

**The Influence of Paradigms and Perspectives on the Decision To
Build Undertaken By Large Experienced Clients of the UK
Construction Industry**

by
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Volume 1

**This thesis is submitted in accordance with the requirements of the
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Abstract

This thesis explains how paradigms and perspectives influence both the process and content of the decision to build undertaken by large experienced clients of the UK construction industry. The level of client experience is drawn from a sample with a collective value of around £300-350 million, which are in turn taken from a group of clients who spend around £1 billion per year on construction industry projects. The thesis moves from a “messy” (Ackoff, 1979) view of the research problem and client dissatisfaction (Latham, 1994 and Egan, 1998) to arrive at a clear understanding of how the decision to build is made. Its scope begins by considering the initial stimulus that triggers the decision-making process and finishes when the developing proposal receives a firm commitment in the form of budgetary sanctioning. This thesis argues that it is the allocation of funds which marks the boundary between a proposal and project stage and so names the proposal’s evolution phase the “Pre-Project Stage”.

The overarching aim of the thesis is to prepare the way for improved client satisfaction and it achieves this goal by explaining the following:

- The process of the decision to build and its structure is determined by the expectations of paradigms and perspectives.
- The content of the decision to build process and the conversations within it are influenced by other competing paradigms and perspectives that seek to impose ‘their’ criteria by which their definition of ‘good’ decisions can be recognised.
- The internal and external influences on the decision to build’s process and content stem from the complex interrelationships that influence the dominance of perspectives within individual paradigms that are at the same time in competition to determine how success is recognised.
- How the decision to build can be improved is explained as a corollary of the realisation that contrasting views of what is a ‘good’ decision can exist at different levels within the same client organisation.

The use of grounded theory (Glasser and Strauss, 1967) with a multiple case study research methodology (Yin, 1994), built around thirteen core questions, led to a detailed explanation and conclusions which satisfied the research aims and objectives. Central to this detailed explanation is the consequence of dividing the process of decision-making between constituent groups within the client organisation; these groups are decision approvers, decision takers and decision shapers. The explanation articulates the decision to build as a paradigm in its own right and reveals that the people involved in the decision making process are in reality a co-ordinated-collection of smaller groups. This division of decision making lacks consonance as the various groups push different process and content agenda in an attempt to arrive at a successful decision. It is paradigms and perspectives that guide logic as they provide a means of objectifying decisions and also link the decision to build to a wider society. The thesis highlights that conflict can exist between the decision approvers’, takers’ and shapers’ view of effectiveness and

efficiency. Essentially the property department, who are the decision shapers, see their role as delivering projects and so it is through their paradigms and perspectives that they attempt to justify subjective aims as objective decisions. Shapers see their primary role as driving potential-projects through the approval process to achieve budgetary sanctioning and are often in competition with other shapers from different parts of the same organisation. Decision shapers see the approval process not as a mechanism to improve decision quality, but as a series of obstacles in the way of the project's delivery. Should anything stifle the shapers drive to get a proposal through the pre-project stage, then they will make modifications and adapt their approach in an attempt to ensure that the proposal becomes a project. The unifying theme is that all the actors seek to realise 'good' decisions and that for shapers 'good' decisions result in the successful delivery of a building. The construction industry's interpretation of 'client' can now be redefined as a small group of property related professionals working in a much larger organisation which has a core business that is tangential to the decision to build.

Validity is achieved by establishing agreement with subjects during data collection, by selecting experienced subjects who want to be seen as using best practice, by using cross-sectional corroboration within the case studies and literature, by using grounded theory and its inherent ability to confirm theory as it emerges out of data, by providing an audit trail from the explanation to the data, and by verifying its findings in a validating workshop.

Keywords

Decision to build, decision, making, taking, shaping, paradigms, perspectives, objective, subjective.

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Finally, the author recognises the contribution his wife Helen, and his son Tom, have made by enduring financial prudence, long absences, and zombie like appearances. Without their understanding and support, again this thesis would have been unfinished.

In closing my acknowledgements I would like to share with you something that happened the other day. My five year old son was colouring in a picture. The crayon he was using kept slipping over the lines and so I felt the urge to explain to him that the proper way to colour pictures was to keep inside the lines. Because of this thesis I now understand why I felt such an urge. I now understand that we sometimes teach paradigms without even realising it. I acknowledge that the undertaking of this research has changed me and the way I view the world.

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Part One: The Research and Thesis Structure.

Chapter One: Introduction To The Thesis.

1.1. Introduction To The Chapter.

Apart from one thesis written around a single case study (Bilello, 1993), no other single source of literature was found that discussed the origins of the decision to build within the client's organisation. This thesis emanates from the value management subject area as it relates to the construction industry and capital projects (Bone, 1996; Connaughton & Green, 1996; Crum, 1971; Dale, 1995; Dell 'Isola, 1982; Gage, 1967; Gilleard, 1991; Green, 1990, 1992, 1994; Green & Popper, 1990; Heller, 1971; Kelly & Male, 1991, 1993, Male et al., 1996; Miles, 1962, 1972, Norton & McElligot, 1995, O'Brien, 1976, Palmer, 1990, 1992, Parker, 1994, Roberts, 1994, Tavernier, 1975, Zimmerman & Hart, 1982). However, this work places an emphasis on understanding the issues considered by UK client organisations, which influence their decision to commit large sums of money to procure new buildings. Its intention is to pave the way for further research and a value management response, and starts from the general acknowledgement that the construction industry needs to improve levels of client-satisfaction (Egan, 1998). If the UK economy is to achieve sustainable economic growth, the construction industry must assist its clients to achieve competitive advantage. Thirty years after the Banwell Report (1964) articulated client dissatisfaction, Sir Michael Latham published a report (Latham Report, 1994) with similar findings. Despite the passage of thirty years the same adversarial relationships were identified, though the underpinning reasons for conflict were not described in a way that allowed their disruptive 'power' to be dissolved.

Increasing awareness of poor relations between the industry and its client groups also has implications for Value Management. To meet rising customer expectations during the mid 1980's, major clients required improved new facilities to enable quick market responses. This period saw the Broad Gate project (Building, 11/7/86; Construction News, 27/6/85 and 13/4/86) and the UK emergence of Fast Track (Gray, 1982; Gray and Flanagan, 1984; Fazio et al. 1988; Kolesar, 1989), Fast Build (Contract Journal, 28/9/89; Barnes 1989) and Value Engineering (Dell'Isola, 1974,

O'Brien, 1976; Zimmerman & Hart, 1982; Kelly and Male, 1988 and 1991; Green, 1990, Robinson, 1991). The traditional approaches to the design and construction processes were being challenged. Procurement routes such as Design and Build began to appeal to clients who wanted single point responsibility, guaranteed maximum prices and reduced construction periods. Clients were demanding increased value (Latham, 1994; Egan *in* Whitelaw, 1995) and were pushing the construction industry to rethink the way it does its business (Egan, 1998). During this transitory period, value engineering and value analysis, with their product oriented emphasis, began to be applied to decision making. The late 1980's and early 1990's marked the emergence of value management. One of the main stimulants to this manifestation was the realisation that greater value can be liberated in the front end of a project (Kelly & Male, 1993) because at this stage it is easier to change decisions without incurring major financial consequences. At the moment, the approach of value management to construction is mainly applied within the confines to the UK's Royal Institute of British Architect's (RIBA) "Plan of Work", or its American equivalent (Connaughton & Green, 1996; Dell 'Isola, 1982; Gilleard, 1991; Green, 1990, 1992, 1994; Green & Popper, 1990; Kelly & Male, 1991, 1993, Male et al., 1996; Norton & McElligot, 1995, Palmer, 1990, 1992, Zimmerman & Hart, 1982). In order to push further upstream, to the origins of the decision to build, this research sought to enter the client's decision making process to understand how and why the decision to build was reached, and explain the process in terms of the influences acting upon it.

1.2. Scope Of The Research.

Because of the lack of literature relating to how the decision to build is reached within the client organisation, it is necessary to make explicit the scope of this research. This explanation of 'scope' is elaborated further in the next chapter, which explains issues within the thesis' research methodology. In order to move towards best practice it was decided that only experienced clients of the construction industry should be considered, as they were more likely to have developed methods to

manage the decision to build process, rather than to be learning from mistakes, as they are developing systematic approaches. It was also decided that only major projects should be considered so that trivial experiences would not be given too much emphasis. The research sought to understand the decision to build from the initial idea, to the decision to sanction funds for a new build project. This thesis, which also positions the decision to build new facilities along side other options, such as to lease existing facilities, names this phase of a project's life the "Pre-project stage".

1.3. Aims And Objectives.

The aim of this research is to understand the influences on the decision to build undertaken by large experienced clients of the construction industry in the UK and contribute to improving practice. To achieve this aim the following objectives were designed and achieved by this thesis:

To explain the process of the decision to build.

To explain the content of the decision to build.

To explain what influences the decision to build.

To explain why those influences affect process and content in the decision to build.

To explain how the decision to build can be improved.

By achieving these objectives, this thesis meets the overarching aim as stated above, by explaining the influences in terms of paradigms and perspectives, which influence the thinking and considerations within the decision to build process.

1.4. The Definition Of Paradigms And Perspectives Used By This Thesis.

Because this thesis explains the decision to build as a product of the influences of paradigms and perspectives it is essential that this section clearly defines what is meant by these terms which are abundantly used throughout the work.

The thesis presents paradigms as a collection of rules, codes of practice and peer expectations that can be identified as belonging to a particular school of thought, social institution, or profession. For example, it is these rules, codes of practice and peer expectations that distinguish the Architectural paradigm, from spontaneous-untrained attempts at design such as would be viewed as inferior by architects. The paradigms are built upon underlying values that encompass more than ethical and moral considerations. At the heart of all paradigms is a collective belief in what is 'right', 'wrong', 'good', 'bad' and 'indifferent'. For an individual to enter such 'groupings' requires internalisation of the norms and associated paradigmatic terminology. However within a paradigm, such as the Architectural paradigm, it is possible to have competing perspectives. An example of this in the Architectural paradigm can be seen in the preference for classical or post-modernist architecture, or even in the attitudes associated with positions of authority and status.

The result is that different perspectives compete for dominance within a paradigm, which is also competing for dominance with other paradigms. For example, whilst classical and post-modernist perspectives might fight for dominance within the Architectural paradigm, the Accountancy paradigm might dismiss all such deliberations as inconsequential, as it promotes 'cost' as more important for good decision making than aesthetics.

Because this thesis only considers paradigms and perspectives which influence the decision to build, it does not necessarily explain each paradigm in totality and in some cases alludes to a paradigm, but concentrates on the perspectives within it that actually have an influence on the decision to build. This is the case with the

explanation of the Organisational and Management perspectives, which are confined to their influence on the decision to build rather than decision making in general. In both of these cases it is the dominant perspectives from the larger paradigms, which have a direct influence on the decision to build.

Throughout this thesis whenever paradigms and perspectives are referred to, the understanding outlined above is the intended meaning. Paradigms consider the whole system and perspectives reflect different views within a paradigm.

1.5. Originality.

The originality provided by this work explains the decision to build as a paradigm in its own right. This is explained by exposing its own rule system and expectations, created and influenced by other paradigms and perspectives which compete for dominance over it. This situation exists because those involved in the decision to build process promote objective decision making as superior to subjective decision making. The thesis' concludes that, to avoid individual bias, the decision to build's development is presented as being justified in objective metrics which have no linkage to the people involved (i.e. an individual's bias is removed). However, as will be explained, such bias does exist and does exert an influence in the way the decision to build is developed. The main source of the thesis' originality stems from the identification and explanation of how the decision to build is influenced by, and reciprocally influences, paradigms and perspectives. This explanation also allows the term 'client' to be seen more clearly as a collection of groups within the client-organisation, each with its own identity and ambitions, which are not always in unison.

To arrive at the explanation called for an unconventional structure to the thesis. The thesis presents the research methodology as its second chapter in order that the data from literature can be considered alongside practice, rather than being distinct from it. To achieve this, grounded theory was used in conjunction with case study research

methodologies. Not only did this approach lead to an explanation of how the paradigms and perspectives influence the decision to build, but it also allowed the actors to be seen trying to understand the decision making process from within their dominant paradigms and perspectives. Another source of originality provided by this thesis, is that the last two chapters allow the reader to step outside and objectify the paradigms and perspectives. In this way an understanding of taken for granted issues such as 'Return on Investment being more important than aesthetics' can be seen as products of paradigm and perspectives, built on underlying 'embedded' professional values. It is this originality that allows an opportunity to manage the decision to build rather than be swept along by the process itself. This thesis came into being because no such explanation of the decision making process could be found.

In addition to the above sources of originality is the "Collaborative method" (See appendix 15). This methodology allows several dominant paradigms to be considered in a single episode rather than allow the project life cycle to influence which one should be most dominant in the actor's thinking, progressively and sequentially.

1.6. Thesis Structure.

Because of the need to include all the empirical data to support this thesis, its physical size has necessitated two volumes. The first volume presents the thesis and the second volume, stored on a CD ROM held on the inner leaf, contains the appendices used to support the arguments contained within the thesis. This section sets out how the exploratory nature of this research is described in the thesis within volume 1. It begins by explaining the non-traditional approach to structure by explaining that the thesis is divided into four parts to allow a logical progression of the work to be presented.

Data from both literature and case studies are seen as equally valid in their influential role of guiding behaviour in the decision making process. This observation presented problems when collating the findings, as the explanation and conclusions were not products of sequential logic, but the result of a gestalt. However to achieve validity, reliability and confidence in the conclusions, demands that academic rigour is demonstrated in such a way that the reader can follow the explanation from its initial premise to its final articulation. The four parts into which the chapters are placed therefore, are:

1. The Research And Thesis Structure:

Chapter One: Introduction.

Chapter Two: Research Methodology

2. The Development Of A Preliminary Theory From Literature.

Chapter Three: Research Orientation

Chapter Four: The Paradigms And Perspectives Which Influence The
Decision To Build.

Chapter Five: Analysis Of The Literature.

3. The Consideration Of Evidence From Practice.

Chapter Six: Case Study Analyses.

4. The Explanation Of How Paradigms And Perspectives Influence The Decision To Build And, Conclusions To The Research.

Chapter Seven: Explanation Of How Clients Of The Construction Industry Arrive At The Decision To Build.

Chapter Eight: Conclusions And Recommendations.

Part One explains the context of the research. It gives an explanation of the research methodologies selected to build theory and reveals the issues that were involved in the methodological considerations.

Part Two reviews the literature and presents an initial theory by extending the work of Allison (1971) and Bilello (1993). This section contains a founding premise that states complex problems are 'messy' (Ackoff, 1979) and that such messy problems are also the product of competing paradigms (Schön, 1995). This initial understanding is developed further in chapter four, so that the paradigms and perspectives which influence the decision to build are made explicit. This second part of the thesis finishes by presenting a preliminary theory in the form of a model in chapter five.

Part Three uses case study analysis to confirm the existence of paradigms and perspectives and their influences. The use of case studies and grounded theory allows the validity of the literature survey to be established and also developed further. This exploratory thesis, which combines data from theory and practice, draws on Kolb et

al's (1979) work. In order to move beyond the simple confirmation or rejection of hypotheses developed from theory, this thesis adopted a non-traditional presentation. Part Four of the thesis presents a final explanation of how large clients arrive at the decision to build and modifies the previous models, by considering the data and evidence presented in the earlier chapters. The final chapter proffers the conclusions to the research, and demonstrates how the aims and objectives have been satisfied.

Chapter Two: Research Methodology

2.1. Introduction To The Chapter.

This thesis takes an incremental approach towards the development of new theory. The chapter begins by outlining the research problem, issues related to the research methodology selection and use, before offering an explanation of how a new theory was built.

2.2. The Research Problem: The Founding Theory.

Having accepted Ackoff's (1979) view that complex decisions are 'messy' and are often the product of competing paradigms (Schön, 1995) the initial task of the research methodology was to discover what paradigms were at play within the decision to build. Hughes (1995), Sekaran (1984), Gill and Johnson (1991) and McCracken (1988) provided the initial background from which the research methodology developed. The research problem investigates how large experienced organisations in the UK approach the decision to build. This process begins with an unknown initial stimulus that begins a series of considerations and decisions. In the UK, the culmination of this series is often the triggering of stage A of the RIBA "Plan of Work". The shaded area of figure 1, a simplification of Stanhope PLC's position paper "Procuring a Building in the 1990s", shows the milestones initially identified within the decision to build process.

