-term conference.   VM is believed to enable clients and stakeholders define and achieve their needs with minimum use of resources (Building, 2000). The VM method is applicable throughout the entire project's life-cycle.

2.4.1.1   Value Management system

VM is more of a service framework rather than a single method, where various time- and practice-proven' methods are brought together and integrated to form a service system. Kelly and Male (1993) further recognised VM as a service which maximises the functional value of a project by managing its development from concept to completion and commissioning through the audit (examination) of decisions against a value system determined by the client. Similarly, as a structured approach, VM helps in defining what 'value' means to a client when meeting a perceived need, and delivering that value via the design and construction process (Connaughton and Green, 1996)   Usually applied as part of structured problem-solving procedure in the early stages, VM's primary objective is to develop a common understanding of the design problem, identify

explicitly the design objectives and synthesise a group consensus about the comparative merits of alternative courses of action (Green, 1994; Shen and Liu, 2003).

Shen *et al.* (2006) were of the view that VM has been introduced into the construction industry as a useful tool for coping with the many challenges such as budgetary constraints, safety issues; environmental impacts, and after all, VfM. VM is distinguished from other management disciplines by three core factors: a value system; a team-based process; and, the use of function analysis to promote in-depth understanding without detriment to quality (Kelly *et al.*, 2004; Male *et al.,* 2007). However, there seems to be no universally accepted defining characteristics of VM (Green and Liu, 2007) such that even Kelly *et al.*'s (2004) association of functional analysis with VM has been challenged (Spaulding et al., 2005).

Some definitions detract the VM approach's capability to address client needs, instead emphasising cost reduction (for example Best and de Valence, 1999; Building, 2000 and Male *et al.*, 2007). This has led to the misconception of VM as a cost-cutting approach instead of being exploited to generate value at the front-end without sacrificing quality. On the contrary, WLV and parallels depicted in VfM are not about least cost but the most cost-effective option based on balancing economic, social and environmental issues against specific client value systems for a project.

There are a number of VM practices in the construction industry the choice of which depends on a number of factors, namely:
- the type and nature of the project;
- the timing of the VM exercise; and,
- the composition of the design team.

Further details about the VM process including the different phases within a typical 'job plan' and the workshop procedures in which a 'job plan' is applied

are discussed elsewhere in the literature (Kelly and Male, 1993; Seeley, 1997; Kelly *et al.*, 2004).

2.4.1.2   Soft Value Management (SVM)

Proponents of 'soft value management' (Green, 1999; Liu and Leung, 2002) expressed discontent with traditional 'hard' VM/VE practice discussed above. They argued that traditional VM was rooted in hard systems methodology which was consequently only effective in solving 'hard' technical problems. Liu and Leung (2002) observed that such 'hard' problems are always manifested as a pursuit for cost reductions or function-related values. Hard systems emphasise goal-seeking that involves scientific methods such as mathematical models that are effective for solving well-defined problems. As such, the proponents of SVM are of the view that traditional VM/VE approach is typically a 'hard' systems method because it uses techniques such as functional analysis, life cycle costing and value tree diagrams and other mathematical models among others. SVM models have been innovated to take care of the softer intangible issues associated with *'values'* (*Section 2.2.5*) during value alignment. Soft systems methodology (SSM) is an accommodating learning system that integrates conflicting interests among participants (Checkland, 1981; Checkland, 2000). SSM emphasises learning, human content, epistemologies and system models using social problems to solve soft and ill-illustrated problems.

2.4.1.3   Merits of using VM approach

Application of the VM approach has been shown to deliver various benefits including consensus building amongst stakeholders; improved communication; project learning; sense-making; participatory goal setting; achievement of VfM; better quality project definition; increased innovation; and, the elimination of unnecessary cost (Green, 1994; Connaughton and Green, 1996; Barton, 2000; Thiry, 2001; Liu and Leung, 2002).

Parallels can be drawn from what the Institute of Value Management (IVM, 2010) summarised as VM merits. They include, better business decisions by providing decision makers a sound basis for their choice; and, improved

products and services to external customers by clearly understanding, and giving due priority to their real needs. In addition, VM is said to lead to enhanced competitiveness by facilitating technical and organisational innovation; as well as, a common value culture, thus enhancing every member's understanding of the organisation's goals.

2.4.1.4 Demerits of VM approach

One disadvantage is that VM workshops are more productive if conducted by trained facilitators. Therefore interested users of VM methodology need to be trained or hire a trained facilitator lest desired results are not achieved. In addition, the several variations of the VM methodology imply that client organisations may keep using a variant version, hence may not develop continued learning and expertise from VM application. The other disadvantages may arise from the lack of time. Ample time is required at the beginning of the project, in addition to every time VM workshops are held during the lifecycle. Delivery of projects on time is one of the critical project performance criteria, therefore some clients and contractors may find the lengthy (and preferably regular) VM workshops time consuming.

2.4.1.5 Application of VM to WLV delivery

VM boasts basic focus of assessing the relationship between function, cost and worth. It is likely that what makes VM a strong integrating method or system, is its application of functional analysis and other problem solving tools, and a multi-disciplinary team to analyse a project. It is a good system for integrating the project stakeholders: the end user, the client, design/building team. When a VM service is used proactively it has the capacity to align value systems from the outset and to ensure that a project progresses effectively and efficiently and that appropriate decisions are taken in light of the fact that it costs money to retrace footsteps (Male et al., 2007). Used reactively, it usually involves re-aligning value systems that have become distorted for some reason; or it attempts to re-assemble a value chain which is usually an uphill task in cases where the project team has become dysfunctional.

In order to get the most of VM as a tool to assist in attainment of WLV-based project goals and targets, it should be proactively deployed right at the beginning of the project at 'statement of need'. Embedding VM in a broader WLV (economic, social and environmental) framework may facilitate integration of risk, sustainability and other innovation into a facility's design, delivery and use. This ensures that structured methodology is available in the capture and clarification of client needs and values, which if pursued may lead to enhanced value delivery and client satisfaction.

2.4.2 Whole Life Costing

An understanding of the costs of functional areas is required for successful value improving exercises (Phillips, 2006). However, although there is growing awareness of the need to think about costs over the whole life now (Kirkham *et al.*, 2004), the construction industry has until recently predominantly focused on delivering projects at lowest capital cost (Egan, 1998; Smith *et al.*, 1998; Best and de Valance, 1999; Kishk *et al.*, 2003b; Horner *et al.*, 2010).

2.4.2.1   Defining Whole Life Costing (WLC)

The Office of Government Commerce guidance described whole-life costs of a facility as the costs of acquiring (including consultancy, design and construction costs and equipment), the costs of operating and the costs of maintaining it over its whole life until it is disposed off (OGC, 2003). It further expounded that these total ownership costs include internal resources and departmental overheads, where relevant; risk and flexibility allowances as required; refurbishment costs and the costs relating to sustainability and health and safety aspects. WLC was defined as "the systematic consideration of all relevant costs and revenues associated with the ownership of an asset (nCRISP, 2004). Alternatively, Part V of the International Standard, ISO 15686 draft defined whole-life costing as "economic assessment considering all agreed projected and relevant cost flows over a period of analysis expressed in monetary value"; where, the projected costs are those costs required to achieve defined levels of performance, including reliability, safety and availability.

Typical steps in a WLC process are discussed elsewhere in literature (for example, OGC, 2003; Bourke et al., 2005; BS/ISO, 15686-5: 2008).

2.4.2.2 Drivers for WLC

The key drivers to adopting a WLC approach are identified (DTI, 2006) as:

- growing appreciation of whole-life costs and capital to operational ratios (design: construction: building operation);
- Demonstrations where increased capital investment has led to greater operational savings;
- Range of tools that support design decisions based on whole life;
- Companies' recognition that their operation is not solely measured on financial metrics but in a wider sustainability context;
- Carbon focus and energy prices causing infrastructure owners to seek alternatives to standard solutions;
- Evidence that innovative approaches to WLC in PFI projects are resulting in environmental, social and financial benefits.

Government legislation and initiatives for example, the Office of Government Commerce's whole life costing guide (OGC, 2003), 'Strategic Change' (Egan, 2002) and 'Rethinking Construction' task force (Egan, 1998) as well as 'Best Value' (1999) initiative, are driving the shift from a capital cost perspective towards WLC. The British and International Standards, BS ISO 15686 – service life planning of buildings and constructed assets, also provides guidance on WLC in order to enable building design to be tailored to meet clients' long-term needs. BS ISO 15686 provides a standard for issues to consider, at design stage and earlier, within the perspective of a facility's operation, that is, whole life/long-term performance and operating costs (BSI, 2001).

2.4.2.3 Application of WLC to WLV delivery

Adopting WLC costing systems for better investment decisions is seen as vital to setting targets, measuring and achieving long term value in addition to improved cost management. Ferry and Flanagan (1991) noted that using WLC

primarily aims to evaluate and optimise the life cycle costs of a building while satisfying the client and user requirements. The *Constructing Excellence* forum (2004) highlighted the relevance of WLC in comparing alternative investment scenarios when considering individual buildings or estates. This is important to VfM where decision-makers are required to justify and illustrate that the decisions made comply with long-term value.

It is recommended that the focus on whole-life costs start from the business case. According to the 1:5:200 ratio (capital:maintenance:operating) derived from a study by the Royal Academy of Engineering (RAE) (Evans *et al.*, 1998), a building's operating costs constitute the biggest proportion of the total cost of acquisition and use. In another study, it was found that a minimal upfront investment of about two percent (2%) of construction costs typically yields life cycle savings of over ten times the initial investment (Kats *et al.*, 2003). The message depicted in these ratios is that any exercise intended to maximise value of the building should proactively consider whole life costs. Therefore, to satisfy the economic aspect of the WLV definition, WLC is useful way of viewing different cost scenarios and implications through a whole life perspective.

2.5   Conclusion

Identifying client organisation stakeholders and their specific needs provides a starting point for addressing WLV issues. Identifying stakeholders and creating effective avenues for identifying and understanding their needs is achieved through the construction briefing process. The identified client value also comprises the primary yardstick for reviewing and appraising the finished product as a way of measuring satisfaction. However, there is a dearth of extant literature exclusively covering the WLV concept. The study therefore considered WLV from generic value aspects and later interpreted the concepts in relation to the built environment. The subjective nature of value has been recognised. It was noted that the most important aspect of value to the owner-occupier client like healthcare organisations is the utility value delivered to end-

users. Therefore, taking the utility value perspective and relating it to the Bourke *et al*. (2005) multi-aspect definition of WLV implied further exploration of the most important aspects for whole life stakeholder satisfaction, especially for end-users. Moreover, including WLV policy as basis for strategic briefing and optioneering may provide for a proactive way of aligning the main value priorities to be adhered to in proceeding project stages. This may help to ensure that major long-term issues that are likely to impact the whole life of the facility (especially in use) are incorporated right from inception and followed through to use.

The next chapter discusses briefing and optioneering, and seeks to uncover a linkage to WLV issues discussed in this chapter.

Chapter Three: Strategic Briefing and Optioneering

3.0   Chapter Introduction

This chapter reports on construction briefing and optioneering processes, as part of the pre-framework stage of the research project, (*Stage 1, Figure 1.2*). Also discussed are, the construction brief; early views on briefing; as well as emerging trends in briefing. The corporate strategy concept is explored in correlation with strategic briefing. The relatively novel concept of optioneering is approached through decision-making philosophy. Later sections in the chapter conceptually integrate briefing and optioneering with the aim of improving WLV delivery and present the chapter conclusion.

3.1   Construction 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). The *'Accelerating Change'* (Egan, 2002) forum suggested to the construction industry to devise a process that would help 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 judge their satisfaction with project outcomes. As O'Reilly (1987) noted, defining client requirements as well as communicating them to other stakeholders are key to the successful delivery of a project. Hence, in order to ensure that client needs are met and satisfied, it is important that they are understood at the very early stages 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', a 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) observed that construction briefing is "a process leading to the statement of an architectural problem and the requirements to be met in offering a solution". Blyth and Worthington (2010:3) defined it as "the process by which options are reviewed and requirements articulated with the 'brief' as the product of that process". They further distinguished construction briefing 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 because it sets the agenda for the remainder of the facility's life-cycle 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; Barrett and Stanley, 1999; Pena and Parshall, 2001; Blyth and Worthington, 2010). 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 (NHS Estates, 2008); and, ASPECT (DH, 2008a). Despite all this, the briefing process generally remains problematic and inadequate (Kelly *et al.*, 2003; Shen, 2004).

3.1.1 Briefing within standard process protocols

Project requirements may be represented in the form of general checklists and tables prepared by the client organisation and handed to the designer as the 'brief' to develop into a probable solution. However, some client organisations use standard procedures to structure their briefing processes. One such procedure is the RIBA Plan of Work (RIBA, 2007), a sequential process which starts with receiving the client's instructions and culminates into a fixed or 'static' detailed project brief, before detailed design commences. Figure 3.1 shows the briefing process in relation to the overall project process with reference to the RIBA Plan of Work (RIBA, 2007) stages.

RIBA Outline Plan of Work 2007										
Preparation		Design			Pre-construction			Construction		Use
A	B	C	D	E	F	G	H	J	K	L
Appraisal	Design Brief	Concept	Design Developm't	Technical Design	Production Information	Tender Documtn.	Tender Action	Mobilisation	Constructn. to practical completion	Post Practical Completion
Strategic briefing and optioneering		Detailed briefing and design								

Figure 3.1: Briefing within the overall RIBA project process

Other familiar briefing formats include the OGC 'gateway' process (OGC, 2007b), British Property Federation (BPF, 1983) and other less familiar ones well summarised by Hughes (1991). In addition, the Generic Design and Construction Process Protocol (Kagioglou *et al.*, 2000) provides an improved project process format that is based on a whole lifecycle perspective while concurrently integrating project participants under a common framework.

Some experienced client groups and frequent property developers have been known to develop standard briefs, which are presented to designers at the time of their appointment. Examples of such clients are Greycoat Estates in the

1980s, and later Stanhope Securities on the Broadgate development of central London (Green, 1996b), and more recently supermarket giants and chain store retailers.

For healthcare facilities construction, key inputs for the briefing process, the project design requirements, are taken from pre-designed codes and guidance frameworks: the Health Building Note (HBN), Design Briefing Systems (DBS) and Capital Project Code, published as Capricode (NHS Estates, 1992; NHS Estates, 2002). These guides and frameworks contain all the requisite policy information for the Whole Hospital and departments as well as schedules of accommodation including critical room areas.

3.1.1.1 Information capture

During briefing, "the initial set of requirements is seen as a first step in a series of interpretations of the client's needs" (Zeiler *et al.*, 2006: 12). The primary issue being the statement of requirements that should ideally contain everything a designer needs to know about the client's project (Hansen and Vanegas, 2003).

Information is gathered from stakeholders through discussions, examination of initial 'briefs', interviews, questionnaires, workshops, observation of clients (end-users) at work, inspection of existing facilities, and through visits to similar facilities. Another source of information is feedback from Post Project Evaluation/Post Occupancy Evaluation (PPE/POE) as well as from lessons learnt records.

3.1.2 Early views on briefs

Early views on briefing considered it essential for the client to have a clear view of what facilities should achieve. Briefs needed to be clear and to be fixed (static) at a specific point early in the project in order to enable the construction team to undertake its job (Kelly, 1993; Cherry, 1998; Barrett and Stanley, 1999; Pena and Parshall, 2001). The client was thought to be a single entity

(Newcombe, 2003), a single point of contact for project requirements definition and evaluation of the project upon completion.

These earlier views on the brief as a 'static' document have continued to present challenges to the construction delivery process, and, effectiveness of briefing has remained problematic (Shen *et al.*, 2004). This is manifest for example, through the continued lack of satisfaction from the construction clients (Green and Simister, 1999; Egan, 2002; Cheong *et al.*, 2003; Cheng *et al.*, 2006). Lately, it has been recognised that in bigger organisations, there are many relevant voices and different needs. Moreover, most often there is a distinction between ownership and occupation of buildings clouding the identity of the client (Newcombe, 2003). In fact for organisations like the NHS, clients are often multi-faceted in nature, comprising several different interest groups, with different and perhaps conflicting objectives (Green, 1996). Boyd and Chinyio (2006) argue that since projects take extended periods of time, personnel and stakeholders can change thereby challenging the brief in order to have their needs met. Consequently, alternative views and suggestions for improving construction briefing are arising.

3.1.3   Recent views and trends on briefing

Alternative opinions are emerging on how to improve requirements definition, articulation and consequently client satisfaction. Some advocate for proactive ways of engaging stakeholders especially the end-users during the briefing process (for example, Pena and Parshall, 2001). Others are advocating for empowering the client (Barrett and Stanley, 1999) while some others are urging for better teamwork between the client, designers and construction teams (CIB, 1997). Other changes perceive checklists and standard methodology to suffice in bringing about needed improvement in briefing process (BS 7832:1995; Salisbury, 1998; ISO 9699:1994).

Other views promote the dynamic briefing ideology which posits that, like design, briefing is iterative in nature and hence question the assumption that

the client's objectives can remain static over time (for example Luck *et al.*, 2001; Bertelsen and Emmitt, 2005; Prins *et al.,* 2006; Gibb *et al.*, 2007; Habraken, 2008). Some authors believe that briefing should include strategic, client and facilities analyses (Nutt, 1993; Atkin and Flanagan, 1996; Smith *et al.*, 2003; Ryd and Fristedt, 2007). Others promote the application of Value Management methodology, Facilities Management and Risk Management approaches for improving the briefing process (Green, 1996; McGregor and Then, 1999; Kelly *et al.*, 2005; and, Othman *et al.*, 2005).

Other views originate from the manufacturing industry and point to possible improvement in construction briefing process, accruing from applying Quality Functional Deployment (QFD) and the House of Quality (HoQ). QFD is being fronted as a more advanced and reliable methodology to enable capture, synthesis, management and translation of clients/user requirements into quality design features; leading to client satisfaction in the finished product or facility (Kamara *et al.*, 2002; Gray and Al Bizri, 2006).

Research developments and views further proposed the application of automation and IT support tools for the construction briefing process (Hudson *et al.*, 1990; Barrett, 1999; Kamara and Anumba, 2000; Bouchlaghem *et al.*, 2000; Cheong *et al.*, 2003). The authors argued that construction has yet to exploit the potential of IT systems to assist both demand side and supply side parties during briefing.

Some of the above views are of interest to this research. These include, among others, the proactive involvement of all stakeholders (Barrett and Stanley, 1999), and, closer attention to the Facilities Management function (McGregor and Then, 1999; Ryd and Fristedt, 2007). In addition, 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, 2010) is envisaged as a way towards better briefing.

3.1.4   Strategic briefing

The briefing process comprises two stages: 'strategic (initial) briefing' and 'project (detailed) briefing' (CIB, 1997; Kelly, 2002; Kamara *et al.*, 2002; CABE 2002a; RIBA, 2007). Figure 3.2 is a presentation of the key phases, sub-processes and points in the briefing and optioneering process. A project/scheme is a separate, temporary activity from the organisation's core business that aims to make change (Kelly *et al.*, 2005). Since WLV takes a whole life cycle view, the term 'project' implies the entire cycle from 'idea' to 'end of life' of the healthcare facility. Therefore, to avoid ambiguity between 'project' as a full cycle, and the usual definition of project as running from pre-design to practical completion and handover, the three main phases are named with reference to the construction activity to give, 'Pre-Construction', 'Construction' and 'Post-Construction'. The sub-processes from inception, feasibility through to decommission and renewal, are adapted from Bourke *et al.*'s (2005:5) lifecycle view of 'WLV throughout'.

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) suggested 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". With reference to Figure 3.2, the strategic briefing process includes part the inception and the feasibility and appraisal sub-process; and runs between '*statement of need*' and culminates in the formulation of the *strategic brief*.

PRE-CONSTRUCTION		CONSTRUCTION		POST-CONSTRUCTION
INCEPTION	FEASIBILITY & APPRAISALS	PLAN & DESIGN	CONSTRUCT & HANDOVER	▪OPERATE AND MAINTAIN ▪DECOMMISSION AND RENEWAL

Optioneering

Project brief

Idea

Strategic briefing

Strategic Brief

Statement of Need
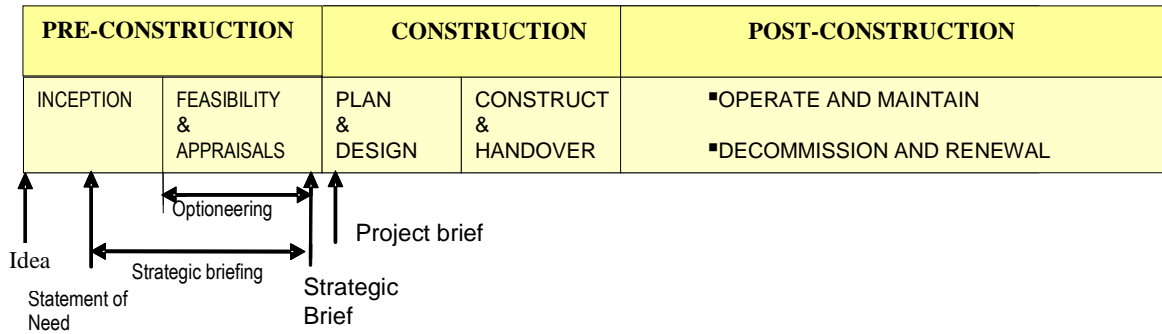
Figure 3.2: Whole life cycle depicting key points in the early stages

3.1.4.1   Strategy

Johnson *et al.* (2008:3) defined 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) were of the view that strategy is the pattern that links the organisation's major goals, policies and actions into a cohesive whole. From these definitions, it is suggested that every undertaking (action) including facility acquisition (design and construction) should have a specific strategy.

3.1.5   Linking strategy and strategic briefing in healthcare facility schemes

It is only healthcare facilities that can attract many patients that will be able to survive. The '*patient choice'* initiative (DH, 2004a) and the '*payment by results'(PbR*) - (money follows patient') scheme (DH, 2003b), 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 an organisation with 'internal' competition from individual facilities. Consequently, in order to improve the services that attract patients and staff, it is increasingly

important 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 already been highlighted (Bordass and Leaman, 1997; McLennan, 2000; Nutt, 2004; McLennan; 2006). Therefore, in order for NHS organisations to survive internal competition, and in order to be able to meet long-term needs of the users (patients and staff), a conscientious strategy for planning healthcare facilities is pertinent. This is the essence of strategic briefing which encompasses decision-making in changing, uncertain, unpredictable and competitive circumstances (Nutt, 2000).

3.1.6 Strategic briefing and WLV

This account is based on the premise that WLV for a facility owner-occupier, in this case NHS healthcare organisations, is tightly knit with the satisfaction delivered to the end-users. Consequently, notwithstanding the myriad beneficial aspects of an efficient and effective briefing process, the most fundamental aspect is the *use value* of the facility. This aspect is the core of this research. Furthermore, strategic briefing offers an opportunity for *total* focus on the rationale of the construction project as well as a requirement to look farther into the future than the present day, when seeking to meet the needs and requirements of stakeholders. Consequently, the strength of a resulting strategic brief lies in its ability to offer a structured way for planning built facilities for both the present and future needs of the end-users, thereby achieving WLV.

3.2   Optioneering

Optioneering is a term that was coined during the construction of the Channel Tunnel Rail Link to signify the process of testing strategic and route alignment options against set criteria and required business standards for the line (Gambrill, 2003). The terms 'options-selection' and 'optioneering' are used synonymously in this thesis. In an organisation, decision making is said to take place when managers facing important issues carry out a decision process to make choices that produce outcomes with consequences (Nutt, 2000; Bhushan and Rai, 2004). Strategic decisions are said to address issues that are important in terms of actions taken, the resources committed, or the precedents set (Mintzberg *et al.*, 1976; Amason and Schweiger, 1997; Bhushan and Rai, 2004). It may be deduced that optioneering (option-selection) is about the key issue of decision-making. Optioneering involves making high level decisions which normally affect the success or failure of the whole ensuing life-cycle of the facility. Optioneering encourages discourse where the design team negotiate the criteria space for a design problem at the outset of collaboration (Holzer and Downing, 2010). Consequently, it encompasses the processes of selecting an optimum solution that best meets the needs and requirements of stakeholders. It is conducted simultaneously with strategic briefing of the construction briefing process (see Figure 3.2); and is therefore is a crucial aspect of the pre-construction phase. Optioneering activities parallel Stage A/B, RIBA Plan of Work (RIBA, 2007).

The early stages of construction projects, and indeed, most other projects, are characterised by the making of critical decisions (Duerk, 1993; Bruce and Cooper, 2000; Agouridas *et al.,* 2006). Smith and Jackson (2000) 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. This is the basis of the optioneering process.

With construction projects, some decision issues identified from literature (for example Nutt, 1993; Woodhead, 2000; Standing, 2001) are presented in Figure

3.3. During early construction decision making, decision makers are faced with competing matters including client (corporate) issues, user (functional) issues, and physical issues. In addition, decision makers must contend with financial, operational and contextual issues. Moreover, Barton and Pretorius (2004) note that most economic decision-making is about the application of limited resources. Therefore, during optioneering, decision makers seek to find the best balance between these issues and in light of wider WLV issues.
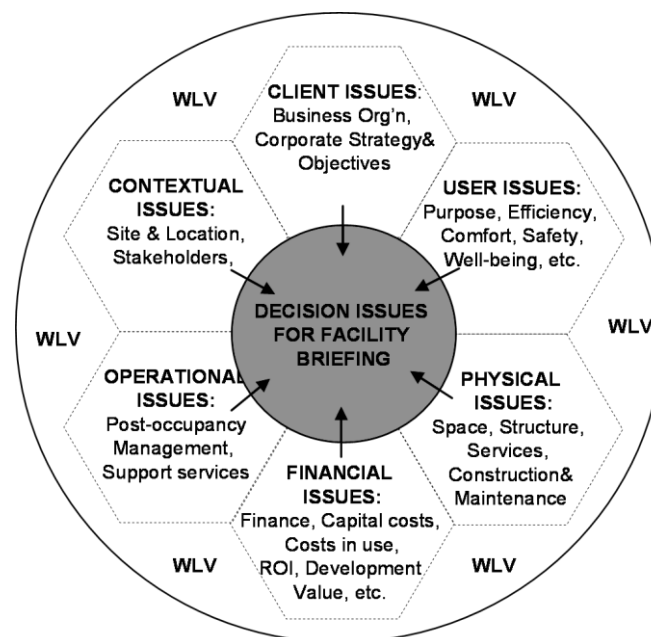
Figure 3.3: Decision issues for facility briefing and optioneering

3.2.1   The quest for better optioneering

Early decisions associated with the pre-construction phase highlight a critical challenge to decision makers. This is especially true with respect to planning, particularly long range (strategic) planning. However, Nutt (1993:29) observed that "the future needs of an organisation, its components divisions and user groups cannot be forecasted with confidence". This is of particular concern for the NHS which is characterised by frequent change (Boyd and Chinyio, 2006; Darzi, 2008 and *Section 1.2*). In addition, public sector organisations such as the NHS are characterised by multiple stakeholders and further by emergent requirements for transparency and public accountability audit trails (Green

45

Book, 2002). For such organisations, the quest to improve decision making structures and methods to support option selection has never been timelier.

Moreover, as highlighted earlier, decisions made during the pre-project stage are amongst the most critical of all project and life cycle decisions. It has been said that 80% of the initial cost of a project is determined at the briefing stage (Brandon, 1978 cited in Tzortzopoulos *et al.*, 2006). In addition, it has been said that, problems in buildings (Smith *et al.,* 2001; Shen *et al.*, 2004); most costly mistakes (Duerk, 1993); a pyramid of decisions regarding setting the scope and characteristics of the project (Kelly*,* 2002), as well as the nature of the final solution and the extent to which it will satisfy the client's objectives (Goodacre *et al.,* 1982) are determined during the briefing pre-project phase particularly during briefing.

Therefore, a need to investigate current decision-making (strategic optioneering) along with the concepts used to arrive at those decisions was identified. In addition, through reviewing literature, current optioneering practices were investigated in order to identify the deficiencies therein.

The following sections involve an in-depth investigation into optioneering as problem solving and decision making.

3.2.2   Problem structuring approaches in decision-making

A problem is a question or an issue of concern that needs to be solved or studied (Smith *et al.*, 1998; Daellenbach and McNickle, 2005). Construction projects are a result of someone or a group of individuals identifying an unsatisfactory state of affairs that may need to be addressed through construction of a new building (Smith *et al.*, 1998). Hence, building design and construction may be handled as part of a problem-solving process which starts with a bid to understand the problematic issues. Understanding the problematic issues is the crux of the construction briefing process of which optioneering is part.

Chinyio (2007) argued that if there is a problem to be solved, problem-solving requires that the major task is the accurate identification of the problem. However, according to Schon (1991:40), "in real world practice, problems do not present themselves to practitioners as givens … They must be constructed from the materials of problematic situations which are puzzling, troubling and uncertain". He further suggested that in order to convert a problematic situation into a problem, one must do a certain kind of work that involves making sense of the situation that initially makes no sense.

Planning and designing complex healthcare buildings presents a typical example of attempting to address a problematic situation. These buildings are required to comply with a myriad regulations while at the same time satisfy the multi-faceted stakeholders. Moreover, in dealing with multiple stakeholders, it has been recognised that their needs and requirements may at times conflict (Green, 1996). In the pre-construction phase, some stakeholder needs and requirements may be known, clear and easy to define at the time of statement of need while some others will be difficult to ascertain at that point. As highlighted, "the reality confronted by decision makers can frequently be constituted by ambiguous tasks, loosely defined structures, dynamic standards, and poor information coupled with few opportunities to collect more of it" (Georgiou, 2008:319).

Therefore, problem structuring approaches in decision-making constitute one of the first major steps involved in solving a problem. They aid successful setting of the problem with regards to the concern at hand, together with the context within which the problem occurs. The approaches may also aid analysing and setting the boundaries because resources are usually limited, hence they may not be able to solve the problem in its entirety. Some problem-structuring approaches are summarised in *Appendix 3.1*. They include, Soft Systems Methodology (SSM) (Checkland, 1981, 2000; Daellenbach and McNickle, 2005; Georgiou, 2008); Strategic Option Development Analysis (SODA) (Eden and Ackermann, 2001); and, Simple Multi Attribute Rating Technique (SMART) methodology (Green, 1992, 1996a). Others are Strategic Choice Approach

(SCA) (Friend and Hickling, 1997; Friend, 2001); Robustness Analysis (Rosenhead, 1980; 1989); and, Strategic Needs Analysis (SNA) (Smith *et al.*, 1998; Smith and Jackson, 2000; Smith *et al.*, 2003).

3.2.3 Optioneering hierarchies: decision framework

Buildings are complex products composed of several elemental parts joined together. Moreover different decisions may usually be made at different times during the pre-project stage. Blyth and Worthington (2010) promoted the notion of keeping options [decision-making] open as long as possible until the "last responsible moment". They argued that often the wrong kinds of decisions are made at the wrong time, detailing and freezing decisions early. In their view, the briefing process would be easier if it were layered and decisions continuously made concerning the site, shell, skin, services, scenery, systems and settings. In addition, a study by Mintzberg *et al.* (1976) concluded that although strategic decisions are complex and dynamic, they take place across three central phases, identification, development and selection.

Similarly, Schwenk (1984) identified strategic decision making activities to comprise goal-formulation, problem-identification, alternatives-generation and evaluation/selection.   Moreover, Bejder (1991) noted that clients become aware with time, realising or discovering some new needs as the project proceeds thereby changing objectives. It may therefore be conceptualised that optioneering takes place at different levels starting from the general and filtering down to the more specific. Decisions are made incrementally as you progress down the hierarchy, and downstream through the lifecycle stages to allow for relevant changes as more information about needs becomes available. This was interpreted to imply that pre-design decision-making could be considered at three basic levels: primary, secondary, tertiary to correspond with increasing levels of detail involved at each level from less to more detailed. Optioneering hierarchies are founded on the above premises and illustrated in Figure 3.4.

3.2.3.1 Primary level decisions

Primary level optioneering involves decisions that directly deliberate on issues pertaining to how to meet the primary gap (need) or problem currently faced. Hence, primary level decision making comprises the problem structuring stage. Arriving at these decisions may necessitate critically analysing:

- drivers of the perceived gap or need;
- current organisational resources;
- current and future opportunities; and,
- range of constraints and barriers – external (fixed/imposed) and internal (negotiable).

The question addressed by primary level optioneering is whether to build or not. Smith *et al.* (1998) suggested that thorough analysis of the problem is necessary because a decision to build is may not necessarily be the solution.

Tools: In order to facilitate primary level decision making, ideational and analytical approaches are required. In addition, mechanisms for reaching decisions (selecting amongst options) need to be in place. Moreover, due to the nature of NHS organisation, the assumption was that decision making is a group effort albeit still high level at this point. Suggested tools include, brainstorming (Osborn, 1957; Diehl & Stroebe, 1987; Mullen, *et al.*, 1991a); Delphi technique (Dalkey, 1969; Vennix and Gubbels, 1992; Turoff, 1970; Linstone and Turroff, 1975; Vidal *et al.*, 2010) and the Nominal Group Technique (Delbecq *et al.*, 1975).

3.2.3.2 Secondary Level decisions

Conversely, secondary level decisions derive from the decision to build; and answer the question of what to build. The decisions involve such issues as whether to build completely new facility, or to extend, refurbish or modify existing (Smith *et al.*, 1998; Smith *et al.*, 2001). These decisions will also involve the option of either incorporating into the built solution adaptability for future use or building with relatively shorter design life that can be cost effectively demolished and materials re-used. The decisions taken at this

secondary level will be based on analysing present facilities (if any) to identify gaps, analysing immediate or short-term need as well as forecasting the future. For healthcare facilities, critical issues to be considered at this level may include stability of organisational and external dynamics as well as trends in demographics, information/communication and medical technology as well as models of care. Issues to be resolved at this level will involve high levels of risks (Woodward, 1995), therefore, robust risk analysis would inform effective decision-making here.
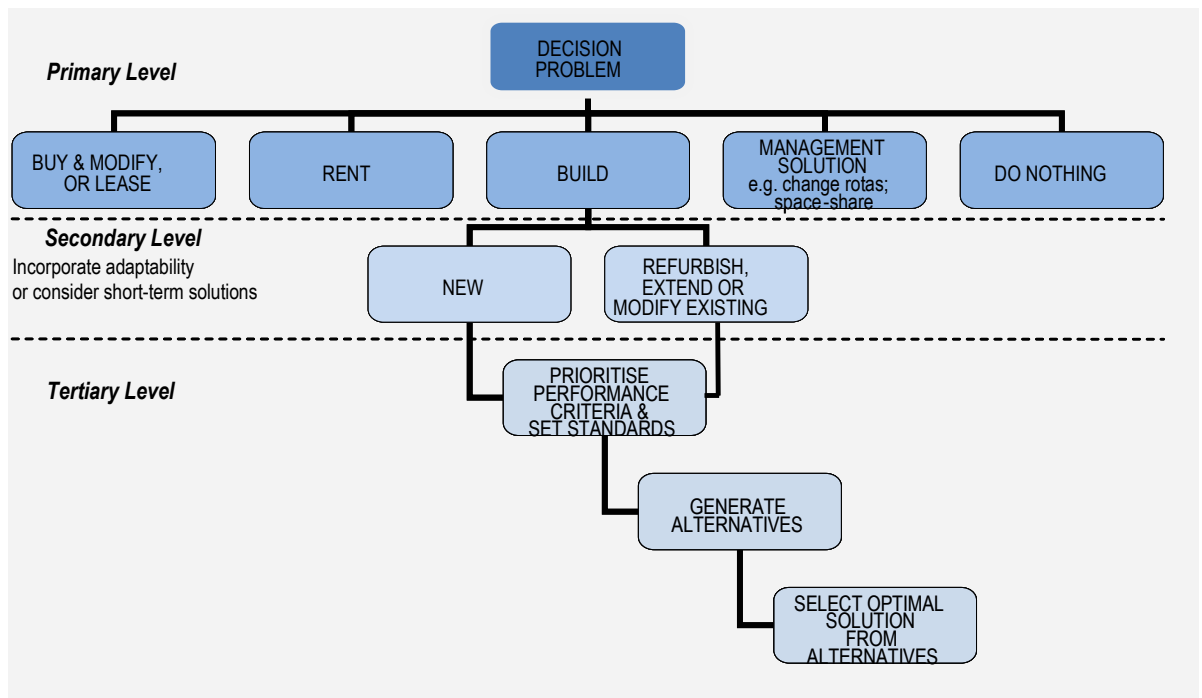
Figure 3.4: Decision Levels in construction

Tools: Brainstorming, Value Management, Delphi Techniques, Real Options (Amram and Kulatilaka, 1999; Kogut and Kulatilaka, 1994, 2001) and Cost Benefits Analysis (Johnson *et al.*, 2008) are suggested tools for this type of decision.

3.2.3.3   Tertiary decisions

Tertiary level decisions happen at three sub-levels. Firstly, they will deal with the issues of prioritising and setting performance criteria and standards expected of the finished facility. Criteria and standards will normally arise from

captured needs and requirements as laid out in the statement of need; corporate strategy and objectives which must adhere to local, national or global regulatory standards. The second level will pertain to generating multiple project options that could meet the expected performance criteria and standards set at the preceding level. The third sub-level will subsequently involve selecting the best option from a the range of possible alternatives

Tools: Suggested tools for this level aim to facilitate ideation at a wider scale than before to provide for large numbers of stakeholders to be involved. In addition, effective means of capturing and managing information, consensus building and transparent option selection are needed. Tools may include brainstorming and Electronic Brainstorming (EBS) (Aiken *et al*., 1996; Dennis and Valacich, 1999; DeRosa *et al.,* 2007) for reaching more stakeholders; NGT; SMART methodology; and, SSM. Other probable tools are VM; ranking and scoring, Multi-Criteria Decision Analysis/Making (MCDA/MCDM) (Dodgson *et al.*, 2000; Wenstop, 2005; Lima and Augenbroe, 2007) and decision trees or Analytical Hierarchy Process (AHP) (Saaty, 1990) for prioritising. Also relevant is Scenario Planning/Analysis (Schoemaker, 1995; Daellenbach and McNickle, 2005; Johnson *et al*., 2008) and Questions Options Criteria (QOC) (McKerlie and Maclean *et al.,* 1993, 1994) which although it was invented to settle design decision making is applicable at this level.

Further details about some option-generation and option-selection methods are presented in *Appendix 3.1.*

The decision levels depicted in this section demonstrate that decisions made at a preceding level become part of the input for the next level down the hierarchy. Moreover, all decision making processes are hinged on effective communication involving all relevant stakeholder and informing them about what needs to been, why it is being done and the output of the process after their participation. This further demonstrates the importance of having structured optioneering mechanisms lest decisions to vital issues are forgotten. Figure 3.5 conceptualises the problem-solving cycle through the life of a facility.

PRE-DESIGN	DESIGN	CONSTRUCTION	USE, MAINTAIN & REFURBISH	DECOMMISSION & RENEWAL
•Understand problem •Ideate how to solve problem •Decide which idea to develop	Solve problem	Deliver solution	•Use •Record & report unforeseen shortcomings in solution/lessons learned	Solution obsolete

FEEDBACK
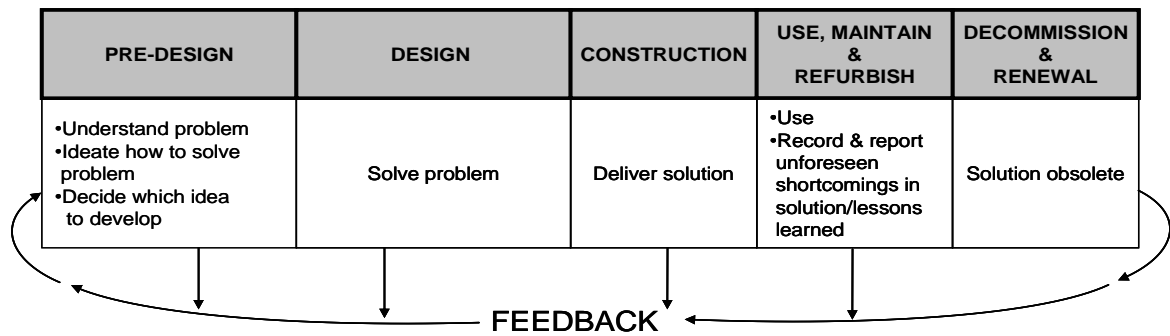
Figure 3.5: Problem solving cycle

3.3   Integration of briefing and optioneering for Whole Life Value

According to Baccarini (1999), success is synonymous with *effectiveness*, that is, the degree of achievement of objectives. Some authors are of the view that the concept of success in construction projects corresponds with *efficiency* and *effectiveness* (Brudney and England, 1982; de Wit, 1988; 1989; Smith *et al.*, 1998; Atkinson, 1999; Crawford and Bryce, 2003). ISO 9000, 9001 and 9004 define *efficiency* as a relationship between results achieved (outputs) and resources used (inputs); and, *effectiveness* as the degree to which a planned effect is achieved. Accordingly, the aim of the proposed improvement framework follows Crawford and Bryce's (2003) dimensions for project *efficiency* and *effectiveness*. In their view, project *efficiency* ("doing the thing right") is concerned with cost and process management (that is, the efficient conversion of inputs to outputs within budget and on schedule) and a wise use of human, financial and natural capital. They view project effectiveness ("doing the right thing") as being concerned with the development of worthiness or appropriateness of the chosen project goal. Therefore, a successful strategic briefing and optioneering process is one that uses the available resources to efficiently convert the main information inputs into an effective strategic brief in order to define satisfactory design for delivering a satisfactory WLV product. Where, satisfaction depicts the level of 'happiness' of people affected by a project (Chan *et al.,* 2002), the stakeholders.

Stage A/B, RIBA Plan of Work (RIBA, 2007) integrates brings together briefing and optioneering activities. In addition, *Figure 3.1* demonstrated the linkage between strategic briefing and optioneering. Arguments for better optioneering and advocates for the importance of the front-end improvement emphasise the significance of the decisions made during that stage of the lifecycle together with their costly impact of bad decisions on the remainder of the lifecycle. *Figure 3.3* highlighted the various decision issues that must be optimised during optioneering to deliver better WLV to stakeholders.

Although all three aspects of WLV (economic, environmental and social) are significant, there is good reason to believe that the social value facet may inarguably be the primary pillar for enhanced value delivery. As the first step, effective strategic briefing and consequently requirements capture involves the delivery team in social processes. By interacting with, identifying, and engaging with the stakeholders, the team builds its understanding of what the 'real' project needs are in order to deliver a satisfactory built facility. Secondly, the social aspect is presumed to support whole life cycle project information dynamics and decision-making; including transparent information exchange for all at pre-project stage (briefing and optioneering), during project delivery, and through to use. Grounded in feedback from the managers and users of the facility, post-construction feedback may be invaluable during re-fits, maintenance and remodelling, as well as in informing future projects. This will be particularly beneficial for continual improvement throughout the projects life-cycle. Therefore, mechanisms and tools that enhance the social aspects of briefing and optioneering are important for improved better WLV.

3.4   Conclusion

Decision-making is quite complex and the rationale we use even in making personal or individual decisions may not be clear and structured to us. As Gregory and Keeney (1994) said, choices that require multiple stakeholders to balance conflicting objectives are among today's most controversial decisions.

Therefore, for NHS organisations that must balance diverse stakeholder needs as discussed in *Section 3.2* and *Figure 3.3*, group problem structuring and problem solving may provide a transparent way of reaching agreeable decisions.

Most of the existing problem-solving methodologies are highly numerical, technical and complex (for example AHP, Saaty, 1990; Game theory, Friedman, 1986; Gibbons, 1992). They mainly involve 'hard' data inputs and outputs and therefore are often difficult to understand by 'layman' thereby limiting active stakeholder participation and group consensus. Preferable optioneering approaches would aim to promote "maximum user involvement and understanding whilst minimising mathematical complexity in a structured thinking and problem-solving framework" (Smith *et al.,* 1998); for example, SMART (Green, 1996) and SNA (Smith and Jackson, 2000) methodology.

The following chapter takes a closer look at briefing, optioneering and WLV in healthcare construction schemes. Findings from this chapter are to be used later to draw a comparison of general practice and healthcare practices.

Chapter Four: Whole Life Value, briefing and optioneering in NHS building construction projects

4.0   Chapter Introduction

This chapter is literature-based and gives an outlook on the concepts of briefing, optioneering and WLV. It is based on Government publications accessed from the Department of Health website; HM's Treasury and NHS information portal as will be indicated where applicable. The chapter integrates the enormous yet convoluted information on the healthcare estate acquisition process. Briefing and optioneering for the NHS schemes is closely linked to the procurement route to be followed and legislation requirements for public capital assets. This chapter takes an in-depth investigation into briefing, optioneering and WLV in the NHS.

4.1 NHS agendas for healthcare built environments

NHS Trusts are now operating in a more consumer-driven healthcare market. Agendas for healthcare built environments are specifically being developed around *consumerism, design quality* and *sustainability* (PCC, 2008) agendas described below.

Originally a premise of the private sector, *consumerism* may be defined as the private sector's desire for competitiveness in the market (Ridley and Jones, 2002). In the NHS, the *consumerism* agenda focuses on improving the patient experience by addressing their needs, emphasising on the individual rather than patients in general (PCC, 2008). The agenda further suggests that patients be viewed as customers and their needs put before the needs of healthcare providers through ensuring their comfort and convenience in both the organisation of care and in the quality of the built environment. Therefore, the implication for its facilities now, more than ever before, is such that they are expected to be more attractive (aesthetic quality) and more patient-focused

(DH, 2008). Some of the other key parameters expected of NHS Trust facilities now are:

- timely delivery;
- within budget;
- offering value for money throughout their life (cost-effective to run over their operational life and lead to better quality services);
- high quality, well functioning premises that meet patients needs for privacy and dignity;
- fit for purpose; and,
- representing the opinions of those using them.

The *design quality* agenda is related to the increasing awareness of the linkage between design of the physical environment and patient recovery (Lawson and Phiri, 2003; Carr, 2011). In addition, design quality also seeks to link physical environments to work performance and job satisfaction of clinical staff (Ulrich *et al.*, 2000). These linkages are shown in the '*planning and design guidance for primary and social care premises* (PCC, 2008). This agenda therefore raises awareness about the quality of design in healthcare buildings. As part of this agenda, the Government has introduced a requirement that each PCT appoint a 'design champion' in order to improve the quality of healthcare buildings for patients and staff. Furthermore, the mandatory requirement that AEDET Evolution (Achieving Excellence in Design Evaluation Toolkit) be applied for every scheme (NHS Estates, 2008) ensures quality of new developments by covering three aspects of functionality, impact and build standard.

The *sustainability* agenda means that a sustainable NHS considers environmental, social and economic implications in order to lead to: improved working environments; cost savings; better service to the community, reduced environmental impacts as well as a holistic view of all activities (PCC, 2008). This *sustainability* agenda is closely related with the WLV principles (Bourke *et al.*, 2005; Mootanah, 2005) discussed in *Chapter 2*.

Briefing and optioneering in the NHS is closely linked to the procurement route to be followed and legislation requirements for public capital assets. The account given below is mainly based on Government publications accessed from the Department of Health website; HM's Treasury and NHS information portal (for example NHS Estates, 2002) as will be indicated where applicable. Other inputs for the briefing process, that is, the project design requirements, are taken from pre-designed codes and guiding frameworks, namely, the Health Building Notes (HBN), Design Briefing Systems (DBS), Activity Data Base (ADB) and Capital Project Code, published as Capricode (NHS Estates, 1992; NHS Estates, 2002). These guides and frameworks contain all the requisite policy information for the Whole Hospital and departments as well as schedules of accommodation including critical room areas.

4.2   Planning Primary and Social care Premises in the NHS

4.2.1 The process

The process discussed in this section is mainly based on planning and design guidance provided by the Department of Health for Primary and Social care premises (PCC, 2008). Figure 4.1 is a summary of the main steps in the process; they are developed from the Best Client Manual (NHS Estates, 2002) and the Department of Health Primary Care Contracting guidelines (PCC, 2008).

Through the 7 steps process, the guidance requires Trusts to:
1. *Understand the national policy framework;*
    i)   the health policy
    ii) built environment policy
2. *Prepare strategic service development plan (SSDP)*
    i)   Reviewing current position (review existing services and premises)
    ii) Document service vision – this includes processes involved in deciding the range of services to be delivered in the future.

iii) Prepare and/or update your SSDP documentation. An SSDP can assist a PCT in establishing the optimum service delivery pattern in a particular locality.

3. Prepare procurement plan

A procurement plan can now be prepared building from the documented strategic context and service vision from the preceding steps.

A. Funding and procurement issues;

B. Prepare your business planning documentation. The documentation covered in this section is that which is required in order to secure funding for an individual scheme. It includes preparing a feasibility study; SOC; Business Case; approval for scheme; and, lease documentation.

C. Site related issues

4. Develop Project brief

From earlier stages, national and local strategic issues will have been considered by now; the need for primary and social care premises will have been identified; and, site and funding issues will have been investigated, to establish if such a development is feasible.

Issues to consider include, Project Management, strategic design issues, project briefing documents.

a) Project Management issues

Moving the project from feasibility stage to detailed project briefing involves a considerable change in the scope of information to be gathered and decisions to be made. For this activity, more individuals and organisations are needed to provide specialist knowledge and ensure support for the proposals from the outset. Also needed are a clear information-gathering framework and a clear decision-making framework. The decision making framework involves agreeing scope of the project; agreeing a methodology with stakeholders (the full range of potential stakeholders); and, identifying of a spokesperson/service lead for each of the services to be included in the facility. This stage further involves gathering all information required to

underpin decision-making. This can be considered under three headings, services to be delivered, possible sites considered and funding sources.

Parties/Responsibility

Information gathering - service leads, or,

Information gathering and decision-making performed by - one or more individuals or teams depending on the scale and complexity of the project.

Step 5: Set a project programme

Set from the outset. Initially broad-brush target bar chart but develops to include all aspects of the project, timescales for project procurement, commissioning and occupation. Programme should cover the five main stages of the process: national policy framework; local strategic plan; procurement plan project proposals; and detailed design considerations.

Parties/Responsibility

Project manager – for keeping the programme up to date and identifying critical issues that could affect project delivery

Project Team

Project Board

6. Prepare project briefing documents

Project briefing documents can be used in two ways depending on procurement and contract routes to be followed:

- either, to further develop the detailed design brief,
- or, in a tender situation to bring on board designers.

Information needed to be documented to produce a clear set of briefing documents includes: the functional content schedule; updated operational briefing information and information about key 'design-drivers' and organisational flows for the new premises. The 'patient experience' is one of the most important of the 'design-drivers' and it describes how the building is set out from the users' perspective. In addition, essential relationships between rooms and services (space adjacency) are important for a clear brief as well as

a strategy for accommodating future change and growth; and, what organisational tensions exist and how they can be accommodated. A list of design standards and principles that are to be followed as well as room data sheets for each space are also important contents for a project brief.

7. Establish detailed design brief

The final stage involved establishing a detailed design brief. However, this stage is beyond the scope of the present research focus.

The next section describes the different procurement routes through which healthcare facilities are acquired.

UNDERSTAND THE NATIONAL POLICY FRAMEWORK → **PREPARE STRATEGIC SERVICE DEVELOPMENT PLAN (SSDP)** → **PREPARE PROCUREMENT PLAN** → **DEVELOP PROJECT BRIEF; PROJECT PROGRAMME AND PROJECT BRIEFING DOCS.** → **ESTABLISH DETAILED DESIGN BRIEF** →

Health Policy	Review current position i.e. services and premises	Funding & Procurement issues e.g. sources of funding, initial financial model	**1. Consider Project Management issues** a) establish DM framework b) identification of key spokesperson (svc lead) c) identification of full range of potential stakeholders d) Gather information e) Set a project programme	Internal spaces
Built Environment Policy	Document service vision	Prepare business planning documentation i.e. Feasibility study, SOC, Business case		External spaces
	Prepare and/or update SSDP documentation			Engineering, IM&T and communication services

Prepare public service comparator,

Assumption: Trusts have received planning permission, have completed output spec., design, construction requirements for PFI Schemes

2. Strategic design issues
a). Review DM at key stages
b). Obtain formal stakeholder support to proceed with briefing and design
c). Check viability with local authority planners and statutory authorities
d) Check legal issues
e) Check affordability and best value

Get approval for the scheme

Prepare lease documentation

Site related issues*

3. Prepare project briefing documents
a). Functional content schedule
b). Collate and update operational briefing info.
c). Identify Key 'design drivers'
d).Identify essential relationships between rooms and services
e). Establish how future change can be accommodated
f). Identify organisational tensions and how to resolve them

Figure 4.1: Process for planning Primary and Social Care premises in the NHS

* Site related issues

- availability of site
- update financial projections
- initial concept designs
- site-specific outline costings
- secure the site
- Planning application
- produce planning application
- produce a detailed design
- confirm sources of funding
- construct premises

4.3 Procuring healthcare facilities in the NHS

4.3.1 ProCure21

Healthcare facilities are currently procured following ProCure21 guidance. ProCure21 is a procurement method for publicly funded NHS Capital Schemes (NHS, 2008). It was set up for the Department of Health (DH) and the NHS as a direct response to 'Achieving Excellence' (Egan, 1998) recommendations (DH, 2000a). Alongside the Private Finance Initiative (PFI) (DH, 2005) and Local Investment Finance Trust (LIFT) (DH, 2007) it is being used to deliver healthcare facilities such as community hospitals, primary care centres and acute services. Originally mandated to be the procurement method used until September 2008, it was extended a further two years ending September 2010.

4.3.1.1 Description

ProCure21 Programme is said to be a fast procurement route, delivering projects on time and budget unlike traditional procurement of Treasury funded NHS capital schemes (NAO, 2008). It offers a partnering method of construction where an NHS Trust can select a Principal Supply Chain Partner (PSCP) without having to go through the Official Journal of the European Communities (OJEC) tender process. The services offered by the PSCP are helping the Trust: plan; design; approve; and, construct their scheme.

4.3.1.2 Advantages

Some of the advantages offered by ProCure21 are, rapid mobilisation of projects with supply-chains that have excellent experience with NHS; joint incentives; long-term relationships. Furthermore, it is said to offer complete support from the department of Health while at the same time, NHS Trusts experience more certainty of time, cost and quality at no extra charge. For example, the selection process and rapid mobilisation has the potential to bring project delivery forward by at least 6 months (NHS, 2008). Conversely, its open-book accounting system allows for the costs to be constantly monitored thereby aiding cost control.

The method also offers Trusts the capability for early engagement of PSCPs and their supply-chains who include clinical planners, healthcare architects and key stakeholders. Some of the advantages of early engagement on schemes are said to be, bringing on timely advice on feasibility and affordability; innovative solutions to the design and delivery; and, increased supply-chains' knowledge of the scheme, the trust and their key drivers. The method is said to also encourage an open working relationship and problem-solving attitude.

4.3.1.3 Characteristics

One principal characteristic of the ProCure21 route is that projects are procured in line with best practice public sector procurement guidelines. Projects should also support whole-life-costing as well as seek to ensure that buildings represent value for money throughout their life. Furthermore, the projects embody the principles and standards set out by the Treasury, DTI and OGC. The use of Achieving Excellence in Design Evaluation Toolkit (AEDET Evolution) is mandatory on every scheme (NHS Estates, 2008).

Conversely, ProCure21 is based upon performance review, lessons and continuous improvement regularly monitored (MOT'd) through a range of Key Performance Indicators that PCSPs are required to report their performance against.

4.3.1.4 Key players

The following key participants are engaged on a typical ProCure21 scheme:

Project Director;

In-house NHS Trust experts;

Implementation Advisors from DH;

Principal Supply Chain Partner (PSCP);

Supply-chains; and,

Key stakeholders.

4.3.1.5   Challenges

ProCure21 requires a pro-active client as well as an experienced Project Director. (However, in 2007, 71% of NHS Project Directors MOT'd were on their first ProCure21 Scheme (NAO, 2008)). Furthermore, demands on the NHS Trusts are high and ProCure21 has been acknowledged to pose difficulty for some Trusts with little or no construction experience.

The early stages of the scheme are said to be the most difficult to manage (NAO, 2008). The challenges for the Trusts are:

- arrange funding;
- submit Strategic Outline Cases (SOC) or Outline Business Cases (OBC);
- Select a PSCP;
- Organise clinical requirements; and,
- Develop the design.

Furthermore, the National Audit Office requires that departments procure on the basis of Value for Money (NAO, 2004). Although it has been noted that, "in practice, it is hard to design and procure on the wider basis of WLV" (NAO, 2008). In the same report, the National Audit Office (2008) further highlights barriers to this challenge as: lack of clarity and understanding of WLV; absence of suitable tools from design for understanding and evaluating the inter-relationships between cost, time, quality, the wider social, environmental and economic impacts.

4.3.2. Public Private Partnerships (PPP): Private Finance Initiative in the NHS

4.3.2.1   Introduction

Private Finance Initiative (PFI) is a type of Public Private Partnerships (PPP) in which project financing mainly rests with the private sector (Akintola *et al.*, 2003). In the NHS, PFI is believed to be a key policy for improving the quality and cost-effectiveness of public services (NHS Estates, 1999). This is achieved through exploiting the full range of private sector management, commercial and

creative skills in providing public services and facilities. However, PFI is not considered good value for money for schemes below £25 Million because of the high upfront costs and advisor fees involved (PCC, 2008).

4.3.2.2 How PFI Schemes work in the NHS

PFI schemes are based on formulating partnerships between the public and private sectors. For the health sector, the NHS is responsible for providing high quality clinical care to patients while the private sector, through PFI, provides the capital investment needed for facilities (NHS Executive, 1999).

Typically, major PFI schemes take the form of DBFO (design, build, finance and operate). For large schemes, the PFI partner is usually a consortium comprising a construction company and a facilities management provider amongst others. NHS Executive (1999) reports the main responsibilities for the PFI partner as:

- designing the facilities (based on the requirements specified by the NHS);
- building the facilities (to time and at a fixed cost);
- financing the capital cost (with the return to be recovered through continuing to make the facilities available and meeting the NHS' s requirements);
- operating the facilities (providing facilities management and other support services).

The NHS defines its needs in terms of "outputs" (the nature and level of service required) and invites private sector bidders to present their solutions to meet these service needs. On agreeing contract terms between an NHS Trust and the PFI partner, the private sector partner obtains funds for the project, constructs the hospital and provides services as specified in the contract agreement. In principle, no payments are made by the NHS Trust until services are delivered as per the agreed standard.

4.3.2.3 Fundamental requirements for a PFI scheme

The first requirement for any PFI scheme is to demonstrate value for money for public sector expenditure (NAO, 2004). The Office of Government Commerce (2003) delineates value for money decisions to comprise three major issues: whether to proceed with the project; whether to proceed using PFI; and, which private sector partner to select.

4.3.2.4 PFI procurements in the NHS

The Capital Investment Manual (CIM) for the NHS (CIM, 1994) sets out the capital procurement process into four stages:

a. Establish the strategic context and make the case for change. The need for change is identified with the aid of a Health Improvement Programme (HImP)

b. Identify the preferred option and prepare an Outline Business Case;

c. Assess and plan the preferred option in detail, and prepare a Full Business case;

d. Manage the project through implementation and evaluation and ensure that the outputs are delivered.

In line with the above CIM process, the NHS PFI process is as follows:

i. Establish the strategic context, assess the options and, for major schemes, make the case for change in a SOC and get approval;

ii. Identify and develop a preferred option through an investment appraisal, make the case in an OBC, and get approval;

iii. Prepare for procurement by turning the approved option into a detailed specification of outputs, outcomes and desired allocation of risks;

iv. Advertise the project in the OJEC, identify potential providers and the best privately financed solution;

v. Select a preferred bidder with whom negotiations can be completed, involving stakeholders (e.g. staff and trade unions) in the assessment of proposals;

vi. Complete the definitive investment appraisal and Full Business Case to obtain approval;

vii. Finalise, award and implement the contract;

viii.   Evaluate and monitor the project.

4.3.1.5   Task/Gaps

The issues manifested by the challenges discussed above can be partly alleviated by attempting to understand WLV from a strategic briefing and optioneering perspective. By tackling strategic briefing and optioneering, the core emphasis for our research sought to provide a structure through which NHS Trusts could effectively speed up the organisation of SOC/OBC. The framework designed as a direct output from this research aimed to assist Trusts in effectively and efficiently organising their clinical requirements, improve decision-making when making choice and enhance WLV, rooted in the pre-design phase.

4.4   Optioneering in NHS

4.4.1 Introduction

Capital asset decisions are based on HM Treasury's Green Book guidelines (Green Book, 2002). This section presents an overview into the process of appraisal and evaluation as laid out in the Green Book.

The Green Book describes how economic, financial, social and environmental assessments should be combined. It is designed to promote efficient development and resource allocation in the public sector. It informs decision-making, and aligns departmental and agency activities with government priorities and public expectations. The book advises that all programmes (group of related projects) and projects be subjected to comprehensive but proportionate assessment so as to promote public interest. Assessment is based on inquiring if there are better ways to achieve an objective; and, if there are better uses for the resources, before adopting a policy, programme or project. It promotes making decisions that take account of wider social costs and benefits, and the proper use of public resources.

4.4.2 The appraisal and evaluation process

The appraisal process takes place at the start (Stage A/B, RIBA Plan of Work, 2007) analysing activities to support a government decision which would result in measurable benefits and/or costs to the public. Conversely, evaluation takes place at the 'finish' (stage L, RIBA Plan of Work, op cit.). It takes a retrospective analysis of the activity at completion, conclusion or revision.

The Green Book considers appraisal and evaluation as stages of a broad policy cycle comprising, Rationale, Objectives, Appraisal; Monitoring; Evaluation; and, Feedback (as illustrated in Figure 4.2).
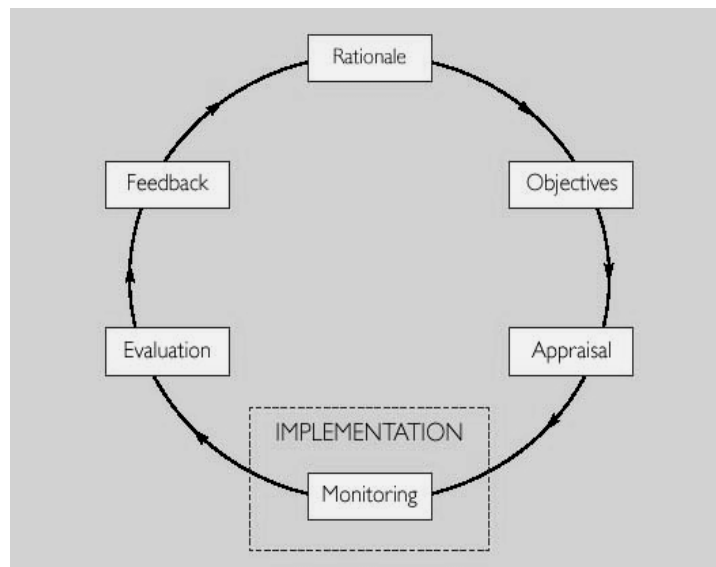
Figure 4.2: The ROAMEF cycle
(source: Green Book, 2002)

4.4.2.1   The Appraisal process

Appraisals should provide an assessment of whether a proposal is worthwhile. They should also clearly communicate conclusions and recommendations. The essential technique used in appraisal is option appraisal. It involves validating government intervention; setting objectives; creating and reviewing options; and, analysing their costs and benefits. The use of cost-benefit analysis (Green Book, 2002; Johnson *et al.,* 2008) is central to option appraisal. The appraisal process is characterised by several iterations before implementation of a

proposal. As options are developed, it will be necessary to review more than once the impact of risks, uncertainties and inherent biases.

The process involves the following steps:

a. Justifying action – to ensure that there is a clearly identified need; and, to ensure that any proposed intervention is likely to be worth the cost;

b. Setting objectives – setting out clearly the desired outcomes and objectives of an intervention in order to identify the full range of options that may be available to meet them;

c. Appraising options – involves initially creating and review a wide range of options; short listing them for manageability, always including a 'do minimum' option (Base Case) in the shortlist as a check. The appraisal process may involve:

    i. identifying and valuing the costs of each option;

    ii. identifying and valuing the benefits of each option;

    iii. if necessary, adjusting the valued cost and benefits for: distributional impacts and relative price movements;

    iv. adjusting for the timing of the incidence of costs and benefits by discounting them, in order to obtain their present values;

    v. if needed, adjusting for material differences in tax between options;

    vi. adjusting for risk and optimism bias;

    vii. consider unvalued impacts (both costs and benefits), using weighting and scoring techniques (e.g. Mills et al., 2009);

d. Developing and implementing a solution – decision criteria and judgement are used to select the best option(s) which are refined into a solution. Issues that may impact the successful implementation of proposals are identified in this stage;

e. Evaluation – uses historic (actual and estimated) rather forecast data to ensure that lessons are widely learned, communicated and applied when assessing new proposals.

In addition, the OGC Gateway Review (first and second gateway) for programmes and projects (OGC, 2007b); the Regulatory Impact Assessment;

and, the Centre for Management and Policy Studies (CMPS) Policy Hub (PH, 2008) are relevant frameworks applicable to the appraisal and evaluation process.

Appendix 3.1 summarised tools and techniques that may be applicable to enhance briefing, optioneering and WLV. Some well known NHS briefing tools such as ADB, HTM and HBN are omitted as they apply to later stages of the briefing process.

4.5   Conclusion

The NHS defines its needs in terms of "outputs" (the nature and level of service required). The current agendas for briefing new facilities show that patient focus is now central to healthcare service delivery. Briefing in the NHS is closely linked to the procurement process. Although there are varied ways for procuring a service, one thing in common is the requirement to meet strategic service needs. Briefing is hinged on the business case and procedural guidance provided by the NHS is set around delivering a business case. In addition, it has been seen that the early stages of the scheme are difficult to manage and preparing the requisite business cases is often problematic. It can be noted that, procedural guidance provided by the DH/NHS is strong on the guiding to deliver 'outcomes' but weak on the details, for example, on the end-user stakeholders and how to proactively involve them in the scheme definition process.

Furthermore, it has been seen that from the available guidance, the WLV concept is less explicit than briefing and decision making through the Green Book guidance. It was seen that there is lack of clarity and understanding of WLV; absence of suitable tools for understanding and evaluating the inter-relationships between cost, time, quality, the wider social, environmental and economic impacts before design. However, it may be said that WLV principles are implicitly enshrined within the new DH/NHS agendas for healthcare built

environments as well as in requirements to demonstrate VfM procurement of schemes. The decision making framework provided by the Green Book is extensive and provides for relevant issues required in the appraisal and evaluation of schemes. However, further investigation is needed to establish whether or how the Green Book guidance is applied by NHS practitioners. The results of the investigation may help to show to what extent WLV is pursued in practice. It would also be insightful to discover how these numerous issues are balanced in practice and if any additional tools are employed other than those recommended by the book. Furthermore, the Green Book makes no reference to the parties involved in the appraisal and evaluation process, hence a further point to investigate.

Chapter Five: Research Methodology

5.0   Chapter Introduction

This chapter covers the philosophies behind systematic research investigation. The chapter also discusses some of the different research philosophies, paradigms, techniques and data collection methods. Finally, the chapter describes the research strategy and methodology for the present research project.

5.1   Research Philosophies

Research philosophy relates to the development of knowledge and the nature of that knowledge (Saunders *et al.*, 2007). The authors argue that the research philosophy adopted contains important assumptions about the way the researcher views the world. These assumptions will underpin the research strategy and the methods chosen to support this strategy.

Three major ways of thinking about research philosophy are *epistemology, axiology* and ontology.

5.1.1 Epistemology

Epistemology is the study of the criteria used for distinguishing between reliable and unreliable knowledge (Johnson and Duberley, 2000). It is also said to constitute acceptable knowledge in a particular field of study (Saunders *et al.,* 2007). Epistemology covers the principles of positivism, realism and interpretivism.

5.1.2 Axiology

Saunders *et al.* (2007) defined *axiology* as an epistemology that studies judgements about values in the process of social enquiry. They further cited Heron (1996) who posited that our values are the guiding principles for all human action arguing that one's choice of philosophical approach is a reflection of their values as is the choice of data collection techniques.

5.1.3 Ontology

Ontology relates to the nature of reality and is concerned with aspects of objectivism, subjectivism and pragmatism. Objectivism represents the situation that social entities exist in reality external to social actors (Saunders *et al.*, 2007), while subjectivism advocates for the necessity to study the details of the situation in order to understand the reality or perhaps the reality behind them (Remenyi *et al.,* 1998). Pragmatism advocates that the most important determinant of the research philosophy adopted is the research question, further arguing that 'one approach may be 'better' than the other in answering particular questions' (Saunders *et al.*, 2007:110).

5.2   Philosophical worldviews/paradigms

Understanding the influence that competing worldviews have on the way in which research is carried out is essential to understanding the contribution their research makes to knowledge (Dainty, 2008). The terms worldview/paradigm are used in reference to a theoretical framework which includes a system by which people view events (Fellows and Liu, 2003). In terms of research, a philosophical worldview is a general orientation about the world and the nature of research that a researcher holds. The types of beliefs held by individual researchers will often lead to embracing a qualitative, quantitative, or mixed methods approach in their research. There are several worldview typologies but four are discussed: post-positivism, constructivism, advocacy/participatory and

pragmatism as presented in Table 5.1. The table is a summary of major characteristics associated with these four worldviews.

5.2.1 Positivist and post-positivist worldview

This worldview holds a deterministic philosophy, that causes perhaps determine effects or outcomes (Creswell, 2009). Therefore, the problems studied by post-positivists reflect the need to identify and assess the causes that influence the outcomes, such as exemplified in experiments. This philosophy is often associated with scientific research which is usually based on first formulating a theory or hypothesis which must be proved or refuted at the end of the study.

Table 5.1: Four research worldviews
(source: Creswell, 2009:6)

Four Worldviews	
Post-positivism	**Constructivism**
• **Determination** • **Reductionism** • **Empirical observation and measurement** • **Theory verification**	• **Understanding** • **Multiple participant meanings** • **Social and historical construction** • **Theory generation**
Advocacy/Participatory	**Pragmatism**
• **Political** • **Empowerment Issue-oriented** • **Collaborative** • **Change-oriented**	• **Consequences of actions** • **Problem-centred** • **Pluralistic** • **Real world practice oriented**

5.2.2 Social constructivist worldview

Social constructivism often combined with interpretivism (Lincoln and Guba, 1985; Saunders *et al.*, 2007) holds that individuals seek understanding of the world in which they live and work. Consequently, individuals develop subjective meanings of their experiences – meanings directed towards certain objects or

things (Crotty, 1998; Creswell, 2009). "The meanings are varied and multiple, leading the researcher to look for the complexity of views rather than narrowing meanings into a few categories or ideas. The goal of the research is to rely as much as possible on the participants' views of the situation being studied. The question becomes broad and general so that the participants can construct the meaning of a situation, typically forged in discussions or interactions with other persons. The more open-ended the questioning, the better, as the researcher listens carefully to what people do or say in their life settings (Creswell, 2009:8). Rather than starting with a theory (as in positivism), inquirers generate or inductively develop a theory of meaning.

5.2.3   Advocacy and Participatory worldview

This philosophical position was introduced by individuals who felt that the post-positivist assumptions imposed structural laws and theories that did not fit marginalised individuals in a given society or issues of social justice that needed to be addressed (Heron and Reason, 1997; Neuman, 2007; Creswell, 2009). This worldview suggests that research inquiry needs to be intertwined with politics and a political agenda. Therefore, the research contains an action agenda for reform that may affect participants, the institutions in which individuals work or live, and the researcher's life.

5.2.4   The pragmatic worldview

There are many forms of pragmatism, but for many, this worldview arises out of actions, situations, and consequences rather than antecedent conditions prevalent in post-positivism (Tashakkori and Teddlie, 2003; Creswell, 2009).

5.3   Management Research

Easterby *et al.* (2001) suggested that there are two main approaches to management research, through a positivism paradigm and an interpretivist

paradigm. In taking a positivist stance, a researcher is working with an observable social reality the end product of which can be law-like generalisations similar to those produced by the physical or natural scientists (Remenyi *et al.* 1998; Fellows and Liu, 2003). It is also believed that a positivist researcher is likely to employ a highly structured methodology in order to enable replication (Gill and Johnson, 2002).

On the contrary, an interpretivist paradigm advocates for a necessity for the researcher to understand differences between humans in their role as social actors (Saunders *et al.*, 2007). Therefore truth and reality are social constructs, and so researchers should endeavour to determine truth and reality from the participants' collective perspective – to see things through their eyes (Crotty, 1998; Fellows and Liu, 2003; Creswell, 2009).

5.4   Research Techniques and procedures

Strauss and Corbin (1990) identified three main techniques or procedures of undertaking research, that is, Qualitative, Quantitative and Grounded theory.

5.4.1 Qualitative Research

Qualitative research is a means for exploring and understanding the meaning individuals or groups attribute to a social or human problem (Creswell, 2009). The aim of a qualitative research study is to understand a particular social situation, group, role, event or interaction (Silverman, 1985). Data is reported in words or pictures rather than in numbers (Merriam, 1988). Although some of the results may be quantified, for example background information, the bulk of the analysis is interpretative (Strauss and Corbin, 1990). Exploration of the subject is undertaken without prior formulations, the object of which is to gain understanding and collect information and all data such that theories will emerge (Fellows and Liu, 2003; Creswell, 2009). This kind of research yields descriptive data in form of peoples' own words and behaviour. It explores

behaviour in their natural settings and uses multi-methods to interpret, understand, explain and bring meaning to them. Data from these methods is often considered as subjective. Morse (1991:120) suggested a number of characteristics of a qualitative research problem to be solved when:

a) a concept is 'immature' due to inconspicuous lack of theory and previous research;

b) available theory may be inaccurate, inappropriate or biased;

c) a need to explore and describe the phenomenon and to develop theory; and,

d) the nature of the phenomenon may not be suited to quantitative measures.

Within qualitative research, there exists a diversity of methods (for example Silverman 2004; 2005). However, perhaps the most common are the case study and the interview.

5.4.2 Quantitative Research

In *Quantitative* research (often associated with scientific methods), initial study of theory and literature yields precise aims and objectives with hypotheses to be tested (Fellows and Liu, 2003). Data from these methods is often regarded as objective, it is therefore, not abstract, it is hard and reliable; measurements are of countable, tangible, sensate features of the world (Bouma and Atkinson, 1995).

5.4.3 Triangulation

Triangulation is broadly defined as the combination of methods in a study of the same phenomenon (Denzin, 1978; Morse, 1991; Hammersley and Atkinson, 1983; Decrop, 1999). In triangulation, "researchers search for convergence among multiple and different sources of information to form themes or categories in a study" (Creswell and Miller, 2000: 126). The use of combined methods, perspectives and observers in a single study adds rigour, breadth and

depth to an investigation (Denzin and Lincoln, 1998; Miles and Huberman, 1994; Yin, 2009), thereby opening ways for richer and more valid interpretations (Decrop, 1999). In *triangulated* studies, two or more research techniques, qualitative or quantitative approaches may be employed to study the same phenomenon (Morse, 1991; Fellows and Liu, 2003). Complementary methods are deployed under the assumption that weaknesses inherent in one approach will be counterbalanced via strengths in another (Webb *et al.,* 1966; Jack and Raturi, 2006). Patton (2002) discussed four types of triangulations, namely, data triangulation (of data sources), investigator triangulation (among various investigators), theory triangulation (of perspectives to the same data set), and methodological triangulation (of methods).

5.4.4 Grounded Theory

Strauss and Corbin (1990) defined grounded theory as theory that was derived from data, systematically gathered and analysed through the research process. They further stated that, in this method, data collection, analysis, and eventual theory stand in close relationship to one another. A researcher does not begin a project with a preconceived theory in mind; rather, the theory emerges from the data derived from the area of study. Because of this, grounded theories are likely to offer insight, enhance understanding, and provide a meaningful guide to action.

5.4.5 Literature Review

A literature review explains potentially relevant theory and literature for the purpose of exploring the theory and understanding behind a particular subject (Saunders *et al.,* 2005; Corbin and Strauss, 2008). A literature review forms descriptive and analytical reviews of the works with the intention of formulating an explanation of the works and carrying out a critical examination for the purpose of identifying similarities, controversies and areas of theoretical and empirical weaknesses.

5.5   Methodological exclusivity?

Research methods are not usually mutually exclusive although only one, or a small number of approaches, will normally be adopted due to resource constraints on the research work. The methods used in collecting data impact upon the analyses which may be executed and, consequently, the results, conclusions, values and validity of the study (Fellows and Liu, 1997). Understanding the approach to research assists in establishing the theoretical issues behind a particular area of study and the techniques of data collection that will lead to the right end result and decision.

5.6   Data collection methods (research styles)

Bell (1993) said that research should either take on Action, Ethnographic, Surveys, Case study or Experimental style.

5.6.1 Action research

Action research is also referred to as the 'problem-solving approach' (Naoum, 2007). It is said to involve active participation by the researcher in the process under study, in order to identify, promote and evaluate problems and potential solutions (Fellows and Liu, 2003). The researcher reviews the current situation, identifies the problem, gets involved in introducing some changes to improve the situation and, possibly, evaluates the effect of his/her changes (Naoum, 2007).

5.6.2 Ethnographic Research

Ethnographic research approach demands less active 'intrusion' by the researcher. The researcher becomes part of the group under study and observes subjects' behaviours (participant observation) to gain insight into what, how and why their patterns of behaviour occur (Hammersley and

Atkinson, 1983; Fellows and Liu, 2003; Creswell, 2009). The empirical element of ethnography requires an initial period of questioning and discussion between the researcher and the respondent to facilitate the researcher's gaining an understanding of the perspectives of the respondent (Fellows and Liu, 2003).

5.6.2.1 Participant observation

Participant-observation is usually considered together with ethnography. Both involve extended involvement of the investigator in the social lives of those s/he studies (Bryman, 2004). Participant observer roles could be classified on a continuum spanning two extremes from complete participant (involvement) to complete observer (detachment) as represented in Figure 5.1 (Gold, 1958 cited by Bryman, 2004).

A complete participant is a fully functioning member of the social setting and the investigator's identity is not known to members (covert observer). The participant-as-observer is similarly a fully functioning member of the social setting but members are aware of the investigator's status as a researcher. On the contrary, an observer-as-participant undertakes research work mainly as an interviewer, there is little observation but hardly any participation. The complete observer does not interact with the people and neither do they take the researcher into account.
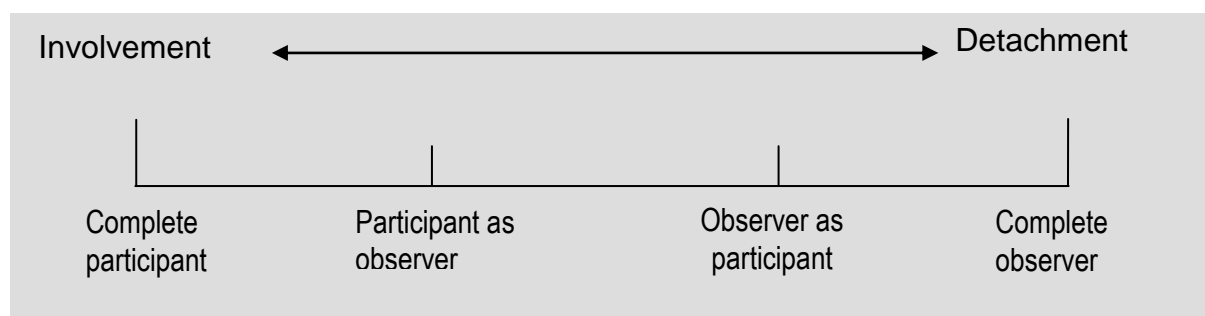
Figure 5.1: Participant observer roles
(source: Gold, 1958 cited Bryman, 2004)

5.6.3 Surveys

Surveys operate on the basis of statistical sampling. The principles of statistical sampling, to secure a representative sample – are employed for economy and speed (Fellows and Liu, 2003). Surveys are used to gather data from a relatively large number of respondents within a limited time frame. A survey is thus concerned with a generalised result when data is abstracted from a particular sample or population (Naoum, 2007). Surveys will commonly be in the form of highly structured-, semi-structured-, and unstructured-questionnaires and interviews. Descriptive surveys seek answers to 'how many?', 'who?', 'what?', 'where?' and 'when?'; while analytical surveys seek to establish the relationship and association between attributes of the study.

5.6.4 Case studies

Case studies encourage in-depth investigation of particular instances within the research subject. Robson (2002:178) defined case study as "a strategy for doing research which involves an empirical investigation of a particular contemporary phenomenon within its real life context using multiple sources of evidence". Case studies may combine a variety of data collection methods with the vehicle or medium of study being the particular case (Stake, 1995; Fellows and Liu, 2003). Case study research is not sampling research (Stake, 1995:4). Unlike surveys which employ samples designed to be representative of the population, case studies operate through theoretical generalisations rather than empirical generalisation (Stake, 1995; Fellows and Liu, 2003; Bryman, 2004; Yin, 2009). Yin (2009) identifies six primary sources of evidence for case study research, namely, documentation; archival records; interviews; direct observation; participant observation; and, physical artefacts.

5.6.4.1 Types of cases

Naoum (2007) identified three types of case study design:
- descriptive case study – similar to the descriptive survey (involving counting) except it is applied to detailed case(s);

- analytical case study – also similar to the analytical survey (involving counting, association and relationship) except it is applied to detailed case(s);

- explanatory case study – which is the theoretical approach to the problem. It explains causality and tries to show linkages among the objects of the study. The researcher collects facts and studies the relationship of one set of facts to another, with the hope of finding a causal relationship between them.

In addition, Bryman (2004) identified,

- 'the critical case', in which a single case meets all the conditions for testing a well formulated theory (also Yin, 2009);

- a 'unique' or extreme case;

- the 'revelatory' case; as well as,

- the 'exemplifying' case - in the exemplifying case study, cases are chosen because they provide a suitable context for certain research questions.

5.6.5 Experiments

Experimental research seeks to determine cause-and-effect. By providing a specific treatment to a group and withholding it from another, researchers determine how both groups scored on an outcome (Creswell, 2009; Silverman, 2007). Experimental style research is best suited to 'bounded' problems or issues in which the variables involved are known, or hypothesised with some confidence (Fellows and Liu, 2003).

5.7   Research design and Methodology for this research

The methodology for this research study comprised three major parts as presented in *Figure 1.2* and discussed below as Stage 1, Stage 2 and Stage 3.

5.7.1 Stage 1: Literature survey and empirical data collection

Stage 1 combined a desk study and fieldwork. This stage explored understanding of the key concepts in the project. In addition, it sought to justify the need for a framework for improved strategic briefing and optioneering as a way of enhancing WLV of healthcare facilities (as the final outcome of the project). In order to inform the theoretical aspects of the final framework, the first part involved a rigorous study of relevant literature. This part of stage 1 comprised three major theory areas, WLV, briefing and optioneering. This literature review section aimed to establish existence of theory-based causal relationships between better construction briefing and optioneering processes and better WLV, first for generic construction, later generalising to healthcare facility construction projects.

The last part of the Stage 1 involved gathering and analysing empirical evidence. Table 5.2 is a summary of the research design which was based on a constructivist/interpretivist paradigm. *Constructivism* would best reflect the human (social) factors that are characteristic of the construction briefing and optioneering processes being investigated, as well as the subjective nature of the value (WLV) phenomenon. According to Yin (2009), a qualitative methodology is best applicable when there is need to address 'how' or 'why' research questions, such as those of the present research (see *Section 1.6*), about a contemporary set of events. Hence, a qualitative research approach was chosen.

Moreover, due to the scarcity of NHS-specific extant literature on the concepts under investigation, answers to the research questions needed to rely on participants' views (see for example Creswell, 2009, and *Section 5.1.2*). Data were collected through multiple sources of evidence (see Table 5.2) with respect to the research question under investigation. Methods used included interviews; case study; and, non-participant observations at workshops and group meetings. Although not all sources of evidence are essential to every case study, the importance of multiple sources of data to the reliability of the

research was recognised (Stake, 1995; Yin, 2009). It has been noted that recent events are reported better than those that occurred in the distant past (Eisenhardt, 2002 cited Cannell *et al.*, 1977). Therefore, in order for the data collected to be of research relevance (yielding current and valid results), the target case study organisations had to have carried out or commissioned a healthcare facility within the last five years. The interviews carried out were semi-structured and unstructured (mostly guided conversations (open-ended) rather than structured queries (Silverman, 2007)). Observation was through observer-as-participant (see *Figure 5.1*) with more observation and no participation.

Table 5.2: Research design

Philosophical Worldview	Technique/Approach	Data Collection methods	
Constructivist/ interpretivist	Qualitative	Method	Evidence
		Case Study	Non-participant observation, Focus group, Documents (meeting minutes, emails and project reports)
		Interviews	Face-to-Face Telephone Semi-structured and unstructured questions
		Observation	Non-participant observers

5.7.1.1   Purpose statement for data collection

The purpose of this qualitative study was to understand healthcare facility construction briefing and optioneering in relation to WLV. Data collected through observation, interviews and case study aimed to investigate deficiencies in the processes that needed to be bridged in order to deliver WLV. The unit of analysis was the 'in-contact/access event' which comprised either interview, observation or document.

5.7.1.2   Case study data collection – using a case study protocol

Before setting out to collect data, an investigator should know why the study is being done, what evidence is being sought and what variations can be anticipated. Furthermore, s/he needs to know what evidence would either support or contravene any given proposition (Yin, 2009). In order for case study data collection to be effective, a case study protocol is required before setting out for the field. Although similar to a survey instrument, it contains more than a survey instrument. A case study protocol contains procedures and general rules to be followed using the instrument and it's equally essential in a single case study as well as a multi-case study (Tellis, 1997; Yin, 2009). Hence, a case study protocol was prepared before setting out for data collection. *Appendix 5.1* is a copy of the protocol instrument.

5.7.1.3   Interviews

The aim of the interviews was to enable in-depth insights. In-depth interviews allow researchers to enter the other person's perspective and find out those things cannot be directly observed (Patton, 2002). Therefore the questions were broad and open. The interview instrument used was designed in such a way that it fit within the case study inquiry as part of the multiple sources of evidence characteristic of case studies. The same instrument was also applicable as an independent tool for non-case study data. In order to achieve good feedback, it was imperative that good questions were designed. According to Eisenhardt (2002), good questions are reliable (providing consistent measures in comparable situations) and valid (leading to answers that correspond to what they are intended to measure). Hence, in order to ensure that the designed questions were thematically accurate enough to deliver the required response without being biased or leading, a pilot study was conducted (Patton, 2002; Hammersley and Atkinson, 2007; Merriam, 2009). The initial draft was piloted by an experienced researcher and supervisors for clarity, after which it was revised and used for all interviews. The open-ended discursive nature of the interview questions enabled an environment in which interview sessions were used as avenues for friendly discourse (Taylor, 2001; Haigh, 2008). Therefore, the interview instrument was mostly used for guidance

purposes and not as a course to be strictly adhered to. *Appendix 5.2* is a sample of the interview instrument.

5.7.1.4   Target population – initial plan

As noted earlier, case study research is not sampling (Stake, 1995). Therefore, in order to aid theoretical generalisation rather than empirical generalisation (*Section 5.4.4*), choice of target population was influenced by several factors. Firstly, due to the previous Labour Government's interest in decentralising healthcare from acute (centrally located) centres back into the local community. Secondly, most of the expenditure on healthcare facility construction targeted primary and community care. Case study research is the most robust method for collecting qualitative data (Yin, 2009). However, a case study may involve multiple field visits to the same participant/organisation (Tellis, 1997; Borman *et al*., 2006); hence, initial selection of cases needed to take into consideration proximity issues. A preliminary web search of NHS Primary Care Trust organisations within the East Midlands (Trent Strategic Health Authority) geographical area was carried out. Eight PCT organisations were shortlisted after noting that they were either in the process of, or had recently commissioned a scheme. Based on Yin's (2009) guidance into effective case study research, the researcher's wish was to gain access to at least three 'cases' that would then be analysed through cross-case analysis.

5.7.1.5   Negotiating access

Chief Executive Officers or Estates Managers from the short-listed eight PCTS were contacted through a postal letter *(*see *Appendix 5.3).* A period of two weeks was allowed before they were re-contacted by telephone or e-mail.

5.7.1.6   Response and follow-up

Out of the six mailed requests, one positive response was received within two weeks. An estates officer with one of the PCTs, henceforth known as PCT A, agreed to be interviewed. However, after that, no response was forthcoming, therefore follow-up communications were made. This yielded another positive

response in the form of what came to be the longitudinal case study (henceforth known as PCT B); and sometime much later on collaboration was agreed with another PCT (C). Together, this provided information from 3 PCTs, PCT A, PCT B and PCT C.

5.7.1.7   Access to a longitudinal case study

Further contact with PCT A and PCT C did not yield multiple sources of evidence to qualify as case studies as recommended by Yin (2009). Data sources were thus based on only 2 interviews each. However, at the time of agreeing to collaborate with the researcher, PCT B was about to embark on a project to construct new healthcare facilities. The project had progressed from the PCT client organisation onto the developers. Project development took the form of a tranche scheme, that is, it involved developers simultaneously planning and developing two primary care facility schemes for the PCT B. A meeting between the two institutions Loughborough University (researcher) and the developer organisation (on behalf of PCT C), was arranged to clarify information/data issues needed by the research investigator(s). It was agreed that the study involve a combination of non- participant observation and interviews. Henceforth, as part of the observation exercise, the investigator was invited to attend design; planning; and user and public engagement meetings.

5.7.1.8   Re-thinking the target population – contingency plan

A slow response to the initial requests from researcher to collaborators resulted in a re-think of data access strategy. While the initial plan was to seek data from the client side alone, particularly PCTs within the East Midlands area, alternative sources (external to the NHS Trust organisations) had to be considered. The new strategy was advantageous for wider geographical coverage, and, led to both 'internal' (NHS-based) and 'external' contributions to the study. This provided more robust multi-dimensional views from both the 'giver' and 'receiver' of the brief. Individuals with healthcare project experience were contacted for interviewing.

5.7.1.9 Selection of interviewees

Interviewee organisations (random samples) were selected from pre-qualified DH/NHS Principal Supply Chain Partner (PSCP) consortia lists available online (NAO, 2008). Under PFI/PPP procured schemes, consortia are involved much earlier than usual, and sometimes take on briefing roles on behalf of an NHS Trust. Further searches on healthcare facility developers provided a contact within renowned contracting organisation (though not a listed PSCP) currently undertaking a multi-billion pound Acute Hospital scheme in the UK.

Simultaneously, random samples of architects who have been involved with healthcare schemes within the past five years were also contacted. Again, for proximity reasons, initially, architects practising within the East Midlands area (Leicestershire and Nottinghamshire) but later architectural practitioners from farther afield, as far as South Yorkshire and London, were also contacted.

5.7.1.10 Response and follow-up – second phase

Of the seven PSCP organisations contacted, positive responses were received from three. Two of the respondents were from the same organisation albeit based in different departments and geographical locations. A further positive response was received from the unlisted PSCP organisation (developer for the Acute Hospital mentioned in *Section 5.7.1.9*).

All efforts to gain interviews with the architectural practices (both in and outside of the East Midlands) were unsuccessful. This was unfortunate for the research investigation because of the lost opportunity for contributions from architects. As first level users of the client brief downstream the architects' role in interpreting and delivering the right design solution is central to delivering WLV. Their contributions to the study would have provided a great insight into what aspects of the briefing process need to be improved in order to deliver WLV of healthcare facilities.

5.7.2 Stage 2: Framework design

This Stage applied findings from Stage 1 to devise a framework for WLV delivery. It was a desk-study that ran in parallel with the on-going literature survey. Further details about this stage are found in *Chapter 9*.

5.7.3 Stage 3: Evaluation and dissemination

Having designed the framework for achieving WLV of healthcare facilities, this stage evaluated the outcomes of Stage 2. It involved a field survey in which probable future users of the framework were interviewed through unstructured interviews. Results from the interviews were used for refining and modifying the framework and the final design of which is presented in *Chapter 9* of the thesis.

Chapters Six and *Seven* build on *Section 5.7* to discuss data collection, management and analysis.

Chapter Six: Investigation of current Whole Life Value, briefing and optioneering practices in NHS healthcare construction projects

6.0   Chapter Introduction

This chapter gives a detailed account of the field data as part of the empirical investigation of the key research concepts, within UK healthcare facility projects. From the field procedures, two sets of data resulted. This chapter is concerned with the first data-set collected from primary care-based NHS Trusts and from external organisations (NHS Trust-contracted providers) involved in early stages of healthcare project delivery. Data from external providers is based on varied accounts from individuals and groups involved in delivery of facilities for PCTs, Acute Trusts, Mental Health Trusts and Care Trusts. In this chapter, data is presented; the analytical framework discussed and applied to show findings that arose.

6.1   The Data

The data is based on 8 face-to-face interviews ranging from 45 minutes to 2 hours long. In addition, a 15 minute telephone interview and 3 workshops (with the researcher as non-participant observer) are part of the data. In order to differentiate the sources, the data is classified as internal or external depending on whether the participants are from inside or from outside the NHS settings, respectively. All the internal participants together with the case study are based in the East midlands, while the external participants are from the South East, West Midlands and the North West of England. Data collection ceased when it was evident that no new information was emerging because participants or observations started to repeat what had been learnt from prior contacts (Stake, 1995; Yin, 2009).

A summary of the primary data sources is presented in Table 6.1. In the table participants' identities are shown as alphabetical codes in the first column and the second shows their status (internal/external). The third column shows the data collection method used and the last shows other remarks such as duration of data collection exercise and availability of other evidence.

Table 6.1: Summary of data sources

Participant Code	Internal/ External to NHS	Research Approach	Remarks
A	Internal- PCT org'n	Interviews (FTF)	**2 x 1 hr interviews, no documents or other evidence available**
B	Internal	Interviews (FTF)	**1 x 45min. interview, no documents or other evidence available**
C	Internal	Interviews (FTF)	**1 x 45min. interview, no documents or other evidence available**
D	External – independent developer	Interview (FTF)	**1 x 2 hr interview, additional documents provided**
E	External – PSCP Consortium partner	Interviews (FTF)	**1 hr interview, no additional docs.**
F	External – PSCP Consortium partner	Interview (FTF)	**1 hr interview, no additional docs.**
G	External – PSCP Consortium partner	Interview (FTF)	**1 ½ hr interview, no additional docs.**
H	Internal - PCT	Workshop (as Non-participant observer)	**2 hour stakeholder meeting (Next Stage Review)**
I	Internal - PCT	Workshop (as Non-participant observer)	**1 hour session**
J	Internal – PCT	Workshop (as Non participant observer)	**2 hour stakeholder analysis workshop**
K	Internal – PCT	Telephone interview	**15 min. interview**

Key: FTF = Face-To-Face
Total: 9 interviews, 3 workshops

6.2   Processing data

Six of the interviews were voice recorded and it was not possible to record the other three owing to technical problems or participants declining to be recorded. All recorded interviews were backed-up with handwritten notes. All workshop proceedings were recorded as field diaries and memos highlighting the most significant issues in relation to the research questions.

Voice recorded data was transcribed verbatim by hand with the intention of typing them out later for easier data processing. Together with the field diaries and memos, a large amount of textual data was generated. In order to save time, a decision was made to leave the data in the raw format (as handwritten transcripts).

One dilemma for qualitative researchers is how manage the large quantity of text generated from the research endeavour (Thompson, 2002). With respect to data presentation, qualitative research has been criticised as often being merely an assembly of anecdotal and personal impressions, strongly subject to researcher bias (Mays and Pope, 1995; Myers, 2000; Yin, 2009). In addition, qualitative research studies have been criticised of failing to illuminate thoroughly how they derive the outcomes of the analysis (Attride-Stirling, 2001; Neuman, 2007). For such reasons as these, some writers have called for a more rigorous reporting of techniques through the use of computer programmes (for example, Tesch, 1990; Bryman and Burgess, 1994; Bazely and O'Rourke, 1996; Bandara, 2006; and, Jemmott, 2008). While computer software offers a number of ways of organising and managing qualitative data, they do not help with the analysis itself (Bazely and O'Rourke, 1996; Coffey *et al.*, 1996; Holloway and Wheeler, 2002; Blismas and Dainty, 2003).

A decision was taken to manually manage the textual data. Nevertheless, other non-specialised programmes such as MS Word, MS Excel and MS PowerPoint were applied during the data management and analysis process. As highlighted in later sections, after hand transcribing the data, it was input into MS Excel spreadsheets and later managed with the aid of MS PowerPoint programme.

Investing a greater amount of time in sorting, highlighting and handling the data proved helpful in re-connecting and re-living the data, in addition to enhancing familiarity, a relationship corroborated by Thompson (2002).

6.3 Data analysis

Literature covering on qualitative data analysis showed that, although qualitative methods have gained growing popularity over the past two decades (Jensen, 1991; Bryman and Burgess, 1994; Denzin, 1994; Morse, 1994; Bouma and Atkinson, 1995; Marshall and Rossman, 1999; Patton, 2002; Silverman, 2005, 2007), there is a dearth of literature on how to analyse systematically the enormous amount of textual data resulting from qualitative studies (Dainty *et al.*, 2000; Attride-Stirling, 2001; Silverman, 2007).

6.3.1 Qualitative Data Analysis (QDA) and content analysis

QDA covers a range of processes and procedures that illustrate the transition from collected data into some form of explanation, understanding or interpretation of the people and situations under investigation. The process typically involves identifying, coding, and categorising patterns found in the data (Bryne, 2001). Most QDA methods include content analysis, a systematic coding and categorising approach. Content analysis can be used to explore large amounts of textual information in order to ascertain trends and patterns of words used, their frequency, their relationships and the structures and discourses of communication (Weber, 1990; Mayring, 2000; Grbich, 2007). Although it may sometimes involve a thematic approach, content analysis predominantly involves enumerative techniques in that a set of categories are established for which instances that fall into that category are counted (Grbich, 2007). However, this and other methodologies that involve quantification were discounted as not being appropriate for the current analysis. Due to the social aspects of the concepts under investigation and due to the discursive nature of the interview data, if coded and analysed with respect to quantitative

occurrences, there was a possibility of losing the meaning of individual messages that may have low frequencies but high significance to the study.

6.3.2 Thematic Analysis

The amount of literature devoted to explicit issues of qualitative data analysis has also progressed (Dey, 1993; Bryman and Burgess, 1994; Bouma and Atkinson, 1995; Bryne, 2001; Patton, 2002; Grbich, 2007 and Silverman, 2007). However, a literature survey revealed scarcity of sophisticated tools that are capable of preserving the textual richness; and, of not drifting back into enumerative methods (similar to quantitative methodologies). Moreover, in order to dispel criticism directed at qualitative studies, a good tool needed to be capable of enhancing readers' confidence; and, of demonstrating transparency in the data analysis process. Furthermore, such a tool had to provide a way of dealing with the enormous amount of text in a systematic way while at the same time being replicable. One methodology that appeared to satisfy the above criteria was identified as Thematic Networks Analysis (Attride-Stirling, 2001). The analytical process followed is similar to Miles and Huberman's (1994:21) suggestion for data analysis which involves "three concurrent flows of activity: data reduction, data display and conclusion drawing/verification.

6.4 Thematic networks analysis

Themes are defined as units derived from patterns such as conversation topics, vocabulary, recurring activities or meanings (Taylor and Bogdan, 1984). They are identified by bringing together fragments or components of ideas or experiences which would otherwise seem meaningless when viewed alone (Leinenger, 1985). Thematic analysis focuses on identifiable and patterns of living or behaviour and seeks to unearth the salient themes in a text at different levels. It follows the basic steps of:
1. Collecting data;
2. Listing patterns and information from the collected data;

3. Identifying all the data that relate to the already classified patterns;

4. Cataloguing related patterns into subthemes.

Attride-Stirling's (2001) discovered that thematic analyses can be usefully improved and presented as thematic networks. She explained that thematic networks aim to facilitate the structuring and depiction of themes in textual data; and applying thematic networks therefore is considered to be a simple way of organising a qualitative data. Thematic networks are web-like diagrams (*networks*) summarising main themes making up a piece of text. Thematic networks are not an entirely new methodology (similar to, for example, Corbin and Strauss, 1990; Silverman, 1993; Bryman and Burgess, 1994; Denzin and Lincoln, 1998; Cresswell, 2009). However, they offer textual representation and organisation, while at the same time making explicit the procedures that are applied in the transition from a large amount of raw textual data to interpretation. The networks provide a mechanism for breaking up text, and finding within the text explicit rationalisation and their implicit meanings (Attride-Stirling, 2001).

The next section is a step-by-step thematic networks analysis process adopted from Attride-Stirling's (2001) work. A practical application of how it was adopted and adapted for the present study is to be found in *Section 6.4.2*.

6.4.1 The thematic networks analysis process

Thematic networks organise the processing of: (i) lowest-order principles manifest in the text (*Basic Themes*); (ii) categories of basic themes grouped together to distil more abstract principles (*Organising Themes*); and (iii) super-ordinate themes summing up the principal metaphors in the text as a whole (*Global Themes*). These are then represented as web-like maps, depicting the salient themes at each of the three levels, and demonstrating the links between them as shown in Figure 6.1

6.4.1.1   Terms

Basic Theme: A lowest-order theme that is obtained from the textual data. *Basic Themes* are simple premises typical of the data which when read individually, say very little about the text or group of texts as a whole. Therefore, they must be read collectively in context with other basic themes in the group in order to make sense beyond their immediate meaning. Together, a group of basic themes represents an Organising Theme.

Organising Theme: A middle-order theme that organises the Basic Themes into groups of similar issues. Organising Themes contain the main ideas proposed by several Basic Themes, and break down the main premises underlying a broader theme that is particularly central to the texts as a whole. Together, a group of Organising Themes embodies a Global Theme.
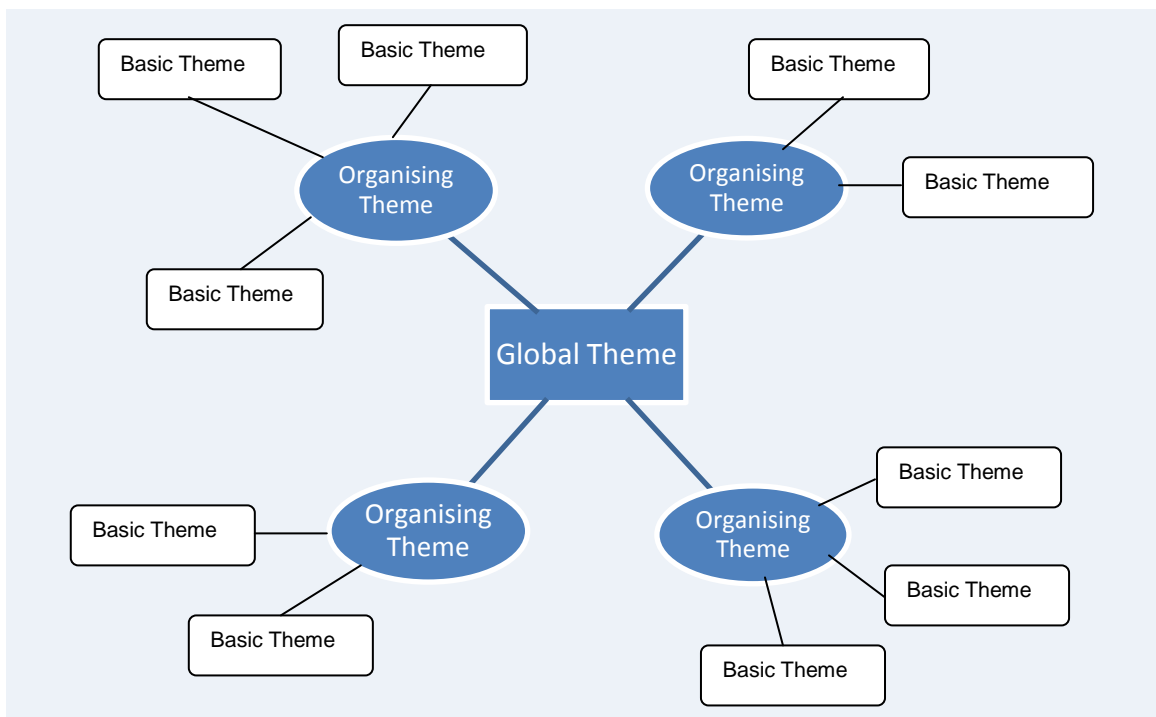
Figure 6.1: Thematic Network Structure
(source: Attride-Stirling, 2001:388)

Global Theme: An overarching theme that encompasses the most important metaphors in the data as a whole. A Global Theme is a concluding or final tenet, and brings together sets of Organising Themes that together summarise

and make sense of clusters of lower-order (basic) themes abstracted from and supported by the data. As macro themes, Global Themes represent what the texts as a whole are about within the context of a given analysis. (Depending on the complexity of the data and the analytic aims, a set of texts may well result in more than one Global Theme). Each Global Theme is the nucleus of a thematic network. Consequently, an analysis may result in more than one global theme and therefore more than one thematic network.

6.4.1.2 Procedure

A thematic network is developed from the outside beginning with the Basic Themes working inwards toward a Global Theme (see Figure 6.1). Once a collection of Basic Themes has been developed, they are classified according to the underlying story they are telling and these become the Organising Themes. With reference to their Basic Themes, Organising Themes are then reinterpreted, and are brought together to show a single conclusion or overarching theme. It becomes the Global Theme.

Thematic networks are illustrated graphically as web-like nets to remove any notion of hierarchy. This gives fluidity to the themes and emphasises the interconnectivity throughout the network. However, the networks are only a tool in the analysis process, not the analysis itself. Once a thematic network has been derived, it will serves as an organising principle and a demonstration tool in the interpretation of the text. It enables disclosure for the researcher, and understanding for the reader.

The procedure is summarised as three broad stages that involve (a) reducing or breaking down of text; (b) exploring of text; and (c) integrating the explorations. Each level involves interpretation and at each level a higher level of abstraction is reached.

The three broad stages are further broken down into specific sub-steps (also summarised in Box 6.1) which include:

ANALYSIS STAGE A/B: REDUCTION OR BREAKDOWN OF TEXT
Step 1. Code Material
      a) Devise a coding framework
      b) Dissect text into text segments using coding framework
Step 2. Identify Themes
      a) Abstract themes from coded text segments
      b) Refine themes
Step 3. Construct Thematic Networks
      a) Arrange themes
      b) Select Basic Themes
      c) Rearrange into Organising Themes
      d) Deduce Global Theme(s)
      e) Illustrate as Thematic Networks
      f) Verify and refine the network(s)

ANALYSIS STAGE B: EXPLORATION OF TEXT
Step 4. Describe and Explore Thematic Networks
      a) Describe the network
      b) Explore the network

Step 5. Summarise Thematic Networks

ANALYSIS STAGE C: INTEGRATION OF EXPLORATION
Step 6. Interpret patterns

Analysis Stage A: Reduction or breakdown of text

Step 1: coding the material. The first step involves reducing the data. Using a coding framework, text is dissected into manageable and meaningful text segments:

(a) *Devise a coding framework.* With reference to the researcher's objectives, this tends to be done on the basis of the theoretical interests guiding the research inquiry, on the basis of salient issues that emerge from the text itself, or on the basis of both.

(b) *Dissect text using the coding framework* This step involves applying the codes derived in the previous step to the textual data, dissecting it into text segments: meaningful and manageable chunks of text such as passages,

98

quotations, single words, or other criteria judged important for a particular analysis.

It is fundamental that this first step be completed with great rigour and attention to detail. The codes in the coding framework should have quite precise boundaries (definitions), so that they are not interchangeable or redundant. In order to avoid coding every single sentence in the original text, their scope should be narrow and focus explicitly on the object of analysis.

Step 2: identifying themes After coding all the text, themes are abstracted from the coded text segments:

(a) *Abstract themes from coded text segments.* By re-reading the text segments in each code (or group of related codes), salient, common or significant themes in the coded text segments are extracted. By doing this, the researcher is able to reframe the reading of the text, thereby allowing for easier identification of underlying patterns and structures.

(b) *Refine themes* The aim of this step is re-presenting the text passages succinctly. Selected themes are re-read and refined further into themes that are (i) specific enough to be discrete (non repetitive), and (ii) broad enough to encapsulate a set of ideas contained in numerous text segments. This step further reduces the data into a more manageable set of salient themes that concisely summarise the text.

Identification of the themes requires a great deal of interpretative work and calls for close attention to conceptual detail. As the themes emerge, they are moulded and shaped to accommodate new text segments, as well as old ones.

Step 3: constructing the networks The themes identified in Step 2 provide the basis for the thematic networks:

(a) *Arrange themes* Taking the themes are assembled into similar, logical groupings: themes about A, themes about B, etc. These groupings will become the thematic networks.

Grouping of themes depends on either the content or when appropriate, on theoretical grounds. It may be that the themes are few enough and about similar enough issues to fit under one network. If they are too numerous, or if quite distinct issues arise, then more each grouping will result in a distinct Global Theme, supported by discrete Organising and Basic Themes.

(b) *Select Basic Themes* The themes that have been derived from the text, and now assembled into groups, are now used as Basic Themes.

(c) *Rearrange into Organising Themes* With attention to wider shared issues, clusters of Basic Themes are grouped together to make Organising Themes. Issues fundamental to them are identified and named.

(d) *Deduce Global Theme(s)* With reference to the Basic Themes, the main claim, proposition, argument, assertion or assumption that the Organising Themes are about is deduced. This claim is the Global Theme of the network: the nucleus, principal metaphor that summarises the main point in the text. If more than one grouping of themes was made in step 3(a), then the procedure is repeated for each grouping, constructing distinct Global Themes for each set.

(e) *Illustrate as thematic network(s)* Once the Basic Themes, Organising Themes and Global Themes are prepared, they are presented as non-hierarchical, web-like representations. A thematic network will be constructed from each Global Theme.

(f) *Verify and refine the network(s)* The text segments related to each Basic Theme are re-read to confirm that (i) the Global Theme, Organising Themes and Basic Themes reflect the data, and (ii) the data support the Basic, Organising and Global Themes. Adjustments are made if necessary.

Working from the periphery Basic Themes, inwards to the Global Theme, thematic networks aim to summarise particular themes in order to create larger, unifying themes that condense the concepts and ideas mentioned at a lower level.

Analysis Stage B: Exploration of text

Step 4: describe and explore the thematic networks In this first part of analysis Stage B (see *Box 6.1*), a further level of abstraction is reached. It

involves describing and exploring the networks. This involves identifying the patterns that underlie the texts. After the networks are put together, the researcher returns to the original text and explains it with the aid of the networks:

(a) *Describe the network* Taking each network in turn, explain its contents supporting the description with text segments.
(b) *Explore the network* As a description is being put together, begin to explore and note underlying patterns that begin to appear.

This step sees the researcher return to the original text, but instead of reading it in a linear manner, the text is now read through the Global Themes, Organising Themes and Basic Themes. By this stage, the thematic network is not only a tool for the researcher, but also for the reader, who is able to relate the researcher's interpretation with the summary provided by the network. Step 4 merges the data and the interpretation, and details the analysis for an audience. It takes the researcher into a deeper level of analysis, which is best conveyed by example, rather than description.

Step 5: summarise the thematic network After describing and exploring a network in full, a summary of the main themes and patterns characterising it, is presented. In this step, the intention is to summarise the major themes that began to emerge in the description of the network. In addition, the researcher begins to make explicit the patterns emerging in the exploration. Some of these may have already been hinted at in step 4, but in order to make the interpretation more compelling, they are presented succinctly and explicitly for the audience, which is very useful in the analytic process.

Analysis Stage C: Integration of Exploration
Step 6: interpret patterns This step explores the significant themes, concepts, patterns and structures that arose in the text by bringing together (i) the deductions in the summaries of all the networks (if more than one was used), and (ii) these deductions and the relevant theory. In this last step, the researcher returns to the original research questions and the theoretical

interests underpinning them, and addresses these with arguments grounded on the patterns that emerged in the exploration of the texts.

The next section demonstrates how a Thematic Networks Analysis has been applied to the present study.

6.5   Empirical application of Thematic Networks Analysis

The Thematic Networks Analysis process was applied to the data summarised in Table 6.1. In order to reflect the actual analytical process applied to the data, some variations were made to the original thematic networks analysis procedure described in *Section 6.4 and Box 6.1*. Analysis was carried out in nine steps and the adapted process is represented by Figure 6.2. The data resulted into three thematic networks representing three Global Themes, namely, *project strategy*; *communication and engagement*; and, *deliverables*.

6.5.1 Reduction of textual data

Step 1: Elementary reduction
Transcribed textual data were entered into an MS Excel spreadsheet eliminating irrelevant information. In the spreadsheets, data was recorded under the broad conceptual themes of *briefing*, *optioneering* and *WLV*. For each of the three concepts, data was entered under headings asking: 'What?', 'Who?', 'When?', 'Why?', 'Which?', 'Where?' and 'How?'. The idea was adapted from Dey's (1993) techniques for early interactive reading of data segments, in which he suggested critiquing data in a similar manner. The questions were plotted in columns across the spreadsheet, while maintaining a connection with participants listed in Greek alphabetical order, in rows running down the spreadsheet. Figure 6.3 is an example of a screenshot of the spreadsheet. Sample spreadsheets resulting from this step are shown in *Appendix 6.1*.
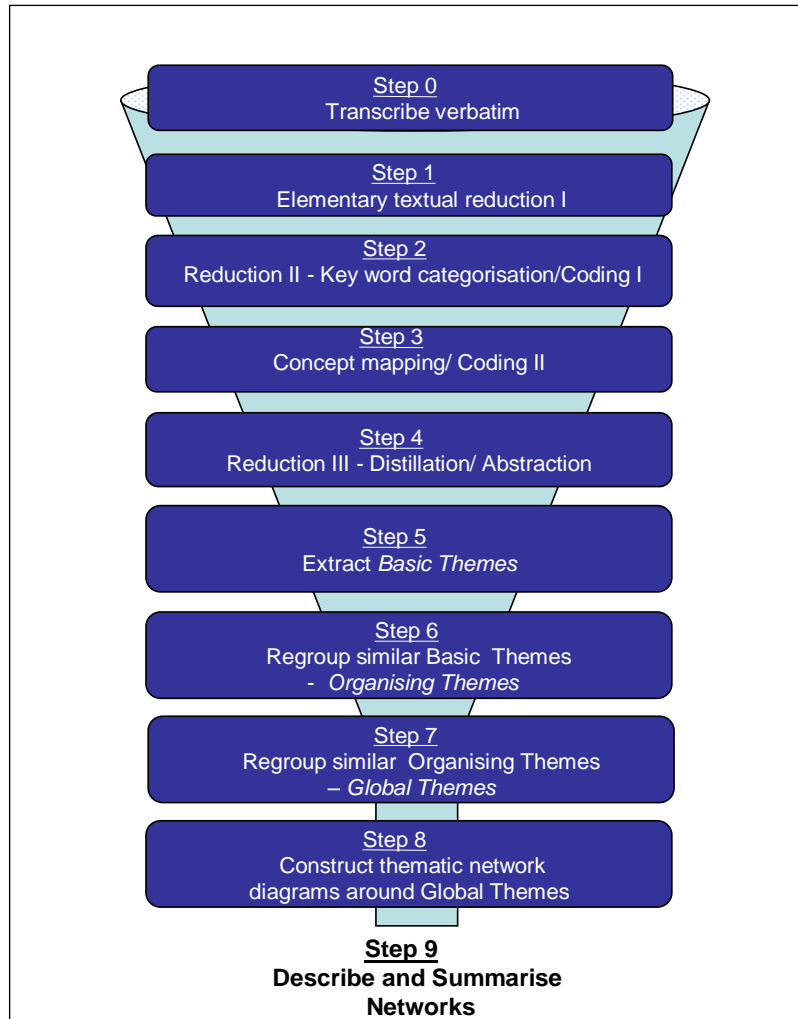
Figure 6.2: Analytical process

Under the 'what?' heading was textual data relating to the participants affiliated organisation and what sort of recent project experience they had (for example scope, typology, and, role played in scheme development), together with any information considered generic but important about that organisation. The data recorded under 'who?' pertained to which parties/stakeholders participated in the projects. The 'when?' column contained data concerning what stage of a scheme's lifecycle the interview participant experienced (for example, inception? design?, construction? or operation?). All the data that had an element of explanation, with participants discussing why they did what they did especially concerning the planning processes was recorded in the 'why?' column. Data concerning personal opinions and dissatisfaction of any kind were

recorded under the 'which?' heading; while the 'how?' column contained all the data pertaining to processes and procedural issues on ways the same are conducted.

Figure 6.3: Elementary textual reduction

Step 2: Reduction II - Coding the material

Tesch (1989:1) suggested that the process of data reduction does not merely involve random division into smaller units but rather "skilled perception and artful transformation by the researcher". To this end, with reference to the three main concepts (briefing, optioneering and WLV), 38 codes were derived on the basis of (a) recurrent issues within the interviews and observations data, and (b) specific theoretical positions inherent within the research questions. This step involved several iterations in which text segments from the spreadsheet (seen in Step 1,) were split into smaller manageable chunks and categorised according to the 38 codes. A list of the codes is shown in Box 6.2.

The 38 codes were input into another MS Excel spreadsheet as headings for the columns and the rows remained as before. Figure 6.4 is a screenshot of this step. Some spreadsheets resulting from this step are attached as *Appendix 6.2*

demonstrating how text segments were recorded under the general concepts of briefing, optioneering and WLV for Participant 'Alpha'. This step involved further reduction of textual data in that while *Step I* had most of the text directly recorded as large "blocks" of text from the transcription, the text here was condensed further to fit within specific categories of codes.

Box 6.2: Coding keywords

Keywords/Codes	
1. Brief/briefing	20. Key success factors
2. Business case	21. Procurement route
3. Design	22. Facility typology
4. Optioneering/option selection & Decision making	23. Alterations and changes
	24. Project management/whole life cycle
5. WLV	25. Evaluation and KPIs
6. Stakeholders	26. Lessons learned/feedback
7. Informing	27. Risk
8. Consulting (stakeholders)	28. Time
9. Collaboration and engagement	29. Tools
10. Communication	30. Success Stories
11. Systematic processes	31. Good practice
12. Value parameters	32. Issues
13. Constraints	33. Drivers
14. Unpredictables/dynamics	34. Benchmarking/Comparison
15. Users	35. Problems
16. Patients	36. Needed Improvement and weaknesses
17. Public and community	37. Debate
18. Monitoring and measures	38. Challenges
19. Legislation	

However, after fitting text segments under the 38 codes, it emerged that some keywords were slightly redundant, with not many text segments recorded in their columns, thereby implying that not much had been said about them. Moreover, Attride-Stirling (2001:394) suggested that codes need to be "discrete enough to avoid redundancy and global enough to be meaningful". One of the redundant codes was 'risk' which though discrete enough, it never emerged as a commonly discussed or significant issue across the participants. In spite of this disparity, literature indicates that decision making and construction project

performance are no longer based on only the ubiquitous 'Time-Cost-Quality' triangle parameters, but on a wide range of other measures including risk (Thompson and Perry, 1992; Best and de Valence, 1999; Loosemore, 2006). More recent work by Yu *et al.* (2007) also named risk management as one the 13 critical success factors in construction briefing.

Keyword Informant	Brief /Briefing	Business Case	Design	Optioneering/ options selection & decision making	WLV
Alpha	- no standard methodology; - the wish to involve everyone in trying to create a brief backfires; - everything should be done in phases including briefing and involvement; - those sat around the room sign off their brief; - if brief meets everyone's expectations - there shouldn't be conflict; - brief will change because perceptions change;	- all planning now subject to clear business cases and business plans;	- design owned by LIFTco.; - danger in building designed by committee - stakeholders design building which lead to poor design; + incorporating flexibility in design very difficult when you have competing needs; - service plan should dictate the design; - ADB acts like a design bible - depart from it at your own peril; - not always sure when to bring the architect in; - those sat around the table (committee) state in writing that they are happy the outline design meets their brief; - HTM & Building Notes provide design requirements to make an area fit for purpose in schemes; - input into design brief: county	- compromise decision reached especially multi-occupancy buildings designed by committee; - 'those sat around the table formally sign-off their brief or outline design --> don't move to detailed design until this is finished; - decision making in larger LIFTco schemes - user groups (upto contract stage) --> building management group/project management/ procurement group > commissioning group - same principles, different names; - lay ground rules before start of process; - equipment selection and purchase based on best value overall lifecycle and comfort of professionals going to use it; - because of sustainability agenda - v.very rigorous Whole Life Assessment before decision for	- value in schemes is delivered to specification - encompasses within it th value judgements which people on brie table have built into it; - in terms of value aim is to ensure that PPE is carried out; - coming up with a building that meets everyone's perception in terms of value difficult; - very difficult to judge what is good val depends on where you sit in this chain, from user of the service to provider of t service to EFM responsible for making th facility run; - need to understand and concentrate o wider issues of value judgement as opposed to VfM; - NHS not gotten to grips the concept of WLCosting - still very much look at initia capital cost;
Beta	-participate in aligning Trust's business			- decision for new facility reached	- very idealist because in all honesty

Figure 6.4: Coding II - keyword categorisation

Step 3: Concept mapping /Reduction II

Although, to a great extent, Step 2 reduced the volume of data, the textual data was still considerable. Hence, in order to reduce the coded data to a manageable level, concept mapping (Novak and Gowin, 1984) was introduced; though not part of the original Thematic Networks Analysis standard procedure. Concept maps are graphical tools for organising and representing knowledge. Concepts are usually enclosed in boxes or circles, and relationships between them represented as linking lines with or without words (Novak and Canas, 2008). Concept maps simplify the development and clarification of theory (Miles and Huberman, 1994; Maxwell, 2004); and are useful for refining ideas (Jackson and Trochim, 2002; Burke *et al.,* 2005). In addition, they have been

used in analysing textual data, and for sorting and further abstraction (Wiener *et al.*, 1994).

Using display software, concept maps were constructed for the 38 keyword codes and the corresponding text segments in the spreadsheet columns of *Step II.* The codes represented a central focus for each map. On the maps, the focal code word was differentiated from the rest of the bubbles (drawn around it) by giving it bolder lines and text. The lines joining the other text segments to the focal code word represented a relationship either a simple linkage (no arrows), an implication/effect or resultant (uni-directional arrow), or, a mutual/ reciprocal relationship (double-sided arrows). In cases where there were several criss-crossing linkages in an area on the map, some lines were dotted for better clarity but their meanings still depended on the type or lack of arrows. An example of the concept maps is shown in Figure 6.5.

It emerged that some codes such as, collaboration, consulting and informing had a number of shared text segments, a probable indication of conceptual linkage between the codes. Hence, a decision was made to have them all on the same map. Such a map therefore featured multiple focuses but with 3 different foci. This further provided the added advantage of being able to view 3 related codes, with all the data about them, side-by-side on the same map, at the same time avoiding repetition of the text segments. This step resulted in 29 concept maps. *Appendix 6.3* shows 10 examples of the 29 concept maps.

Step 4: Identifying the themes
(a) Abstracting themes from coded text segments in concept maps
In this step the 29 maps were re-read and scrutinised with attention to salient features, recurrent patterns (within and across codes), and controversies if any.

Each concept map was analysed for conceptual linkages and relationships between its bubbles. Attention was paid to 'busy' bubbles that seemed to have several links with other bubbles since the several linkages could be an indication of an underlying message. This step involved a deeper level of

analysis than before. Initial results of emerging themes were recorded such that themes that seemed to be about a similar conceptual message were grouped together. Iterations were carried out for the shortlisted words and phrases until themes began to converge and emerging themes became more evident. For every theme, all phrases or words relating to it were recorded and lists of similarly themed text segments compiled. An example of such a list is shown in a screenshot as Figure 6.6. This step resulted into a list of 149 text segments.
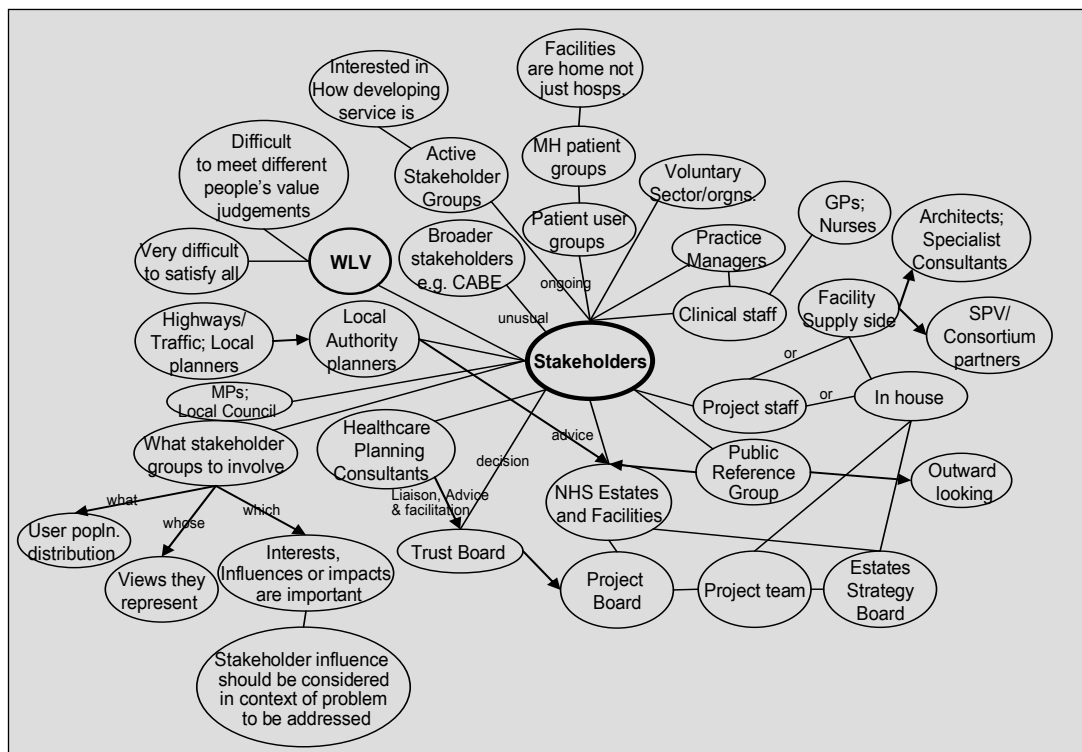
Figure 6.5: Stakeholder concept map
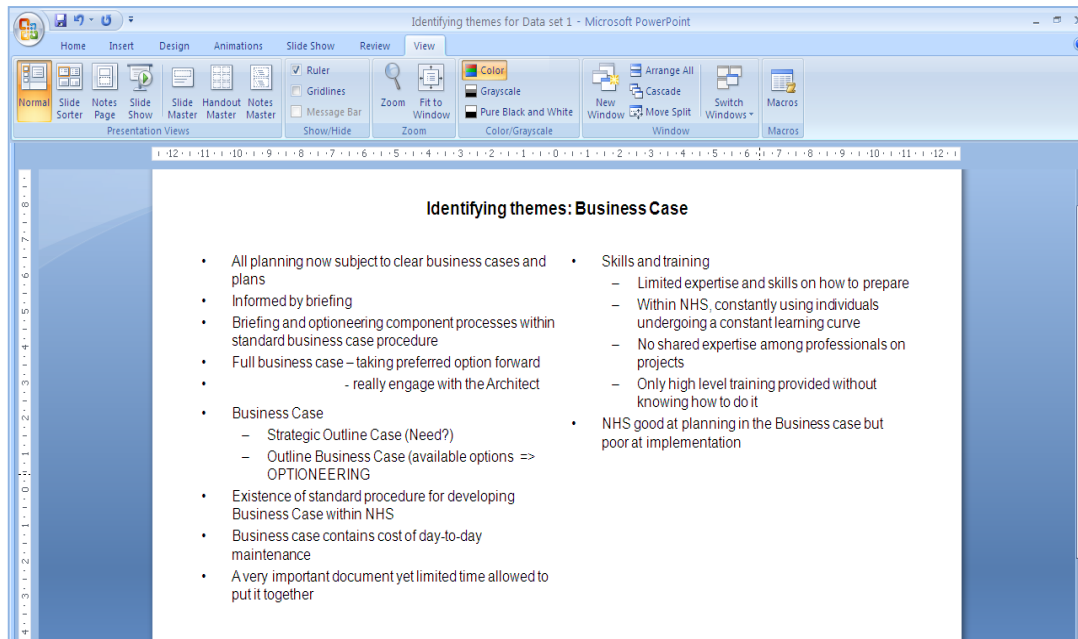
Figure 6.6: Identifying Themes: An example

(b) Refining the themes

The 149 words and phrases from the previous step were further scrutinised and filtered for themes that were, i) specific enough to be distinct or non repetitive, and, ii) broad enough to condense a set of ideas presented in several other text segments. This procedure reduced the data to 70 significant but manageable themes shown in Box 6.3.

Box 6.3: Refining themes

1) Service Vision: positive clinical outcomes
2) Operational policy
3) Consensus difficulties
4) Standard procedure of Business case
5) Optioneering and Briefing within Business Case structure
6) skills shortage
7) healthcare planner role
8) liaison and advice
9) researcher role
10) late involvement of healthcare planner
11) financial envelope
12) sign-offs
13) compromise decisions
14) CIM guidance
15) WLC Costs
16) Lifecycle
17) Value
18) Value judgements
19) VfM
20) Political
21) Legal
22) Environment
23) Technology
24) Economic
25) Social
26) PFI expert design process
27) Contractually led
28) Design by committee
29) Iterative design process
30) Benchmarking hospital design
31) Design – standards
32) Selective briefing
33) Foundational
34) Understanding user needs
35) Time priorities
36) Elicitation
37) Facilitating workshops
38) Need to be seen to be engaging
39) Communication, information and understanding
40) Consensus building
41) Team building
42) Same methods, different backgrounds
43) Stakeholders in social networks
44) Neighbourhoods
45) Clinicians
46) Rapport building
47) Communication
48) Health planners in comms.
49) Elicitation by healthcare planner
50) Facilitators (professionalism)
51) Pivotal liaison
52) Active stakeholder groups
53) PPE/PCE/POE
54) User satisfaction
55) Consult for feedback Patient flows
56) How everything works
57) Trigger document – clinical o/put spec.
58) Support services
59) Throughputs
60) Clear Business Case
61) Documents – SOC, OBC, FBC
62) Brief by Whole Health Economy (WHE)
63) Multi-functionality of briefs
64) Clear, fixed
65) Different level
66) Fixed design
67) Design standards
68) Whole life product that's flexible
69) Whole life solution
70) Affordability over time

6.5.2 Constructing the networks

Step 5: Extracting Basic Themes

In this step, the global, organising and basic themes were reached. The themes identified in *Step 4* provided a foundation on which to construct the thematic networks.

(a) With reference to the theoretical background and underlying messages they portrayed, the 70 themes were scrutinised for similarities and like themes grouped together. This exercise yielded 11 broad groups, presented in Box 6.4. These were to become the thematic networks. However, Attride-Stirling recommended that if the themes are too numerous to fit under one network, or

if quite distinct issues arise, then more than one grouping should be made (2001:392). In this case, the 11 groups were too numerous to be global themes.

Box 6.4: Broad theme groups

1) Business case
2) Clinical Service Model/Plan/Agreement/Design
3) Healthcare planner/Consultant Roles
4) The Workshop
5) Briefing
6) Design
7) Decision making
8) Feedback
9) Whole Life Value
10) Communication and Stakeholder Engagement
11) Systemic and Environmental issues

(b) Selecting the Basic Themes

The 70 unique words and phrases, generated before got used as Basic Themes.

Step 6: Rearranging into organising themes

The 11 broad groups in *Step 5(a)* and Box 6.4 defined the Organising Themes.

Step 7: Deducing Global Themes

With respect to the underlying messages contained within the 70 basic themes, the 11 Organising Themes were scrutinised once more and clustered in accordance with the overarching message they told. It emerged that the 11 groups fit within 2 unifying Global Themes: *Project Strategy;* and*, Communication and engagement.* These 2 Global Themes defined the core metaphors contained in the textual data.

Step 8: Illustrating as Thematic Networks

Once the Basic Themes, Organising Themes and Global Themes were assembled into their respective categories, they were illustrated as web-like,

non-hierarchical diagrams with each Global Theme generating a network as seen in Figure 6.7 (a), and (b).

Step 8 (b): Verifying and refining the networks

All the text segments relating to a Basic Theme were re-read to ensure that, i) The Global Themes, Organising Themes and Basic Themes reflected the data and that, ii) the data supported the Basic Themes, Organising Themes and Global Themes.
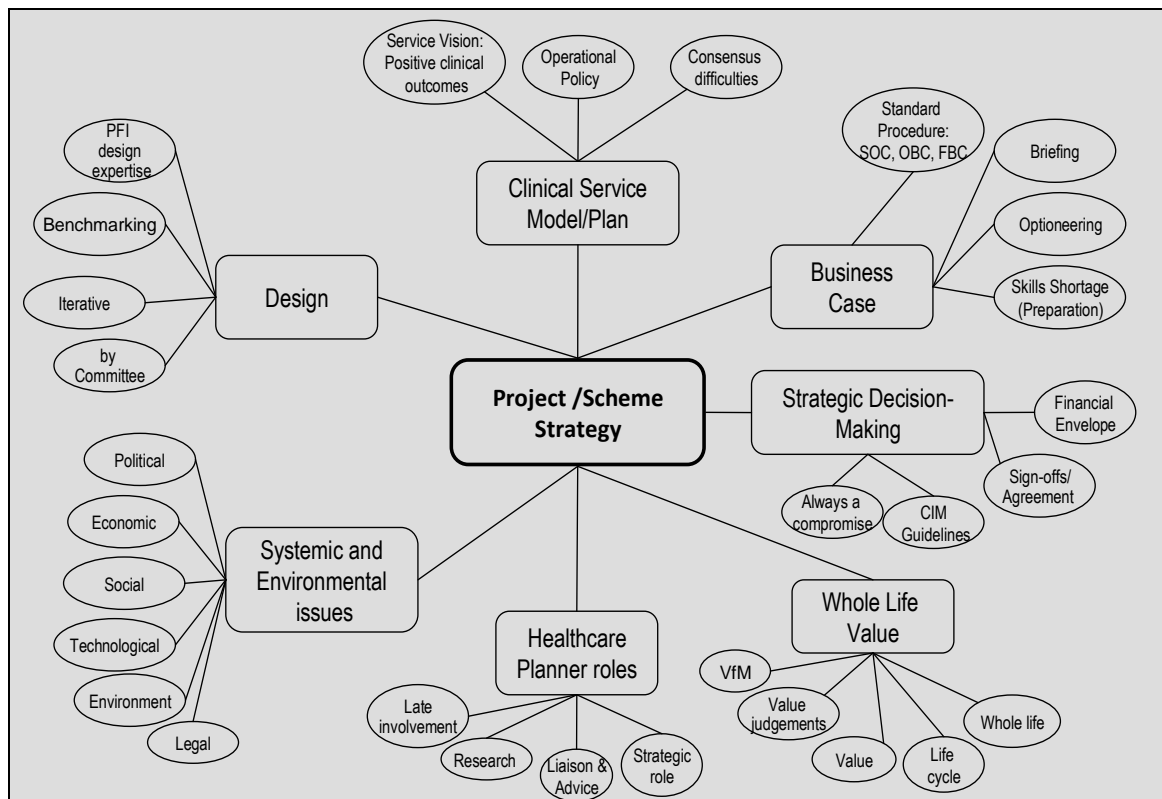
Figure 6.7 (a): 'Project Strategy' Thematic Network
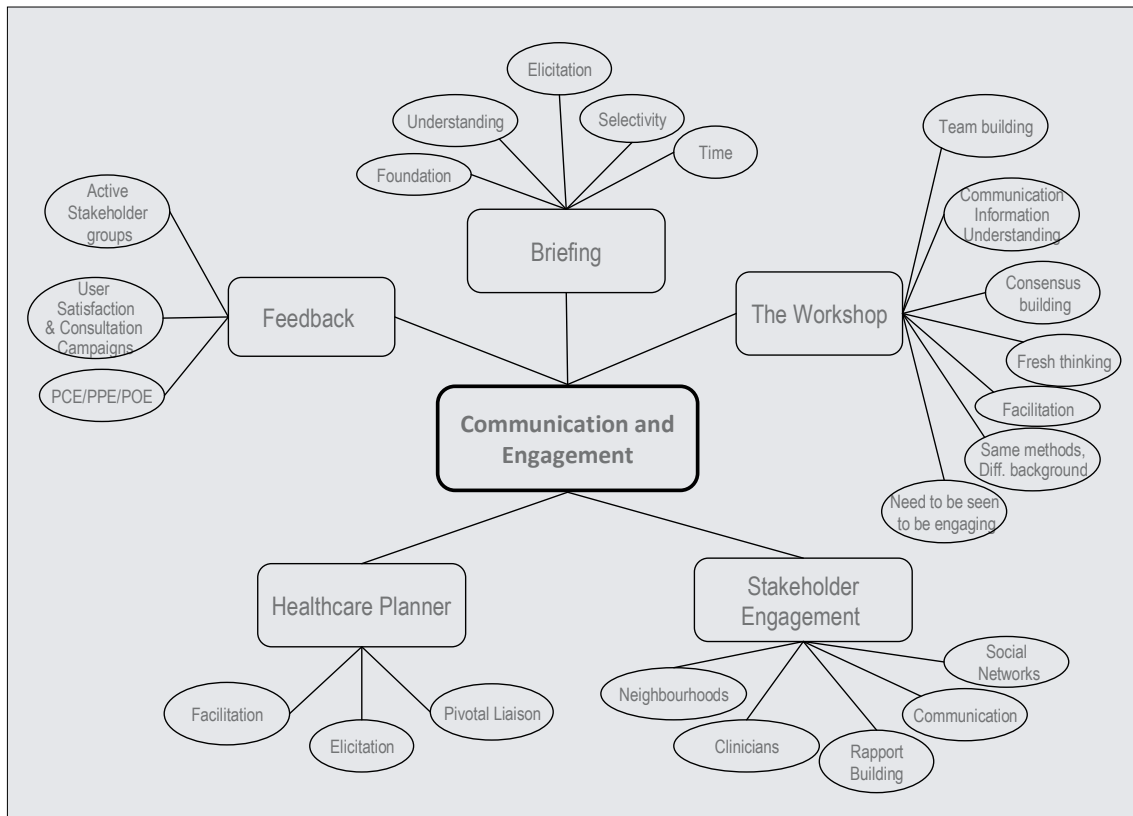
Figure 6.7 (b): 'Communication and Engagement' Thematic Network

Further scrutiny showed that it was necessary to introduce another Global Theme to reflect the different targets related to the processes encapsulated within the 2 identified Global Themes. Within the data, these targets were captured as documents or expected end products which project teams work to achieve. The basic themes reflecting these targets were grouped together and categorised as before into Organising Themes and named under Global Theme, *'Goals/Deliverables'*. The thematic network for this is illustrated in Figure 6.8.
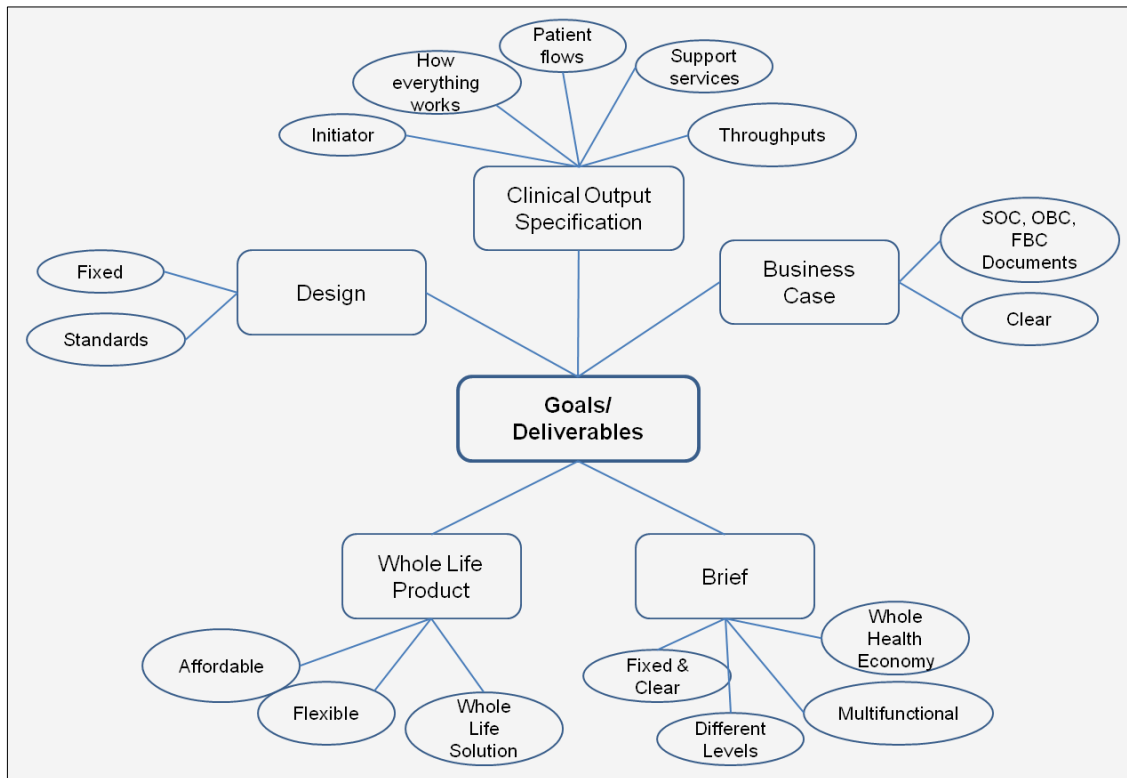
Figure 6.8: 'Goals/Deliverables' Thematic Network

6.5.3 Analysis Stage B: Exploration of text / Research Findings

Step 9: Describing and exploring Thematic Networks

This step took the researcher back to the original data. But rather than reading it in a linear manner, data was read through thematic networks with the aid of the Global Themes, Organising Themes and underlying Basic Themes. In this step, data and its interpretation were brought together. The networks are generally described starting from the Organising Themes at the top of the diagram and sequentially through a clockwise direction.

6.5.3.1 Global Theme: Project Strategy

This thematic network comprises 7 Organising Themes and 30 basic themes. The investigation into briefing and optioneering and how these correlate with the WLV concept, revealed key strategic issues, central to healthcare facility WLV. With reference to *Figure 6.7 (a),* the clinical Service plan, Business case

114

process and Strategic decision making represented principal themes that emerged as significant to a healthcare project's strategy. In addition, WLV, healthcare planner roles, systemic and environmental forces, as well as a project's design were seen to be significant to a healthcare project scheme.

Organising Theme: Clinical Service Plan

This organising theme highlighted the need for those involved in healthcare facility briefing to seek to first and foremost address the question *'how would doctors and nurses want to treat patients?',* before embarking on any other activity at project definition stage.

> "We [healthcare planners] start by engaging with service users, doctors, nurses, managers and a whole host of support staff to confirm what their requirements. The basis for taking brief forward is the 'model of care' or 'service model' with the guiding question for doctors and nurses being: how do you want to treat your patients?" *Participant (healthcare planner)*

It was found that getting the answers to this question right scopes a clinical service plan and is a key success factor for briefing healthcare facilities and subsequent selection of options.

> "During briefing, if you can't get a clinical (service model) agreement it is a high project risk because you have to work quickly to try and elicit something robust and pragmatic in a short period." *Participant (healthcare planner)*

Once agreed, the clinical service model, encapsulating the service vision and operational policy is presented as a clinical output specification document. Figure 6.8 is an excerpt of this Organisation Theme taken from *Figure 6.7 (a).*
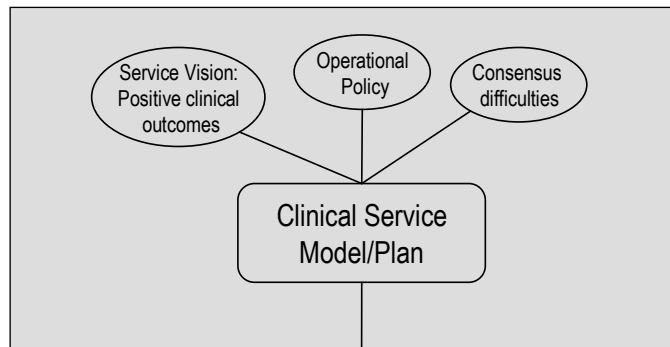
Figure 6.8: Clinical Service plan Thematic Network

Basic Theme: Service Vision

The service vision was seen to define how the service is to be developed. The service vision includes a definition of the benefits criteria and the basic investment objectives. Through the service vision, owners ask questions such as, what benefits do we want?; is it to provide for our patients, our staff or local community?; is it our aim to treat patients for less?; reduce backlogs?; or, reduce maintenance costs? The service vision provides a basis upon which to,

> "identify available options for improving services alongside the vision; possibly three or four that should realistically look at delivering that service vision." *Participant (FM, NHS)*

It was found that overall, the primary element of a healthcare service vision tends to be to enable positive clinical outcomes and a better patient experience. Where, better clinical outcomes were defined as pertaining to better quality of care, patient safety and faster patient throughputs, carried out in a healing environments, in which there are reduced infection rates and Healthcare environment Acquired Infections (HAIs). Faster patient throughputs involve seeing patients on time thereby getting them faster through the system. As an objective, achieving was said to increase revenue for the clinical business as well as,

> "improve the facility's reputation on the press side of things" *Participant (PSCP)*

One participant was of the view that, the ultimate aim of a clinical service plan, when it has been agreed should envision,

> "achieving healthcare facilities that deliver clinically excellent services" *Participant (Healthcare Planner)*

Therefore, healthcare facilities aim to enhance the achievement of the vision for a service that will deliver positive clinical outcomes and better patient experiences.

Basic Theme: Operational Policy

The operational policy goes deeper that the service vision and covers policies on clinical design elements as well as the expected clinical outputs. Clinical design elements take into consideration how everything works; how patients will move around the facility in addition to delineating what support services are to be included. The operational policy It details exactly how each patient is to be treated, including patient throughputs (how many patients come through the system); duration in each room, and combined patient flows and adjacencies. One participant emphasised the significance of early consideration of design elements saying,

> "You must get these [design elements] right at the start or you start building up costs" *Participant (Healthcare planner)*

Basic Theme: Difficulty with consensus of clinical teams

The clinical service plan is very important to the planning of healthcare facilities and subsequent stages. However, some participants expressed difficulty with getting consensus among clinical teams as to how they want to treat their patients, saying that,

> "They'll claim to know how, how many inpatients, outpatients, throughput, local demographics etc. but upon analysing on paper, there isn't much to robustly

work with. The implication is to go back and do a bit of research and analysis."
Participant (Healthcare planner)

This is frustrating to the briefing process since something robust and quick must be elicited from them because,

"being away from the 'coal face' puts a lot of pressure on them" *Participant (PSCP)*   ,

But how can such a fundamental agreement be rushed and still deliver value? The implication for this is that any improvement in the way the clinical service agreement is reached would seek to address consensus building amongst clinicians.

Organising Theme: Business Case

The business case process was seen to be central to the NHS facility planning process. Participants reported that while building procurement within the NHS used to be based on lump-sum contracts with the only requirement being compliance with the Health Technical Memoranda (HTM) and Health Building Notes (HBN); all planning in the NHS is now subject to clear business cases and business plans, which must be presented and defended before a panel, before funding a scheme can be approved. The key themes that emerged about the business case are presented in Figure 6.9.
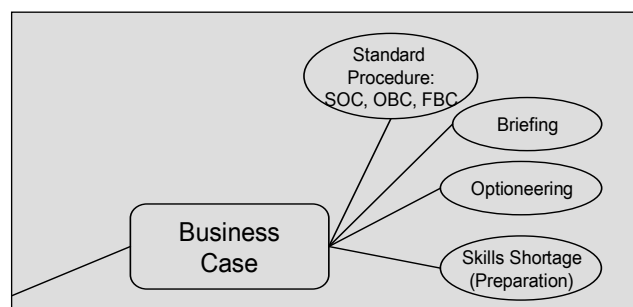
Figure 6.9: Business Case Thematic Network (i)

Basic Theme: Standard Procedure

It was found that NHS has got standard business case procedure that must be followed, depending on the status of the Trust whether an independent Foundation Trust or one reporting directly into a Strategic Health Authority (SHA). For those Trusts reporting to a SHA, a standard business case procedure is broken down into three parts: Strategic Outline Case (SOC); Outline Business Case (OBC); and, Full Business Case (FBC). Generated from the participants' contribution, the procedure is summarised in Figure 6.10.

BUSINESS CASE PROCESS

SOC
Asks: Is there a need?
• Very much about the clinical service
Defines:
• What is needed in broad terms;
• Why it is needed;
Includes:
• Identifying current state;
• Describing vision of how services should be developed

OBC
Looks at options for improving service;
What is available to us?
Identification of preferred option:
Do nothing;
Do minimum;
Do preferred option;
* refer to benefits criteria & investment objectives
* CIM
* For the first time, gives robust project cost

FBC
Take preferred option forward;
Really engage with Architect;
Engage with consultants in full earnest;
A lot of market testing and refinement of costs;

SOC Doc. Sign-off

OBC Doc. Sign-off
Proceed to detailed design

FBC Doc. Sign-off

Figure 6.10: NHS Business Case Procedure

Basic Theme: Briefing

Theoretically, construction briefing has been defined as a process through which client requirements are identified and defined (CIB, 1997) and as a process leading to the statement of an architectural problem and the requirements to be met in offering a solution (Pena and Parshall, 2001). Through the business case process, both these definitions can be linked to the activities of the SOC process. Some informants, on discussing how their planning processes are structured, reported that they always follow the *RIBA Plan of Work*. As such, parallels can be drawn between the business case's sub-processes and certain stages of the *RIBA Plan of Work* (RIBA, 2007). For

example, between the SOC and the *RIBA Plan of Work, Stage A/B: Appraisal,* in which client's needs are identified and the possible constraints on the development delineated. The briefing process was seen to compliment the business case process through informing and fine-tuning the business case.

Basic Theme: Optioneering

When asked about the concept of optioneering, most participants were not aware of the terminology. However, upon further discussion, they unanimously believed that optioneering is embedded within the NHS business case process. Optioneering within healthcare projects is performed in the OBC Stage and includes: identifying available options for improving the service, identifying available resources and with the aid of the Capital Investment Manual (CIM, 1994; DH, 2004b) deciding on a preferred option. Optioneering within healthcare projects (OBC activities) can be paralleled with the *RIBA Plan of Work Stage A/B* (RIBA, 2007) in which preparation of feasibility studies and assessment of options takes place.

Basic Theme: Skills shortage

One NHS participant was of the view that writing a winning business case needs experience and special skills, both of which are lacking in the NHS. While, another NHS participant reasoned that the lack of skills is partly because when people are involved in schemes,

> "What we don't do is share with those individuals, the expertise they have gained in developing the business cases … that is not shared across the NHS …" *Participant (FM, NHS)*

It was also found that the training provided is high level with no true understanding of how to actually prepare a business case. As such,

> "Some NHS schemes are not successful because people can't manage the pressure of learning quickly and keeping up" *Participant (FM, NHS)*

In addition, participants said that NHS staff are encouraged to work with the private sector, but they lack skills because of,

> "… continually using people who are going through a learning curve about how to develop a major scheme." *Participant (FM, NHS)*

This theme highlighted needed improvement in 'in-house' skills development for better business case preparation.

Organising Theme Summary: This theme highlighted the different stages of standard business case procedure, and how the different stages parallel with the briefing and optioneering processes. The theme also showed that despite the standard set procedure for business case preparation, Trusts are not equipped with the right skills for preparing a winning business case. These observations pointed toward the necessity of the NHS to review its training programmes and to create environments through which expertise can be shared; both of which support better WLV delivery.

Organising Theme: Strategic Decision Making

This theme concerns the intricacies associated with early decision making in healthcare scheme development. Through discussions with participants, it emerged that for healthcare schemes, most major strategic decisions are made within Business Case planning process. Participants described strategic decision as those that will help reduce overall costs down the line. With reference to Figure 6.11, this theme highlights the significance of the CIM guidelines and how all decisions are predominantly driven by the available financial envelope. The theme further covers issues concerning the NHS approval process which is characterised by sign-offs; and, how decisions with multiple stakeholders are always a compromise.
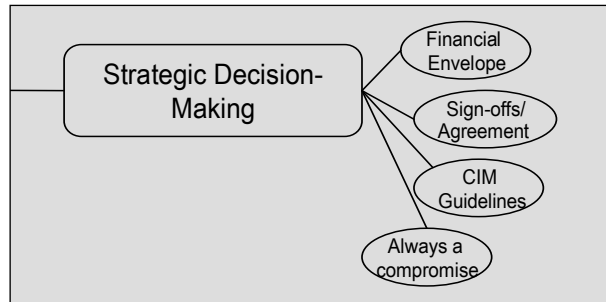
Figure 6.11: Strategic Decision Making Thematic Network

Basic Theme: Financial envelope

From discussions and observations of meetings, it was found that the issue of the available financial envelope is a major decision making driver within NHS scheme development process. Most interview and workshop participants rated financial cost high on the criteria of decision drivers. Moreover, it was found that final decisions tend to favour lowest cost overall, whether in the selection of suppliers or the scheme's design and finishes. A participant commenting on factors that affect decisions was of the view that,

> "In all honesty, decisions are based on fixed or limited budgets" *Participant (PSCP)*

Moreover, asked about their success stories, participants recurrently cited completing to budget as a significant achievement; thereby, rating financial factors highly both as a decision driver and as a performance indicator after project delivery. However, it was emphasised that although all care is taken to work within the available financial envelope, decisions are made in such a way that patient welfare and safety is not jeopardised.