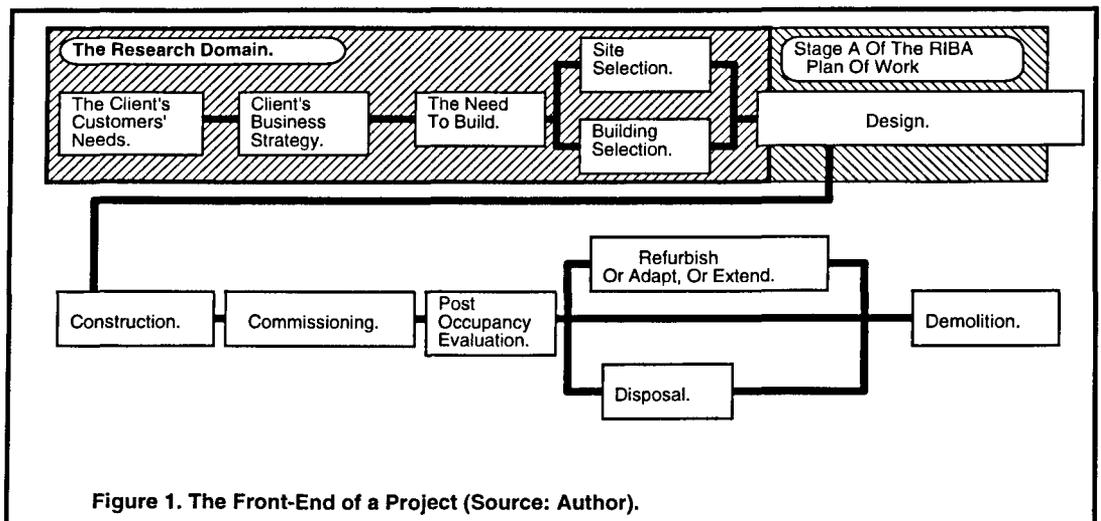
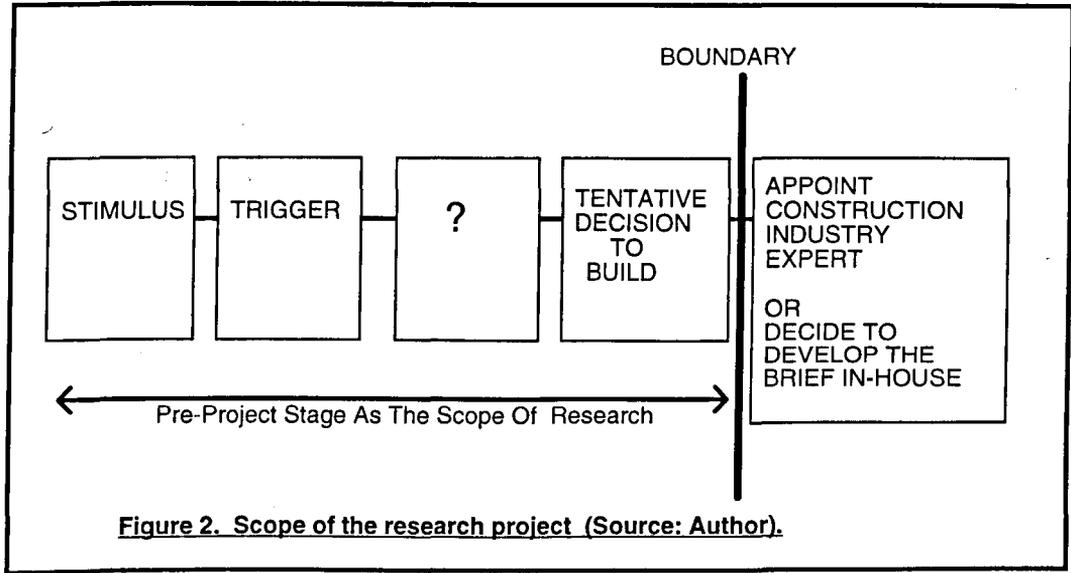


Figure 2 provides a pictorial representation of the research project. This figure graphically illustrates the scope of the research and shows that following a project's trigger, something happens which often leads to a tentative decision to build. A boundary is shown in figure 2 to explicitly define the intended cut-off point for this research project.



The starting point of the design and construction process in the UK was taken as Stage 'A' of the "RIBA Plan of Work". However, this stage commences as a response to the client's tentative decision to build. This means that the pre-project stage begins within the client's organisation before the construction industry, and construction industry disciplines, become involved.

The research problem was to identify and explain, in terms of processes, and the actual contents of this decision making phase, why 'things' happen and how they are realised.

2.3. The Choice Of Appropriate Methodologies.

Because Ackoff describes complex problems as 'messy' it was decided to consider both quantitative and qualitative data in order not to introduce researcher bias which might undermine the exploratory nature of this research.

Susman and Evered (1978) as well as Argyris, Putman and Smith (1985) in advocating "Action Science" made an observation that influenced the choice of research methodology when they said:

"...the principal symptom of what they describe as the crisis in the field of Organisational Science to be that, as research methods and techniques have become more sophisticated, they have also become increasingly less useful for resolving the practical problems faced by members of Organisations" (*In Gill and Johnson;1991; p.76*).

It was recognised that quantitative research methods are best suited to problems that can be easily measured. However, to use them exclusively, in this exploratory research study, could ignore emergent data. This is because to measure, an understanding of what is to be measured must be present. To measure what is already understood is to validate that understanding; that is, traditional approaches to research are directed toward proving a hypothesis, rather than developing a deeper understanding. To reduce this potential it was decided that the research methodology must be capable of quantitative and qualitative data collection and analysis as the means to achieve an original contribution to knowledge. To achieve this goal a number of research methodologies were considered. In relation to this exploratory research, the relative strength and weaknesses of potential research methodologies are discussed with respect to their implication for this work.

2.3.1. Consideration Of The Laboratory Experiment.

The laboratory experiment creates an artificial environment contrived to manipulate variables in a controlled atmosphere by limiting the effects of 'other' variables. This enables a high level of internal validity and reliability. Its weakness is perceived to be its external validity, particularly offering low ecological validity as the relaxation of controls in natural settings causes side effects.

The laboratory experiment was considered inappropriate for the exploratory investigation of the decision to build.

2.3.2. Consideration Of The Survey.

The survey offers a well tried and tested method of assessing a sample and projecting findings upon the population as a whole. The main weakness of this methodology is that it requires an understanding of what questions should be asked. Consideration of a question's structure reveals the potential for bias, including indexicality, and unrealised confusion caused by the attachment of different meanings to common words.

Simister (1995) also alludes to the artificial rationale that can be caused by surveys when he states:

"One criticism of surveys is that only standardised data can be collected. The data cannot easily be linked to other pieces of information which may have had a bearing on the response". (p.21)

Simister qualifies this statement by quoting Diesing (1972);

"Statistical generalisations tell us that certain regularities occur a certain part of the time, but say nothing about the actual inner or interpersonal

transactions that bring them about. To see why a regularity appears in one case and not another, one must enter into the two cases and see how the particular perceptual and cognitive processes produced the results." (p.21-22)

Simister's and Diesing's statements promoted the case study as a feasible research methodology which would allow contextual variables to be observed.

2.3.3. Consideration Of The Quasi-Experiment And Action Science.

The next methodologies considered were the "Quasi-Experiment" and "Action Research". These methodologies have similarities from the perspective of validity in that they move closer to observation in natural settings. However, as can be seen in the case of the Hawthorne Experiment, a number of researchers can provide different interpretations of the results. The "Hawthorne Effect", is a product of a Quasi-Experiment, the results from which could have been due to: indexicality (Goffman, 1969; Douglas 1976), experimenter effects, (Rosenthal, 1966; Rosenthal and Rosnow, 1975; Rossenberg, 1968) and the subject's mediation through interpretation (Shotter 1975). In terms of this thesis it was not possible to completely remove this source of bias and so the Quasi Experiment was omitted from consideration.

Action Research is seen as an extended role of the observer to an influential participative position, where in some situations, a researcher's findings become an influence on the action being studied. The paradox faced is that of the influence observation has on the results.

Access problems to client organisations prevented either of these methodologies being considered for this research.

2.3.4. Consideration Of Ethnography.

Ethnography is drawn by the concept of "verstehen", where the researcher is a non-influential participative observer. Gill and Johnson, (1991; p166) define 'verstehen' as a term that allows an understanding of the subjective behaviour of the subject's actions. Gill and Johnson state:

"...it is often considered that Ethnography has inherent advantages over positivistic research methodologies (e.g. laboratory experiments and surveys) that suffer from deficiencies in ecological validity (Brunswick,1956; Bracht and Glass, 1968). That is, ethnographic research (unlike other research strategies) takes place in the natural setting of the everyday activities of the subjects under investigation. This, and the research procedures used, reduce contamination of the subject's behaviours by the researchers themselves and the methods they use for collecting data." (p.124)

Criticisms of ethnography relate to its use of induction and unstructured methods of data collection that can create problems regarding replicability, and reliability. (Gill and Johnson; 1991; p.124) This is because the in-depth study is centred on a small population, and thus ecological validity, the ability to successfully transfer findings to another context, remains untested. However Mitchell (1983) and others dispute this.

There is merit in extending such 'intimacy' to the research problem as it would allow a more 'informed' understanding of the roles actors play, feel and desire. Such participative methods must consider ethical questions associated with undeclared observation, as well as the practicalities of actually conducting such an experiment. Another problem would be the question of timing and access, particularly before a subject has considered a decision-making sequence.

Attempts at accessing an organisation either before, or during, the decision making process proved unsuccessful.

2.3.5. Consideration Of The Case Study Research Methodology.

A case study methodology, within a designed protocol is capable of all the types of validation and still allows flexibility to adapt to unforeseen opportunities and identify either qualitative or quantitative variables. Yin uses examples such as the Bernstein's and Woodward's exploration of the Watergate Scandal (Yin;1994; p16), Whyte's "Street Corner Society" (Yin;1994; p5) and Allison's "Essence of Decision: Explaining the Cuban Missile Crisis" (1971) to show how case studies can be used within an exploratory qualitative investigation that would allow unconsidered data to emerge, and yet maintain a rigorous commitment to validity, reliability and confidence.

Simister (1995) explains the use of case studies within construction management, and advocates the following design methodology:

"One of the principal purposes of the design is to help avoid the situation in which the collected data does not address the initial research questions. The research design should therefore;

- make explicit the questions the researcher should answer
- provide hypothesis/propositions about these questions
- develop a data collection methodology
- discuss the data in relation to the initial research questions and the hypothesis/propositions" (p.21)

Whilst accepting the strengths that flow from this advice, explicit questioning assumes an informed platform from which to start the research process. In a sense, case study research provides a venue where data, analysis and inference, can merge to describe a particular instance of a reality. The stages of data retrieval, analysis and inference do not have to follow one after the other as discrete stages of the "Natural-Science" methodology, but influence and are influenced by their own development.

To manage such a methodology, tacit propositions are elicited, linking current position to the research objectives (Yin,1994; p. 63-73). Eventually, such propositions will either be abandoned as false or weak, or survive the journey to become conclusions.

Single case studies were collected and then considered as both individual and multiple instances of how clients arrive at the decision to build. This methodology was selected as a means of achieving the aims and objectives of this thesis.

2.3.6. Consideration Of Grounded Theory.

In recognition of the potential of hindsight, it was decided that once the case studies had been assembled, grounded theory would be used as a means of synthesising the data. Glaser and Strauss (1965, 1967) challenged the dominance of the verification process over the production of theory. In logico-deductive research strategies, data is used as confirmatory evidence as an emergent theory is tested against 'examples' to provide proofs. Often, the inspiration that led to the initial theory is poorly described. Glaser and Strauss argue that theory should emerge from data and a rigorous process should provide inherent verification. As the case studies were developed within a protocol that tested validity, grounded theory was used to draw an explanation from this reliable data bank. To ensure the explanation itself was valid, the methodology used was made explicit and will be described shortly. As a further check, the explanation was presented to three of the subjects and three comparable decision makers who had no contact with the research.

2.4. Thesis Research Strategy.

After considering a range of research methodologies it was decided that a preliminary explanation would be developed from the literature and tested against practice. The confirmation, rejection or modification of the preliminary position would be achieved with a case study strategy that was capable of collecting both quantitative and

qualitative data. At this stage of research design a grounded theory approach (Glaser and Strauss, 1965, 1967) was adapted such that the data and analysis from the case studies to achieve synthesis and build an explanation which satisfied the research objectives.

2.4.1. The Methodology Used To Develop Understanding From The Literature.

This thesis accepts all researchers bring 'baggage' with them into new research projects. As no specific work that related to the research problem existed, the first task was to develop some kind of categorisation system that allowed a single piece of literature to be positioned in relation to other fragments of knowledge. The first attempt to develop a system that structured the literature was based around a time series of milestones. However, it was realised that certain professions and techniques, or approaches associated with a profession, spanned several of the milestones. These were initially identified as professional considerations but even this proved difficult as some techniques such as financial appraisals were carried out, or used, by different professions. It was at this point that paradigms and perspectives were recognised as flowing through the decision to build process and across professional boundaries. In order to categorise these paradigms and perspectives, several attempts were made to group them together. The problem here was that some paradigms and perspectives were internal and others external. Also, some paradigms and perspectives influenced *what* was considered and others *when* things must be considered. With this in mind the paradigms and perspectives were eventually grouped under the generic headings of *process* and *content* oriented paradigms and perspectives. The literature survey concluded with the production of a preliminary process model which could be used to explain the progression towards the decision to build from the initial stimulus triggered by some kind of customer or stakeholder. The main question that flowed from this stage of the research was "How accurate was this model?" To compare theory with practice the next stage of the research used case studies as a means to collect data and contrast the preliminary model with what actually happens in practice.

2.4.2. The Methodology Used To Develop Understanding From Practice: Case Studies.

This section begins by explaining how the case study protocol was designed, before discussing how the units of analysis, project and client types were selected.

To test and adapt the preliminary model developed from the literature, a case study protocol was designed. This assisted, particularly during data collection, with tasks such as sending out standard letters (See Appendix 1). Part of this protocol included an information pack which addressed issues such as sources of evidence confidentiality and ethical considerations.

The preliminary explanation and initial propositions, influenced by Yin (1994) and McCracken (1985), were moulded into thirteen open-ended questions, tested in a pilot study, and then consistently asked at every semi-structured interview.

In order to identify the initial stimulus or need being addressed, question one asked, "What triggered the process that led to the tentative decision to build?". Question two "Why was the building needed?" sought to understand what response to the stimulus was actually made. Question three asked, "What decisions were made during this process?" in order to identify common decisions at the various stages of the decision to build process. To identify modifying and exogenous variables, question four asked, "What considerations were made?". Question five asked two questions. The first part asked, "Did anyone have overall responsibility for the process?" in order to establish how authority and responsibility were established, and the second part of the question asked "If so, who?" to make the management seniority of the person explicit. In order to identify other actors in the process, question six asked, "Who explored the various considerations?". Question seven was designed to build upon the previous questions and sought to identify if a highly structured process is present by asking "Were roles and responsibilities established?". To reveal the content of the

decision to build process, identify secondary actors and other sources of information, question eight asked "What sources of information were considered and / or consulted?". The question of from where the initial budget originated was the subject of question nine which asked "Was a target cost identified?" and "If so what was it?" This question was also included to try and identify the importance of cost as a variable during the process. To identify if any preconceived ideas may become moderating variables, question ten asked, "Did anyone talk about what the building would look like?". On the subject of change, and to test if there were any other moderating variables present, question eleven explicitly asked "Was the initial idea of the building modified in any way?" and "If yes, why was it modified?". Question twelve sought to identify the effects of time on the process and understand if the time span is an independent or moderating variable. This was achieved by asking, "What was the time span from the process being triggered to the tentative decision to build?". The last question asked, "Was any external advice sought?" and "If yes, from whom?" in order to identify external actors who might make a common intervention into the decision to build process.

These questions allowed emergent data to surface. To establish stability and move towards validity and reliability the task then became one of negotiating the subject's agreement that each case study was a "true and fair view" (Buchanan, Boddy and McCalman; 1984). In this respect, the validation process mirrors the professional accountant auditing a company's accounts. The protocol called upon the subject to explicitly sign a validation certificate to say that they agreed it was a true and fair view (See Appendix 2 for an example). This meant that the subjects had time to reflect on their actual experiences and emphasise points either misunderstood, missed or misrepresented. This strategy sought to turn any subject bias to the advantage of promoting 'Best Practice'.

Access to other team members during data collection proved difficult. However, as the subject was the principal decision-maker, it was felt that his or her perceptions would dominate. This was based on the recognition that it would be the principal

decision-maker who would ultimately have responsibility to take proposals for approval to more senior managers. In addition to the thirteen questions, a second set of questions asking about the company was included to provide background information.

This research sought to encourage the intimacy born of mutual trust and respect. In order to uncover unforeseen sources of data, the actors were also asked, "If you were the interviewer, what questions would you ask?" This question attempted to reduce the presumption of "knowledge" during the design and data collection phase.

2.4.2.1. Identifying The Unit Of Analysis.

This section explains the issues considered in identifying the subjects. Following UK business convention, client types were based on the Standard Industrial Classification (SIC) as published by the Central Statistical Office. Selection was also combined with project types as described by the DoE's Development Control Form PS2. The 1980 SIC edition was used to establish client variety, as the 1990 SIC edition, reduces the number of categories to comply with EEC statistical counting procedures (Chisnall, 1995; p.132). As will be discussed, this becomes arbitrary as regular procurers often commission several different types of building.

Within the SIC system, clients are categorised by divisions, classes, and finally groups and activity headings. Division 2, "Extraction of minerals and ores" was omitted from the study because no clients could be identified who had built a major project at the time of this research due to the previous years of economic recession. Also there was no direct sampling of another component of this division, the "Manufacture of metals, mineral products and chemicals" category, again because of the recession's effect on the decision to build. Pawford Development Corporation's case study was used to reflect this category of division 2 by explaining the implications flowing from the concentration and consolidation of the steel industry.

Other systems were considered such as the Department of the Environment's (DoE) "Housing and Construction Statistics". However it was decided to be more relevant to building-type, rather than client type, and was not used. For example, an industrial client could build a leisure facility that was not their typical requirement, and had little relevance to their core business activity.

Property Developers were excluded as client types (i.e. primary constructors) in line with Masterman and Gameson's (1994) classification of secondary constructors:

"... for whom expenditure on constructed buildings is a small percentage of their total turnover, and for whom buildings are necessary in order to undertake a specific business activity, such as manufacturing." (*In Walker, 1996; p.88*)

The reason for this omission was to remove the potential bias of short-term decision-making, which might place profitable construction higher than client or tenant satisfaction. One of the case studies, Pawford Development Corporation, had a declared long-term interest in a particular location and was included to provide a reflection of property development expertise. As the case studies reveal, a number of clients adopted a property development approach as a response to their 'internal market' ethos.

2.4.2.2. Selection of clients.

Clients from within SIC categories were identified from the Financial Times top 1000 companies (1993) and Building Magazine's periodic review of the "Top 20 Clients". They were then speculatively contacted by phone to enquire if they considered themselves as regular procurers of buildings. The result of this enquiry led to a number of cases that are shown below. This summary of the case study subjects identified by their industrial division (See SIC; 1980) is used to illustrate a varied selection of client types.

<u>Division</u>	<u>Number</u>
0. Agriculture, forestry and fishing.	0
1. Energy and water supply industries.	2
2. Extraction of minerals and ores other than fuels; manufacture of metals, mineral products and chemicals.	0
3. Metal goods, engineering and vehicle industries.	1
4. Other manufacturing industries.	1
5. Construction.	1
6. Distribution, hotels and catering; repairs.	3
7. Transport and communication.	1
8. Banking, finance, insurance, business services and leasing.	1
9. Other services.	<u>2</u>
	Total 12

In addition to the above, five other case studies outside the designed protocol were also conducted in response to unforeseen research opportunities. These were;

- a) An exploration of local authority permissions in relation to the Wotton's case study.
- b) A value management workshop for Brayfield NHS Trust.
- c) A value management workshop for Gritford NHS Trust and an exploration of both the Capricode and Capital Investment Manual guides for NHS for the procurement of a hospital.
- d) Considering finance: An interview with Mr Wilkinson, former director of Davy McKee (Sheffield) Ltd.