Participants thought the NHS needs to improve its decision making process by demonstrating a clear ability for Trusts to enhance capital spending, in order to take advantage of future revenue cost savings. They suggested that this can be achieved by spending more on the original building, with one participant suggesting an American philosophy that NHS Trusts could adopt. The philosophy involves,

"spending more on patient-focused quality initiatives at the front-end thereby providing money back over the life of the building through treating more patients and incurring low running costs etc." *Participant (Healthcare planner)*

Basic Theme: Sign-offs

Decision making within NHS projects was found to be centrally characterised by sign-offs for every stage completed. Obligatory sign-offs were seen to be a requisite for every business case stage, for the clinical service agreement as well as for the different briefs completed. Sign-offs seemed to symbolise agreement or consent to advance to the stage downstream. Signing-off was seen to be the responsibility of either, Trust Boards, Project Boards, Estates or Building Committees. In addition, for all the stages requiring sign-offs, nothing is done until the preceding stage is signed off. Accordingly, one participant appealed to the NHS to streamline its approval process because,

"some projects sit ready to go at FBC for 3 months [waiting] to get sign-off through a SHA...this creates uncertainty and unnecessary costs" *Participant (PSCP)*

This basic theme highlighted a decision making process characterised by sign-offs which may interpreted as a sign of bureaucracy; a lack of Trust between parties and a demonstration of accountability (decision audit trails) in NHS projects. Participants were of the view that the NHS needs to streamline its approval process to avoid unnecessary delays, uncertainty and costs.

Basic theme: Capital Investment Manual (CIM) guidance

Participants in this study agreed that they follow CIM guidance during the decision making process for healthcare capital investments (in this case, for schemes). The CIM provides detailed guidance on the technical considerations of the full capital appraisal process. Participants reported that they use the guidance for developing options and that, for each option, the guidance helps in bringing the process together so that it is easy to decide which option is best.

Participants concurred that it the CIM guidance "works well" although some participants expressed reservations about the way it is applied; adding that the training provided by the NHS on how to use the CIM guidance is inadequate.

The unanimous use of CIM guidance represents a systematic procedure for decision making for NHS project delivery. However, for the process to effectively enhance WLV delivery, requisite skills need to be reinforced.

Basic theme: Compromise decisions
This theme was recurrent to decision making discussions. It was raised in relation to the various, yet competing demands that are made by NHS' multiple stakeholders, on a fixed and ever decreasing budget. In some participants' experience, decision making is always about making compromise decisions.

> "I've often said about the buildings that we do particularly when we have multi-occupancy buildings that end up being designed by committees or something like that very similar sort of process. I don't even think we even achieve a solution where everybody says it's ideal. It is a compromise, it is always a compromise." *Participant (FM, NHS)*

It was reported that there is usually a mismatch between aspiration and affordability coupled with the different stakeholders' value judgements that are difficult to meet fully.

However, participants felt that partnership relations enable compromises and satisfactory end-results. Participants also said that where all the concerned parties are fully aware of the facts, a compromise is possible; and further that, laying 'ground rules' and agreeing a set of parameters, at the start of the process, increases transparency and awareness among the parties, making it easier to agree a compromise.

Organising Theme Summary: Strategic decision making within healthcare construction project strategy was seen to be predominantly driven by the available financial envelope and characterised by various sign-offs. It was also

124

found that the CIM guidance is central to the healthcare project decision making; moreover, participants were of the view that it is useful when dealing with and analysing available options. It was also found that NHS decision makers need to streamline approval processes to mitigate unnecessary delays, uncertainty and costs. In addition, the findings indicated that value judgement needs to be made in favour of spending more on the original building if longer term cost savings are to be realised. Furthermore, due to the various stakeholder groups usually involved in the planning and designing of healthcare facilities, it was revealed that most decisions usually result in compromises because it is usually difficult to meet all people's expectations.

Organising Theme: WLV

The WLV concept was neither clear to interview participants nor evident in the workshops observed. Some participants were sceptical about the practicality of WLV perceiving it as 'very idealist' because in their experience, all decisions are based on fixed budgets which leave little room to include other value measures besides cost. Moreover, they questioned how different WLV parameters would be accounted for, in terms of information sources, when UK departments operate in silos. Participants described WLV in terms of value criteria, subjective value judgements or in terms of a scheme's lifecycle and lifecycle costs. From the meetings observed, it was WLV was demonstrated as recurrent but subtly expressed cues of what mattered to the Trusts and workshop participants. Insightful comments about the concept revealed that WLV does not mean much to decision makers because,

> "Not many people stay in a building long enough to realise and appreciate WLV; rather, it is usually of interest to the 'financial people' at the front end"
> *Participant (Healthcare planner)*

This theme brings together prominent themes raised in relation to WLV in healthcare facility delivery. The issues are summarised in Figure 6.12.
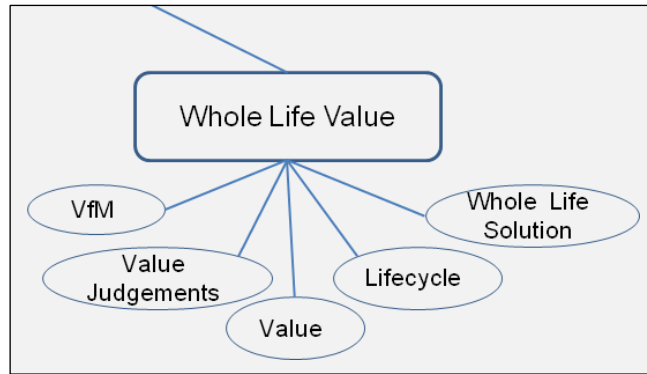
Figure 6.12: WLV Thematic Network

Basic Theme: Whole Life Solution

Consultants to the NHS noted the importance of considering a facility's whole life through focusing on offering a whole life solution rather than short term fixes. A whole life solution was said to be achieved by,

"… helping clients look at their whole life costs by looking at front-end decisions, ... we make a strong financial case for having this extra expenditure on all major fronts and on improving quality at the front end",

in addition to,

"… getting alongside them and getting them to make strategic decisions such that they reduce overall costs down the line". *Participant (Healthcare planner)*

Practically, a whole life solution may be achieved through the choice of flooring (floor finishes) in older people's homes which if carefully planned for, results in less falls and consequently less claims and safer living conditions for residents. Therefore, in selecting options, an affordable solution, both to acquire and use was seen as favourable and of better value.

Basic Theme: Life cycle and flexibility

WLV was at times described in terms of the facility's life cycle. A healthcare facility's life cycle was seen to span between inception to end of functional use, an average period of 60 years. Although not necessarily demolished, facilities would then change use usually converted for administration use. Participants

believed that a facility's lifecycle resonates with the expected maintenance cycles and life time costs associated with occupying the healthcare facility.

Some participants thought that for healthcare facilities, flexibility over the lifecycle is one of the most important factors in healthcare facility planning. It was reported that service models change quite frequently, hence, it is important that a facility is planned and designed in order to accommodate the changing ways in which patients are treated. Therefore, over a planned design life of 60 years, the facility should be able to functional adapt to the changes with minimal physical changes, thereby allowing for flexibility over the life cycle.

Basic Theme: Value

When asked about their WLV perceptions, most participants discussed value parameters in schemes. About the definition of value, most echoed literature (for example; Perry, 1914; Miles, 1961; Best and de Valence, 1999) in saying that value means different things to different people. Some participants were of the view that in order to understand what is good value one has to understand a stakeholder's position in the delivery chain.

> "So it is very difficult, it is very difficult. I think what I am coming to is that it is very difficult to assess what is good value. It depends where you sit in this chain, from user of the service to provider of the service, to someone else like myself responsible for making the service run." *Participant (FM, NHS)*

The chain was seen to be a continuum between user of the service (for whom it is planned and designed) through to E& FM responsible for making the service run. Table 6.2 illustrates some examples given by participants about the different value judgements usually held by various stakeholders on a healthcare facility delivery chain. It was further found that successful value delivery is measured in different ways; however, post-contract works signify that value was not delivered.

Table 6.2: Stakeholder value(s)

Position/Role	Parameter
User/patient	• Safety; • Privacy and dignity; • Healing environments free from HAIs; • Reduced waiting times • Location and accessibility; • Car parking;
Trusts/Client	• Reduced ongoing revenue-type costs; • Better patient outcomes; • Patient safety and welfare; • Reduced infection rates; • Faster throughputs; • Total affordable solution; • Flexibility; • Sustainability; • Value for money; • Provider client relations;
Clinicians	• Patient outcomes; • Work environments (lighting and ventilation); • Lengths of stay; • Adjacencies;
Public/Citizens	• Location and accessibility; • Reduced disruption to traffic, environment (trees, nature) • Car parking; • Effective use of public funds;
Designers	• Landmark building
Healthcare planners/ other consultants	• Whole life solution
Construction partner (consortium)	• Lowest unitary charge - lowest sqm charge to build project;
Estates and Facilities	• PFI/LIFTcos - Lowest cost per sqm to maintain over period they are responsible for facility; • Meets budget • Completed on time; • Well constructed and robust • Best and most innovative materials; • Value for Money – cheapest is not always best;

Some participants believed that value in schemes is always determined as cost. However, one participant was of the view that although there is greater emphasis on *VfM*, there should be more focus on wider issues of value than cost. Because,

> "We all have different value judgements and we do quite often fail to understand that and concentrate on: was it value for money? How much did it cost? As opposed to the wider issues of value." *Participant (FM, NHS)*

Basic Theme: Value judgements

The term 'value judgement' was recurrently used by participants discussing WLV. The term seemed to reflect the subjective nature of value which depends on individual opinions rather than shared inclinations. For instance, on commenting about achieving WLV in schemes, one participant was of the view that,

> "it is difficult to meet different people's value judgements" *Participant (Internal PCT)*

Basic Theme: Value for money (VfM)

Furthermore, discussions and observations saw the term *VfM* regularly used. One participant, while discussing WLV, was of the view that, it is should be about VfM, in that,

> "cheapest is not always best …"

> but rather an investment in,
> "building to best ability with best and most innovative materials". *Participant (FM, PSCP)*

The study uncovered notable definitions of WLV for healthcare facilities, one of which was,

> "value(s) that deliver the best possible clinical outcomes"; *Participant (PSCP)*

While another was about,
> "delivery of best possible services in the most economic manner and having the right culture in designing these"; *Participant (PSCP)*

And fundamentally as the capability to:

"Offer a whole life solution to the Trust and client". *Participant (External, Independent developer)*

Organising Theme Summary: Together, these definitions may be summarised to contain the key ingredients for **healthcare WLV** delivery including: **clearly defined value(s),** *that support(s)* **best possible clinical outcomes/services,** *within* **economic limitations,** *having* **the right design culture in order to deliver a whole life solution to Trusts.**

Organising Theme: Healthcare Planner

The role of the healthcare planner in the project definition process was highlighted by participants from within and outside NHS Trusts. Healthcare planners were found to be from private consulting organisations, employed by NHS Trusts to advise on planning and to facilitate the briefing and optioneering process. It was found that, on some occasions, healthcare planners are contracted to only facilitate stakeholder workshops and nothing else. Most participants mentioned utilising the services of healthcare planners at some point in the briefing and business case preparation process, thus confirming their significance to healthcare facility planning. The sub-themes related to healthcare planner roles are summarised in Figure 6.13.
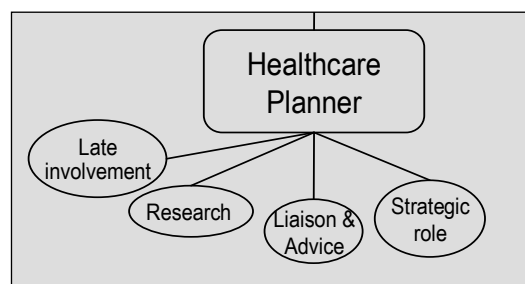
Figure 6.14: Healthcare Planner Thematic Network (i)

Basic theme: Strategic role

Discussing the strategic role, one participant said that as a healthcare planning organisation they...

"…get alongside clients and get them to make strategic decisions";

Believing that;

"if you get things right at the front end, the whole life cost to the client will be reduced". *Participant (Healthcare Planner)*

This observation demonstrates how the healthcare planners contribute to the strategy process of healthcare facility planning.

Basic theme: Liaison and advice

It has been found that healthcare planners play a pivotal role in liaising with the client side, stakeholders, design team and construction team. They were found to support client organisations by standing alongside them as advisers throughout the process. With one healthcare planning participant saying,

"in fact we are duty bound to advise on meeting standards" *Participant*

Basic theme: Research

In order to enhance their advisory role, healthcare planning organisations said they engage in practical research in order to confirm through observation how healthcare facilities and specific interior spaces are used.

"When we go into hospitals and look at briefing, we look at how people do things; we look at improving the patient pathway band improving the flow of patients and staff in order to better patient experience." *(Healthcare planner)*

Basic Theme: Late involvement

Despite their significant role, healthcare planners often get involved late in the process. A participant discussed how clinical teams invite a healthcare planning

organisation after agreeing the SOC and clinical service model, but upon analysing on paper, there is not much to robustly work with, the implication of which is to go back and do a bit of more research work and analysis. This puts a strain on the already limited period of time allocated to carry out the planning tasks.

Organising Theme Summary: The healthcare planner role has emerged as an essential contributor to the success of a scheme's strategy. As liaison and strategic advisers; as well as, researcher, they symbolise an indispensable service to both sides of the supply chain: client and provider sides in interpreting information and enabling successful delivery of long term value.

Organising Theme: Systemic and environmental issues

This theme integrated those themes that influence planning but over which the Trusts may have little or no control. Basic Themes within this Organising Theme were categorised along the PESTEL analysis framework (Mayer-Wittman, 1989; Day, 1990; Hopkinson,1993). PESTEL defines Political, Economic, Social, Technological, Environmental and Legal influences impacting the environment in which a business organisation operates. Using this framework provided a structured way for discussing issues that impact healthcare scheme decision making as raised by participants (see Figure 6.14).
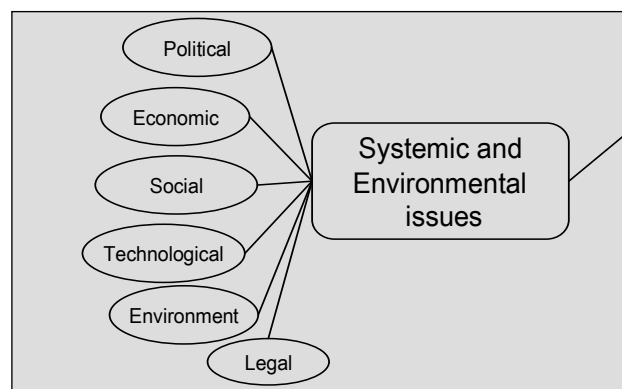
Figure 6.14: Systemic and Environmental factors Thematic Network

132

Basic Theme: Political Environment

It was found that, sometimes, the decision making process, especially during optioneering, is influenced with by local politicians. In one example, during the planning of a regional hospital, a decision on the location stalled because 3 politicians failed to agree since each wanted a major proposed acute facility to be situated within their constituencies. In addition, initiatives for taking healthcare back into the community (discussed in *Section 1.2*) resulted in localised decision making in the NHS facility planning process. Localised decision making is characterised by wider participation within the local 'whole health economy'. In the whole health economic model, Local Authorities (who have taken over social care services), traffic agencies, educational services, Ambulance Trusts and all who may be affected by a new facility's operation must now be involved and consulted during briefing. Involving all these influential individuals was reported to cause a lot of tension in the balance of power during decision making, which usually delays decisions, causes uncertainty and increases project times.

Basic theme: Economic environment

This theme parallels the theme on cost and affordability raised earlier. From the observations and discussions held, the economic environment was consistent theme. For instance, due to the current economic environment, participants were concerned about mandatory requirement to consult and reach a wide citizen population on limited or shrinking budgets. Participants were also concerned about the implications of consulting diverse stakeholders but not fulfilling their needs because the Trusts cannot afford to.

Basic Theme: Social environment

This was demonstrated through patients' increasing need for dignity and privacy. Dignity and privacy are now changing healthcare planning and design considerations for instance, moving away from design of 'Nightingale' shared wards to single bed wards. Furthermore, widening diversity in terms of ethnicity and religion as well as demographics are changing the way in which facility

planning and design responds to diverse stakeholder needs through inclusive briefs.

Basic Theme: Technological environment

Participants acknowledged the rate at which changing technologies are affecting healthcare facility planning and design. As a consequence, forecasting future viability and use of facilities is challenging planning considerations. Dynamic ICTs, changes in patient intervention methods, as well as increasingly modern building materials, were some of the technological issues raised by participants.

Basic theme: Environmental influence

Due to the sustainable development agenda (WCED, 1987) and compounded with environmental/natural disasters, environmental considerations are becoming more significant to decision making, planning and healthcare facility design. While it might not have been the case two decades ago, it was found that attaining the BREEAM standard and demonstrating sustainability awareness are transforming prioritisation criteria for briefing and optioneering. In terms of strategic healthcare planning, one participant gave an example that,

> "We have an NHS edict which comes from government and quite rightly so, on sustainability and carbon reduction. And we are asked to encourage the people to use public transport more and more." *Participant (FM, NHS)*

Consequently, this has resulted in additional pressure on the limited available funds, with one participant commenting,

> "Since we have got to tick boxes on all the sustainability fronts, it means we have got less to spend on actual healthcare and clinical services". *Participant (Healthcare planner)*

This statement implies that of late the sustainability agenda and the need to achieve the BREEAM standard seem to have taken precedence over actual healthcare.

Basic Theme: Legal environment

Changing Government legislation for clinical services and building requirements were found to affect planning and design of healthcare facilities. Examples of changing legislation include, ever changing National Service Frameworks (NSFs) for treatment of patients; sustainability/BREEAM standards; and, inclusive design-related issues exemplified through the Disability Discrimination Act (DDA).

Organisation Theme Summary: The environmental forces covered under this organising theme seem to originate externally of individual Trusts. Hence, they often have implications on requisite compliance for planning and design to be deemed satisfactory. In the participants' experience, such factors were said to leave little flexibility for other stakeholders needs and for innovation towards supporting real healthcare service.

Organising Theme: Design

Salient themes under the 'design' theme revealed, a briefing, optioneering and design process characterised by national standards; public participation in planning and design; as well as, the expertise exhibited by PFI consortiums in the design process. Figure 6.15 is a representation of the theme.
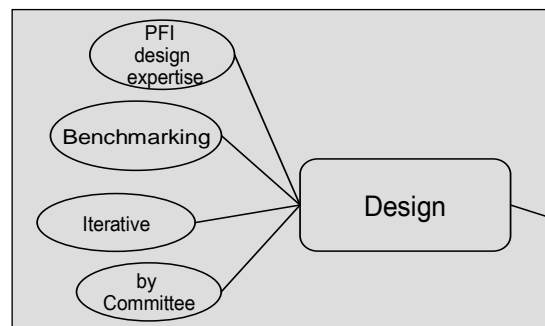
Figure 6.15: Design Thematic Network

Basic theme: Design by committee

Since the Labour Government devolved care back into the community, planning teams now include representatives from key stakeholder groups in a process that was referred to by a participant as 'design by committee'. However, in some participants' experiences, such a planning and design process is dangerous and leads to poor design as the PCT has to account for anybody's views. It was said that, through the collaborative approach,

> "the PCT is forced to take on views of people who may not know what they are commenting on… and do not realise the impact it has on the rest of the building".

Therefore, in the participant's opinion,

> "The wish to involve all backfires". *Participant (FM, NHS)*

Adding that,

> " ... why the project in example worked we involved the right people on the team, the right balance on the team - we did not involve a patient because patients are not qualified to understand the intricacies of medical care but are qualified to judge on subjective issues like PR, care, patients should judge on fit outs, art work, furniture because they don't understand priority in budgets."

These comments regarding reservations about design by committee and involvement of all in everything allude to selective involvement in briefing.

Basic Theme: Iterations

For healthcare facilities, it was found that the design process starts the moment funding is approved. Starting with Outline Business Case preparation, Trusts

begin to engage with service users (mainly clinicians) to confirm requirements that were solicited earlier. The initial design was seen be based on the key design elements delineated in the clinical service model; as well as, NHS design and technical standards: Health Technical Memorandum (HTM), Health Building Notes (HBN) and the Activity Data Base (ADB). The design process was reported to be iterative in a process that involves engaging with users, and progressively consulting with them through the 1:200, 1:100 up to 1:50 loaded drawings stages. Therefore, briefing and design are seen to be interwoven and symbiotically related as briefing, through consultation and engaging with stakeholders, provides feedback to design development while, design provides a visual tool utilised in briefing and confirming stakeholder needs.

Basic Theme: Benchmarking

Benchmarking refers to the process of searching for the best industry practices that will lead to exceptional performance through implementation of the best practices (Camp, 1989; Bhutta and Huq, 1999). Its central essence is learning how to improve activities, processes and management (Ahmed and Rafiq, 1998), through measurement, comparison, identification of best practices and improvement (Anand and Kodali, 2008).

Benchmarking for design was found to be common practice during healthcare project briefing. Participants reported that through benchmarking, planners keep up with spatial standards and aesthetics by comparing with existing healthcare facilities both within the NHS and internationally (especially with USA and Europe). Participants further recounted how the press and internet media have induced user-led benchmarking in which,

> "people see buildings…things built in America and Abu Dhabi and say, 'why can't we have it here?'" *Participant (Healthcare planner)*

Although benchmarking was also said to apply to cost planning (in comparing project costs) of the OBC process, the practice was said to be primarily applied

in deriving internal design standards (set by individual Trusts) during early briefing.

Basic Theme: PFI design expertise

It was found that, for healthcare projects procured under PFI/LIFTco. contractual arrangements, the design and planning process is owned and driven by the private providers. Comparing with non-PFI procured schemes, a participant from a Trust commended the high level of expertise demonstrated by PFI consortiums during the briefing and design process on a recently completed scheme. The participant thought the process was flawless, and that it led to better design and an innovative building. In the PFI-led process, the service was designed before the facility where as,

> "traditionally, we would have been designing a facility before a service"
> *Participant (FM, NHS)*

In the informant's opinion, the PFI design process worked better and exhibited a high level of design expertise.

Organising Theme Summary: Healthcare facility briefing and design was found to be tending towards a more collaborative effort between Trusts and their stakeholders. It was also found that the design process is iterative and that it is symbiotically related to the briefing process. It was seen that benchmarking for design is regularly practised in healthcare briefing and that it is sometimes user-driven. In the study, participants also expressed their satisfaction with the level of expertise demonstrated by the PFI design process.

Global Theme Summary

This Global Theme uncovered issues impacting healthcare project strategy formulation. Highlights include, the need to agree a clear clinical service model, as a first step; the significance of a mandatory business case planning; and, key issues in strategic decision making. Furthermore, WLV and its diverse

meanings to the different healthcare stakeholders was delineated; the role of the healthcare planner was seen, as has the role of systemic environmental factors. Key issues concerning briefing and initial design, how they symbiotically feedback into each other as well as expertise demonstrated through service design before facility design by PFI-procured schemes were also part of this Global Theme.

6.5.3.2 Global Theme: Communication and Engagement

This global theme integrates all those themes that exhibited elements of communication, interaction and all manner of group social dynamics associated with briefing and decision making. In addition, the healthcare planner role is re-visited as a key player in the communication and engagement process during project definition.

The need for communicating arises whenever two or more people need to perform a task that none of them can perform alone (Kushilevits and Nisan, 1997). The objective of communication is to ensure that the receiver reacts in the way the sender expects (Feldberg, 1975; Otter and Emmitt, 2008). It is believed that the process of briefing is one of communication in which active listening should be encouraged to allow a free and complete flow of information in order to enable desired results in meeting the need to be addressed (Barrett and Stanley, 1999; Emmitt and Gorse, 2003; Kelly *et al.*, 2005). Effective briefing is founded on clear definition of the client's requirements and communicating them to the procurement team (O'Reilly, 1987). In briefing therefore, it is important that opportunities for stakeholders to communicate their needs and requirements are fostered.

This Global Theme summarised salient themes on communication and engagement (see Figure 6.7(b)). In particular, it covers the briefing process; the workshop as a key feature in healthcare project stakeholder engagement; and, the active role played by healthcare planners in communicating and engaging

with the diverse stakeholders. In addition, the issue of feedback is discussed in accordance with why, how and when it used.

Organising Theme: Briefing

In the study, the briefing process was found to involve understanding, eliciting, clarifying, in addition to aligning a Trust's business needs. The data also reiterated briefing process as a fundamental process for laying the foundation for the rest of the project's life. However, it was found from the study that in most cases, project delivery times are pre-fixed and as a result, time that could have been spent on strengthening briefing is directed to other project activities. This theme also includes perceptions from some participants on their dissatisfaction with processes in which the public/citizens are actively involved in defining the brief. Figure 6.16 is a summary of the basic themes on briefing.

Basic Theme: Foundation stage
It was found that the briefing stage is a key foundational stage associated with setting standards to which schemes are to be built and for creating integrated teams for value delivery. It was also found to be a process in which a high level brief is translated into a set of critical success factors for the scheme's development. For example, a participant expounded that where the high level brief previously recorded a desire for a reception space with 'an airy feeling to it', it is now analysed and broken down to its true meaning, and that,

> "Usually it means it [the space] has got a large proportion of glazing and atrium type of feeling to it". *Participant (FM, NHS)*

Basic Theme: Understanding
Discussions with participants showed that during the briefing process, project teams endeavour to understand what the real issues in a scheme are. Understanding is defined as the "grasping of connections between ideas…to understand something is to recognise the links between it and other ideas"

140

(Kosso, 2002:40). Understanding gives the 'learner' a capacity to explain, justify, predict and, in some instances control events (Newton and Newton, 2000). Hence, seeking understanding in briefing is more than a collection of ideas. Rather, through extra efforts such as exemplified by a participant's discussion on how their organisation goes a step further than the meeting with users by carrying out observations in healthcare facilities to enhance and confirm how spaces are actually used.
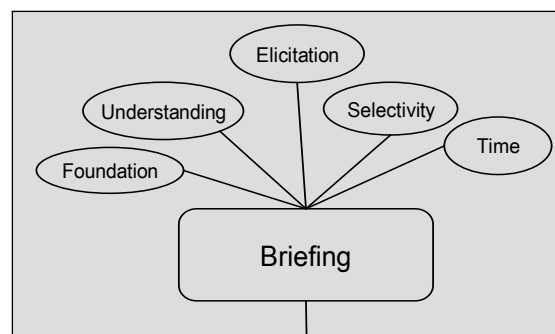
Figure 6.16: Briefing Thematic Network

Basic Theme: Elicitation

The briefing process was also recognised by participants as one that involves direct elicitation of needs and requirements from Trusts, users (clinicians and staff), patients and the public. The most recurrent factors elicited for were: the clinical service model and the Trust's business needs. It was discussed that when eliciting information from clinicians special attention is paid to the fact that it must be a quick process, yet robust and pragmatic because,

> "… taking people away from the 'coal face' … from treating their patients, puts pressure on them" *Participant (PSCP)*

Basic theme: Selectivity

Some participants expressed disappointment in the recent trends in briefing in which Trusts consult and involve all. They argued that because the PCT is obliged to account for anybody's views, even from

141

"People who do not know what they are commenting on, not realising the impact on the rest of the building, ... Where it [briefing] goes wrong – there is so much legislation to be complied with on top of having to take the users' views into consideration! Where do you strike the balance with users? Through trying to tie the subjective and the objective based on fact and real need? The complexity of the NHS is such that the wish to involve everyone in trying to create a brief backfires." *Participant (FM, NHS)*

In their view, it is important to,

"be careful not to involve everyone in everything. Invite them [stakeholders] to what affects them and what they will use; everything should be done in phases including briefing and involvement" *Participant*

One participant challenged full engagement wondering that,

"… if it is an endoscopy unit in a hospital and we have consulted with the clinicians and the Trust and possibly the patient group, I am not sure what anybody from the outside will add…" *Participant (PSCP)*

Therefore, these views point towards the necessity for Trusts to consider being selective on who is engaged and when. Participants also noted that, depending on the context of the scheme, it is important to know at what stage to consult or inform stakeholders.

Basic Theme: Time

The issue of time emerged from participants acknowledging that project teams are left with no choice but to cut the briefing period short because of the 'unrealistic time expectations' from Trusts. It was found that some Trusts have guidelines as to how long it should take to write a business case, but …

"when we are set a deadline here, it puts a squeeze on everything else…but the construction phase, people can only build at a certain rate."

Therefore,

"What gets squeezed is the business case and design period". *Participant (Healthcare planner)*

Adding that,

"If you start squeezing that [period], you are risking the whole process, getting this wrong if you do not spend enough time here in the planning and the brief". *Participant*

Ironically, other participants questioned what a protracted briefing period would contribute towards the final brief given the funding boundaries. Their argument is that…

"more time during pre-design might have a detrimental effect overall"

And question,

"How much more of a better brief would we have if we had more access to stakeholders?" *Participant (PSCP)*

Moreover, completing schemes on time was recurrently cited by participants as an important measure of project performance. Hence, the issue of how much time is enough time in briefing seemed debatable.

Organising Theme Summary: This Organising Theme has re-affirmed the importance of spending time in the briefing and planning stage. The theme has further corroborated what previous research showed about clients and the industry not spending adequate time in the briefing stage (Shen, 2006; Emmitt, 2007). Participants also confirmed the importance of spending enough time understanding needs and requirements in order to mitigate risking the whole process. Finding showed participants' dissatisfaction with involving all stakeholders in all briefing activities and advocated for selective involvement.

Organising theme: Stakeholder workshops

It was discovered that many briefing activities are conducted through stakeholder workshops. In the construction industry, the briefing workshop is usually associated with Value Management (Kelly, 2007). However, Chinyio and Akintoye (2008) reported that workshops are practical approaches to engage stakeholders. Likewise, workshops emerged as a familiar medium for engaging with stakeholders during briefing. Workshops were seen as forums for understanding stakeholder expectations; consulting with stakeholders and for informing them; as well as, as a facilitated means to meet and deliberate via consensus (summarised in Figure 6.17).
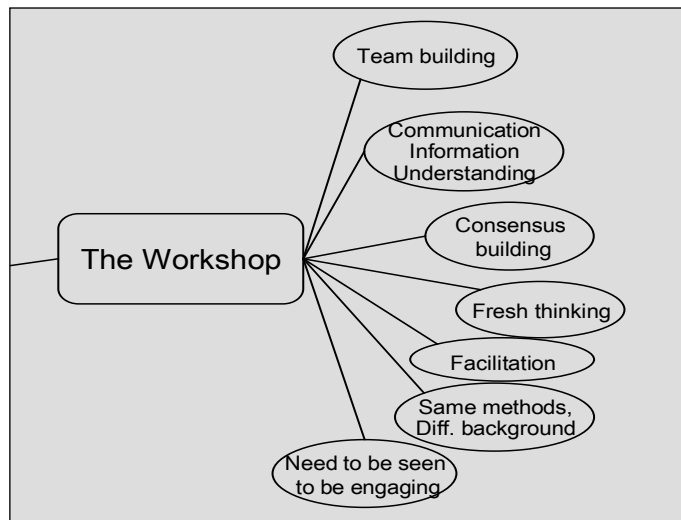
Figure 6.17: 'The Workshop' Thematic Network

Basic Theme: Team building

Workshops were seen to be an important medium for early team building with stakeholders. Supply-side participants recounted that as soon as their organisations are appointed, they set up initial stakeholder workshops in order to encourage collaborative working as part of the process for building integrated teams.

Basic Theme: Communication, Information, understanding

It was found that the workshop is used as a multipurpose forum for informing and communicating with stakeholders throughout the briefing and optioneering process. Participants were of the belief that it is important to set up stakeholder workshops immediately, because the delivery team…

"hold workshops to gain consensus for multiple clients. We need to be sure that people understand why we are doing something and we need to know definite tangible benefits". *Participant (PSCP)*

Therefore, through the initial stakeholder workshop, the supply-side seek to understand the varying outcomes that various groups are expecting from a proposed scheme.

Basic theme: Consensus building

A recurrent theme, workshops were seen to be a useful forum for building consensus amongst multiple stakeholder groups. Discussions with participants revealed that stakeholder workshops enable:

- a better understanding and awareness of what the definite tangible benefits for a scheme are;
- reconciling benefits;
- "coming to some sort of agreement".

Basic Theme: Fresh thinking

Participants said that through facilitated workshop environments, with the aid of scenario mock-ups, clinicians and Trust managers are encouraged to consider different ways of carrying out their day-to-day tasks. Hence, through workshop, users are more aware of the consequences of certain decisions. Consequently, they contribute ideas towards challenging the status quo and towards more effective strategic options concordant with budgetary constraints.

Basic Theme: Facilitation

It was established that successful workshops depend on how well they are facilitated. Successful facilitation was found to be dependent on the ability to have structured workshop processes that are well organised with a clear agenda; in addition to having a determination to come to a consensus, by letting workshop participants know the goals before hand.

"if you tell people that the door is not going to be opened until we have gained consensus, and people understand what they have to go through before a process, that helps" *Participant*

Basic theme: Same method, different backgrounds

Furthermore, during public consultation workshops observed, it was noted that there was a tendency for engaging various people at the same time, with the same tools used, irrespective of their backgrounds. For instance, at one workshop, a large public meeting attended by close to 100 people, and facilitated by NHS Trust staff, was observed. The workshop was attended by diverse stakeholders including clinicians, charitable organisations, Local Authority staff and patients and the public. The workshops was facilitated with the aid of modern ICT and required workshop participants to read, comprehend and answer a given question (displayed on overhead projector) within 10 seconds. Some participants seemed frustrated at not responding in time hence, not being fully involved in the workshop proceedings. Therefore, despite being physically present, their active involvement was questionable in this case.

Basic theme: "…need to be seen to be engaging"

The statement, *"we hold workshops because we need to be seen to be engaging"* was heard from several interview participants. Such comments negatively affect the authenticity of stakeholder consultation workshops. In addition, issues on whether and how the results from the workshops are applied arise.

Organising Theme Summary: The workshop method was found to be a familiar forum for engaging stakeholders during briefing and optioneering. It was found

that through workshops Trusts and facility providers seek a better understanding of stakeholders' needs and requirements; educe fresh thinking for problem solving; and, build consensus. Workshops were also seen good forums for meeting with and building teams. However, it was found that successful workshops are primarily a result of good facilitation; and further that, workshops may be arranged perfunctorily to comply with regulations, without genuine interest in their advantageous outcomes. In addition, for some consultation workshops, methods were not tailored to the diverse stakeholder groups attending them.

Organising Theme: Stakeholder engagement

The basic themes encompassed in this organising theme emerged from issues concerning stakeholders and managing stakeholder relations during briefing and optioneering. As illustrated in Figure 6.18, the emerging basic themes included, social networks; communication and rapport building as well as the preference for neighbourhood involvement over general public/citizen involvement.
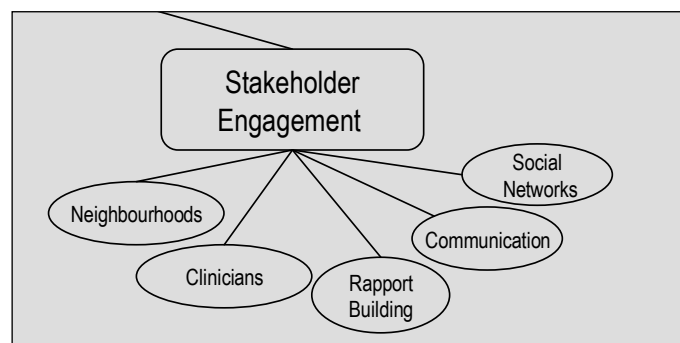
Figure 6.18: Stakeholder Engagement Thematic Network

Basic Theme: Social Networks

The study revealed a significant contribution of social networks in stakeholder engagement and briefing of healthcare facilities. Gangrade (1988:54 cited by van Willigen and Chadha, 2003) referred to networks as a "Multiple Linkage

147

Group" including co-workers, friends, neighbours, other kin and persons linked through joint association membership. Social networks are formal or informal social connections that exist between individuals (Ziersch and Arthurson, 2005); they are a linkage that serves as a lubricant for getting things done (Powell and Smith-Doerr, 1994).

It was found that Trusts heavily rely on both informal and formal networks during consultation and engagement. Most hospitals and GP practices have active stakeholder groups that meet regularly regardless of whether there is a proposed scheme or not. Participants acknowledged and commended the contribution of interest groups such as patient user groups; mental health groups; voluntary and charitable organisations; and, in some cases clinical staff groups.   A participant reported that for every construction project carried out by their Trust, a Public Reference Group was set up. The participant described the group as,

> "... an outward facing group which will involve interested parties…the sort of people who have an interest in the facility, an interest in the way it is being designed, e.g. civic society, care for the elderly, legal friends etc.". *Participant (FM, NHS)*

The participant noted that this group is very supportive during the consultation process and that,

> "The PCT uses this group to bounce ideas off and to help with the consultation process. The effect of involving the public through the public reference group is that they actually come up with all sorts of ideas e.g disabled member of public reference group had useful insight into wheel chair use in a toilet space despite the fact that professionals were involved". *Participant (FM, NHS)*

Social networks represent a resource that if fully exploited by Trusts, more people could be reached in consultation and engagement, as well as for providing constant feedback over a facility's life cycle.

Basic Theme: Communication

The theme emerged as a direct contribution from participants' perspectives on what could be done better overall in order to improve briefing and optioneering processes. Participants were of the view that in order to improve, what was needed was …

> "Absolutely communication. With all appropriate stakeholders engaged with from the beginning and not brought along halfway or quarter-way through the process". *Participant (FM, PSCP)*

With reference to the briefing process, communication was seen as an art that has been lost to modern technologies because,

> "What could be done better? Communication - better communication all round. We've lost something in emailing - lost the art of communication, of picking up the phone seeing people face to face. If we sat down more often and talked we'd get on a lot better - even for projects, even if it were through video conferencing. Core teams probably need to get away from workplace and work out how to communicate with one another. ". *Participant (FM, PSCP)*

Communication was also acknowledged as essential when dealing with stakeholders. One participant remarked that in a briefing process that succeeded,

> "overall, … communication and liaison with users helped tremendously". *Participant (FM, NHS)*

Participants were of the view that conflicting needs and requirements amongst the diverse stakeholder groups can always be solved by communicating with stakeholders in order to 'come to some sort of agreement'.

Therefore, in order to achieve better briefing and optioneering, some aspects of communication need to be improved.

Basic Theme: Building rapport

Communication and engagement activities could be recognised as being about 'rapport' building. The compact Oxford English Dictionary (Online) defines rapport as "a close and harmonious relationship in which there is common understanding". Smyth and Mitchell (2008) viewed rapport as the ability 'to get along with', but Bruce and Yearley (2006: 84) associated it with empathy and the ability to 'imaginatively feel what others are experiencing'. 'Building rapport' parallels gaining understanding (discussed under the 'Briefing' Organisation Theme). In rapport building differences are derived and meanings are produced through a process of listening and conversing (Young, 1995: 235-236).

Participants reported that through workshops and other means of engagement, the delivery teams seek to, improve awareness and understanding, to build relations and to establish collaborative working. Collectively, these reasons improve rapport thereby contributing to effective stakeholder engagement.

Basic Theme: Clinicians

Overall, clinicians' contributions emerged as the most sought after during stakeholder consultation and engagement. Participants unanimously believed that clinical staff had the best insight into how the facility is used and therefore they had the most to contribute to the briefing and optioneering process. Conversely, some participants were of the view that currently E&FM stakeholders are not as valued as should be. They thought that by FM not being fully consulted, a crucial input is neglected. Moreover, given their day-to-day tasks in healthcare soft FM operations, they are more knowledgeable, for instance, about internal finishes that could be avoided in order to curb HAIs or to improve safety in hospitals.

Basic Theme: Neighbourhoods

Engaging with neighbourhoods or local communities living close to proposed healthcare facility sites was seen to be a preferred option to engaging with the wider public or citizens. It was seen that although stakeholder consultation is only mandatory in case of major service change, fully enlisting neighbourhood

involvement outside the prescribed way, is necessary where schemes are deemed to be disruptive due to construction-related activities such as high noise levels and heavy vehicles and machinery. Participants stated that in such cases it is important to inform, consult and engage with neighbours to make them aware and to find out if there are any concerns that need addressing. In addition, engaging with neighbourhood stakeholders was a salient theme cited in discussions about planning Mental Health schemes whose site locations seem to always be a concern to surrounding neighbours.

Organisation Theme Summary: The 'stakeholder engagement' theme covered emerging issues on proactively communicating to improve understanding, build rapport as well as for better relations amongst stakeholders and delivery teams. The theme also highlighted the role of social networks in stakeholder engagement, and neighbourhood stakeholders as the preferable group to engage rather than the general public.

Organising Theme: Healthcare planner

The role of the healthcare planner was found to be vital under the Global Theme on 'Scheme Strategy'. Once again, the healthcare planner role emerged as a central tenet to the Global Theme on 'Communication and Engagement'. As a pivotal liaison, usual workshop facilitator and for the role in the elicitation activities, the healthcare planner was recognised as an important player in WLV delivery. The roles are shown in Figure 6.19.
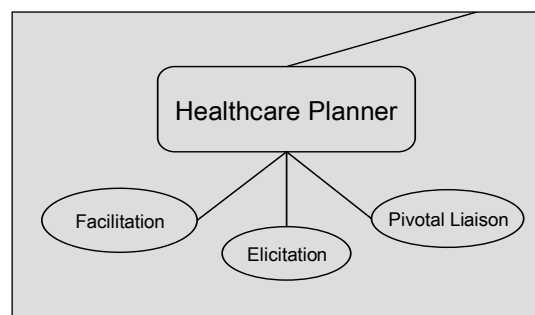
Figure 6.19: 'Healthcare Planner' Thematic Network (ii)

Basic Theme: Pivotal Liaison

The healthcare planner was found to be a key liaison between stakeholders groups on both the client and supply side. During early stages, they were found to closely liaise with users (clinicians and the public), the design team, construction team, and the client side, interpreting their requirements.

Basic Theme: Elicitation

With respect to communication and engagement, this theme resonated with the liaison role in that healthcare planners utilise their vast elicitation experiences to draw out information from stakeholders. Moreover, it was found that when working with clinicians, healthcare planners have to be exceptionally skilled since they must quickly but robustly draw out information so as not to keep the clinicians' away from their patients.

Basic Theme: Facilitation

This role was highlighted under the 'stakeholder workshop' Organising Theme. Healthcare planners' vast experience in facilitating briefing and decision-making workshops was cited by a number of participants from both the NHS client side and outside. Trust participants credited healthcare planners for using systematic processes and exuding professionalism in briefing and optioneering workshops.

Organisation Theme Summary: The healthcare planner role and associated tasks need to be examined further. Literature on construction briefing and decision making (both academic publications and from the DH/NHS websites) does not highlight the role of the healthcare planner. Publications on briefing currently target improving processes or briefs for the benefit of the client side or the supply (architect/designer) side. The healthcare planner roles could be explored to identify how to best enhance their activities to deliver better WLV for healthcare facilities.

Organising Theme: Lifecycle Feedback

This theme summarised salient themes that portrayed how schemes are appraised over the project's lifecycle. The theme also integrated ideas about lifecycle feedback loops enabled by lessons learned and continual stakeholder engagement. The themes are outlined in Figure 6.20.
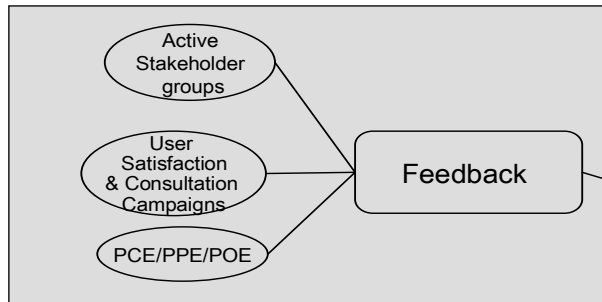
Figure 6.20: 'Feedback' Thematic Network

Basic Theme: Post Contract Evaluation (PCE) and Post Occupancy Evaluation (POE)

It was found that two types of feedback are used to measure performance after a scheme has been commissioned. PCE, synonymous with Post Project Evaluation (PPE) is carried out immediately after completion, between 6 weeks to 2 months for small schemes; and after 12 months for a large scheme. It was found that in general, a PCE exercise aims to capture views on whether the facility was delivered as expected. Hence, PCE exercises measure value delivery and stakeholder satisfaction. POEs measure a facility's performance during use (value in use), thereby providing constant feedback to Estates and Facilities Management.

After the PCE/PPE exercise, corrective action is taken and/or results are recorded as lessons learned feedback for future schemes. It emerged that PCE results may be proactively influenced by involving all service users at the earliest possible stage in the briefing process,

"so they know what they are getting at the end of the job". *Participant (FM, NHS)*

Participants reported that during initial design stages, if there is a lot of criticism, the design is changed or there will be no value in developing the scheme. As such, stakeholder views during briefing and optioneering provide feedback before the scheme is developed.

Basic Theme: User satisfaction and consultation campaigns
During a facility's operational phase, Trusts reported that they use other means to obtain feedback from the general public and patients. Alternative sources of feedback include user perception surveys (mainly through questionnaires) and stakeholder campaigns through workshops and consultation events, for example '*Have your Say*'; '*Our NHS, Our Future*' and '*Next Stage Reviews*'. Feedback and from such exercises is used for informing future design and decision making.

Basic Theme: Active Stakeholder groups and patient forums
This theme resonates with the basic theme on '*Social Networks*' seen in stakeholder engagement. Existing groups were found to be an excellent source of feedback. Because the active stakeholder groups are constantly meeting over other issues, at no extra cost to the Trust, they are a source of constant and readily available feedback regarding the performance of a facility. Furthermore, full public consultation exercises, active stakeholder groups were said to mobilise other members of the public within their social circles, thereby providing an expanded coverage to their Trusts.

Organising Theme Summary: The most recurrent themes to emerge about feedback included the PCE/PPE/POE assessments, user satisfaction surveys and public consultation campaigns. In addition, active stakeholder (interest) groups and patient forums affiliated to Trusts represented a valuable source of feedback.

Global Theme summary

Overall, it was found that communication and engagement is dependent on people and social skills. Through collaborative briefing and optioneering workshops, project delivery teams seek to understand, to build stakeholder relations and to gain consensus on various issues concerning developing schemes. The healthcare planner role in managing interaction through liaison, elicitation and facilitation, further demonstrates the social aspects of communication and engagement. During consultations for briefing, social aspects are perceptible through role of social networks and active stakeholder groups in providing wider coverage for Trusts and as a source of ready feedback. Although the feedback could be obtained from non-interactive methods like the postal survey questionnaires, it takes good communication skills to design effective instruments that deliver desired outcomes.

6.5.3.3   Global Theme: Goals and Deliverables

This is a smaller theme that emerged out of the bigger themes but deserved its own category because it represents themes concerning the various goals and end-products across the project development processes. With reference to Figure 6.8, the organising themes embodied in this global theme are mainly documentary deliverables that must be prepared and authenticated by decision makers in order for a scheme to progress from one stage to the next. In addition, the theme covers salient issues that arose in relation to what should be the ultimate goal of all - delivering a WLV product (scheme). Documentary goals include the clinical output specification, the different business cases and briefs, and the facility's design.

Organising Theme: Clinical Output Specification

This theme represents issues about the end-product of the clinical service modelling process. The basic themes about the clinical output specification document are shown in Figure 6.21.

Basic Theme: Initiation

The clinical output specification is not generated as part of standard NHS practice. However, it was found that a healthcare project definition process that commences by preparing a clinical output specification leads to a superior start, and consequently, a better briefing and optioneering process. This document is an affirmative statement containing answers to the primary question: *'How do clinicians want to their treat patients?'*. Therefore, defining other deliverables on the basis of the clinical output specification ensures that the right solution is delivered.
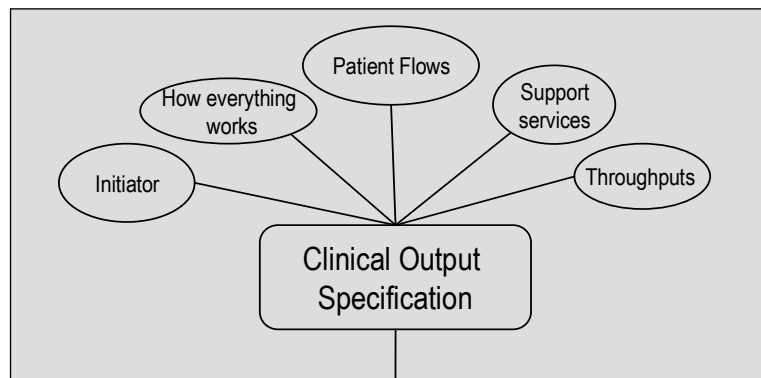
Figure 6.21: 'Clinical Output Specification' Thematic Network

Basic Theme: How everything works

The output specification was also found to comprise a summary of all the elements of a service agreement in relation to everything else. For instance, in delineating the design elements of a clinical department, it follows that single units within the department are defined and aligned for best fit and adjacency, and single departments aligned within the context and content of a whole

hospital. Therefore, the clinical output specification enumerates the elementary units and how they work together as part of a whole.

Basic Theme: Patient flows

Including a statement on how patients move around the facility was seen to augment the statement on how everything works in the clinical output specification. Clinicians have to agree on expected patient flows in order to clarify internal planning policy that informs facility design.

Basic Theme: Support Services

As part of the clinical output specification, a statement on support services covers all the non-clinical areas which are vital for the success of the clinical areas. It was found that, the required support services must also be agreed by the clinicians and staff (end-users). A list of support services usually includes spaces such as administrative support; storage; and waiting area(s).

Basic Theme: Throughputs

It was further found that the document must also contain key estimates on how many patients are expected to go through the system, at what rate, how long they are expected to spend in a specific area.

Organising theme summary: The clinical output specification comprises of statements on: how everything is expected to work together with support services; patient flows; and, throughputs. The information contained in the output specification is the basis for aligning other briefing and optioneering outcomes in order to deliver a final solution that is congruous with the main clinical business functions.

Organising theme: Business Case

Section 6.5.3.1 on Scheme Strategy discussed findings on the Business Case process. At the end of that process, a full business case must be presented to a

panel or board for approval. The business case process progresses through three sub-processes and results in three documents, namely: the Strategic Outline Case; the Outline Business Case; and, the Full Business Case (shown in Figure 6.22).

Basic Theme: Strategic Outline Case (SOC)

This document delineates a Trust's statement of need. It is prepared by Trusts and participants stated the usual practice is to employ an external consultant healthcare planner. Upon completion, the SOC must be agreed and signed-off before proceeding to the next stage.
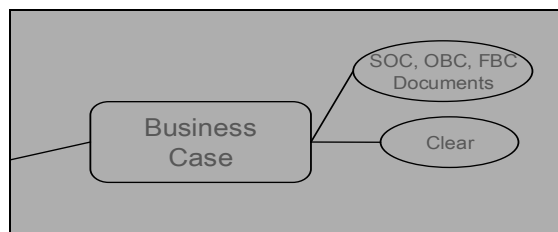
Figure 6.22: 'Business Case' Thematic Network (ii)

Basic Theme: Outline Business Case (OBC)

The OBC records the options appraisal procedure, the available options and a statement on the preferred option. The document must be agreed by all parties, most times the board, and signed off before moving to the next and final stage of the business case process.

Basic Theme: Full Business Case (FBC)

The FBC is statement on confirmation of the need, together with what the preferred option to meet the need is. When the FBC is endorsed, it leads to detailed design and deeper engagement with the design team and other consultants.

Basic theme: Clarity

Funders require that the Business Case components are clear and auditable and without ambiguity.

Organising Theme Summary: Progressive business case statements signify a level of achievement that must be agreed and signed before advancing to the next stage. Without a well documented business case, funding approval cannot be attained.

Organising Theme: Brief(s)

This theme summarised the several issues that emerged in relation to the different levels of briefs. The basic themes for 'brief(s) are illustrated in Figure 6.23.
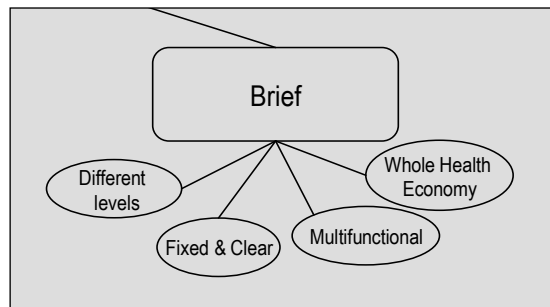
Figure 6.23: 'Brief' Thematic Network

Basic Theme: Whole Health Economy

Devolving healthcare back into the community; and the Trusts' departure from reactive (healing) services towards offering proactive (well being) services have led to the development of the local Whole Health Economy Trend. These include, but are not limited to: Local Authorities; Ambulance Trusts; Education services; and, voluntary and charitable partner organisations. Consequently, all local departments and institutions that support the service or that the service supports must now contribute to the brief. Therefore, through engaging with the local whole health economy, Trusts consult on what spaces to provide in order to enhance other support services.

Basic Theme: Levels of detail

Different types of briefs are produced depending on the level of detail required at that stage in the process. These findings are consistent with the briefing literature presented in *Section 3.1.4*. The different level briefs are progressively signed-off and frozen before advancing to the next stage downstream.

The strategic brief: Participants revealed that, to compliment the SOC, a high level brief is prepared. The strategic brief, also referred to as a high level brief, was said to contain initial thoughts and concepts from the client organisation. The strategic brief also contains agreed critical success factors for the scheme. It was found that this it must be agreed by the client before moving onto the functional brief.

The functional brief: Building on the first brief, the functional brief is more detailed. In this level brief the critical success factors enumerated in the strategic brief are translated for their true meaning in tangible, unambiguous terms. The functional brief lists the proposed site; functional content of the facility; operational policies and details of services to be provided; finishes; and design aspirations.

Basic Theme: multifunctional brief

The brief has been found to serve several key functions. Among these, the different level briefs (strategic/outline) and detailed brief serve as conditional gates that must be authenticated before proceeding to the next level. Similarly, the brief was found to serve as a critical consent document that needs to be signed by parties as a sign of approval of the proceedings thus far, as well as an auditable proof to go ahead to the next stage in the process. Furthermore, participants said that for every stage downstream, developing schemes are tested back against the brief in order to ensure that all is still going to as briefed. This illustrates the brief as a reference document. In a similar manner, the brief was found to act as a monitoring and control tool. In this function, the critical success factors are identified and recorded in the brief, and, over the course of the scheme's development, one participant said,

"We come back to the brief again and again. This should be the measure to test the scheme against". *Participant (FM, NHS)*

As an audit and evaluation tool, the brief is central to the PCE/PPE process. Upon commissioning, completed schemes are compared to what was set out in the brief in order to check for any divergence from what was agreed. Together, these functions make the brief a significant document before, during and after project delivery.

Basic Theme: fixed and Clear

Participants from the supply side were of the view that the brief needs to be as clear as possible in order to avoid any ambiguity and consequent conflicts. In addition, they perceive that in order to deliver a reliable Guaranteed Maximum Price, the brief has to be frozen at a certain point, so that the scheme can be designed and costed.

Organising Theme Summary: The construction brief document, as the final goal of the briefing process is based on contributions from several parties. Lately, parties that contribute towards the final brief defined within the context of a local whole health economy. There are different levels of briefs, characterised by the level of detail they contain. In addition, the construction brief was seen to serve multiple purposes over the lifecycle thereby confirming its significance to value delivery. Supply-side stakeholders believe that in order to deliver a Guaranteed Maximum Price for the scheme, the final brief must be clear and fixed at a certain point.

Organising Theme: Design

Although details about the design stage are outside the scope of this research project (concerned with Stage A/B RIBA Plan of Work, 2007), scheme design (as product of the design process) was a recurrent theme during discussions with participants. Satisfactory design was seen as the most immediate goal of

161

the briefing process and hence, it was difficult to entirely dissociate design from project definition processes (briefing and optioneering). Salient themes are presented in Figure 6.24.

Basic Theme: Design standards

NHS facility design is predominantly based on approved externally- or internally-set standards. A great proportion of the standards originate directly from the DH/NHS as part of regulatory standards that must be complied with. The standards include NHS client requirements contained in the National Service Frameworks (NSFs) for guidance on clinical service standards; HTMs and HBNs, for technical standards; and, the ADB for spatial standards. Other standard guidelines that were seen to impact on briefing, optioneering and subsequently design include, BREEAM for sustainability issues; and, the DDA and Equality Impact Assessment (EIA) standards for inclusivity considerations. In addition to the external standards, individual Trusts set other internal quality standards, based on their stakeholders' views, to reflect bespoke expectations. Together, both the internal and external standards form the crux of the design inputs and considerations for a specific healthcare facility.
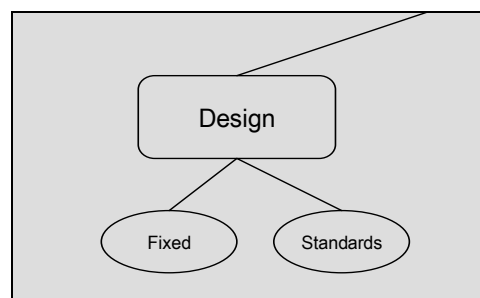
Figure 6.24: 'Design' Thematic Network

Basic Theme: Fixed

As with the final brief, it was seen that a scheme's design has got to be frozen at a certain point, after which only minor changes are allowed. It was seen that because Trusts change their minds a lot, and due to the considerable number

of stakeholders involved, if not frozen, the design would have to keep changing so as to incorporate changing stakeholder views.

Organising Theme summary: The theme aggregated the most significant issues concerning the design as a product, which is the preliminary goal of the briefing process. The theme showed that briefing and optioneering healthcare facilities must incorporate implications from external and internal standards. In addition, the theme presented supply-side perceptions about a clear brief that must be frozen so as enable cost certainty.

Organising Theme: Whole Life Value product

From a WLV perspective, it is expected that the ultimate goal of all life cycle processes beginning with project definition through to commissioning for use and after is to yield a WLV product. This theme concerns basic themes about participants' opinions on what attributes are symbolic of a WLV product. They are illustrated in Figure 6.25.
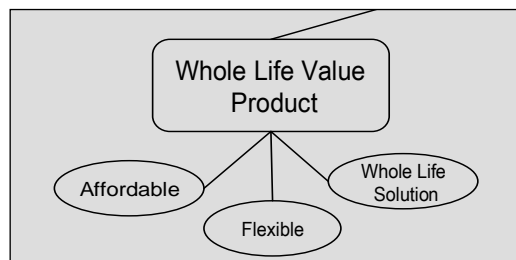
Figure 6.25: 'WLV Product' thematic network

Basic Theme: Whole Life Solution
Participants reported that their organisations aim to offer NHS clients a whole life solution. A whole life solution was described as one in which clients are guided to,

> "... look at their whole life costs by making the right decisions at the front-end";

> Believing that,

> "if you get things right at the front-end, the whole life costs to the client will be reduced". *Participant (Healthcare planner)*

In their opinion, a whole life solution involves having extra expenditure on all major fronts and on improving patient-focused quality initiatives at the front-end. Hence, when the facility is handed over for use, the total costs to the client are manageable.

Basic Theme: Flexible

The issue of flexibility emerged as an important feature of a WLV product. On average, healthcare facilities have a design life of 60 years. End-users felt that flexibility of a healthcare facility over the design life is an important attribute owing to the ever changing service models. Participants were of the view that a flexible WLV product is important to users because

> "Users' WLV equals flexibility of use of the building - If and when service models change, can the building adapt to new ways of working?" *Participant (FM, NHS)*

Moreover, with care moving closer to home, healthcare facility users (clients and clinicians) are concerned about what would happen to the facilities that have been designed to current needs. In addition, advancing patient intervention technologies imply that patients are spending shorter times in hospital. An example was cited for the case of diabetes for which a vaccine is expected in the near future. If a facility space was rigidly adapted to the specific diabetic issues, the space would be rendered unusable in future.

Basic Theme: Affordable

The issue a solution that is affordable to plan, construct, operate and maintain, emerged as a recurrent characteristic of a WLV product. Furthermore, because of budgetary and funding constraints an affordable solution was regarded as a requisite in order for clients to able to fund the schemes while at the same time meeting the affordability targets, set by the (central) treasury.

Organising Theme Summary: A WLV product may be defined as a whole life solution characterised by flexibility to adapt to future clinical service changes over its design life; and be affordable all round.

Global Theme Summary

This global theme amalgamated findings on the various goals and targets that are aimed for over the entire lifecycle of a healthcare facility. The clinical output specification was seen to be the first and most important goal to be achieved in the process of defining a proposed healthcare facility. Business case documents signify a degree of progression towards a final business case, Within the theme on 'the brief', it was found that there has emerged a whole health economy composed of different local parties all of whom must contribute to the final brief. In addition, the brief serves as a multifunctional document during a facility's lifecycle. Participants expressed their views on the characteristic of a WLV product, citing that it must be a whole life solution capable of flexibility in the light of ever-changing clinical service models. It is also believed that a WLV product must be affordable all round.

6.6   Chapter Conclusion

This chapter provided in-depth analysis of an NHS-based empirical data-set exploring aspect of better construction briefing and optioneering for improved WLV. It has emerged that the most important issues for healthcare project definition include improvement within certain aspects of a scheme's project strategy; effective communication and engagement; and various deliverables across the different pre-construction processes. The next chapter explores the second data-set based on a longitudinal case study. Findings from this and the next chapter are aggregated and discussed in Chapter Eight and the implications of findings incorporated into framework design in Chapter Nine.

Chapter Seven: A single case study investigation of current Whole Life Value, briefing and optioneering practices in NHS healthcare construction projects

7.0   Chapter Introduction

This chapter is a detailed account of field procedures and findings based on a single case study exploring construction briefing, optioneering and WLV in the NHS. The data was gathered over a course of about 12 months from a primary care-based NHS Trust.

The chapter starts with a background section showing the case study's geographical location and the regional healthcare provision profile within which the case study situated. The second section of the chapter presents the case study data and collection procedures after which the thematic networks analysis is applied (as before described in Chapter 6, Section 6.4 and 6.5).   Later sections in the chapter present case study research findings and chapter before concluding with a chapter summary.

7.1 Case study background

For the benefit of protecting the identities of the collaborating PCT and the players within the case study, code names have been used. The PCT (referred to as PCT B in *Section 5.5.1.7*) will henceforth be known simply as NHS Shire County PCT, while the names of the schemes and players have been alphabetically or numerically coded. Concealing identity was done because the case study portrayed an "ideal type" (Yin 2009: 181) thus, disclosing identities was deemed irrelevant.

The data applied in this single case study covered early stages of project definition for 2 primary care health schemes initiated by NHS Shire County PCT, located in the East Midlands area of the UK.

7.1.1 Geography

Geographically, East Midlands is bordered by Yorkshire and the Humber, the North-West, the West Midlands, the South-East and the East of England regions and by the North-Sea coastline to the East (ONS, 2005). With reference to Figure 7.1, the region comprises 6 counties: Derbyshire, Leicestershire, Lincolnshire, Nottinghamshire, Rutland and Northamptonshire.

Figure 7.1: The Counties and unitary authorities of the East Midlands
(Source: Office for National Statistics, 2005)

7.1.2 Regional healthcare

Strategic Health Authorities (SHAs) manage the NHS locally and are a key link between the Department of Health and the NHS. NHS East Midlands is the headquarters of the NHS in the East Midlands region. It is one of the ten SHAs

that form the intermediate tier of the NHS between the Department of Health and the NHS commissioning and provider Trusts within the region; NHS East Midlands' role is to ensure that local health systems operate effectively and efficiently for the local population of 4.3 million (NHS East Midlands, 2009). The local healthcare map is presented in Figure 7.2.
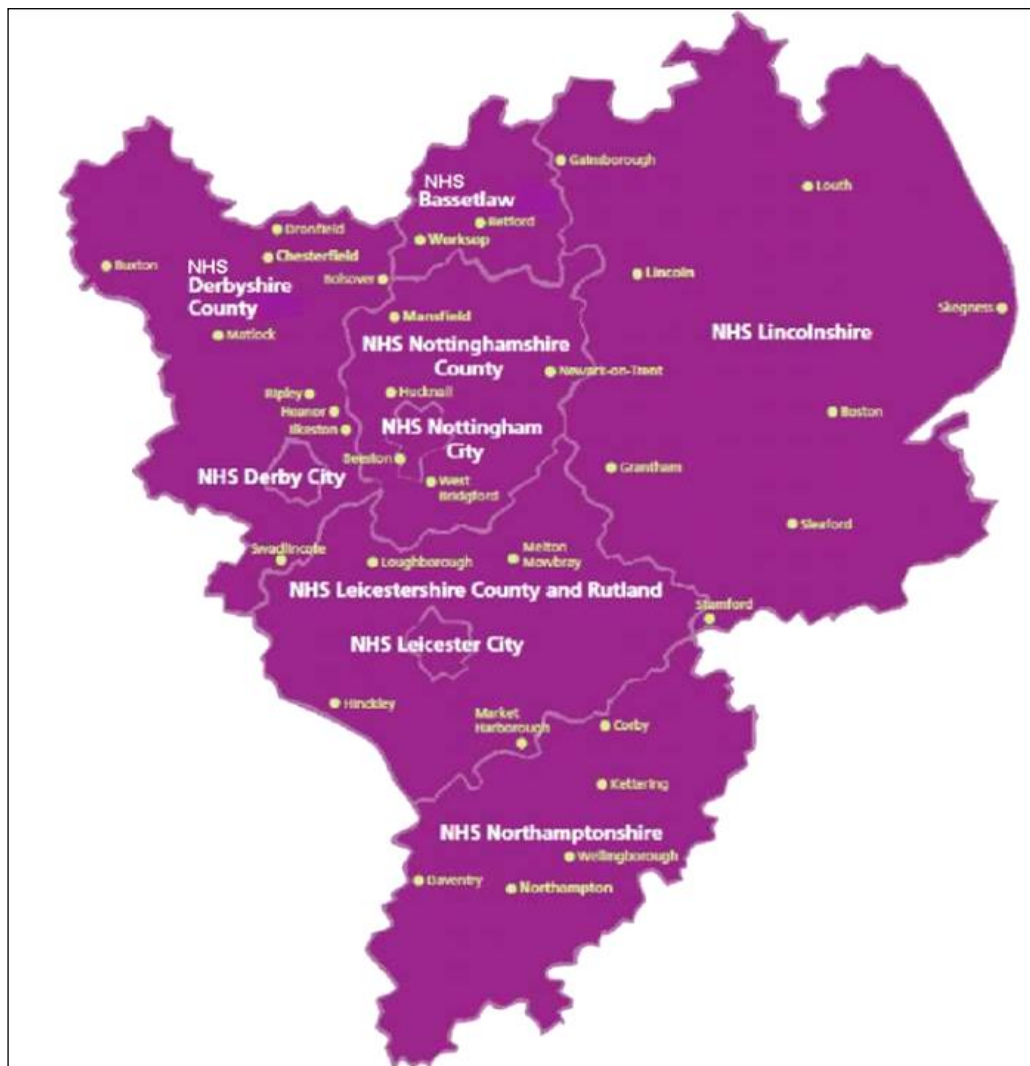
Figure 7.2: NHS East Midlands - Area Map
(Source: NHS East Midlands, 2009)

The East Midlands has nine PCTs responsible for commissioning health and healthcare services for the local population, a range of rural, inner city and urban populations (NHS East Midlands, 2009).

7.1.3   The case of NHS Shire County PCT

NHS Shire County PCT is one of the nine PCTs in East Midlands. The PCT is separate from hospitals and other NHS Trusts which directly provide services. From the case study, it was found that the role of NHS Shire County PCT is paying for services from external providers in addition to monitoring their performance.

In 2008, NHS Shire County PCT embarked on expanding its estate by proposing to construct two healthcare schemes (referred to as Scheme A and Scheme B) in two of its boroughs. The capital cost of each health centre scheme was estimated to be £6 Million. In order to save on planning and project management costs, NHS Shire County PCT decided to plan and construct the two primary health centre schemes simultaneously. This arrangement was known as a Tranche scheme. Consequently, the arrangement was to have one joint business case for both schemes. The schemes were to be jointly occupied by GPs and certain functions of the PCT's administration.

At the time of the researcher joining the case study, public consultation exercises for choosing locations (site optioneering) for the two schemes had just been completed. In addition, the SSDP (part of the SOC) process had been conducted earlier and using the then new business case guidance, the team was in the process of briefing the new schemes. Subsequently, NHS Shire County PCT was going through the early stages of its business case preparation, of which the briefing process observed for the case study was part. The business case would follow two stages, stage 1 and 2, which were six months apart. A project team consisting of Architects, Artists, consultant engineering (mechanical and electrical) organisations, and planning consultants had been appointed together with a local private finance provider consortium, Shire LIFTco. (coordinating the process in conjunction with the PCT).

Through the SSDP, NHS Shire County PCT outlined its priorities for developing health services and facilities across the county over the next ten years. In addition, an earlier audit (reported in Artist in residence report and the detailed consultation report, see Table 7.1) had classed the current health centre facilities as unlikely to reach the appropriate standards, even with significant investment.

The case study involved observing Stage 1 business case activities. Observation events included public and local council consultation meetings, meetings with user groups (practice managers, GPs, PCT clinical services representatives for each of the services to be housed); and, Architects/design team meetings.

7.1.4 Duration of the case study

Between November 2008 and November 2009, the researcher attended several meetings at different sites within the case study remit. Consultation for Stage 1 lasted longer than the recommended three months (DH, 2006) and was sometimes characterised by inactive spells between meetings. It was later understood that the irregularities were partly due to the PCT's delay in deciding and announcing the site location for Scheme B; in addition, the economic uncertainty influenced decision making to commit to proceed. Eventually, in July 2010 NHS Shire County PCT announced a decision to defer both schemes for future dates. Although the announcement implied that no further meetings or observations could be made, by November 2009, observable patterns and recurrences in field observations were already established. Therefore, any subsequent meeting would have added marginal benefit to the already collected data.

7.2   The data

The data is based on a focus group interview, meeting observations and analysis of key project-related documents. The data sources are presented in Table 7.1. The meetings observed ranged from one- to two-hour durations. Data collection was by the researcher as an 'observer-as-participant' (Gold,1958 cited Bryman, 2004, *Figure 5.1*). The researcher observed meetings but did not contribute to any ongoing debate or discussion. Access to documents such as design drawings, meeting minutes and project programmes was not restricted. Therefore data was collected as personal hand recorded minutes of all proceedings (recorded verbatim as much as possible) from the interview and meetings. Using the field notes and memos taken of proceedings, the notes could be corroborated by checking against the official minutes provided at the following meeting.

Altogether, fifteen meetings were observed. The observed meetings were used as units of analysis for the case study. A first focus group meeting served to introduce the case study and researcher after which terms of the research were agreed between the host organisations (PCT and LIFTco.) and the researcher. Documents accessed include meeting minutes, architectural drawings, project programmes, consultation documents (questionnaire and report for Scheme B) and the artist's report.

The other fourteen meetings were categorised as:

Catch-up meetings: The aim of these weekly meetings was for the project team to plan and monitor progress against the planned programme (for making the business case deadline). Catch-up meetings were attended by the project team and PCT representatives. At the meetings, participants also identified challenges and/or obstacles affecting progress in addition to brainstorming and agreeing strategies for mitigating the challenges. Altogether, four catch-up meetings were attended.

Design team meetings were conducted weekly or fortnightly. The aim of these meetings was for the project team to discuss and convey requests for information (RFIs) from other consultants to the architects. In addition, at design team meetings were utilised for clarifying needs and requirements from the PCT. At design team meetings, the project team also communicated feedback from other stakeholders and sought to ensure that stakeholder-concerns were reasonably addressed by the architects. In total, three design team meetings were observed.

PPI Strategy meetings: Two of the fourteen meetings were dedicated to planning a patient and public involvement (PPI) strategy for effective consultation and engagement. PPI strategy meetings were attended by the project team representative, PCT representative as well as PPI officers responsible for overseeing the consultation campaign for both schemes.

User group meetings were conducted by the project team to consult and engage with clinical staff, patient and the public, sometimes separately or together. Most meetings were chaired by project managers (PM1 and PM2). One of these meetings was a combined walkthrough of an existing (recently occupied) health centre followed by a patient/public question and answer session. The walkthrough was guided by the estates manager for the centre together with the PCT representative. Altogether, there were seven user group meetings.

NHS Shire County's consultation process aimed to seek views about the proposed changes to the health centres. Through the consultation process, Shire County PCT aimed to inform the public, patients, carers, staff and partner organisations about the proposed changes to locations and services. Furthermore, In addition, the consultation was aimed at seeking views on preferred site locations. One of the project managers revealed that the consultation was conducted in line with the HM Government Code of Practice on Consultation (BERR, 2008). The consultation process was seen as an opportunity to give all concerned parties with an interest in the local area or

community a chance to 'have their say'. It was found that, the objective of the consultation was to "engage end users and staff in meaningful consultation about the new building design" (Artist in residence report for Scheme B).

Table 7.1: Case study data

S/No.	Source	Date/Time
1	Focus Group Meeting – 1	18-Nov-08 1.30-3.30pm
2	Design Team Meeting - Stage 1	21-11-08 9.30-12.00pm
3	PPI Strategy Meeting	18-03-09 2.00-3.30pm
4	User Group Meeting Scheme A	21-04-09 2.00-3.00pm
5	Weekly Catch-up Meeting and Design Team meeting	08-05-09 10.00-12.00pm
6	Weekly Catch-up Meeting	15-05-09 10.00-12.00pm
7	Weekly Catch-up Meeting and Design Team Meeting	22-05-09 10.00-12.00pm
8	User Group Meeting Scheme A	22-05-09 2.00-4.00pm
9	PPI Meeting	16-07-09 18.00 - 20.00pm
10	Weekly Catch-up Meeting	17-07-09 10.00-12.00pm
11	User Group Meeting Scheme A	21-07-09 2.00-3.00pm
12	User Group Meeting Scheme B	19-08-09 6.30-8.30pm
13	User Group Meeting Scheme B	27-08-09 6.30-8.30pm
14	Core Group Meeting Scheme B	02-09-09 6.30-8.30pm
15	User Group Meeting Scheme B (A Health Centre "walk through")	26-11-09 2.00-3.00pm
	DOCUMENTS	
16	Artist in residence report for Scheme B	
17	Public Consultation Questionnaire	
18	Detailed Consultation Document	
19	Meeting minutes and Emails	

7.3. Analysing case study data with Thematic Networks Analysis

Case study data was analysed with the thematic networks analysis methodology (Attride-Stirling, 2001) following the same procedural steps described in Section 6.5. However, differences in data sources resulted in additional work in Step 0 (see *Figure 6.2*). While the data in *Chapter Six* was mostly electronically recorded and transcribed verbatim, case study data mainly involved manually recording and transcribing in addition to summarising the documents.

7.3.1 Analysis Stage A/B: Reduction or breakdown of text

Step 0: Transcribe verbatim and summarise document contents
The aim of this step was to bring together the data from the field notes, memos and document summaries while at the same time reducing the data.

Step 1: Elementary textual reduction I
Data reduction resulting from this step was managed as described in the previous chapter, as exemplified in *Appendix 6.1*.

Step 2: Reduction II – keyword categorisation/Coding I
Data coding resulted into 37 unique words, presented in Box 7.1. As before, the data resulting from Step 1 was re-entered into an MS Excel spreadsheet to fit within these 37 keywords (for example *Appendix 6.2*).

Step 3: Concept mapping/Coding II
This step generated 37 concept maps from the 37 codes identified in *Step 2*. Figure 7.3 is an example of a concept map constructed for the code 'GPs'.