- e) York University's briefing workshop.

These case studies, from outside the research protocol were used as secondary sources of data to provide a more integrated backcloth to the multiple case studies (See Appendix 3).

2.4.2.3. How The Project Types Were Selected.

The Development Control Statisticians' form PS2 is used to monitor project types applying for planning permission. The form breaks project types down into the following three main classes:

Major Developments.

Minor Developments.

Other Developments.

Only major developments or alternatively multiple-instances of minor developments were considered. Individuals procuring dwellings were omitted as such clients may not only be inexperienced but also lack any direct input into the decision making process. The thesis took an arbitrary definition of experienced clients based on any organisation that builds at least once a year on a regular basis.

2.4.2.4. The Role Of The Pilot Study.

Before undertaking a series of interviews a pilot study was instigated to check, and to test the appropriateness of the questions linked to the initial propositions. The result of the pilot study, comprising two case studies led, to the following conclusion:

The thirteen core questions seem to be adequate. The semi-structured interview that they facilitated provided a rich source of data. At that stage no major change of direction seemed necessary. Both pilot studies were validated by the subjects. It was also felt that "Generalisations" could be made. Further propositions emerged, which gave comfort as unconsidered data was emerging. The pilot did reveal one necessary modification; Question seven was modified to explicitly ask for the drawing of an organisational chart.

2.4.2.5. Data Collection And Analysis.

Every case study was treated as an individual instance of an organisational approach to the decision to build. Data collection comprised a one to two hour interview that led to a written case study. Each case study was sent back to the subjects and an amendment process began which in some instances involved several rewrites.

To limit potential researcher bias, it was essential that each subject validated his/her own individual case so that reliability and consistency existed in all case studies, but the actual content remained client specific (Yin, 1994). Once all the single cases, treated as individual longitudinal studies, were validated by their respective subjects, the multiple cross sectional analysis began to identify commonalities or distinguishing features.

Analysis was a two stage process. The first stage collected evidence from the case studies which was specifically related to the thirteen questions being asked. The second stage was a pattern-matching exercise where further questions and

propositions were used to interrogate the data again. This was only possible after the completed first stage had allowed further insights to be gained.

Strips of paper were prepared as shown below. Each case study was checked to see if a particular instance did or did not agree with the proposition or question being put forward.

Subjects	1	2	3	4	5	6	7	8	9	10	11	12
Uses Primary Market Research	Y	Y	N	N	N	Y	N	N	N	N	Y	Y

Where the product of this process was deemed relevant and could be demonstrated, it was converted into a table so that it would be easier for a reader to understand.

	YES	NO
Alpha Fast Burgers.	✓	
Regency Retailing.	✓	
Pawford Development Corp.		✓
Wottons.		✓
Hillshire Water PLC.		✓
Perrytons.	✓	
Brayfield Hospital Trust.		✓
Premier Motor Company.		✓
Wellowshire Energy Group PLC.		✓
Railtrack PLC.		✓
Sharland City University.	✓	
Albion National Bank.	✓	

Where several strips of paper could be grouped, these were converted into more complex tables as illustrated in the example on the next page.

	Strong Sense of Shared Destiny	Strong Sense of Decision Accountability	Strong Need to Satisfy Shareholders	Strong Need to Satisfy Customers	Strong Desire to Improve Internal processes
Alpha Fast Burgers.	✓			✓	✓
Regency Retailing.	✓		✓	✓	
Pawford Development Corp.	✓	✓			
Wottons.	✓			✓	✓
Hillshire Water PLC.		✓	✓		✓
Perrytons.		✓	✓	✓	✓
Brayfield Hospital Trust.	✓	✓			✓
Premier Motor Company.		✓			✓
Wellowshire Energy Group PLC.		✓	✓		✓
Railtrack PLC.			✓		✓
Sharland City University.	✓			✓	✓
Albion National Bank.		✓	✓	✓	✓

An Example Of Table 23: Examples of Client Emphasis.

Many of the answers revealed in the second stage of analysis did not lead to meaningful patterns or could not be substantiated and so were discarded. Others show patterns or groupings of clients for one question that was not repeated when set against another question. This shows that the decision to build shares the dilemma of contrasts and similarities between individuals within a population; for example, one thousand people can have the same hair colour but different eye colour. If the research methodology was singularly built around case studies, and ignored the literature, then a lot of the tables could have been dismissed as irrelevant in order to present an eloquently designed argument that demonstrated validity with a neat solution. However, as this work was to explain a 'messy' problem (Ackoff, 1979) then it must collect, structure and analyse in a way that represents the complexity of such situations. The problem then becomes one of explaining the process and content of how experienced clients arrive at the decision to build. To achieve this the whole of the case study data and analysis was synthesised into a new explanation presented in part 4.

2.4.3. The Methodology Used To Synthesise Previous Theory And Develop An Explanation By Using Grounded Theory.

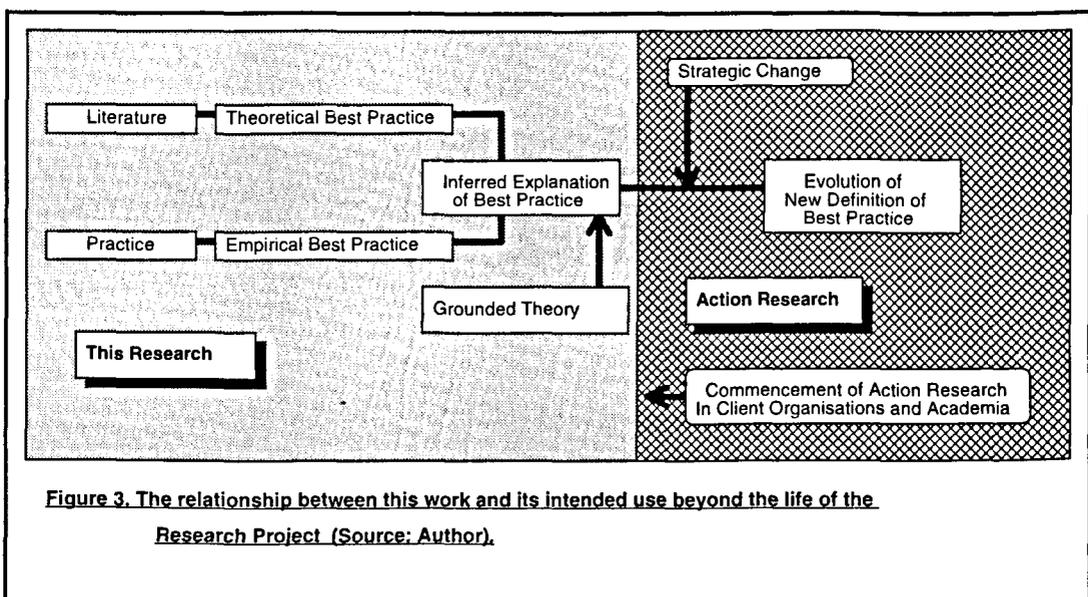
The methodology used to develop the final explanation was to reconsider the research reported in parts 1, 2, and 3 of this thesis. The research problem had been solved but as yet undisclosed or explained. Part four of this thesis is the explanation of how experienced UK clients arrive at the decision to build and how this process influences, and is influenced by, paradigms and perspectives. At the end of part 4, the research problem is no longer 'messy' but intricate and complex, almost like a three-dimensional spider's web. It is not a single problem but a complex web of problems which pull, push, and tug against each other. The explanation can be read in isolation but to demonstrate validity requires the reader to consider it with the preceding chapters. Its validity is a corollary of the rigorous processes used in part 3. The explanation's final test of validity and originality came from a validation workshop which also included people unconnected to the research, all with capital project

experience. The final explanation synthesises the products of the previous methodology and draws a clearer understanding from a reliable data bank in the approach of grounded theory.

2.4.4. Validation.

Validation comprises a series of iterative steps where bias is aired and the actors asked to either confirm or deny the verity of the particular vision of reality, or definition of the situation, being presented.

The research findings and conclusions were presented to subjects and a control group. This testing did not cause any need for modification. Whilst this research might be finite, the actual research topic progresses beyond this project as "Action Science" (See fig. 3). That is, the consequence of having understood how paradigms and perspectives influence the decision to build leads to those paradigms and perspectives being adapted in the light of new understanding.



The research investigated how "people" perceive and respond to certain stimuli caused by paradigms and perspectives. In terms of validity if everyone believes the world to be flat, then this research would confirm that everybody believes the world

to be flat. Research that looks at thoughts and perceptions can only be treated as inductive because the relationship between validity and truth can only ever be assumed. Popper (1967;1972a; 1972b) uses the case of "All swans are white" which until the discovery of Australian black swans, was accepted as deductive logic. This is the fulcrum of his argument which proposes:

"...that no theory can ever be proved by a finite number of observations; no matter how many confirmatory instances not yet observed which demonstrate the falsity of the theory" (In Gill & Johnson, 1991; p.31).

Because this thesis treats all knowledge as inductive the roles of empirical and theoretical data are not seen as separate. It is from this perspective that "Explanation Building" (Yin; 1994) searches for a common view of reality that unites the paradigms, perspectives, people, and personalities in the context of a complex decision making process. The role of literature is changed from a collection of discrete packages of theory, to a means of adding greater clarity, validity and explanation to the empirical data.

This research methodology addresses specific issues related to validity as:

1. Internal Validity is achieved by the validation process during data collection, and as part of a collective response by the subjects and control group.
2. External Validity is addressed by the following considerations:
 - i) Population Validity is reflected by the diversity and experience of the subjects. The subject-selection process further extended credibility in terms of frequency of construction, as well as using major-projects, a definition based around financial values.

- ii) Ecological Validity is achieved because of the varied sources of subjects/client-types. This consideration is extended by the consideration of different project-types, as well as industrial, commercial and social contexts.
3. Reliability is a consequence of the repetitive open questions, the positive management of bias, as well as the ability for unconsidered data sources to emerge. This was consistently applied during data collection within the case study protocol (See Appendix 1) which acted as a controlling guide.
 4. Confidence is a consequence of the rigour coming from the case study protocol, the validation of data collection and analysis, and the inclusion of the validation workshop.

2.5. Research Methodology Conclusions.

This chapter has explained how the research methodology combines literature, case studies and grounded theory. After discussing issues such as scope, qualitative and quantitative approaches to exploratory research, and the need to keep options open, an explanation of why some methods were discarded was presented. This thesis aims to explain how experienced UK clients approach their decision to build. This chapter exposed the deliberations that influenced the choice of research methodology and design. To meet that aim, the key components in this discussion were alternative research methods, sources of bias, ethics, validity and confidence. As some bias (i.e. subject indexicality) could not be removed from consideration, a proactive approach was adopted that allowed any perceived bias present, to be visible and used to the advantage of the research objective promoting best practice. An example of this can be seen in the collaborative approach to data collection where the subject becomes an intimate part of the data collection process, as opposed to operating in a 'bell jar'.

Popper's arguments put forward that deduction could in reality be induction still to be exposed. This has influenced the thesis' treatment of the literature and empirical evidence. These two sources of data are combined to construct an explanation of how experienced UK clients arrive at the decision to build. Confidence and reliability in this process are a corollary of academic rigour, which can demonstrate validity.

The reader has been provided with an insight into the rigorous design of the methodology, and management of issues associated with data collection and analysis.

The case studies are presented in appendix 3. The next chapter, which is in part two, explains the literature in more detail and provides a background to, and also introduces, the paradigms and perspectives that influence the decision making process of clients considering the decision to build.

**Part Two: The Development Of A Preliminary Theory From
Literature.**

Chapter Three: Research Orientation.

3.1. Introduction To The Chapter.

As explained in the research methodology chapter, this thesis draws upon Ackoff's (1979) view that complex decisions are 'messy'. The thesis also takes Schön's (1995) view that messy problems are often the product of competing paradigms. The aim of this chapter is to explain how the 'messy' view of the decision to build can be untangled, or understood, in such a way that a rationale could be developed into an explanation of the process.

The chapter begins by explaining client dissatisfaction, and existing guidance for clients, before reviewing the only specific research to be found in this area. It is by combining both Ackoff's and Schön's views with the existing literature that an embryonic explanation is preferred superficially. This initial proposition (Yin, 1994) is then used to structure and categorise the literature survey in the following chapters.

3.2. An Historical Overview Of Client Dissatisfaction.

The Simon Report (1944), the Phillips report (1950), the Emmerson Report (1962), the Banwell Report (1964) and the Latham Report (1994) portray dissatisfaction of clients with regard to construction industry processes and products.

The Banwell report (1964) urged the government of the day to intervene in the construction industry. The first chapter of the Banwell report outlined that the main problem for the construction industry was a lack of cohesion between the various sections. This can be explained further by Emmerson's (1962) dictum, which emphasises that no other important industry has its design process so far removed from production. In July 1965, the Economic Development Committee appointed a working party charged with the task of implementing the report. Thirty years later, similar criticisms surface in the Latham Report (1994).

In the 1980s, clients used the British Property Federation (1983) as a vehicle to improve the performance of the UK construction industry. The move marked a turning point that precipitated the North American experience of Fast-Track construction on projects such as "Broadgate" with an increased emphasis on client satisfaction and management skills. In the 1990s a move towards partnering (Bennett & Jayes, 1995) has attempted to bring clients and the construction industry closer together. The problem of the construction industry being a 'responding agent' to client needs and targets is recognised in this approach which is sometimes called a strategic alliance. In 1998 a forty page report titled "Rethinking Construction" (Egan, 1998) called for a radical overhaul of the methods adopted during the construction process. This move towards greater efficiency is typical of a service type activity that responds to customer needs. However, at the heart of customer needs are 'values' which prioritise and stimulate hopes, aspirations and expectations. Sir John Egan's (Building, 24 July, 1998, p.19) view, if correct, is that the construction industry:

"...is failing to satisfy most of its customers with cost and quality of projects"

The implication of client dissatisfaction within the decision to build must be explained in terms of values, paradigms and perspectives if hopes, aspirations and expectations are to be understood in ways that will allow client dissatisfaction to be converted into satisfaction.

3.3. UK Guidance To Clients Considering The Decision To Build.

This section presents reports available to clients who have made the decision to build in principle. Advice is given to clients in a way that expects them to engage with the construction industry as an established process. It comes from a distinct view that two or more separate parties are coming together for the purpose of an efficient procurement episode of a new building.

The literature prepared for UK clients considering the decision to build include "Before you Build" (NEDO, 1974), "Thinking about Building" (NEDO, 1983a; Construction Round Table, 1995), and "Faster Building for Industry" (NEDO, 1983b). These are written in response to a perceived need from private clients for information. Titles such as "Thinking about building" are a response to the client's decision to build. One guide (Before You Build, NEDO, 1974) starts by asking questions such as "How much should it cost? When is it needed?" etc., then continues by explaining the steps necessary for the engagement of the construction team. The advice provided emerges out of the expectations of stage 'A' of the "RIBA Plan of Work", and that the option of a building seems necessary.

In 1995, the Construction Round Table consolidated previous guides and produced an up to date client guide entitled "Thinking about Building". The theme of the guide was aimed at matching business processes with spatial requirements. It promotes a seven-step methodology, which is:

1. Select an in-house project executive to act as a single point of contact.
2. Select an advisor who is capable of acting as a client representative.
3. Define your requirements in a brief.
4. Consider timing implications.
5. Select a procurement path.
 - a) Design and Build.
 - i) Direct
 - ii) Competitive
 - iii) Develop and Construct

b) Design and Manage.

- i) Contractor
- ii) Consultant

c) Lump Sum Contracting (The 'traditional' procurement method)

- i) Sequential.
- ii) Accelerated

d) Fee Construction.

- i) Management Contracting
- ii) Construction Management

6. Recruit construction professionals.

7. Choose a site.

(Construction Round Table, 1995)

This guide builds on earlier publications (NEDO, 1983 a & b) and takes a chart from "Thinking about Building" (NEDO, 1983a). In this chart, the client is asked to identify his/her priorities with the merits of all the procurement options listed at the side. All this information acts as objectives, or targets, that the client should meet. The emphasis is placed on the efficient procurement from, and engagement with, the construction industry.

3.4. Bilello's Research.

The only Ph.D. thesis found in the research domain was Bilello's (1993). He opens his thesis entitled "Deciding to Build", by saying:

"At their best, buildings reflect the organization that produced them. Their architecture illuminates the values and aspirations that organizations may hold most dear." (p.1)

The research investigated California State Polytechnic University (Cal Poly) with a case study that addresses the following questions (Bilello, 1993; p.2).

- a. What are the factors that led this University to build? What led it to make the decision to build the particular building that it did?
- b. How did Cal. Poly. engage with its architects in the processes of planning, programming, and design?
- c. How do structural, human resource, political, and symbolic "frames" drawn from organizational theory help illuminate what occurred in the processes?
- d. How might a narrative allow these questions to be seen in ways that have not been possible before?

Although Bilello describes the research area in his title (i.e. Deciding to Build) his work starts in the client organisation and moves on to consider the briefing process within an architectural competition. Bilello (1993) examined a single case study from a number of perspectives: architects, administrator-clients, users, state officials and shows how four perspectives lead to different stories about how the building was conceived.

The four approaches Bilello found were:

- i) Rational goal attainment.
- ii) Motivation and the need to serve humans.

- iii) The impact of individual and collective power on time, money and space.
- iv) The elicitation of aspirations, symbols, meanings and ambiguities.

Bilello (1993) explained that each approach can be told in isolation, but it is as a composite that they form a more comprehensive reality. The emphasis of contextual reality in decision making was first explained by Allison (1969), who in studying the Cuban Missile Crisis developed a framework for considering group decision-making. Bilello adapts Allison's three models of decision making, which Northcott (1992) summarises as:

- "1. A "rational policy model" which interprets decisions as "reasonable" choices made by "actors", given known objectives-i.e. action is a calculated response to a problem.

2. An "organizational process model" which views decisions as the output of organizations, given particular organizational contexts, pressures, procedures and "repertoires".

3. A "governmental politics model" which interprets decisions as a result of bargaining games which are influenced by perceptions, motivations, positions, powers and manoeuvres of the political adversaries involved."
(p.205)

Bilello adds a fourth model evolving from an architectural paradigm. Both Bilello and Allison show that decisions can be observed as competing perspectives and paradigms that combine to create an augmented reality. Bilello's (1993) four frames are discussed below:

- i) The structural-goal approach.

This trigger was a response to the recognition that if Cal Poly wanted to meet certain goals then it needed to increase space. This approach fits in with:

"Standard operating procedures, expertise, rationality and capacity to redesign its structures to accommodate needed changes to accomplish the goals of building the Classroom / Laboratory / Administration building". (p.207-8)

Bilello assumes that a building was the only method that could be used to achieve the goals and does not consider other potential options. The decision to build had been made in principle and was undergoing a process of refinement and articulation.

ii) Human needs (human resources approach)

Bilello describes how the people involved with the decision to build pushed the project forward with their enthusiasm and drive:

"People exercised unusual perseverance, 'cashed in' reserve credit (favors) with others that they had accrued, and extended themselves in ways uncharacteristic of normal university behaviour. An inspired collaboration occurred throughout the architect selection process." (p.208)

iii) Power and Political approach.

Organisational politics existed and influenced not only the decision to build, but also preferential treatment in attaining funding. In discussing power and politics, Bilello describes numerous forms of power, for example, legitimate, expert, charismatic, etc., which suggests the decision to build operated on a

number of levels simultaneously; formal, informal, organisational, interpersonal, within the bounds of fair play, and possibly on the fringe.

This political perspective, led to:

"...intense behind-the-scenes pressure applied politically" and that, "...someone pulled some strings." (p.157)

Some actors with authority and power played a significant role in the process but were not highly visible decision-makers yet did influence decisions and considerations. This shows that the decision making process may have contributors not formally recognised. In the case of Cal Poly, the political perspective played a significant part in gaining funding. When considering the combination of computer labs, admin., and classrooms into one project, one participant explained that the president listed as many needs as he could to justify the case for funding. It was assumed that the building would solve organisational issues. The fear of losing a competitive advantage to rivals motivated the bidders and can be seen in Bilello's statement:

"In the unlikely event Cal Poly's administration did not ask for available state funds for capital outlay, other system campuses would. If it didn't argue convincingly for its needs, others would and they may be more successful at garnering those funds." (p.209)

This is the hub of Bilello's power and political frame; a source of finance looking for a project, and a project looking for a need-justification.

iv) Searching for Meaning- Symbolic approach.

This is where Bilello's (1993) thesis shows an emergent definition of the project. He explains that articulating the meaning of the building for the client

was a critical factor in deciding what to build. Questions such as 'What is Cal Poly? How strongly must this be reflected in the design? shaped attempts to create a new definition of the campus.

Unforeseen opportunities were used to drive the project forward. An example of this was when key decisions were made whilst a senior decision-maker, who was not in concert with the majority, was absent.

Bilello continues exploring this "objective-goal" approach by explaining that responsibility was divided into sections with people clearly assigned (E.g. President, Provost and Vice President etc.). Whilst the board of trustees approve major construction projects, the responsibility and decision making process was delegated. Within this discussion, Bilello says, "...people and units depend on one another to make decisions that get new buildings built."

Bilello underlines an observation that emphasises the symbiotic relationship between the building and its users:

"Organizations and people need each other. Organizations need ideas, energy, and talent that people provide, while people need the careers, salaries, and work opportunities that organizations provide." (p.40)

Cal Poly has a manual that elicits standard operating procedures entitled "Physical Planning and Development." One participant explained that decisions were mechanically driven by formulas. Also, the decision making process combined individuals, with different perspectives and emphasis on project appraisal. Indeed, this leads Bilello to recognise that the decision to build can be seen from a number of approaches and that these paradigms may run simultaneously.

Bilello provides insights into how Cal Poly structured itself to meet the demands of the project. Authority and impersonal rules controlled vertical coordination during

the planning stages. Lateral coordination was achieved by “strategically selected players” being invited to committee meetings.

The case study progresses from the client side to the design side and explains how a design team responded to the challenge. The architectural team made massing models, two dimensional blocks and three dimensional plasticine models. This led to a concept that became the sketch design. However, Bilello explains that even within the confines of an architectural competition, the design team could not make design decisions, no matter how trivial. Bilello builds on this by quoting an architect as saying the:

“...approval process was a step by step incremental realization of a building, at any point of which you can lose the project...It's not enough to get the project funded. It's not enough to get the project through design. It's not enough to get funding through the legislature. It's not enough to any one of those stages or all of those stages. Up to a certain point, a building in process is constantly at risk from some kind of death.” (p.119)

This suggests that a formal structure existed and that the project must have adapted and developed to meet the various requirements at each stage in the process.

3.5. Moving Beyond The Summary To Identify Paradigms And Perspectives In The Research Domain.

No single source of literature has provided a complete explanation of the UK decision to build process from the initial stimulus to Stage ‘A’ of the RIBA plan of work. As this process is regularly conducted by experienced clients it must be the participants who provide the structure and rationale, which overlap and intrude on subsequent stages. The assumption made here is that all decisions are intended to move towards success. It is only in the ‘messy’ realisation of projects that different views of success can cause conflict, as expectations clash. Figure 4 identifies the

milestone stages in a building's life. Within each milestone stage will be a range of different professionals involved with the process (See fig. 5). In considering the sources of expertise and experiences clustered around the milestones, it is possible to identify common approaches and techniques that exist.

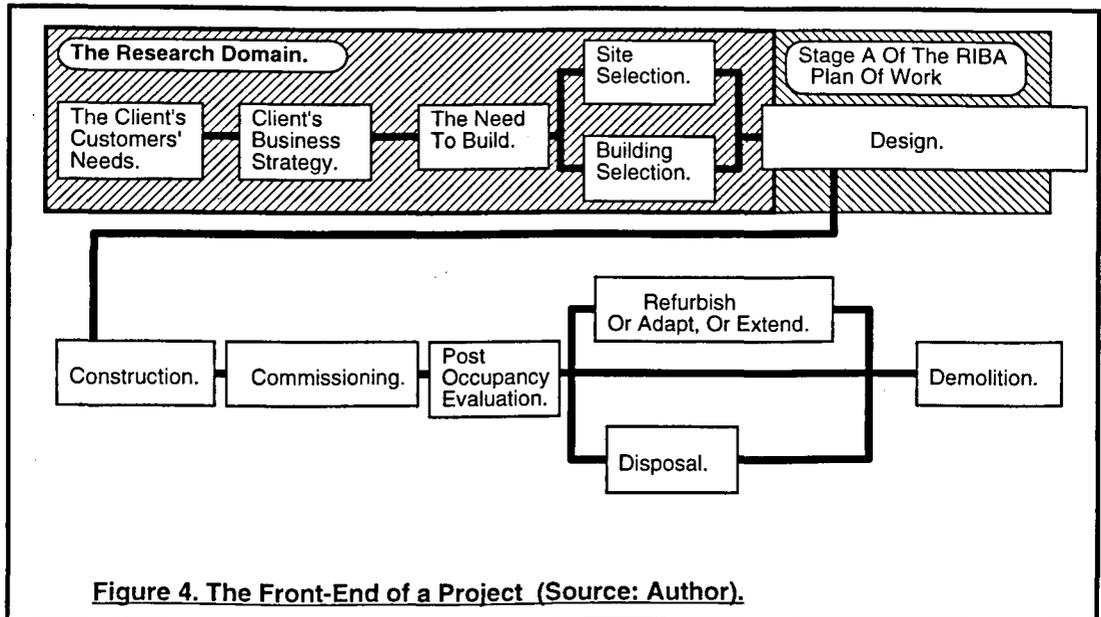
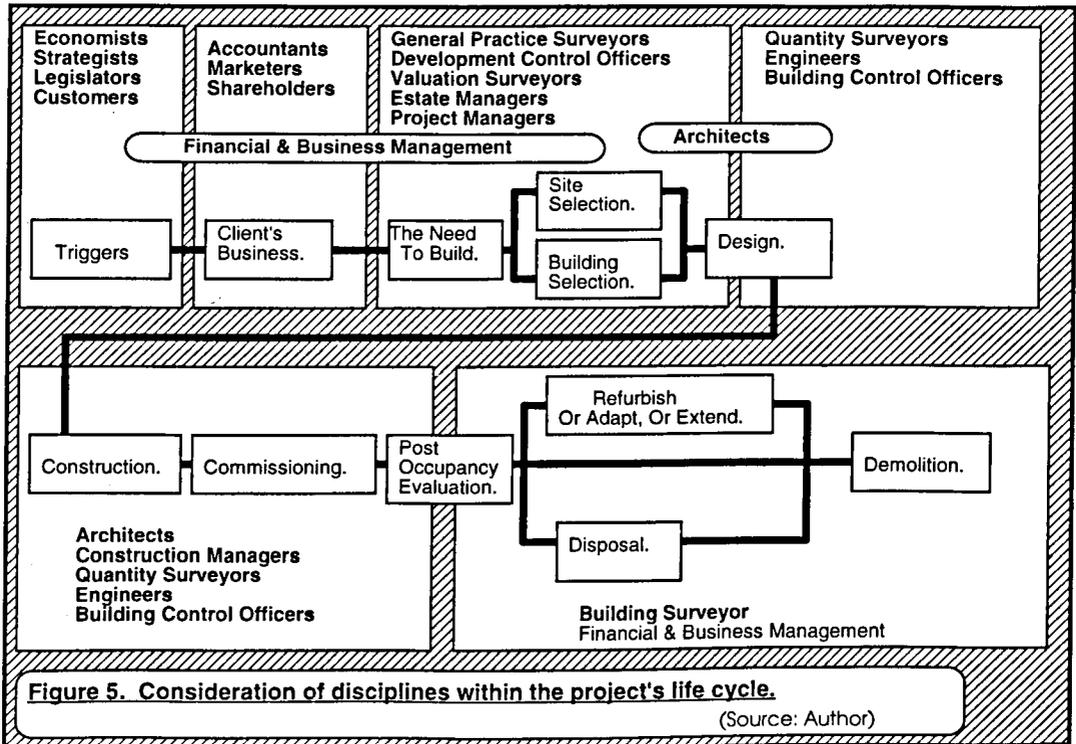


Figure 4. The Front-End of a Project (Source: Author).

The cluster of professionals at each stage, possibly from different departments and firms, represents a team-based approach to the decision to build which combines several strands of knowledge. By examining the origins of the professional's body of knowledge, common paradigms and perspectives were identified (see fig. 5). By paradigm, is meant the rules or expectations common to a group that can be used to identify professions, their 'shared' reality, and their approaches to decision-making (See definition in Chapter 1). Perspectives on the other hand refer to a particular view that can exist within a paradigm such as Mintzberg's (1973) view that management is dynamic and responds to chaotic events rather than the rationalistic approach advocated by Taylor (1947). The motivation of these approaches is to establish a rational approach to decision making which can be explained in relation to attempts to achieve a successful outcome. These paradigms and perspectives are often reinforced by the professional Chartered Institutions, which codify standards and expectations. Vocational degrees at universities also perpetuate the professional

values and paradigms, as well as teach a number of perspectives, or alternative views within each paradigm.



After great deliberation it was recognised that the main paradigms and perspectives at play in the decision to build process were:

- The capital investment paradigm;
- The cost benefit analysis paradigm;
- The financial paradigm;
- The strategic paradigm;
- The marketing paradigm;
- Organisational perspectives;
- Management perspectives;
- The property development paradigm;
- The planning permission paradigm;
- The preliminary design paradigm.

The paradigms and perspectives can also be understood in terms of how they influence the decision to build process. The initial categories developed to explain these influences were:

Paradigms and perspectives which influence the process of the decision to build.

Paradigms and perspectives which influence the content of the decision to build process

Paradigms and perspectives which intrude, or are imposed on the decision to build process by external agents.

However, as will be seen in the next chapter a further refinement revolving around internal and external issues has been used to articulate these categories further so that the explanation becomes clearer. Some paradigms and perspectives may not have been identified and others, not yet in existence, may still emerge. The initial proposition used, in building the explanation presented in the penultimate chapter, was that by tapping into the body of knowledge associated with each paradigm, it might be possible to gain a deeper understanding of how participants go about solving their individual problems. This was based on an embryonic belief that the decision making process may have been segmented into a series of interrelated disciplinary packages that overlap the milestones in figure 5. Each of the paradigms and perspectives could be used to describe individual aspects within the decision to build process. It is only by considering the paradigms and perspectives in combination, that a heightened awareness can be achieved by recognising that the behaviour and expectations of actors is heavily influenced by the most dominant paradigms that influences them. This approach extends Allison's and Bilello's models to allow more complexity to be recognised and structured.

The next chapter, developed from the literature, explains the processes, issues and considerations within the various paradigms and how they influence the decision to build. In order to explain how experienced UK clients arrive at the decision to build objectively, the thesis examines the individual paradigms and perspectives from within before moving its focus to consider them externally.

Chapter Four: The Paradigms And Perspectives Which Influence The Decision To Build.

4.1. Introduction To The Chapter.

The aim of this chapter is to gather the paradigms and perspectives together and explain each one of them from within. At a later stage the thesis will move its focus outside the paradigms to understand how actors are influenced by the dominant paradigm or perspective. From this vantage point the competition between paradigms and perspectives for control (Schön, 1995) can be observed and understood. An example of this might be the accountant's view that financial considerations are more important than architectural aesthetics. The counter position could be the architect's argument that aesthetics are more important than cost. The paradigms and perspectives which influence the decision to build are as follows:

4.3. The Capital Investment Paradigm; A Process Influencing Paradigm Which Is Internally Focused.

4.4. The Cost Benefit Analysis Paradigm, A Process Influencing Paradigm Which Is Externally Focused.

4.5. Content Influencing Paradigms And Perspectives Which Are Internally Based.

4.6. Content Influencing Paradigms And Perspectives Which Are Externally Based.

4.7. Content Influencing Paradigms And Perspectives Which Are Imposed On The Decision To Build Process By External Agents.

The first of these sections to be considered explains paradigms which influence 'how' the process of the decision to build is affected starting with the Capital Investment (CI) paradigm before considering Cost Benefit Analysis (CBA).

4.2. How Process Oriented Paradigms And Perspectives Influence The Decision To Build.

Economic emphasis features predominantly in the literature linked to the decision to build. The reason why this economic view dominates may be a result of a preference to measure resources and success in monetary terms. The two main paradigms which structure the process in terms of what is important and when such considerations are made are the Capital Investment (CI) Paradigm and the Cost Benefit Analysis (CBA) paradigm. Both seek to make a rational decision with minimum cost consequences of an abandoned scheme. Whilst both have an incremental approach to solution generation, screening and approval, they are diametrically opposed in the emphasis they seek. The CI paradigm searches for a decision to build which will accrue visible returns for the organisation making the investment. CI has an introverted focus. CBA looks at the external benefits that are a consequence of the organisation's decision to make an investment. The CI paradigm uses indicators such as "Return on Investment", to evaluate a proposal's viability. CBA attempts to quantify benefits and if they are larger than the investment (i.e. the cost) the proposal is considered favourable. The aim of both these paradigms is to provide a structured approach to ensure the decision to build is a good one. The influence of both CI and CBA is therefore very dominant in the decision to build process. The next two sections explain the content of each paradigm.

4.3. The Capital Investment Paradigm, A Process influencing Paradigm Which is Internally Focused.

This section explains the CI process that experienced private sector organisations would use to take a proposal from its initial stages, through finance and into implementation, completion and operational status. An investment in a building - for example maintenance- which is necessary but leads to no return, is a capital expenditure. This distinction is important for the decision to build and the subsequent design stage as the emphasis placed on a capital expenditure project is to minimise cost.

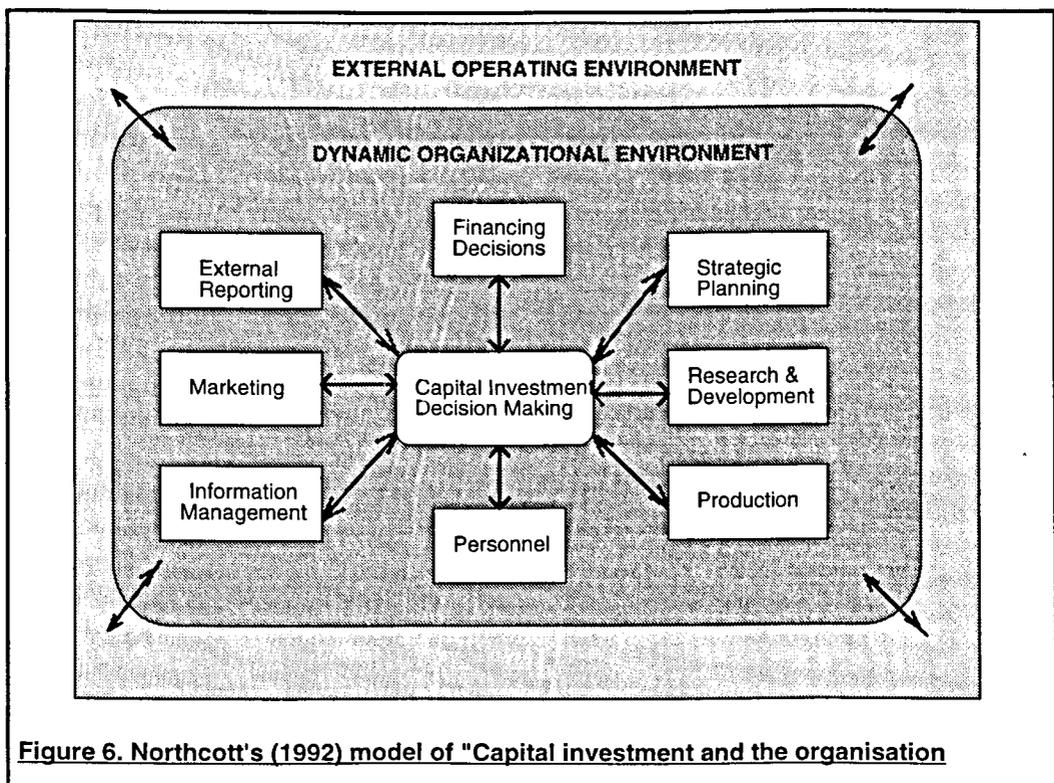
Drucker (1955) is of the view that capital-investment policy influences management decisions as it prioritises which marketing, innovation and productivity options should be preferred, and assumes the organisation can turn opportunities down. The organisation's long-term viability is a result of the selection of CI projects, replacement of existing capital assets, and decisions to abandon unsuccessful projects (Clark, Hindelang and Pritchard, 1979).