Step 4a: Reduction III- Distillation/Abstraction
Building on the relationships between the text segments in the bubbles, the 37 concept maps were analysed for emerging themes. For each map, a set of representative text segments from the bubbles was selected, summarised in a

text box and presented on the same page. An example for the GPs' concept map with a text box (red colour) is presented in Figure 7.4. Altogether, this step resulted in 267 diverse text segments. *Appendix 7.1* presents 10 examples of concept maps with abstracted text embedded.

Box 7.1: List of keywords

Coding keywords

1. Business Case
2. Service
3. Parties/Participants
4. User Groups
5. LIFTco. Scheme
6. Consultants
7. Communication/Comms. Plan
8. Public Consultation/Influence
9. Involvement/Information/Influence
10. Engagement
11. Fora/Modes
12. Advisory Group/Panel
13. Presentation/Drawings
14. Users
15. GPs
16. Local Auth./Town Council
17. Public / Community
18. Schools
19. Groups
20. BREEAM/Green/Sustainability
21. Cost
22. Stakeholders
23. PPI
24. Design
25. Flexibility
26. Adjacency
27. Art in h/care design
28. Disability/ Accessibility
29. Waiting Area
30. Courtyard
31. Feedback and accountability
32. Site
33. Travel Plan/Access
34. Car Parking
35. Personalisation/Sense of place
36. Drivers
37. Aims/Objectives (meetings and documents)

Step 4b: Refining

In this step, the 267 text box segments were further analysed and refined into a manageable 122 themes. A complete list of these is shown in Box 7.2.
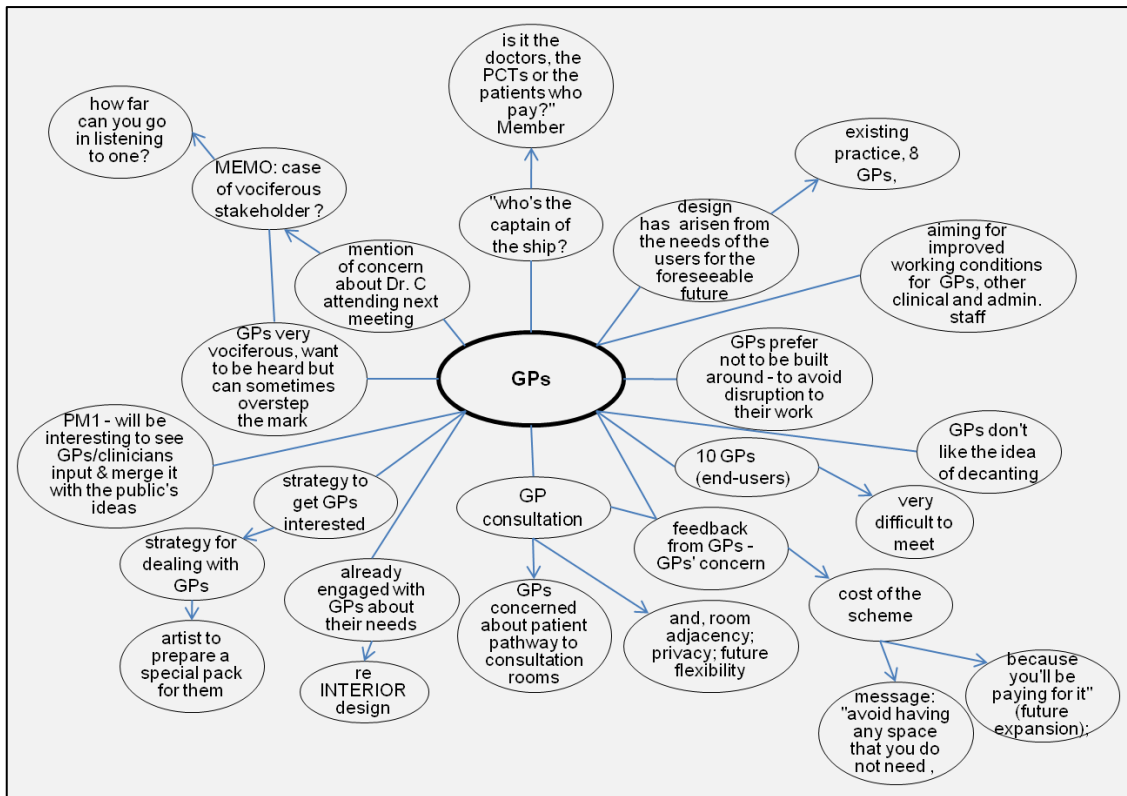
Figure 7.3: Concept mapping 'GPs'

7.3.2 Constructing the networks

Step 5: Extracting Basic themes

The 122 themes identified in the previous *Step (4b)* were subjected further abstraction.

5a) The 122 themes were analysed for similarity, congruence and convergence, and similar themes grouped together.

5b) Selecting the basic themes

At 122, the themes were still too numerous. Further scrutiny and reduction narrowed the number down to 44. These were used as basic themes as presented in Box 7.3.

Step 6: Re-arranging into organising themes

The 44 basic themes in *Step (5b)* were re-arranged. After distilling the re-arranged themes along broader shared attributes, this step yielded 24 provisional organising themes shown in Box 7.4.
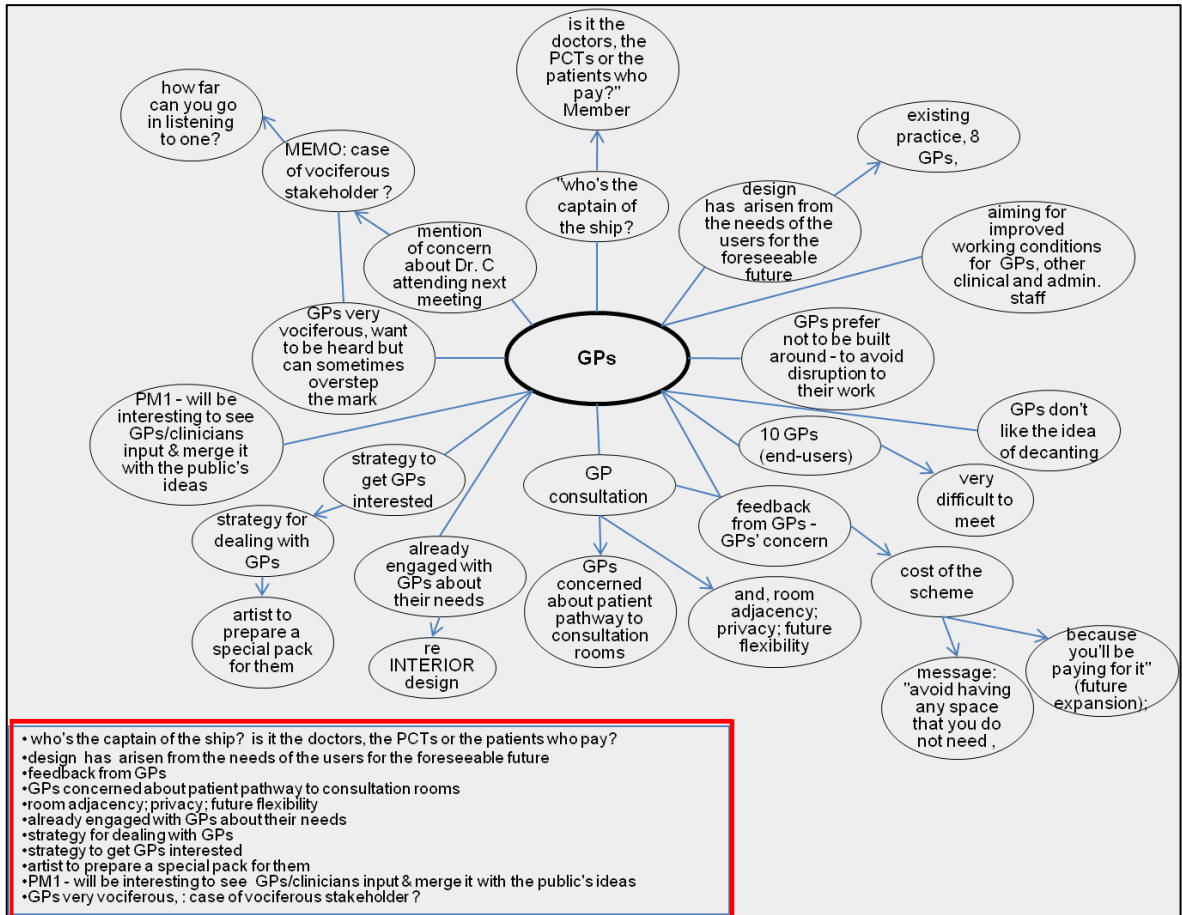
Figure 7.4: GPs concept map with text box summary

Box 7.2: Refined themes

Step 4b: refined themes

1. 1st level proofing
2. Access
3. Access issues (address)
4. Acoustics
5. Adjacency – patient pathway;
6. Advisor
7. Advisory Panel – Core group: overseeing; Transport; DDA; Art and Interior
8. Amalgamation of
9. Awareness/knowledge
10. Balance – now and the future
11. Budget
12. Building/facility use
13. Car parking spaces – phased use of building
14. Catch-up
15. Challenge
16. Clear strategy
17. Co-located and integrated services
18. Commitment
19. Communication - Inform
20. Communication - interest
21. Communication Difficulty
22. Communication Strategy
23. Community – close engagement with;
24. Community Space; multi-use
25. Compliance
26. Concerns/value
27. Consultation
28. Consultation outcomes
29. Contextualisation
30. Cooperation/collaboration
31. cooperation;
32. Core group
33. Cost (Affordability); long term;
34. Courtyard – Confidentiality – closed access
35. Courtyard - ventilation
36. Creativity
37. Deadline (Time)
38. Design aspirations Modern – expectations; equipped; purpose built
39. Difficulty
40. Disabled
41. Emotive/concern
42. Engagement
43. Expectations   - procedural (influence)
44. Feedback
45. Financial/economic – Taxpayer-led – wasteful decisions
46. Fit for purpose
47. Flexibility
48. Foreseeable future
49. GPs
50. Green Agenda
51. Guidance
52. Harmonising
53. High pressure to apply and comply
54. How everything works
55. How to engage
56. How to and how much?
57. Impact
58. Inclusive – not alienating; supportive; welcoming;
59. Influence - input – contribution
60. Influence and application of (Input)
61. Influence/power
62. Interest – sustainability (environmental);
63. Interest (getting them to be)
64. Lead 'consultees'
65. Lessons learned
66. Local Authorities
67. Local community
68. Local environment
69. Location/Site
70. Main reference document
71. Maximise/optimise
72. Neighbours
73. Opinion (patients and public); input; approval
74. Opinion/ideas
75. Owned outcomes
76. Ownership
77. Ownership – young people;
78. Parking
79. Participatory/
80. Partnering PCT/LIFTco
81. Patient Advisory Panel
82. Patient and Public Advisory Group
83. Patients
84. Pleasant
85. Problem identification/solving
86. Problem before solution
87. Problem-identification/solving – big issues
88. Product
89. Programme – Objectives; planning/ implementation/mode; Action; feedback;
90. public – local community
91. Public meeting
92. Public meetings – vocal minority – silent majority
93. Reliable
94. Representation – representative
95. Requirements
96. Running costs (financial affordability)
97. Scheme Contextualisation/Personalisation/Sense of place
98. Schools – input
99. Selective (attendance early days)
100. Sense of place
101. Sense of place/personalisation
102. service relationships
103. Social/Political – engagement/consultation/involvement (PCT-led/Gov't)
104. Strategy- communication
105. Strategy: PPI;
106. Survey (major mode of)
107. Sustainability: Environmental
108. Sustainable
109. Therapeutic
110. Therapeutic and healing (comforting); relaxing
111. Travel consultant
112. Travel plan
113. Unifying factor/community/public
114. Unique and humanised
115. User experience/user-led; practical use of facility;
116. Visible results
117. Visual Environment
118. Visual Welcoming
119. Vocal minority
120. Voluntary
121. Waiting areas - Hub
122. Young people issues

Box 7.3: Basic themes

Themes

1. Access/Parking
2. Travel plan
3. Emotive
4. Awareness or Consultation out comes
5. Waiting area
6. Courtyard
7. Sustainable and flexible
8. Visual aspect
9. Contributors
10. Role
11. Artist in Residence
12. Community
13. Business case deadline
14. Cost (Affordability)
15. Cost (Accountability)
16. Guidance
17. Improvement
18. Adjacency
19. Modern
20. Therapeutic and healing
21. Inclusivity
22. Parties
23. Groups
24. User experience
25. Influence
26. Compliance
27. How to? How much?
28. Problem identification/solving
29. strategy
30. Information
31. Interest
32. Central role
33. Involvement
34. Importance
35. Special strategy
36. Financial
37. Social
38. ownership
39. Influence
40. Lessons learned
41. Existing Groups
42. Plans
43. Survey
44. Newsletters

Box 7.4: Provisional organising themes

Themes

1. Business Case
2. Groups
3. Strategy
4. Service
5. Accountability
6. Local Authorities
7. Public
8. Art
9. Representation and accountability
10. Communication
11. Consultation
12. Tools – architectural plans – 1:200/larger for clarity
13. Engagement
14. Feedback
15. Scheme Contextualisation/ Personalisation/Sense of place
16. Location/Site
17. GPs
18. Community
19. Sustainability
20. Design aspirations
21. Visual
22. Flexibility
23. Waiting areas
24. Building/facility use

Further analysis of underlying and converging themes reduced the number from 24 to 14 themes. These were used as *Organising Themes* and are shown in Box 7.5.

Organising themes

1. Business Case
2. Service
3. Art
4. Representation and accountability
5. Communication
6. Consultation
7. Tools

8. Artist in residence
9. Engagement
10. Feedback
11. Location/Site
12. GPs
13. Design
14. Design aspirations

Step 7: Deducing the global themes

With reference to the 44 underlying *basic themes*, the 14 *organising themes* arising from *Step 6* were further distilled, re-grouped, re-arranged and named according to the idea that best represented what all the themes in the cluster portrayed. The final output of this was three *Global Themes*, namely: 'Drivers'; 'Features'; and, 'Communication and engagement'.

Step 8: Illustrating as thematic networks

For each Global Theme, a network diagram was drawn. These diagrams are shown in Figure 7.5 a, b, and c.
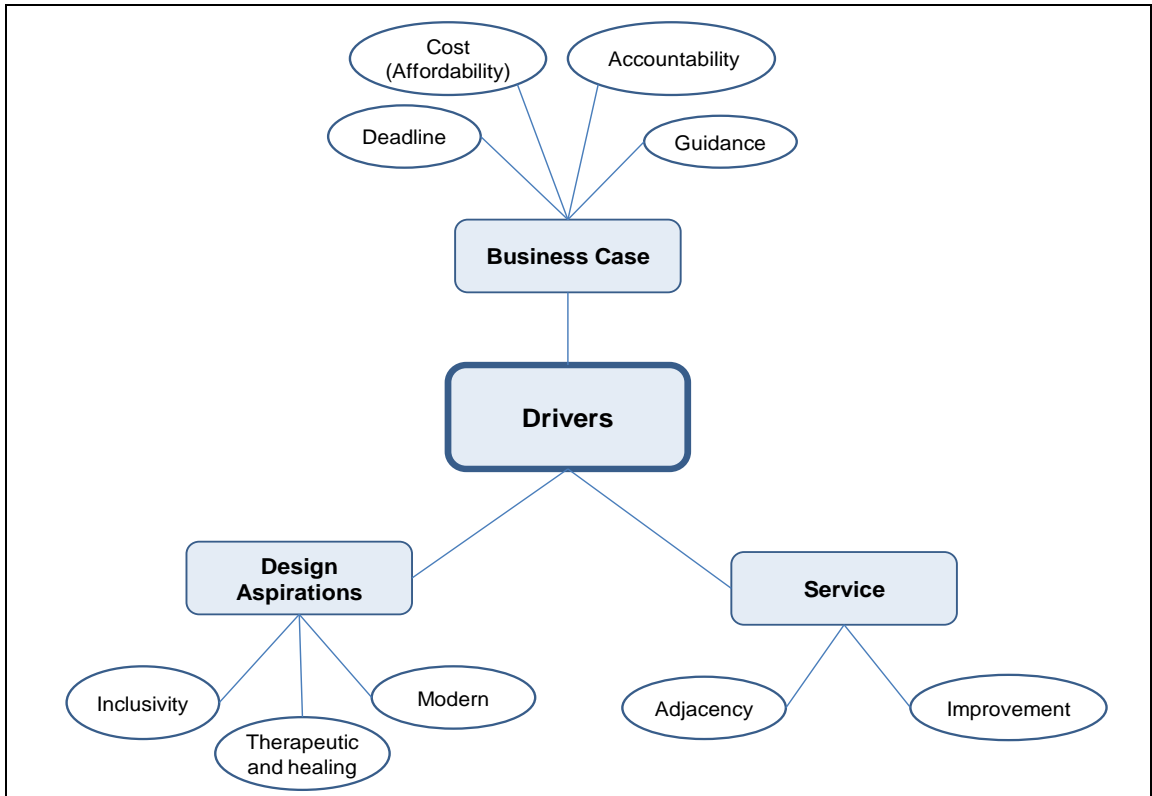
Figure 7.5 (a): 'Drivers' thematic network
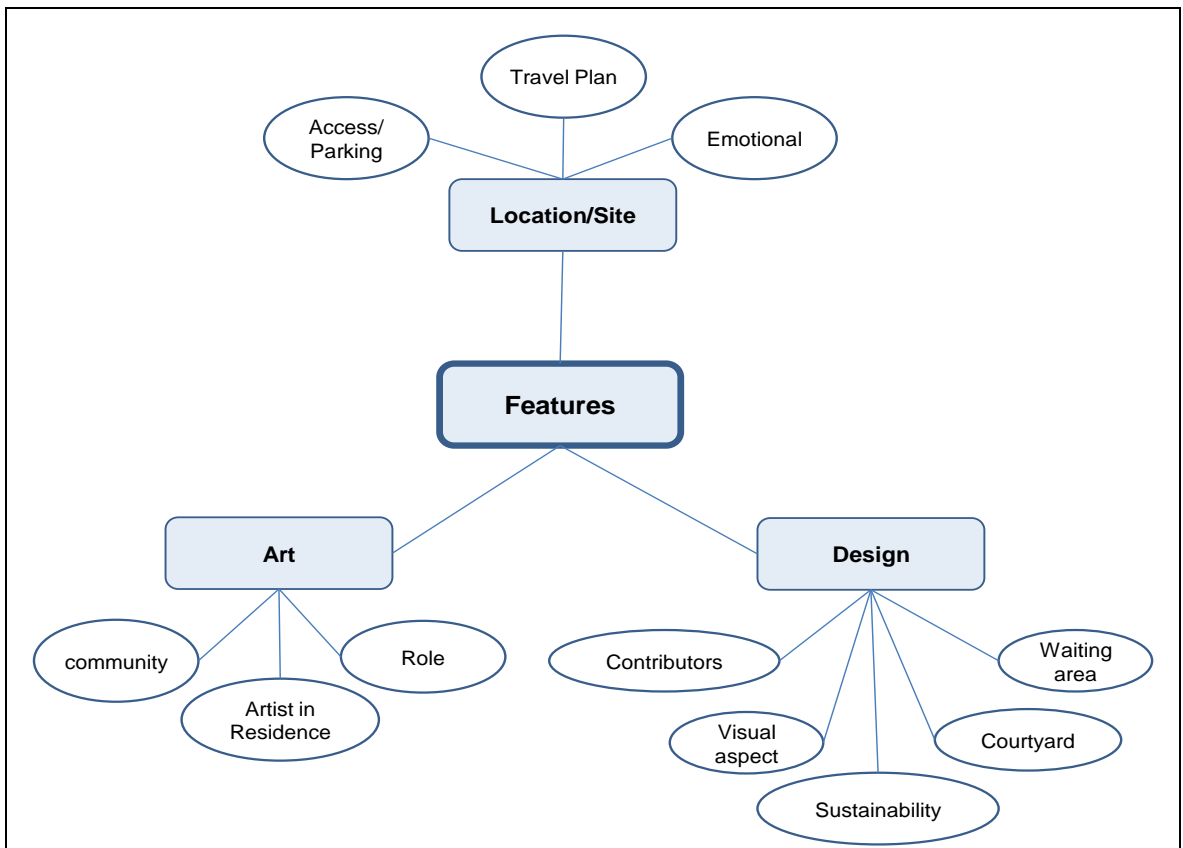
Figure 7.5(b): 'Features' thematic network
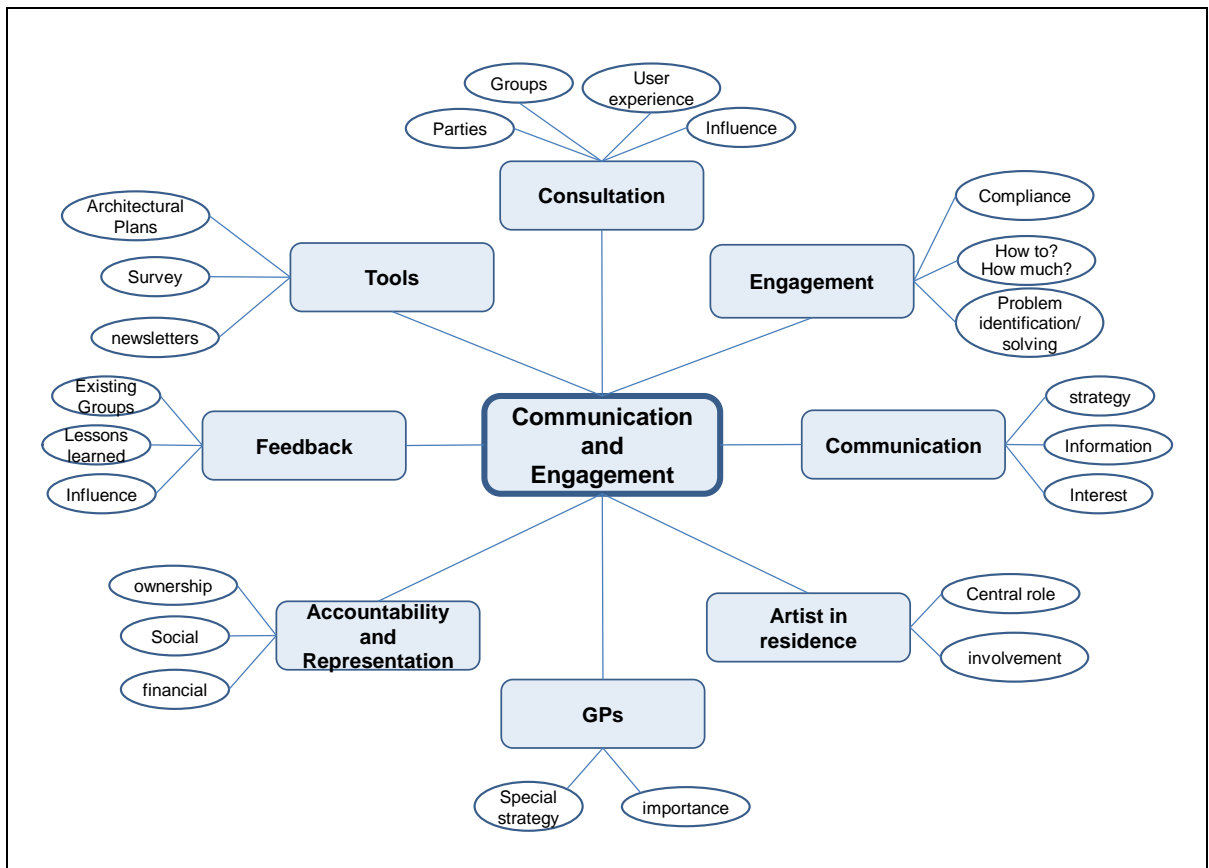
Figure 7.5 (c): 'Communication and Engagement' thematic network

Step 8b: Verifying and refining networks

In this step, text segments representing the basic themes were re-read to ensure that: i) Global, Organising and Basic Themes reflected the data adequately; and, ii) the data supported the Basic, Organising and Global themes. After ensuring they were accurate representations of the data, the networks were confirmed.

7.4 Findings

Step 9: Describing and exploring networks

This step involved describing the individual thematic networks, moving from the central Global Themes outwards to the non-hierarchical organising themes and their underlying basic themes.

7.4.1 Global Theme: Drivers

This network summarises three organising themes that emerged from data acknowledging key drivers for the proposed schemes. In the study, drivers were often expressed as aims and objectives or where not discussed, they were observed as implicit needs guiding briefing and optioneering activities. The *business case*, *service* and *design aspiration*s (seen in Figure 7.5 (a)) emerged as most important drivers for Scheme A and B development.

Organising theme: Business Case

Successfully producing a (winning) business case seemed like the most fundamental driver for the entire process. The most recurrent basic themes are discussed in this section. They include *deadlines, cost* and *accountability* as illustrated in Figure 7.6.

Basic theme: Deadlines

It was observed that meeting stage 1 and stage 2 business case deadlines was a constant reminder. Most decisions and briefing activities were bounded by the necessity to complete business case process within pre-set date.
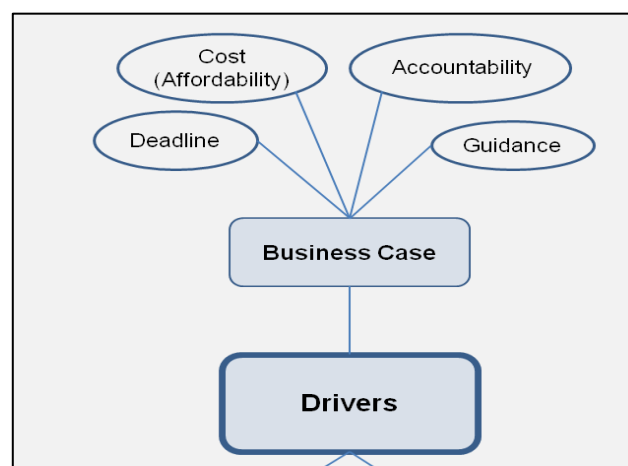
Figure 7.6: 'Business Case' organising theme

Basic theme: Cost (affordability)

It emerged that one of the key success factors for a winning business case, was the issue of cost, specifically, affordability. It was reported that in order for the business case to be passed, it had to satisfy the affordability criteria. The PCT and SHA as business case approvers had to be satisfied that Scheme A and B would be affordable not only in the short term (capital costs) but also in the long term (maintenance and running costs). During the consultation process, the public was often reminded that decisions were co-dependent on affordability. For example, officiating at one patient and public user group meeting for Scheme A, the project manager reported that as a next step, among other things,

> "the business case which goes to board must show affordability" PM2

Because at Stage 1,

> "the idea is to get cost certainty in terms of affordability in design for Guaranteed Maximum Price in relation to Guaranteed Maximum Budget". *PM1*

In addition it was observed that often,

> "the public's concern is, what is the cost and who bears it? Does the project satisfy affordability in the long term? *PM 2*

Basic theme: Accountability

During the study, it was found that the project team had to demonstrate to the NHS Shire County PCT that they had engaged and consulted with service users as part of the business case process. In addition, it was seen that,

> "The outcome of the consultation process will inform the outline business case for the new health centres" *Chairman/PM1*

Such instances exemplified the importance of (public) accountability in the business case process.

Basic theme: Guidance

At the time of the researcher joining the case study, new business case guidance had just been issued. However, Shire LIFTco. seemed frustrated about briefing Scheme A and B with the new guidance given the tight schedules. Therefore, ever-changing business case guidance seemed problematic to the project team.

Organising theme summary

This organising theme showed that affordability, accountability and time are significant to satisfactory business preparation and therefore affect how and when decisions are made in healthcare scheme definition stages.

Organising theme: Service

This theme emerged as a summary of basic themes related to the healthcare business. The theme concerns the importance of planning for the functional design of healthcare facilities in order to support clinical and support services. Themes include '*service improvement*' and '*adjacency*' and are illustrated in Figure 7.7.

Basic theme: Service Improvement

NHS Shire County PCT justified developing the two schemes was improving the service spatially and in widening the scope of future services to be offered at the new health centres. For instance, one of the analysed documents attributed the change to the fact that,

> "It has become clear that the existing health facilities... cannot deliver the kind of services you [the public] have the right to expect... Our aim is to offer high quality services characterised by modern settings and fit for purpose buildings which are reliable, sustainable and flexible... We must ensure that buildings are

well equipped, modern and support, our staff in a therapeutic and healing environment for patients; safe and efficient service delivery; improved working conditions for GPs, other clinical and administrative staff; pleasant and welcoming amenities for patients". *Statement in Public Consultation Questionnaire*

Therefore, the need to address better service improvement was seen to be one of the drivers for change of facilities.
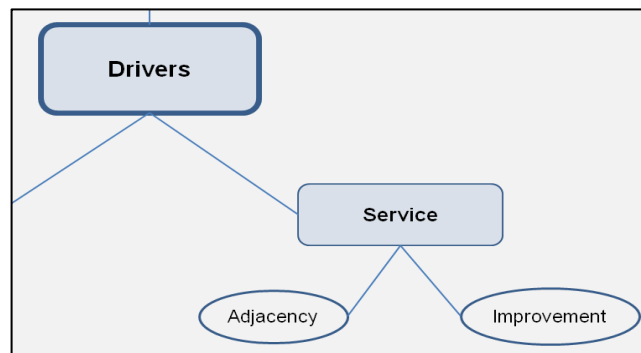
Figure 7.7: 'Service' organising theme

Basic theme: Adjacency

Clinical spatial adjacency was seen as the relationship between individual elemental units within a clinical service and how they fit together to form a whole. Spatial relationships are defined by proximities between the related clinical elements and getting them right was seen to be vital for the clinicians, support staff and patients. Adjacency was found to be important for maximising service relationships; delivering efficient patient pathways; and, easing the patient's journey. It was reported that,

"Building design was chosen to maximise service relationships or adjacency"
Design team, presenting Scheme B's progress to services users

This confirms the significance of adjacency in healthcare facility design.

Organising theme summary

Therefore, the service driver highlighted the importance of clinical service improvement and getting adjacencies right, both of which impact decision making and design considerations.

Organising theme: Design aspirations

For both schemes, briefing and consultation processes were found to be guided by several design aspirations. Most recurring of them was the desire to achieve modern facilities that are inclusive and therapeutic. This theme summarises the three underlying issues (see Figure 7.8) and shows their impact on decisions and later design of the schemes.
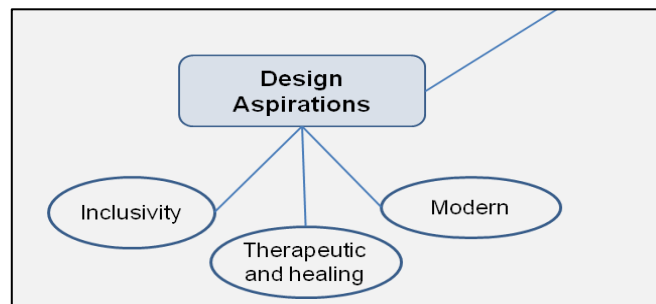
Figure 7.8: 'Design aspirations' organising theme

Basic theme: Modern settings

One of the most recurrent justifications for NHS Shire PCT choosing to build new health centres was so that healthcare service could be provided in a safe and efficient way because,

> "... modern settings, fit for purpose... provide improved working conditions for GPS, other clinical and administration staff... as well as pleasant and welcoming amenities for patients". *Public consultation questionnaire*

> In addition,

"NHS Shire County outlined its priorities for developing health services and facilities over the next 10 years in a document called the SSDP; in the document old health centre B was highlighted for pre-commitment subject to business case approval based on health need ... to comply with current standards the new development will be approximately three times bigger than existing to provide for a possibility of developing modern purpose built facilities fit for 21st Century healthcare" *Detailed Consultation Document*

It was noted that existing facilities were characterised by,

"poor public facilities, cramped waiting room and minimal toilet facilities imply existing building needs to be replaced as it is too small by current healthcare building standards (to deliver health services in a safe and efficient way)." *Public consultation questionnaire and Detailed Consultation Document*

And further that, a recent health building condition survey for the existing centre for Area B concluded that,

"even with significant investment, the building could not be brought up to acceptable standard" *Public consultation questionnaire.*

Therefore, the desire to acquire modern purpose-built facilities was one of the design aspirations driving Scheme A and B development.

Basic theme: Therapeutic and healing
Planning and designing therapeutic and healing environments for patients was seen to be a recurrent aspiration. The aspiration was expressed in statements such as,

"pleasant and welcoming amenities for patients"

And a desire to...

"Create a visual environment which is at once welcoming, stimulating and calming, with therapeutic outcomes of reducing stress, anxiety and aggression..." *Artist in Residence report, Scheme B*

Basic theme: Inclusivity

The aspiration to provide equally for all users, especially considering needs of the disabled seemed vital to the success of the briefing and design process. For consultation activities, inclusivity was achieved by engaging with various disability groups, in addition to advising that disability groups have a representative on the Patient Advisory Panel. A representative on the panel would ensure that disabled people's needs were heard and incorporated in the final design. In addition, an inclusivity-related issue cited in the public consultation document as justification for change was that,

"... no lift in current building limits use and does not meet the needs of disabled people".

The theme also highlighted special efforts to engage 'hard to reach' societies including ethnic minorities, in the briefing process.

Organising theme summary

Therefore, the desire for NHS Shire County PCT to deliver modern, therapeutic, purpose-built, inclusive facilities was influential to the briefing and decision making process.

Global theme summary

The business case, service provision and certain design aspirations were found to be the most consistent drivers for Scheme A and B briefing and optioneering. These findings may be helpful in focusing efficient and effective consultation, better design processes influenced by desirable outcomes. Knowing what is

important to the process and the product (facility) could also save the time spent in consultation activities and in design iterations.

7.4.2 Global theme: Features

This global theme emerged from data about certain physical aspects of schemes that were of recurrent interest to Scheme A and B stakeholders. The themes that emerged were presented in Figure 7.6(b).

A scheme's location, certain design attributes and art in healthcare built environments emerged as the most salient physical features during the briefing and optioneering process. Details of the theme are elaborated in the following sections.

Organising theme: Location/site

The location for Scheme A had been selected by the time of consultation but it was of little interest to the study's participants except for the local authorities who asked that Scheme A fits right with the new area master plan. However, Scheme B's location was of recurrent interest at catch-up meetings and during the consultation and engagement campaign. Over the case study period, the proposed site location was often a source of dissension between participants and the project team.

This organising theme summarised the most salient topics concerning the future location of Scheme B. (shown in Figure 7.9)

Basic Theme: Access/Parking
The data demonstrate that 'parking and access' issues dominated discussion at various meetings thereby taking considerable precedence over other aspects of the schemes' designs. The GPs, health centre staff, patients and public were

concerned about what appeared like inadequate parking on the proposed designs, with the patients further advocating for the provision of free car parking. In addition, the project team, patients and the public emphasised the need to provide safe and inclusive access to the site and building.

Consequently it was seen that finding selecting a site that satisfied accessibility and spatial criteria seemed problematic.
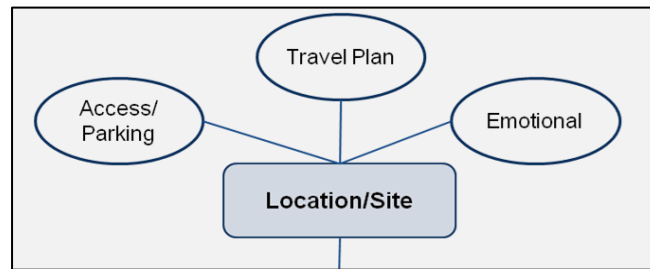
Figure 7.9: 'Location/Site' Organising Theme

Basic theme: Travel Plan

A travel planning consultant was contracted to carry out traffic studies for respective local areas to be served by Scheme A and Scheme B. Findings from the travel consultant's studies were to be incorporated with recommendations from the Government Green Travel Plan which advocates for less private- and more public-travel. Together, results the travel planner's studies including Green Travel Plan recommendations represented the travel plan which was to be presented to stakeholders for supporting site selection decisions and site planning. Project managers often cited the travel plan indicating that certain decisions could not be made until it was available, thus confirming the travel as an essential aspect of the scheme's location.

Basic theme: Emotional

Results from an earlier public consultation campaign about the scheme's location were not known during the entire briefing process. This made service users emotive during the meetings with some reportedly staying away arguing that consultation exercises were not transparent. Sometimes 'art and interior design' user group meetings were interrupted by questions about the final

decision on the location of the Scheme B. For example, at one meeting, when asked for feedback on the presentation (design proposals) a participant's reaction was...

> "The most important thing is, where is the [health] centre going to be? Because at the moment, it appears to be a void! Will the building be adaptable to wherever the site will be?" *Committee member of public*

While at another meeting, having suspected that the PCT preferred the less popular site option, which was on a hill, a participant interjected an unrelated discussion saying,

> "The people's concern is, why on top of the hill? Given a chance, change it's blocking people's thoughts." *Committee member of public*

Thereby exemplifying the emotions associated with selecting a site.

Organising theme summary

These salient themes therefore defined the most recurrent topics about a scheme's physical location. Car parking and the travel plan were seen to be influential to a scheme's site selection. In addition, it was seen that decisions about a scheme's location can be emotive; therefore early resolution with stakeholders is important lest the uncertainty interfere with other project processes. Car parking and access should be at the forefront of early optioneering processes if a healthcare facility is to live up to its usefulness to the public and staff. However, the contentious issue may still remain over whether to provide for ample parking or for direct healthcare service.

Organising theme: Scheme design

The health centre's waiting area, courtyard and sustainability-related features, were found to be of most interest compared to other features on the designs.

The basic themes defining the 'scheme's design' are summarised in Figure 7.10.

Basic theme: Waiting areas

Waiting areas were said to be 'the hub' of the health centres. For both schemes, waiting areas were to be designed to be centrally located, comfortable and well lit with atria. Moreover, it was found that for one of the schemes, one justification for change was because,

> "Currently, public facilities are poor, waiting areas crammed..." *Public consultation questionnaire*

Furthermore, waiting areas were seen to be one of the few areas patients and the public could wholly influence.
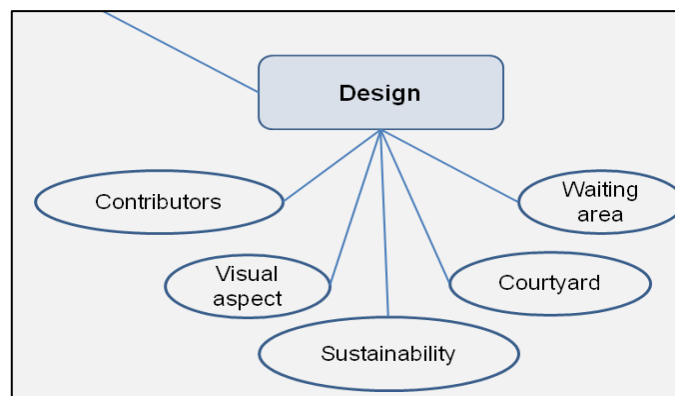
Figure 7.10: 'Design' Organising Theme

Basic theme: Courtyard

A courtyard incorporated within Scheme B's design caused much debate from GPs, staff and from patients and the public. (It was found that the courtyard was incorporated for the benefit of natural lighting and ventilation only, in connection with BREEAM requirements, a purpose was not known to user stakeholders). Health centre staff worried that the courtyard would not be beneficial for confidentiality (audio and visual) in the consultation rooms around the courtyard. Administrative staff were concerned about users' health and safety

within the courtyard; while the patients and public urged for accessing the courtyard since it would contribute to a therapeutic environment.

Basic theme: Sustainability and flexibility

The role of sustainability in influencing design was found to be significant. During the focus group meeting, Shire LIFTco. revealed that for both schemes, sustainability and acoustics were high on the design agenda. At later design team meetings, design considerations were said to target achieving and exceeding BREEAM ratings. In addition, NHS Shire County PCT expressed a desire for the patients and public to understand the need for healthcare to be delivered in buildings which are,

> "... reliable, sustainable and flexible - capable of meeting the needs of future generations." *Public Consultation questionnaire*

Furthermore, it was found that of the probable nine site options, four were eliminated on the grounds that they lacked the flexibility for future expansion.

Box 7.6 presents some of the features incorporated in the proposed design as part of the BREAAM/sustainability agenda for Scheme B.

Box 7.6: Design features for sustainability

Sustainability-related features

Courtyard area
Solar photovoltaics on roof
Atrium
Timber fins (for solar gain/shading)
Red bricks (externally – to match surrounding buildings)
Grass-planted roof
North facing (solar) lights

Organising theme: Art

This organising theme consolidates factors arising about art for both proposed schemes. They include: the role of art, the artist in residence and the community, as illustrated in Figure 7.11.

Basic theme: Role of art in healthcare built environments
NHS Shire County PCT saw the objective role of art as enabling,

> "a visual environment which is at once welcoming, stimulating and calming"
> *Artist in Residence report, Scheme B.*

Similarly, art was projected to have the capability to...

> "... create a unique and humanised sense of place rather than an institutionalised, anonymous and alienating space".
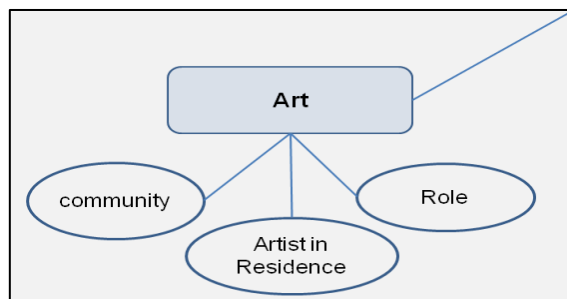
Figure 7.11: 'Art' organising theme

Basic theme: Artist in residence
The PCT contracted the services of two artists in residence. The role of the artists was very pivotal to the consultation and engagement process and involved resident artists working with the PCT staff, GP Practices, patient groups, the project team. At the end of the residency, it was reported that having an artist in residence,

"... allowed for the public to engage in a way that was not confrontational or mysterious". *Artist in Residence report, Scheme B.*

Basic theme: Community spirit

The study revealed that one of the major objectives of having art in health centre design was to help...

"enhance local identity through being specific to the immediate context and help the building to contribute to local distinctiveness". *Artist in Residence report, Scheme B.*

The artist's final report further demonstrated that the residency focused on involving

"... a greater number of community and local groups in the creation of the final artwork."

In order to encourage community involvement members of the 'Interiors and Art Group (committee groups shown in Figure 7.13) thought it was important to involve all in the community. A member said,

"I have seen textile/embroidery work in another building/facility. We could co-use local art work alongside art contributed by local established groups, schools etc. Art could be put up on a rotational basis to ensure local involvement as well as ownership." *Committee member, Interiors and art group*

One of the artists in residence also reported that the main artistic themes and approaches created were a result of close engagement with the local community. As such, the artistic work created through joint effort of professionals and locals would therefore be more than artwork but a contribution to local distinctiveness and heritage thereby making art a unifying factor for the community.

Global theme summary

The theme has presented the importance attached to a scheme's location; the most salient attributes to design with waiting areas being the most central public space in the centres. The role of sustainability in recent scheme design considerations has also been described. The significance of artwork in healthcare design and how it was proactively used to enhance local distinctiveness, ownership and involvement was an important highlight too.

7.4.3 Global Theme: Communication and engagement

Observed processes involved active communication flows from different parties and stakeholders. This theme represents the findings involving communication and engagement between NHS Shire County PCT, Shire LIFTco. and the other stakeholders. Within this global theme, the most significant issues about consultation, communication and engagement across the parties involved are summarised in Figure 7.6(b).

In addition, the role of the Artist in residence in engaging and involving other stakeholders is re-visited. Another significant finding to emerge was about the GPs' input, influence and importance. On the contrary, the theme also covers GPs low interest and commitment to the scheme's development. This global theme also covers findings on the importance of stakeholder representation and accountability to the public stakeholder group, feedback as well as common tools of communication and engagement.

Organising theme: Consultation

Consultation involved the PCT and LIFTco. in lengthy activities of eliciting stakeholder views about site locations and later, about the concept designs of the proposed schemes. This organising theme's underlying themes describes

the parties involved; consultation through groups; seeking for user experience; and, public influence. These findings are re-presented in Figure 7.12.
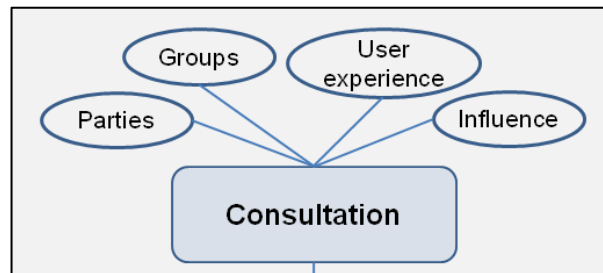
Figure 7.12: 'Consultation' organising theme

Basic theme: Parties

In order to ensure that the consultation programme for Scheme B was as comprehensive as possible, several parties were consulted to contribute, namely, the Town Council, Community Concern, and patients. The consultation process was led by the PCT and overseen by consultation coordinators, who were PPI Managers with the PCT. For both schemes, a local PPI lead was appointed to coordinate and report to the manager. The frequently consulted groups were GPs, patients, the public, groups and organisations with an interest in the developing schemes.

Basic Theme: Partnering Groups

During the consultation process, the project team set up what they called a *Patient Advisory Panel*. Through the group, NHS Shire County PCT hoped to get patient and public user input into the schemes' design so that,

"It's not left to professionals". *PPI officer, Scheme B*

And so that,

"... all responses to consultation are considered fairly and are included in the final evaluation..." *PM1*

Scheme A participants opted for a single group while for Scheme B the panel was further sub-divided into three autonomous committees. Panel group participants voluntarily signed up to be involved in either the committee on 'Travel'; 'DDA' or 'interior design and Art'. Each group elected a member to represent them on the core group. Figure 7.13 shows the relationship between the panel groups and the core group. The arrows represent information flows between the committees as well as the final outflow mediated by the project team to inform the scheme's design.

At core group meetings, minutes from other sub-groups were shared in order to,

"Identify issues worth cross-fertilisation/across other groups";

And to,

"Identify what the big issues are for each of the groups" *PM1*

User advisory panel members were charged with

"Overseeing engagement with the wider public". *PPI lead*

And to,

"Go out to make contact with all those who cannot make it to the meetings". *PM1*

For most of the consultation campaign, meetings were conducted through this system. Members brought feedback from engaging with the wider public into their respective groups. Therefore, through partnering community members on the Patient Advisory Panel, the project team was able to reach a wider population base than would otherwise have been possible.
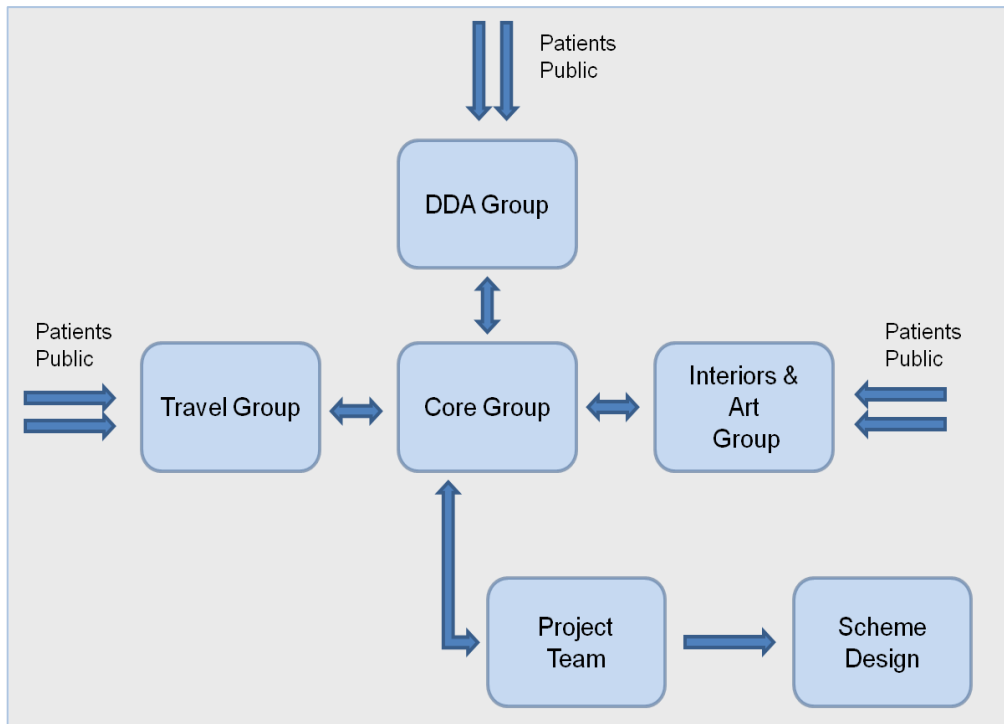
Figure 7.13: User group relationships

Basic Theme: User experience

In engaging and consulting with user groups, the project team often stressed the importance of seeking information on how the facilities were to be used, reasoning that,

"Members of the public will be practical about the use of the building" *PM2*.

And public views were needed to,

"Help us decide on the best way to replace existing centres". *PPI Strategy meeting*

Therefore, getting user experience was an important aspect of the consultation programme.

Basic theme: Influence

Similarly, 'influence' emerged as a salient theme for consultation and engagement. It was a concern for the coordinating team as well as the public.

200

While the coordinating team were aware that public and user groups needed to be involved, they were also aware of the need to inform the public of,

"what they can influence and what they cannot". *PM1*

Because there is a need to,

"make it clear to the public that there are planning regulations that regulate how clinical spaces should be planned". *Community Engagement Officer*

The public could only influence communal spaces including, accesses (entrances), waiting areas, corridors and toilets; and, art. In addition, the patients and the public participating always requested reassurance that their input would influence decisions.

Organising Theme: Engagement

There are parallels between communication, consultation and engagement. However, from the data, it was demonstrated that some issues raised were specific to engagement. While consultation could be a one-off contact with participants, for example, through a questionnaire survey or single council hall presentation, engagement was seen to represent longer term interactive relationships between parties (providers and users). Engagement also involved longer term negotiation in some cases where it may not have been possible for a single instance interaction. The most prominent issues arising about engagement are illustrated in Figure 7.14 and discussed below.

Basic theme: Compliance

The issue of complying with engagement and PPI guidelines was raised several times. Over the course of the case study, it emerged that one of the major reasons for engaging users during the briefing process was so as to comply with the requirement to involve service users in planning. It was seen that the LIFTco. had to demonstrate to the PCT's and the Business Case advisor that,

201

"not only have we put plans on the table",

but also that,

"members of the public's opinions have been put into consideration". *Project Team*
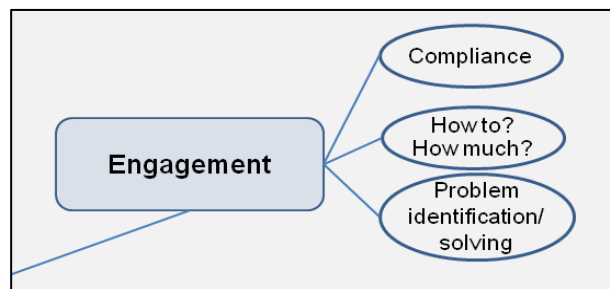
Figure 7.14: 'Engagement' Organising theme

Basic theme: How to? and, how much?

A recurrent question during the engagement process was that of how to and to what extent to engage. In addition, who was to be invited for engagement and at what point in the process? In an attempt to address these questions, the project team used the first sessions of the public meetings to brainstorm with participants about the best ways of engaging and consulting with the public.

Basic theme: Problem identification and problem solving

Members of the public thought that engagement meetings could be used for problem identification and problem solving. The idea that problems with the existing facilities were already known was rejected in favour of identifying the problems in the small group panel meetings. Subsequent meetings would be used to delineate probable ways of solving the identified problems. At one *transport panel group* meeting, the aim of the meeting was communicated as

"trying to establish what the real problems are and not what we think they are".
Group chairman

This theme showed that participant used meetings as means of agreeing problems and collectively seeking ways to solve them.

Organising theme summary

It was found that engagement was partly driven by the requirement to comply. The theme also uncovered the challenges underlying the practical issues concerning effective engagement. It further showed that participants thought of small group committee meetings as opportunities for identifying problems rather than solve presumed problems.

Organising Theme: Communication

This organising theme integrated basic themes about official channels of contacting stakeholders. The sub-themes are summarised in Figure 7.15. The theme also covers the most significant matters about continuous involvement of patients and the public, in addition to the importance of maintaining contact between the providers and service users during the briefing process in order to keep them informed about the developing scheme.

Basic theme: Strategy
It was found that, the coordinating team recognised that in order for the consultation and engagement campaign to be successful, a communication strategy was required. The strategy needed to address questions such as: what needs to be done to comply; what message (verbal or written) to send out; and, who to engage in what and how. The strategy also aimed to address what sort of questions to be asking in the case of questionnaire surveys; and, how to involve and include 'hard to reach' sections of the community. Having a strategy in place was therefore seen as important for structuring and streamlining communication goals for successful outcomes.
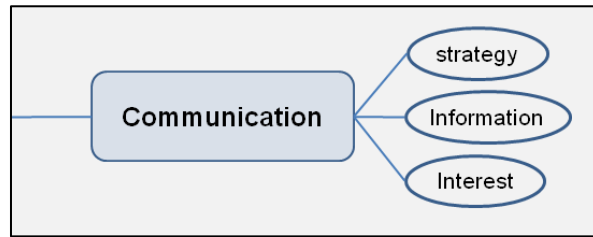
Figure 7.15: 'Communication' Organising Theme

Basic theme: Information

It was further found that most written project communication from the project team and the PCT, to the public were for information purposes only and utilised newsletters. Such communications served several purposes, for example, through the first section of the consultation questionnaire, notifying the public about the current state of existing centres, the proposals and shortlisted sites.

Basic theme: Interest

For the present study, interest is understood as the willingness to be continually involved in, and committed to participating in the progress of the developing scheme. Getting the public and clinical users interested was a major challenge for the team. During public consultation campaigns, service users were encouraged to sign-up for further involvement in further discussions about their respective schemes. However, the level of interest was low as reflected in poorly attended consultation and engagement meetings. The challenge to achieve stakeholder interest was confirmed by the resident artist for Scheme A, who observed that,

> "It is difficult to engage with people because they are always rushed off their feet".

And further that,

> "it is difficult to find the right forum[to engage]". *Resident Artist, Scheme A*

Organisation theme summary

The data showed that in order to achieve effective communication and engagement, a communication strategy is needed. The data also showed that most written communication utilised newsletters for one-way information purposes to the public. In addition, it was seen that getting stakeholder interest and commitment was challenge to the communication and engagement process.

Organising theme: Artist in residence

It was found that the artists in residence played a crucial role in the consultation and engagement programme. Through their own initiatives, the artists endeavoured to seek public and user opinions and contributions for art in the proposed health centres. Under this organising theme, findings about the role of the artists in communication and engagement are discussed.

Basic theme: Central role
Resident artists played a central role in seeking unifying artistic themes for the respective health centres. The objective of the artists' residency was to,

> "inspire and inform the consultative and design process",

As well as to,

> "enhance people's experience of the new health building, by ensuring a welcoming family environment in which people's voices have been sought and responded to." *Artist in Residence Report, Scheme B*

Through their arrangements outside the main consultation campaigns, the artists met people in the market place, in existing health centres and in their homes. In addition, the artwork proposals for the schemes were said to be a

direct result from interaction with the community, reached after amalgamating opinions, visions and the need for recognising the local area and its heritage.

Basic theme: Involvement

The resident artists also played an active role at user and public meetings. They attended and presented artwork proposals to the stakeholders.

Organising theme summary

The data demonstrated the significant role played by the resident artists in enhancing community involvement during the consultation programme. Through the resulting artists' proposals, the user community was able to realise visible and tangible outcomes.

Organising theme: GPs and Clinicians

Amongst stakeholder groups whose involvement was targeted, GPs and clinicians received more attention from the project team. GPs' input was especially sought as important for Scheme A because the new health centre was to bring together 10 GP practices that were originally working individually. It was seen that communicating, engaging with them, as well as reconciling their individual requirements was difficult. This organising theme summarises the key issues that emerged about GPs and clinicians, namely, their importance and the need for a specific strategy for dealing with them, as illustrated in Figure 7.16.
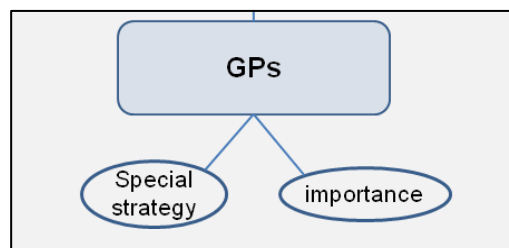
Figure 7.16: 'GPs' Organising Theme

Basic Theme: Importance

GPs' opinions were highly valued in briefing and optioneering Scheme A and B. GPs and clinicians' opinions seemed to take precedence over other stakeholders' in addition to being solicited before any other stakeholders groups'. In addition, GPs and clinicians were usually met separately away from other stakeholders and a specific team was assigned to regularly engage with GPs and clinical staff. However, expressing frustration against what seemed like superior consideration for GPs and clinicians, a participant asked,

> "Who is the captain of the ship? Is it the doctors, the PCT or the patients who pay?" *Member of public*

Basic theme: special strategy

Despite the special attention, it was found that it was difficult communicating with GPs and clinicians and getting them interested in the developing designs. On the few occasions they were available they were reportedly vociferous and difficult people to deal with. For example, one GP attending a user group meeting was perceived as more of a liability than a benefit. The artist for Scheme A reported failure to get GPs and clinicians to engage, upon which the project team agreed to the formulation of a special communication and engagement strategy to get them involved.

Organising theme summary

This organising theme therefore summarised the key themes emerging about the GPs importance and interest. The theme described the special attention attached to GP and clinician opinions and the how their lack of interest was overcome by designing a special communication and engagement strategy.

Organising Theme: Accountability and representation

This theme summarised underlying issues (Figure 7.17) that show NHS Shire County PCT's and providers' commitment to proactively aim at delivering schemes that reflect user and community ownership. In addition, social and financial accountability aspects were highlighted under this global theme.
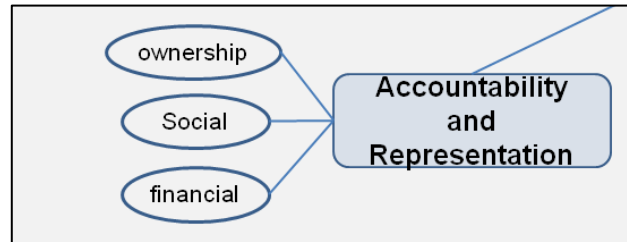
Figure 7.17: 'Accountability and Representation' Organising Theme

Basic theme: Financial accountability

From the outset of the briefing, financial accountability was important to stakeholders. Members of the User Advisory Panel were of the view that as part of the responsibility to mediate between the project team and the public,

> "it is important that this group manages people's expectations in relation to the budget because it is not a bottomless pot of money." *Panel member, Scheme B*

This was an indication of the public's awareness of financial accountability taking precedence over expectations. Another example involved the project team inquiring from the Patient Advisory Panel how the public wanted to spend the money allocated to artwork, a response of which was,

> "... should be affordable in the long term or the public might think it was a waste of money", *Member, Interior and art group*

This further indicated that allowing for financial accountability was essential during engagement. Therefore, it was seen that through communication and engagement, the project team got the opportunity to financially justify proposals

and decisions to the public, while at the same time consulting them about what mattered to the tax-paying public.

Basic theme: Social accountability
The need to engage with representatives members of the public was often mentioned in planning meetings and user group meetings because,

> "It is important that this group be representative of the public" *Project Team*

In addition, the campaign targeted 'hard to reach' members of the community and consulted with 23 existing organisations. In addition, a special group to represent the needs of the disabled community was included on the Advisory panel. These actions therefore exhibited the project team's willingness to conduct an accountable and inclusive process.

Basic theme: Ownership
Ownership was a recurrent theme throughout the case study. As an objective of the public consultation campaign, the coordinating team aimed to:

> "Engage end users and staff directly in meaningful consultation ... with highly visible and tangible and owned outcomes."

> As well as,

> "Engender ownership of, and pride in the building amongst end-users and staff through creative participation." *Artist in Residence report, Scheme B*

One Borough Council representative advised that local young people are actively involved involvement in the scheme's development suggesting that involving them would improve their sense of ownership and stop them from vandalising the building.
Furthermore, it was seen that applying the artists' approach to communication and engagement,

"Allowed for ownership and understanding of the importance of having artwork connected to the community." *Artist in Residence report, Scheme B*

The project team aimed to achieve ownership in order to gain support and acceptability, while the users needed to own the outcomes in order to achieve personalisation and contextualisation typical to their respective areas.

Organising theme summary

It was seen that the project team was mainly concerned about public buy-in from both social and financial fronts, while the public were concerned about careful use of resources and owning outcomes; in addition to, being able to relate the outcomes to their location to reflect a sense of place.

Organising theme: Feedback

The feedback theme was salient throughout the consultation and engagement process. The significance of feedback to the study was reflected through coordinating team proactively seeking user and public's views (consultation) on the progressing design. Feedback was also reflected through the public's wish to know whether their input would contribute to actual design and final outcome. The most salient issues about feedback, namely, influence, lessons learned and existing groups are described. Figure 7.18 presents this organising theme.
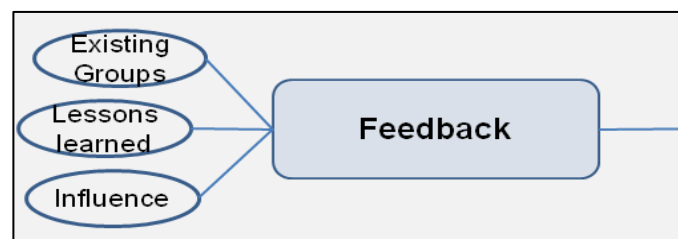
Figure 7.18: 'Feedback' Organising Theme

Basic theme: Influence

It emerged that the most important aspect feedback the project team expected from the public and users was on how the buildings' communal areas could be used rather than input into the entire design. Consequently, the users and public could only influence use of the communal areas. During the consultation process, the patients and public groups always sought to ensure that their input would contribute to the final design. For example at one of the public meetings for Scheme B, on being reminded of the pending deadline for Stage 1 business case submission, a member asked:

> "If submission is due in 2 months, what will our influence be?" *Panel Member*

In other words, they seemed to ask: how will our contributions influence and feedback into design? The project team responded through reiterating that the outcomes from the consultation campaign would be fed back to the design team for consideration.

Basic theme: Lessons learned

Reference to lessons learned from other developing or recent schemes was a usual occurrence over the course of the study. At one catch up meeting, a project manager with another ongoing LIFT Scheme (C) was invited to share their project experiences after which participants were asked rhetorically,

> "Can LIFTco. confirm that they have taken on board the lessons learned from Scheme C?" *PM1, Meeting Chair*

Furthermore, the public often referred the project team to other health centres with features they thought should be avoided in the proposed schemes. In addition, one of the DDA user group meetings suggested a 'walkthrough' site visit to a newly occupied healthcare centre. The visit was duly arranged and lessons learned recorded.

Feedback was important to the communication and engagement theme. In cases where it was difficult to achieve, it was frustrating for the team, for

example, in instances of poorly attended consultation meetings, the coordinating team expressed disappointment because feedback on the developing scheme was vital.

Basic theme: Existing groups

The consultation campaign also sought to take advantage of other existing groups such as voluntary organisations and schools. Through such groups, feedback was possible without necessarily having group members attend public meetings.

Organising theme summary

This organising theme has highlighted evidence of the importance of influence, lessons learned and existing groups, to a scheme's feedback structure.

Organising theme: Tools

The most commonly used tools for communication and engagement during the briefing and optioneering process are summarised in this theme. They include newsletters, the postal survey and architectural plans.

Basic theme: Newsletter

The printed newsletter was found to be a common tool used by the PCT and project team to inform and communicate with the public about the status of the developing schemes. The newsletter was used in instances when ensuring wider coverage was required. It was found that newsletters were distributed through post, left at council premises or were available from GP practice receptions.

Basic theme: Survey

The questionnaire survey was seen to be a familiar tool for consulting with the wider public. Surveys were used in consulting about site options and travel behaviours in order to inform the briefing and decision process.

Basic theme: Architectural plans

These were central to the briefing process for both schemes. It was found that the use of 1:200 concept drawings as well as 2D and 3D pictorial presentations was central to communications between project team and service users. In addition, displays at council chambers and distributing architectural drawings to stakeholder representatives was perceived as a helpful mode of consulting and informing stakeholders of the schemes' progress. Such applications implied that architectural drawings were a significant communication tool during the briefing process.

Organising theme Summary: This theme has reflected upon the use of newsletters, the questionnaire survey as well as architectural presentations as key instruments of communication and engagement in the healthcare schemes briefed.

Global theme summary

Communication and engagement are central to the healthcare scheme briefing process. This theme has been founded on inter-related issues that made communication and engagement significant to the case study. The global theme further demonstrated that apart from the project team, GPs, resident artists, and user advisory groups were important contributors to the communication and engagement process. It has also been found that measures for ensuring representativeness and demonstrating accountability needed to ensure public confidence and involvement in briefing and optioneering activities. In addition, feedback was seen to be important to the communication and engagement process; with major communication tools being newsletters, questionnaire surveys and architectural drawings.

7.5   Chapter Conclusion

Through this case study with NHS Shire County PCT and Shire County LIFTco., it was found that the business case, service needs and design aspirations were the major drivers for the two constituent primary care schemes. It was further found that the most important features for the schemes included the site location, waiting area and sustainability-related design features such as the courtyard. The role of art and the resident artist was a further highlight in the case study. From the case study, it was found that efficient stakeholder communication and engagement was the strength of briefing the two schemes.

The next chapter integrates these findings with findings from chapter Six. By relating the findings to the original research questions, answers are sought and these answers used in Chapter 9 to design a WLV improvement framework relevant for healthcare projects.

Chapter 8: Discussion

8.0 Chapter introduction

This chapter integrates the results from *Chapter Six* and *Chapter Seven*. "The aim is to take the key conceptual findings in the summaries of each network, and pool them together into a cohesive story by relating them back to the original questions and the theoretical grounding of the research" (Attride-Stirling, 2001:402). In an attempt to relate the findings to the original purpose of the research, the first section of the chapter reviews the aim and objectives of the research; and, re-visits the original research questions.

8.1 Research aim and objectives – a review

After an initial literature survey, the present research set out **to develop a process improvement framework that would facilitate better briefing and optioneering for satisfactory WLV delivery of healthcare facilities**. The objectives of the study were to:

a) Explore construction briefing and optioneering theory;

b) Investigate the generic meaning of WLV and its linkage to briefing and strategic options selection;

c) With reference to healthcare projects: investigate perspectives on briefing/optioneering/WLV;

d) Identify gaps and areas for improvement in both theory and practice;

e) Design a best practice framework for effective process improvement towards satisfactory WLV;

f) Test, refine and recommend the framework as a guidance tool for satisfactory WLV delivery of NHS healthcare facilities.

Through a comprehensive literature survey, objective (a), (b) and part of (c) were addressed. This chapter aggregates the results that satisfy the last part of objective (c), which is the empirical investigation of briefing, optioneering and WLV in UK healthcare facilities. Furthermore, it seeks to address objective (d), the implications of which will be used in the next chapter to meet objective (e).

8.2   Research questions

Through the 5 objectives the study seeks to address the question: How can construction briefing and optioneering processes be improved to deliver satisfactory WLV of healthcare facilities? Further questions arising from this are: What is the general understanding of all three concepts? Furthermore, concerning the current state of practice for briefing and optioneering in aligning WLV,

- How are the processes currently carried out?
- Who is involved or affected (stakeholders), when and to what extent?
- How do the processes work? Are they effective?
- What are the possible suggestions for improvement?
- How is WLV reflected in the built health environment?
- What are the Critical Success Factors for its achievement?

And finally, how can the processes of briefing and optioneering be improved individually and as a whole to achieve these Critical Success Factors?

The following section summarises the findings and their implications.

8.3   Data triangulation

Section 5.4.3 presented an overview of triangulation. It was seen that with reference to doing data evaluation, four types of triangulations are applicable,

namely, *data triangulation*, *investigator triangulation*, *theoretical triangulation* and *methodological triangulation* (Lincoln and Guba, 1985; Morse, 1991; Johnson, 1997; Decrop 1999; Patton, 2002). *Data triangulation* uses a variety of information sources to enhance understanding of a phenomenon in a study while *investigator triangulation* concerns the involvement of several investigators or researchers evaluating or interpreting the same data. Under theoretical triangulation, multiple perspectives are used to interpret a single set of data. By so doing, different research perspectives (for example ethnography; phenomenology; discourse analysis) which have their own theoretical implications, could be triangulated. In *methodological triangulation*, multiple methods are used to study a single problem, be it different qualitative methods or quantitative but usually a combination of both. Most researchers, regardless of their own methodological orientation associate triangulation with mixed methods (Tashakkori and Tedlie, 2003). In triangulation, the search for convergence is fundamental in order to make propositions more sound and valid (Decrop, 1999).

The present investigation focused on *data triangulation* which entailed collecting information from different sources for the purpose of building a coherent explanation for themes and promoting understanding of the phenomena under investigation (Johnson, 1997; Decrop, 1999; Yin, 2009). Data from interviews, documentation, and direct observations was used to corroborate, elaborate or illuminate the research question (Morse 1991; Johnson, 1997; Decrop, 1999).

8.4   Findings and implications

These findings are based on triangulating the 5 global themes emerging from the data presented and analysed in *Chapters Six* and *Seven*. The findings include: project strategy; communication and engagement; goals and deliverables; drivers; and, features. In this chapter, each finding is discussed in the light of relevant literature, research objective(s) and question(s) it

addresses. Findings are later probed to find out whether they imply good practice, a gap in practice or further theoretical exploration.

8.4.1 Project strategy

Section 3.1.4 defined a project and described the lifecycle perspective along with its inherent key project points as they apply to the present study. In addition, the strategic theory was defined in accordance to Mintzberg *et al.* (2004) and Johnson *et al.* (2008)'s views.

It was found that most recently constructed facilities have a design life of 60 years, with maintenance and refurbishment intervals built into the business case. Accordingly, a healthcare project's strategy seeks to direct decisions and allocate resources towards linking the project (a separate activity) to the organisation mission and core business over its 60 year design life, in order to fulfil stakeholder expectations. Findings from *Chapter Six* indicated that having a project strategy is vital for aligning WLV delivery. The following themes, seen in *Figure 6.7 (a)* and summarised in Figure 8.1, were found to be associated with and are important to a healthcare project strategy. The order in which they appear is of no significance.

Clinical Service Model

The clinical service plan or model encapsulates the clinical service vision and a healthcare facility's operational policy. It was seen that a successful healthcare facility project strategy begins by defining the clinical service model through answering the question, *'how would doctors and nurses want to treat patients?'* From case study findings, themes addressed by the clinical service model parallel the '*service'* and '*design aspirations'* sub-themes of the '*Drivers*' Global theme.

However, clinical service modelling was not addressed elsewhere in the literature survey. Moreover, in practice, it was also found that not all practitioners followed the approach but those who recently did found that

defining the service before the facility leads to better briefing outcomes and consequently more satisfactory design. Despite the primary importance of the clinical service plan to the planning and subsequent stages, participants expressed difficulty with getting consensus among clinical teams as to how they want to treat their patients.

Verdict and Implications: As a first step, in the briefing process, the matter of defining the clinical service plan right, was seen to be a critical success factor. Implications for improvement are to advocate for defining the clinical service model as standard first step for practitioners. In addition, the framework will seek to address means of achieving better and quick consensus among clinical teams. This finding and implications contribute to objective (d) and research question (i), (iv) and (vi).

Project strategy

- Clinical service model
- Business case
- Strategic decision making
- WLV
- Healthcare planner roles
- Systemic and environmental issues
- Design

Figure 8.1: Project strategy

Business case

The business case was seen to be central to the briefing and optioneering processes when defining a healthcare project's strategy. This finding was common to both interview data and case study data. However, it was found that

users of standard business case guidance need better training support than is currently provided. In addition, participants noted the lack of mechanisms for sharing business case preparation expertise. The business case was not as explicitly emphasised in the literature survey (*Chapter Four* and *Figure 4.1*) as in the empirical findings. However, the lack of theoretical coverage could be attributed to a general scarcity of NHS-related construction process literature. Nevertheless, the general business case process is well documented for OGC procedures for public capital procurement (OGC, 2010).

Verdict and implications: Without a good business case, there can be no funding for a healthcare scheme. The implication of this finding is that in order to deliver better WLV, training support and better environments for sharing expertise are needed. Therefore, means for accessing the same need to be built into the improvement framework. The consequence of solving this will relate to objective (d) and answer questions (i) and (vi).

Strategic decision making

Participants described strategic decisions as those that will help reduce overall costs down the line. It emerged that most major strategic decisions are made within the business case process. Strategic decision making within healthcare construction project strategy was further seen to be predominantly driven by the available financial envelope and characterised by various sign-offs. This finding is contradicts what was covered in *Chapter Four*, in which it was seen that decisions are predominantly based on demonstration of VfM, a concept that was seen to be broader than cost in *Section 2.1.3*. CIM (1994) guidance is central to the healthcare project decision making; this finding resonates with what had earlier been found through the literature on decision making within the NHS, *Section 4.4.* However, similar to findings on business guidance, participants believed that more comprehensive training is needed for its effective application. In addition, decision makers were said to tally decisions at FBC without explanation thereby causing uncertainty and undue costs to stakeholders.

Verdict and implications: The CIM guidance was believed to be useful for the optioneering process. These findings point towards re-thinking current decision making criteria and processes by focusing on long term decision consequences rather than the available financial envelope. In addition, Trusts need to be aware that failure to devise means for mitigating unnecessary delays in finalising decisions causes undue uncertainty and costs to the supplier leading to poor project experiences and other knock-on effects to the user stakeholders.

Freeman defined stakeholders as 'any group or individual who can affect or is affected by the achievement of the firm's objectives' (1984). This was the operational definition of stakeholder adopted for the present study (*Section 2.1.1*). However, these findings on NHS strategic decision making and their impact imply a need to define stakeholders to not only account for an organisation's objectives, which only symbolise intent but not necessarily action, rather to incorporate elements of decision consequences too. Therefore *"stakeholders are any group or individual who can affect or is affected by the organisation's decision-, indecision-consequences or by the achievement of its objectives".* Therefore, this stakeholder definition encourages decision makers to consider possible consequences of their decision or indecision every time a decision needs to be made.

Findings on this theme further bear implications for more comprehensive training support needed for CIM guidance application. In addition, the framework is expected to advocate for spending more at the front-end on the original building as a way towards WLV. Findings from this theme provide answers to objective (c) and (d), in addition to addressing question (i), (iii) and (iv).

Whole Life Value

The WLV concept was unclear to the study participants. This finding corroborates what was seen earlier in the literature survey (*Chapter Two*) about a dearth of explicit information on WLV. The WLV definition in *Section, 2.2.6* is

quite cumbersome, broad and hardly reflects specific healthcare needs. In order to improve understanding of the WLV concept within healthcare facilities, from a definition emerging from the data, WLV components were summarised as clearly defined value(s), *that support(s)* best possible clinical outcomes/services, *within* economic limitations, and *having* the right design culture in order to deliver a whole life solution to Trusts.

Verdict and implications: This definition of WLV affirms that a healthcare building is created for the core purpose of supporting a clinical business. Therefore, implications for framework construction are for a clear approach for defining the relevant 'values' for supporting best clinical outcomes for a scheme. These findings indicate that in the main, WLV is contextual and varies from scheme to scheme. Nevertheless, as a starting point, there is need to define value(s) which support best clinical outcomes and services, that are relevant across all schemes. In addition, suggestions for WLV in facility design will advocate for considering a whole life solution. These findings satisfy objective (c), (d) and research question (v).

Healthcare planner role

Theoretically, healthcare planning is said to be essential when resources are scarce and when there is conflict between market and regulatory forces (Hyman, 1982: 587). Today's and future realities present challenging environments characterised by ever increasing demand for services, capital and human resource shortages, as well as renewed effort by governments and employers to curtail increasing costs (Weitzner, 2004). As such, healthcare planners are contracted to determine and advise on the best means to focus investment of limited resources into services or solutions that meet an organisation's mission and objectives (Hyman, 1985; Weitzner, 2004). A healthcare planner may be independent or may represent a healthcare consulting firm that takes a broader planning role in assisting the institution in defining its project scope (Wolper, 2004). Tremblay et al. (2007) observed that healthcare planners usually exhibit characteristics associated with knowledge workers. Knowledge workers can be defined as employees who apply their own

knowledge acquired through experience and education, to develop new knowledge or to apply existing knowledge (Drucker, 1993). From the empirical investigation, healthcare planners were seen to be teams of highly experienced, creative and skilled communicators usually working within health planning consulting organisations. Healthcare planners analyse and solve operational facility and strategic planning issues in hospitals and health systems by applying a variety of methods (Weitzner, 2004). They are contracted by NHS Trusts to advise on optimum operations, evaluate and prioritise strategic options to meet service and facility needs.