Drury (1988) explains the objectives of CI as determining specific investment projects, such as a new building, the estimated cost and how a portfolio of projects should be financed. These considerations must test the impact on cash flows and the balance sheet, as capital decisions influence share prices and investor behaviour. This perspective sees CI as a speculative decision where mutually exclusive projects are compared to discover which will maximise some kind of reward for undertaking it. Those rewards are usually financial. Clark, Hindelang and Pritchard (1979) add that the capital budget influences operating plans in the long-term and are future-oriented. Short-term budgets guide the day-to-day operations of the organisation.

Broster (1968) provides six motives for a capital decision such as the decision to build:

Expansion - development	Saving - development
Expansion - renewal	Saving - renewal
Expansion - reorganisation	Saving - reorganisation

As Broster's motives are the corollary of other strategic decisions, CI must not be considered in isolation from the organisation's external operating environment (Drucker, 1955; Northcott, 1992). The decision to build is one decision amongst a collection of other decisions. Northcott illustrates this relationship between decisions by putting forward the following model that sets CI in a wider context (See fig. 6). She argues that both the internal and external environments influence and are influenced by CI decision making.



Northcott (1992) adds clarity to this paradigm as she explains CI as a process:

- "1. The investment generally involves a substantial financial outlay.
2. The returns from the investment occur over a number of years in the future.
3. There is generally some element of risk and uncertainty in predicting what these future returns will be.
4. The types of investment typically considered to be CIs include the purchase or expansion of equipment or production facilities, or other expenditures which directly impact upon the organization's ability to meet its strategic and operating objectives." (p.1)

At the heart of the CI paradigm is a belief that success can be measured in monetary terms. The distinction between CI as a paradigm and CI as a process is achieved by acknowledging the underlying values that influence the way it is designed and conducted. This acknowledgement of the role underlying values have on processes is used throughout this thesis to distinguish paradigms from processes and methodologies.

4.3.1. Roles Within The Capital Investment Paradigm.

By acknowledging the distinction between paradigms and processes in the previous paragraph, this section treats CI as a process to explain the roles within it. Turner, (1995) writing from a project management perspective, identifies a number of project stakeholders in the decision to build: the owner is the client organisation; the sponsor provides external funding; a champion is a senior user who argues the case for the facility; partners include joint ventures; supporters include contractors, managing contractors, suppliers, consultants, designers, shippers, financiers, insurers and government. Stakeholders include individuals and groups affected by the project in some way such as neighbours, local communities and so on.

A different author (The Levene Report, 1995) describes the participants as investment decision-maker, project owner, project sponsor and also considers a project board and a user panel. This shows that from different sources the labels attached to stakeholders change. There is no consistent naming of roles in the literature but the underlying role-function remains constant.

However, Mukherjee and Henderson (1987) noted that the budget development phase and early screening stages of the process predominantly involves engineers and management accountants more than finance personnel. Northcott (1992) says:

"As with most decisions, the information input is often richer the more people are consulted, and it is common to see any or all of the following personnel contributing;

- accountants/financial managers
- operational managers
- line staff (who often work with the capital assets)
- production personnel
- engineers
- specialist capital investment officers/committees
- general managers and boards of directors (who are often responsible for the final decision to commit to large items of expenditure)". (p.3)

Because the CI paradigm is founded on values linked to money it is not surprising that cost considerations are also applied to the CI process itself. The National Health Service's Capital Investment Manual (Business Guide, 1995) suggests that the CI process costs around 1% of the estimated value of the actual investment for the total resource costs of the combined outline and full business cases. This represents the cost of perhaps five to eight person-years of senior staff time, plus professional services and consultants. The resources necessary to realise a capital project thus

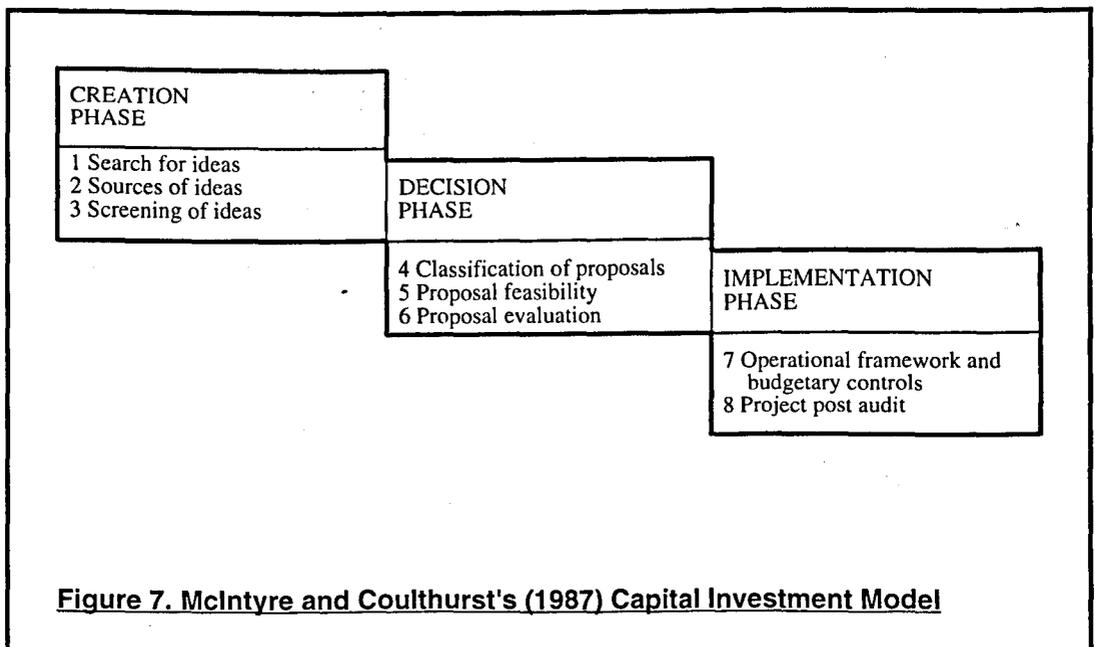
become an important consideration for the organisation considering the decision to build.

4.3.2. How The Capital Investment Paradigm Is Realised.

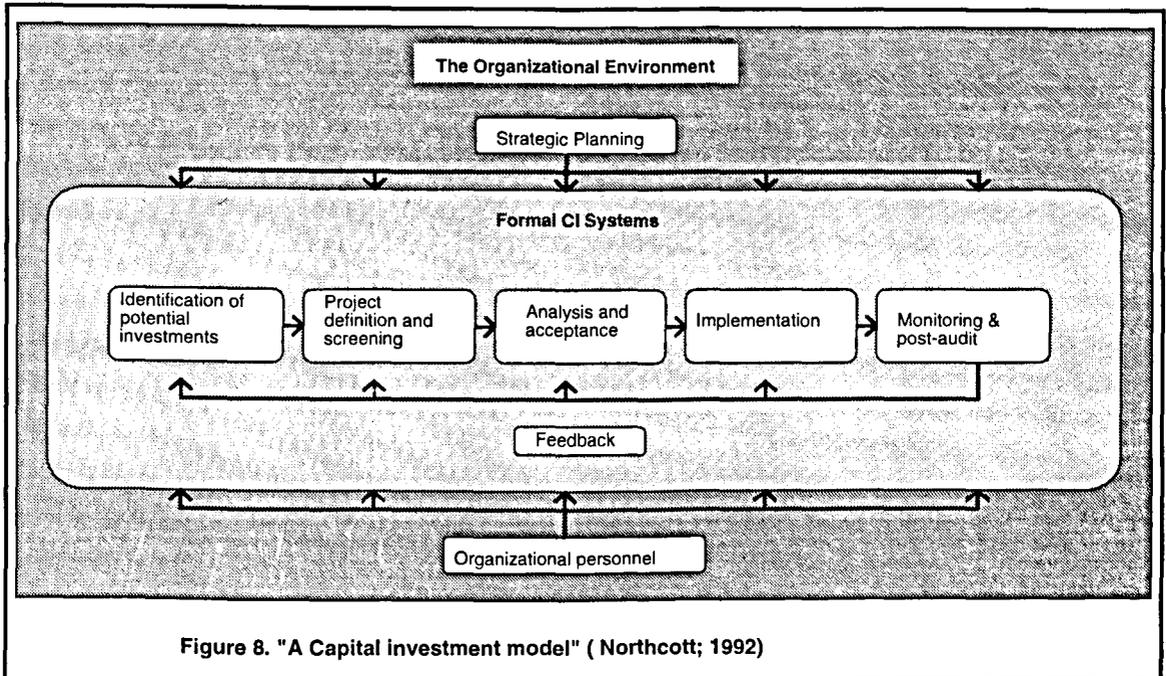
Pike and Neale (1993) explain decision-making as an incremental activity, which involves many people throughout the organisational hierarchy, over a period of time. Senior management retains final approval, but actual decisions are effectively taken at a lower level, by an earlier process that is still not entirely clear, or consistent in all organisations. Their research puts forward the following key stages in the CI decision making process:

- "1. Determination of the budget.
2. Search for and development of projects.
3. Evaluation and authorization.
4. Monitoring and Control." (p.253-4)

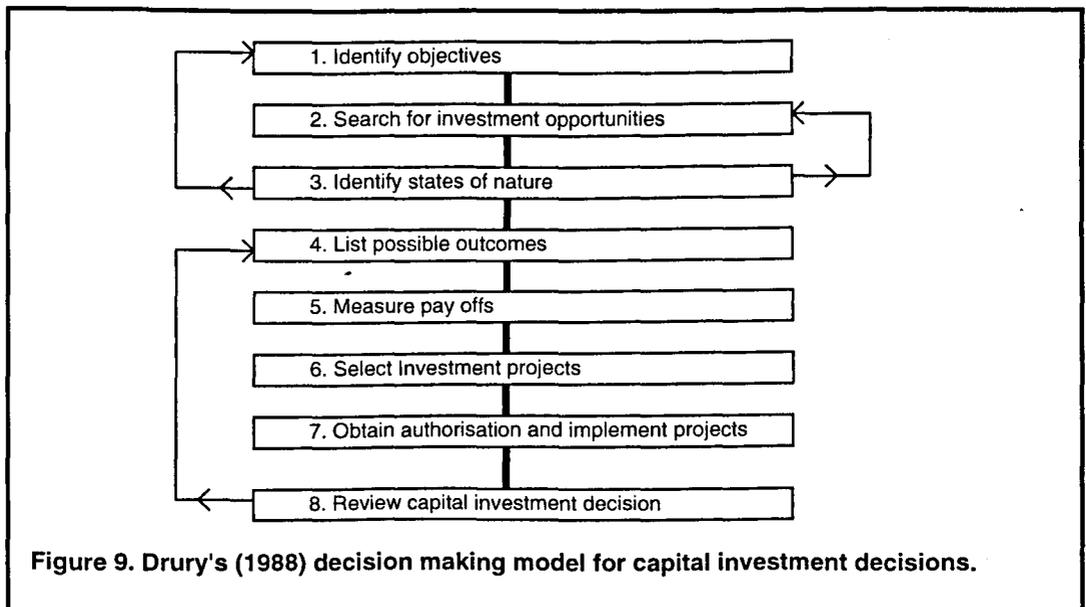
McIntyre and Coulthurst (1987) present a three phase conceptual model (See fig.7) that does not begin with setting the budget, but with the search for new ideas:



Northcott (1992) suggests that the CI process is a rationalised series of steps comprising various inputs, processes, and outputs (See fig.8). The mechanistic approach, that she later modifies, is seen as having several identifiable stages.



Drury (1988) advances yet another model for the CI decision making process (See fig. 9).



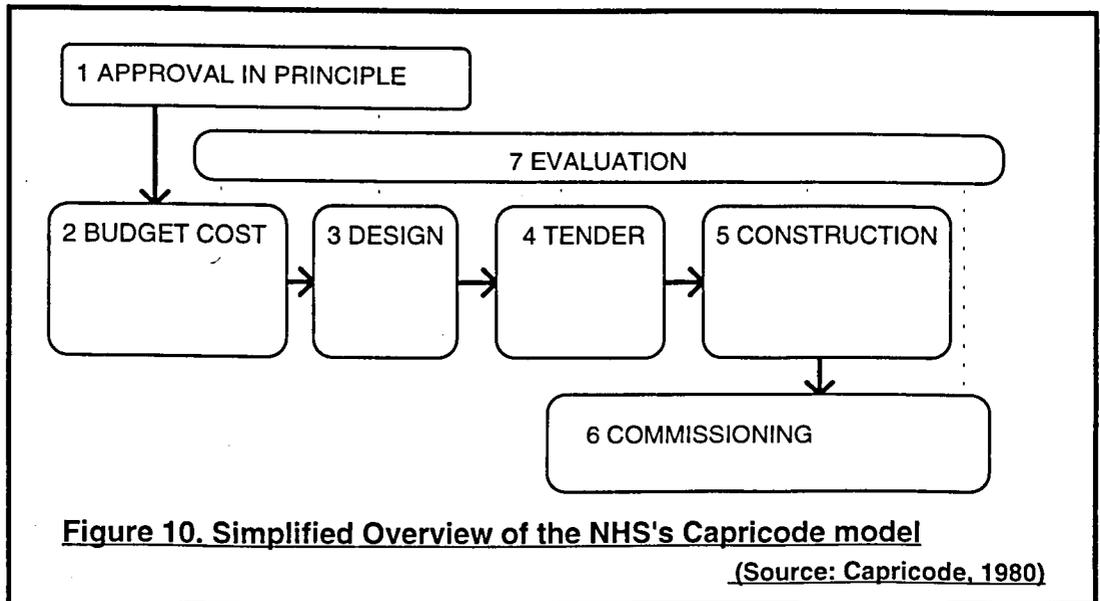
The four models presented in this section illustrate the heterogeneity of the CI process advanced by the literature. But what must be recognised is that these processes and methodologies are developed from a set of values. It is the ultimate goal of making a good decision that unites them. Whilst different routes to the goal of making a good decision are advocated, a systematic approach in the form of written procedures is common. Klammer (1972) found that 97% of respondents in 1970 used standardised documentation, such as a CI manual. McIntyre and Coulthurst (1987) found that 58% of medium sized UK companies had written CI procedures and that 59% had standardised CI documentation. Pike (1988) found that during a period from 1975 to 1988, the number of large UK organisations that used CI manuals rose from 65% to 84%. It can be seen from this that not only is the outcome important but also the method adopted to arrive at that situation so that the commonality of underlying values can be demonstrated.

4.3.3. The Capital Investment Process.

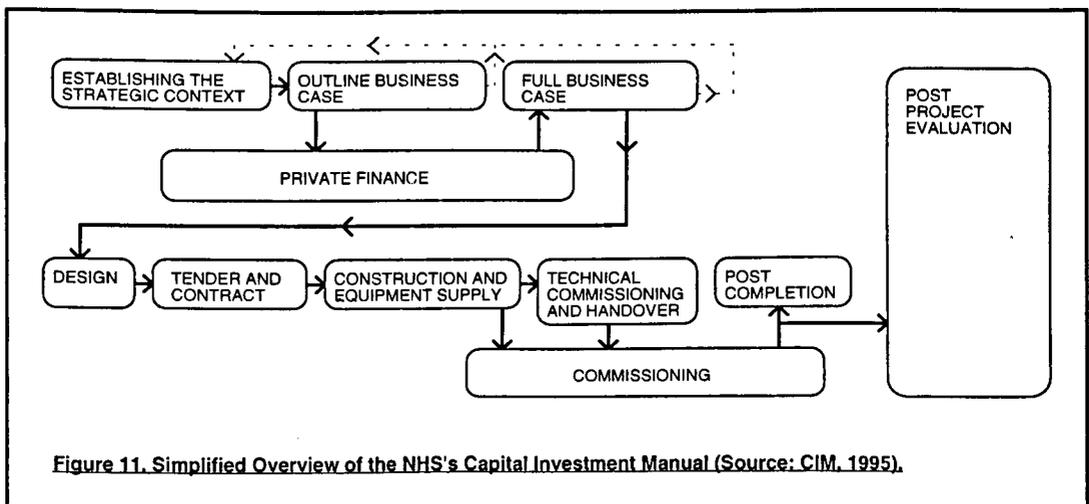
This section uses the National Health Service's (NHS) Capital Investment Manual as an openly visible CI system linked specifically to the decision to build. It was selected as an investment model specifically because it is designed to reach the decision to build and is published in the public domain. Other manuals were unavailable as organisations considered them commercially sensitive.

The Capital Investment Manual's wide use and its high visibility made it an ideal means of explaining how the decision to build is reached by an experienced UK client (A critique of CIM can be seen in appendix 4). It has been found that a number of investigations into Capricode, the predecessor to the current NHS procurement strategy, focused on cost-effectiveness (Griffiths Report, 1981; Review of Capricode, 1981; Walshe and Daffern, 1990). The National Health Service Executive revised the Capricode CI model (See fig. 10) to meet the new NHS structure for hospitals opting out of state control and taking Trust status. Capricode has since been superseded by

the Capital Investment Manual (1995; See fig. 11) where the name of the paradigm actually appears in the process title.