Therefore, by definition, healthcare consultants make vital contribution to the project strategy-setting process and their role as key liaisons between stakeholders and the client organisation was hailed as indispensable. Moreover, the healthcare planner role was seen as an essential contributor to the success of a scheme's strategy. In a separate study, it was found that healthcare planners were the ultimate decision makers in all hospital related issues during briefing (Chandra and Loosemore, 2010). However, interviewed healthcare planners felt that they would achieve more if they joined the process earlier than they do presently.

Verdict and implications: Healthcare planners play an important expert role in healthcare facility the briefing and optioneering process. Therefore, their involvement on the delivery team needs to be as early as possible in the process. In addition, having a healthcare planner along with the usual consultants should be encouraged as good practice. These recommendations will be reflected in the framework. Findings about the healthcare planner role meet objective (d), question (ii) and (vi).
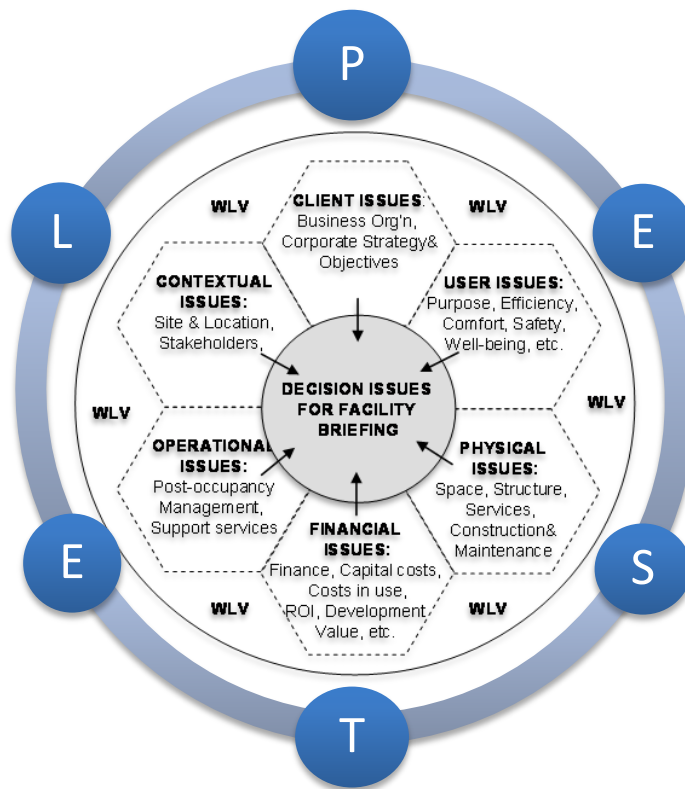
Figure 8.2: Systemic and environmental issues in WLV decision making

Systemic and environmental factors

This theme resulted from Chapter Six and summarised PESTEL factors that impact on planning and scheme definition but over which the Trusts may have little or no control. Chapter Seven did not strongly reflect the PESTEL factors; however, through themes such as changing requirements, for instance, through the requisite public consultation process and the prominence of sustainability issues in planning and design, some parallels can be drawn. Literature recognises that PESTEL factors need to be addressed in order to manage project dynamics associated with uncertainty and risk; factors that cause time or budgetary overruns or complete failure (O'Callaghan, 2007; Johnson *et al.*, 2008; McCabe, 2010). Furthermore, PESTEL factors relate the factors affecting early decision making as discussed in *Section 3.2* and *Figure 3.1.* The diagram is adapted to reflect the PESTEL issues and presented in Figure 8.2.

Verdict and Implications: PESTEL factors represent influences that an organisation must address, in developing a strategy, regardless of the organisation's context (McCabe, 2010). The proposed framework needed to highlight the PESTEL factors as and other factors reflected in Figure 8.2 to account for comprehensive issues that may affect a proposed scheme and its delivery process. Findings on systemic and environmental forces correspond with objective (c) and question (vi).

Design

The healthcare facility briefing and design process was found to be tending towards a more collaborative effort between Trusts and their stakeholders. It was further found that dependencies on set standards greatly influence planning considerations. Experienced NHS participants commended the level of expertise demonstrated by the PFI design process which characterised by designing the service before the facility.

In studying literature on briefing and optioneering, both generic and NHS specific, it was assumed that initial briefing and optioneering are first concluded and clarified before embarking on the design process. The assumption was made with reference to the linear representations within the scope of Stage A/B, RIBA Plan of Work (RIBA, 2007); and, from extant literature advocates for separating the briefing and design processes in order to ensure clarity of needs and requirements before embarking on design (Pena and Parshall, 2001; Kamara *et al.* 2002; Blyth and Worthington, 2010) . From both sets of data the contrary was found as well as noting that the design process complemented the briefing process.

Verdict and Implications: The design process is not usually separate from the briefing process but rather they symbiotically complement each other iterating to support regular feedback between the two processes (for example, O'Reilly, 1987; CIB, 1997; Lawson, 1997; Hillier and Galal, 1999; Luck *et al.,* 2001; Kelly *et al.*, 2005; Bertelsen and Emmitt, 2007). From literature and empirical data, some authors and participants advocated for concluding the briefing process

before embarking on the design process (for example, Barrett and Stanley, 1997; CABE, 2005; Kam-Chuen, 2005; Blyth and Worthington, 2010). It has been said that architects have 'a solution-focused strategy', learning about a problem through attempting to create solutions rather than analysing the problem itself (Lawson, 1997). In addition, Kamara *et al.,* (2002) argued that the method of defining a problem by proposing solutions (in the form of sketches and drawings) tends to shift the focus of attention away from the client's requirements and towards the designer's. Therefore, the proposal is to understand and clarify stakeholder requirements before any sort of design, in order to avoid making unfounded presumptions and diversionary ideas. The present study intends to take the same stance in designing the framework.

Similarly, the acknowledged advantages of the PFI design procedure are linked to the above argument and to clarifying first a clinical service modelled before embarking on the general facility briefing and architectural design.

However, it was found that the initial concept drawings served as major communication tools during the briefing and optioneering processes. This could be an indication of lack of alternative tools for communicating with stakeholders about the developing facility. Separating briefing and design in a bid to understand and clarify requirements better, would therefore calls for innovative ways for initially engaging in briefing without diversion presented by using architectural plans. These findings satisfy objective (c), (d) and question (i)-(iv).

8.4.2 Communication and engagement

Communication is said take place when a sender and receiver interact in the sharing of meaning to reach a mutual understanding and to gain a response (Otter and Emmitt, 2008; Gorse, 2009). The communication and engagement theme summarised sub-themes that exhibited elements of communication, interaction and all manner of group social dynamics associated with briefing, decision making and early design. As a global theme, communication and

engagement spanned the two data-sets. However, organising themes from the two data-sets raised different underlying issues. These are shown in Figure 8.3.

Briefing

This theme re-affirmed the importance of spending time in the briefing and planning stage. The theme also corroborated what previous research showed about clients and the industry not spending adequate time and resources in the briefing stage (Banwell, 1964; Latham, 1994; Egan, 2002; Emmitt, 2007). Participants asserted the importance of spending enough time briefing and understanding needs and requirements or risk the whole process. This finding substantiates what was found in the literature associating the briefing process with problems in buildings, costliest mistakes and the making of a pyramid of decisions (Goodacre *et al.,* 1982; Duerk, 1993; ISO 9699:1994/BS 7832:1995; Salisbury, 1998; Pena and Parshall, 2001; Smith *et al.,* 2001; Kelly*,* 2002; Kelly *et al.,* 2003; Shen *et al.*, 2004).

Empirical findings further confirmed literature about the briefing process as one concerned with understanding real needs and requirements as well as the issues that may impact a scheme (CIB, 1997; Blyth and Worthington, 2010). In addition, participants expressed dissatisfaction in collaborative briefing and design. The suggestion was that individuals only get engaged in only what they will use, what affects them.

Verdict and Implications: Briefing is important to the project outcome. It is a time of understanding real needs, requirements and issues that affect a scheme. However, to be effective, more time needs to be dedicated to this stage.

Furthermore, selective involvement of stakeholders in what directly affects them was found to be more useful than 'blanket' involvement of all in everything. This will be taken on board when designing the improvement framework. Findings on briefing respond to objective (c), (d) and questions (i), (iii) and (iv).
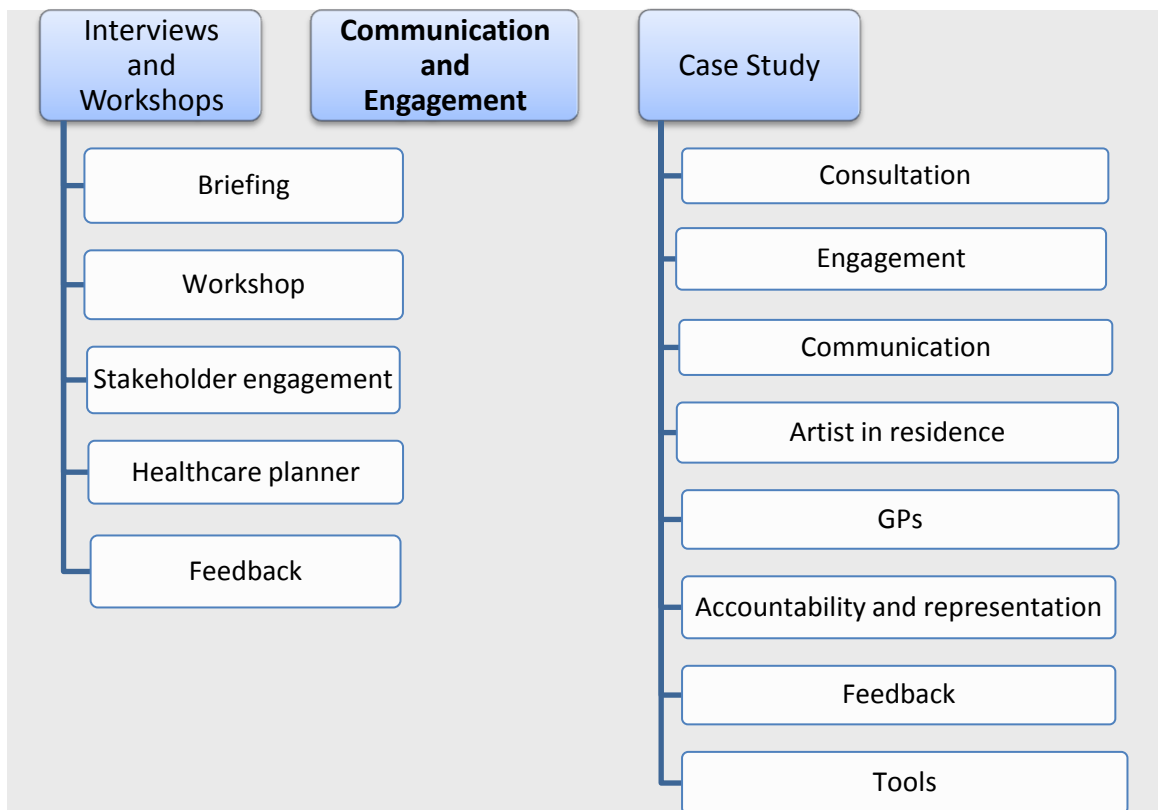
Figure 8.3: Communication and Engagement

The Workshop

Stakeholder workshops were found to be a familiar medium of communication and engagement. This finding corresponds with extant literature in which workshops have been seen as practical approaches to engage stakeholders (for example, Smith *et al.*, 2003; Kelly *et al.,* 2004; Chinyio and Akintoye, 2008; Otter, 2009). It was found that workshops may be arranged perfunctorily for the sake of being seen to be engaging, without genuine interest in the advantageous outcomes. It is recognised that the effectiveness of communication and interaction that occurs in face-to-face meetings is dependent on the process as well as technical factors (Fruchter and Demian, 2002). It was seen that methods used in some public workshops were also not tailored to the diverse stakeholder groups that were convened in them, thereby challenging their effectiveness.

Verdict and implications: Workshops are a common and convenient method for bringing stakeholders together. However, findings about their use in briefing and optioneering seem to point towards improving their effectiveness by tailoring communication and engagement methods to participants' backgrounds. There is also need to engage with genuine interest and not for the sake of being seen to. The framework will advocate for improvement through tailoring methods to stakeholders and; and advocate for engaging genuinely. These findings apply to objective (c), (d) and question (iii) and (iv).

Stakeholder engagement

This theme represents findings related to working with stakeholders and managing stakeholder relations in briefing and optioneering. This research found that Trusts heavily rely on both informal and formal social networks for purposes of consultation and engagement. Most participants noted and commended the contribution of groups interested in how the developing service is. Case study data further revealed the practice of engaging to satisfy compliance; the use of engagement panel group meetings for problem identification and solving; and, the lack of knowhow on public engagement and its extent.

Verdict and implications: Proactive communication through existing groups and social networks is cost- and time-saving because it exploits existing resources. In order to take advantage of the benefits during briefing and optioneering, Trusts need to always maintain constant channels of communication with such groups. By so doing, this may ensure a ready source of feedback through the facility's life cycle. Another implication is towards an engagement strategy which highlights benefits of genuine engagement (Mills *et al.,* 2009) as well as procedures for engagement. These finding relate to objective (c) and questions (ii) and (iv).

The healthcare planner

The healthcare planner was recognised as an important player, especially as a process facilitator, in healthcare facility WLV delivery. Literature shows that it is common practice for clients to use facilitators to represent their interests during project delivery (for example, Kelly *et al.*, 2004; Christoffersen and Emmitt, 2009; Emmitt, 2010). However, literature on construction briefing and decision making for healthcare projects (both academic publications and from the DH/NHS websites) does not highlight the role of the healthcare planner.

Verdict and implications: Through examining their boundary-spanning tasks as independent agents with no vested interest neither as supply side nor demand side, the role of the healthcare planner could be explored in order to identify how to enhance their performance for better value delivery. This finding corresponds to objective (c), (d) and question (ii) and (iv).

Feedback

Findings on feedback relate to what, how and when different sources of evidence from past and on-going projects inform design and decision making over a healthcare facility's life cycle. The most recurrent and salient themes emerging on feedback were seen to include the PCE/PPE/POE assessments; user satisfaction surveys; active stakeholder groups; and, public consultation campaigns. Case study evidence revealed stakeholders need reassurance that their input actually influences design and decision making. In addition, it was noted that feedback themes emphasised product feedback and less of the process. Like Winch (2010) argued, learning tends to be restricted to measurable aspects such as energy consumption, rather than what is important to the value of the asset, such as how it enhances users' performance and experience.

Verdict and implications: Feedback is important for assessing process and product performance (Sterman, 1992; BS EN ISO 9001:2000; Deming, 2000; Walker, 2007; Winch, 2010) and consequently WLV. Networks and groups

were found to be a reliable and available source of feedback, which if fully exploited would greatly enhance whole life feedback loops supporting continuous improvement for healthcare value. Recommendations for the improvement framework in the next chapter need to highlight social networks as a highly valuable feedback resource for better briefing and decision making. Findings on feedback address research objective (c) and question (i) - (iv).

Consultation

Consultation involved the PCT and LIFTco. comprehensive activities collecting stakeholder views about site locations and user expectations based on their experiences, for the proposed schemes. This theme summarised issues concerning the parties consulted, in addition to demonstrating the project team's approach to consult and partner interested patient and public representatives through a user group panel. It was found that in order to improve public trust and confidence in the consultation programme, measures for ensuring representativeness and demonstrating accountability need to be in place.

Verdict and implications: This theme demonstrated the advantages of having a clear strategy for dealing with the wider public through a small team of representatives. Having a clear motive of seeking user experiences further shows focussed efforts towards a known objective. This is a good way to control the consultation campaign and a useful aid to managing the information and dealing with results from consultation. These findings may be useful in the framework's composition and answer to objective (c) and (d) and question (i) and (ii).

Communication

This represents issues about official channels for making contact with stakeholders. It was seen that the most important issues to arise included, having a communication strategy. The most significant challenge to communication and engagement was found to be, getting the service users interested and committed to further involvement in the development process.

Verdict and implications: A communication strategy provides a structured approach for the communication and engagement process. In addition, having a communication strategy has been cited as a tactic for ensuring ongoing commitment by all stakeholders (Manowong and Ogunlana, 2010). These findings answer to objective (c) and (d) and questions (i) - (iii).

Artist in residence

Artists in residence played a crucial role in the consultation and engagement programme. However, by carrying out their initial activities in isolation from the main consultation campaign meant that some users (including most on the interior and art panel) were not aware of the artists' residency and did not buy into the proposals consequently seeking different artwork approaches.

Verdict and implications: As independent consultants, artists bridged the gap between PCT and providers and the service users. However, it is recommended that an integrated consultation approach embedded within the main campaign reduce artistic 'rework' thereby saving time and costs, while keeping stakeholders informed of the artists' activities. These findings answer to objective (c) and (d) and questions (i) and (iv).

GPs

It was found that GPs and other clinicians' opinions were highly regarded by the project team. This finding corroborates earlier research that clinical staff are the most highly regarded stakeholders (Mills *et al.,* 2009), and, are keen to retain control over decision making and undermine the legitimacy of other stakeholders (Martin, 2008). Moreover, recent NHS reforms by the present Government advocate for empowering GPs more by abolishing Trusts (DH, 2010). The new reforms inherently award GPs and clinicians an even bigger influence in the planning and design of schemes. However, during stakeholder consultation and engagement it was found that getting GPs and clinicians interested and committed was a challenge. In order to counter this challenge, a decision was made to devise a special communication strategy.

Verdict and implications: Devising a special strategy for GPs is consistent with the need for a communication strategy as seen above under the 'communication' theme. Having a special communications strategy for GPs and clinicians further resonates with the suggestion for tailoring methods to stakeholders groups in order to improve effectiveness. Similarly, failure to get GPs and clinicians committed may be attributed to the overreliance on FTF communications as were observed to be the most commonly used forum. Implications are that a mode that recognises GPs' other time commitments thereby relying on less FTF engagement may be a likely solution. The proposed framework needs to emphasise a specialised communication and to explore non-FTF engagement options. These findings relate to objective (c) and (d) and questions (ii) and (iv).

Accountability and representation

This theme covered representation and accountability from the perspective of the project team and from that of the users and public. It was seen that the project team was mainly concerned with public buy-in from both social and financial fronts; while, the public were interested in 'owning' the project outcome. At the same time, it was found that 'acceptable' use of public resources was important to the public.

Verdict and implications: This implies that communication and engagements needs to consider accountability and representativeness, issues that will be highlighted in the framework. These findings correspond with objective (c) and (d) and question (ii) and (iv).

Tools

The newsletter, the postal survey and architectural plans were found to be the most used instruments for communication and engagement. However, it was found that getting the public feedback and involvement remained a challenge during the course of the case study.

Verdict and implications: This theme leads to questions such as: could other communication modes electronic media be exploited? What other tools exist for communication and engaging with stakeholders? Do all service user stakeholders understand architectural drawings, or are some participants alienated by their use? In addition, the theme links back into the need to tailor information and communication methods to a specific audience. This theme addresses objective (c) and (d) and questions (i) and (iv).

8.4.3 Goals and Deliverables

'Goals and deliverables' represented findings about objects that are targeted either during the project delivery process or as end-products of the entire healthcare project development process. Findings on goals and deliverables are illustrated in Figure 8.4 and discussed in this section.

Figure 8.4: 'Goals and Deliverables'

Clinical Output specification

The clinical output specification was seen to be a fundamental goal to briefing, optioneering and the achievement of WLV. The information contained in the output specification is the basis for aligning other briefing and optioneering outcomes in order to deliver a solution that is congruous with the main clinical

business functions. However it was not cited amongst the standard documents alongside the business case.

Verdict and implications: Every healthcare scheme planning process should include this document amongst its standard deliverables. This document is to be included in the process improvement framework as a key deliverable. Findings address objective (c) and (d) and questions (i) and (iv).

Business case

Findings showed the importance of having a clear, auditable and unambiguous business case. It was reported that without a well documented business case, funding approval cannot be attained.

Verdict and implications: The business case is one of the most important documents in a healthcare facility delivery process. However, as has been noted with the business case process, more training support is needed if NHS users to develop expertise on preparing the component business case documents. This finding is a response to objectives (c) and (d) and part of questions (iii) and (iv).

Brief(s)

Findings about the 'the brief', showed that there has emerged a whole health economy comprising different local parties all of whom must contribute to the final brief. The brief was also seen to serve multiple functions throughout the facility's lifecycle. It was further found that the final brief must be clear and fixed at a certain point to enable final design and estimation of a Guaranteed Maximum Price for the scheme. The necessity to have a clear, fixed brief is corroborated by past authors (Barrett and Stanley, 1999; Pena and Parshall, 2001) who believed it a necessary precaution for enabling the construction team undertake its job. However, it was seen in *Section 3.1.3* that some authors questioned the plausibility of fixing the brief given that clients change their minds a lot and further that as new information becomes available downstream, clients objectives may change (for example Luck *et al.*, 2001;

Othman *et al.,* 2004; Bertelsen and Emmitt, 2005; *Prins et al.,* 2006; Savanovic and Zeiler, 2006).

Verdict and implications: Constructing a brief that meets the expectation of all parties within the health economy was said to be a challenge. In addition, given the enormity of the stakeholder base, the funding challenges together with the certainty embodied within business case requirements, it is acknowledged that for healthcare projects, the final brief needs to be preferably fixed rather than dynamic. Consequently, it is noted that the generalising that construction briefs must be dynamic or fixed is not fair on the feasible but judgement on flexibility of the brief should related to the specific context of a project. These findings are associated with objective (c) and questions (i) and (ii).

Design

Another major goal for the project definition process is the final design. It was found that the design 'product' is the most prominent milestone besides the business case. The predominance of externally set design standards was noted; a finding that is collaborated by literature covered in *Section 3.1* and *4.1.* Although the issue of design lies outside the scope of this research project it was recurrently cited in discussions about briefing.

Verdict and implications: Strategy concerns beginning with the end in mind (Price, 2003; Ryd and Fristedt, 2007; Johnson *et al.,* 2008). However, it is also important that focusing on the finished design as 'an end' does not overshadow focusing on getting upstream goals right first (Kamara et al., 2002; Blyth and Worthington, 2010). For healthcare facility definition, attention to clarifying the clinical output specification and other user needs takes precedence over focusing on the initial design. This theme echoes findings on 'the design process'; and contributes to objectives (c) and (d) and questions (i) and (iv).

WLV product

In addition, aiming for a WLV product emerged as an ultimate goal for the project definition. It was found that WLV product could be defined by a whole

life solution, which involves having extra expenditure on all major fronts, and on improving patient-focused quality initiatives at the front-end in order to reduce total costs to the client in the long term. However, it was found that the NHS is weak at implementing as planned over the whole life cycle.

Verdict and implications: Aiming for a WLV product is good practice. However, the findings indicate that a culture of focusing on the whole life implementation strategy needs to be nurtured by top management allocating resources; and, by E & FM enforcing the implementation plans over the whole life cycle. These findings respond with objectives (c), (d), question (v) and (vi).

8.4.4   Drivers

This theme defined the implicit forces behind the main aims, objectives and decisions made during the briefing process. As illustrated in Figure 8.5, the *business case*, *service* and *design aspiration*s emerged as most important drivers for design justification and decision making for case study data.
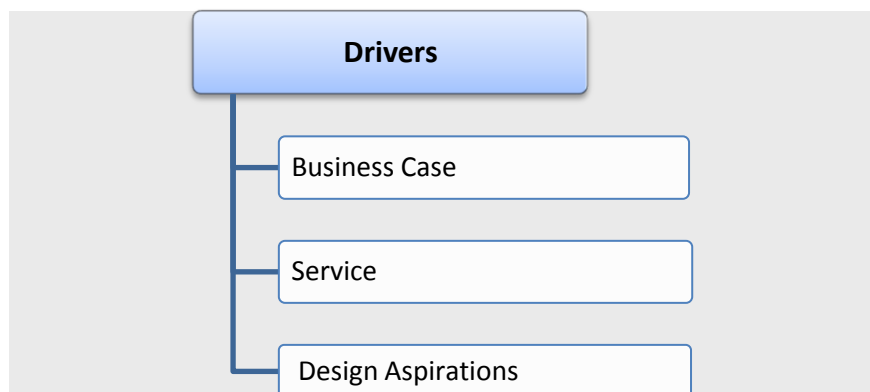
Figure 8.5: Drivers

Business case
The business case was seen to be one of the main drivers for scheme delivery. Results from the study showed that business case deadlines, its inherent cost and accountability implications, influenced how the process was carried out as well as decision making.

237

Verdict and implications: The business case is inarguably one of the most important aspects driving the healthcare facility definition processes. However, as project teams need more training and skilling support on preparing winning business cases. This finding relates to objective (c) and contributes to answer question (i), (iii) and (iv).

Service

Several factors were raised as justification for service change from the existing. However, the most outstanding findings on what was driving the new facilities involved the need to improve service. In addition, service adjacency was a consistent design decision driver.

Verdict and implications: Better Service delivery is closely linked to the chief organisational function (the business) and how facilities are built for the purpose of supporting the business. Turner (2007) argued that the change delivered by a project is of value if the benefit justifies the cost. Therefore, service improvement delivered by a constructing better facility represents value to the client organisation/Trust and core justification and accountability to service users and the tax-paying public. In addition, by highlighting service improvement as a driver for change, project initiators performed one of the first tasks of optioneering (seen in *Section 3.2.2*), that of problem identification. The framework needs to echo these findings which correspond with objective (c) and contributes to answer question (i), (iii) and (iv).

Design Aspirations

Also driving the schemes' definition was the project initiators' wish for modern, inclusive environments, capable of supporting therapeutics and healing. Inclusivity is enshrined in several modern agendas for public spaces such as sustainability (social facet); CABE (2006); the Disability Discrimination Act (DDA, 1995; 2005); as well as the mandatory Equality Impact Assessment (EIA, Section 71 of the Race Relations (Amendment) Act 2000) that must be carried out when planning public facilities. These agendas aim to promote equality for

all users. In addition, the findings encompassed by this theme correspond with the NHS agendas consumerism, design quality and sustainability (PCC, 2008) for healthcare built environments which were discussed in *Section 4.1*.

Verdict and implications: The role of buildings in supporting other key organisational resources has been highlighted before (Bordass and Leaman, 1997; Nutt, 2004). The themes represented by these drivers show two facets; one side is related to the business issues corresponding with the business case, while on the other, are patient-focused initiatives represented by service drivers and design aspirations. Accordingly, these drivers represent two-sides (strategic business and operational issues) that healthcare facility planning and design must balance in order to be valuable to the end-users. These findings could be an indicator of what aspects are most desirable in the funding, design and use of healthcare facilities. The findings could be used to guide efficient and effective consultation, as well as for better design processes and targeted design outcomes. Knowing what to look out for could also save the time spent in consultation and design iterations, thereby resulting in better outcomes all round. These findings will contribute to the factors to be considered in planning the framework. The findings are relevant to objective (c) and question (i), (iii) and (iv).

8.4.5 Features

The findings discussed in this section represented the most salient attributes for schemes in the case study. These are discussed, and illustrated in Figure 8.6. The issue of location was found to be a core factor and it generated a lot of debate amongst user stakeholders groups. Other attributes included features of a facility's design, and art.

Location
This theme summarised key findings on the schemes' location, namely, access and car parking, travel plan and the emotions associated with the site selection process. It was asserted that millions of pounds are spent providing for car

parking, funds that would be better spent directly on real health service initiatives. It was seen that major optioneering and design decisions were based on possibility of ample parking and accessibility. Delayed announcement of the preferred site for Scheme B caused tensions amongst stakeholders and in some ways affected the quality of the consultation process and outcomes.
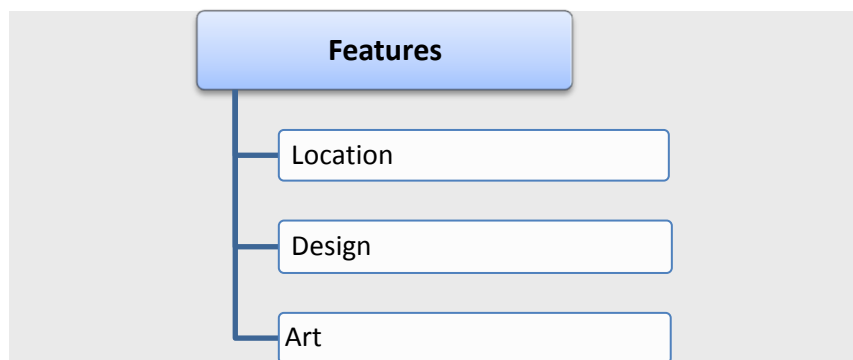
Figure 8.6: 'Features'

Verdict and implications: Site location and selection for a new scheme is very complicated. It was seen that decisions need to balance spatial requirements, flexibility and stakeholder emotiveness. Moreover, Earl and Clift (1999) noted that decision makers are increasingly being faced by complex decisions made emotive by diverse stakeholder expectations. As part of better optioneering, decision makers need to tackle indecisiveness by progressively deliberating on decisions from the larger to the smaller (Blyth and Worthington, 2010) , ensuring that such an emotive issue as location is resolved before progressing downstream to consultation and design. In addition, car parking, access and location are an indication of what matters deeply to healthcare facility users, a probable issue of WLV and facility usefulness. These findings allude to collaborative prioritisation, better communication and negotiation with users in order to achieve a compromise. This will be raised during framework design. These findings address objective (c) and question (iv).

Scheme Design

The health centre's waiting area, courtyard and sustainability-related attributes were found to be the most prominently discussed design features.

240

Verdict and implications: The waiting area is a central feature in healthcare facility design. Its importance to both clinicians and patients makes it the facility's hub. In addition, the influence of the sustainability/BREEAM agenda on recent design approaches is phenomenal. However, from case study and interview data, it was evident that because this agenda is relatively new, incorporating it in design was a challenge to healthcare designers. Planners are easily derailed from focusing on direct patient-focused initiatives towards satisfying the extensive sustainability agenda instead. Moreover, Holton *et al.* (2010) noted a tendency for organisations to emphasise 'eco-efficiency' and less of 'social-efficiency' aspects of sustainability. Hence, there is need for a balance and for prioritisation of what truly matters for positive patient and staff outcomes. This finding will be incorporated as part of the recommendations. In addition, the importance of waiting areas will be highlighted for further attention. Both these findings relate to objective (c), (d) and question (ii) – (iv)

Art

The role of art in healthcare design has been of recent academic and empirical interest. Studies have advocated for art to be included in healthcare built environments as a contributor to better healing and therapy (Ulrich, 2000; Daykin *et al.,* 2008; Codinhoto *et al.,* 2009; Stuckey and Nobel, 2010). Through art, service users felt they could influence the facility design outcomes in order to achieve unique, humanised, non-institutionalised spaces connected to their communities.

Verdict and implication: Art is important to healthcare design. Its inclusion provides a forum for engaging and involving the public in an otherwise technical design process that would have excluded them. These findings demonstrate that users and communities are interested in facilities that can be personalised, which represent sense of place and local context. This may be an indicator of public value (discussed in *Section 2.2.3*) and inherently WLV. The findings are relevant to objective (c), and apply to question (i), (ii) and (v).

8.5 Implications for the framework

This chapter has amalgamated and discussed findings from Chapter Six and Seven. The findings came to five broad headings each with underlying subthemes. With each of the themes' discussion, a 'verdict and implication' was indicated and corresponding further action stated. Recommended inputs for framework design are summarised in Table 8.1. The table lists the theme findings and their underlying sub-themes. A column in the table indicates gaps in existing practice or extant literature together with a recommendation for alleviating the gaps. In addition, another column alludes to novelty and best practice by indicating whether the concept is NHS standard practice or not. The last two columns point to what objective and what research question is addressed by the corresponding 'action' column.

8.5.1 Summary of recommended inputs for framework design

From the results and reference to Table 8.1, the following issues are recommended inputs for incorporating into the proposed framework:

- Clinical service modelling - Step 1 of briefing process
- Strategic Goal – Whole life solution
- Support factors - Healthcare planner – WLV agent/key actors
- Systemic and environmental forces – to be highlighted as constants
- Possible communication tools other than architectural designs?
- Indicate selective involvement of stakeholders in what they use and what affects them directly;
- Different communication methods for different groups
- Support factors – expert workshop facilitation
- Engagement protocol – who to engage with, what to engage about and how
- Integrate artist's activity with general campaign
- Key parties – GPs and Clinicians – design specific strategy

- Include other tools for communication and engagement e.g. electronic media
- Key deliverables hierarchy: Clinical output specification; Clear initial brief; initial design
- Whole life solution – WLV Product
- WLV criteria – modern, therapeutic and inclusive environments, location, waiting areas, adjacency; artwork; sense of place and personalisation to community.

Table 8.1: Findings and Actions

Theme	Sub-theme	Gaps/Actions	Current Status	Objective	Question
Project Strategy	Clinical Service Model	Its definition, recommended as first step in project definition - briefing	Not standard practice	(d),	(i), (iv), (vi)
	Business Case	More training support recommended, and, avenues for sharing expertise and experiences needed	Standard business case	(d)	(i), (iv)
	Strategic Decision Making	1. CIM useful but training support needed, 2. NHS needs to improve decision making process to enhance capital spending: spend more on original building 3. Streamline decision making – progressive	Standard CIM	(c), (d)	(i), (iii), (iv)
	WLV	1. Clear approach to defining values that support best clinical outcomes and services 2. Whole life solution	Not standard	(c), (d)	(v)
	Healthcare Planner roles	1. Encourage their usual involvement on delivery team to take advantage of their expertise 2. Include as WLV agents on framework	Not standard practice to have health planner on team	(d)	(ii), (vi)
	Systemic and Environmental factors	1. Include in framework as constraints, requirements and external forces 2. There is always limited finance/budgets	Not standard	(c)	(vi)
	Design	1. Recommend not to start design until clarity over requirements 2. Investigate other communication tools other than architectural plans	Not standard	(c), (d)	(i) – (iv)
Communication & Engagement	Briefing	Recommend selective involvement of stakeholders in what directly affects them – action for proposed framework	Not standard	(c), (d)	(i),(iii), (iv)
	Workshop	1. Recommend communication methods tailored to participants backgrounds 2. Engage with genuine interest 3. Ensuring good facilitation – CSF	Not standard	(c), (d)	(iii), (iv)

Theme	Sub-theme	Gaps/Actions	Current Status	Objective	Question
	Stakeholder engagement	1. Trusts should endeavour to maintain constant channels of communication with existing social and professional networks 2. Consider designing engagement protocol involving who to engage with, what to engage about and how	Not standard	(c), (d)	(ii), (iv)
	Healthcare planner	Further research? Investigate how to enhance boundary-spanning role for better value delivery	Not standard	(c), (d)	(ii), (iv)
	Feedback	Recommend support and exploitation of social networks for whole life feedback loops and continuous improvement	Not standard	(c)	(i) – (iv)
	Consultation	Recommended, a clear consultation strategy for dealing with public	Not standard	(c), (d)	(i), (ii)
	Engagement	1. Trusts should endeavour to maintain constant channels of communication with existing social and professional networks 2. Consider designing engagement protocol involving who to engage with, what to engage over, and how	Not standard	(c), (d)	(ii), (iv)
	Communication	Further research - How do you get the users and public interested and committed?	Not standard	(c), (d)	(i) – (iii)
	Artist in Residence	Integrate all activities with general consultation campaign	Not standard	(c), (d)	(i) – (iv)
	GPs	1. Recognise GPs' special status 2. Include special GP strategy in communication strategy? 3. Recommend communication methods tailored to stakeholder groups and backgrounds	Not standard	(c), (d)	(ii), (iv)
	Accountability and Representation	Define Public value in healthcare projects – ownership of outcomes and acceptable non wasteful expenditure	Not standard	(c), (d)	(ii), (iv)
	Tools	1. Recommend other tools such as electronic communication to broaden feedback and involvement; 2. Further research – does everyone understand architectural drawings? Investigate other communication other than architectural plans?	Not standard	(c), (d)	(i), (iv)

Theme	Sub-theme	Gaps/Actions	Current Status	Objective	Question
Goals and Deliverables	Clinical output specification	Recommended as a key deliverable on schemes	Not standard	(c), (d)	(i), (iv)
	Business Case	Recommend more training support on how to prepare	Standard	(c), (d)	(i), (iv)
	Briefs	1. Aim to have a clear brief, 2. Aim for an effective briefing process to deliver the clear brief	Not standard	(c)	(i), (ii)
	Design	Recommend maximum attention to first clarifying clinical output specification and other user needs before embarking on design	Not standard	(c), (d)	(i), (iv)
	WLV Product	1. Recommend as major goal in framework 2. Recommend extra front-end expenditure on major fronts and on patient-focused initiatives 3. Recommend for implementation as planned over life cycle	Not standard	(c), (d)	(v) – (vi)
Drivers	Business Case	More training support recommended	Standard	(c)	(i), (iii), (iv)
	Service	Most important: service improvement and adjacency			
	Design Aspirations	Most important: modern, therapeutic and healing, inclusivity	Not standard	(c)	(i), (iii), (iv)
Features	Location/Site	1. To include as part of what matters most to facility users (WLV?) 2. Further research on the contribution of car parking to the WLV of healthcare facilities	Not standard	(c)	(iv)
	Design	1. Important influence: on briefing (and WLV?): Waiting area; Adjacency, Sustainability and BREEAM; 2. Recommend balanced prioritisation between sustainability and direct patient-focused initiatives	Not standard/ Standard	(c), (d)	(ii) - (iv)
	Art	1. Including artwork is important not only for therapeutic and healing, but also for engagement and local involvement 2. WLV - Most important aspect to users/public: Personalisation, sense of place; community context	Not standard	(c)	(i), (ii) and (v)

8.6   Chapter conclusion

In response to the chief research aim, the next chapter utilises recommendations from section 8.4.1 to construct a WLV delivery framework applicable to healthcare facilities.

Chapter Nine: Framework for improving WLV of healthcare facilities through better briefing and optioneering

9.0   Introduction

This chapter brings the major research aim of this study to fruition. It attempts to explore and address practical avenues of improving briefing and optioneering in order to achieve WLV of healthcare facilities. Through alleviating deficiencies summarised in *Chapter Eight*, a framework for enhancing WLV of healthcare facilities is devised.

The first section of the chapter presents the framework together with the pertinent issues, including assumptions taken, key concepts, its operation and key features. In addition, considerations for integrating WLV during briefing and optioneering of healthcare facilities are presented. The last section of the chapter is an evaluation of the framework comprising the methodology used for evaluation and how the feedback from the evaluation is integrated to improve the framework.

In accordance with the initial plan, Figure 9.1 presents a diagram of how this chapter relates to the research tasks design.

9.1   Development

The term framework pertains to a wide range of theoretical and practical concepts, but in this case, it is concerned with providing structured guidance for healthcare scheme definition and planning activities. According to McIvor (2000), a framework is related to making recommendations of what to do and what should be done. It acts as a benchmark, providing a frame of reference (Male *et al.*, 1998). Hence, the proposed framework serves two purposes:

- to guide future design of healthcare facilities; and,

- to provide a structure for acknowledging an individual project's strategy and its interrelated concepts when making long term decisions in planning.

The framework is intended to bridge the gaps presented in *Table 8.1* and *Section 8.4.1*. Particularly, it is aimed at improving the processes associated with clarification of stakeholder needs and requirements for healthcare facilities. In response to this aim, the framework is a communication-driven decision-process support instrument for informing more effective design and consequently WLV realisable over the long term through use. The main highlights of the framework include a public service organisation, the NHS; a disparity of stakeholders; a collaborative planning process that demonstrate its stakeholders' involvement; and a whole life cycle view to creating value through solutions that are customised to specific service user requirements.

The framework is aimed at NHS Trusts policy makers and managers of construction programmes/schemes. The framework is useable by the client organisation, either with in-house expert capability where possible and/or in collaboration with expert advice and facilitation from healthcare planners, to guide the strategic direction of scheme WLV definition and clarification. Strategic direction may be relevant for different scenarios whenever the need to define long term value arises, either for a new-build, extension or refurbishment. In relation to *Figure 3.2*, the framework is reference guidance applicable from the point of 'Idea' (further details in *Section 9.2*).Due to their capability to be present throughout the major lifecycle stages (see *Figure 3.2*), E&FM managers are charged with championing the cause for WLV on behalf of the Trusts.

The framework's design was deliberately made incremental, aimed at augmenting, rather than replacing, existing methodologies.
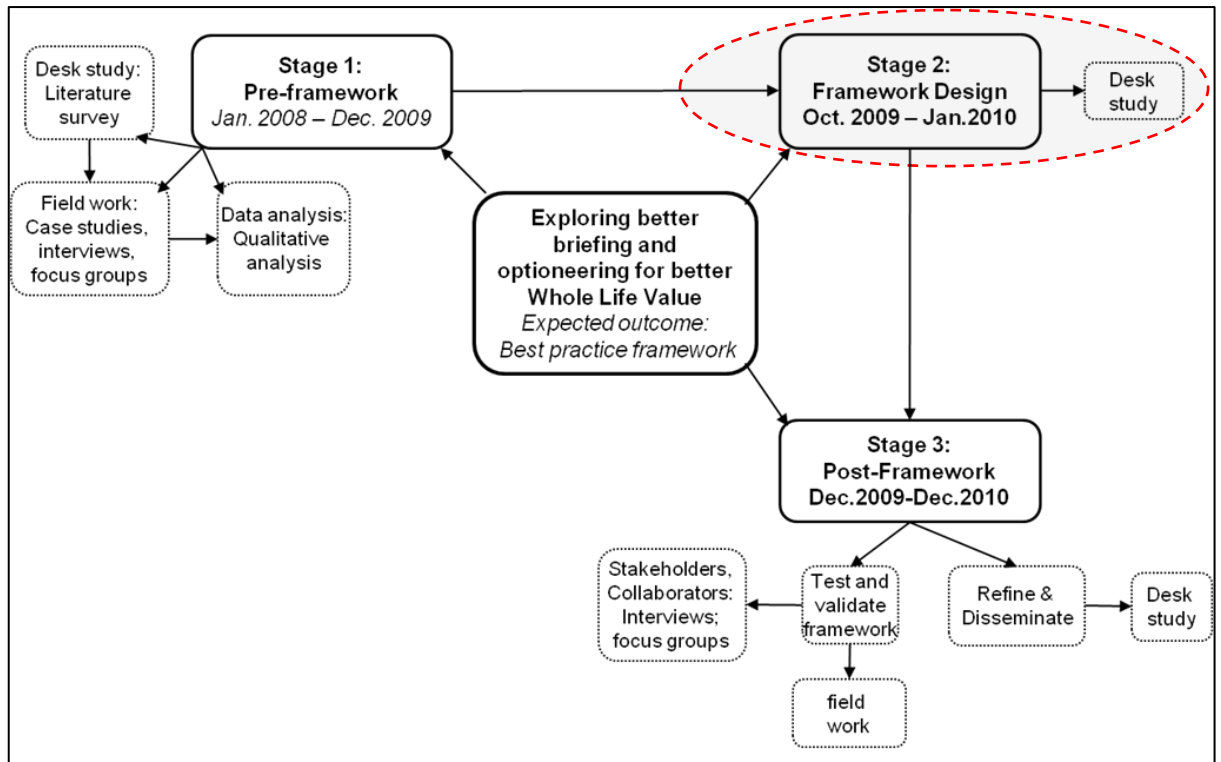
Figure 9.1: Framework design task (circled in red)

9.1.1 Motivation for the framework

The motivation for the framework was identified in *Chapter One, Section 1.2* as the need to provide a structured way of alleviating challenges associated with the rapid changes in the healthcare sector, linking them to the pre-design processes where major strategic decisions are made, in order to achieve WLV.

9.1.2 Gaps

Findings from literature (*Chapters Two to Four*) and field data (*Chapter Six and Seven*) indicated a dearth of literature specific to WLV. In addition, it was noted that methodologies and procedures for clarifying stakeholder needs and requirements as well as for focusing decision making to deliver WLV were lacking.

9.2   Structure of the framework

The framework comprises three interlinked elements (see Figure 9.2). Element 1 is a side-by-side comparison between briefing in the present framework and briefing within extant process protocols. Element 1 highlights the main headings within the protocols and how they relate to the major concepts within the proposed framework. Element 2 details the sub-activities within the briefing and optioneering processes and how they relate to the whole life solution – a practical representation of WLV. Element 3 of the framework represents a proposed communication and engagement guidance protocol, showing who is involved, consulted or informed along with the bilateral information flows between specific stakeholder groups and the project coordination team.
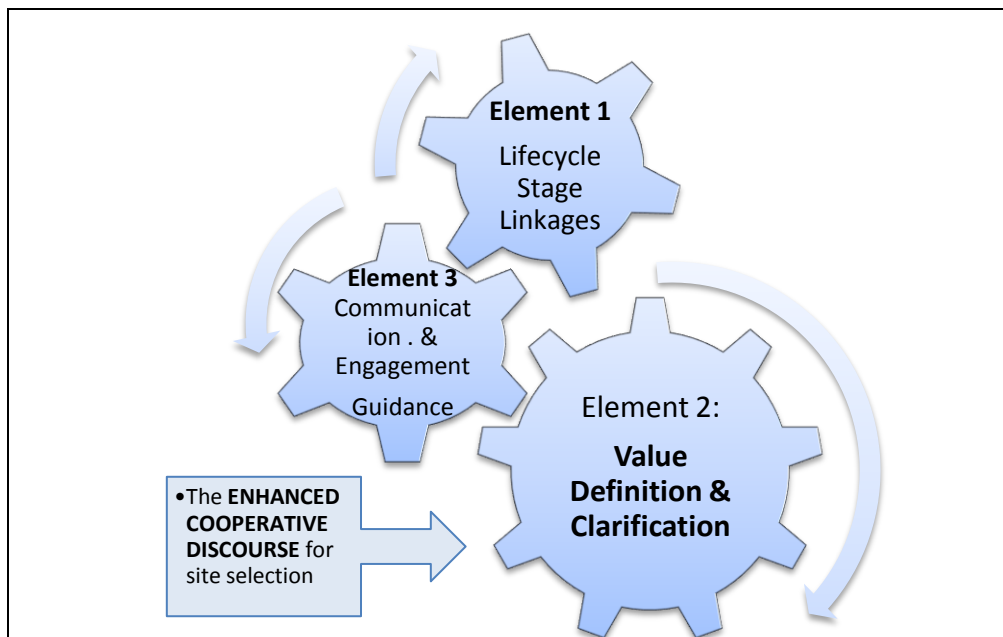
Figure 9.2: Framework elements and their linkages

9.2.1 Element 1 – briefing within existing frameworks

The present research was scoped to correspond with Stage A/B RIBA Plan of Work (RIBA, 2007). Several protocols were identified in *Section 3.1.1*, but the RIBA protocol was chosen because it was found to be the most familiar in practice. In order to reflect recent policy changes (covered in *Sections 1.2* and

251

9.1.1), the final brief must reflect stakeholders' inputs; as well as, demonstrate financial accountability to fit within business case requirements. In addition, the brief must incorporate standard technical guidance (seen in *Sections 3.1.1* and *4.1*). *Figure 3.1* showed a representation of the briefing process in relation to the RIBA Plan of Work (RIBA, 2007) procedure.

Figure 9.3(a) and 9.3(b) show Element 1 of the framework's design. The diagrams are process maps of the business case process and the project whole life cycle, including respective deliverables and decision points. The figures also show relationships between the business case and the RIBA Plan of Work stages (RIBA, 2007). Element 1 was included in the framework guidance for several reasons:

- to compare how the detailed proposal aligns with other existing planning protocols in light of the findings that some organisations involved in the planning of healthcare facilities follow the RIBA Plan of Work in addition to the requisite business case and CIM process;

- to illustrate where the proposal is situated in relation to the whole life cycle layout (presented in *Figure 3.2*), highlighting the comprehensive proposed feedback mechanism which is a major source of (information) input for the briefing process;

- to depict that strategic optioneering and briefing are iterative.

9.2.2 Element 2 – strategic briefing and optioneering process

This section presents the most important issues taken into consideration during development of the enhanced strategic briefing and optioneering elements of the framework. In order to counter time constraints often associated with the construction briefing and optioneering process, the framework advocates for an effective strategic briefing and optioneering process (effectiveness is described in *Section 3.3*).

The framework's activities are designed to follow an iterative cycle alternating between theory and practice. Figure 9.4 is an illustration of the iterative cycles. The fundamental idea behind the iteration cycles is learning and utilising new knowledge as it becomes available over the course of the briefing and optioneering process. At the same time, the individuals responsible for problem solving want to collect relevant data, from broader ideas to more specific ones. By so doing, decisions are left until the last responsible moment (Blyth and Worthington, 2010). Experts involved in the planning draw from their theoretical knowledge (expertise), make sense of it by utilising the practical knowhow possessed by service users about their experience and expectations of the proposed facility. However, rather than standardise the solution in the last cycle, the aim is to customise it to the specific context (needs and requirements) of the project stakeholders. For the purpose of this thesis some assumptions are necessary to illustrate the framework.

Legend: Process flow symbols

Start/End of a process	RIBA Plan of Work (2007)
Input	
Process step/activity	
Decision	
Output	
Connector, connects pages	
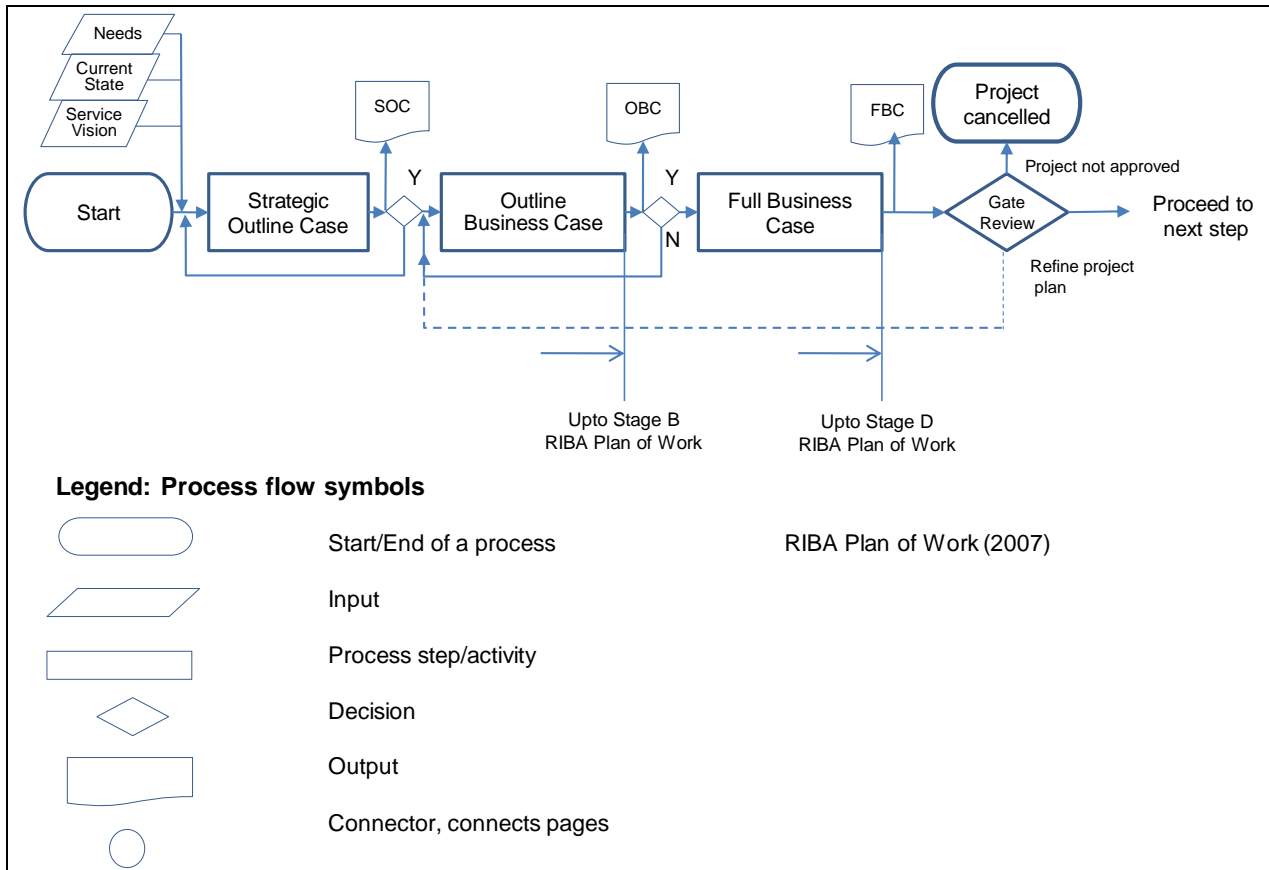
Figure 9.3(a): Element 1 – Business case process and RIBA Plan of Work stage

254

RIBA Outline Plan of work 2007										
Preparation		Design			Pre-construction			Construction		Use
A	B	C	D	E	F	G	H	J	K	L
Appraisal	Design Brief	Concept	Design Developm't	Technical Design	Production Information	Tender Documtn.	Tender Action	Mobilisation	Constructn. to practical completion	Post Practical Completion

In line with Stage B,
RIBA Plan of work
and OBC

INFORMATION AND FEEDBACK REPOSITORY

PRE-DESIGN		DESIGN & CONSTRUCTION		POST - CONSTRUCTION
INCEPTION	FEASIBILITY & APPRAISALS	PLAN & DESIGN	CONSTRUCT & HANDOVER	OPERATE AND MAINTAIN DECOMMISSION AND RENEWAL

Optioneering

Idea

strategic briefing

Project brief

Statement of
Need

Strategic
Brief

Figure 9.3 (b): Element 1 - Whole Life Cycle view with business case and RIBA Plan of Work (2007)

255
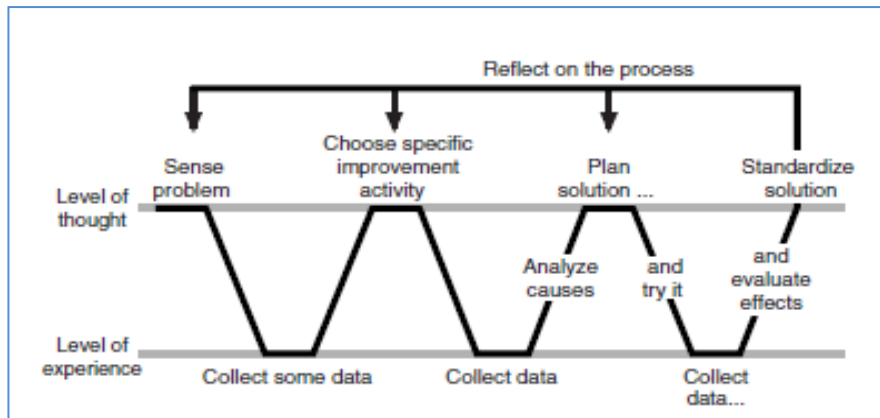
Figure 9.4: Alternating between theory and experience
(Source: Shiba and Walden, 2002:2)

9.2.2.1 Assumptions

The client organisation is the initiator of the scheme's development, and represents all the demand-side (user) stakeholders. The client organisation is led by a management board, responsible for making high level decisions, and for deciding on the final course of action or cancelling the project.

It is assumed that the Estates and Facilities Management (E&FM) function plays a central role within the whole cycle view of the project; given their presence before, during and after construction completion through to use of the healthcare facility.

The client appreciates and as standard practice seeks the expertise provided by healthcare planners. According to the recommendations from *Chapter Eight*, early involvement of healthcare planners is preferred in order to have best decision making guidance on board sooner than later.

PROCESS FRAMEWORK FOR ACHIEVING BETTER WHOLE LIFE VALUE OF HEALTHCARE FACILITIES

Flowchart labels (left column):

WHE · **User experience**

POE · FM · patient needs · User Social · Networks · Technology · Feedback **Facility Status** · New Govt. **reports** Legislation;

- Needs & Reqts.
- Fuzzy Idea funnel
- Capture needs and requirements → Statement of Need
- Start: **Idea** → Optioneer → Experience Log
- Corporate Vision / Service Gaps / Forecasts / Resources
- Build/Refurb./Extend? → N → Do Nothing/Minimum Rent Buy
- Corporate values & Vision / Service Gaps / Forecasts / Quality standards
- Y → Project Mission Goals/Scope Objectives → Whole Life Solution Statement / Experience Log
- Local Authorities / technical analysis of options / public consultation abt Location / clinical needs & reqts. / other user needs & reqts. / constraints/environmental forces / Lessons Learned
- Optioneer: Site Selection → Briefing Consultation & Engagement
- Analyse inputs / Design Clinical Service Model / Prioritise WLV criteria / Acknowledge Constraints / Agree Trade offs / Confirm Site → Experience Log
- Confirm Clinical Reqts. / Confirm WLV aspects / Confirm Expectations / Feedback/Lessons Learned
- **Set Clinical Service targets/standards** · Set measurable TARGETS · **Agree clear, stakeholder EXPECTATIONS** · **Draft Project Plan** → Clinical Output Specs. / Statement of Expectations / Project Plan / Experience Log
- Project Strategy → Strategic Brief
- Go Forward → N → Cancel/Defer (Refine) / Y
- Strategic brief / Consultation / Feedback
- • Comprehensively engage with Architects and Artist · Engage Consultants in earnest · Continue user/Stakeholder Engagement → Detailed brief / Concept Design / Experience Log
- to Detailed Design → Refine → Cancel/Defer / Y → Proceed to next stage

Tasks/Activity	CSF	Action & Tools	Consult/involve/ Engage	Inform/ Communicate
Acknowledgement of need • Identify stakeholders • Consolidate stakeholder needs and requirements • Represent as 'Statement of Need'	• Stakeholder identification • Problem identification/ setting	Sponsor/initiator Board E & FM (questionnaire surveys, satisfaction surveys, informal mtds)	All stakeholders	All stakeholders *Further details presented in Element 3: The communication and engagement protocol*
Assessment: • Appoint Healthcare planner • Brainstorm - how to solve need • Decide on definite action	Healthcare planner	Trust, Healthcare planner E & FM (workshops; Delphi, choosing by advantages; CBA)	Board/Top management	All stakeholders
Define • Align project mission, goals and objectives • Define Whole Life Solution •. Appoint Project Team	Defining the Whole Life Solution aspiration : **modern, therapeutic, inclusive and Sustainable**	Trust, Healthcare planner	Board/Top management	
Consult and Engage • Choose and confirm site • Analysis & Negotiation	• Comm. strategy • Workshop facilitation • Negotiation • Feeding back consultation outcomes Site selection decision	Project Team Experts (tools: Cost benefits analysis • CIM Enhanced Cooperative Discourse) Healthcare planner Project Team (workshop; e-engagement; MADM)	All stakeholders • Stakeholder reps. and networks	All Stakeholders (status report)
Confirmation: • Clinical service model • Targets and standards • Expectations • Project Plan Present as Strategic Brief Sign-off & Commitment	Clear Clinical Output Specification Agreed Stakeholder Expectations Clear Strategic Brief Decision finality	Healthcare planner Project Team Board Experts Healthcare planner Project Team (Technical; Workshops; e-engagement;)	• Clinical Staff • Admin. • User reps. • Stakeholder reps. Project Team	All stakeholders All stakeholders
Customisation • Initial design • Specific Stakeholder consultation and engagement Sign-off & Proceed	• Customised solution/ sense of place • Comm. • Specificity/targeted engagement Decision finality	Stakeholders Board	• Project Team • Consultants • User stakeholders	All Stakeholders All stakeholders

Figure 9.5: Element 2 of framework – value definition and clarification

257

9.2.2.2 Framework features

Element 2 of the framework is presented in Figure 9.5. The left hand side of the framework shows the interrelated step-by-step procedures, incorporating the required information inputs, and the resulting outputs, mainly in the form of documents. In addition to the final strategic brief (output), other main documents include an experience log for every activity undertaken, decision audit for all decision points; a whole life solution statement, clinical output specification, project plan and a statement of expectations to be agreed by relevant stakeholders.

For each level of activity, shown on the left, corresponding descriptive columns are aligned to the right hand side. They respectively depict main tasks involved, their critical success factor(s) (CSFs), ownership (or responsible member) of the task, contributing stakeholders (consultation and engagement information inputs) and informed stakeholders (who need to be told about the decision or action taken).

9.2.2.3 Elemental Tasks

Acknowledgement of need

As a first step, acknowledgement of need occurs when someone within the client organisation formally expresses an awareness of a problem or a gap in the physical infrastructure support symbolic of the current state of a healthcare facility. The assumption is that the E&FM function is inundated with demands or complaints from users, which demands affect achievement of the organisation's objectives but are nevertheless beyond a 'short term fix' solution. Other gaps/problems in the current state may arise from changed legislation in which the present healthcare facility is found deficient rendering the building obsolete. In either or both scenarios, E&FM officially raise the issue with higher authorities (decision making); thereby acknowledging the need for new facilities.

According to Shiba and Walden's (2002) model presented in *Figure 9.4*, acknowledgement of need is at the 'level of thought' and corresponds to 'sensing a problem', while within the framework it is the starting point of the process and is marked as 'idea' on the diagram in Figure 9.5 Upon sensing the problem, some data is collected to ascertain the reality of the situation. Due to the enormity and diversity of this initial data and the state of uncertainty, this level is presented as the fuzzy idea funnel.

At this point, in order to enable effective capture of their specific needs and requirements, together with the E&FM department, top management seeks to analyse the stakeholder base (for example groups shown in *Figure 2.1* and *Table 6.2 and*) The issues of stakeholder identification and analysis in construction projects have been discussed elsewhere (for example, Mitchell *et al.,* 1997; Cleland, 1999; Schilling, 2000; Winch and Bonke, 2002; Olander and Landin 2005; Simmons and Lovegrove, 2005; Olander, 2007; Walker *et al.,* 2008; Yang *et al.*, 2009; Chinyio, 2010). The key stakeholder groups are initially contacted to find out their 'tentative' needs and in some cases the E&FM will already know from previous interaction with them. These needs (inputs) are presented as part of the 'fuzzy ideas funnel' in Figure 9.5, from which management consolidates and distils the critical needs and presents them as a 'statement of need' document (output deliverable).

Deliverable: 'Statement of Need' and 'Experience Log'.

Critical Success Factors for 'Acknowledgement of need'
It is believed that in order to understand the scope of the problem being faced, a thorough effective stakeholder identification and stakeholder analysis is executed. Failure to identify key stakeholder groups and their needs at this stage may have negative repercussions at later stages when it may be too late to incorporate their needs and requirements in the developing scheme.

Furthermore, it is important to ensure that the right problem is identified during the initial analysis in order to ensure that the same is recorded in the official

'statement of need' to be carried forward to the next level. Problem identification, at this level is assumed to set off a WLV chain reaction as illustrated in Figure 9.6.
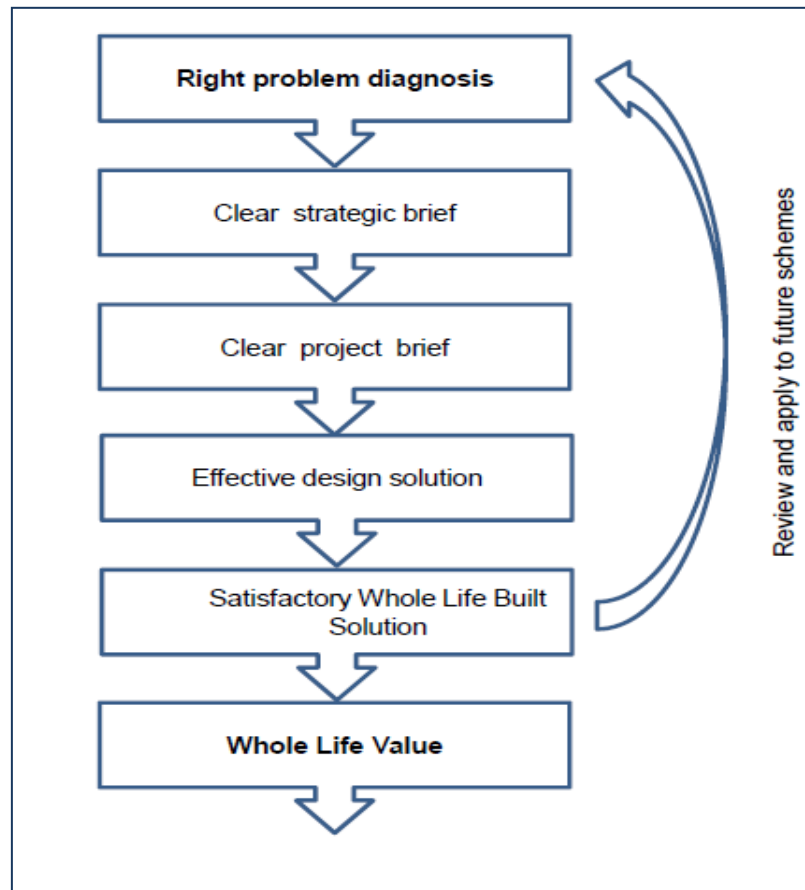
Figure 9.6: Problem diagnosis and WLV

Action and Tools for 'Acknowledgement of needs

This activity is the responsibility of the initiating organisation either Trust or GP Practice(s). If the origin of the cause for improved facilities is internal, in order to avoid methodological complications, this initial exercise is conducted through simple questionnaire surveys, user satisfaction surveys, post-occupancy records. However, if it is externally driven by changed legislation, the new legislation is to be applied in addition to any other relevant internal improvements.

Consultation and engagement

At this stage, all affected stakeholder groups are contacted in order to learn of their 'problems' with the current state of the healthcare facilities.

Informing and communicating

At this point in a scheme's lifecycle, in order to build awareness, all stakeholders are informed of the intention to solve current gaps or problems. In addition, this initial information also serves to notify stakeholders that their collaboration may be sought at a later date. Consequently, when the actual consultation and engagement campaign starts, this earlier information is useful groundwork as people are not unduly surprised by requests for involvement.

Assessment

Outputs from the previous step are analysed to decide the way forward. It is important that the right judgement is made and not to presume that a built solution is the only way. Exemptions are for cases involving technological or evident physical obsolescence of healthcare facilities that deeply affect the quality of service being provided or in cases where improvements cannot be economically integrated within the existing facilities. The client engages expert healthcare planning services to lead the analysis and facilitate decision making processes.

The client organisation's leadership aims to make a high level strategic decision for a long term solution to the problem cited in the 'acknowledgement of need' stage. With reference to the corporate vision, mission and goals, service gaps and forecasts as well as available resources, the healthcare planner guides decision makers through identifying possible problem-solving strategies/options. The choice is between non-built options (do nothing; do minimum, out-source facilities; buy) or investing in a built solution (for example, through new build, extending, renovating, re-modelling).

Deliverable: Key deliverables from this high level optioneering activity include the final decision (a definite action) agreed by management board to proceed or

not proceed with building a new facility. Another deliverable is the 'decision audit' (to be described later).

Critical Success Factor for 'Assessment activity'

Whatever the final outcome, one of the most important factors is that the decision is auditable. The decision audit captures identified options and decisions. It is explicit about the rationale for investing in a new healthcare facility (or if not, why?); justification for investing now; and, methods used to arrive at the decision. A well recorded audit encourages management to think about the consequences of their decisions, is advantageous for traceability of decisions and 'replicability' of successful decision making.

Action and Tools for assessment

This activity is led by a healthcare planner on behalf of the organisation. The planner facilitates management in identifying and summarising possible options through face-to-face brainstorming in a workshop environment or through facilitated electronic brainstorming or the *Delphi method*. Tools such as *choosing by advantages* (pros and cons analysis) and decision trees are applied to structure the decision making process, particularly, to choose amongst options.

Consultation and engagement

Only top management or the decision making board are consulted and engaged with in this activity because they are responsible for providing strategic direction of the organisation.

Informing and communicating

In line with building and maintaining stakeholder confidence and trust, the decision outcome is communicated to all concerned parties, who may be affected by the consequences of the resolution.

Definition

This task follows a decision to build. The aim is to define specific project direction for the developing scheme. This activity involves re-visiting the 'statement of need', corporate vision and values, highlights of the service gaps, demographic forecasts, and mandatory building quality standards and requirements. With the assistance of the healthcare planner, top management together with E & FM agree a definite project mission ensuring that it is aligned with the corporate objectives for the right strategic fit. In order to achieve WLV, the project's mission includes the intention to deliver a whole life solution with emphasis on patient-focused initiatives, bearing in mind that healthcare service core business concerns satisfying patients' (customers) needs.

Project definition activity also includes the scope of the project (non-prescriptive goals of what the project must accomplish to solve the problem – inclusions and exclusions). In addition, the overall objectives – means of achieving overall mission are included. Consequently, one of the objectives includes assembling a project team responsible for successful project delivery, together with clearly defined terms of team members' responsibilities and accountabilities and initial time allocations for major project deliverables. From this point henceforth, the E& FM function joins the project team. The architect and artist, together with the design team (structural, M&E and other key consultants), if not already known through partnership agreements, are also appointed, and are brought on board in an observational role, to understand the basis (background and values) for the design though not yet actively engaging in designing activities.

Deliverables: Whole life solution statement, Responsibility Assignment Matrix (described elsewhere in *Section 9.2.2.3*) and an experience log.

Critical Success factors for 'Definition'

This research study found that the most enduring characteristics for a whole life patient-focused solution often aspire to be modern, therapeutic, inclusive and sustainable (and flexible). Therefore, as a starting point, it would be useful to

include these generic characteristics in defining a Whole Life Solution for the scheme.

Action and Tools

This activity is led by the healthcare planner, in close collaboration with the E&FM function, on behalf of the Trust. The same tools and methods used for 'Assessment' apply.

Consultation and engagement

Inputs to this activity are sourced from top management because they involve elements concerning setting the healthcare facility's strategic direction. The assumption is that management are informed of current legislation and mandatory requirements expected of new facilities. In addition to facilitation, the services provided by the healthcare planner include providing advice on the latest healthcare-related legislation.

Informing and communicating

Participating parties are to be informed of the final outcome of the activities carried out together with a copy of the Whole Life Solution statement.

Stakeholder Consultation and Engagement

With the project team assembled, architect and design team appointed, the Whole Life Solution Statement is used as a basis for identifying a suitable building site. Simultaneously, full scale consultation and engagement with the public and user group stakeholders commences. These two activities are cyclic in nature and continue until all relevant stakeholders have had their input and the project team has narrowed down a list of recurrent priority WLV attributes. During this stage, constraints are also researched and acknowledged with the aid of the PESTEL tool. It is noted that in order to make effective use of the usually limited time allocated to briefing, and in order to control stakeholder expectations (and sometimes user demands) consultation and engagement is conducted at the right level to suit the different groups' user and functional needs. To this effect, the project team must consultant specifically and

selectively. Hence, rather than consulting and presenting issues to all about everything regarding the proposed scheme, it is preferable that stakeholders only know details of what affects them directly, what they will use. In order to achieve this on a practical level, it is necessary to formulate a communication strategy. *Element 3* of this framework provides further details about respective stakeholder groups and what they get consulted and engaged about at this point in the scheme's development.

By consulting and engaging with clinicians, and through expert facilitation from the healthcare planner, the project team aims to understanding and agree a clinical service model under which the proposed healthcare scheme will be operating. This is the first and most fundamental target of the briefing process. In addition, through constant communication and engagement, the team prioritises value attributes and negotiates with all stakeholders in order to agree trade-offs in case of competing criteria. Site selection is usually an emotive issue with the stakeholders, and one that calls for negotiation and decision finality within this stage lest the whole consultation and engagement process is obscured.

In addition, *Section 4.1* and *4.3* presented other briefing aids specific to healthcare facilities. Notably, however, these tools target design evaluation and are most useful after initial design has been undertaken. Hence, they neither address how the design is informed nor the human dynamics involved in the process, subjects of the present framework. Nonetheless, the themes highlighted by these tools could be used as a reference point for required information during gathering ideas for the design.

Deliverables: A short-list of a summary of desirable outcomes for each stakeholder group; agreed clinical service model; priority WLV attributes; constraints list; site confirmation, and experience logs.

Critical Success Factors for Stakeholder Consultation and Engagement
A communication strategy based on the previously conducted stakeholder analysis is a great enabler for success. The strategy shows who needs to be

involved and how and at what level. The strategy also clarifies different issues to consider with the different stakeholder groups as expounded in Element 3.

Other critical factors for success include good facilitation during workshops; demonstration of a genuine desire for consensus through negotiation; as well as a clear channel of communicating feedback of outcomes from activities that stakeholders have been involved in. Furthermore, as soon as the site is selected, it must be communicated to stakeholders especially the users together with the rationale for its preference over the others.

Action and tools

This activity is led by the healthcare planner in collaboration with the project team. Some useful tools include those discussed under the 'Assessment' activity. In addition, the 'Enhanced Cooperative Discourse' methodology is a useful approach for negotiating issues and trade-offs as well as for making the most of specific 'user' knowledge held by different stakeholder groups. The approach is detailed elsewhere in *Section 9.2.2.4*. Workshops are familiar and useful means for meeting and engaging with the public. In addition, modern electronic communication technologies are useful for reaching wider population especially at this stage when issues are still generic and as many ideas as possible are needed to inform the developing service. Prioritisation may be aided by collaborative weighting and pair-wise comparison.

Consultation and engagement

All client-side stakeholders are consulted and depending on their commitment, stakeholder group representatives engaged with over the course of the briefing and optioneering process. Supply-side stakeholders only take part as mostly observers on a learning journey of getting acquainted with the pertinent value issues.

Informing and consulting

Outcomes from the activities are communicated to all stakeholders.

Confirmation

This activity involves confirming inputs from the preceding activity and seeking deeper understanding where clarity is dubious. While the previous activity represented collection of inputs from all stakeholders as well as putting together legislation-related requirements, this level involves converting the confirmed attributes into clinical service targets along with other auditable standards and measurable targets before lists of various stakeholder expectations can be drafted and agreed. In addition, this activity entails drafting a project plan indicating all major milestones and approximate timelines to which the scheme is to be delivered until completion.

Deliverables: Outputs from this activity include the clinical output specification; consented statements of expectations for the various stakeholder groups; the project plan including change control structures and experience logs from participants on the project team.

Critical Success Factors for 'Confirmation'

Success completion of the 'confirmation' activity is dependent on clinicians agreeing clinical service expectations and having the right translation of the same. Upon agreeing the clinical service plan, further success is achieved by the healthcare planners and project team setting it out in form of a clear *clinical output specification.* Furthermore, agreeing and clearly setting out stakeholder expectations is important for the 'confirmation' activity to succeed.

Action and Tools

This activity is the responsibility of the healthcare planner working in close collaboration with the project team. Probable tools include consensus-building workshops, e-engagement, and, weighting.

Consultation and engagement

Representatives for all the consulted stakeholders are involved in this activity.

Informing and communicating

All stakeholders are informed of their respective agreed expectations as well as the status of the scheme.

Strategic brief

The strategic brief embodies a firm foundation on which design and all the downstream stages are referenced. As a goal, reaching a strategic brief is a culmination of preceding activities that mainly involved converting the different information inputs into usable knowledge that can now be applied to inform design development for a whole life solution. Hence, the main features of the strategic brief include a statement of the organisation's corporate mission, a re-affirmation of the context-based project mission and goals highlighting the nature of the finished solution in relation to achieving the organisation's main business objectives. The strategic brief further presents, decision audits for key decisions taken, a whole life solution statement for the healthcare scheme, and, a 'responsibility assignment matrix' for the key players on the delivery team. The strategic brief also includes a statement about the acknowledged constraints and assumptions as well as a confirmation of the site. In addition, a clinical output specification, signed-off statements of expectations for the various stakeholder groups, a project plan and communications plan are major features of the strategic brief.

Deliverables: the strategic brief is a major deliverable and all the sub-features delineated are its key components.

Critical Success Factors for 'Strategic brief'

The strategic brief should be clear if it is to be effectively applicable to proceeding activities. The brief must also be a true representation of the captured and consented expectations of the various stakeholders.

Action and tools

The strategic brief is compiled by the healthcare planner and the E&FM staff supported by the project team.

Consultation and engagement

Relevant stakeholder representatives may be contacted as deemed necessary to clarify issues as they arise in the process compiling the strategic brief.

Informing and communicating

The outcomes from this activity are communicated to top management and the technical delivery team.