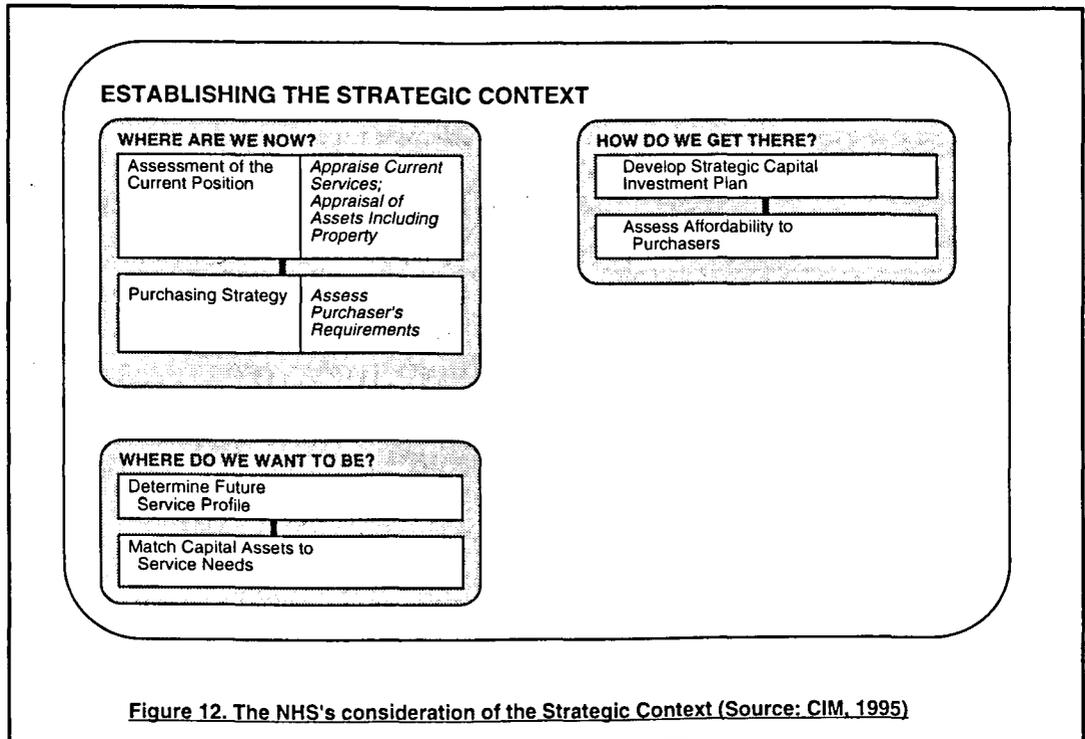


The above model of the Capricode process is shown so that a comparison can be made with its successor, the Capital Investment Manual (CIM). One of the major differences is the increased level of articulation and the inclusion of private finance.



Below is the "Strategic Context" (See fig. 12) of the CIM which is explained in the Business Case Guide as phase I, step one, entitled "Set the Investment within the

Strategic Context." This marks the preliminary stage in a Trust's decision to build process.



Where the original idea that starts the decision to build process comes from is not discussed in the Capital Investment Manual. Moving beyond the NHS, King (1975) describes the initial recognition of an idea as "triggering". This implies the trigger is 'found' rather than 'created', pointing to McIntyre and Coulthurst's view that the process begins with the search for ideas. Pike and Dobbins (1986) emphasise that an organisation's success depends more on its ability to create profitable proposals than appraise them. For some public sector organisations which do not necessarily make profits it is the need to achieve something driven by underlying values, such as build a new hospice, that stimulates the search for ideas. In terms of the source of triggers Mukherjee and Henderson (1987), Istvan (1961 b), Mao (1970), Petty, Scott and Bird (1975) and Northcott (1992) suggest that ideas emanate from lower levels within the organisation, often from personnel in technical positions such as plant managers. Northcott (1992) puts forward McIntyre and Coulthurst's (1987) views that all types

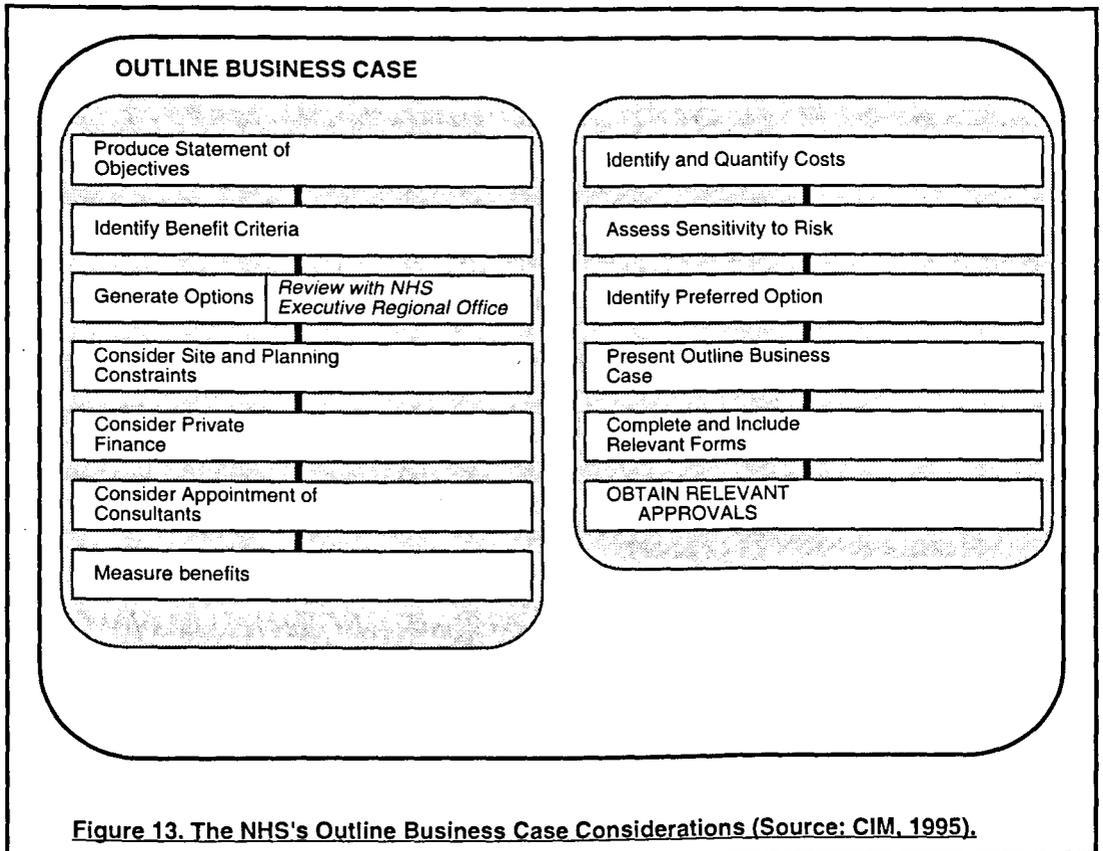
of investment ideas were predominantly from top management. This suggests that ideas come from many potential sources.

Klammer (1972) identified a stage in the early part of the CI process as "Idea Generation". In 1959, 82% of Klammer's survey respondents actively sought investment ideas; this figure rose to 94% in 1970. However Istvan (1961 a) found only 48% of his respondents actively searched for investment ideas. In 1987 McIntyre and Coulthurst (1987) reported only 49 % of respondents claimed to undertake an organised search. This shows that more than one approach is in evidence.

Having established the organisational strategy, the Trust would next develop an Outline Business Case (See fig. 13). The stages within this phase are explained in the Business Case Guide as comprising seven steps that are:

- Define objectives and identify benefit criteria.
- Generate options.
- Measure the benefits.
- Identify and quantify the costs.
- Assess sensitivity to risk.
- Identify the preferred option.
- Present the outline business case.

This approach is similar to Drury's model (1988). The final step, present the outline business case, marks the first approval stage in the NHS' capital investment process. The idea behind having this preliminary approval stage is to minimise the risk of Trusts spending money developing bids that will not succeed. The Business Case Guide explains that the development of the outline case should reflect a process of consultation and consensus between the Trusts, regional offices, purchasers, and where necessary universities. This implies that the supply chain plays an important role in deciding who are stakeholders.

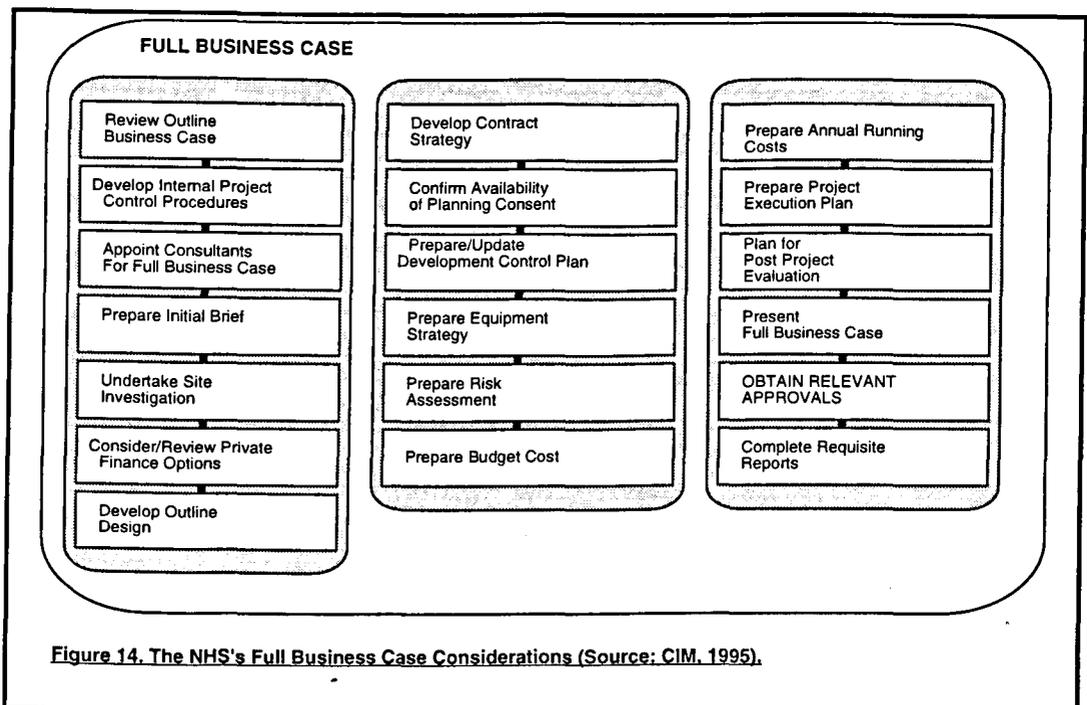


Northcott (1992) sees this stage as where ideas are converted into operational formulations, spending requirements, implementation practicalities and quantifiable future benefits. The process of information gathering from such sources as markets, customers, suppliers and the need for specifications, can be expensive, especially if the project is later aborted. For this reason, Northcott argues that project definition should be in two stages. At the first stage, outline business case, enough data is collected and assimilated to allow a preliminary screening. Once this receives approval then investment in a more comprehensive full business case commences. She continues by stating:

"It is often during this definition stage that the project initiator develops personal commitment to a CI idea. As the initiator gathers information, he or she must continually reassess the project, and often must convince colleagues of its feasibility. The colleagues may also begin to support the proposal, and

so commitment to it grows. The more commitment a project achieves, the more likely it is to be ultimately approved" (p.12)

Northcott adds that proposals which fail at the first screening stage rarely reappear. This sorting process is also used within the NHS' Capital Investment Manual. Scapens and Sale (1981) found that prescriptive manuals were used to control the type of proposals by the organisation's head quarters and this approach guided people in understanding what constituted an acceptable proposal. However, they also found that this approach ensured all proposals being developed were in line with organisational objectives and potentially acted as a limiting factor to the generation of new ideas.



The full business case is phase III in the Business Case Guide (See fig. 14), where the proposal is produced for final approval. An explanation of the, "Full Business Case" is also detailed in the guide entitled, "Management of Construction Projects." The full business case, which involves recruiting external consultants, is explained in a guide that articulates a construction management response; the focus widens over a

boundary that was initially concerned with internal-client considerations, and now extends that consideration to external parties. The implication of this is that a project, that has outline business case approval might recruit external consultants without having secured full business case approval. The Trust therefore carries risk if it invests money in a bid, which may fail to win funding and repay the pump-priming investment. In relation to Bell's (1994) work this suggests not a decision-to-build-line, but a decision-to-build-phase or zone.

One of the main tasks during the full business case is the generation of cash flow data and establishing the required rate of return. The NHS asks for Internal Rates of Return (IRR) and Net Present Cost (NPC) calculations that will later be used to gauge the attractiveness of the proposal.

However, the definition and estimation of cash flows are seen as very important within this paradigm and also the most difficult stage (Fremgen, 1973; Gitman and Forrester, 1977; Lilleyman, 1984; Northcott, 1992). The required rate of return (RRR) or "hurdle rate" in the private sector is often the Weighted Average Cost of Capital (Brigham, 1975; Petry, 1975; Petty, Scott and Bird, 1975; Oblak and Helm, 1980; McMahon, 1981). Pullara and Walker (1965) found that Weighted Average Cost of Capital (WACC) and the hurdle rate, that proposals must better, was applied arbitrarily. Northcott (1992) explains that market measures of cost of capital such as the Capital Asset Pricing Model (CAPM) are often used as an indicator of a minimum required rate of return. CAPM equates risk with a measure of dispersed share price. If a share price has a large range between its lowest and highest price then it is perceived as being of a higher risk than a share with a tight spread. This affects a company's ability to raise finance on equity markets. (See Appendix 5 and 6 for detailed explanation of CAPM)

Essentially, all projects should have estimated returns in excess of the WACC if approval and funding are to be feasible on financial grounds. Petry (1975) and Brigham (1975) claimed over half of their US respondents adjusted rates of return

(RRR) according to risk. Brigham (1975) also found that only 39% of his respondents revised their Recommended Rate of Returns (RRR) less than once a year, with 32% making irregular revisions. The implication of this is that the proposal may be more or less attractive at different times of the financial year depending on the cost of capital at the time it is submitted. Northcott (1992) indicates appraisal techniques fall into two groups: non-discounted cash flow methods (considered unsophisticated), and discounted cash flow methods (considered sophisticated).

The common techniques are listed below:

Unsophisticated Techniques:

Payback Period (PP)

Accounting Rate of Return (AROR)

Variants also known as:

Return on Capital Employed (ROCE)

Return on Investment (ROI)

Internal Rate of Return (IRR)

Sophisticated Techniques:

Discounted Cash Flow (DCF)

Net Present Value (NPV)

Profitability Index (PI)

Techniques Used to Reflect Shareholder Expectations

Capital Asset Pricing Model (CAPM)

Dividend Growth Models (DGM)

Weighted Average Cost of Capital (WACC)

Marginal Cost of Capital (MCC)

(See Appendix 6 for a more detailed explanation of appraisal techniques)

Frost (1975) argues against quantitative appraisal techniques, seeing them as promoting a particular course of action in which decision-bias exists. He explains the weaknesses of sophisticated techniques, such as discounted cash flows, are:

- i) Assumptions not clarified
- ii) Passed the job to the accountant
- iii) Lack of imagination in applying the method
- iv) The analysis is not stated early enough to have any real effects.

The full business case is presented to the Trust's main board upon completion. If the main board approve the full business case the proposal is sent as a bid for funding to the NHS Executive and in some cases also to H.M.Treasury for final approval and budgetary sanctioning.

A number of authors have endorsed 'authority' as providing the link between organisational hierarchy and the CI process. Petty, Scott and Bird (1975) indicated authority in the US for CI rested with the Board of Directors, an executive committee, the chief executive officer (CEO) or some operating committee. Scapens and Sale (1981) explain that levels of authority were established by spending limits assigned to different hierarchical levels. This is also the case in the NHS. Ross (1986) puts forward a case where the project went first to a Plant Manager (or equivalent) then to a corporate engineer for evaluation and was then sent to divisional headquarters as part of a group of requests. This suggests a second screening level that begins before the Outline Case stage of the decision to build, a third one before the Full Case commences.

A large amount of responsibility for approval rests in the lower organisational levels, with higher-level approval tending towards the 'rubber stamping' of lower-level decisions (Marsh et al, 1988; Northcott, 1992). Some authors state that in the private sector it is common to find a central review committee established to decide a

proposal's fate (Gitman and Forrester; 1975; Pike, 1983 b; Lilleyman, 1984). The Levene Report (1995) alludes to a project board in the public sector.

In practice, acceptance of CI proposals combines four aspects: techniques, the influence of non-financial factors, cash flow data and the required rate of return, and risk analysis. In respect of financial techniques, Horngren and Foster (1991) favour NPV over IRR, which is also reflected by other academics such as Pike and Neale (1993). NPV is viewed as more appropriate than IRR as it avoids the assumption of reinvestment at the cost of capital rather than the project's IRR. Pullara and Walker's (1965) survey revealed that in the sixties there was a heavy reliance on subjective judgement. During the nineteen seventies, the payback period (PP) was the most commonly used method but only as a support to more sophisticated methods (Gitman & Forrester, 1977; Hendricks, 1981). The seventies marked a continuing trend towards Discounted Cashflow (DCF) techniques (Pike, 1988; Klammer, 1972; Fremgen, 1973; Gitman and Forrester, 1977; McMahon, 1981). During the 1980s, Internal Rate of Return was seen as the most important criteria (Fremgen, 1973; Pike 1988). This shows that the popularity of an individual technique changes and so the emphasis within the paradigm shifts.

Northcott (1992) suggests that the following steps be involved in analysis and acceptance.

1. Completion of a standard form requiring financial data.
2. Classification of the 'type' of capital investment.
3. Financial Analysis.
4. Comparing outcome of financial analysis to predefined criteria.
5. Consideration of the project within the context of the capital investment budgets for current and future budgetary periods.
6. The decision to approve or reject the project.
7. If the project is approved, establishing implementation and monitoring systems.

Another issue that emerges as important within this paradigm is risk appraisal. In order to appraise a proposal, the riskiness of it must be allowed to influence the decision-maker's selection of mutually exclusive proposals.

An explanation of how risk is considered follows. Norkett (1982) states:

"The entrepreneurial manager is not encouraged to take risks under a budgetary control system. Indeed a budgeting system tends to favour the inward looking 'play it safe', organisational man." (p.374)

Northcott suggests that risk analysis is commonly undertaken with Operations Research (i.e. from within the OR paradigm). Klammer (1972) states that the most popular OR techniques were probability theory, simulation, PERT/CPM and Linear Programming. Lilleyman (1984) in his Australian survey found that 59% used sensitivity analysis, 36% probability analysis, and 32% used simulation to account for risk. However, Northcott (1992) points out that nothing was said about how such methods were used, or what weighting was given to the results. (See Appendices 27, 28, and 29 for methodology)

A weakness of OR techniques is typical of "Hard" systems, which assume all options are exhausted. The assumption being made is that decision-makers know all the variables and how they will behave under a given set of circumstances. What Northcott is alluding to is that there is neither perfect knowledge nor articulated understanding of the variables at play. This is illustrated by Pike and Neale's (1993) consideration of Olympia & York's project in London's Docklands:

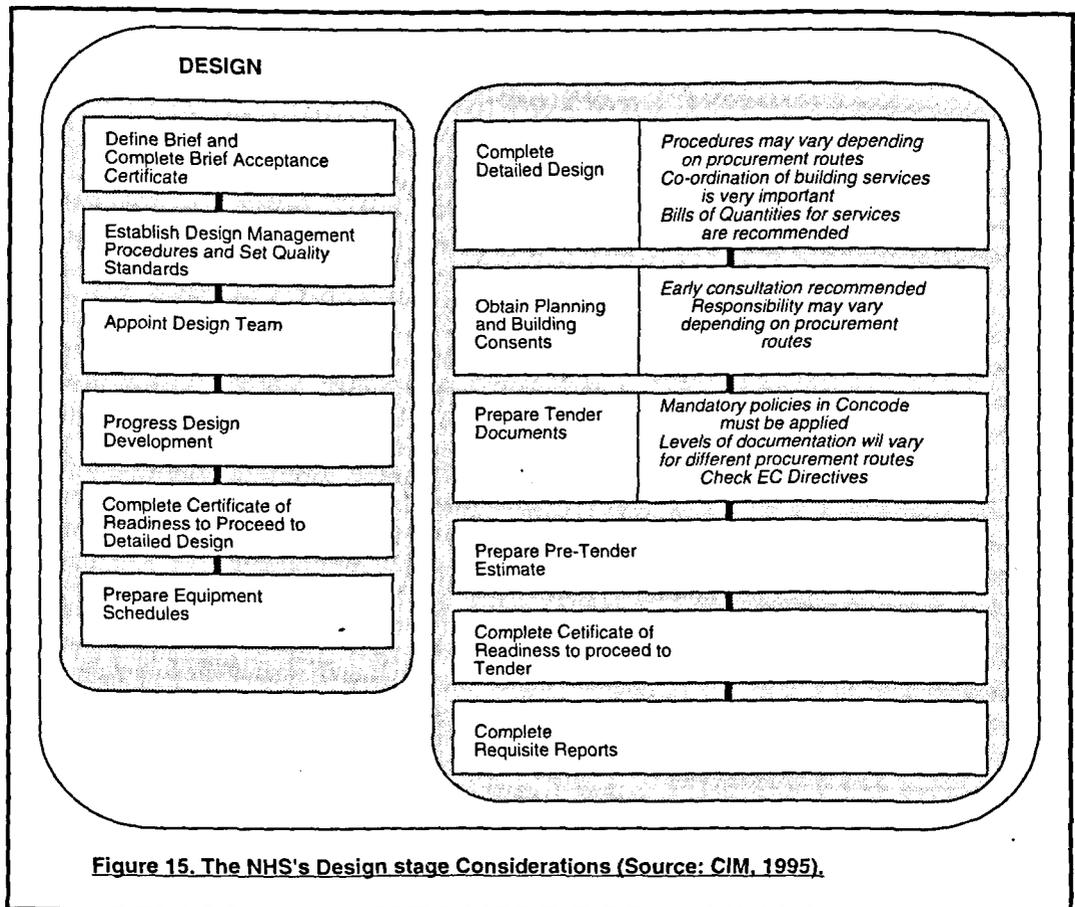
"THE CANARY THAT FELL OFF ITS PERCH

In July 1987, at the height of the property boom, Olympia and York obtained the rights to develop the Canary Wharf site in London's Dockland. The project involved the construction of 5.4 million square feet of luxury office

accommodation within five years, the government providing a link road and the Docklands Light Railway at a cost of £700 million.

The Canary Wharf development was successfully implemented, being completed ahead of schedule and within the budget. Yet in May 1992 Canary Wharf filed for insolvency having failed to raise a required £500 million new loan facility. In many ways it was a victim of largely uncontrollable circumstances: a prolonged economic recession, a down spiral in office rents, government abolition of generous tax allowances to the Docklands, and inadequate road and rail infrastructure." (p.174)

The Canary Wharf case shows how risk can pervade both the internal and external project boundaries. From this standpoint, Pike and Neale (1993) argue that project



risk must not be viewed in isolation, but with regard to its impact on corporate risk, and its implications for shareholders. Sensitivity analysis is a common method of modelling scenarios and their impact on NPV, IRR, and ROI, etc (Pullara and Walker's, 1965; Schall, Sundem and Geijsbeck, 1978).

Once full business case approval has been granted then the NHS' Capital Investment Manual describes the commencement of the design stage (See fig. 15). The design stage begins within the Full Business Case's development and is explained in the guide entitled "Management of Construction Projects." This provides an overlap with the preliminary design paradigm and sets out what the design team must aim for in relation to requirements, deadlines and obligations.

4.3.4. Post Auditing And Efficiency Auditing

The lessons learned from a completed project should be fed back into the organisation so that there is a benefit from the experience. Post project reports are a common feature of public sector and private sector capital procurement systems (Klammer, 1972; Pike, 1983b). Pike found isolating costs and benefits of 'live' projects is difficult. However, post audits are useful because the psychological awareness of accountability influences the actions and decisions of those involved in the process (Northcott, 1992; Scapens and Sale, 1981).

Success is often evaluated in terms of profit and return on investment (ROI) (Moore and Reichert; 1983, Mukherjee and Henderson; 1987). The NHS also uses discounted cash flows in their Net Present Cost calculations to reflect operational and whole life costs. Petty and Scott (1981) and Stanley and Block (1984) found that maximisation of return on assets and growth in earnings per share were by far the most significant measures of success or failure. These two were closely followed by maximisation of shareholder's wealth, indicating that qualitative results are given lower priority than quantitative results.

Having explained the CI paradigm as a process, the next two sections explain some of the issues raised by its implementation in more detail.

4.3.5. Linking The Capital Investment Paradigm To A Management Perspective.

As stated earlier, CI and the decision to build resides within an internal and external environment. This is articulated by Northcott's (1992) observation:

"It is often forgotten that CI decision-making is a *human* activity rather than an objective, mechanical procedure. There are people behind the 'process'. It is this human appreciation of CI decision-making that appears to be missing from the rational, economic models which have driven normative CI theory. Theory has reflected an implicit image of economically rational, profit-maximising decision-makers with perfect knowledge and few emotions. Such people can correctly use and interpret the sophisticated CI techniques proposed in the literature, and will never make a bad decision simply because they're having a bad day! A hopeful, but somewhat unrealistic scenario."
(p.124)

CI paradigm applied to the decision to build requires the integration of many specialists in the context of a project (Bower, 1970). There seems to be confusion over who gets most involved in the CI process (Mukherjee and Henderson, 1987). Northcott (1992) and Butler et al (1991) argue it is middle managers who get most involved with an individual project.

As for the proposal's initiator, Mukherjee and Henderson (1987) add:

"...experience with a project's sponsor, the project initiator's previous track record and interdepartmental politics all affect the credibility of cashflow predictions in contrast to theoretical assumptions, many projects are rejected

during preselection stages apparently for non-economic considerations (for example, personalities and interdepartmental politics)." (p.81)

The subjective element of decision making is again raised by Ross (1986) when a bid that did not meet the required hurdle rate was accepted because the plant manager was considered, "...cautious in his proposals and is very effective in other respects."

4.3.6. The Need To Augment The Capital Investment Paradigm

Pinches (1982) points out that capital budgeting is criticised by Gold (1976), Hastie (1974) Heukensfeldt Jansen (1977) and King (1975). Pinches (1982) explains that these critics argue that a narrow emphasis is misplaced, and doesn't focus on the important strategic issues concerned with the long run maximisation of the value for the organisation. This is because academics and practitioners have focused on providing sophisticated analytical techniques suitable only for narrowly defined problems. Little attention has been paid to the overall strategic question of how effectively capital budgeting interfaces with the organisation's resource allocation process (Pinches, 1982). Pinches points out that proposals rarely go forward unless the probability of acceptance is high and that there is a danger that projects may not surface because of the fear of a career blemish.

Bower (1970) reveals that there is a strong tendency in the capital budgeting theory to regard the personal stakes of managers as a source of bias or noise. That is largely because such treatments regard the manager's problem as isolated and static. The problem a rational manager faces, as he considers committing himself to a project over time, is not considered. He or she is part of a series of proposals and projects that compete with other managers for the limited funds available. At the same time, the other managers are his peers and friends. Whatever the result, working relationships will have to be maintained with those same people for a considerable period after the individual initiative is resolved. In that sense, the bidding for funds

becomes a 'zero-sum' game. It is difficult for a proposal to achieve approval without compromising another, as is the nature of competition.

Pinches (1982) inferred from other research and his own observations that some of the main points from capital budgeting in practice are:

1. Coalitions, interpersonal factors, bargaining and politics often play an important role in the selection or rejection of capital budgeting projects.
2. The capital budgeting process is largely iterative with screening taking place in a somewhat sequential fashion.
3. Multiple criteria are employed for decision making.
4. Information problems and data uncertainties abound.
5. The proper treatment of risk is still a major source of concern.
6. The reward and punishment system employed has an important impact on capital budgeting decisions.”(p.8-9)

4.3.7. Analysis Of The Capital Investment Paradigm.

Capital investment is a very broad subject area. Its approach, dominated by economics and accountancy, considers the allocation of capital in the context of time constrained projects. It considers mergers, take-overs, and purchase of machinery in the same way as procuring a new building. This perspective has been translated into rules and procedures, which form the paradigm described in investment manuals.

The underlying belief of this rationalistic approach is that past performance is a good predictor of future behaviour. By reflecting on historic projects, a model is designed that guides management to plan, monitor and control. Its goal is to make a good decision, its objectives are to show how that decision was made rationally. As the future growth and survival of the organisation depends on, and is influenced by CI, this rationalised process provides a system that co-ordinates activities and considerations, in a pre-determined sequence. The primary motivation for

organisational decisions is seen as shareholders' wealth maximisation but the whole paradigm is founded on the belief that wealth creation in monetary terms is what is important.

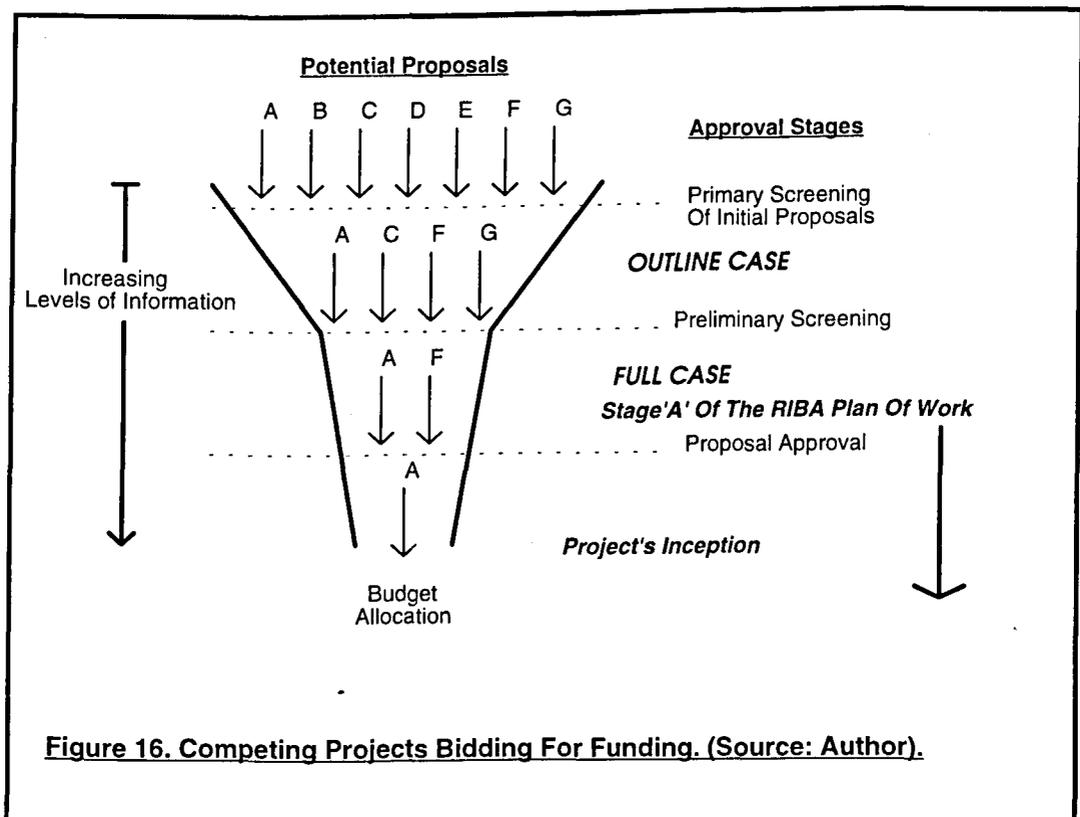
CI processes attempt to assess a decision from a detached investor's point of view. A remote stance, provided by detached approval committees, suggests that the organisation need not make any investment if the returns are inadequate. Designed impartiality implies that approval committees have, at least, equal knowledge and understanding to all other employees. In well established superior-subordinate hierarchical organisational cultures and designs, differing levels of problem-awareness may exist. Consequences of competing value-systems could manifest in terms of compromise, emphasis, urgency, commitment, motivation and communication.

The CI process assumes that approval committees consider projects in relation to the organisation's objectives. Proposals are considered in terms of operational formulation, spending requirements, implementation practicalities and quantifiable future benefits. However, this detached and introverted perception of the project is conducted under the need for information gathering whilst minimising the investigative costs. As such, CI procedures become pre-designed routes that may restrict individual projects to grow organically, or even combine with other projects to enhance investment value.

Both public and private sector organisations demonstrate proximity to a rational objective management approach. Tasks, roles, responsibilities, communication procedures, approval and control systems are all in place before the project's need has been identified. This may be a response to past experience, which seeks to reduce the cost of learning. However, a team whose purpose is to deliver buildings, may stimulate a self-fulfilling prophecy. This shows how another paradigm can exist within a more dominant paradigm, as long as the dominant paradigm's expectations are met.

The NHS's Capital Investment Manual (CIM) describes a model which holds "Accountability" in high regard and is focused on 'how' the capital decision is made, and what steps are taken to reduce cost. It is assumed that the product of the system will be a good decision. CIM attempts to link the CI system to a strategic context within a pre-designed protocol. This protocol must be followed if the proposal is to attain project approval. Thus, the proposer efficiently carries out the pre-defined tasks necessary for a successful bid and the process subsumes the purpose.

Approval is by boards or committees. Information supplied to these bodies, which may influence the promoter's career prospects, will be prepared to influence acceptance as all parties strive towards making a good decision. As access to the



respective approval body is determined by financial limits, some projects may be scaled down to mitigate the need to seek ratification. Bilello reports, proposers may defer problems so as to ensure phased approval. The challenge is getting final

approval and budgetary sanctioning. The typical approval process is a competition that funnels successful projects towards funding, and rejects other projects (See fig.16).

During the preliminary screening phase, individuals may adopt proposal "ownership" which motivates them to drive the project through all the approval stages, possibly also motivated by a move toward personal career enhancement.

Although there is a lack of consistency in labels attached to the participants of the decision making process, the people involved are typically: Accountants, Operational Managers, Line Staff, Production Personnel, Engineers, and General Managers. Personalities, and the past experience of certain people, can influence the credibility of the proposer and the initial reaction to the proposal. Success for the proposer may be at the expense of colleagues whose failure undermines information sharing and team dynamics. There may also be motivation for collaborations with other bidders in an effort to enhance political bargaining positions, to successfully gain funding at the expense of a superior project. This political perspective may gain emphasis if success or rejection would result in some colleagues being made redundant.

Just as CI pervades the internal and external environments, marketing, production, strategy and organisational design, the scope for a political bargaining model presents the possibility that some senior decision makers are manipulated by, or participate in, information censorship. Similarly, projects that could be accepted, might not surface from lower organisational levels as personnel, not being intimate with senior management thinking, may incorrectly perceive the proposal as having little chance of approval, or view it as potentially detrimental to career prospects. Also conflicts in project ranking techniques show that the CI paradigm, even with its bias towards quantitative data, has difficulty in promoting a single technique that accommodates all eventualities. The CI paradigm places an emphasis on how a decision is made rather than what decision is made.

4.4. The Cost Benefit Analysis (CBA), A Process Influencing Paradigm Which is Externally Focused.

The previous section explained the Capital Investment (CI) approach as introverted and concerned with financial gain from an investor's perspective. The opposite approach is Cost Benefit Analysis (CBA) which is extroverted as it scans for benefits that flow from the investment accrued by external parties. That is, CBA does not promote an internalised view of value, but seeks to justify cost in terms of external benefits that will flow from the planned implementation. It is this slight but marked difference in the underlying values that moves CBA away from CI.

The CI paradigm revolves around senior management's need to increase the wealth of the company's shareholders. Some projects are needed for social reasons, but would not be capable of attracting investors. An example would be a public library that lacks an identifiable source of revenue, but provides society with access to knowledge that could stimulate progress, generally.

In contrast to CI, the Cost Benefit Analysis (CBA) approach seeks to compare the cost of a project against the external benefits that would be liberated. Frost (1975) states:

“It is no longer good enough to look at problems of public policy from the narrow view point of pure economics; techniques are available for assembling a great deal of data on their sociological and technical impact, and on the ways-in which decisions taken now will interact with the future. However, many debates have degenerated into slanging matches between such groups as economists, environmentalists, planners, businessmen, and so on. Some way must be found of encouraging these people to discuss problems in a sensible way.” (p.ix)

Mishan (1975) explains that the social benefits of a project often come to fruition in the future. It is this long-term view of a delayed return on investment that is lacking in CI project appraisal. Frost (1975) considers project appraisal from three perspectives:

1. Economic choices related to industry; for example, a new road to rejuvenate inward investment to a particular location.
2. Public interest choices based on economic arguments as in the case of public inquiries and opposition to new motorways.
3. Choices outside economic paradigms such as public amenity and scenic beauty.

Frost (1975) describes CBA as an extension of the discounted cash flow technique. He is of the opinion that it is designed to air omissions of forecasting and physical consequences. The methodology considers all consequences, which are converted to a common unit such as money and then subjectively weighted against multi-criteria. Mishan (1975) explains that the estimate of social costs often proves more difficult than the initial capital and operating estimations.

During Mishan's (1975) explanation of the conflict between social and fiscal objectives, he introduces us to the concept of benefit-cost ratios. This approach means that a project, which is uneconomic in its own right but may lead to desirable outcomes as a consequence, may be viable.