Sign-off and commitment to proceed

This activity represents the official acceptance of the strategic brief as being truly representative of what the project is expected to achieve as well as the process for delivering it. Top management are presented with the document and upon their satisfaction with the contents, sign it off ready to be carried forward and hence forth commit to provide requisite resources for successful project delivery. However, at this decisive point, opportunities still exist for reviewing the contents of strategic brief, cancelling or deferring the scheme for a later date. A decision audit may be necessary to keep track of the decision taken together with rationale and special conditions or assumptions accompanying the decision.

Critical Success Factors for 'Sign-off'

A decision must be reached lest there is undue uncertainty amongst stakeholders especially the supply-side for the scheme.

Action and tools

Top management are responsible for making this decision. Communicating the outcome is their responsibility too, although the project communication mechanisms will be used to relay it. Stakeholder representatives may be contacted through postal newsletters or email or a general announcement put through a wider-coverage media as appropriate.

Informing and communicating

All stakeholders are informed of the decision taken. If the scheme is to proceed, user stakeholder groups may preferably be informed about tentative dates for construction and expected completion and occupancy. Neighbourhood stakeholders and local authorities may further be informed about possibilities for further engagement to discuss any expected disruptions as or when need arises. Further information about how to keep stakeholders informed of future progress and activities could also be communicated at this point as should any further information about a project website or queries. Stakeholders should also be made aware that no further drastic changes can be made to expectations of the scheme.

Customisation

Customisation marks the beginning of the design process. The main issue about customisation relates to composing a bespoke design to fit the context and location of the healthcare facilities. Although the NHS guidance provides for spatial and technical standards for clinical areas, the way they are arranged and finished is not given, hence must fit what the specific recommendations and standards set out in the strategic brief. Therefore, seeking to customise the solution serves to avert from designing what stakeholders regard as 'institutionalised and impersonal healthcare facilities'. This iterative activity involves translating the strategic brief into desirable characteristics that are associated with the expected final solution, which are presented as a detailed brief. Customisation activities are associated with the technical details of the scheme attainment of an initial architectural design, complemented by the artist's and associated consultants' activities.

This activity also involves relevant stakeholder representatives in further discussions about the developing design and art, as a way of clarifying that the design team is making the right translation of the strategic brief. For effective use of the limited time, user group stakeholders continue to be engaged in accordance with what affects them and are preferably not burdened with having

to understand and provide input into spaces they will not be using. This includes technical details about design and construction.

Deliverables: Customisation leads to the production of the detailed brief, initial design and experience logs.

Critical Success Factors for 'Customisation'

In order for customisation to be successful, design attributes associated with enabling a sense of place should be focused on. In addition, it is of key importance to maintain continuity with the strategic brief still usable as a reference document. Due to the necessity for two-way communication during this activity, effective facilitation is fundamental for success. Another success factor relates to targeted consultation during customisation. Stakeholders are required to contribute ideas specific to what they use. This is useful for time management, expectations management and makes it easier to communicate progress as most stakeholders especially patients and the public are not burdened with technicalities they have little or no understanding of. For example, in presenting and discussing design proposals to patients and the public simple 3D and/or photographic views could be used to depict entrances, receptions, waiting areas and corridor layouts rather than technical architectural drawings.

Action and Tools

Most of the customisation activities are the responsibility of consultants who work alongside the healthcare planners and the project team to ensure the strategic brief is well translated. Most of the consultation and engagement activity under 'customisation' requires two-way communication, therefore methods and tools used should be attuned to suit the audience and specific information needs. For instance workshops are organised for those stakeholders who can make time for face-to-face meetings, and alternative e-engagement mechanisms provided for flexible availability when meeting face-to-face may not be possible.

Consultation and engagement

In addition to the design and consultants' teams, relevant stakeholder representatives for the various user groups, embody a core resource for the customisation stage of briefing. Through their feedback the design and project team ensure that effective progress towards value delivery.

Informing and communicating

Whenever a significant design milestone is reached, all stakeholders should be made aware via the most cost effective way possible.

Sign-off to proceed to detailed design

The detailed brief and initial designs are presented to decision-makers and stakeholders for approval. After several adjustments at 'customisation' level and upon ensuring that the detailed brief corresponds with the envisioned solution set out in the strategic brief and statements of expectations, stakeholders agree to proceed with the design, re-adjust 'translation', defer the process or cancel before further commitment.

Deliverables: a statement on the decision, together with the decision audit report.

Critical success factors for 'sign off'

As with the other 'sign-off' points, it is important that a decision is reached and finalised.

Action and tools

Making the decision to proceed or adjust the 'translate solution' is the responsibility of top-management.

Consultation and engagement

No consultation is necessary.

Informing and communicating

All relevant stakeholders are informed of the decision taken and status of the scheme in relation to previous communication.

9.2.2.3 Other Special Deliverables – Documents

Besides the statement of need, strategic and detailed briefs, the documents described here are to be produced in tandem during the process. The documents complement the process, guiding the delivery team to ensure structure, repeatability and continuity in the process as well as providing smaller milestones.

The Experience Log

The experience log is a retrospective social tool for sharing experiential knowledge. Its creation is suggested as a response to the lack of in-house continuity in skills and expertise acquired from being part of a successful NHS scheme. The experience log aims to capture organisational learning; the process for achieving improved actions through better knowledge and understanding, shared or distributed among members of the organisations (Fiol and Lyles, 1985; Snyder and Cummings, 1998). It has been noted that, recounting experiences from past projects is the most striking means of transmitting knowledge from project to project, among team members and from experts to novices in architecture/engineering/construction offices (Fruchter *et al.*, 2003). Therefore, through experience logs, upon completing a given activity in the process, it is hoped that participants can leave informative anecdotes (may be anonymous) about their experiences on a given scheme especially what worked well and how it was achieved. Anonymity is encouraged to encourage people to share freely and fully without inhibitions. These logs can then be a useful resource for future projects where personal help may not be available when urgently required. The logs could be in written, audio or visual format as the participants see fit. Within the framework's design, experience logs are indicated for all activities to encourage participants to share while

experiences are still freshly remembered. Moreover, with chances of staff leaving the project delivery team before completion, their experiences and expertise are captured by the logs sooner lest they are lost.

The difference between the experience logs and 'lessons learned' lies in their lack of formality and in their voluntary nature. While lessons learned may also include issues about the end-products and aiding better decision-making, experience logs are mostly about skills-sharing and learning. They target improving value through having better processes and expertise in-house and as a future reference point for NHS staff. The E&FM function may be the best choice for keeping these records together with all other records accumulated through the scheme delivery process.

Decision Audit report

A decision audit trail report has been included for all major decision points. Construction clients (in this case the NHS wider client organisation) demand documented proof of the steps taken to deliver value (Thomson *et al.,* 2006). Decision audit trails aim to maintain a track record of all major decisions made during a process (for example Denscombe, 2007; Phillips *et al.*, 2007; Audit Commission, 2011). Therefore, the decision audit report attempts to capture the problem situation, the problem solving process and the rationale behind the solution or final decision taken. The parties involved in the decision-making, and their positions of responsibility within the organisation or project formation are also to be included. A suggested decision audit would look like Table 9.1. The premises on which the table is founded are based on ideas represented by TQM principles (Oakland, 1995); Steele *et al.*, (2000); ISO9001:2008; and, the Audit Commission (2011).

Table 9.1: Example of a Decision Audit trail report

Item	Description	Required field/action
Decision Name	What is the brief name for this decision?	e.g. deliberate on site for Scheme X
Decision Purpose	What is the purpose for this decision? what is to be achieved, and how it will impact on performance?	Concludes site optioneering exercise, project advances smoothly, quality of other processes affected or project stalls awaiting this decision
Decision stakeholders	Who is affected by decision or indecision?	PCT, partners, Users, design team, consultants, contractors, etc.
Decision Owner	Who is primarily responsible for taking this decision?	Named individual or group
Decision Seriousness	What is the seriousness or level of impact of this decision on the project?	Low, Medium, High, Critical
Urgency	What is the level of urgency for this decision? Think about critical milestones or windows of opportunity?	Low, Medium, High, Critical
Decision/indecision Growth/Trending	What is the trend in terms of this decision?	e.g. it become more critical if we put off the decision (UP ARROW), or, become less critical (DOWN ARROW)

Statements of Expectations

These are signed-off documents confirming the agreed terms of reference for the different stakeholder groups. After the consultation and engagement process and upon negotiating terms with reference to the available budgets, the project team prepares clear statements defining how needs are intended to be met; articulating what project's scope, quantity and performance parameters have been agreed. Having clear, signed-off expectations statements resolves misunderstandings that may have been created through verbal communication and perceptions provided by visual representations by the planning team. In addition, when the finished scheme is due for appraisal, the statements represent benchmarks against which different stakeholder groups assess what was 'promised' and what has been delivered. Thus providing a measure of satisfaction.

Responsibility Assignment Matrix (RAM)

The responsibility assignment matrix maps the tasks involved within project delivery, who is expected to carry them out and who the responsible individuals

are answerable or accountable to. Table 9.2 is an example of the headings and contents of the RAM.

Table 9.2: Responsibility Assignment Matrix example

Team Member/Role Task/Deliverable	Member A	B	C	D	Etc.
1	R	A	C	I	...
2	A	R	I	R	...
3	A	C	R	I	...
Etc.	...	...	...	...	...

R = Responsible for carrying out task and achieving deliverable =

A = Accountable = answerable and responsible for success/failure of activity

C = Consulted = input required

 I = Informed = notified when task id complete

9.2.2.4 Suggested tools

Delphi methods

The aim of the Delphi methodology is agreeing a most reliable consensus amongst participating stakeholders. Delphi technique – an iterative forecasting procedure characterised by three features: anonymity; iteration with controlled feedback; and statistical response (Rowe and Wright, 1999; Outhred, 2001). Participants are subjected to facilitated interviews or questionnaires that progress from broad towards convergent ideas through to a definite agreed position. Delphi methods can either be electronically moderated or face to face as was discussed in *Appendix 3.1*. Electronic modes would be the preferred method for interacting with healthcare professionals and top management because this would save participants' valuable time they could otherwise have to spend with patients and other patient-related activities. Application of Delphi methods in the framework is recommended for all the tasks in which clinicians and management are involved, and that require several cycles of abstraction

before consensus can be reached, for example during 'assessment', 'consultation and engagement' and in confirmation stages.

E-engagement

This refers to all electronic information and communication technologies (ICTs) that could be used to facilitate engagement. Similar to the electronic Delphi methods discussed before, e-engagement takes advantage of the ubiquitous ICTs to enable quicker, wider-reach and non-real time engagement (when face-to-face meetings are not possible due to time and remoteness constraints) as would normally be associated with engagement workshops. Such methods would include electronic brainstorming (discussed in *Section 3.2.3.3* and *Appendix 3.1*) for problem solving tasks; emails, video conferencing, weblogs, chat rooms and on-line surveys, among others.

Value Management and Soft Value Management (VM/SVM)

These are familiar methods used within the construction briefing exercises. A detailed discussion was presented in *Section 2.3.* The methods are recommended here for the benefit they deliver during the processes of aligning the true needs and prioritising the value attributes for scheme stakeholders.

Enhanced Cooperative Discourse for participative optioneering

The *Enhanced Cooperative Discourse* methodology is recommended for group optioneering. An adaptation of Renn *et al.*'s (1997) work, the enhanced cooperative discourse advocates for actively involving stakeholders in only what affects them. Renn *et al.* (1997) noted that without a systematic procedure to reach consensus on values and preferences, the stakeholders' position often appears unclear. They perceived that participatory processes that combine technical expertise, rational as well as moral decision-making, and public values are needed. Processes such as negotiation, mediation and arbitration are suggested solutions, and this includes the present proposal. The three-step model is shown in Figure 9.7.

The methodology has been adapted to deal with the often most contentious issue of site optioneering during consultation and engagement, although it may apply elsewhere in the process. Moreover, according to the recommendations of the main framework, all the other decision points are to be undertaken by top management, implying that site optioneering is the only negotiable participative decision-making point that involves all stakeholders groups.

The *Enhanced Cooperative Discourse* model entails having all the main stakeholders groups (representatives) participating in one or several facilitated workshops and activities, with both the end-users and top management openly presenting their issues and negotiating terms, in the presence of independent experts (healthcare planners and/or other advisors). Thereafter, decisions ensuing from the negotiations and dialogue are based on the expert's analysis of the different presentations. It is noted that the argument for discourse does not aim to remove conflict and differences, rather, by respecting and raising differences/disagreements, thereby improving awareness about stakeholder grievances.

The 'cooperative discourse' model comprises:
   (i)   Identification and selection of concerns and evaluative criteria
This is best accomplished by asking all relevant stakeholder groups to reveal their values and criteria for judging different options. At this point, it is said to be crucial that all relevant value groups be represented and that the value clusters be comprehensive and include economic, political, social, cultural and religious values – use of value-tree analysis (for example Kelly *et al.,* 2004) appropriate at this stage.

Evaluative criteria derived from the value-tree are operationalised and transformed into indicators by a research team or an external expert group. Once reviewed and approved by all parties, these indicators serve as measurement rules for evaluating the performance of each site option on all value dimensions. Experts with diverse perspectives on the topic of the discourse are asked to judge the performance of each option on each indicator.

278

The objective is to reconcile conflicts about factual evidence and reach an expert consensus via direct confrontation among a heterogeneous (diverse) sample of experts in the field (Otter and Emmitt, 2008). At the end of this step, performance profiles which reflect the strengths and the weaknesses of each option on each indicator for each option are constructed.

Basic concept and elements of the Three-step participative

Actors	STEP 1	STEP 2	STEP 3
	Acknowledgement of need	Generation & Assessment of options	Evaluation of options
Interest groups/End users	Elicitation of needs/concerns and value parameters VM/SVM service	Informed about Step 2 outcomes	State preference and rationale for; Witnesses at workshops
Community/ Public/Citizens	Contribute to needs and concerns list	Informed about Step 2 outcomes	State preference and rationale for; Witnesses at workshops
Sponsor/Trust	Input to concerns;	Generation of options; Incorporation of institutional	Witnesses at workshop; Make decision
E & FM and Project Team	Input to concerns;	Incorporation of institutional knowledge; verification of expert advice	Witnesses at workshop; Compile decision audit and report;
Healthcare Planners and/or other advisors	Additional input to requirements; and, Facilitation	Group Delphi facilitators and analysts; generation of options VM/SVM service	Witnesses, facilitators & analysts; Option evaluation and recommendations VM/SVM service
Deliverables	**Statement of need**	**Performance profile for each shortlisted option**	**Optioneering report and Decision Audit**

Figure 9.7: The Enhanced Cooperative Discourse for participative optioneering

(ii)   *The identification and measurement of impacts and consequences related to different site options*

(iii)   *Conducting a rational discourse with randomly selected citizens as jurors and representation of stakeholder groups as witnesses*

The last step is the evaluation of potential solutions by one group or several groups of randomly selected citizens (Dienel, 1978; 1989) – citizen panels. These panels are given the opportunity to evaluate the site options based on the knowledge of the likely consequences and their own values and preferences. The participants are informed about the options and the consequence profile generated by the experts in *Step (ii)* before they are asked to evaluate these options on each dimension identified in the value tree process *(Step i).* At this level, stakeholder group representatives and experts – as witnesses, provide their arguments and evidence to the panels who ultimately decide on the various options.

The deliberation process is said to take time: citizen panels are normally conducted as seminars over 3-5 days. The three groups (experts, stakeholder groups and the general public) play a role in each step, *but they are encouraged to impact the decision process with the specific knowledge with which they are most proficient:*

- the stakeholder groups have the most proficient and diverse knowledge of evaluative criteria;
- the experts have the best systematic knowledge about factual performance; while,
- the citizens have an appropriate and legitimated deliberation potential to weigh benefits and risks.

For healthcare projects, a major benefit of the cooperative discourse methodology is that, this division of labour provides a check-and-balance process and a sequential order for multiple actor involvement. Applied in combination with the familiar SVM/ VM methodology, the benefits of this model will further be enhanced.

Multi-Attribute Decision Making (MADM)

Multi-Attribute Decision Making (MADM) and Multi-Criteria Decision Analysis (MCDA) methodologies concern making decisions based on multiple objectives (Zimmerman, 1985, 1987; Bhushan and Rai, 2004; Kahraman, 2008). Objectives symbolise the decision-makers' values and are derived from multi-dimensional value functions that signify decision-maker preferences. A more detail discussion was covered in Section *3.2.3.3 and Appendix 3.1.*

9.2.2.5 Communication and Engagement protocol

The final element of the framework's design is communication and engagement protocol, illustrated in Table 9.3. Although the NHS Act S242 (DH, 2006) requires Trusts to involve stakeholders in the planning of schemes every time a major change in service provision is expected, legislation does not provide guidance on who to involve, how to involve them when to involve them in the planning process. Therefore, in parallel with the *Enhanced Cooperative Discourse*, the main hypothesis behind this protocol's creation is that, in order to optimise stakeholder influence, participants need only be involved in activities that contribute to design inputs of the areas/spaces that directly affect them, spaces will use. Adopting this premise in the communication and engagement strategy ensures that the limited time normally allocated to briefing and optioneering consultation is used effectively through purposeful selective engagement of relevant stakeholders in selected activities.

The protocol features three main components, namely, 'stakeholder group', 'consultation and engagement' (inputs) and 'information' (output).

The 'stakeholder groups' component of the protocol is presented on the left-hand-side column and delineates plausible stakeholder group typologies with interests in proceedings of healthcare scheme planning. These include, both demand-side and supply-side stakeholders. The demand side comprises the SHA and Trusts; GPs and Clinicians; Administration Staff; E & FM; Patients and the public, Local Authorities as well as other holdings with the wider WHE. Due

to the nature of the scope of the proposed framework, the supply side comprises of the architects/design team, artists and other relevant consultants such as, travel, M & E, and Cost Consultants. Owing to the boundary spanning agency function of the healthcare planner role, they are both supply and demand sides.

The middle column of the protocol represents the 'consultation and engagement' component of the protocol. In line with column 1, this component comprises two sub-headings, where the first one indicates the scope of informational inputs or contributions expected of each enumerated stakeholder group; with the second indicating the methods used for accessing the input together with the 'language' of communication to be used when interacting with the particular group. In response to the need to effectively 'reach' stakeholder audiences with diverse backgrounds, different groups are to be interacted with in different 'languages' in order to ensure the best level of understanding and effective interaction. The 'language' ranges from plain English and pictures or diagrams for communicating with patients and public with unknown and varied backgrounds; to, business language including, diagrams, charts, graphs and plain English for Trusts/SHAs; and, technical and business language for consultants.

The final column shows the informational output arising from the process and feeding back to the stakeholders. During the discussion about *Element 2,* it was shown that several deliverables accrue from different activities of the briefing process. It was further seen that, activities also allowed for a reporting mechanism that recommends for stakeholders to be informed of progressive activity outcomes throughout the briefing process. Where parties are not actively involved in an activity, they are only informed about the final decision and next step, while active participants may receive copies of minutes or other relevant information. It is noted that beside the E&FM and the project team members, procedural outcomes are communicated through plain English and where relevant business charts, photographs and diagrams for spatial representations. Besides artists who may not necessarily have the construction

technical background, communications targeted at technical teams, consultants and the healthcare planner could take any language format depending on the subject matter under consideration.

Table 9.3: Improving communication and engagement

Stakeholder group	Consultation and Engagement (for process inputs)		Information/output	
	What	How/Language	What	How/language
Trusts/SHA	Requirements Budget/funding Standards Service Vision, Goals & objectives Project Goals	Delphi method Business, Diagrams (charts, 2D & 3D CAD, VR)	Decisions and Progress	Business Charts
GPs & Clinicians	Clinical service model Expectations Art and interiors Access & Car parking	Delphi electronic/Surveys Scenario presentations	Decisions and Progress	Business Charts
Administration Staff	User behaviour Adjacencies Expectations Art and interiors	Surveys Workshops/Focus groups through: Business, charts, Scenarios	Decisions and Progress	Business Charts
Estates & FM	Occupancy data Finishes Day-to-day user appraisals Expectations including Standards Art and interiors	Interviews Business lang. e.g. Charts and Diagrams; 2D & 3D diagrams	Decisions and Progress Experience Log all documentary outputs Technical drawings	Business Charts Technical

(Table top header: **Communication and engagement protocol**)

Stakeholder group	Consultation and Engagement (for process inputs)		Information/output	
	What	**How/Language**	**What**	**How/language**
Patients	Location Reception/Waiting areas Access (ext. & int.) Comfort/Ambience Art	Workshops; Surveys (electronic and traditional); Words, tables, simple 2D & 3D Images	Decisions and Progress	Business Charts
Public	Location Access Expectations Impact	Workshops; Surveys (electronic and traditional); Through: Words, tables Simplified 2D & 3D Images	Decisions and Progress Images of proposals	Business Charts
Local Authorities	Location Public Transport.	Interviews, Dialogue, focus groups; through: Words, tables, images	Decisions and Progress	Business Charts
WHE partners	Facility use Expectations	Surveys Workshops/Focus groups thr: Business, charts, Scenarios	Decisions and Progress	Business Charts
Healthcare Planner	Expertise	subject dependent	Decisions and Progress	Business Charts
Artist	Expertise	words, diagrams	Decisions and Progress	Business Charts
Consultants	Expertise	subject dependent	Decisions and Progress	Business Charts

9.3   Framework evaluation

9.3.1   Introduction

This section discusses application of the framework, demonstrating its use as a tool to improve briefing and optioneering in order that better WLV may be deliver in healthcare schemes. In relation to the research tasks presented in *Figure 1.2*, the framework's evaluation stage is highlighted in Figure 9.8 below.

The framework was designed to be usable by NHS Trusts and organisations responsible for commissioning healthcare facilities. The framework was inherently aimed at organisations responsible for providing the client brief and for making strategic decisions for planning of healthcare facilities.
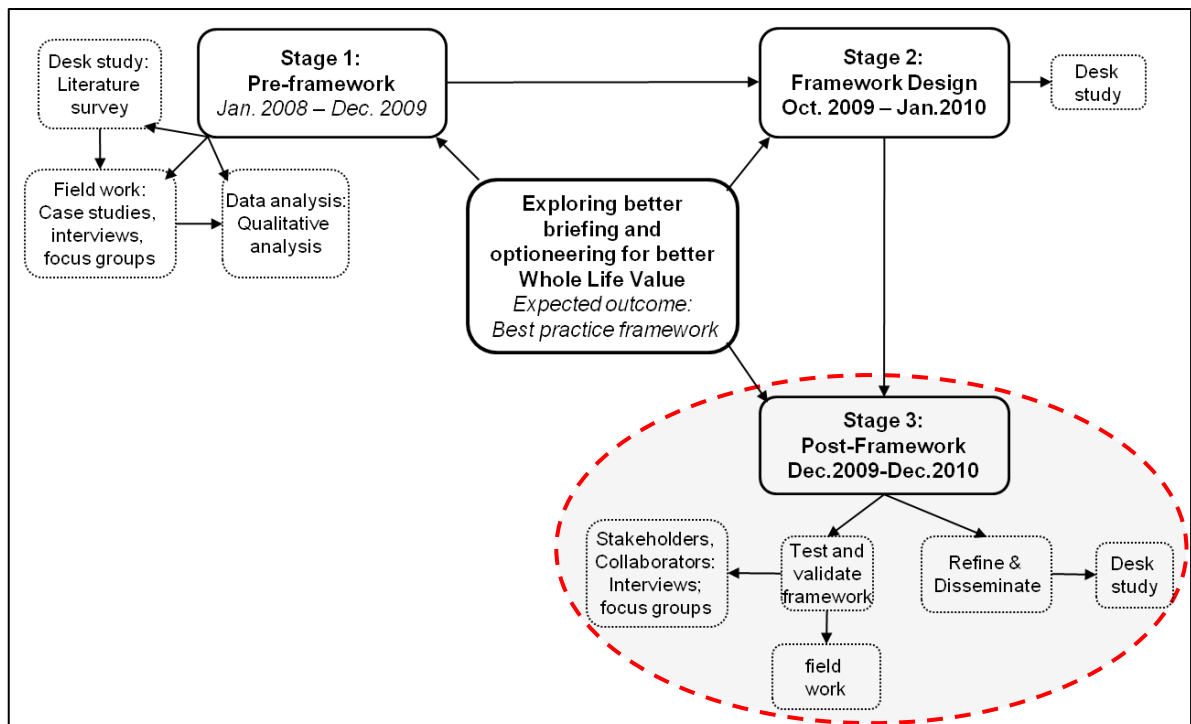
Figure 9.8: Highlighting Stage 3 Post framework design

9.3.2   Objectives of the evaluation

The main objective of evaluating the framework is to test its feasibility to deliver better WLV as perceived by its future users.

9.3.3   Methodology for the framework evaluation process

The original plan was to solicit views from targeted users of the framework. Therefore, requests for input into the evaluation process were sent to seven PCT E&FM practitioners including 3 participants of Stage 1 data collection. However, most of the contacted individuals could not participate in the evaluation exercise because of other commitments. Some participants cited commitments related to the current Government proposals for devolution of a PCT-led into a GP-led NHS (DH, 2010). Having failed to get input from the targeted audience, further requests were extended to five more construction industry-based participants (who are normally part of the NHS schemes' briefing and planning process). The contacted individuals were selected especially because they had participated in the earlier data collection exercise, therefore would they would easily relate to the evaluation exercise, Contacted individuals included healthcare planners, architects and directors from PSCP organisations. In addition, a healthcare programme manager with the UK's CABE/Design Council was invited to participate in the expectation that capturing the opinion from an independent UK design and built environment review organisation would be invaluable to the framework's evaluation and applicability. In addition, opinions were sought from a European (Scandinavian) researcher with research interest in value and healthcare design as well as from an expert UK academic researcher with special interests in the area of construction communication.

The evaluation procedure was originally planned to involve unstructured FTF interviews but due to time constraints questions were adapted to *email*-based or telephone discussions. Participants were required to give feedback on the framework's main elements presented through display software on 4 slides (one provided a very brief background to the framework's design, including a legend for the process map; the second, presented the main process framework; the third, was about the cooperative discourse model for collaborative site selection; and the fourth provided the communication and engagement guidance). The main question for the evaluation was,

'How practical are the framework elements? Can the framework be applied to healthcare scheme definition (strategic briefing and optioneering) to effectively enhance WLV delivery?'

In addition,

'What could be done to improve the proposed framework?'

9.3.4 Results and discussion

9.3.4.1 Results

Altogether, feedback for the evaluation exercise was received from 4 participants as shown in Table 9.4 below.

Table 9.4: Evaluation participants

Participant	Background/industry	Evaluation Feedback Section
A	NHS (PCT Deputy Head of E& FM)	All framework elements - 1,2 and 3
B	CABE/Design Council (Healthcare planning)	All framework elements – 1,2 and 3
C	Academic (VM/healthcare researcher - Europe)	All framework sections -1,2 and 3
D	Academic (construction communication – UK)	Communication protocol section – Element 3

Participant A

As shown in the table, of the 4 participants, Participant A was the sole contributor from the NHS. The participant is one of the NHS-based individuals who had earlier participated in the data collection exercise.

Remarks: This participant felt that the framework looked logical, thorough and comprehensive enough to achieve the intended purpose; and that it would align well with the CIM guidance, saying that,

> "...my initial reaction was that they [the different elements] looked over complicated however having review them again they are very comprehensive and show a logical approach to the process.

Further concluding that,

> "There is little I can add..."

Participant B

This participant is a coordinator with the CABE/Design Council and is in charge of healthcare planning.

Remarks: The participant was of the view that the framework looked logical and was capable of guiding the team during scheme definition. However, the feeling was the proposed framework would best be tested on a 'real life' project.

Participant C

This participant is based in Scandinavian Europe. Having recently completed a value-based study comparing value practices within Scandinavian and American healthcare systems, it was thought that this participant's insight would be relevant to the proposed framework.

Remarks: The participant lauded the framework's capability for highlighting the exact input needed from each stakeholder and how to access it. In addition, although the framework looked logical and provided for 'process feedback loops', the participant felt that it was possibly too rational for practitioners. As such, suggested improvement required that a lighter version is prepared for practical use when need arises to apply the framework to a 'real life' project.

Participant D

Being the only participant from construction industry-related academia, this participant was requested to contribute at a time when PCT-based participants seemed inaccessible. As an expert in construction communication, *Participant*

D's input was envisaged to be relevant to the communication protocol guidance.

Remarks: This participant liked the idea of the 'communication model' and thought it is a good idea to be rational about selecting specific communication vehicles to suit output, adding that, it makes the interaction more efficient and effective. However, it was suggested that there should be some consideration over the nature and the purpose of information that is being communicated, whether for promoting understanding or for compilation purposes. Noted examples include differences between newsletters, emails and texts, what does each convey? What message might it send or reinforce? In addition, *Participant D* thought that the purpose and attributes of different meetings should be recognised, comparing and contrasting one-to-one meetings, three-person meetings, to focus group meetings.

9.3.4.2   Discussion

It was also insightful to know that based on the NHS-based *Participant A*'s view, the framework is comprehensive, with the capability to capture the intended output in the briefing and optioneering processes. From the above feedback, it may be noted that all the 4 participants acknowledged the logical set-up of the framework. However, in order to respond to the perception that the processes seem too rational for practitioners, it may be noted that structured techniques are valuable but limited in nature; therefore they cannot substitute the designer's skills and sensitivity in interpreting needs (Smith *et al.*, 1998). The design team and architects must utilise all the available resources in order to gain a deeper insight into the clients' requirements (London *et al.*, 2005). Hence, it may be argued that the processes depicted by the framework are only intended for guidance purposes. In addition, it was noted in *Sections 8.3.1* and *9.2.2* that process tasks are iterative to account for learning and effective utilisation of new knowledge as it becomes available. Therefore, iterations may provide an effective way for countering the ideal of being 'too rational'. In addition, Kamara *et al.* (2001) advocated for a structured rationalistic approach

inspired by manufacturing, arguing that such an approach is necessary for mapping and managing changes in requirements that may occur over time.

The issues highlighted by *Participant D* concerning nature and purpose of communication are well accounted for in *Sections 8.4.1; 9.1.2; 9.2.2.5.* Essentially, as part of the main motivation for streamlining stakeholder communication and engagement, it was deemed necessary to improve briefing and optioneering through purposeful involvement as exemplified by the communication guidance itself and the *Enhanced Cooperative Discourse* tool. In addition, as with the main framework, the suggested communication tools are only exemplar and not meant to be prescriptive. Communication tools are also meant to gather information while simultaneously promoting understanding and learning of what the 'real' problem may be. Thus, the attribute of communication mediums (newsletters, email, texts) are not mutually exclusive to compilation of information or promoting understanding.

9.3.6 Challenges and limitations of the evaluation process

Due to the limited time available for testing the framework, only 4 individuals contributed. However, this limitation eventually led to a diverse array of opinions ranging from practitioners to academic experts, thus resulting in a well diversified opinion. In addition, it would have been ideal to test the framework in a real life situation, on a live project as per the original plan (see *Figure 9.8*) but this has not been possible. This is a limitation of the framework's feasibility because it cannot be 'proofed' and improved based on practice. The following section describes how the framework could be evaluated in greater detail in case an opportunity to apply it to a 'real-life' NHS healthcare scheme situation arose.

9.3.7 Guidance for future evaluation of the framework

The evaluation protocol presented in Appendix 9.1 is prepared as guidance for a field researcher to apply in 'real-life' NHS scheme scenarios. The evaluation protocol is not a comprehensive manual on how to conduct the exercise; rather, due to the fact that it is based on qualitative inquiry, it provides relevant evaluation questions, thereby providing a conceptual road map that could be adapted in various schemes scenarios when framework is applied.

9.3.7.1   Field procedures

The data collection methods described in *Section 5.7.1* for collecting empirical data apply to the evaluation process. They include, but are not limited to, observation, ethnography, case studies, interviews and field diaries.

A comparative study could be arranged to measure the difference in process performance and outcomes (deliverables) between schemes where the framework was applied against those in which it was not. Schemes are to be compared from 'idea' to completion and use, with emphasis on pre-design tasks highlighted in the framework. The aim is to measure 'performance' indicators with the framework to ensure that it 'does' what it was designed to do, eliminating and avoiding rework of any form. Indicators for satisfactory WLV are considered over the whole life cycle to include, as summarised in Table 9.5:

- In the near short term, whether a satisfactory detailed brief has been achieved. Satisfaction is judged by how easily relevant stakeholders, agree and sign off the brief without much further 'rework', a sign that stakeholder communication and engagement effectively delivered as expected.
- In the short term, assuming other factors are in place, for example an expert design team is on board, the framework's performance is measurable by the quality of the design achieved from the brief and the level of stakeholder satisfaction with the resultant design measurable by how many changes and adjustments are required to ensure that the design satisfies the brief.

Table 9.5: Expected outcomes/indicators from framework's application

Time →

Time scale	Near short term Immediate outcomes	Short term After briefing and optioneering	Medium 18-24 months/after construction completion	Long 1 year after occupation and use or 3 years+
Outputs/ indicators of framework success	Feedback on: Quality of detailed brief; Conceptual design; Quality of stakeholder communication and engagement; Ease/complexity of framework's application; Time spent in briefing	Quality of Resulting design; Amount re-design/rework	Value delivered at completion; Stakeholder feedback on satisfaction; Post-contract works	Operational outcomes through: -post occupancy work; Added value visible through better clinical outcomes and user satisfaction accruing from satisfactory design from framework application; Affordability measured through operation and maintenance costs

- In the medium term, upon completion, the measure is whether the built solution meets stakeholder expectations in accordance with the brief. Again, the assumption is that the contractors were 'right' and that the design was a correct representation of the stakeholder needs and requirements shown in the brief. Performance of the framework is measured by stakeholders who agree that the completed facility meets their expectations. In addition, upon PCE, the absence of major post-contract works is an indicator that value was well defined, clarified, interpreted and has now been delivered.

- In the long term, it would be a question of how the healthcare facility meets the business and users' needs; how it adapts to constant use and maintenance within the requisite affordability standards. In addition, another WLV indicator would be whether as a whole life

solution, the facility cost effectively and easily adapts to changing health service models and needs.

The protocol presented in *Appendix 9.1* represents specific questions that the evaluator needs answered in accordance with the above indicators. The protocol is divided into three sections.

The first section contains a set of instructions on using the protocol and reassurance about confidentiality of participants. It also covers a brief background to the study including highlights from findings that informed the framework's formulation, the aim and objectives of framework and of the evaluation exercise.

The second section describes the key elements of the framework while the third section provides for participants to give personal details, such as name, contact, current job designation and previous experience within NHS projects, if any. This section also asks specific questions about the framework's performance upon application. Questions include the participant's general opinion on the framework with the aim of establishing whether,

- the framework captures the relevant elements of the briefing and optioneering processes that directly influence the achievement of WLV;
- the framework is a good representation of NHS facility definition processes, if not, what is missing?
- there are any misplaced activities as far as NHS processes are concerned;
- the CSFs highlighted by the framework are adequate for ensuring that the process is effective in defining and clarifying value.

The evaluation further asks about major successes for schemes, attributable to application of the framework; what seems to be working and whether there were any major challenges or problems accruing to application of the framework. Participants are finally asked to rate the framework as a guide for

WLV delivery and for any contributions and commentary towards further refinement of the framework.

9.3.8 Chapter conclusion

Having designed and evaluated the framework, the following chapter draws from this and the rest of the thesis to bring the study to a coherent conclusion.

Chapter Ten: Conclusions and recommendations

10.0   Chapter Introduction

This chapter summarises the main findings of the study and how they were applied to the research question and objectives in order to inform the formulation of the healthcare facility WLV delivery process improvement framework.   Also presented is a critical appraisal of the present research, limitations for the study, recommendations to practitioners and future research, as well as the study's original contributions to knowledge.

10.1   General Summary

After an initial literature survey, it was found that there was a need for improving the WLV of healthcare facilities in the UK. It was also found that, the most fundamental decisions affecting WLV of buildings are made during the course of briefing and optioneering. A further search found that no previous research has particularly attempted to improve WLV for healthcare facilities by looking to improve the briefing and optioneering processes.

The first four chapters provided a background to the present research and a review of WLV, briefing and optioneering literature within the context of the UK healthcare sector. The chapters uncovered research gaps that further informed this study before posing a research question, aim and objectives. *Chapter Five* described the research philosophy and specific methodologies used to address the research question consequently responding to the aim and objectives of the study. The next two chapters (*Six* and *Seven*) followed on with a field study into real life NHS pre-design practices, with *Chapter Eight* presenting findings in relation to the aim and objectives of the study together with gaps identified from extant literature. The findings were analysed and implications for the proposed framework depicted. The implications then informed the framework's creation presented in *Chapter Nine*. Having designed the framework, it was evaluated

with input from experienced construction practitioners within NHS-based organisations.

10.1.1 Reviewing research question, aim and objectives

The explorative study aimed to enhance WLV of healthcare facilities through devising a pre-design process improvement framework. Inputs for the framework's construction were to be directly informed by answers to the question as to **how briefing and optioneering of healthcare facilities can be improved in order to deliver satisfactory WLV**. The delineated objectives for the study were to,

a) Explore construction briefing and optioneering theory;

b) Investigate the generic meaning of WLV and its linkage to briefing and strategic options selection;

c) With reference to healthcare projects: investigate perspectives on briefing/optioneering/WLV;

d) Identify gaps and areas for improvement in both theory and practice;

e) Design a best practice framework for effective process improvement towards satisfactory WLV;

f) Test, refine and recommend the framework as a guidance tool for satisfactory WLV delivery of NHS healthcare facilities.

The following sections summarise how the question, aim and objectives have been met by the study.

10.1.2 Research aim

The previous chapter fulfilled the research aim by designing the framework, a composite of three main elements. The first element contrasted the scope of the proposed framework within existing process protocols embodied in the RIBA Plan of Work (RIBA, 2007), OGC Business Case and a life cycle view;

while the second element covered a step-by-step process of defining design parameters from 'acknowledgement of need' through to 'customisation'. The last element of the framework augmented the second element by providing further detailed guidance to the communication and engagement process on which the improved briefing and optioneering processes are founded.

10.1.3 Research objectives

Through a comprehensive literature survey, objective (a), (b) and part of (c) were addressed. The key findings addressing the last part of objective (c) are summarised in this section.

10.1.3.1   Healthcare project strategy

It was found that having a specific project or scheme strategy is vital value delivery. It was further found that briefing and optioneering activities are embedded within the business case process and therefore completing them successfully contributes towards successful formulation of the business case. Decisions were seen to be predominantly dependent on the available financial envelope and the decision making process characterised by several sign-offs.

Furthermore, the WLV phenomenon was found to be unfamiliar to people involved in healthcare facility definition processes. Most described WLV synonymously with whole life cycle costing. However from inferences made of the empirical findings, it was understood that ***WLV of a healthcare facility encompasses a combination of clearly defined value(s) that support(s) best clinical outcomes, bounded by economic limitations, and having the right decision culture in order to deliver a whole life solution to Trusts.*** From this definition, WLV of healthcare facilities is directly linked to the ability of the final solution to support the clinical business.

10.1.3.2 Communication and engagement

It was found that the healthcare construction briefing process parallels stakeholder consultation and engagement activities. Findings about briefing for

healthcare facilities corroborated current practices reported through literature on the briefing within the construction industry.

The agency role played by healthcare planner was once again seen to be important to the success of the communication and engagement activities briefing and optioneering process. Accountability and representation also emerged as important issues for stakeholder consultation and engagement; stakeholders need to feel that the resulting scheme's outcomes are a direct contribution from them and that public resources have been well expended as demonstrated through the decision outcomes leading to the eventual scheme's design.

10.1.3.3   Drivers, Goals and deliverables

The business case may be perceived as the most important requisite deliverable of a healthcare facility's definition process. With respect to achieving WLV, it was found that the clinical output specification is the first and one of the most important goals. In order to deliver a whole life solution that is congruous with an organisation's clinical business functions, the contents of the clinical output specification are the basis for aligning other briefing and optioneering outcomes.

The briefs, as standard deliverables were seen to be increasingly resulting from a collaborative process with the Whole Health Economy stakeholders contributing to the final brief. The brief was found to be a multifunctional document over the life cycle of the healthcare facility.

Aiming for a whole life solution was also found to be an ultimate goal for some involved in early definition and decision making.

Furthermore, the most recurrent driver for the decision to build was seen to be the need to improve healthcare service provision. Similarly, facility initiators were seen to increasingly aspire for a design that is all inclusive and capable of supporting therapeutics and healing.

10.1.3.4　　Features

Selection of an acceptable location for a proposed scheme was found to be a contentious aspect of the briefing and optioneering process. Overall, major optioneering and healthcare facility design-related decisions are made to satisfy ample car parking space-provision and to enable inclusive accessibility for all users.

Another key aspect of a healthcare facility briefing and optioneering includes specific scheme design features. Certain design aspects, specifically, patient-waiting areas, courtyards and sustainability-related features dominate patient and public consultation discussions and influence design aspirations and eventually design strategy. Incorporating art early in the planning process was seen as an important feature of the briefing's consultation and engagement process. By letting user stakeholders contribute towards art they feel empowered to influence elements within their future physical environments, towards making them more pleasant, ambient, therapeutic and personalised. This usually leads to a win-win situation for both top-management and the user stakeholders.

10.2　Critiquing the study

10.2.1 Limitations of the study

Although all necessary measures were taken to make the study as satisfactory as possible, there are there are a few limitations that need to be addressed.

The first one involves the primary data collected. In order to get a representative outlook of the healthcare briefing and optioneering process, it would have been ideal to incorporate into the study opinions and contributions from all usual project team players. Although much care has been taken to make the most of the available data, accessibility challenges meant that some people who actually make decisions could not be reached. For instance, it

would have been valuable to know the underlying process behind major decisions such as to build or not to build a healthcare facility; as well as, the decision issues considered for final site selection among the preferred options. In addition, at the time of joining, the case study, the design process was already underway; it would have been of great advantage to the study to observe the process in its entirety, including the SSDP where the decision to build was made.

The other issue with the data access concerns the ethical approval process for allowing researcher and facility-end user interaction. However, due to the convoluted process of gaining ethical approval to study patients and clinicians, it was not possible within the time scale of the present study. Nevertheless, having more extensive end users input, would have provided relevant insight to the study, especially with respect to their WLV. Similarly, access to architects, as key players in the building process, was presumed vital for the study. However, all effort to get them to collaborate on the study was unsuccessful thereby missing out on a vital link to a supply-side stakeholder group that primarily uses the client brief.

10.2.2 Validity of the research

Qualitative researchers need to convince themselves and others that their findings are based on critical examination and that the studies are credible (Creswell and Miller, 2000; Silverman, 2007). Validity refers to the extent to which an account accurately corresponds to the phenomenon it represents (Brinberg and McGrath, 1985; Hammersley, 1992 and Maxwell 1992). However, it is noted that, "data in themselves cannot be valid or invalid; what is at issue is the inferences drawn from them" (Hammersley and Atkinson, 1983:191). This section presents a critical appraisal of the research in which the study outcomes and processes are evaluated for reliability, internal validity and credibility as well as for their external validity and transferability.

10.2.2.1   Internal validity and credibility

Internal validity refers to a characteristic of a study's design and is a measure of causality between the variables encountered in the study (Yin, 2009). However, unlike (positivist) quantitative research, qualitative research is less about establishing the 'reality outside our perception of it', that is associated with cause-and-effect. Consequently, credibility is said to be a better measure for internal validity (Glaser and Strauss, 1967; Guba and Colin 1989; Corbin and Strauss, 2008).   In their view, credibility establishes that the results of a qualitative study are believable and trustworthy "in that they reflect the participants', researchers', and readers' experience of the phenomenon but at the same time the explanation is only one of the many possible 'plausible' interpretations possible from data" (Corbin and Strauss, 2008:302) . Therefore, in order to earn credibility in qualitative research, a researcher must cite actual data and ensure that results are "independently and objectively verifiable" by indexing all quotes and examples so that they can be "traced back to an identifiable subject and setting" (Greenhalgh, 1997:160). In the present study, actual data was cited whenever relevant and quotes can be traced back to the appended transcripts attached in relation to *Chapters Six* and *Seven*. In addition, by using observational data, the present study satisfied Adler and Adler's (1994) position on observational research functions as the most powerful form of validation because they are based on the researchers' "direct" knowledge and their judgement of reality. Thus, the study satisfies internal validity and credibility tests.

10.2.2.2   External validity and transferability

External validity is concerned with establishing the domain to which a study's findings can be generalised or transferred to other contexts and settings beyond the immediate study (Stake, 1995; Yin, 2009). Due to the fact that `no empirical study offers certainty that its "findings are valid over other populations" (McCutcheon and Meredith, 1993), external validity is a more difficult problem to address. This is less of a problem with the exploratory study provided the case is "clearly an example of a generic class of process or phenomenon" (Leavy, 1991), which is the case for the present study. In

addition, unlike quantitative studies, designed to test theories, qualitative case studies do not represent a "sample", therefore their goal is to expand and generalise theories (analytic generalisations) rather than enumerate frequencies (statistical generalisation) for generalising to populations or universes (Yin, 2009).

Due to the data access and due to logistical matters, the study was limited to England and to participants who were willing to collaborate. Therefore, the result of the study cannot be claimed to be generaliseable to the entire UK healthcare system. However, through the diverse sources of data used, the study endeavoured to capture as many varied opinions as possible, thereby enriching the study. Certain aspects related to findings on briefing, optioneering and WLV (for example public value, stakeholder engagement, and the relevance of communication strategies) though based on the healthcare schemes, can easily be applicable to the entire construction industry, especially to public sector projects.

10.2.2.3   Reliability

Reliability is the extent to which the same observational procedure in the same context yields the same information – thereby demonstrating that the same operations of a study are consistent and can be repeated over time with the same results (Kirk and Miller, 1986; Joppe, 2000; Yin, 2009). It is said that although the strength of field research lies in its capability to sort the validity of propositions, if reliability is not attended to, results will get ignored (Kirk and Miller, 1986).

It is said that for qualitative research, calculating reliability is dependent upon the investigator documenting his or her procedure in such a way that decisions internal to the research project are made apparent. By so doing, the curious public is informed of how the investigator prepares for the study, how data is collected and analysed (Kirk and Miller, 1986). For the present research, a case study protocol was designed and used to structure the case study process. Overall, the empirical research process followed was described in detail in

order to illustrate how the data came about and aspects of the practices investigated. In addition, the accounts represented in this thesis can be described as representing what Geertz (1973) called a thick description. The measures described here reinforce the study's reliability.

However, unlike experimental research, the present study was heavily dependent on retrospective accounts and the data therefore accessed through 'uncontrolled' conditions. Moreover, even in instances where observational data were used, due to the social (human factor-based) settings typical of the briefing and optioneering phenomena under investigation, one cannot guarantee that the same operations are replicable. That is, it would be very difficult to get the same participants, in the same surroundings or that the same retrospective accounts would be given with the same accuracy of recall. The subjectivity involved in the present study is acknowledged and hence, although the procedure followed are well documented, there is no assurance that they will yield the same accuracy of data if repeated.

10.2.2.4   Quality control – Triangulation

Triangulation is a strategy (test) used for improving the validity and reliability of research or evaluation of findings. Triangulation is defined as "a validity procedure where researchers search for convergence among multiple and different sources of information to form themes or categories in a study" (Creswell and Miller, 2000: 126). The use of combined methods, perspectives and observers in a single study adds rigour, breadth and depth to an investigation (Denzin and Lincoln, 1998; Miles and Huberman, 1994; Yin, 2009), thereby improving the quality of the research. In addition, Mathison (1988) believed that the rise of triangulation in qualitative approaches to evaluation serves to control bias and to establish valid propositions, thereby improving the quality of the research. For the present investigation, *data triangulation* was used to collect information from different sources for the purpose of building a coherent explanation for themes. That is, interviews, documentation, and direct observations were used, hence improving validity and reliability of the study.

10.3   Gaps and implications for theory, policy and practice

This section summarises practical issues highlighted for NHS Trusts to pursue in order to achieve better WLV. The issues relate to managerial action needed to tackle identified gaps found in relation to objective (d). The framework proposal (response to objective (e) and main research aim) presented in Chapter Nine sought to address those gaps that can be bridged through better process practices; while those that need tackling through longer term managerial or policy-level initiatives are presented in this section. **Together, the proposed framework and the recommendations presented in this section provide answers to the main research question of how WLV of healthcare facilities can be enhanced through improvements made in the briefing and optioneering process**.

The following recommendations support the framework and enhance WLV delivery but as far as the finished product is concerned, they are more or less intangible (and sometimes immeasurable in the short-term). However, as stated by Saxon (2005), when considering value, "not all that counts can be counted (and not all that can be counted counts)". Therefore, by acting on the intangibles, value to the finished healthcare facility may be enhanced over the whole of its useful life.

10.3.1 Training and knowledge sharing

Human resource is said to be one of the most important assets for any given organisation. In order to enhance the capability of this asset to deliver WLV, the people involved in the briefing and optioneering process must be equipped with the right skills. It was found that the training provided by the NHS is very high level with no true understanding of how to practically apply it to the business case and CIM guidance provided. Therefore, more and better training support from the DH /NHS to Trusts is recommended. Moreover, in order to enhance

organisational learning, avenues for sharing business case preparation expertise and project experiences need to be explored. The *experience log* incorporated within the proposed framework attempts to capture organisational learning from the project team but needs to be augmented by other measures.

10.3.2 Decision making

Issues relating to shrinking NHS budgets and disparate stakeholder demands on the same are acknowledged. In addition, ever-increasing operating costs and the need for NHS facilities to respond to constant change all entail an array of priorities that NHS decision-makers must take into consideration during the construction planning process. However, the NHS needs to improve its decision making processes by demonstrating a clear ability for Trusts to enhance capital spending, in order to take advantage of future revenue cost savings. This implies that more is spent on the original building in order to spend less in running costs and other avoidable knock-on effects that result from short-termism decision making. For instance, by initially spending more on strategic patient-focused initiatives, savings on operating costs will be realised down the line. A good example is through careful selection of materials that enhance patient safety which when carefully planned and selected, finishes such as flooring that minimises falls lead to less falls which subsequently result in less claims and improved user confidence in the building. Therefore, as a matter of policy, the NHS could achieve this improvement by instituting proactive mechanisms for making value judgements based on harnessing capital spending for longer term user and patient-focused benefits.

10.3.3 Defining Whole Life Value

The primary role of a healthcare 'business' is to provide or facilitate the delivery of healthcare services. Therefore, a clear approach to defining values that support best clinical outcomes and services is needed in order to deliver a whole life healthcare building solution symbolic of healthcare facility WLV. Such an approach points towards knowing and articulating the expected outcomes,

as well as enumerating and prioritising what built features will deliver or support these outcomes. Examples from the study indicated usual expected outcomes of built healthcare environments as enabling therapeutics, healing, safety, reduced aggression among staff and patients. The study also showed that users expect their facilities to be characterised by inclusive environments. In order to support healing and inclusivity, infrastructure for healthcare environments comprises attributes such as: adjacency, uncomplicated patient pathways, privacy-enhancing receptions, accessible and clear entrances and corridors, and ambient waiting areas. Strategies for finishes and hospital equipment selection should emphasise user safety and confidence in the healthcare built environment.

10.3.4 Healthcare planners

Healthcare planners were found to be central to successful healthcare delivery processes. However, not all healthcare schemes take advantage of their expertise and professionalism. In line with the recommendations for training and spending more on the original building, if included as a standard project team role, just like the architect and other consulting engineers, the cost of contracting a health planning organisation to steer the project definition process (business case preparation, briefing and optioneering) will be discounted down the line, while at the same time NHS staff are learning alongside the experts. This may partly solve training needs, save time, while at the same time ensuring that value decisions are made and value delivered, right first time.

10.3.5 Social networks

In order to achieve whole life feedback loops, it is recommended that healthcare organisations support and exploit existing social networks comprising service users and interest groups. Hence, Trusts should endeavour to maintain constant channels of communication with existing social and professional networks.

10.3.6 Clinical output specification

This is a critical document for articulating clinical outputs and facts such as specific services to be offered, clinical staff breakdowns, patient flows and throughputs. A healthcare planning organisation interviewed reported that without this document, it is difficult to ascertain clinical and spatial needs. Therefore, it is recommended that the clinical output specification is included as one of the key document deliverables. Moreover, it is suggested that, this document is prepared as the first step before engaging the design team and embarking on design.

In addition to the above, the following recommendations also respond to achieving objective (d) and to the further development of understanding WLV.

10.4   Implications and recommendations for further research

These recommendations arise from findings about identified gaps in theory and/or practice. However, immediate solutions to these gaps may not be possible within the scope of the proposed framework. They include investigating the role of the healthcare planner; user interest and commitment; tools for public communication; and, car parking and WLV.

10.4.1 Healthcare planners

The role of healthcare planners in the briefing and optioneering processes has been well highlighted in the findings. For their role in facilitating communication and engagement; expertise in business case preparation; and, for mediating between the stakeholders, healthcare planner performance is demonstrably critical in the delivery of WLV. However, literature searches on their role yield negative results, an implication of a gap in knowledge. Further research on how to enhance the boundary-spanning role of healthcare planners in order to deliver better healthcare facility WLV is needed.

10.4.2 User interest and commitment

There is a strong correlation between WLV of a healthcare facility and its sustained usefulness to end-users across the building's whole life. *Section 2.3* expounded on arguments for user-centred theories of built environment value. In addition to these theoretical findings, empirical data confirmed the need to harness wider user opinions during briefing and optioneering.

However, it was found that many service users were not interested in signing up for involvement during consultation and engagement exercises. In addition, their commitment to seeing the briefing and design through was lacking. Moreover, GPs' and clinicians' opinions were highly rated but getting them interested was a challenge. Furthermore, the number of patients and public coming to engagement meetings was not commensurate with the total population base. Therefore, there is need to investigate how to get representative populations signed up to engage in healthcare scheme definition, and to increase their willingness to commit to seeing the process through to its conclusion. For example, Trusts could consider enabling more forums for interaction, such as internet-based non-FTF meetings or consultations and providing incentives for services users willing to sign-up for involvement. Getting commendable representative opinion will enable better contextual definition of what means WLV to a healthcare facility and what would consequently define a satisfactory whole life solution to users' needs.

10.4.3 Linking Car parking and WLV?

The issue of car parking was found to be a divisive matter during consultation and engagement meetings. Furthermore, it was found that nationally, millions of pounds are spent on providing car parking spaces to NHS users, thus seemingly diverting funds from direct healthcare provision. A search of extant literature on about the significance of car parking to UK healthcare facilities or hospitals leads to a paucity of information. Therefore, there seems to be a need

to investigate how or whether car parking is important to healthcare service provision and the attainment of WLV of healthcare facilities. In addition, such a study may be related to the feasibility of recent interest in sustainability agenda aspects advocating for public/shared transport along with related BREEAM standards, and healthcare facility functions.

10.6   Original contributions to knowledge

This study contributes to existing bodies of knowledge in incremental ways. Significant contributions to knowledge are described in this section.

10.6.1 A framework for improving WLV of healthcare facilities through better briefing and optioneering

Further to recommendations made to top management (Section 10.3), the research project contributed a structured way for looking at the consequences of briefing and optioneering on the whole life cycle in order to enhance WLV. Extant literature does not provide such a structured methodology but for the RIBA Plan of Work, BPF framework and the IT Process Protocol. Parallels can be made between the present proposal and the *DH process for procuring primary healthcare facilities (Section 4.2).* However, the outcome of this research is applicable to any healthcare building typology due to its strategic perspective. The structure provided by the proposed framework is specific to the healthcare facilities and emphasises a communication approach to better briefing and optioneering. This specificity therefore makes it easier to apply to the healthcare facility briefing and strategic optioneering.

10.6.2 Extending the meaning of WLV

The concept of WLV is fairly new to the construction industry. Bourke et al.'s seminal work stated that "WLV of an asset represents the optimum balance of stakeholders' aspirations, needs and requirements and whole life costs"

(2005:2). They further understood WLV to encompass 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). The present study offers a further definition of WLV specific to healthcare facilities as one comprising *a combination of clearly defined value(s) that support(s) best clinical outcomes, bounded by economic limitations, and having the right decision culture in order to a deliver whole life solution to Trusts*. The *'value(s)'* in the present definition reflects the pluralistic nature characteristic to any NHS client organisation, with diverse stakeholder groups informing the planning process. The definition also indicates a necessity to align interests with targeted clinical outcomes to define a whole life solution albeit within given economic boundaries. The clinical business as one that is results-oriented; as well as the utility value of healthcare buildings through the term *'whole life solution'* are also accounted for by the definition.

10.6.3 Simultaneity of healthcare briefing and optioneering

The approach taken combining briefing and optioneering in the study of healthcare projects is unique. Furthermore, although construction briefing studies covered in extant literature have discussed decision-making, none has done an in-depth coverage of optioneering, nor its relationship with strategic briefing and WLV as covered in this thesis.

10.6.4 Methodological contribution

The application of Attride-Stirling's (2001) Thematic Network's Analysis to qualitative data analysis as seen in the present study is novel to construction briefing qualitative research. Moreover, for the present study, Attride-Stirling's original analytical framework was further adapted to include concept mapping as a data display method to enhance clarity during analysis. This adaptation further added to the novelty of the method.

10.7   Conclusions

In light of the original research question therefore, achieving WLV of healthcare facilities through focusing on briefing and optioneering could be achieved through procedural and managerial actions. Specific actions include:

- Focusing on purposeful stakeholder communication and engagement;
- Proactive top management intervention in decision making, skilling and providing requisite resources; and,
- Focusing on strategic definition of WLV as a function of utility delivered to facility users.

10.7.1 Focus on better stakeholder communication and engagement

Both managerial and procedural actions are rooted in improving communication, and a focus on purposeful engagement during the pre-construction stages and throughout the life cycle of the healthcare facility. At the centre of WLV achievement are the roles of the healthcare planner, E&FM and top management who all seek to focus on patient-focused service delivery.

Through improved communication, procedural actions are based on focusing the briefing and optioneering processes towards clarifying stakeholder needs as a basis for devising a project strategy for providing a whole life solution to meet these needs. Strengthening stakeholder communication also implies that service users contribute towards better understanding of likely problems and towards defining the whole life solution that symbolises stakeholder WLV. With respect to people, the versatile healthcare planner role is emphasised as crucial to WLV due to their expert guidance and facilitation during problem and WLV definition.

The study advocates for improving briefing and optioneering through focused stakeholder communication and engagement. This is achievable by involving stakeholders in only what directly affects them, what they will use in the finished facility.   Focused communication and engagement further involves using

different methods for interacting with the diverse stakeholder groups. By aligning communication and engagement methods with the different backgrounds within the stakeholder base, attending to disparate stakeholder ideas and concerns is more manageable. Doing so improves clarity, effectiveness and better time management whilst controlling stakeholder expectations by not revealing more than is of relevance and interest to a particular group.

In defining stakeholders and applying stakeholder theories, the study assumes a consistent stakeholder base and invariable stakeholder needs for any scheme. However, in reality, this may not be the case since ideas evolve and people come and go over the course of the scheme's life cycle. However, regular communication and constant negotiation with stakeholders especially those who may join the scheme's development process after briefing or design has been 'frozen' ensures that stakeholders understand the rationale behind decisions for the current scheme.

Service users are most interested in inclusive healthcare environments and on personalised healthcare facility design capable of inducing feelings of 'sense of place' and healing. Therefore, it is suggested that engagement efforts focus on letting service users influence the non-clinical affective attributes related to ambient healing environments. Such attributes include colour scheme selection, fine art and furniture located in entrances, waiting areas, courtyards and corridors. The result will be satisfied stakeholders contributing towards highly visible inputs in the environmental features they often interact with. In addition, patient and public stakeholders are also concerned to see that final decisions are commensurate with what the UK taxpayers perceive as value for money. As such, effective communication and negotiation seeks to improve transparency, trust and confidence in the healthcare organisation's decisions.

10.7.2 Top management

Major decisions are still a responsibility of a Trust's top management although some situations require collaborative decision making. Particularly, due to emotive issues associated with selecting suitable sites for schemes, decisions are best resolved via dialogue through mediated negotiation herein structured around the '*Enhanced Cooperative Discourse*'. Uptake of the methodology is envisaged to improve problematic site optioneering through selectively engaging stakeholders according to their relevant expert knowledge. Hence, the method improves decision making leading to better understanding of each stakeholder group's value judgement, better communication and quicker decision finality. The '*Enhanced Cooperative Discourse*' approach also promotes transparency thereby leading to the added longer term benefits of stakeholder trust and confidence.

Managerial intervention emphasises training and provision of relevant (business case preparation and CIM application) skills to in-house staff. In addition, top management is charged with creating environments and providing resources for harnessing voluntary knowledge-sharing by project participants. Top management are also responsible for ensuring that the defined WLV is implemented as planned over the course of the lifecycle in order to achieve the required whole life solution.

10.7.3 WLV as a function of utility to healthcare service users

WLV of healthcare facilities is a function of usefulness. Therefore, a facility's WLV is only realisable as long as it supports service-based patient and public health interventions during use. The WLV concept draws parallels from the utility theories of value discussed in *Chapter Two*. Hence, the utility value of a healthcare facility is dependent on the satisfaction derived from using the building over its design life, usually 60 years, as well as the ability of the facility to cost-effectively adapt to changing use thereby symbolising a whole life solution and WLV. But it all starts with the right strategic definition and decision

making during briefing and optioneering. Priority issues for decision-making include revising policy to place patient-focused initiatives at the core of all strategic decision judgement. Patient-focus embraces current patient bases as well as future scenarios of forecast trends in order to allow for the right level of flexibility for future WLV.

In this study, briefing and optioneering are seen as being mainly about defining what the problem is and defining what the right solution to the problem is (*Section 3.1, 3.2.2 – 3.2.3*). The theory of WLV is in this thesis deduced as ontology for perceiving human experience of the built healthcare environment simultaneously as practical and contextual. Users are viewed as practitioners of their lives and the healthcare facility useful for supporting their day-to-day practices. Hence, due to these practical and contextual characteristics, WLV definition is unique for every healthcare facility. Generalisations can only be made in the context of NHS national technical standards provided for clinical spaces but not for contextual project aspects. Therefore, improving communication and engagement is bound to improve the value of context-based inputs necessary for defining WLV for users.

Overall, the E&FM function acts as WLV custodians. Due to their familiarity with the healthcare facility, gained from being part of the whole life cycle from pre-construction through to use, FM are well placed to ensure service users' continued experience of WLV. By ensuring constant contact with user group social networks, E & FM continually access and evaluate feedback concerning the usefulness of the facility in line with ongoing PESTEL conditions and a facility's expected performance.

However, without good clinical services, better healthcare facilities are little more than buildings and equipment. Nevertheless, if providing better WLV is symbolic of better user experiences and that other knock-on effects are realised for all the other stakeholders, then it is worth pursuing. It is believed that enhanced WLV of healthcare facilities (achieved through better briefing and optioneering), is only part of a larger healthcare system, but not independently

capable of accomplishing clinical outcomes on its own. Therefore, having acquired the right solution in the form of a healthcare facility that meets long term users' needs, Trusts will presumably endeavour to exploit the facility while at the same time aligning the other co-elements in the service system to deliver better clinical service outcomes.

References

Adler, P. & Adler, P. (1994) Observational techniques, pp. 377 – 392. IN DENZIN, N. K. & LINCOLN, Y. S. (Eds.) *Handbook of qualitative research.* Thousand Oaks, Sage.

Agouridas, V., Winand, H., Mckay, A. & De Pennington, A. (2006) Early alignment of design requirements with stakeholder needs *Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture* 220**,** 1483-1507

Ahmed, P. K. & Rafiq, M. (1998) Integrated benchmarking: a holistic examination of select techniques for benchmarking analysis. *Benchmarking for Quality Management and Technology,* 5 (3), pp. 225-42.

Aiken, M., Vanjani, M. & Paolillo, J. (1996) A comparison of two electronic idea generation techniques. *Information and Management,* 30**,** 91-99.

Akintola, A., Hardcastle, C., Beck, M., Chinyio, E. & Asenova, D. (2003) Achieving best value in private finance initiative project procurement. *Construction Management and Economics,* 21**,** 461-470.

Allinson, K. (1998) *Getting There by Design,* London, Elsevier Publications.

Amason, A. C. & Schweiger, D. (1997) The effect of conflict on strategic decision making effectiveness and organizational performance, (pp. 101-115). IN DE DREU, C. K. W. & VAN DE VLIERT, E. (Eds.) *Using conflict in organizations.* London, Sage.

Amram, M. & Kulatilaka, N. (1999) *Real options. Managing Strategic investment in an uncertain world,* Cambridge, MA, Harvard Business School Press.

Anand, G. & Kodali, R. (2008) Benchmarking the benchmarking models. *Benchmarking: An International Journal,* 15 (3), pp. 257-291.

Anderson, P.F. (1982) Marketing strategic planning, and theory of the firm. *Journal of Marketing,* 42 (Spring)**,** 15-26.

Arditi, D. & Pulket, T. (2005) Predicting the Outcome of Construction Litigation Using Boosted Decision Trees. *Journal of Computing in Civil Engineering,* 19**,** 387-393.

Atkin, B. & Flanagan, R. (1995) Improving Value for Money in Construction: Guidance for Chartered Surveyors and their Clients. London, The Royal Institution of Chartered Surveyors.

Atkinson, G. (2008) Sustainability, the capital approach and the built environment *Building Research & Information,* 36**,** 241 - 247

Atkinson, R. (1999) Project management: cost, time and quality, two best guesses and a phenomenon, its time to accept other success criteria *International Journal of Project Management,* 17(6), pp. 337-342.

Attride-Stirling, J. (2001) Thematic networks: an analytic tool for qualitative research. *Qualitative research, pp. 385 - 405,* 1 (3).

Audit Commission (2011) Better information, better decisions, better services: Deciding on eligibility for telecare services, Available at: http://www.audit-commission.gov.uk/sitecollectiondocuments/auditcommissionreports/nationalst udies/decisionguidetelecare.pdf, Accessed: 20/02/2011. Audit Commission.

Available at: http://www.nationalschool.gov.uk/policyhub/better_policy_making/ Accessed 01/10/08. Ascot, Berkshire, Civil Service, Policy Hub.

Available at: http://www.primarycarecontracting.nhs.uk/planning-and-design-guidance.php?routemap_ID=5&process_ID=14&sub_process_ID=0&activity_ID =106. *The Process.* London, Department of Health.

Baccarini, D. (1999) The Logical Framework Method for Defining Project Success. *Project Management Journal,* 30 (4), pp. 25-32.

Bandara, W. (2006) Using NVivo as pp 6-19. IN RUTH, A. (Ed.) *Quality and Impact of Qualitative Research, 3rd annual QualIT Conference, Brisbane: Institute for Integrated and Intelligent Systems.* Brisbane, Brisbane: Institute for Integrated and Intelligent Systems, Griffith University.

Banwell, H. (1964) Report of the committee on the placing and management of contracts for building and civil engineering work, IN H.M.S.O. (Ed.) London. Great Britain.

Barnes, M. (1997) *Care, Communities and citizens,* Harlow, Addison Wesley Longman.

Barrett, P. & Stanley, C. (1999) *Better Construction briefing,* Oxford, Blackwell.

Barton, R. & Pretorius, F. (2004) Managing values: challenge for public projects in Hong Kong. *Value Manager, HKIVM,* 10**,** 15 - 23.

Barton, R. T. (2000) Soft value management methodology for use in project initiation - a learning journey. *Construction Research,* 1**,** 109-122.

Bazeley, P. A. & O'rourke, B. (1996) *Getting started in research: A series of reflections for the beginning researcher,* University of Western Sydney, Macarthur.

Bejder, E. (1991) From the client's brief to end use: the pursuit of quality. IN BARRETT, P. S. & MALES, R. (Eds.) *Practice management: New perspectives for the construction professional.* London, E&FN Spon.

Bell, J. (1993) *Doing Your Research Project,* Buckingham, Open University Press.

Benaroch, M. (2001) Option-based management of technology investment risk. *IEEE Transactions of Engineering Management,* 48**,** 428-444.

BERR (2008) Code of Practice on Consultation, Available at: http://www.bis.gov.uk/files/file47158.pdf, Accessed November 2010. In Department for Business Enterprise and Regulatory Reform (Ed.), crown.

Bertelsen, S. & Emmitt, S. (2005) The client as a complex system. *13th Conference of the International Group for Lean Construction.* Sydney, Australia.

Best, R. & De Valence, G. (1999) *Building in Value: Pre-Design Issues,* London, Arnold Publishers.

Bhushan, N. & Rai, K. (2004) *Strategic decision making: applying the analytic hierarchy process* Bangalore, India, Springer-Verlag.

Bhutta, K. S. & Huq, F. (1999) Benchmarking – best practices: an integrated approach. *Benchmarking: An International Journal,* 6 (3), pp. 254-268.

Blismas, N. & Dainty, A. (2003) Computer-aided qualitative data analysis: panacea or paradox? *Building Research and Information,* 31(6) pp. 455 - 463

Blyth, A. & Worthington, J. (2010) *Managing the brief for better design, 2 ed.,* London and New York, Routledge.

Bordass, B. & Leaman, A. (1997) Future buildings and their services: Strategic considerations for designers and clients. *BUILDING RESEARCH & INFORMATION,* 25**,** 190-195.

Borman, K. M., Clarke, C., Cotner, B. & Lee, R. (2006) Cross-case analysis, pp. 123 - 140. In GREEN, J. L., CAMILLI, G. & ELMORE, P. B. (Eds.) *Handbook of complementary methods in education research, American Educational Research Association.* NJ., Lawrence Erlbaum Associates, Inc.

Bouchlaghem, D., Rezgui, Y., Hassanen, M., Cooper, G. & Rose, D. (2000) IT tools and support for improved briefing. *Construction Informatics Digital Library http://itc.scix.net/.paper* w78-2000-124.

Bouma, G. D. & Atkinson, G. B. J. (1995) *A handbook of social science research: A comprehensive and practical guide for students* Oxford, Oxford University Press.

Bourke, K., Ramdas, V., Singh, S., Green, A., Crudington, A. & Mootanah, D. (2005) *Achieving whole life value in infrastructure and buildings,* Watford, UK, BRE Bookshop.

Boute, R., Demeulemeester, E. & Herroelen, W. (2004) A real options approach to project management. *International Journal of Production Research,* 42**,** 1715-1725.

Boyd, D. & Chinyio, E. (2006) *Understanding the construction client,* Oxford, Blackwell.

BPF (1983) *Manual of the BPF System: The British Property Federation System for Building Design and Construction,* London, British Property Federation.

Brandon, P. (1978) A framework for cost exploration and strategic cost planning in design. *Chartered surveyor, B and QSQ,* 5.

Brinberg, D. & McGrath, J. E. (1985) *Validity and the Research Process,* Beverly Hills, CA, Sage Publishing.

Broyles, J. E. (2003) *Financial management and real options,* Chichester, Wiley and Sons.

Bruce, M. & Cooper, R. (2000) *Creative product design : a practical guide to requirements capture management* Chichester, Wiley.

Bruce, S. & Yearley, S. (2006) *The sage dictionary of sociology,* London, Sage.

Brudney, J. L. & England, R. E. (1982) Urban policy making and subjective service evaluations: Are they compatible? *Public Administrative Review,* 42 (2), pp. 127-135.

Bryman, A. & Burgess, R. (1994) *Analysing Qualitative Data,* London, Routledge.

Bryman, A. (2004) *Social research methods (2nd Ed.),* Oxford, Oxford University Press.

Bryne, M. (2001) Data analysis strategies for qualitative research *AORN, available at , accessed 21/12/2009.*

BS/ISO (2005) 15686 Part Building and Constructed Assets - Service life planning - Whole Life Costing. Available at www.bsi-global.com.

BSI (2000) British Standards Institution. *BSEN ISO 09001:2000, Quality Management Systems - Requirements.* Milton Keynes, UK

Building (2000) Cost Model: Value for money, *Building, available at:http://www.building.co.uk/data/cost-model-value-for-money/1348.article, Accessed: June 2008,* Issue 26, June 2000.

Burke, J., O'Campo, P., Peak, G., Gielen, A., McDonnell, K. & Trochim, W. K. (2005) An Introduction to Concept Mapping as a Participatory Public Health Research Method, Available at:

http://www.socialresearchmethods.net/research/burke_ocampo.pdf   Accessed Feb. 2010. *Qualitative Health Research,* 15(10), pp.1392-1410.

CABE (2002a) The design brief. *Supplement to the Client Guide for ACP Projects, Available at:http://www.cabe.org.uk/files/acp-design-brief.pdf, Accessed 09/10/10.*

CABE (2005) *Design Quality and the Private Finance Initiative,* London, CABE.

CABE (2006) The principles of inclusive design (they include you). IN Commission for Architecture and the Built Environment, CABE. Available at: http://www.cabe.org.uk/publications/the-principles-of-inclusive-design, Accessed July, 2010

Camp, R. C. (1989) *Benchmarking: The search for best practices that lead to superior performance,* Milwaukee, WI, ASQC Quality Press.

Carr, R. F. (2011) Hospital. *Whole Building Design Guide, Available at: http://www.wbdg.org/design/hospital.php, Accessed April, 2011.*

Chandra, V. & Loosemore, M. (2010) Mapping stakeholders' cultural learning in the hospital briefing process. *Construction Management and Economics (July 2010) 28, 761–769*

Checkland, P. (1981) *Systems thinking System Practice,* Chichester, Wiley.

Checkland, P. (2000) Soft Systems Methodology: A thirty year retrospective. *Systems Research and Behavioural Science,* S11-S58.

Cheng, J., Proverbs, D. & Oduoza, C. F. (2006) The satisfaction levels of UK construction clients based on the performance of consultants: Results of a case study *Engineering, Construction and Architectural Management, Vol. 13 Iss: 6, pp.567 - 583.*

Cheong, S., Anumba, C., Hill, R. & Bouchlaghem, D. (2003) Improving construction client satisfaction through functional briefing. *2003 Construction Research Congress Conference 'Winds of Change: Integration and Innovation in Construction'.* Honolulu, HI, American Society of Civil Engineers.

Cherry, E. (1998) *Programming for Design: From Theory to Practice* New York, John Wiley and Sons.

Chinyio, E. & Akintoye, A. (2008) Practical approaches for engaging stakeholders: findings from the UK. *Construction Management and Economics, 26, 591-599.*

Chinyio, E. (2007) A shared project brief. IN SEXTON, M., KAHKONEN, K. & LIU, S. (Eds.) *CIB Priority Theme - Revaluing construction.* CIB Publication 313.

Christoffersen, A. K. & Emmitt, S. (2009) Exploring the value universe: A values-based approach to design management, pp.34-52. IN EMMITT, S., PRINS, M. & OTTER, A. D. (Eds.) *Architectural Management: International research and Practice.* Chichester, England, Wiley-Blackwell.

CIB (1997) *Briefing the Team, a guide to better briefing for clients,* London, Construction Industry Board - Thomas Telford.

CIC (2003) Design Quality Indicator Online. Available at: http://www.dqi.org.uk/dqi/common/dqionline.pdf.

CIM (1994) 1994 Capital Investment Manual, Available at http://www.dh.gov.uk/en/publicationsandstatistics/publications/publicationspolic yandguidance/dh_4119896 , Accessed 14/03/08. London, Department of Health.

Cleland, D. J. (1995) *Project Management Strategic Design and Implementation,* Singapore, McGraw-Hill.

Codinhoto, R., Tzortzopoulos, P., Kagioglou, M., Aouad, G. & Cooper, R. (2009) The impacts of the built environment on health outcomes *Facilities,* Volume 27, Numbers 3-4, 2009 , pp. 138-151.

Coffey, A., Holbrook, B. & Atkinson, P. (1996) Qualitative Data Analysis: Technologies and Representations. *Sociological Research Online:1(1)<http://www.socresonline.org.uk/socresonline/1/1/4.html>.*

Connaughton, J., N., & Green, S. D. (1996) *Value Management in construction : a client's guide,* London, CIRIA.

Corbin, J. & Strauss, A. (1990) Grounded Theory Research: Procedures, Canons and Evaluative criteria *Qualitative Sociology,* 13.

Corbin, J. & Strauss, A. (2008) *Basics of qualitative research (3rd Ed.),* Los Angeles, CA, Sage.

Creswell, J. & Miller, D. L. (2000) Determining validity in qualitative inquiry. *Theory into Practice,* 39(3), 124-131.

Creswell, J. W. (2009) *Research Design: Qualitative, quantitative, and mixed methods approaches, 3rd Edition,* California, SAGE.

Crotty, M. (1998) *The foundations of social research: meaning and perspectives in the research process,* Thousand Oaks, CA., Sage.

Daellenbach, H. G. & Mcnickle, D. C. (2005) *Management science: decision making through systems thinking* Basingstoke, Hampshire, Palgrave Macmillan.

Dainty, A. (2008) Methodological pluralism in construction management research (pp 1-12). IN KNIGHT, A. & RUDDOCK, L. (Eds.) *Advanced research methods in the built environment.* Chichester, UK, Wiley-Blackwell.

Dainty, A., Bagilhole, B. & Neale, R. (2000) A grounded theory of women's career underachievement in large UK construction companies. *Construction Management and Economics,* 18, 239-250

Dalkey, N. & Helmer, O. (1963) An experimental application of the Delphi method to the use of experts. *Management Science,* 9(3), pp. 458-467.

Darzi, L. (2008) NHS Next Stage Review: Leading Local Change. London, Department of Health (DH).

Davison N., Gibb, A. G., Austin, S. A. & Goodier, C. I. (2006) The multi space adaptable building concept and its extension into mass customisation. *Adaptables'06.* Eindhoven The Netherlands, Eindhoven University of Technology.

Daykin, N., Byrne, E., Soteriou, T. & O'Connor, S. (2008) The impact of arts, design and environment in mental healthcare: A systematic review of the literature. *Journal of the Royal Society for the Promotion of Health,* 128(2), pp. 85-94.

DDA (1995) Disability Discrimination Act 1995, Available at: http://www.legislation.gov.uk/ukpga/1995/50/contents, Accessed, November, 2010. UK.

DDA (2005) The Disability Discrimination Act 2005, Available at: http://www.legislation.gov.uk/ukpga/2005/13/contents, Accessed, November 2010.

Decrop, A. (1999) Triangulation in qualitative tourism research. Tourism Management, Vol. (20), pp. 157-161.

de Valence, G. (1999) Project Initiation. IN BEST, R. & DE VALENCE, G. (Eds.) *Building in Value: Pre-design issues.* London, Arnold.

de Wit, A. (1988) Measurement of project success. *Project management,* 6(3), pp. 164-170.

Delbecq., A. L., Van De Ven, A. H. & Gustafson, D. H. (1975) *Group techniques for program planning: A guide to Nominal Group and Delphi processes,* Glenview, IL., Scott Foreman and Co.

Dell'isola, A. (1997) *Value Engineering: Practical Applications....for Design, Construction, Maintenance & Operations,* Kingston, MA., R.S. Means Company.

Deming, E. W. (2000) *Out of the crisis,* Cambridge, Mass., MIT Press.

Dennis, A. R. & Valacich, J. S. (1999) Electronic brainstorming: Illusion and patterns of productivity. *Information Systems Research,* 10 (4)**,** 89-101.

Denscombe, M. (2007) *The good research guide: for small-scale social research projects, 3 Ed.,* Berkshire, England, Open University Press/McGraw Hill Education.

Denzin, N. (1994) The art and politics of interpretation, pp. 500–15. IN DENZIN, N. & LINCOLN, Y. (Eds.) *Handbook of Qualitative Research.* London, Sage.

deRosa, D. M., CARTER, L. S. & HANTULA, D. A. (2007) The medium matters: Mining the long-promised merit of group interaction in creative idea generation tasks in a meta-analysis of the electronic group brainstorming literature. *Computers in Human Behaviour,* 23**,** 1549-1581.

Dey, I. (1993) *Qualitative data analysis: a user-friendly guide for social scientists* London, Routledge.

DH (2000a) Sold on Health: Modernising procurement, operation and disposal of the NHS estate. Available at: http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4117472, Accessed: 18/08/08. London, Department of Health

DH (2000b) The NHS Plan: A plan for investment. A plan for reform. London, Department of Health, HMSO.

DH (2003a) Strengthening Accountability, Involving Patients and the Public: Practice guidance Section 11 of the Health and Social Care Act 2001. London, Department of Health, HMSO.

DH (2003b) Response to Reforming NHS Financial Flows: Introducing Payment by Results. London, Department of Health.

DH (2004a) Choose and Book: Patients choice of hospital and booked appointment - Policy framework. London, Department of Health, HMSO.

DH (2004b) Treasury's new value for money assessment for PFI: Guidance for NHS build schemes: overview. Available at:http://www.dh.gov.uk/en/PublicationsAndStatistics/Publications/PublicationsProcurement/DH_4120114. Accessed: 12/09/08. London, Department of Health.

DH (2005) PFI Guidance. Available at: http://www.dh.gov.uk/en/Procurementandproposals/Publicprivatepartnership/Privatefinanceinitiative/PFIguidance/DH_4108133. London, Department of Health.

DH   (2007a)   About   NHS   LIFT,   Available   from
http://www.dh.gov.uk/en/Procurementandproposals/Publicprivatepartnership/nh
slift/dh_4000519, accessed 16/09/08. London, Department of Health.

DH   (2008)   Patient   and   Public   Involvement.   Available
from:http://www.dh.gov.uk/en/managingyourorganisation/patientandpublicinvolv
ement/dh_085874. Accessed: 03/08/08 London, Department of Health

DH (2010a) Equity and excellence: Liberating the NHS, Available at:
http://www.dh.gov.uk/en/publicationsandstatistics/publications/publicationspolic
yandguidance/dh_117353 Accessed, January 2011. IN Department of Health
(Ed.), Crown Copyright.

DH (2010b) Hospital estates and facilities statistics, 2009/10, Available at:
http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsStati
stics/DH_120783 Accessed, May 2011. IN Department of Health (Ed.), Crown
Copyright.

Dhillon, G. (2005) Gaining benefits from IS/IT implementation: Interpretations from
case study. *International Journal of Information Management,* 25**,** 502-515

Diehl, M. & Stroebe, W. (1987) Productivity loss in brainstorming groups: Toward the
solution of a riddle. . *Personality and Social Psychology,* 53**,** 497-509.

Dienel, P.C. (1989) Contributing to social decision methodology: citizen reports on
thechnological processes. In VLEK, C. A. J. & CVETKOVICH (Eds.) *Social
decision methodology for technological projects.* Dordrecht, Netherlands,
Kluwer Academic Publishers.

Dodgson, J., Spackman, M., Pearman, A. D. & Phillips, L. D. (2000) Multi-criteria
analysis: a   manual,   Available   at
http://www.communities.gov.uk/documents/corporate/pdf/146868,   Accessed
June 2009. In Department of the Environment Transport and Regions London
(Ed.).

Douglas, C. H. & Douglas, M. R. (2005) Patient-centred improvements in health-care
built environments: perspectives and design indicators. *Health Expect,* 8**,** 264-
76.

Douglas, C. H. & Douglas, M. R. (2005) Patient-centred improvements in health-care
built environments: perspectives and design indicators. *Health Expect,* 8**,** 264-
76.

Drucker, P. F. (1993) Post-Capitalist society, NY, Harper Collins

Duerk, D. P. (1993) *Architectural Programming: Information Management for Design,*
NY, Published 1993

Earl, G. & Clift, R. (1999) Stakeholder value analysis: a methodology for integrating
stakeholder values into corporate environmental investment decisions.
Business Strategy and the Environment, 8(3)**,** 149-162.

Easterby-Smith, M., Thorpe, R. & Lowesmith, A. (2001) *Management Research: An
Introduction,* London, SAGE.

Eden, C. & Ackermann, F. (2001) SODA -   the principles. IN ROSENHEAD, J. &
MINGERS, J. (Eds.) *Rational Analysis for a problematic world revisited:
Problem Structuring Methods for complexity, pp 21-41.* 2nd ed. Chichester,
Wiley.

Egan, J. (1998) Rethinking construction : the report of the Construction Task Force to
the Deputy Prime Minister, John Prescott, on the scope for improving the

quality and efficiency of UK construction. . IN EGAN, J. L. (Ed.) London, DETR, Great Britain. Construction Task Force

Egan, J. (2002) Accelerating Change. London, Strategic Forum for Construction.

Eisenhardt, K. (2002) Building theories from case study research, pp 5-35. IN HUBERMAN, A. M. & MILES, M. B. (Eds.) *The qualitative researcher's companion.* Thousand Oaks, CA., Sage Publications.

El-Haram, M., Marenjak, S. & Horner, M. W. (2002) Development of a generic framework for collecting whole life cost data for the building industry. *Quality in Maintenance Engineering,* 8**,** 144-151.

Ellis, C., Balwin, E. & Dick, R. (2010) Refocusing the NHS estate: A ten point plan to facilitate radical cost reduction and service transformation, Available at: http://www.publicpropertyuk.com/wp-content/uploads/2010/10/REFOCUSING-THE-NHS-ESTATE_whitepaper_FINAL_V3.pdf Accessed, May, 2011. EC Harris/Health.

Emmitt, S. & Gorse, C. (2003) *Construction communication,* Oxford, Blackwell.

Emmitt, S. & Gorse, C. (2007) *Communication in construction teams,* Oxon, UK, Taylor and Francis.

Emmitt, S. (2007) *Design Management for Architects,* Oxford, Blackwell Publishing.

Emmitt, S. (2010) *Managing interdisciplinary projects: A primer for architecture, engineering and construction,* Oxon, UK, Spon Press.

Evans, R., Haryott, R., Haste, N. & Jones, A. (1998) The long term costs of owning and using buildings. London, The Royal Academy of Engineering.

Evans, R., Haryott, R., Haste, N. & Jones, A. (2004) The long term costs of owning and using buildings. In Macmillan, S. (Ed.) *Designing Better Buildings.* NY/London, Spon Press.

Feldberg, M. (1975) *Organizational Behaviour: Text and Cases,* Cape Town, Juta and Company.

Fellows, R. & Liu, A. (2008) *Research Methods for Construction* Oxford, Blackwell Publishing

Ferry, D. J. O. & Flanagan, R. (1991) Life cycle costing - a radical approach. London, CIRIA.

Fiol, M. C. & Lyles, M. A. (1985) Organizational learning. *Academy of Management Review,* 10, pp. 803-813.

Ford, D. N. & Sobek, D. K. (2005) Adapting real options to New Product Development by Modelling the Second Toyota Paradox. *IEEE Transactions of Engineering Management,* 52**,** 175-185.

Foucault, M. (1972) *The archaeology of knowledge; translated from the French by A.M. Sheridan Smith. ,* London, Tavistock Publications.

Freeman, R. E. & Mcvea, J. (2001) A Stakeholder Approach to Strategic Management. *Darden Business School Working Paper No. 01-02. Available at SSRN: http://ssrn.com/abstract=263511*.

Freeman, R. E. (1984) *Strategic management: a stakeholder approach,* Boston, Pitman.

Friedman, J. W. (1986) *Game theory with applications to economics,* New York, Oxford University Press

Friend, J. & Hickling, A. (1997) *Planning under Pressure: The Stratetic Choice Approach,* Oxford, Butterworth-Heinemann.

Friend, J. (2001) The Strategic Choice Approach. IN ROSENHEAD, J. & MINGERS, J. (Eds.) *Rational Analysis for a Problematic World: Problem Structuring Methods for Complexity, pp. 115-149.* 2nd ed. Chichester, Wiley.

Fruchter, R. & Demian, P. (2002) Knowledge Management for Reuse *Proceedings of the CIB W78 Conference 2002 - Distributing Knowledge in Building, vol. 1, pp. 93-100.* CIB W78.

Gallupe, R., Dennis, W., Cooper, J., Valacich, L., Bastianutti, L. & Nunamaker, J. (1992) Electronic brainstorming and group size *The Academy of Management Journal,* 35**,** 350-369.

Gambrill, B. (2003) Channel Tunnel Rail Link: From options to approval. *Proceedings of ICE: Civil Engineering 156,* Paper 13222, May, pp. 11-17.

Geertz, C. (1973) *The interpretation of cultures,* NY, Basic Books.

Georgiou, I. (2008) Making decisions in the absence of clear facts. *Operational Research,* 185**,** 299-321.

Gibb, A. (2001) Standardization and pre-assembly - distinguishing myth from reality using case study research. *Construction Management and Economics,* 19**,** 307-315.

Gibbons, R. (1992) *A primer in game theory*, Financial Times Prentice Hall.

Gill, J. & Johnson, P. (2002) *Research Methods for Managers,* London, SAGE.

Glanville, R. (2003) A blueprint for future health buildings in the UK. Available at: http://www.touchbriefings.com/download.cfm?fileID=119, Access date: 26/06/08. *Hospital engineering and facilities management.* Touch briefings.

Glaser, B. & Strauss, A. (1967) *The discovery of Grounded Theory,* Chicago, Aldine.

Goodacre, P., Pain, J., Murray, J. & Noble, M. (1982) Research in building design : Occassional Paper No. 7. Reading, University of Reading, Department of Construction Management.

Goodman, R. H. (1972) Systems Health Building. *Philosophical transactions of the Royal Society of London. Series A, Mathematical and Physical Sciences,* 272**,** 611-619.

Gorse, C. A. (2009) Researching interpersonal communication in AEC projects. IN EMMITT, S., PRINS, M. & OTTER, A. D. (Eds.) *Architectural Management: International research and practice, pp. 55-71.* Chichester, England, Wiley-Blackwell.

Gray, C. & Al Bizri, S. (2006) Development of QFD to support decision making during the briefing process. *Montreal International Confrence* Montreal.

Grbich, C. (2007) *Qualitative data analysis: an introduction,* London, Sage.

Green, A. (2005) Best value optioneering. *Modern Building services, Available on: www.modbs.co.uk/news/fullstory.php/aid/1509/Best-value_optioneering.html.*

Green, S. D. & Liu, A. M. (2007) theory and practice in Value Management: a reply to Ellis et al. (2005). *Construction Management and Economics,* 25**,** 649 - 659.

Green, S. D. & Simister, S. J. (1999) Modelling Client Business Processes as an aid to Strategic Briefing. *Construction Management and Economics* 17**,** 63 - 76.

Green, S. D. (1992) *A SMART methodology for value management, Occasional Paper No. 53,* Ascot, Chartered Institute of Building.

Green, S. D. (1994) Beyond value engineering: SMART value management for building projects. *International Journal of Project Management* 12**,** 49 - 56.

Green, S. D. (1996a) Group decision support for value management. IN LANGFORD, D. (Ed.) *CIB W-65 Symposium, Shaping Theory and Practice.* Glasgow.

Green, S. D. (1996b) A Metaphorical Analysis of Client Organizations and the Briefing Process. *Construction Management and Economics,* 14**,** 155 - 164.

Green Book (2002) *The Green Book: Appraisal and Evaluation in Central Government,* London, HM Treasury.

Greenhalgh, T. (1997) How to read a paper: Papers that tell you what things cost (economic analyses) *BMJ* 315, 6 September, 596-599.

Guba, E. G. & Lincoln, Y. S. (1989) *Fourth generation evaluation,* Newbury Park, CA., Sage.

Habraken, J. (2008) Open building - brief introduction, Available at http://www.habraken.org/html/introduction.htm, accessed, July, 2008.

Hackney, R., Dhillon, G. & McBride, N. (1997) Primary care information technology within the NHS: The concept of markets and hierarchies on systems exploitation. *International Journal of Public Sector Management,* 10 388 - 395.

Haigh, R. (2008) Interviews: A negotiated partnership, pages 111-120. IN KNIGHT, A. & RUDDOCK, L. (Eds.) *Advanced research methods in the built environment.* Chichester, UK, Wiley-Blackwell.

Hammersley, M. & Atkinson, P. (1983) *Ethnography: Principles in Practice,* London, Tavistock Publications.

Hammersley, M. & Atkinson, P. (2007) *Ethnography: Principles in practice, 3rd ed.,* London, Routledge.

Hammersley, M. (1992) *What's wrong with ethnography? : Methodological explorations,* London & New York, Routledge.

Hansen, K., Lee, & Vanegas, J., A. (2003) Improving design quality through briefing automation. *BUILDING RESEARCH & INFORMATION* 31**,** 379-386.

Harris, R. (1998) Decision Making Techniques. *Virtual Salt. Available: http://www.virtualsalt.com/crebook6.htm. Accessed: 27/06/2008.*

Haugen, T. (2006) Meeting changing user demands through adaptability (Guest Editor: CIB070 2006: Trondheim International Symposium). *Facilities,* 25.

Hawkins, B. (1999) *How to generate great ideas,* London, Kogan Page.

Heap, R. (2010) NHS reform leaves property professionals in the dark, Available at: http://www.publicpropertyuk.com/2010/07/30/nhs-reform-leaves-property-professionals-in-the-dark/ Accessed May, 2011. Public Property UK. Com.

Heller, E. D. (1971) *Value Management: Value Engineering and Cost Reduction, ,* Massachusetts, Addison - Wesley.

Heron, J. & Reason, P. (1997) A participatory inquiry paradigm. *Qualitative Inquiry,* 3 (3) 274-294.

Heron, J. (1996) *Co-operative Inquiry: Research into the Human Condition,* London, Sage Publications.

Hildrey, S. (2003) Spice things up: you've deliberated, cogitated and diversified—now it's time to look at your satellite holdings. Available at: http://findarticles.com/p/articles/mi_hb5067/is_245/ai_n29021772, Accessed 01/12/08. *What Investment.*

Hillier, B. & Galal, G. (1999) 'Capturing emergence'. *Proceedings from Fourth IEEE International Symposium on requirements engineering.*

Holt, R. (2001) Creating whole life value proxemics in construction projects. *Business Strategy and the Environment,* 10**,** 148-160.

Holton, I., Glass, J. & Price, A. D. F. (2010) Managing for sustainability: findings from four company case studies in the UK precast concrete industry. *Journal of Cleaner Production* 18 (2010), pp. 152-160.

Holzer, D. & Downing, S. (2010) Optioneering: A new basis for engagement between architects and their collaborators. *Architectural Design,* Volume 80, Issue 4, pp. 60 - 63.

Horner, M., El-Haram, M. A. & Marenjak, S. (2010) *Whole Life Costing: In the construction industry,* Oxford, John Wiley and Sons Ltd.

HPERU (2008) Survey on the general public's views on NHS system reform, Available at:
http://www.bma.org.uk/ap.nsf/attachmentsbytitle/pdfpublicviews/$file/publicview s.pdf. Accessed on 26/08/08. Health Policy and Economic Research Unit.

Hudson, J., Gameson, R. N. & Murray, J. P. (1990) The use of computer systems to improve communication between clients and construction professionals during the briefing process IN PETER BARRETT & MALES, R. (Eds.) *Practice Management: New Perspectives for the Construction Professional* London and New York, Taylor and Francis group.

Hughes, W. P. (1991) Analysing construction projects using plans of work. IN HORNER, R. M. W. & ZAJA, M. (Eds.) *East meets west: International conference on construction project modelling and productivity.* Dubrovnik. *International Journal of Educational Management,* 16 (1), pp. 6-17.

ISO 9699 (1994) *Performance Standards in Building: checklist for briefing - Contents of Brief for Building Design* International Organization for Standardization.

IVM (2010) The Institute of Value Management Techniques, Available at: http://www.ivm.org.uk/techniques.php, Accessed, October 2010. Institute of Value Management.

Jack, E. P. & Raturi, A. (2006) Lessons learned from methodological triangulation in management research. *Management Research News,* 29**,** 345-357.

Jackson, K. & Trochim, W. (2002) Concept mapping as an alternative approach for the analysis of open-ended survey responses. *Organizational Research Methods,* 5(4), October, pp.307-336.

Jemmott, H. (2008) Using NVivo for Qualitative Data Analysis. *Analysis,* 1(February), pp.7-7, Stanford University.

Jensen, K. (1991) Introduction: The Qualitative Turn, pp. 1-12. IN JENSEN, K. & JANKOWSKI, N. (Eds.) *A Handbook of Qualitative Methodologies for Mass Communications Research.* London, Routledge.

Jensen, P. A. (2006) Continuous briefing and user participation in building projects. IN SCHEUBLIN, F. (Ed.) *Adaptables '06.* Eindhoven, Eindhoven University of Technology, Netherlands.

Johnson, B. (1997) Examining the Validity Structure of Qualitative Research. Education, Vol. 118.

Johnson, G., Scholes, K. & Whittington, R. (2008) *Exploring corporate strategy: Text and cases. 8th edition, Harlow, England,* FT Prentice Hall

Johnson, P. & Duberley, J. (2000) *Understanding Management Research: An Introduction to Epistemology,* London, Sage.

Jonker, J. & Foster, D. (2002a) Stakeholder excellence? Framing the evolution and complexity of a stakeholder perspective of the firm *Corporate Social Responsibility and Environmental Management,* 9**,** 187-195

Joppe, M. (2004) The research process, Available at http://www.ryerson.ca./~mjoppe/rp.htm Accessed October 2010.

Kagioglou, M., Cooper, R., Aouad, G. & Sexton, M. (2000) Rethinking construction: the Generic Design and Construction Process Protocol. *Engineering, Construction and Architectural Management* 7**,** 141-153.

Kahraman, C. (2008) *Fuzzy multi-criteria decision making: theory and applications with recent developments,* NY, Springer.

Kamara, J., Anumba, C. & Evbuomwan, N. (2001) Assessing the suitability of current briefing practices in construction with a concurrent engineering framework. *International Journal of Project Management,* 19**,** 337-351.

Kamara, J., Anumba, C. & Evbuomwan, N. (2002) *Capturing client requirements in construction projects* London, Thomas Telford.

Kam-Chuen, L. (2005) The management of multi-headed clients in design and construction – The case of hospitals. *Business Briefing: Hospital Engineering and Facilities Management,* Issue 2.

Kats, G., Alevantis, L., Berman, A., Mills, E. & Perlman, J. (2003) The costs and financial benefits of green buildings. IN KATS, G. (Ed.), California's Sustainable Building Task Force.

Keeney, R. (1994) Creativity in decision making through Value-focused thinking. *Sloan Management Review (34) 5, pp 33-41.*

Keeney, R. L. (1996) *Value-focused thinking: a path to creative thinking,* Cambridge, MA., Harvard University Press.

Kelly, G., Mulgan, G. & Muers, S. (2002) Creating Public Value - An Analytical Framework for Public Service Reform. IN CABINET OFFICE, Strategy Unit, UK Government, London.

Kelly, J. & Male, S. (1993) *Value management in design and construction,* London, E& FN Spon.

Kelly, J. (2002) *Best Value in Construction* Oxford, Blackwell Publishing Ltd.

Kelly, J. (2007) Making client values explicit in value management workshops *Construction Management and Economics,* 25**,** pages 435 - 442

Kelly, J., Hunter, K., Shen, G. & Yu, A. (2005) Briefing from a facilities management perspective. *Facilities,* 23**,** 356-367.

Kelly, J., Male, S. & Graham, D. (2004) *Value Management of Construction Projects,* Oxford, Blackwell Science.

Kelly, J., Shen, Q., Hunter, K. & Yu, A. (2003) The development of a theoretical framework for briefing using a VM approach. IN PROVERBS, D. (Ed.) *RICS Foundation Construction and Building Research Conference.* University of Wolverhampton, COBRA/RICS.

Kilner, R. G. & Founds, C. (2007) 2020 Liverpool - Performance and value for money. *Proceedings of the Institution of Civil Engineers Municipal Engineer 160.*

Kim, H. M. & Ramkaran, R. (2004) Best practices in e-business process management: Extending a re-engineering framework. *Business Process Management Journal,* 10(1), pp. 27-43.

Kirk, J. & Miller, M. L. (1986) *Reliability and validity in qualitative research,* Beverly Hills, CA., Sage Publications, Inc.

Kirkham, R. J., M., A., Da Silva, A. P., Grindley, T. & Brondsted, J. (2004) EUROLIFEFORM: An integrated probabilistic Whole Life Cycle Cost and Performance Model for Buildings and Civil infrastructure. IN ELLIS, R. & BELL, M. (Eds.) *The international construction research conference of the Royal Institution of Chartered Surveyors.* Leeds Metropolitan University, COBRA

Kishk, M., Al-Hajj, A. & Pollock, R. (2003a) Whole Life Management of Buildings: Towards closing the feedback loop. IN PROVERBS, D. (Ed.) *The RICS Foundation Construction and Building Research Conference.* University of Wolverhampton, UK, RICS Foundation.

Kishk, M., Al-Hajj, A., Pollock, R., Aouad, G., Bakis, N. & Sun, M. (2003b) Whole life costing in construction: A state of the art review. *RICS Foundation Research Papers, 4(18) pp. 1-39.*

Kogut, B. & Kulatilaka, N. (1994) Options thinking platform investments: Investing in opportunity. *California Managament Review.*

Kogut, B. & Kulatilaka, N. (2001) Capabilities as real options. *Organisation Science,* 12 (6)**,** 744-758.

Kohler, W. (1966) *The place of value in a world of facts,* New York, Liverlight,.

Kosso, P. (2002) The Omniscienter: beauty and scientific understanding *International Studies in the Philosophy of Science,* 16 (1), pp. 39-48(10).

Krantz, L. & Thomason, A. (1999) *Strategic Investment Decisions. Harnessing opportunities managing risks,* London, FT Prentice Hall.

Kushilevitz, E. (1997) Communication Complexity. *Advances in Computers,* 44, pp. 331-360

Latham, M. (1994) Constructing the Team: Joint Review of Procurement and Contracting Arrangements in the UK Construction Industry. London.

Lawson, B. (2005) Evidence-based Design for Healthcare. *Business briefing: Hospital Engineering and Facilities management***,** 25-27.

Lawson, B. R. & Phiri, M. (2003) *The Architectural Healthcare Environment and its Effects on Patient Health Outcomes,* London, The Stationery Office.

Lawson, B. R. (1997) *How Designers Think (3rd Ed.),* Oxford Architectural Press.

Leaman, A., Bordass, B., Cohen, R. & Standeven, M. (1997) The Probe Occupant Surveys: Buildings in use. *Probe Conference.* London, CIBSE.

Leinenger, M. M. (1985) Ethnography and ethnography: models and modes of qualitative data analysis, pp 33-72. IN LEINENGER (Ed.) *Qualitative methods in nursing.* Orlando, FL, Grune and Stratton.

Leinonen, J. & Huovila, P. (2000) The house of the rising value. Available at: http://www.iglc.net/conferences/2000/Papers/. Accessed on 10/06/08. *IGLC 9.* Brighton, IGLC.

Lima, C. & Augenbroe, G. (2007) The use of formal methods for decision-making in the planning phase of healthcare services. *The construction and building research conference.* Georgia, Atlanta - USA, RICS.

Lincoln, Y. S. & Guba, E. G. (1985) *Naturalistic inquiry,* Beverly Hills, CA., Sage.

Linstone, H. & Turoff, M. (1975) *The Delphi method: Techniques and applications,* Reading, Mass., Addison-Wesley.

Liu, A. M. (2002) Developing a soft value management model. *International Journal of Project Management,* 20**,** 341 - 349.

London, K., Chen, J. & Bavinton, N. (2005) Adopting reflexive capability in international briefing. *Facilities,* 23 (7/8), pp.295 - 318.

Loosemore, M. (2006) Managing project risks, pp. 187-204. IN PRYKE, S. & SMYTH, H. (Eds.) *The management of complex projects: a relationship approach* Oxford, Blackwell Publishing Ltd.

Luck, R., Haenlein, H. & Bright, K. (2001) Project Briefing for accessible design. *Design Studies,* 22**,** 297-315.

Macmillan, S. (2006) Added value of good design, *Building Research & Information,* 34**,** 257 - 271

Male, S., Kelly, J., Fernie, S., Gronqvist, M. & Bowles, G. (1998) *The value management benchmark: A framework for clients and practitioners,* London, Thomas Telford.

Male, S., Kelly, J., Gronqvist, M. & Graham, D. (2007) Managing value as a management style for projects. *International Journal of Project Management,* 25**,** 107-114.

Malkin, J. (2003) The Business Case for Creating a Healing Environment. Available at: http://www.touchbriefings.com/pdf/13/hosp031_r_malkin%5B1%5D.pdf *Business briefing: Hospital Engineering and Facilities management*

Manowong, E. & Ogunlana, S. (2010) Strategies and tactics for managing construction stakeholders. IN CHINYIO, E. & OLOMOLAIYE, P. (Eds.) *Construction stakeholder management.* Chichester, England, Wiley-Blackwell.

Mathison, S. (1988) Why triangulate? *Educational Researcher,* 17(2), pp. 13-17.

Maxwell, J. A. (2004) Causal explanation, qualitative research, and scientific inquiry in education. *Educational Researcher,* 33(2), 3-11.

Mayring, P. (2000) Qualitative Content Analysis [28 paragraphs]. *Forum for Qualitative Social Research, [On-line Journal], Available at: http://qualitative-research.net/fqs/fqs-e/2-00inhalt-e.htm, Accessed: Dec. 2009,* 1(2)

Mays, N. & Pope, C. (1995) Qualitative Research: Rigour and Qualitative Research. *BMJ,* 311(6997), 109-112.

McCabe, S. (2010) *Corporate strategy in construction: Understanding today's theory and practice,* Chichester, England, Wiley - Blackwell.

McGregor, W. & THEN, D. S. (1999) *Facilities Management and the Business of Space,* Oxford, Butterworth-Heinemann.

McIvor, R. (2000) A practical framework for understanding the outsourcing process. *Supply Chain Management: An International Journal, ,* Vol. 5 (1), pp.22 - 36.

McKerlie, D. & Maclean, A. (1993) QOC in action: Using design rationale to support design. INTERCHI '93, Open University.

McKerlie, D. & MACLEAN, A. (1994) Reasoning with design rationale: Practical experience with Design Space Analysis. *Design Studies,* 15 (2)**,** 214-226.

Mclennan, b. (2008) Work-integrated learning (WIL) in Australian Universities:the challenges of mainstreaming WIL. *ALTC NAGCAS National Symposium, June 2008.* Melbourne.

McLennan, P. (2000) Intellectual capital: future competitive advantage for facility management. *Facilities, 18(3/4), pp.168 -172.*

Merriam, S. B. (1988) *Case study research in education: a qualitative approach,* San Francisco; London, Jossey - Bass.

Merriam, s. B. (2009) *Qualitative research: a guide to design and implementation,* San Francisco, John Wiley and Sons Inc.

Milburn, A. (2001) Empowering the NHS Frontline - Labour Government's Agenda for Second Term. Speech by the Secretary of State, June, 2001. Available at: http://www.dh.gov.uk/en/News/Speeches/Speecheslist/DH_4000748 Accessed on 22/05/08. London, Department of Health.

Miles, L. (1961) *Techniques of value analysis and value engineering,* New York, McGraw Hill.

Miller, L. & May, D. (2006) Patient choice in the NHS: How critical are facilities and services in influencing patient choice? *Facilities,* 24**,** 354-364.

Miller, R. L. & Swensson, E. S. (2002) *Hospital and healthcare facility design,* New YORK, Norton and Company.

Mintzberg, H., Lampel, J., Quinn, J. B. & Ghoshal, S. (2004) *The Strategy process: concepts, contexts and cases,* Harlow, Pearson Education Ltd.

Mintzberg, H., Raisinghani, D. & Théorêt, A. (1976) The structure of "unstructured" decision processes *Administrative Science Quarterly, 21, 246 - 275.*

Mitchell, R., Agle, B. & Wood, D. (1997) Towards a theory of stakeholder identification and salience: defining the principle of who and what really counts, Academy of Management Review, 22 (4) 853-886.

Mootanah, D. (2005) Researching whole life value methodologies for construction. IN KHOSROWSHAHI, F. (Ed.) *21st Annual Conference of the Association of Researchers in Construction Management (ARCOM).* London, School of Oriental and African Studies (SOAS).

Morse, J. (1994) *Critical Issues in Qualitative Research Methods,* Thousand Oaks, CA, Sage.

Morse, J. M. (1991) Approaches to qualitative - quantitative methodological triangulation, pp 120-123, Available at:http://journals.lww.com/nursingresearchonline/Citation/1991/03000/Approaches_to_Qualitative_Quantitative.14.aspx, accessed: 10/10/09. *Nursing Research,* 40 (2).

Mullen, B., Johnson, C. & Salas, E. (1991a) Productivity loss in brainstorming groups: A meta-analytic integration. *Basic and Applied Social Psychology,* 12 (1)**,** 3-24.

NAO (2001) Modernising Construction, Appendix 5: The NHS Estates. Available on: http://www.nao.org.uk/publications/nao_reports/00-01/000187.pdf Accessed on, 26/04/08. London, National Audit Office.

NAO (2004) Getting Value for Money from construction projects through design: How auditors can help. In DAVIS LANGDON & EVEREST (Eds.) London.

NAO (2008) ProCure21 highlighted as a model of Best Practice by the NAO: Improving public services through better construction Available at: http://www.nhs-procure21.gov.uk/news/downloads/63/p21highlightedasmodelofbestpracticebynao1_1_.pdf. Accessed: 24/06/08. National Audit Office.

Naoum, S. G. (2007) *Dissertation Research and Writing for Construction Students,* Oxford, Butterworth-Heinemann.

nCRISP (2005) Collaborating for the Built Environment (Be) and new construction research and innovation strategy panel (nCRISP) London Be/nCRISP Value Task Group Be

Neuman, W. L. (2007) *Social research methods: qualitative and quantitative approaches, 6th Edn.,* Boston, Mass.; London, Allyn and Bacon.

Newcombe, R. (2003) A stakeholder mapping approach. *Construction Management and Economics,* 21**,** 841-848.

Newton, D. P. & Newton, L. D. (2000) Do Teachers Support Causal Understanding through their Discourse when Teaching Primary Science? *British Educational Research Journal,* 26(5), pp. 599 - 613.

NHS (2000) The NHS Plan: A plan for investment, a plan for reform. London, Department of Health, Crown Copyright.

NHS (2008) NHS ProCure21: Overview, Available at: http://www.nhs-procure21.gov.uk/content/overview.asp, Accessed 15/06/08. London, National Health Service.

NHS East Midlands (2009) The Local NHS, Available at: http://www.eastmidlands.nhs.uk/the-local-nhs/ Accessed: December 2010.

NHS Estates (1992) *The Whole Hospital, Briefing and Operational Policies,* LONDON, HMSO Publication Centre.

NHS Estates (2002) The Best Client Guide: Good Practice Briefing and Design Manual.

NHS Estates (2008) Achieving Excellence Design Evaluation Toolkit (AEDET Evolution). London, NHS Estates

NHS Executive (1999) *Public private partnerships in the National Health Service : the private finance initiative good practice* London, The Stationery Office.

Nisar, T. M. (2007) Value for money drivers in public private partnership schemes. *International Journal of Public Sector Management,* 20**,** 147 - 156.

Novak, J. D. & Canas, A. J. (2008) The theory underlying concept Maps and how to construct and use Them Technical Report IHMC Cmap Tools 2006-01 Rev 01-2008, Available at: http://cmap.ihmc.us/publications/researchpapers/theoryunderlyingconceptmaps.pdf Accessed Dec. 2009. FloridaInstitute for Human and Machine Cognition.

Novak, J. D. & Gowin, D. B. (1984) *Learning how to learn,* Cambridge, Cambridge University Press.

Nunamaker, J., Applegate, L. & Konsynski, B. (1991) Electronic meeting systems to support group work. *Communication of the ACM,* 34(7)**,** 40-61.

Nutt, B. (1988) The strategic design of buildings. *Long range planning,* 21 (4)**,** 130-140.

Nutt, B. (1993a) The Strategic Brief *Facilities* 11 (9)**,** 28 - 32

Nutt, B. (2000) Four competing futures for facilities management. *Facilities,* 18**,** 124-132.

Nutt, B. (2004) Infrastructure resources: forging alignments between supply and demand. *Facilities,* 22**,** 335-343.

Oakland, S. J. (1995) *Total Quality Management: Text with cases,* Oxford, Butterworth-Heinemann Limited.

O'Callaghan, M. (2007) Managing the Context. IN TURNER, R. (Ed.) *Gower Handbook of Project Management (4 Ed.).* Aldershot, England, Gower Publishing Limited.

OGC (2003) Procurement Guide 07: Whole-Life Costing and Cost Management, Achieving excellence in construction series. IN OGC (Ed.), Crown Copyright.

OGC (2007b) OGC Gateway™ Process. London, Office of Government Commerce.

OGC (2008) OGC Gateway Review for Programmes & Projects : The Gateway process. Available at http://www.ogc.gov.uk/what_is_ogc_gateway_review.asp. Accessed 12/09/08. Norwich, Norfolk, Office of Government Commerce.

Okoroh, M. I., Gombera, P. P. & Ilozor, B. D. (2002) Managing FM (support services): business risks in the healthcare sector. *Facilities,* 20**,** 41-45.

Okoroh, M. I., Gombera, P. P., J., E. & Wagstaff, M. (2001) Adding value to the healthcare sector - a facilities management partnering arrangement. *Facilities,* 19**,** 157-163.

Olander, S. & Landin, A. (2005) Evaluation of stakeholder influence in the implemetation of construction projects. *International Journal of Project Management,* 23**,** 321-328.

Olander, S. (2007) Stakeholder impact analysis in construction project management *Construction Management and Economics,,* Volume 25**,** pages 277 - 287

O'Reilly, J. J. N. (1987) *Better Briefing Means Better Buildings,* Watford, UK Building Research Establishment.

Osborn, A. (1957) *Applied imagination : principles and procedures of creative problem-solving (3rd ed., rev),* New York, Scribner's.

Othman, A. A. E., Hassan, T. M. & Pasquire, C. L. (2005) Analysis of factors that drive brief development in construction. *Engineering, Construction and Architectural Management,* 12**,** 69-87.

Otter, A. D. & Emmitt, S. (2008) Design team communication and design task complexity: The preference for dialogues. *Architectural Engineering and Design Management,* 4, pp. 121-129.

Outhred, G. P. (2001) The Delphi method: a demonstration of its use for specific research types. *Proceedings of the RICS Foundation, Construction and Building.*

Patton, M. Q. (2002) *Qualitative Research and Evaluation Methods (3 Ed.),* London, Sage.

PCC (2008) Primary and Social Care Premises - Planning and Design Guidance.

Peña, W. M. & Parshall, S. A. (2001) *Problem Seeking: An Architectural Programming Primer* New York, John Wiley and Sons

Perry, R. B. (1914b) The Definition of Value. *Philosophy, Psychology and Scientific Methods,* 11**,** 141-162.

PH (2008) Better Policy Making.

Phillips, M. R. (2006) Value managing the performance improvement cycle. *Value Manager, HKIVM,* 12**,** 11 - 17.

Phillips, S., Martin, J., Dainty, A. & Price, A. D. F. (2007) Uncertainty in best value decision making. *Journal of Financial Management of Property and Construction, Vol. 12 (2), pp.63 - 72.*

Porter, M. (1998) *On competition,* Boston, Harvard Business School.

Powell, W. & Smith-Doerr, L. (1994) Networks and economic Life, pp.368-402 In SMELSER, N. & SWEDBERG, R. (Eds.) *Handbook of Economic Sociology.* Princeton, NJ, Princeton University Press.

Preiser, W. F. E. (2001) Feedback, feed forward and control: post occupancy evaluation to the rescue. *Building Research and Information,* 29**,** 256-259.

Price, A. D. F. (2003) The strategy process within large construction orgnisations. *Engineering, Construction and Architectural Management, ,* Vol. 10 Iss: 4, pp.283 - 296.

Prins, M., Koolwijk, J., Volker, L. & Wamelink, J. (2006) Briefing: Static or Dynamic? IN AL., F. S. E. (Ed.) *Adaptables '06.* Eindhoven, Eindhoven University of Technology.

Raftery, J. (1991) *Principles of building economics: an introduction,* Oxford, BSP Professional.

Rawlinson, J. G. (1981) *Creative thinking and brainstorming* Farnborough, Gower.

Rawlinson, S. (2005) Cost Model: LIFT healthcare schemes, Available at http://www.building.co.uk/data/cost-model-lift-healthcare-schemes/3058064.article Accessed, May, 2011. Building, Issue 43.

Remenyi, D., Williams, B., Money, A. & Swartz, E. (1998) *Doing research in business and management: an introduction to process and method* London, SAGE.

Renn, O., Blattel-Mink, B. & Kastenholz, H. (1997) Discursive Methods in decision making. *Business strategy and the environment,* 6**,** 218-231.

RIBA (1973) *Plan of work for design team operation,* London, R.I.B.A., .

RIBA (1997) *RIBA Plan of Work for the Design Team Operation,* London, RIBA Publications.

RIBA (2007) *Plan of work for design team operation,* London, R.I.B.A. .

Ridley, J. & Jones, L. (2002) User and public involvement in health services: A literature review. SHS Trust- Partners in Change, Edinburgh.

Robson, C. (2002) *Real world research (2nd Edition),* Oxford, Blackwell.

Rosenhead, J. (1980) Planning under uncertainty: 1. The inflexibility of methodologies. *Operational Research* 31**,** 209-216.

Rosenhead, J. (1989) *Robustness analysis: keeping your options open , pp. 193-218.,* Chichester, Wiley.

Rowe, G. & Wright, G. (1999) The Delphi technique as a forecasting tool: issues and analysis. *International Journal of Forecasting,* 5**,** 353-75.

Ryd, N. & Fristedt, S. (2007) Transforming strategic briefing into project briefs:A case study about client and contractor collaboration *Facilities* 25**,** 185-202

Saaty, T. L. (1990) *Mathematical Methods in Operation Research*, Dover Publications.

Salisbury, F. (1998) *Briefing your Architect,* Cambridge, Butterworth-Heinemann/Architectural Press.

Saunders, M., Lewis, P. & Thornhill, A. (2007) *Research Methods for business students,* Harlow, Essex, UK, FT Prentice Hall.

Savanovic, P. & Zeiler, W. (2006) Dynamic briefing for adaptable building design. IN SCHEUBLIN, F., PRONK, A., PRINS, M., EMMITT, S. & OTTER, A. D. (Eds.) *Adaptables '06.* Eindhoven, Eindhoven University of Technology.

Saxon, R. (2005) *Be Valuable,* London, Constructing Excellence.

Schatz, M. (2006) Design by committee. *Contract, 48(9) 96-96.*

Schilling, M. A. (2000) Decades ahead of her time: advancing stakeholder theory through the ideas of Mary Parker Follett. *Journal of Management History,* 6(5): 224-242.

Schoemaker, P. (1995) Scenario Planning: A Tool for Strategic Thinking. *Sloan Management Review; Winter, 3 (2), pp 25-40*

Schon, D. (1991) *The reflective practitioner: how professional think in action,* Aldershot, Arena.

Seeley, I. H. (1997) *Quantity Surveying Practice,* UK, Macmillan.

Shen, G. (2006) Ensuring value for money: A value management approach to manage multiple stakeholders in the briefing process. IN BROWN, K., HAMPSON, K. & BRANDON, P. (Eds.) *Clients Driving Innovation: Moving ideas into Practice.* Queensland Australia, Cooperative Research Centre for construction Innovation

Shen, Q., Li, H., Chung, J. & Hui, P. (2004) A framework for identification and representation of client requirements in the briefing process. *Construction Management and Economics,* 22**,** 213-221.

Shiba S. & Walden, D. (2002) Quality Process Improvement Tools and Techniques, Available at: http://www.walden-family.com/public/iaq-paper.pdf, Accessed, January 2011.

Silverman, D. (1985) *Qualitative methodology and sociology: describing the social world,* Aldershot, Gower.

Silverman, D. (2005) *Doing qualitative research: a practical handbook,* London, Sage.

Silverman, D. (2007) *Interpreting qualitative data: methods for analysing talk, text and interaction, 3rd Ed.,* London; Thousand Oaks, CA., Sage Publications.

Silverman, D. (Ed.) (2004) *Qualitative research: theory, method and practice,* London, Sage.

Simmons, J. A. & Lovegrove, I. W. (2004) Bridging the conceptual divide: lessons from stakeholder analysis. *Journal of Organizational Change Management,* 18(5), pp. 495-513.

Simon, H. (1957) *Models of management,* New York, Wiley.

Smith, J. & Jackson, N. (2000) Strategic needs analysis: its role in brief development. *Facilities,* 18**,** 502-512.

Smith, J., Kenley, R. & Wyatt, R., (1998a) Evaluating the client briefing problem: an explanatory study. *Construction and Architectural Management,* 5**,** 387-398.

Smith, J., Love, P.E.D., & Wyatt, R. (2001) To build or not to build? Assessing the strategic needs of construction industry clients and their stakeholders. *Structural survey,* 19**,** 121-132.

Smith, J., Wyatt R. & Jackson, N. (2003) A method for strategic client briefing. *Facilities,* 21**,** 203-211.

Smyth, D. S. & Checkland, P. (1976) Using a systems approach: The structure of root definitions. *Applied Systems Analysis,* 5**,** 75-83

Smyth, L. & Mitchell, C. (2008) Researching Conservative Groups: Rapport and Understanding across Moral and Political Boundaries *International Journal of Social Research Methodology,* 11 (5), pp. 441 - 452.

Snyder, W. & Cummings, T. H. (1998) Organization learning disorders: Conceptual model and intervention hypothesis. *Human Relations,* 51(7), 873-895.

Spaulding, W. M., Bridge, A. & Skitmore, R. M. (2005) The use of function analysis as the basis of value management in the Australian construction industry. *Construction Management and Economics,* 23**,** 723 - 731.

Stake, R. (1995) *The art of case study research,* Thousand Oaks, CA, Sage Publications.

Standing, N. (2001) *Value management incentive program: Innovations in Delivering Value* Thomas Telford.

Steele, F. I. (1973) *Physical settings in organisational development,* Addison Westley.

Sterman, J. D. (1992) Systems Dynamics Modelling for Project Management. Cambridge, MA, Sloan School of Management, MIT.

Strauss, A. & Corbin, J. (1990) *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory,* London, Sage Publications.

Tashakkori, A. & Teddlie, C. (2003) *Handbook of mixed methods in social and behavioural research,* Thousand Oaks, CA, Sage.

Taylor, S. J. & Bogdan, R. (1984) *Introduction to qualitative research methods: The search for meanings,* New York, John Wiley and Sons.

Taylor, S. J. (2001) Conducting Discourse Analytic Research. In WETHERELL, M., TAYLOR, S. & YATES, J. (Eds.) *Discourse as Data: A Guide for Analysis.* London, Sage, The Open University.

Tellis (1997) Introduction to case study, Available at: (Http://Www.Nova.Edu/Ssss/QR/QR3-2/Tellis1.Html), Accessed, 12/10/09. *The Qualitative Report* Volume 3 (2).

Tesch, R. (1990) *Qualitative Research: Analysis types and software tools,* NY, Falmer Press.

Thiry, M. (2001) Sense making in value management practice. *International Journal of Project Management,* 19**,** 71-77.

Thompson, A. & Perry, J. G. (1992) *Engineering Construction Risks: A guide to project analysis and risk management,* London, Thomas Telford.

Thompson, B. & Bank (2010) Use of system dynamics as a decision-making tool in building design and operation *Building and Environment, ,* 45(4) pp 1006-1015.

Thompson, R. (2002) Reporting the results of computer-assisted analysis of qualitative research data, Available at: http://www.qualitative-research.net/index.php/fqs/article/view/864, Accessed September 2010. *Qualitative Social Research.* *FQS* Vol 3, No 2

Thomson, D. S., Austin, S. A., Devine-Wright, H. & Mills, G. R. (2003) Managing value and quality in design. *BUILDING RESEARCH & INFORMATION,* 31**,** 334-345.

Thomson, D., Austin, S., Root, D., Thorpe, A. & Hammond, J. (2006) A problem-solving approach to value-adding decision making in construction design. *Engineering, Construction and Architectural Management, Vol. 13(1), pp.43 - 61.*

Tompkins, E. L. (2003) Using stakeholders preferences in multi-attribute decision making: elicitation and aggregation issues. *CSERGE Working paper ECM 03-13.* Norwich, Centre for Social and Economic Research on the Global Environment & The Tyndall Centre for Climatic Change Research, University of East Anglia.

Tremblay, M. C., Fuller, R., Berndt, D. & Studnicki, J. (2007) Doing more with more information: Changing healthcare planning with OLAP tools. Decision Support Systems, 43(4), pp. 1305–1320.

Tsiakkiros, A. & Pashiardis, P. (2002) Strategic planning and education: The case of Cyprus

Turner, R. (2007) Projects and their management. IN TURNER, R. (Ed.) *Gower handbok of project management (4 Ed.).* Aldershot, England, Gower Publishing Limited.

Turoff, M. (1970) The design of a policy Delphi. *Technological forecasting and social change, Vol 2(2), pp 149-171.*

Turoff, M. (1972) Delphi conferencing: Computer-Based conferencing with anonymity. *Technological forecasting and social change,* 3**,** 159-204.

Tzortzopoulos, P., Cooper, R., Chan, P. & Kagioglou, M. (2006) Clients' activities at the design front-end. *Design Studies,* 27**,** 657-683.

Ulrich, R. (2000) Effects of healthcare environmental design on medical outcomes. In: Proceedings of the 2nd Annual International Congress on Design and Health. *Design & Health-The therapeutic benefi ts of design.* Karolinska Institute, Stockholm Sweden.

van Willigen, J. & Chadha, N. K. (2003) Social Networks of Old People in India: Research and Policy *Journal of Aging & Social Policy,* 15(2/3), pp. 109 - 124

Vennix, J. A. M. & Gubbels, J. W. (1992) Knowledge elicitation in conceptual model building: A case study in modelling a regional Dutch healthcare system. *Operational Research,* 59**,** 85-101.

Vidal, L., Marle, F. & Bocquet, J. (2010) Using a Delphi process and the Analytic Hierarchy Process (AHP) to evaluate the complexity of projects, *Expert Systems with Applications, doi:10.1016/j.eswa.2010.10.016.*

Vischer, J. C. (2008) Towards a user-centred theory of the built environment. *Building Research & Information,* 36**,** 231-240.

Walker, A. (2007) *Project management in construction (5 Ed.),* Oxford, UK, Blackwell.

Walker, D., Bourne, L. M. & Shelley, A. (2008) Influence, stakeholder mapping and visualisation. *Construction Management and Economics,* 26**,** 645-658.

WCED (1987) Our common future. Oxford World Commission on Environment and Development.

Weber, R. P. (1990) *Basic content analysis,* Newbury Park, CA, Sage.

Weitzner, W. (2004) Methods and tools for the Healthcare Planner's toolbox group decision-making: Tools, techniques & traps, Available at: http://www.noblis.org/NewsPublications/Publications/TechnicalPublications/Horizons/Documents/horizons_fall04.pdf#page=23, Accessed, May 2011. HORIZONS: Perspectives in Healthcare Management and Information Technology, Vol. 2, Fall 2004, pp. 24-27.

Welsh, T. & Pringle, M. (2001) Social capital: Trusts need to recreate trust. *BMJ,* 323**,** 177 - 178.

Wenstop, F. (2005) Mindsets, Rationality and Emotion in Multi-Criteria Decision Analysis. *Multi Criteria Decision Analysis,* 13**,** 161-172.

Wolper, L. F. (2004) *Health care administration: planning, implementing, and managing organized,* Sudbury, MA, Jones and Bartlett Publishers.

Womack, J. P. & Jones, D. T. (2003) *Lean Thinking: Banish Waste and Create Wealth in Your Corporation,* London, Simon & Schuster.

Woodhead, R. M. (2000) Investigating of the early stages of project formulation. *Facilities,* 18**,** 524-534.

Yang, J., Shen, G. Q., Ho, M., Drew, D. & Chan, A. P. (2009) Exploring critical success factors for stakeholder management in construction projects *Journal of Civil engineering and management* 15(4), pp. 337-348.

Yin, R. (2009) *Case study research: design and methods,* Los Angeles; London, Sage.

Yu, A., Shen, Q. & Kelly, J. (2007) An empirical study of the variables affecting construction project briefing/architectural programming. *International Journal of Project Management,* 25**,** 198-212.

Zeiler, W., Savanovic, P. & Quanjel, E. M. C. J. (2006) Methodology for dynamic briefing of adaptable buildings. *Adaptables2006, TU/e, International Conference On Adaptable Building Structures 03-05 July 2006.* Eindhoven [The Netherlands].

Ziersch, A. & Arthurson, K. (2005) Social networks in public and community housing: The impact on employment outcomes. *Urban Policy and Research,* 23(4), pp. 429 - 445.

Zimmermann, H. J. (1985) *Fuzzy Set Theory and Its Applications,* Boston, Kluwer, Nijhoff Publishing.

Zimmermann, H. J. (1987) *Fuzzy Set, Decision Making, and Expert System,* Boston, Kluwer, Nijhoff Publishing.

Zotti, E. (1987) Design by Committee. *Planning, 53 (5) 22-27*

Bibliography

Accountability (2005) *Stakeholder Engagement Standard* London, AccountAbility also available on Website:www.accountability.org.uk. Accessed: 11/06/08. London, Construction Industry Council

Adams, G. & Schvaneveldt, J. (1991) *Understanding research methods (2nd edition)* New York, Longman.

Agouridas, V., Baxter, J. E., Mckay, A. & de Pennington, A. (2001) On defining product requirements: a case study in the UK health care sector, *ASME Design Engineering technical conferences.* DETC2001.

Agouridas, V., Mckay, A., Winand, H. & De Pennington, A. (2008) Advanced product planning: a comprehensive process for systemic definition of new product requirements *Requirements Engineering* 13**,** 19-48

Akinori Horiguchi & Suetomi, T. (1995) A Kansei Engineering approach to a driver/vehicle system, *International Journal of Industrial Ergonomics,* 15**,** 25-37.

Albert, A. & Passmore, E. (2008a) Public Value and Participation: A Literature Review for the Scottish Government. Edinburgh, Scottish Government Social Research.

Alencar, L. H. & Almeida, A. T. (2008) Multicriteria decision group model for the selection of suppliers. *Pesquisa Operacional 28(2) 321-337*. Available at: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0101-74382008000200009&lng=en, Accessed: April, 2009

Andersen, S. (1983) Need Assessment: A way of improving value of new products. *Design Studies,* 4**,** 183-187.

Antunes, P., Santos, R. & Videira, N. (2006a) Participartory Decision Making for sustainable development - the use of mediated modelling techniques. *Land Use Policy,* 23**,** 44-52.

Appelbaum, S. H., Hébert, D. & Leroux, S. (1999) Empowerment: power, culture and leadership – a strategy or fad for the millennium? *Journal of Workplace Learning,* 11 (7)**,** 233-254.

Arntzen, E. (2003) Buildings - from concept to use. *Business Briefing: Hospital Engineering and Facilities Management***,** 38-45.

Aronson, J. E., Myers, R. M. & Wharton, R. B. (2000) Time pressure impacts on electronic brainstorming in a group support system environment. *Informatica,* 24(2)**,** 149 -158.

Atkin, B., Clark, A. & Smith, D. (1996) *Benchmarking Best Practice Report: Briefing and Design,* Salford, Construct I.T. Centre of Excellence

Bailetti A.J. & Litva, P.F. (1995) Integrating Customer Requirements into Product Designs *Product Innovation Management,* 12**,** 3-15(13).

Barnes, M. (1999) Researching public participation, *Local Government Studies,* 25**,** 60-75.

Barrett, P. S., Hudson, J. & Stanley, C. (1999) Good practice in briefing: the limits of rationality. *Automation in Construction,* 8**,** 633-42.

Becker, R. (1999) Research and development needs for better implementation of the performance concept in buildings. *Automation in Construction,* 8**,** 525-32.

Bellucci, E. & Zeleznikow, J. (2005) Trade-off manipulations in the development of negotiation decision support systems. *38th Hawaii International Conference on System Science.* Hawaii, IEEE Xplore.

Black, A. (2002) Reconfiguring health systems. *BMJ,* 325**,** 1290 - 1293.

Bogers, T., Van Meel, J. J. & Van Der Voordt, T. J. M. (2008) Architects about briefing: Recommendations to improve communication between clients and architects *Facilities* 26**,** 109 – 116.

Boote, D. N. & Beile, P. (2005) Scholars before Researchers: On the Centrality of the Dissertation Literature Review in Research Preparation. *Educational Researcher,* 34**,** 3-15.

Bottom, C. W., McGreal, W. S. & Heaney, G. (1999) Appraising the functional performance characteristics of office buildings, *Property Research,* 16 339-358.

Bourdeau, L. (1999a) Agenda 21 on Sustainable Construction. *CIB Publication Report 237.* Rotterdam, CIB

Bourdeau, L. (1999b) Sustainable development and the future of construction: a comparison of visions of several countries. *Building Research & Information,* 27**,** 355-367.

Brown, S. A. (2001) *Communication in the Design Process,* London, Spon Press, Taylor & Francis Group

Bryson, J. M. (2004) What to do when stakeholders matter: stakeholder identification and analysis techniques. *Public Management Review,* 6**,** 21-53.

Building Futures (2002) 2020 Vision: Our future health environments, Available at: http://www.cabe.org.uk/default.aspx?contentitemid=668, accessed, 01/12/08. Norwich, Building Futures (CABE and RIBA).

Burr, V. (2003) *Social constructionism (2nd ed.)* London ; New York : , Routledge.

Burt, M. E. (1978) *A survey of quality and value in building*, BRE.

Bustard, D. W. (2002) An experience of Principled Negotiation in requirements engineering. *7th Australian Workshop on Requirements Engineering (AWRE'2002), 2-3 December.* Deakin University, Melbourne AUSTRALIA.

CABE (2002b) The value of good design: How buildings and spaces create economic and social value. London, Commission for Architecture and the Built Environment

Cabinet Office (2006) Chapter 8: Policy - Openness and Accountability. Available at:http://www.civilservice.gov.uk/about/public/bodies.asp. Accessed: 15/11/08. *Public Bodies: A guide for departments.* London, Cabinet Office.

Cabinet Office (2007) Building on Progress: Public Services. London, Cabinet Office.

Carter, S. M. (2006) The interaction of top management group, stakeholder and situational factors on certain corporate reputation management activities. *Management Studies,* 43**,** 1145-1176.

Chappell, D. (2006) *Contractual Correspondence for Architects and Project Managers* Oxford, Blackwell Publishing.

Chinyio, E., Olomolaiye, P. & Corbett, P. (1998) An evaluation of the project needs of UK building clients. *International Journal of Project Management,* 16**,** 385-91.

CIRIA (2001) *Sustainable Construction: Company indicators, C563,* London, CIRIA.

Cirovic, G. & Cekic, Z. (2006) Soft Computing Case Based Reasoning as an IT Support for the Initial Briefing Stage of a Construction Project. *Adaptables '06.* Eindhoven The Netherlands, Eindhoven University of Technology.

Clancy, J. J. (1991) Simultaneous engineering. *45th Annual Quality Congress Transaction.* Milwaukee, WI, USA ASQC

Cole, M. (2006) *Unlocking Public Value : A New Model For Achieving High Performance In Public Service Organizations [electronic resource]* Hoboken John Wiley & Sons, Inc.

Constructing Excellence (2004) Achieving Excellence Guide 7: Whole-life costing, Available at: http://www.constructingexcellence.org.uk//resources/publications/view.jsp?id=2277. London, Constructing Excellence.

Cooke, S. & Slack, N. (2004) *Making management decisions,* Hempstead, UK, Prentice Hall International.

Cooper, R. & Kleinschmidt, E. (1997) Winning businesses in new product development: the critical success factors. *Product Innovation Management,* 14**,** 132.

Cox, A. & Townsend, M. (1998) *Strategic procurement in construction,* London, Telford

Crosby, P. (1979) *Quality is free: the art of making quality certain,* New York, Mc-Graw Hill.

Crum, L. W. (1971) *Value engineering: the organised search for value,* UK, Longman.

Curry, A., Stark, S. & Summerhill, L. (1999) Patient and stakeholder consultation in healthcare. *Managing Service Quality 9(5) 327-336.*

Dallas, M. F. & Humprey, S. (2004) Value or cost? *The value manager, HKIVM,* 10 11-14.

Darlington, M. & Culley, S. (2004) A model of factors influencing the design requirements. *Design Studies,* 25**,** 329-350.

Dart, S. (1991) Concepts in Configuration Management Systems. *3rd international workshop on Software configuration management,* Trondheim, Norway.

de Vreede, G., Davison, R. & Briggs, R. (2003) How a silver bullet may lose its shine. *Communication of the ACM,* 46**,** 96-101.

Delgado, H. D., Bamptom, K. E. & Aspinwall, E. M. (2007) Quality Function Deployment in Construction. *Construction Management and Economics,* 25**,** 597-609.

DETR (2000) Guide to quality and best value. London, Department of Environment, Transport and the Regions (DETR) now Office of the Deputy Prime Minister (ODPM).

DH (1999) Patient and public involvement in the new NHS. London, Department of Health

DH (2006a) Our health, our care, our say: a new direction for community services (Government White paper). London, Department of Health.

DH (2006b) A stronger local voice: A framework for creating a stronger local voice in the development of health and social care services. London, Department of Health.

DH (2007b) Rebuilding the NHS: A new generation of healthcare facilities. Available at:http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolic yAndGuidance/DH_075176. London, Department of Health, HMSO.

DH (2008a) Local Involvement Networks (LINks) explained. Available at: http://www.dh.gov.uk/en/Managingyourorganisation/PatientAndPublicinvolvement/ DH_076366#_1 Accessed: 02/06/08. Department of Health.

DH (2008c) Sustainable development in the NHS, Available at: http://www.dh.gov.uk/en/Managingyourorganisation/Estatesandfacilitiesmanageme nt/Sustainabledevelopment/DH_4119123, Accessed: 05/11/08. London, Department of Health.

DLPF (2002) Building for sustainability: Six scenarios for the David and Lucille Packard Foundation Los Altos Project. Available online at: http://www.packard.org/pdf/2002Report.pdf David and Lucille Packard Foundation.

Donaldson, T. & Preston, L. (1995) The stakeholder theory of the modern corporation: Concepts, evidence and implications. *Academy of Management Review 20, 65-91.*

DTI (2006) Strategy for sustainable construction - consultation events. London, Department of Trade and Industry.

du Plessis, C. (2006) A strategic framework for sustainable construction in developing countries. *Construction Management and Economics,* 25**,** 67-76.

Edwards, N. & Harrison, A. (1999) The hospital of the future: Planning hospitals with limited evidence: a research and policy problem. *BMJ,* 319**,** 1361 - 1363.

EPSRC (2008) Health and Care Infrastructure Research and Innovation Centre (HaCIRIC): Details of Grant. Available at: http://gow.epsrc.ac.uk/ViewGrant.aspx?GrantRef=EP/D039614/1 Accessed 02/03/08. Engineering and Physical Science Research Council (EPSRC).

Farbey, B., Land, F. & Targett, D. (1999) The moving staircase: Problems of appraisal and evaluation in a turbulent environment. *Information Technology & People,* 12**,** 238-252.

Fisher, R. & Ury, W. (1987) *Getting to Yes: Negotiating agreement without giving in,* New York, Penguin Books.

Fowler, F. (2009) *Survey research methods,* Thousand Oaks, CA., Sage, 4th ed.

Francis, S. (2004) Investing in Design: Developing a business case for good design for health. *Business briefing: Hospital Engineering and Facilities Management***,** 1 - 5.

Fraser, M. A. H. (2007) The practice of breakthrough strategies by design. *Business Strategy,* 28 (4)**,** 66-74.

Friend, J. & Hickling, A. (2005) *Planning under pressure: the Strategic choice approach,* Oxford, Elsevier Butterworth-Heinemann.

Friend, J. & Jessop, W. N. (1976) *Local government and strategic choice : an operational research approach to the processes of public planning,* Oxford, Pergamon Press.

Friend, J. (1989) The strategic choice approach. IN ROSENHEAD, J. (Ed.) *Problem structuring methods for complexity, uncertainty and conflict.* Chichester, Wiley.

Funtowicz, S. & Ravetz, J. (1994) The worth of a songbird:ecological economics, as a post-normal science. *Ecological Economics,* 10**,** 197-207.

Fruchter, R., Demian, P., Yin, Z. & Luth, G. (2003) Turning A/E/C Knowledge into Working Knowledge *Fourth Joint International Symposium on Information Technology in Civil Engineering.*

Gambatese, A., Pocock, J. & Dunston, P. (2007) *Constructability Concepts and Practice*, American Society of Civil Engineers.

Gatchalian, J. C. (1997) Principled negotiations - a key to collective bargaining. *XXV Congreso Nacional de Control de Calidad, 16a, 1-4 October, 1997.* Guadalajara, Mexico.

Ghauri, P. & Gronhaug, K. (2005) *Research methods in business studies: A practical guide,* Harlow, FT Prentice Hall.

Gibson, E. & Gebken, R. (2003) Design quality in pre-project planning: Applications of the project definition rating index. *Building Research and Information,* 31**,** 346-356.

Gidel, T., Gautier, R. & Duchamp, R. (1991) Decision-making framework methodology - an original approach to project risk management in new product design. IN NICHOLSON, P. M. (Ed.) *Modern Value Engineering and Project Management.*

Glanville, R. (2007) What is a Hospital? *Hospital Engineering and Facilities Management,* Reference Section.

Glynne, P. (2006) Benefits Management - changing the focus of delivery. *Association for Progress Management Yearbook* 45-49.

Goodland, R. (2002) Sustainability: Human, Social, Economic and Environmental. Available at:http://www.wiley.co.uk/egec/pdf/GA811-W.PDF. Accessed: 05/11/08. *Encyclopedia of Global Environmental Change (sample article).*

Göran Lindahl & Ryd, N. (2007) Clients' goals and the construction project management process. *Facilities* 25**,** 147 - 156

Gordon, A. (1972) The Long life, Loose Fit, Low Energy Study initiated by Gordon, A., President RIBA.

Graetz, K., Barlow. C. B., Proulx, N. & Pape, L. J. (1997) Facilitating idea generation in computer supported teleconferences. *Communications of the ACM***,** 317 - 324.

Gregory, R. & Keeney, R. (1994) Creating policy alternatives using stakeholder values. *Management Science,* 40**,** 1035-1048.

Habermas, J. (1984) *The theory of communicative action,* Boston, MA, Beacon Press.

Hayles, C. (2004) The role of value management in the construction of sustainable communities. *The value manager, HKIVM,* 10**,** 15-19.

Hilliges, O., Terrenghi, L., Boring, S., Kim, D., Richter, H. & Butz, A. (2007) Designing for collaborative creative problem solving *Communication of the ACM***,** 137-147.

Holti, R., Nicolini, D. & Smalley, M. (2000) *The handbook of supply chain management (C546): Building Down Barriers,* London, CIRIA

Hoyes, L., S. Jeffers, R. Lart, R. Means & Taylor, M. (1993) User Empowerment and Reform of Community Care: A Study of Early Implementation in Four Localities. Bristol, University of Bristol.

Hoyle, D. (2002b) *ISO 9000: Quality systems Handbook,* Oxford, Butterworth-Heinemann.

Huczynski, A. & Buchanan, D. A. (2007) *Organisational Behaviour (6th Edn),* Harlow, England, FT Prentice Hall

Hughes, S. (Accessed on 07/04/08) Cost-Effective Application of the ALARP Principle available at: http://www.hvrcsl.co.uk/esas2005/Papers/11%20Cost%20Effective%20Application %20Of%20The%20ALARP%20Priciple.pdf. ERA Technology.

Hunter, K. & Kelly, J. (2007) An integrated framework to support best value in the UK public service sector *The value manager, HKIVM,* 13**,** 3 - 12.

Hwang, H. & Guynes, J. (1994) The effect of group size on group performance in computer-supported decision making. *Information and Management,* 26**,** 189-198.

IISD (2004) Issue Briefing Note: Stakeholder Engagement, ISO and Corporate Social Responsibility. Winnipeg, Manitoba, Canada, International Institute for Sustainable Development (IISD).

INVOLVE (2005a) People and participation: how to put citizens at the heart of decision-making. London, INVOLVE.

INVOLVE (2005b) The true costs of public participation. INVOLVE.

Irwin, A., Georg, S. & Vergragt, P. (1994) The social management of environmental change. *Futures,* 26**,** 323-334.

Ive, G. (2006) re-examining the costs and value ratios of owning and occupying buildings. *Building Research and Innovation,* 34**,** 230-245.

Jackson, M. C. (2001) Critical Systems Thinking and Practice. *European Journal of Operational Research,* 128**,** 233-244.

Jackson-Robbins, A. (1998) *Selecting Contractors by value, SP 150,* London, CIRIA

Jenks, M. (1988) *The briefing process - A critical examination,* King's Ride, Ascot, Chartered Institute of Building.

Jones, I. W. & Pollitt, M. G. (1999) Putting values into action: Lessons from best practice. *Long Range Planning,* 32**,** 162 - 165.

Kelly, J. & Male, S. (1992a) Functional analysis method IN RICS (Ed.) *Value and the Client.* Royal Institution of Chartered Surveyors, RICS.

Kelly, J. & Male, S. (1992b) *Value and the Client,* London, RICS.

Kelly, J., Male, S. & Macpherson, S. (1993) *Value Management -A Proposed Practice Manual for the Briefing Process,* London, Royal Institution of Chartered Surveyors.

Kersten, G. & Mallory, G. (1999) Rational inefficient compromises in negotiation. *Multi-Criteria Decision Analysis, (8), 106 -111.*

Kibert, C. J. (2005) *Sustainable construction: green building design and delivery,* Hoboken, NJ, John Wiley and sons.

Knight, A. & Ruddock, L. (Eds.) (2008) *Advanced research methods in the built environment* Chichester, UK, Wiley-Blackwell.

Knight, A. & Turnbull, N. (2008) Epistemology, pages 64-74. IN KNIGHT, A. & RUDDOCK, L. (Eds.) *Advanced research methods in the built environment.* Chichester, UK, Wiley-Blackwell.

Krishnan, V. & Ulrich, T. (2001) Product Development Decisions: A review of the literature. *Management Science, 47,* 1-21.

Krysalis (2007) What is optioneering? Available on: (www. krysalis.co.uk). Maidenhead, UK.

Kujala, S., Kauppinen, L. & Kojo, T. (2005) The role of user involvement in requirements quality and project success. *Proceedings of the 13th IEEE Iternational Conference on Requirements Engineering (RE'05).*

Lamm, H. & Trommsdorff, G. (1973) Group versus individual performance on tasks requiring ideational proficiency (brainstorming). *European Journal of Social Psychology,* 3**,** 361-387.

Lamm, H. (1988) A review of our research on group polarisation: Eleven experiments on the effects of group discussion on risk acceptance, probability estimation and negotiation positions. *Psychological Reports,* 62**,** 807-813.

Leaman, A. & Bordass, B. (2004) Flexibility and Adaptability. IN MACMILLAN, S. (Ed.) *Designing Better Buildings: Quality and Value in the Built Environment.* London, Taylor & Francis.

Leinonen, J. & Huovila, P. (2001) Requirements management tool as a catalyst for communication. *Construction Informatics Digital Library* http://itc.scix.net/paper ecce-2001-23.content.

Little, M., Jordens. C.F.C., Paul, K., Sayers. E-J., Cruickshank, J. A., Stegeman, J. & Montgomery, K. (2002) Discourses in different voices: reconciling N = 1 and N = many. *Social Science & Medicine,* 55**,** 1074 - 1087.

Macmillan, S. (2005) The valuation of intangibles. *RIBA,* 112.

Macmillan, S. (Ed.) (2004) *Designing Better Buildings: Quality and Value in the Built Environment* London, Taylor & Francis.

Male, S. (2002) Building the business value case. IN KELLY, J., MORLEDGE, R. & WILKINSON, S. (Eds.) *Best Value in Construction.* Oxford, Blackwell Publishing.

McCrary, S. W., Smith, R. R. & Callahan, N., R. (2006) Comparative Analysis Between Manufacturing and Construction Enterprises on the Use of Formalized Quality Management Systems. *Journal of Industrial Technology available on: www.nait.org,* 22**,** 1-8.

McIver, S. & Brocklehurst, N. (1999) Public involvement: working for better health. *Nursing Standard,* 14**,** 46-52.

Meppem, T. (2000) The discursive community: evolving institutional structures for planning sustainability. *Ecological Economics 34 (2000) 47-61.*

Michinov, N. & Primois, C. (2005) Improving productivity and creativity in online groups through social comparison: New evidence for asynchronous electronic brainstorming. *Computers in Human Behaviour,* 21**,** 11-28.

Mintzberg, H., Ahlstrand, B. & Lampel, J. (2005) *Strategy safari: a guided tour through the wilds of strategic management* New York, Free Press.

Morasky, R. L. & Amick, D. (1978) Social systems needs assessment *Long range planning,* 11**,** 47-54.

MORI (2005) Stakeholder perceptions audit. London, Department of Health.

Morris, J. (2006) Removing the Barriers to Participation. London, IPPR and the National Community Forum/ Neighbourhood renewal unit.

Morris, P. W. G. (1974) Systems study of project management. *Building***,** 75-80;83-88.

Mulgan, G. (2005) *Public value: physical capital and the potential of value maps, in Physical Capital: How Great Places Boost Public Value pp. 8-27.,* London, CABE

Mullen, P. & Spurgeon, P. (2000) *Priority Setting and the Public,* Abingdon, Oxon, Radcliff Medical Press Ltd.

Munkes, J. & Diehl, M. (2003) Matching or competition? Performance comparison processes in an idea generation task. *Group Processes and Intergroup Relations,* 6**,** 305-320.

Nagamachi, M. (2002) Kansei engineering as a powerful consumer-oriented technology for product development *Applied Ergonomics* 33**,** 289-294

Nelson, M., Lee, A., Cooper, R., Kagioglou, M. & Fleming, A. (1999) Re-engineering in the Construction Industry – Buzzword or Reality? . *COBRA.* Salford, UK, Royal Institute of Chartered Surveyors.

NHS (2006) Showing the benefits case studies available at: http://www.nhsemployers.org/kb/kb-986.cfm. Accessed date: 02/06/08. London, National Health Service (NHS).

NHS PASA (2008) Social Sustainability. Available at: http://www.pasa.nhs.uk/pasaweb/nhsprocurement/sustainabledevelopment/socials ustainability/landingpage.htm, Accessed on: 20/10/08. NHS Purchasing and Supply Agency.

Nicholls, J. (1990) Value for the customer. *TQM,* 2.

Nicholson, R. (2004) Challenges for designers. IN MACMILLAN, S. (Ed.) *Designing Better Buildings: Quality and Value in the Built Environment (xiv - xvii).* Taylor & Francis.

Nijstad, B., Stroebe, W. & Lodewijks (2003) Production blocking and idea generation: does blocking interfere with cognitive processes? *Experimental Psychology,* 39(6)**,** 531-548.

OGC (2007a) Delivery lifecycle: Benefits Management http://www.ogc.gov.uk/sdtoolkit/reference/deliverylifecycle/benefits_magmt.html#be nmanagement1. London, Ofiice of Government Commerce: Benefits Management.

Olander, S. & Landin, A. (2008) A comparative study of factors affecting the external stakeholder management process. *Construction Management and Economics,* 26**,** 553-561.

Olson, E. G. (2008) Creating an enterprise-level "green" strategy. *Business Strategy,* 29**,** 22-30.

ONS (2008) Internet Access. Available at:http://www.statistics.gov.uk/CCI/nugget.asp?ID=8. Accessed: 01/12/08. Office of National Statistics.

O'Rourke, A. (2003) A new politics of engagement: shareholder activism for corporate social responsibility. *Business Strategy and the Environment,* 12**,** 227-239.

Ovretveit, J. (1996) *Health service quality,* Cambridge, Cambridge University Press.

Petrovic, O. & Krickl, O. (1994) Traditionally-moderated versus computer supported brainstorming: a comparative study. *Information and Management,* 27**,** 233-234.

Picker Institute Europe (2003) Improving Patients' Experience, sharing good practice: Exploring The Benefits of Patient Involvement in Healthcare. Oxford, Picker Institute Europe.

Pinsonneault, A., Barkhi, H., Gallupe, R. & Hoppen, N. (1999) Electronic brainstorming: the illusion of productivity. *Information Systems Research,* 10 (2)**,** 110-133.

PMI (1996) Project Management Body of Knowledge. Newtown Square, PA, PMBOK.

Porritt, J. (1997) Key Note address: Constructing a Sustainable Environment Conference Record of Proceedings. London, Construction Confederation.

Prasad, D. & Hall, M. (2004) The construction challenge: sustainability in developing countries. London, RICS.

Reavill, L. R. P. (1998) Quality Assessment, total quality management and the stakeholders in the UK higher education system. *Managing Service Quality,* 8(1)**,** 55-63.

Reichstein, T., Salter, A. & Gann, D. (2005) Last among equals: a comparison of innovation in construction, services and manufacturing in the UK *Construction Management and Economics,* 23**,** 631-644.

Renn, O. & Levine, D. (1991) Credibility and trust in risk communication. IN KASPERSON, R., E., & STALLEN, P. J. M. (Eds.) *Communicating Risks to the Public: International Perspectives* Dordrecht, The Netherlands, Kluwer Academic Publishers.

Rosqvist, T. (2003a) Stakeholder Compensation Model Based on Decision Analysis. *Multi-Criteria Decision Analysis,* 12**,** 219–223.

Rouse, R. (Ed.) (2004) *Measuring value or only cost: the need for new valuation methods pp. 55-71.,* London, E&FN Spon.

Ryd, N. (2004) The design brief as a carrier of client information during the construction process. *Design Studies*

Sapountzis, S., Harris, K. & Kagioglou, M. (2008) The development of a Benefits Realisation Management Process to drive successful programmes and projects" IN PANTOUVAKIS, J. P. (Ed.) *Joint Fourth Scientific Conference on Project Management (PM-04) & the First IPMA /MedNet Conference - Project Management Advances, Training & Certification in the Mediterranean.* Chios, Greece.

Sarel Lavy & Shohet, I. M. (2007) On the effect of service life conditions on the maintenance costs of healthcare facilities *Construction Management and Economics,* 25**,** pages 1087 - 1098

Sathiendrakumar, R. (1996) Sustainable development: passing fad or potential reality. *Internation Journal of Social Economics,* 23**,** 151-163.

Schmid, A. (1998) Thesaurus and glossary of early warning and conflict prevention terms. IN ANDERLINI, S. B. (Ed.) London, FEWER.

Schwenk, C. R. (1984) Cognitive Simplification Processes in Strategic Decision-Making *Strategic Management Journal, Vol. 5, No. 2 , pp111-128.*

Schwenk, C. R. (1988) The cognitive perspective on strategic decision making. *Journal of Management Studies, Vol. 25 (1), pp. 41-55.*

Scottish Association Of Health Councils, Scottish Consumer Council & The Scottish Office Department Of Health (1999) Designed to Involve: public involvement in the new primary care structures. Glasgow, Scottish Consumer Council.

Sebenius, J. K. (1992) Negotiation Analysis: Acharacterisation and review. *Management Science 38 (1) 18-38.*

Shaw, D. (2003) Evaluating electronic workshops through analysing the 'brainstormed' ideas. *Operational Research Society,* 54**,** 692-705.

Shekaran, M. C. & Tremlett, J. F. (1992) Reasoning about integration issues during requirements definition: a knowledge-based approach. *Second International Conference on Systems Integration.*

Shen, Q., Lin, G., Kelly, J. & Sun, M. (2006) Measuring the process and outcomes of value management studies in construction. *Value Manager, HKIVM,* 12**,** 18 - 23.

Shepherd, A. & Bowler, C. (1997) Beyond the requirements: improving public participation in EIA. *Enviromental planning and management,* 40**,** 725-738.

Shillito, M. L. & De Marle, D. (1992) *Value - its Measurement, Design and Management,* USA, Wiley InterScience Publications.

Sii, H. S. & Wang, J. (2002) A design-decision support framework for evaluation of design options/proposals using composite structure methodology based on the approximate reasoning approach and evidential reasoning method. *Process Mechanical Engineering,* 217**,** 59-76.

Small, N. & Rhodes, P. (2000) *Too ill to Talk? User involvement in palliative care,* London, Routledge.

Smith, J. & Love, P.E.D., (2004) Stakeholder management during project inception: Strategic Needs Analysis. *Architectural Engineering,* 10**,** 22-33.

Smith, J., Love, P.E.D., & Heywood, C. (2005) A method for performance briefing at the project inception stage. *Facilities,* 23**,** 319-329.

Smith, N. C. & Dainty, P. (1991) *The management research handbook,* London, Routledge.

Sommer F, Bootland J, Hunt M, Khurana A, Reid S & S, W. (2004) *ENGAGE: How to deliver socially responsible construction. A client's guide,* London, CIRIA.

Spence, R. & Mulligan, H. (1995) Sustainable Development and the construction industry. *Habitat International,* 19(3)**,** 279-292.

Stoyell, J. L., Kane, G., Norman, P. W. & Ritchey, I. (2001) Analyzing design activities which affect the life-cycle environmental performance of large made-to-order products. *Design Studies* 22**,** 67-86.

Strategy Unit (2002) Public value. *Strategic Thinkers Seminar Series.* London, Cabinet office: Strategy Unit (SU).

Sustainable Committee, W. (2008) Sustainable.

Sweet, S., Roome, N. & Sweet, P. (2003) Corporate Environmental management and sustainable enterprise: the influence of information processing and decision styles. *Business Strategy and the Environment,* 12**,** 265-277.

Tam, A. S. B. & Price, J. W. H. (2008) A generic asset management framework for optimising maintenance investment decision *Production Planning & Control,* 19, Issue 287 - 300

Too, E. G., Betts, M. & Arun, K. (2006) A strategic approach to infrastructure Asset management. IN SIRIKIJPANICHKUL, A. & H., W. S. (Eds.) *BEE Postgraduate Infrastructure theme Conference.* Gardens Point Campus, Queensland University of Technology.

Total Interactive Solutions Ltd (2006) Optioneering Studies, Available on: www.tis-ltd.co.uk/feasibility.html

Tunstall, G. (2006) *Managing the Building Design Process,* Oxford, Butterworth-Heinemann

Turner, R. K. (2006) Sustainability auditing and assessment challenges. *Building Research and Information,* 34(3)**,** 197 – 200.

Tzortzopoulos P., Betts M. & Cooper R. (2002) Product Development Process Implementation -Mini Exploratory Case studies in construction and Manufacturing. *10th Lean Construction Conference.* Brazil.

Ulrich, K. T. & Eppinger, S. D. (2000) *Product Design and Development,* Boston, McGraw-Hill Higher Education.

Ury, W. (1991) *Getting Past No: Negotiating with difficult people,* London, Business Books Ltd.

Vanree, H. J. & Vanmeel, J. (2007) Sustainable briefing for sustainable buildings. *CIB2007 - 362.*

Vogel, D. & Nunamaker, J. (1990) Group Decision support system impact. *Information and Management,* 18**,** 15-28.

Walters, D. & Jones, P. (2001) value and value chains in healthcare: a quality management perspective. *TQM magazine,* 13**,** 319-333.

Wandahl, S. (2006) Understanding Value in the Briefing Process IN SCHEUBLIN, F., PRONK, A., PRINS, M., EMMITT, S. & OTTER, A. D. (Eds.) *Adaptables '06* Eindhoven University of Netherlands.

Ward, S. & Chapman, C. (2008) Stakeholders and uncertainty management in projects. *Construction Management and Economics,* 26**,** 563-577.

Watson, D., Davis, R. & Wienand, N. (2004) The application of dynamic control feedback loops to the problematic issue of controlling 'as designed' compared to 'as built' on construction projects. *1st FIG International Symposium on Engineering Surveys for Construction Works and Structural Engineering.* Nottingham, United Kingdom, 28 June - 1 July 2004.

Weight, D. (2005) Whole-life costs. *Building, Available on http://www.building.co.uk/story.asp?storycode=3056536*

Wilson, J. R. & Corlett, E. N. (2005) *Evaluation of Human Work: A Practical Ergonomics Methodology* Boca Raton, Fla. ; London CRC Press.

Wilson, P. F., Dell, L. F. & Anderson, G. F. (1993) *Root cause analysis: A tool for Total Quality Management,* Milwaukee, WI., ASQC Quality Press.

Winch, G. M. (2010) *Managing construction projects,* Chichester, England, Wiley-Blackwell.

Woodward, D. (1995) Use of sensitivity analysis in build-own-operate-transfer project evaluation *nternational Journal of Project Management, 13(4), pp. 239-246*.

Wubben, E. (1999) What's in it for us? or: The impact of environmental legislation on competitiveness. *Business Strategy and the Environment,* 8**,** 95-107.

Wyatt, R. (1999) *Computer-aided Policy Making: Lessons from strategic planning software,* London, E & FN Spon.

Wyatt, R., Smith, J. & Jackson, N. (2004) Philosophical differences: the case of the architect's reluctance to use strategic planning software. *Systematic Practice and Action Research,* 17**,** 127-142.

Xenergy (2000) Green City Buildings: Applying the LEED rating system. Available at: http://www.sustainableportland.org/CityLEED.pdf. Accessed, . Portland, Portland Energy Office

Yardley, L. (1997) Introducing Discursive Methods. IN YARDLEY, L. (Ed.) *Material Discourses of Health and Illness* London and New York, Routledge.

YHYCYS (2006) Evaluation of Your Health, Your Care, Your Say: An independent report commissioned by the Department of Health. London, Department of Health.

Zahedi, M. F. (1997) Reliability metric for information systems based on customer requirements. *International Journal of Quality & Reliability Management,* 14**,** 791-813.

APPENDICES

APPENDIX 1.1: PUBLICATIONS

Refereed Conferences

Sengonzi, R., Demian, P. & Emmitt, S. (2009) Optimizing Healthcare Facility Value through Better Briefing and Optioneering. In AHMED, V., ALSHAWI, M., EGBU, C. & SUTRISNA, M. (Eds.) Proceedings of the 9th International Postgraduate Research Conference (IPGRC), 29-30th January, 352-365. Research Institute for the Built and Human Environment (BuHu), Salford, UK.

Sengonzi, R., Demian, P. & Emmitt, S. (2009) Opportunities for e-brainstorming in pre-design processes of healthcare projects. In KAGIOGLOU, M., BARLOW, J., PRICE, A. D.F. & GRAY, C. (Eds.) Proceedings of PhD Workshop of HaCIRIC's International Conference 2009: Improving healthcare infrastructures through innovation, 1st April 2009, 32-41. HaCIRIC, Brighton, UK.

Mills, G. R., Price, A. D. F., Mahadkar, S., Sengonzi, R. N and Cavill, S. (2009) Who Or What Really Counts In Stakeholder Value Management: How Can Stakeholder Weighting Be Used In Strategic Asset Management, HaCIRIC International Conference, Improving Healthcare Infrastructure through Innovation, 2-3 April, Brighton, UK

Sengonzi, R., Demian, P. & Emmitt, S. (2009) A Proposal for Discursive Methods of Stakeholder Involvement in Healthcare Project Decision Making. In HORNER, M., PRICE, A.D.F., BEBBINGTON, J. & EMMANUEL, R. (Eds.) Proceedings of SUE-MoT : 2nd International Conference on Whole Life Urban Sustainability and its Assessment, 22-24th April, 2009, 142-155, Loughborough, UK.

Sengonzi, R., Demian, P. & Emmitt, S. (2009) Challenges in Negotiating Trade-Offs in Pre-Design Briefing of Healthcare Projects. In TZENG, C., EMMITT, S. & PRINS, M. (Eds.) Proceedings of the International Symposium CIB-W096: Future Trends in Architectural Management, November 02-03, 2009, 149-159, Tainan, Taiwan.

Reports

Sengonzi, R. (2009) *Improving Whole Life Value of healthcare facilities through better briefing and optioneering,* HaCIRIC, Research progress report, Third year review, Reading University, UK.

Posters

Sengonzi, R. (2009) *Improving Whole Life Value of healthcare facilities through better briefing and optioneering,* HaCIRIC Third year review, Reading University, UK.

APPENDIX 3.1: TOOLS AND TECHNIQUES

Approach (Tool Name and Description)	Applicability				
	Strategic Briefing	Optioneering			Whole Life Value
		Problem-Structuring	Option-Generation	Option-Selection	
AEDET Evolution – Achieving Excellence in Design Evaluation Toolkit evaluates the quality of building design in healthcare buildings. Useful for scoring design quality of existing buildings as way of informing future design considerations (NHS Estates, 2008).	✓			✓	✓
ASPECT – deals with the way the healthcare environment can impact on the levels of satisfaction of patients and staff. It measures levels of satisfaction seen through the health outcomes of patients and through performance of staff (Lawson, 2005). Used retrospectively can be a powerful tool for measuring existing buildings' performance. (DH, 2008)	✓			✓	✓
Brainstorming - The exercise is characterized by the use of four rules, which serve to minimize interference that could be caused by evaluation. Participants are instructed to generate many ideas, to think of uncommon ideas, to combine and improve ideas, and to refrain from criticism (Simon, 1957; Rawlinson, 1981; Hawkins, 1999).			✓		
CIB guidance- provides an extensive list of what a construction strategic brief should ideally comprise, including, a mission statement; the context; and, organisational structure and functions; etc (CIB, 1997)	✓				
Cost Benefit Analysis - hypothesizes that a money value can be put on all the costs and benefits of a strategy, including both tangible and intangible returns to people and organisations outside the 'sponsoring' organisation (Green Book, 2002; Johnson *et al*., 2008)	✓			✓	✓

APPENDIX 3.1: TOOLS AND TECHNIQUES

Approach (Tool Name and Description)	Applicability				
	Strategic Briefing	Optioneering			Whole Life Value
		Problem-Structuring	Option-Generation	Option-Selection	
Decision trees - provide an effective structure for representing and evaluating alternative decisions and the implications of taking those. They may also be use in formulating an accurate balanced picture of the risks and rewards that can result from a particular choice (Arditi and Pulket, 2005).				✓	
Delphi Technique - Delphi technique is based on an anonymous procedure employing a series of mailed questionnaires. Results of one iteration are fed back to the expert panel in the next iteration. The cycles stop when a predetermined criterion, such as level of consensus, has been reached (Vennix and Gubbels, 1992).			✓	✓	
Design Quality Indicator (DQI) - uses a questionnaire with is a short, simple, non-technical set of statements that collect the views from all stakeholders by looking at the *functionality*, *build quality* and *impact* of buildings (CIC, 2003)	✓				
Electronic Brainstorming (EBS) - a form of e-collaboration, with the aid of Group Support Systems (GSS), which has been reported to offset some of the principal constraints associated with FTF manual group brainstorming. Examples of similar established methods for idea generation include, Nominal Group Technique (NGT), electronic blackboards, and Delphi technique. (e.g. Dennis and Valacich, 1999; Gallupe *et al.,* 2007; De Rosa *et al.*, 2007; Sengonzi *et al.,* 2009)	✓	✓	✓		
Financial Analysis, traditional methods e.g. Return on capital employed (ROCE), Discounted Cash Flow (DCF), Net Present Value (NPV) - (Krantz and Thomason, 1999; Broyles, 2003)	✓			✓	✓

APPENDIX 3.1: TOOLS AND TECHNIQUES

Approach (Tool Name and Description)	Applicability				
	Strategic Briefing	Optioneering			Whole Life Value
		Problem-Structuring	Option-Generation	Option-Selection	
Life Cycle Assessments - a systematic set of procedures for compiling and examining the inputs and outputs of materials and energy and associated impacts directly attributable to the functioning of a product or service system throughout its life cycle (BS EN ISO 14040).	✓				✓
Multi-Criteria Decision Analysis (MCDA) – making decisions based on multi-objectives Objectives symbolize the decision-maker's values and are derived from multi-dimensional value functions that signify decision-maker preferences (e.g. Analytical Hierarchy Process, Saaty, 1990).				✓	
NEAT – A checklist-based approach for assessing new developments or refurbishment projects for NHS buildings. Aims to raise environmental awareness within the NHS through estimating the environmental impact and sustainability of NHS facilities and services.	✓				✓
Nominal Group Technique (NGT) - This procedure is used to generate and evaluate a number of ideas regarding an issue (Delbecq, 1975).			✓		
OGC Gate way process – review process for civil procurement conducted by Office of Government Commerce. Examines projects at critical stages in their life-cycle to provide assurance that they can progress to the next stage (OGC, 2008).	✓			✓	
Performance Approach - concerned with what the building is required to do, and not with describing the technical solutions (how it is constructed). This approach emphasises and forces the clients to think of what is really needed to support their business processes (Leinonen and Huovila, 2000)	✓				

APPENDIX 3.1: TOOLS AND TECHNIQUES

Approach (Tool Name and Description)	Applicability				
	Strategic Briefing	Optioneering			Whole Life Value
		Problem-Structuring	Option-Generation	Option-Selection	
Question, Options, Criteria (QOC) - is a design rationale methodology that is used to compare current concepts against a set of criteria that the design team feel are appropriate for the project (McKerlie and McLean, 1993, 1994)				✓	
Ranking and Scoring - Options are assessed against key factors relating to the strategic position of the organisation and a rank score established for each option (Johnson *et al.,* 2008).	✓			✓	
Real Options – the right but not obligation to take action in the future (Amram and Kutalika, 1999; Benaroch, 2001; Boute et al., 2004; Ford and Sorbek, 2005)				✓	
Regulatory Impact Assessment – a policy tool assessing the impact, in terms of costs, benefits and risks of any regulation that could affect the public (PH, 2008).				✓	
Robustness Analysis - a sequential approach that rejects the pitfalls of theoretical optimisation while at the same time avoiding the impractical data demands of comprehensive analysis (Nutt, 1988).		✓		✓	
Scenario Planning/Analysis – effective in considering several possible futures rather than one possible future that tries to accommodate all variability and uncertainty (Daellenbach and McNickle, 2005; (Johnson *et al.,* 2008)		✓	✓	✓	✓
Soft Systems Methodology (SSM) - attempts to promote learning and understanding of the problem situation among a group of stakeholders rather than set out to solve a pre-defined problem (Checkland, 1999).	✓	✓	✓	✓	✓

APPENDIX 3.1: TOOLS AND TECHNIQUES					
Approach (Tool Name and Description)	**Applicability**				
	Strategic Briefing	Optioneering			Whole Life Value
		Problem-Structuring	Option-Generation	Option-Selection	
Soft Value Management (SVM) – similar to VM, soft value management models such as Simple Multi Attribute Rating Technique (SMART- Green, 1992) have been innovated to deal with the softer intangible issues usually associated with 'values' in value alignment (Liu and Leung, 2002).	✓	✓	✓	✓	✓
Strategic Choice Approach (SCA) - an incremental approach useful for identifying uncertainty, complexity and conflict in problem solving (e.g. Friend and Hickling, 1997)	✓			✓	
Strategic Needs Analysis (SNA) - uses a workshop setting involving stakeholders in identifying a range of strategic options for the project problem. The premise of the approach is that any identified option must be consistent with the strategic direction as laid down by the organisation's strategic management processes and statements (Smith *et al.*, 2003)	✓				
Strategic Option Development Analysis (SODA) - uses interview and cognitive mapping to capture individual views of an issue (Eden and Ackermann, 2001)	✓				
The CMPS Policy Hub – aims to improve policy making and delivery (PH, 2008)				✓	
Value Management (VM) – a structured process of dialogue and debate among a design team and decision-makers during an intense short-term conference (Green, 1994). A service which maximises the functional value of a project by managing its development from concept to completion and commissioning through the audit (examination) of all decisions against a value system determined by the client (Kelly and Male, 1993)	✓	✓	✓	✓	✓

APPENDIX 3.1: TOOLS AND TECHNIQUES					
Approach (Tool Name and Description)	Applicability				
	Strategic Briefing	Optioneering			Whole Life Value
		Problem-Structuring	Option-Generation	Option-Selection	
Whole Life Costing (WLC) - In order to enable building design to be tailored to meet clients' long-term needs, WLC deals with the design of infrastructure with regard to its operation (long-term performance and operating costs) through its whole life with considerations taken at the design stage and earlier (BS/ISO 15686; El-Haram et al., 2002; Kishk et al., 2003a, 2003b; Kirkham et al., 2004; Horner, 2010).	✓			✓	✓

APPENDIX 5.1: CASE STUDY PROTOCOL INSTRUMENT

Draft Case Study Protocol

Title: A framework for achieving Whole Life Value of healthcare facilities through briefing and optioneering

Section 1: Overview

Background information

This project is being conducted within the collaborative EPSRC funded Health and Care Infrastructure Research and Innovation Centre (HaCIRIC). Modernising the UK's health and social care system is a priority for government and for the country as a whole. An unprecedented investment to renew the built and technical infrastructure for delivering care is underway with new hospitals and primary care centres being built. It is believed that if world-class infrastructure is to be delivered, this investment must achieve its full potential. The present project aims to help accomplish this broader HaCIRIC goal.

Challenges

The health and social care system is said to be one of the most complex and rapidly changing organisational and technical environments in any sector of the economy (EPSRC, 2008):

- many stakeholders are involved in delivering care;
- funding mechanisms are convoluted;
- patterns of demand and use are changing, as are government health policies.

Furthermore, the life cycles of the various elements of the infrastructure / buildings, medical and information technology / are mismatched. Each involves complex supply chains, <u>multiple users with their own needs</u> and differing institutional and funding arrangements. All these have to be reconciled.

Proposition

Most of the aforementioned challenges impact the whole life of the healthcare facility. As such, they involve issues that necessitate analysing and solving in the pre-design stage before major decisions can be made. Therefore, it is envisaged that tackling the project definition issues through improved briefing and options selection will have a resultant "knock-on" effect of improved methods for achieving Whole Life Value (WLV) of the healthcare facility.

As a solution, the crucial target is to improve the way in which stakeholder needs and requirements are captured and then using these to improve the way decisions are made in selecting facility options. The project therefore seeks to find answers to the key question:

> How can briefing and options selection processes be improved in order for Whole Life Value to be delivered in healthcare facilities?

The project briefing stage has been said to involve: the making of a pyramid of decisions; setting the scope of the project prioritising issues for design; as well as, choosing from potential alternative solutions (Kelly 2002). Consequently, it has also been noted that problems in buildings and costliest mistakes can be traced back to the briefing stage (Shen *et al.*, 2004; Duerk, 1993). Therefore, this project aims to devise means through which healthcare facility value can be improved through better planning and pre-design project delivery.

In order to meet the project aim, case studies will be carried out. Case studies are generally believed to be the preferred strategy when "how" or "why" questions are being posed (Yin, 2003). This is especially true in those instances when an investigator has little control over events; and, when the focus is on contemporary phenomenon within some real life context, as is the case for this project. It has further been argued that because construction briefing is a process which is difficult to discuss in abstract, a case study approach would seem most appropriate (Hudson et al., 1990).

Substantive issues being investigated

i) Briefing and option selection
Case studies investigating NHS project briefing and options selection processes will be conducted.   In order to ensure that contemporary practice is investigated, exemplar NHS organisations having carried out construction in the last five years or those with ongoing projects have been identified and contacted. The main modes of inquiry will be through:
- interviews with individuals responsible for the relevant issues of this research;
- project document content analysis; and,
- observation.

Because of the multiple methods involved, contact over a long term may be necessary. For this reason, organisations within the vicinity of Loughborough have been targeted.

ii) Whole Life Value

The WLV phenomenon is relatively new. Recent studies into WLV include guidance from BRE (Bourke et al., 2005; Mootanah, 2005). Although the phenomenon is appreciated, understanding and practising it still remains a challenge. The National Audit Office (NAO, 2005), has reported that although WLV is targeted by NHS estate practitioners, the exact tools for its achievement are not known. Hence, this research project also aims to investigate current understanding of WLV. The study will target all

potential project stakeholders, capturing their insight and seeking to further enhance propositions for WLV long term achievement.

Section 2: Field procedures

The major tasks in collecting data include:

a) Gaining access

Postal letters inviting the PCTs or interviewees to collaborate on the research project are to be sent. Depending on the initial response, follow-up calls are then to be made in order to ensure that access is made possible.

b) Schedule of activities

Field activity is divided into two parts:

<u>Part 1</u>
Investigation into WLV, briefing and options selection will be carried out between March – June 2009

This will be followed by initial analysis of results leading on to part 2.

<u>Part 2</u>
Getting back to the 'informants' with an initial report and having them validate that it is a true reflection of the findings;

Trialling recommendations (in form of a designed process improvement framework) with participants.

c) Weekly meetings/discussions with supervisors (sharing/guidance and update).

Section 3: Case Study questions

The following questions reflect the actual line of inquiry for the study

Primary/key Question: *How can briefing and options selection processes be improved in order for Whole Life Value to be delivered?*

This leads to further questions:

a) What is the general understanding of all three concepts?

b) Current state of phenomena:
    -    How are the processes carried out? i.e.

Standard procedures involved;

When they commence, milestone activities etc.

Who is involved, when and to what extent;

Describe the practice in detail indicating ways in which it is innovative, compared to other practices of the same kind or in the same jurisdiction.

- Does it work?
- If not, why?
- Suggestions for improvement.

c) How is or how could WLV be reflected in the built health environment?

- what are its CSFs?

d) How can the processes be improved individually and as a whole to achieve the CSFs?

Section 4: A guide for the Case Study Report

This tentative plan of the report includes:

- an outline to facilitate collection of relevant data in appropriate format and reduce the possibility that a return visit to the case study site will be necessary;
- format
- audience for Case Study report

APPENDIX 5.2: INTERVIEW GUIDE INSTRUMENT

Research Title: A framework for achieving Whole Life Value through briefing and optioneering

Interview question guide for architects, advisors and Principal Supply Chain Partners etc.

CONTENT

Section 1: About the participant and organisation

1. Name of participant:…………………………………..
2. Job Title/ Position: …………………………………………………..
3. Name of organisation:……………………………
4. Address:……………………………..
………………………………………………...
………………………………………………...
………………………………………………...
Contact details:
Tel: …………………………………..e-mail ……………………………….

Section 2: Project Details

(1. Have you, in the last five years including now, been involved in the early stages of a healthcare project? Y / N)
2. If yes to (1), how many projects?...
3. Type of project: civil, building, other……………………………………
4. Scope of the work: either, new, refurbishment, extension, re-modelling, other…………………
5. Monetary value of the project…………………………………………
6. What was the source of funding, and how was the project procured?...............
7. Contract duration………………………………………………………….

Section 3: Briefing

1. What is, in your opinion, is construction briefing about?................................
2. Please talk/walk me through a step-by-step briefing process as you recall it was done. Who was involved?
3. About information and communication management: In your opinion, how was it managed?

4. Did you find any peculiarities in briefing for the NHS process as compared to briefing elsewhere?
5. Satisfaction with the whole briefing process? (barriers, strengths, challenges to the process?)
6. What could be done differently?

Section 4: Option Selection

1. Were you a participant in the option selection process?
2. What sort of options did the project have to deal with?
3. Who was involved in this process and how?
4. Forums for decision-making e.g Face-to-face meetings or 'private/individual' decision-methods?
5. Drivers for decision-making?
6. Any decision-making guidance used?
7. How did you reach consensus during option selection?
8. The role of 'time' and 'expense' (not project cost) in choosing methods and reaching agreements?
9. Did you find any peculiarities in option selection in the NHS process as compared to option selection on other projects?
10. Satisfaction with the option selection process? (barriers, strengths, challenges to the process?)
11. What could be done differently?

Section 5: Whole Life Value

1. How has WLV been demonstrated in the healthcare projects you have been involved in?
2. What in your opinion can be done better?

APPENDIX 5.3: EXAMPLE OF STANDARD POSTAL LETTER

6th October 2008

Mr. xxxxxxxxxx
Chief Executive
Xxxxxxxxx Primary Care Trust

Dear Mr/Mrs. xxxxxx:

Loughborough University's Department of Civil and Building Engineering is part of the EPSRC funded '*Health and Care Infrastructure Research and Innovation Centre*' (HaCIRIC), in collaboration with Imperial College London and the Universities of Reading and Salford. Loughborough University is leading the INNOVATION IN FACILITY DESIGN AND CONSTRUCTION PROCESSES theme. More information on theme 3 can be found at http://www.lboro.ac.uk/departments/cv/projects/haciric/.

I am a PhD student member of the Loughborough University team. Therefore, in partial fulfilment of the requirements of the PhD and as part of the Loughborough research theme, I am researching **'A framework for achieving whole life value of healthcare buildings through briefing and optioneering**. This research focuses on the early stages of the project. It is aimed at improving the processes involved in acknowledging healthcare stakeholder needs, collection of needs-related data and information from stakeholders as well as translating these into useful knowledge. The useful knowledge is what will eventually inform better early decision-making in order to deliver value in the healthcare facilities over their entire life (whole life).

As part of my case study research, I am interested in exploring xxxxxxx PCT's construction briefing protocols and other relevant documents, as well as conducting interviews with individuals responsible for briefing within your PCT. The aim of the exercise will be to retrospectively investigate briefing and option selection practice in the healthcare sector. Results from the survey will be used to identify aspects of process improvement and competitiveness through focusing on stakeholder needs and requirements.

This letter is to request your assistance and collaboration. You may be assured that the confidentiality of your response will be respected. The results of the research will be summarised in a report and sent to all interested participants.

I would be very happy to answer any questions you may have and can be contacted on the telephone number or e-mail address below.

I look forward to hearing from you soon.

Yours sincerely,

Ruth Sengonzi
PhD Researcher
HaCIRIC Project
Department of Civil and Building Engineering
Loughborough University
LE11 3TU

Tel: 01509 223641
Mobile: 07984494525
Email: R.N.Sengonzi@lboro.ac.uk

THEME / PARTICIPANT	BRIEFING						
	WHAT	**WHO**	**WHEN**	**WHY**	**WHICH**	**WHERE**	**HOW**
Interviews							
Alpha (FTF)	Small org'n; keep services local; procurement in the NHS: originally lumpsum designed to HTM and HBN, then capital charges (interest and depreciation) introduced -->awareness on cost and capital; all planning now subject to clear biz cases and biz plans - CIM; collaborative approach means PCT is forced to take on views of people who may not know what they are commenting on - don't realise the impact it has on rest of the building; LIFT - design rests on private sector provider - their own interpretation; in a scheme that worked: did not involve a patient; patients should judge on fit outs, art work, furniture; trying too hard to please and design with all in mind; advantages of LIFTco procurement arrangement - maintain bldgs in as good as new condition always - bldgs are well maintained;	experienced E &FM; 3 GPs autonomous; separate patient groups (physiotherapy and mental health); design owned by LIFTco so they tend to shut out users;	no standard methodology therefore no evidence of chronological order of activities in the briefing process;	care back to community after recognising that little focus on primary care; danger in buildings designed by committee is that stakeholders design buildings which leads to poor design - PCT has to account for anybody's views; why project in example worked: involved right people on the team, no blame - users involved from initial outline briefing; the right balance on the team; in a scheme that worked, did not involve a patient because patients are not qualified to understand the intricacies of medical care but are qualified to judge on subjective issues like PR, care; patients should judge on fit outs, art work, furniture because they don't understand priority in budgets; also when you throw something open - such as public consultation - predominantly attended by people with a moan - complainers; no standard briefing methodology/pack - because small organisation; advantages of LIFTco procurement arrangement - maintain bldgs in as good as new condition always - bldgs are well maintained because LIFTco contactually bound to do that; incorporating flexibility in design is very difficult when you have competing needs;	Challenges - bldg designed by committee; dilemma - LIFT as opposed to acute; collaborative approach implies PCT is forced to take views of people who may not understand what they are commenting on; where it goes wrong- so much legislation to be complied with on top of having to take the users' views intop consideration! where do you strike the balance with users? trying to tie the subjective and the objective based on fact and real need? complexity of the NHS - the wish to involve everyone in trying to create a brief backfires; opposite end of the spectrum, some where in the middle is the right way; a patient is not qualified to understand the intricacies of medical care; when you throw something open e.g. public consultation, you predominantly get people with a moan - complainers; we need to get the balance right; conflict with users - lose sight of legislation in abiding with users - lose sight of the legislation; not possible to please all users with their diversities; ideally, you must get the legislature bound in tablets; the functionalities shld be bound; you must get the environment - users should comment on that; be careful not to involve everyone in everything - invite them to what affects them and what they will use; everything should be done in phases including briefing and involvement; what could be done better- follow process such that: - what are the service plan issues? - make functionality issues right; - identify the schedule of accommodation; - get the room-relation diagrams right; - refer to the ADB; - bring the architect in at this point	community/local care;	LIFT: partnership SPV - 60%: 40%; community based services; briefing (traditional method), srvice plan should dictate the design; in practice, when not sure what is needed - get the architect in. example of what worked right involved: business managers in peadiatric and elderly (end-users), architect (observer), consultant, Nurse, ward sister; Design in the NHS dependent on Room Data sheets; no standard briefing methodology/pack - because small organisation; process is: seek advice from user groups, most input needed from staff because OPD scale, supported by community outreach services; ADB acts like the bible of design - depart from it at your own peril; user involvement by LIFTcos - not keen to involve users on the objective issues but easier to involve in softer issues; mainly guided by contractual limitations - construction etc., very contractual and financially led - this has impact on patient experience; not always sure when to bring in the architect;
Beta (FTF)	Recently completed facility; good process on time and to cost;	input in design brief: county council, users, voluntary sectors		introduction of LIFT a challenge because of long- term commitment, with the NHS changing and the recessions etc. you can't afford to be commited	what would be done different - wish the tension before negotiating a price could be avoided; introduction of LIFT a challenge		2006 identified block PFI partner; very systematic process followed; methods for engagement - focus groups, walk throughs, surveys, displays at local councils;

				OPTIONEERING		
WHAT	WHO	WHEN	WHY	WHICH	WHERE	HOW
multi-occupancy; don't think we achieve a solution where everybody says it's ideal; independent assessments for vfm; measure of success - post-contract works; worked on a scheme where a ward sister part of magmt team - zero post-contract works 3-4 yrs after opening; another scheme stopped at 75% because it's been designed on reflection of the past;sometimes different views but partnership relations enable compromises and good end-results; method of procurement shouldn't impact upon end result (value) - if it does then value went out the window or one side's perception of value is dominating the result; negotiating trade-offs - likely to be done through concepts and opinions; sometimes arbitrary decision (unpopular); DM Drivers - a mixture of all; can't proceed without some parameters e.g. financial; HTM;	especially multi-occupancy designed by committee; management group meetings; larger LIFT bldgs - user group upto contract stage; thereafter bldg mangmt group/project management grp/procurement group; then, commissioning group; same principles diff. names; same parties;	pre-contract stage; negotiation of tender; pre-tender cost estimates; procurement; construction; commissioning; PPE;	bills signed off to make sure that financial practices still sound; NHS produces deptal cost allowance figures - a measure of financial comparison; bldgs assessed against B/Notes and HTM - ensures technical reqts are met; about negotiating trade-offs in DM - sometimes arbitrary decision that's others may not like because "it's no good designing a £3 Million bldg if we have only got £2 Million;	Difficulty sometime with an output specification - those responsible for design may feel it's their responsibility to do it; comes back to rules of engagement and well defined they are	pre-contract stage; negotiation of tender; pre-tender cost estimates; bills signed off;	especially multi-occupancy bldgs designed by committee; always a compromise decision; 1st element: process is such that at briefing stage, those sat around a table looking at the design elements formally sign off their brief or state in writing that they are happy the design (outline) produced meets their brief; don't move to detailed designed until outline element is formally signed off; second element: employ services of district valuer to make sure we get the planned revenue; svces of an independent QS to test the costs of new bldgs against other similar bldgs; NHS produces departmental cost allowance figures - gives a measure of financial comparison; assess schemes against B/Notes - meet technical reqts; only when this is done is the scheme ripe for procurement; hopefully majority decisions for 'Yes'; larger LIFT bldgs - user group upto contract stage; thereafter bldg mangmt group/project management grp/procurement group; then, commissioning group; same principles diff. names; Prince I & II project management techniques; do our best but don't always succeed; measure of success: post-contract works; lots of criticism that lead to fundamental change - not good value; nominations for awards; sometimes different views but partnership relations enable compromises and good end-results; past failures bring about future lessons; measures of success: financial - commiting to budget; timely completion; risk (financial and technical); user (professionals providing the service and ultimate (patient or service) users; Negotiating trade-offs: likely to be done under concepts and opinions; sometimes an arbitrary decision which some others may not like is made; how to deal with them not liking decision- always try to do best to ensure assessing outcome on agreed set parameters - if compromise is made, all parties being in full awareness of facts; lay the ground rules before start of the process; come back and review the scheme to be under budget when necessary; come back to brief again - should be the measure to test against the scheme; if brief meets everyone's expectations - there should not be a need for conflict; brief will change because perceptions change - more and more schemes done on output rather than prescriptive specifications; a lot more collaboration has to take place if a scheme is built to output spec. - parties involved have to be prepared to collaborate;

WHOLE LIFE VALUE

WHAT	WHO	WHEN	WHY	WHICH	WHERE	HOW
£10.5 Million and £5 Million schemes; Value in schemes;common spec.; required design & engineering svs; brief; value judgements; healthcare design; HTM, Building Notes; design reqts; ADB: size & fixtures a room shld have; quality standards; qualitative issues; technical brief; existing bldg; users' views; users were happy; balance btn user satisfaction and technical compliance; value judgements in terms of financial consqs. of scheme; value in construction stage ensured through monitoring and making judgement at each interim payment stage; criteria for equipment purchase: best value overall lifecycle and best comfort for professionals; technical value checks thr inspection during construction; towards completion: commissioning phase: systems and equipt checked and certified, relevant training provided to users;endeavour to wherever possible avoid post-contract works; depending on the size of the scheme, endeavour to carry out a PPE - try and assess if everything is OK; record any problems; full post-contract evaluation split into various sections: 1.question-answer btn PCT rep. (E&FM) and blding supply side, 2. bldg supply side and user organisations; subjective views from ultimate users in the main revolve around quality, finishes, fixtures, furnishings, waiting space, car parking space etc., things that assist the patient's journey but are difficult to incorporate into an entire scheme; for this particular scheme took on board some of the constructive criticism: highway issues, cutting down trees, additional patients coming to site, car parking - all those issues common to healthcare schemes; in terms of value aim is to ensure that a PPE is carried out, that we look at results to try and assess not only monetary VfM but also users' perceptions - do they see the completed scheme as adding value? very very difficult to satisfy all; fair to say, if you give people an opportunity to comment - predominant those that want to complain - those that have criticism; difficult to meet different people's value judgements; government edict encourages people to use public transport more and more while some people are of the perception that the NHS should provide them with a car parking space, free and ready, how do you square the two?; to come up with an end result of a building or facility that meets everybody's perception in terms of value is very difficult; got some way to go in WLCosting at design stage; usually WLC used for more financial appraisal than anything else; functional architecture v architectural merit	Tender board; tenderers; Svc users (3 GP practices, PCT svces, mental health services, acute svces); people round table of briefing; dep'tal managers; E&Fac. Manager - chairs periodic building management committee meetings; contractor; some vociferous users not part of original briefing but joined later stage;	Capital schemes; existing building example;existing building, compromise to get best value;for small scheme, after six weeks to 2 months into scheme's use - PPE; larger schemes normally 12 months into use, full formal post-contract evaluation; minor issues that occur during commissioning and bringing into use are dealt with on monthly basis; after 12 months, full formal post-contract evaluation; user perception surveys - 6 months into lives of larger schemes;	aim for level playing field for tenderers; set down building standards within NHS; to make area fit for purpose; best value in the way we are spending; vfm; traditional competitive tendering for best price v. lowest price; aim to always avoid post-contract works; greatest waste of money in completing a capital scheme and having to go back after a few months and start changing it; in terms of value, avoid delays to service users; carry out PPE to assess that everything is OK; record any problems to avoid them happening next time; PCE analysis to ascertain if finished result met expectations of EFM and facility users; actual end-user involvement is encouraged through patient forums but it's difficult because different perceptions of people with little understanding of technical issues of design of healthcare buildings, very subjective views from them;	treat with caution service users' subjective views at PPE; overall experience got from two schemes: communication and liaison with the users helped tremendously; majority of patients not qualified to judge clinical care is excellent, mediocre or not so good but what users are qualified to judge is cleanliness, tidiness, personal dignity in a pleasant manner; it is very difficult to judge what is good value - depends on where you sit in this chain from user of service to provider of service to EFM responsible for making the service run; need to understand and concentrate on wider issues of value judgement as opposed to VfM; NHS not gotten to grips the concept of WLCosting - still very much look at initial capital cost; got some way to go in WLCosting at design stage;debate: lowest WLC v slightly higher WLC but better solution in terms of service to be provided?; financial value v much larger perception of value; functional architecture v architectural merit for community v long term aim of 21st century healthcare provision in a basic building or architecture for the community v long life loose fit that could be altered economically? value judgement regarding high qlty, long lasting fittings and fixtures and materials lasting 20 yrs v argument against them given that they will be changing in 5/10 years! factors for success of WLV - the KPIs: obviously the financial one: commitment to budget;time - on time or ahead? risk(financial and technical);user satisfaction in terms of those providing the service and ultimate user satisfaction; technical assessment - does the bldg meet the statutory reqts at the end of the PPE;	Value in schemes; smaller schemes; large capital schemes; initial stage (inception & design); procurement stage; construction stage; fixtures&fittings stages; value in specific equipment going into the building; performance in relation to some of the comments I hear about schemes in other areas;	Like-for-like specs.;Competitive quotations;based on common spec.; guidance docs.; smaller schemes, informal way of meeting & discussing with users; larger schemes: formal mtgs where issues are documented, plans modified and changes recorded -> courses for horses; i.e. initial stage: setting specs to ensure they meet the value judgements technically (Trusts) and operationally (users); most schemes procured under traditional competitive tendering; construction stage, close & regular monitoring before each interim payment; price assessment and quality assessment; borrow 'best buy' guides from other bigger organisations prepared for best value overall lifecycle cost; towards completion --> commissioning phase: systems and equipment checked and certified; relevant training carried out and room for last minute minor modifications; on all schemes, have had users involved at the earliest possible stage in briefing process so they know exactly what they are getting at the end;PPE or post-contract evaluation after completion to assess if everything is OK; smaller schemes less formal assessment;monthly building management committee meetings - part of process for LIFT buildings; larger schemes: full formal post-contract evaluation exercise after 12 months; procedure for PCE: split into 1. Q&A session btn supply side and E&FM, 2. facility users and supply side; criticisms raised by a single person/party addressed on a one-to-ene basis, issues raised by many are raised for discussion by buildg mangmt group, hoping the design team take away constructive criticism for future schemes; try our best whenever we can to enlist public involvement; advertise schemes; e.g. invited immediate neighbours to see plans - took on board some of the constructive criticism: highway issues, cutting down trees, additional patients coming to site, car parking - all those issues common to healthcare schemes; explained why design was as it was; discussion and analyses fed back to design team in final design solution; for smaller schemes - don't do that element of consultation, copies of plans are sent to people who manage the svc, they display that in their particular consultancies and get us feedback that way; much more of an informal process (horses for courses); Needed improvement: end user (actual patients) involvement; we do campaigns e.g. 'your opinion counts' - leaflets in reception areas and clinical areas and ask for feedback - and get feedback from time to time; user perception surveys; some GP practices run patient forums which meet regularly and feedback to EFM; methodology for WLC depends on individual scheme e.g replacing main boiler plants because of sustainability agenda - v.very rigorous WLife Assessment before decision for preferred solution; for large schemes: because quasi public finance, provider company provided KPIs, look at monthly utility costs, EFM assembles cleaninmg costs, look at maint. costs and compare with similar bldgs in other locations, and we do a costing assessment like that, figures produced can go into projections for future new bldgs;

Keyword / Informant	Brief /Briefing	Business Case	Design	Optioneering/ options selection & decision making	WLV	Stakeholders
Alpha	- no standard methodology; - the wish to involve everyone in trying to create a brief backfires; - everything should be done in phases including briefing and involvement; - those sat around the room sign off their brief; - if brief meets everyone's expectations - there shouldn't be conflict; - brief will change because perceptions change;	- all planning now subject to clear business cases and business plans;	- design owned by LIFTco.; - danger in building designed by committee - stakeholders design building which lead to poor design; + incorporating flexibility in design very difficult when you have competing needs; - service plan should dictate the design; - ADB acts like a design bible - depart from it at your own peril; - not always sure when to bring the architect in; - those sat around the table (committee) state in writing that they are happy the outline design meets their brief; - HTM & Building Notes provide design requirements to make an area fit for purpose in schemes; - input into design brief: county council, users, voluntary sectors;	- compromise decision reached especially multi-occupancy buildings designed by committee; - 'those sat around the table formally sign-off their brief or outline design --> don't move to detailed design until this is finished; - decision making in larger LIFTco schemes - user groups (upto contract stage) --> building management group/project management/ procurement group -> commissioning group - same principles, different names; - lay ground rules before start of process; - equipment selection and purchase based on best value overall lifecycle and comfort of professionals going to use it; - because of sustainability agenda - v.very rigorous Whole Life Assessment before decision for preferred solution;	- value in schemes is delivered to specification - encompasses within it the value judgements which people on briefing table have built into it; - in terms of value aim is to ensure that a PPE is carried out; - coming up with a building that meets everyone's perception in terms of value is difficult; - very difficult to judge what is good value - depends on where you sit in this chain, from user of the service to provider of the service to EFM responsible for making the facility run; - need to understand and concentrate on wider issues of value judgement as opposed to VfM; - NHS not gotten to grips the concept of WLCosting - still very much look at initial capital cost;	GPs; Clinicians; patient groups; - very difficult to satisfy all; - difficult to meet different people's value judgements; - input into design brief; county council, users, voluntary sectors;

369

Informing	Consulting (stakeholders)	Collaboration& Engagement	Communication	Systematic processes	Value parameters
- advertise schemes; - tell them why design is as it is;	- PCT has to account for anybody's views; - opening up public consultation = predominant attendance form people who have something to complain about; - we do campaigns e.g. 'your opinion counts' - leaflets in reception areas and clinical areas and ask for feedback - and get feedback from time to time; - user perception surveys; - some GP practices run patient forums which meet regularly and feedback to EFM;	- collaborative approach means the PCT is forced to take on views of people who do not know what they are commenting on - not realising the impact on the rest of the building; - be careful not to involve erveryone in everything - invite them to what affects them and what they will use; - LIFTcos. not keen on involving users on the objective issues but easier to involve in softer; - sometimes diff views but partnership relations enable compromises and good end-results; - more collaboration between parties needed if is a scheme is built to output specs. ; - try our best whenever we can to enlist public involvement; - invited immediate neighbours to see plans - took on board some of the constructive criticism;	- overall experience - communication and liaison with users helped tremendously;	- no standard methodology for briefing process because small organisation; but, - seek advise from user groups - most input needed from staff because OPD facility mainly supported by community outreach services; '- ideally, better practice would follow sequential process such that: * identify service plan issues; make functionality issues right; identify the schedule of accommodation; get the room relation diagram right; refer to the ADB; bring the architect in at this point;	- users' views; - HTM & Building Notes; - quality standards; - users' subjective views in the main revolve around: quality; finishes; fixtures; furnishings; waiting space; car parking space (things which assist the patient's journey but are difficult to incorporate into the scheme;

370

Procurement route	Facility Typology	Alterations/ changes	Project management/ Whole Life Cycle	Evaluation & KPIs	Lessons learned /Feed back
- under LIFTcos design rests on private sector provider - and so does interpretation; - advantage of LIFTco arrangement - buildings maintained in as good as new condition; - most schemes procured under traditional competitive lumpsum contracts;	- community and local care; - OPD facilities;		- Prince 1 & 2 PM techniques; - criteria for equipment purchase based on best value over all lifecycle and best comfort for professionals; - technical value checks through inspection during construction; - towards complation - commissioning phase - systems and equipment checked and certified & relevant training provided to users; - endeavour to avoid post-contract works; - Whole Life Costing used more for financial appraisal more than anything else;	- post-contract works - measure of success; - lots of criticism leading to fundamental change = no value; - financial - commiting to budget; - timely completion; - risk (financial and technical); - user satisfaction (both clinicians & ultimate patient and service users); - try our best to ensure assessing outcomes on agreed parameters; - test scheme against brief; - full post-contract evaluation divided into: 1. question and answer session between PCT representative and building supply side, 2. building supply side and user organisation(s); - value for money; - does the bldg meet the statutory reqts at the end of the PPE;	- past failures bring about future lessons; - at post-contract evaluation - issues raised by mainy discussed at building management committee meetings - hoping design team takes away constructive criticism for future schemes; - discussion and analyses from public(community) consultation fed back to design team in final design solution; - get feedback from time to time - from consultation campaigns e.g. 'Your Opinion Counts, user perception surveys; - some GP practices run patient forums which meet regularly and feedback to EFM;

371

Concept map nodes and connections:

- **Briefing**
- Need to be sure people understand why we are doing something
- Don't move to detailed design until this
- Why we want to do smthg
- workshop
- Definition of statement of need
- Identify current state
- parallels
- informs & fine tunes costs
- **Business Case**
- experience needed
- NHS lacks skills to prepare & write
- workshop — states — Part of
- Vision of how services should be devpd
- Trust and Senior Managers
- CIM guidelines — Specific & prescriptive
- Very good for developing options
- Based on who service development is for: staff, Patients or community?
- Benefits criteria described at start of project
- For each option, bringing process together: which option is best; criteria: not just capital costs, but lifecycle costing
- results
- Something tangible
- Reviewed against
- Investment objectives: treat patients for less; reduce backlogs etc.
- 3-4 available options for improving service
- elicit fresh Thinking; Strategic Planning options
- workshops
- Gain consensus for multiple clients
- Committee sign-off brief or outline design
- at each level
- All planning now subject to clear business cases and business plans
- Existing facilities not fit for purpose; mixed accommodation, rationalised
- **Optioneering**
- Compromise decision esp. multi-occupancy
- Didn't Call process That
- Get sign-off & agreement before moving on
- Strategic Outline Case
- Outline Business case
- Full Business Case
- From brief to design
- Iterations & cost refinements
- Detailed design
- Care model & available Financial envelope
- drivers
- ground rules before start of process
- life
- Decision making
- tools
- Scoring matrix
- Trust Boards sign off What (option) schemes to take forward
- Very much about clinical service
- Is there a need?
- Options and what is available
- do
- Take preferred option forward
- Consulting engineers: structural, electr. etc.
- NPVs over 30 yr period
- Strategic decisions towards reducing costs down the line and putg things in place to avoid overall expenditure
- debatable
- NHS good at planning in the biz case but poor at implementing 15 years into operational life
- Nothing, minimum, preferred option
- Costs mustn't vary 10% of Outline case
- Govt.
- considerations
- Chose to develop 3 hospitals On 3 sites instead of 1 mainly due to political interference
- Prioritisation framework
- Previous revenue consequences
- National Priorities
- Practicality of making decision based on WLV?
- Sustainability Agenda → Very rigorous whole life assessment before preferred option
- Trust couldn't decide on preferred option
- 3 MPs involved
- lately
- Whole health economies: Health and social care, local authorities, Ambulance services, education, Charitable and voluntary orgns
- Equipment Selection & purchase based on best value over all lifecycle & comfort of professional using it
- DM Cycle for larger LIFT schemes: User groups – up to contract stage → Buildg management group → commissioning group SAME PRINCIPLES, DIFF. NAMES

373

For Trust Faster through- good for press side and more revenue

Trusts – reducing ongoing revenue costs: energy usage, infection rates, faster patient throughput,

e.g. QS – price; clinician – patient outcomes, work environments, patient length of stay;

Enables delivery of safe procedures and care to patients

easy to maintain and well constructed, robust, meets its budget and is completed on time

Healing environments

Different things to diff. people

Location and accessibility

A building that meets everyone's perceptions

depends where you sit on the chain: user? provider? EFM support?

means

difficult

Value

Difficult to judge

clinicians

estates

Depends on who you speak to

designers

Landmark building

public

few stay in a build long enough to realise it

End-users

Currency unit

Reference measure

value in schemes delivered to specifications encompassing Value judgements

patients

Safe care & positive clinical outcomes

Reduced infection rates; Reducing HAIs; Privacy& dignity

"Very idealist"

UK depts operate in Silos. Accountg for all these WLV Issues?

Source of info

aim to ensure PPE carried out

Whole Life Value

Might not mean an awful lot to many clients

Financial people at the front-end

interested

"in all honesty decisions based on fixed/limited Budgets"

means

for

Healthcare clients: Total affordable solution; Resilience built into M&E; Value for Money; Provider-client relations; Clinical adjacencies; best environment for patients & staff; Lighting & Ventilation; Sustainability

users

Flexibility of use of the building

As service model changes, can building adapt to new way of working?

Lifecycle

means

Genuine lifecycle fund

Value for Money

Building to best ability with best and most innovative materials

Healthcare planner

consultant

Strive to offer Whole Life solution

In terms of

Cheapest isn't always best

Helping Clients look at their WLCosts by looking at right front-end decisions

make strong financial for extra expenditure on all major fronts and improving Quality at front end

Understand & concentrate On wider issues of value

374

Healthcare planner at later w/shops

External at first workshop

have to facilitate appropr'tly

Briefing workshops ensure what collaborative working is about

avoid pre-conceived ideas to client reqts.

"our orgn. invests a lot of time in building client relations"

consultant

Engage with users well before Arch.

Easier to involve in softer

School nurses

Health & social care

Local Authorities

Voluntary & Charitable Orgns.

Ambulance services

what they will use

invite them to what affects them

care not to involve everyone in everything

caution

not realising impact on rest of the buildg

People with something to complain about

Collab. working means PCT is forced to take on views of people who don't know what they are commenting on

implications

Newsletters, seminars & w/shops, postal surveys, email & web-based media

Advertise proposed schemes

Set up market stall

LIFTcos not keen on involving users on objective issues

Whole health economy

Monthly mtg with Architect

Predominant attendance

open up public consultation

when

PCT accounts for anybody's views

obligation

FM not at the Table at the beginning

Represented but not fully consulted in later stages

Depending on project

feedback

Even when not doing major changes

Invite stakeholders to tell them why design is as it is

Informing

Collaboration & Engagement

Consulting

User Perception Surveys

Your Opinion Counts; Have Your Say etc

e.g.

Good number of non-NHS users participated

Pre-optioneering & optioneering

No financial Impact/cost

Bi-weekly user group meetings

Focus groups; Walk throughs;

Trust not as Involved as should be

sometimes

Patient Forums meeting regularly

campaigns

Display Proposals at local council

Public & Local community

Gov't recommends Consulting when major change in service provision involved

Need to be seen to be taking their views on board

a lot of hosps. have active stake-holder groups

because

Diff views but partnership relations enable compromises & good end-result

Take on board what people say

Consult over 3 months

What clinical service aspects to improve

Very prescriptive

e.g.

Seek advice from user groups

Public Reference Group

people usually very committed at start

some staff didn't want to let go of old building

Try our best to enlist public involvement

Met every 6wks In 3 parts of city for 3 proposed hosp. sites

Very supportive Group, actually come up with all sorts of ideas

Outward facing, involves interested parties in how facility is being designed

usually get them to engage but some will never engage

why

More needed

Between parties if scheme is to be built on Output Spec.

Invite immed. neighbours to see plans

e.g.

Sometimes agree

Sometimes disagree

Part of on-going regular service Improvement consultation exercise

Civil society & PCT use group to bounce ideas off and to help with consultation process

Human nature

To make them aware

Need to be seen to be taking their views

Designs changed

workshops facilitated by senior PCT staff

through

Outcomes to aid future decision-making

Players keen to please the Trust

most input needed from staff because OPD facility mainly supported by community outreach services

More of communication role

Participants invited thr' email & postal mail

Interactive enhanced by hand-held responder for instant feedback to qstns

Important to know at what stage to consult or inform the public

375

Into the art of Communication by email

Need a communication strategy

Lost the art of communication

Overall experience communication and liaison with users helped tremendously

Communication

Communicated with

Emotive stakeholders

Listened to

When stakeholders have a concern, communicating at local community level better

Hold workshops to gain consensus for multiple clients

Need to

Big financial and time consequence on project if not managed properly

Be sure people understand why we are doing smthg

Reconcile benefits

through

try and elicit their fresh thinking

Know definite tangible benefits

1. Understand objectives

What they want to get out of devpt before hand

Meeting people before

People understand what they must go through before a process

2.Communication and determination to come to a consensus

important

through

facilitating groups come to some sort of agreement

Not come across a scheme where somebody will not partake in any way forward and pull the whole project down

Make slight changes or Tweaks to what they want out of it

376

what we expect to see

Devp. a set of construction standards we want to abide by

How many patients to come through the system

PFI projects have to follow a certain process

Clear agenda & Purpose; justification for what reps invited to workshop

exactly how each patient is to be treated

How long in each room

Interactive with handheld Responder devices

Public consultation workshop conducted in large hall

used for recent PFI procured scheme

Operational policy

Patient flows and adjacencies

Includes indiv. reading projected questionnaire

No standard Methodology for Briefing process

Organised workshop process

List of rooms

ensures signing off and agreed by the client at every stage

Audience to respond and feedback in 10 seconds

Generally follow RIBA Standards and stages

Systematic processes

Briefing process very structured

Ideal better practice

Identify service plan issues; Make functionality issues right; Identify the schedule of accomdtn; Get the room relation diagram right: Refer to the ADB; Bring the Architect in at this point;

Systematic processes used by specialist healthcare planners to narrow down options

Similar to biz case process

Start off with smthg Strategic, people have an idea

Procedure continually being updated as we learn things from diff. projects

Yes, but will normally re-define that at beginning of each process with users

at the end of it have a fully designed building

Develop clear process and detailed progr. to show flow of design thru various stages

To make sure it's approp. for the scheme

NHS set procedure for developg a Biz Case

very quickly develop RACI schedule

depends whether Foundation Trust or reporting directly into SHA

377

- Sustainability
- Car parking space
- quality
- Revolve around things that assist the patient journey but are difficult to incorporate into the scheme
- finishes
- furnishings
- Users' views
- subjective
- Waiting space
- HTM & Building Notes
- Quality Standards
- quality
- Public & community
- emotive about Location
- Not much interruption/ Disruption along the way or after opening
- Shorter stays
- Local diagnostics
- Increased GP services
- In briefing consider
- patients
- **Value Parameters**
- Care closer to home
- Price
- How money is spent
- Clean hospital
- Kept informed
- Seen on time
- Healing environments
- Client's
- Adherence to set affordability target
- Faster through-put for patients
- Adds value to Trust
- Value for Money
- Privacy & dignity
- Decent food
- Patient outcomes
- Clinical equipment
- Acoustics
- Press-side & reputation
- More revenue
- Is it worthwhile?
- Reducing infection rates
- Patient welfare and safety
- Patient experience
- Reducing HAIs
- Atrium and front of house

378

PR,
care, artwork,
Fit-outs

Should judge
on subjective
issues

Standards of
Clinical care

Would be
most affected

Public involvement
normal in process

Invited to look
at proposal

Our orgn. Starts
With clear
objective to

Not qualified to
judge on intricacies
of medical care

Don't
understand priority
in budgets

Neighbours to
proposed site

Important to
understand
communities

Qualified to judge on
cleanliness; tidiness;
personal dignity

Views
incorporated

Limited public
involvement

**Public and
Community**

Public involvement
depends on the
functional use of
the facility

Should
comment on
environment

Users

Sometimes
interchanged

Patients

but

Patient rep.
involvement

Involve local
community where
services near residential
area

Not possible to
please all with their
diversities

or

Ultimate
users

Don't
compromise
patient safety
and welfare

Patient involvement
so effectively public
involvement

Meet regularly and
take cognizance of
their concerns

Try for a balance
between user
satisfaction and technical
compliance

Every
single person
involved is also a
member of the
public

Especially
regarding
MH units

nor

379

Contractually and
Financially led

Contractual
limitations

WLCosting
Interest driven by
What Americans
are doing

Freedom
for staff to focus
on quality of
care

Service provision
v
Estate provision?

How service
will work including
patient journey

Clinical Output
Specification

PCTs becoming
commissioning
organisations

HTM &
Building Notes

Users' views

Drivers

standards

Quality
standards

Having buildings
that deliver clinically
excellent services

Lowest
cost overall

NHS may bring in
(appoint) Architects
But these are
driven by cost

May not always
be the best

Improving
the patient pathway
and flow

Better patient
experience

To improve
spatial standards

People determine
value as cost

Better
quality of
care

Strive to

with current
economic difficulties,
even more important

Design and
keep up to similar
spatial standards as
Europe & America

"If money isn't
There, it isn't there"

duplication - double expense waste of resources for us taxpayers

(pharmacy and dispensary)

Existing facility walkthrough: Health ed. room, used for antenatal, postnatal and group training; facilities: coffee, storage; used 4/5 days

Service provision v estate provision

Does it matter where we offer services from?

Should Maximise use of existing estate

PCTs now becoming commissioning organisations

Service

building design chosen to maximise service relationships/ adjacency

Qstn: Any other services in the facility?

service requirements

new health centre building to focus on providing co-located &integrated services

e.g. some schemes have library, housing;

it is purely a health centre;

Services: GPs, Dental surgery, other consultation

for patients who are elderly & improving the care of patients with chronic diseases

reflecting the PCT's population base;

-maximise service relationships/ adjacency
- Service provision v estate provision
- service requirements
- focus on providing co-located &integrated services
- duplication - waste of resources - taxpayers

383

384

Public Consultation/ Influence

- will be established to ensure that all responses to consultation are considered fairly
- and are included in the final evaluation of the location options;
- 'patient advisory panel' will be established
- don't want politically charged meeting that might lead to sabotage of the scheme
- we want this to be as pro-active as possible, not counter-productive
- ask public for ideas, to be incorporated in stage 2 design
- how will the community influence design?
- the [patient and public] group's opinion is meaningful towards the design of the building
- get Design Team to include slide on where their input is expected
- make it clear to public that there are planning regulations
- (limit) regulate how clinical spaces should be planned
- public should not expect to influence all the building
- LIFTco must demonstrate :
- not only have we put plans on the table
- members of the public's opinions have been put into consideration
- meeting with various portfolio holders
- survey provides snapshot of visitors to the cent
- What do we ask ? When should we do the survey?; Member (D): "how do we send the survey?
- brainstorming about how to seek public consultation
- what meetings do we engage them in?
- some form of engagement of what services are expected
- ARTIST in residence
- what happens when portfolio holders say they don't like it?
- carried out consultation with people in building
- PCT taking lead on the public consultation
- It is not new to them; would be introduced to them already;
- not envisaged a full blown consultation:
- Member (B) : need to identify problem before solution
- Long process of negotiation
- Difficult to get people to feedback
- what to be done in order to comply? How to engage?
- Purpose of this/today's consultation is to get ideas on engagement
- by the time it is presented formally they may already have raised their concerns/ issues
- LIFT and NHS SHIRE COUNTY OBJECTIVES
- Approach: see where we are; where we need to get to; options of how to get there
- National guidelines on what a questionnaire should contain
- engage end users and staff directly in meaningful consultation about new building design in a creative, participatory way, with highly visible tangible and owned outcomes
- What is needed is to contextualise it to Scheme B's issues

- patient advisory panel' will be established
- Difficult to get people to feedback
- negotiation
- the [patient and public] group's opinion is meaningful towards the design
- contextualise it to Scheme B's issues
- ask public for ideas, to be incorporated in stage 2 design
- members of the public's opinions have been put into consideration
- survey
- brainstorming about how to seek public consultation
- design in a creative, participatory way, with highly visible tangible and owned outcomes
- engage end users and staff directly in meaningful consultation
- need to identify problem before solution
- what to be done in order to comply? How to engage
- public should not expect to influence all the building
- how will the community influence design
- ARTIST in residence

385

Engagement

What sort of questions should we be asking? what are their expectations?

keep it non-specific in order to capture wide expectations

ACTION: Group goes out to make contact with all those that cannot make it to meetings

has allowed for the public to engage in a way that has not been confrontational or mysterious

MEMO: how do you engage hard to reach groups like mothers etc. who can't be at evening meetings?

may be initial engagement should cover - the ground rules for artwork

PPI rep - "role of the core group to be overseeing engagement with wider public

"Difficult finding the right forum"

engaging with the public to have user involvement - intensity dependent on site

design presentation for community engagement session

brainstorming about how to seek public consultation: what meetings do we engage them in?

" difficult to engage with people - rushed off their feet"

artist in residence

some form of engagement of what services are expected

How do we engage them effectively?

Members – we'll wait for a series of meetings, so we report back to core group

Artist to bring fresh creative approaches to engaging staff and patients

not for re-design rather for the purpose of knowing what the issues might be

through forum e.g. friends of A patient group

the more engagement the better

consultation/ engagement meeting

MEMO: the dominance of the vocal minority

In gathering their needs & meaningfully responding to them

Accessibility & to answer queries

purpose of public meeting: identify a group of people to work and engage with us

not getting it till late- rather leave it full blown & disagree rather than leave it late

reference to master plan, how we have engaged with the planners

Purpose of this/today's consultation is to get your ideas on engagement

in the design of internal and external spaces

selective about who attends the meeting at this point

LIFT & NHS SHIRE COUNTY OBJECTIVES

engender ownership of, and pride in the building amongst end users & staff through creative participation

in a creative, participatory way, with highly visible tangible & owned outcomes

engage end users & staff directly in meaningful consultation about new building design

- Expectations
-Artist
- core group - overseeing engagement with wider public
- difficult to engage with people
-Selective about who attends
- more engagement the better
- purpose - identify a group of people to work and engage with us
-not for re-design rather for the purpose of knowing what the issues might be
-their input into communal spaces
- design presentation
- how do you engage hard to reach groups like mothers etc. who can't be at evening meetings

386

A concept map / mind map centered on **Presentation/Drawings**:

- will we have access to plans - in order to demonstrate to the public?
- architectural plans at outline (1:200) design stage
- town hall set up with projector for PPT slides; arch. drawings displayed at back of the room
- community engagement officer welcomes idea of including plans in forthcoming newsletters
- Main reference document
- presentation of full size plans displayed on board
- Intend to display plans and provide 3 hour window in which people can come and put up post-it notes
- problem with images/visuals – raise expectations
- MEMO: meeting reference document, 1:200 drawings/plan
- the more visuals the better - LIFTco schemes done before
- 3D Visuals
- Architectural team
- Any plans to be seen? Yes
- FURTHER ACTIONS: PM1 to post out large scale drawings for better clarity
- presentation from exemplar finishes:
- to run through architectural presentation
- present: reports on long consultation with GPs and users of the building
- a university building; two health centres
- goes through GROUND FLOOR plan PPTs explaining different spaces
- to see key issues and flows
- FIRST floor plan, SECOND floor and roof plan
- e.g. access into the building for public and staff; waiting; toilets etc.

•presentation
•of full size plans
•Main reference document
•welcomes idea of including plans in forthcoming newsletters
•exemplar finishes
•Any plans to be seen?
•FURTHER ACTIONS: PM1 to post out large scale drawings for better clarity
•the more visuals the better
• MEMO: meeting reference document, 1:200 drawings/plan

387

Artist's ideas can be challenged - together with input from health centre staff

need to capture the design & art needs of the patients and public

focus on involving a great number of community and local groups

target, involve and ultimately include 'hard to reach' sections of the community

user involvement - intensity dependent on site

intention - to commission new artwork with a unifying theme and influence the overall design of a New Health Centre

Participants are invited to state interest in becoming involved in further discussion by providing their names & addresses

What is the weight of the consultation?

need to launch public consultation strategy and events e.g. public meetings

Get members of the public involved – as well as highlight what the public can influence & what they cannot

Involvement/ Information/ Influence

range of ways to involve patients/public

opportunity to work with schools - involve young people -

public's views needed to "help us decide" on the best way to replace existing health centre

involvement - information campaign

to inform the public, patients, carers, staff and partner organisations

PPI officer talked about her role: importance of getting public and patient user group input into building design

Structure of core group

Vote holders: members from the individual groups

structured campaign with the schools e.g. involve in contributing artwork;

i.e. it's not to be left to the professionals

"small group consists of representatives from three group (interiors + arts, transport and DDA), chaired by ex-mayor; PPI partner organisation, PCT rep." PM1

about proposed changes to the location of services provided at the health centre

-to inform the public, patients, carers, staff and partner organisations
- invited to state interest in becoming involved in further discussion
-public's views needed
- involvement - information campaign
- core group
- importance of getting public and patient user group input into building design
-highlight what the public can influence & what they cannot
-target, involve and ultimately include 'hard to reach' sections of the community
- capture the design & art needs of the patients and public
- focus on involving a great number of community and local groups
-unifying theme and influence the overall design of a New Health Centre
-user involvement - intensity dependent on site

388

Engagement

What sort of questions should we be asking? what are their expectations?

keep it non-specific in order to capture wide expectations

ACTION: Group goes out to make contact with all those that cannot make it to meetings

has allowed for the public to engage in a way that has not been confrontational or mysterious

MEMO: how do you engage hard to reach groups like mothers etc. who can't be at evening meetings?

may be initial engagement should cover - the ground rules for artwork

PPI rep - "role of the core group to be overseeing engagement with wider public

"Difficult finding the right forum"

design presentation for community engagement session

brainstorming about how to seek public consultation: what meetings do we engage them in?

" difficult to engage with people - rushed off their feet"

artist in residence

engaging with the public to have user involvement - intensity dependent on site

some form of engagement of what services are expected

Members – we'll wait for a series of meetings, so we report back to core group

Artist to bring fresh creative approaches to engaging staff and patients

How do we engage them effectively?

not for re-design rather for the purpose of knowing what the issues might be

through forum e.g. friends of A patient group

the more engagement the better

consultation/ engagement meeting

MEMO: the dominance of the vocal minority

In gathering their needs & meaningfully responding to them

Accessibility & to answer queries

purpose of public meeting: identify a group of people to work and engage with us

not getting it till late- rather leave it full blown & disagree rather than leave it late

reference to master plan, how we have engaged with the planners

Purpose of this/today's consultation is to get your ideas on engagement

in the design of internal and external spaces

selective about who attends the meeting at this point

LIFT & NHS SHIRE COUNTY OBJECTIVES

engender ownership of, and pride in the building amongst end users & staff through creative participation

engage end users & staff directly in meaningful consultation about new building design

in a creative, participatory way, with highly visible tangible & owned outcomes

- Expectations
-Artist
- core group - overseeing engagement with wider public
- difficult to engage with people
-Selective about who attends
- more engagement the better
- purpose - identify a group of people to work and engage with us
-not for re-design rather for the purpose of knowing what the issues might be
-their input into communal spaces
- design presentation
- how do you engage hard to reach groups like mothers etc. who can't be at evening meetings

389

Grey water has not been proven to be in line with infection control;

Ans. PCT still reviewing grey water recycling and infection control

decisions about energy - BREEAM set scores;

timber fins (for solar gain and solar shading);

north-facing (solar) lights;

courtyard area;

Atrium

water storage and re-use?

incorporate solar shading, day lighting;

solar voltaic on the roof;

Memo: question about water re-use (rain water);

setting stiff energy targets to exceed BREEAM which is a minimum standard;

grass-planted roof;

(from public) Are we going to use the water collected from the roof?

KEY DESIGN FEATURES

external finish used: materials red brick to match surroundings;

to achieve BREEAM rating - capital cost not important but the running cost;

BREEAM/ Green/ Sustainability

even if HTM set dB levels,

Tenant's Reqts. could exceed that as is the case of both schemes;

what are your reasons for having a flat roof?

2nd floor - wing 2 - green/grass;

Sustainability reasons - Govt. agenda for green environment;

•Setting stiff energy targets to exceed BREEAM minimum standard
•water re-use (rain water);
•BREEAM rating - capital cost not important but the running cost
•high on the agenda: sustainability, acoustics
•Tenant's Reqts
•Sustainability reasons - Govt. agenda for green environment

high on the agenda: sustainability, acoustics;

Answer (Architects) – roof lights - north facing voltaic - if pitched the photo voltaics would be facing south;

390

PM1:
finds the
suggestion
alright

to represent
and answer
some
questions

Borough
Council
suggests to get
a council
member on
panel

PM2:
"pre-planning
meetings to
councils"

Borough
Council asked
why courtyard
not accessible
by public

County
Council report
last year criticised
the building –
too big

in order
to get them
responsible

and avoid
them vandalise
the building?

BOROUGH
COUNCIL
qstn: are you
consulting with
young people
involved

council
consultation

Response
from local PPI
- how will that
be done?

B/Council
response?
"send out info or
put up plans on
the walls "

consultation
programme put
together with
input from Town
Council,

to
ensure it is as
comprehensive
as possible

**Local
Auth./Town
Council**

LA for
scheme A not
interested in pre-
briefing meeting/
consultation-

want to
avoid

outcome
from meeting
with Scheme
A's Borough
Council

(qstn
from Borough
Council)

under croft
car park - due to
anti-social
behaviour - is it a
secure car park,
control
of users

Risk -
ownership
of land

issue with
planners -
car park;

formally
request for
drawing about
site
dimensions

-Ans. Yes
- through design
and orientation

and
CCTV

& secured
with barriers (to
be controlled at
reception;

•council consultation
•pre-planning meetings to councils
Borough Council issue with planners -
car park
•anti-social behaviour - is it a secure
car park, control of users
•LA for scheme A not interested in pre-
briefing meeting/
•consultation-consultation programme
put together with input from Town
Council,
•send out info or put up plans on the
walls consulting with young people in
order to get them responsible
•and avoid them vandalise the
building?
•Borough Council suggests to get a
council member on panel

APPENDIX 9.1: DRAFT PROTOCOL FOR DETAILED FRAMEWORK EVALUATION

Title: Evaluation of a proposed framework for achieving Whole Life Value of healthcare facilities through briefing and optioneering

Section 1

Guidance for evaluators and participants for testing of the framework

Participants are assured that their confidentiality will be respected. All the information arising from the evaluation exercise is to be used exclusively used for research purposes only.

The aim of this guidance is to support high quality and consistent evaluation of the framework for achieving satisfactory WLV of healthcare facilities. This evaluation protocol is not a comprehensive manual on specifics on how to conduct the exercise, rather through intuitive researcher judgement; the questions are to be used in available scenarios to map the practicability and effectiveness of the framework in delivering envisaged benefits.

The evaluator will be investigating the usefulness and impact of the framework with respect to NHS healthcare facility WLV delivery. The evaluation exercise will be informed by qualitative data, including the experiences of people who have used the guidance.

Background

The framework has been designed to address front-end WLV-related the main challenges revealed by an earlier field study. The key findings informing the framework's design include:

1. In order to demonstrate value for money when procuring/acquiring capital

assets, there is need for an accountable (auditable) and hence structured briefing and optioneering process.

2. There are several identified challenges associated with the DH/NHS requirement to consult with, and incorporate diverse stakeholders' (including all service users) needs and requirements, for example,

- Effective stakeholder communication and engagement (who to consult/engage, how to, what about, and, when is it most appropriate?);
- Service users need to be assured they will influence design outcomes from their involvement in consultation and engagement, and consequently seek to contribute towards a brief resulting in a customised (non-institutionalised) design or whole life solution;
- Site selection – seen to be often problematic and emotive.

3. It was also found that in order to achieve the right solutions, it is off fundamental benefit to first clarify the clinical output specification before commencing the healthcare facility's detailed briefing and design;

4. In addition, healthcare planners and Estates & Facility Managers play a critical role in the achievement of whole life value.

The aim of the evaluation exercise is to seek feedback on the framework's performance when applied to real-life scenarios. The objective is to use participant's feedback and observations for informing the framework's refinement in order to improve its applicability and resultant outcomes.

Section 2: The framework

The framework comprises three complementary elements including whole lIfe cycle perspectives considered within the scope of this research, and how they relate to the NHS business case process and RIBA Plan of Work (2007) protocol. The second element is the proposed (main) framework detailing the step-by-step briefing and optioneering process for satisfactory WLV definition

and clarification. The second element is augmented by several extant tools and techniques with a special focus on an additional innovative tool, a cooperative discourse model, that targets collaborative site optioneering. The third element provides the communication and engagement guidance.

The following section is specific guidance about what questions would need to be answered at various intervals over the facilities life cycle. It has been said that recent events are easier to recall than those that happened in the distant past (Eisenhardt, 2002), therefore the evaluator should preferably seek interviews on the framework's tasks as soon as they are carried out.

Section 3: Evaluation questions

1. About the participant and their organisation

    Name of participant:…………………………………....................
    Job Title/ Position: ………………………………………………..
    Name of organisation:………………………………....................
    Address:…………………………………..
    ……………………………………...
    ……………………………………...
    ……………………………………...
    Contact details:
    Tel: …………………………………..e-mail ………………………………

    Further details about specific job description and background experience with NHS projects (if any)

    ....

2. How clear are the framework's elements and specific tasks?
3. Does the framework adequately capture the relevant factors of briefing, optioneering and WLV definition typical of NHS projects?
4. Are there any missing or misplaced activities yet requisite of the NHS pre-design process is concerned?
5. What would you consider the most important activity or stage in the process?

6. Were the CSFs highlighted by the framework adequate for ensuring expected outcomes?

7. What have been the major successes for the schemes after applying the framework?

8. Have there been any problems or challenges in applying the framework? If yes, what?

9. On a scale of 1 – 5, rate the ease and usefulness of the framework as a guide for achieving satisfactory WLV through focusing on briefing and optioneering. 1 represents Strongly disagree; 2, Disagree; Neither agree nor disagree; Agree and 5, Strongly agree

10. Any comments or suggestions about the framework?