Mishan (1975) explains:

"...the economist engaged in a cost-benefit calculation has to go beyond a simple price *times* quantity measure of the benefits arising from the products or services of a project. Instead, he makes use of the area under the entire

ceteris paribus demand curve. Even in the fairly common case, when an investment project is designed to save some part of the costs currently incurred in making use of existing facilities - an example would be a bridge built to replace an existing ferry service- the consumer's surplus concept is implicit in the cost-saving calculation." (p.24)

4.4.1. The Procedures And Layout Of A Cost Benefit Analysis

Whilst the ultimate goal of CBA is a good decision linked to external benefits it, like the CI Paradigm, strives to achieve procedural objectives which allow an audit trail of the rational decision making process. In order to allow a contrast between the CI and the CBA approaches to project appraisal, this section will describe a typical CBA layout.

The Honourable Eustace Roskill (Frost, 1975) was asked to head an inquiry team to investigate the feasibility of a third London Airport. This task force became known as the Roskill Commission.

The Roskill Commission started its task by identifying the terms that had to be studied; it did this by drawing a diagram that outlined the relationships between the various parties involved. Next it considered costs from removal costs to cost of compulsory purchases. In addition to this, it also considered intangibles such as time, noise and amenity.

In considering location issues, the Roskill Commission (Frost, 1975; p.135-145) explored:

- Production costs
- Freight, Insurance and Handling
- Customs duty
- Local labour costs
- Local subcontractors

Local raw materials
 Training costs
 Indirect expenses
 Sales
 Profits
 Benefits to the country.

Walshe and Daffern (1990) state that the first stage in a conventional CBA, is to quantify the individual's valuation of a benefit. The second stage is to aggregate the benefits for all individuals affected by the option.

Methods of valuing used in a CBA include (Walshe and Daffern, 1990):

1. Market price and quantity information; e.g. the effect of consumption increase.
2. Cost savings; e.g. aversion costs.
3. Transaction costs; e.g. time it takes to travel to A or B.
4. Related market pricing methods, or hedonic pricing methods; e.g. a change in one item's price and its effect on another item that cannot be observed directly in the market.
5. Stated preference methods and contingent valuation methods; e.g. a situation where consumers are questioned to find the point they would pay £x to receive benefit y.

4.4.2. Analysis Of The Cost Benefit Analysis Paradigm.

In contrast to the introverted-project appraisal perspective of CI, Cost Benefit Analysis (CBA) considers the project in terms of its external costs and benefits (i.e. externalities). This allows a utilitarian perspective into project appraisal where 'value' in terms of external stakeholders can be considered in relation to a specific investment. CBA lends itself to public sector projects, such as the building of a

motorway, that lack a focused commercial return. The cost of building a bridge could be appraised with the benefits accruing to the local business community, against detrimental effects on wildlife and the environment. For the private sector, this approach may cause potential conflicts between indirect (sometimes altruistic) considerations, and profit maximisation objectives.

CBA seeks to identify all direct and indirect project stakeholders, before calculating the costs and benefits from each stakeholder's individual perspective. A number of accountancy based techniques such as shadow, replacement, or comparable pricing are used to translate qualitative and quantitative variables into quantified costs. Financial costs and benefits are then entered into a discounted cash flow calculation to compare Net Present Values. The difficulty becomes that of selecting an appropriate discount rate. The potential for bias stemming from an individual, or the guiding paradigms which influence the individual, may result in unrealistic rates being imposed so that a desirable outcome can be justified.

Value issues surrounding ethics and morals are suppressed beneath a rationalistic-objective approach. To make the decision to build purely in monetary terms denies the complexities of life, the bias of past experience, and the future's uncertainty, as a proposal is appraised within fairly simple scenarios modelled with a discounted cash flow. The scenario-selector's experiences, empathy, sympathy, and bias, will come into play as he or she seeks, objectively, to describe externalities that might have an influence on appraisal and the description of perceived reality being used. Appraisal bias is ignored in CBA, as costs-to-benefits are compared within the apparently impartial grounding of a mathematical calculation.

The CBA methodology seeks to remove humanistic-subjective values from a decision making process by presenting "fact-like" information as if it were value free. The need to measure and compare on a consistent basis attempts to override any faith in reason and wisdom. Whilst CBA has an important arbitrary role in discussing and apparently resolving conflicts between private and public interests, as well as

widening the scope for stakeholder considerations, its detachment from the conflicting emotional responses and interest groups is supposed to make compromise possible.

By analysing CBA, it can be seen that 'value' within this paradigm is reflected by the gap between costs and financial benefits in their widest sense and is considered in relation to "cost of investment". It is not surprising that public sector projects thus become concerned with value-for-money. The logic of detached investors assumes that externalities are constant, and seeks to increase value by lowering the cost of investment. Costs and benefits that cannot be translated into financial units may be neglected. If a project is considered with its external costs and benefits, then an opportunity exists to modify and refine, rather than reject. An approach that promotes the importance of the clients as stakeholders, and emphasises their expectations, could allow the project to augment by creating secondary sources of income. In this context, project appraisal can be used to combine ideas and liberate an entrepreneurial spirit.

Both CBA and CI are systematic approaches used to structure the decision making sequence which ultimately lead to the decision to build, or not as the case may be. Both these approaches attempt to demonstrate objective decision making and suppress subjective decision making. The assumption in both CI and CBA is that an objective, systematic, approach to decision making will result in a good decision.

4.5. Content Influencing Paradigms And Perspectives Which Are Internally Based.

The previous section explained how certain paradigms and perspectives influence the process by which the decision to build is developed. At the heart of the capital investment and cost benefit analysis paradigms is the belief that 'value' is ultimately a relationship between the project's cost and the benefits that accrue from it. However, this 'process' is also influenced by and sometimes influences paradigms and perspectives, which force the 'content' of the decision to build. Some of these paradigms and perspectives operate within the client's decision making process and of others are imposed by external agents.

This section will explain these internal and external influences on the decision to build process and investigate the paradigms and perspectives which influence recognition of need (i.e. the marketing paradigm), how senior decision makers respond to that need (i.e. the strategic paradigm), and how the organisation affects the decision to build process (i.e. the organisational perspective) and finally, how those charged with implementation influence the decision to build process (i.e. the management perspective)

4.5.1. The Marketing Paradigm

The marketing paradigm pervades the decision to build on a number of levels. These levels are market research, product and image design, and issues related to the point of sale. Marketing pervades all aspects of an organisation's communication process. Companies that exist by trading must meet the needs of consumers in a manner that realises sales and revenue streams. It is the marketing department's sales forecasts which stimulate the firm to either expand, maintain or contract production with all the associated knock on effects. This section explains how overarching strategies are orientated to achieve core business success in terms of the organisation's reason to exist. The building will provide a venue for a specific activity such as research and

development, production, distribution and sales. In some instances, as in the case of restaurants, the building often becomes an extended part of the product's packaging and image as the organisation's values are reflected as part of a marketing communication message; it is not just good food that is important but also the surroundings in which customers eat.

4.5.1.1. Marketing And Strategic Formulation

Chisnall (1995) considers marketing as both a business philosophy and management function and uses Levitt's (1974) quote that it provides a consolidated view of the entire business process. To Chisnall, marketing is more than selling; it's orienting the whole organisation towards meeting the customers' needs. This approach calls for a building that supports the image and values of the product. Chisnall (1995) argues the most important aspect of marketing is to understand and meet customer or consumer expectations.

In order to understand 'need' and translate that understanding into action three broad categories of information are necessary for marketing (See also appendix 7):

1. Information for strategic decisions (e.g. whether or not to enter a particular overseas market, or to diversify into new markets).
2. Information for tactical decisions (e.g. planning of sales territories).
3. Information to provide a 'data bank'; this will require periodic updating to ensure that it retains its usefulness (e.g. details of competitive products, market share analyses, VAT requirements).

The market research in association with the decision to build must consider issues such as:

1. *Consumption patterns*: identification of trends and underlying causes.
2. *Perceptions* of specific products/services and company image.
3. *Expectations* related to products/services; identification of benefits sought from purchase.
4. *Attitudes* towards suppliers, particular products/services, etc.
5. *Motivations* to buy (or avoid) products/services from certain suppliers; industrial buying processes; relative impact of economic, technological, psychosocial factors, etc.
6. *Media habits and influence* on selection of new suppliers, and awareness of economic trends in both home and overseas markets.
7. *Competitors' activities*: identification and classification of main competitors in specific market sectors.
8. *Classification of buyers*: related to end-use markets for specific types of product/service; classified by industrial type, region, volume purchased, etc.

(Chisnall, 1995; p.139-140)

This focus on the micro-economy must also be set in context with the larger picture of macro-economics (Back, 1988; p.33) which considers issues around:

1. Product Market Characteristics
2. Product Market Growth.
3. Economic Growth Factors
4. Interest Rate Forecasts
5. Currency Rate Forecasts
6. Inflation Estimates
7. Trade Growth.

The purpose of this larger consideration is necessary to understand if the decision to build emanates from an organisation, which is either expanding or contracting in size. The marketing paradigm thus interprets the external environment, and integrates that into the internal marketing plan. The marketing paradigm links purchasing decisions, production decisions, personnel decisions, finance decisions, image decisions, with external stakeholders who will ultimately decide success by behaving as predicted (e.g. keeping their shares and/or continuing to buy products and services). Individual organisations along the various supply chains will face different types of demand that will have implications for their sales forecasts and subsequently their property portfolio. The decision to build must be considered in relation to the client's market so that issues such as the relative importance of time and the inability to make firm decisions are understood. The following three sub-sections will investigate derived, erratic and cyclical demand to explain the different pressures facing clients and the supply and demand driven stimulus for the decision to build.

4.5.1.2. Derived Demand.

The actual consumption rate of a client's product is a result of the transaction between the end consumer and the supply chain. Therefore upstream companies (e.g. raw material producers) may not be able to match capacity to downstream demand (e.g. retailers) without understanding and sharing information about what is expected in the long-term. Long-term consideration accommodates the lead-time for such factors as the design and construction of a complex building to come on line in tune with market expectations. Chisnall (1995) explains derived demand for the chemical industry as a mix of economic, social, political and other factors that affect patterns of demand. The decision to build may therefore be a consequence of activity in another market further down the supply chain.

To improve the market response time by upstream companies calls for the sharing of information. This in turn leads to arguments about competition versus collaboration. Failure to share information can lead to some companies over-producing and

building up inventory levels. Chisnall (1995) explains the acceleration effect where a 25% increase in final consumption can lead to a 40% increase in demand upstream (see Appendix 8). The philosophy of Just-In-Time (JIT) makes the supply chain leaner and enables new products to be brought to market faster, as the need to clear old stock is avoided. This will also have consequences for the company's property portfolio (i.e. smaller warehouses). The concept of derived demand is at the heart of supply chain management.

4.5.1.3. Cyclical Demand.

Organisations closer to the point of sale or contact with the public sometimes face different pressures caused by cyclical demand. Therefore the decision to build is sometimes a product of cyclical demand; for example, recession or economic growth. Chisnall (1995) explains that cyclical fluctuations may emanate from several levels: national economy, industries or sectors of industries, and individual firms. Whilst many explanations of business cycles have been offered, no simple explanation is really possible as there is not just one type of cycle. How to predict an economic cycle in the future, in order to begin to build a specific type of facility now, is not discussed at length in the literature, and suggests a fruitful area for further research.

4.5.1.4. Erratic Demand

It is necessary to understand that some organisations exist in more uncertain markets than do others. Erratic demand can be unpredictable-but-imminent (e.g. Ice cream sales and the British summer). The decision to build may by necessity be heavily influenced by considerations of flexibility and adaptability to uncertainty. Other types of demand may have had no consideration or probability attached in any planning models; for example, the impact of Mad Cow disease on gelatine and the consequent effect of the world-wide ban on the export market of the confectionery trade who used gelatine as a fixing agent. The underlying assumption behind Risk Management is that all risks can be identified in advance. Other examples of erratic

demand range from panic buying triggered by a natural disaster, economic events, war and industrial unrest, or even commercial collaborations as in the forming of OPEC and its impact on oil prices during the 1970's (Chisnall, 1995). Clients who trade in erratic markets need either operational flexibility or a wide range of long-life products, which must be considered in the decision to build process.

4.5.1.5. Supply And Product Value

Prefabrication and approaches to lean construction (Egan, 1998) must also feature in the decision to build process. Chisnall (1995) discusses the supply of standard products that he describes as commodities, which lack any differentiation and must therefore compete on a low-cost strategy in relation to a supply and demand curve position. Diametrically opposed to the concept of a commodity is the augmented product. Chisnall (1995) defines augmentation as:

"...a product or service is more than just a simple transaction: it provides not merely the physical benefits inherent in its use, but can be designed to give a cluster of benefits that are attractive to specific kinds of buyer." (p.58)

The implication of the clients' values is thus an influence on how they perceive the building as either commodities or products. Some buildings are essentially manufactured as standard lines and assembled on site in unique locations. Whereas others are designed to the specifications of a prestigious client and particular set of circumstances. Kotler (1980b) explains that products can be viewed on three levels. These three levels can be used to describe a building in terms of:

- (1) The core product;
- (2) The formal product;
- (3) The augmented product.

The marketing paradigm influences decisions by creating categories to understand why people behave as they do and then making adjustments so that a desired behaviour is achieved and a demand satisfied. The core or generic product is the main reason the client seeks to make a purchase. The formal or expected product is what differentiates it from others (e.g. features, architectural style, quality, brand name, etc.) The augmented product adds extra value to the initial product (e.g. maintenance contracts). These bolt on products and services make the overall product larger; they augment it. These can add value to the before, during and after sales' experience. A building may be able to augment a product or the service it houses, and may also be capable of augmentation itself as a product (e.g. architecture which communicates corporate values). This potential shows how the marketing paradigm influences what is actually considered during the decision to build process.

The marketing paradigm of some organisations often leads to certain industries having preferred locations. Competition within an industry depends on the number of firms and their relative sizes (Chisnall, 1995). High concentration occurs when a small number of firms produce a large proportion of an industry's output. If an industry comprises large numbers of small firms, fragmentation occurs by which the companies will not have any market power as they lack the means to influence the prices of rivals. Typical trends of concentration include the geographical preference for some industries in selecting their location. Sometimes this decision is based on historical precedent. Examples of ancillary industry clustering include Textile Industries of Lancashire, Pottery Industries of Stoke-on-Trent, and Car Manufacturing around the Midlands. However, Japanese car manufacturers (i.e. Toyota and Honda) located in the UK away from traditionally associated regions. Perhaps Cooper et al (1986) shed light on why this was so as they explain how a new facility, located in a deregulated labour market, led to a competitive advantage built around the creative re-engineered production and distribution processes. Cooper et al's case study indicates that by combining paradigms and challenging contemporary views, a building can be realised to produce sustainable competitive advantages.

The marketing paradigm recognises that the decision to buy, or build, is complex involving several people from different departments (Chisnall, 1995). In 1958 Dun and Bradstreet found that in an average firm, the decision was influenced by at least nine people (Alexander et al, 1961). Chisnall (1995) adds, that in some very large contracts such as building procurement, special committees are set up to consider suitable sources of supply. Webster and Wind (1972) identify five roles in the buying process: gatekeeper, user, influencer, buyer, decider. Chisnall (1995) advises that it is important to know who the gatekeeper is and his/her degree of influence. Users are those who will realise the benefit of the product. These roles are present in the decision to build.

The individual, or committee, who makes the decision to build must consider the prospective purchase under conditions of risk and uncertainty. Bauer (1960) put forward the view that an individual perceives 'things' with more or less emphasis than other people and so risk is "perceived", but not necessarily actual. Cunningham and Homes (1983) and Cunningham and White (1974) suggest that past-experience in business transactions can reduce perceived risk which may be one reason many experienced clients are experimenting with a "Partnering" type procurement relationship.

What may also be important in the purchase of facilities with long lead in times and pre-purchase risks, both to the organisation and individual careers, is 'post-decisional dissonance' (Festinger, 1957). In some instances, decisional dissonance may lead to previous agreements being reconsidered. This is particularly the case when contractors are asked to sign a contract, parent company guarantee, on-demand bonds, and other warranties. Chisnall (1995) explains that individuals strive towards consistency and equilibrium within their set of beliefs about people, products, events, etc. Dissonance is a state of psychological tension that may result from doubts surrounding a procurement decision. In the initial stages of the decision to build, doubts may be carried forward into subsequent phases and even influence the spirit

within which contracts are drafted; that is, cooperative styles of communication become confrontational.

4.5.1.6. Analysis Of The Marketing Paradigm.

In large complex purchases, as with building procurement, groups of people rather than an individual, perform the marketing function. The functions provided by the group include: roles and authority, intra and inter-organisational communication, articulating needs and constraints, providing practical and professional experience, eliciting influential consideration, enabling commercial and legal acumen, and establishing a decision making forum.

With the recognition of post-decisional dissonance (i.e. Has the correct decision been made?), the decision to build can be considered in at least three distinct phases:

- i) Pre-decisional phase: This involves perception and recognition leading to the need for a strategic, or operational, response within limited boundaries. If 'needs' from other areas of organisational priorities (e.g. types of demand, customer expectations, etc.) are aired, there may be an opportunity to collectively solve many problems in a single cost-effective response and advance corporate goals which are linked to corporate values.
- ii) The decisional phase: This involves articulating what is required and the constraints that exist. It may be possible to augment the project by considering externalities such as location, grants and subsidies, architecture and relationships with stakeholders. It is during this phase that a capital budget will be approved in principle.
- iii) The post-decisional phase: This involves recruiting either a Project Manager or Architect in the preliminary stages of implementation. Post

decisional dissonance leading to 'changes of mind' and variations are likely to emerge during this phase, possibly linked to derived, cyclical, erratic demand or objections from the planning permission paradigm. As the briefing process begins, questions will predominantly explore issues, define what is required and how it will be achieved. It is important that this solution-seeking response does not become myopic and introverted. As the client team worries about its decisions, considerations of accountability and efficiency must not compromise effectiveness. The budget will be approved and funds sanctioned during this phase or the proposal will be rejected.

The entrepreneurial role of the client's marketing paradigm is to translate customer need, and purchase capability, into objectives and advantages. The marketing plan which seeks to realise organisational values and objectives influences procurement, manufacturing, price, quality, mix, image, and augmentation. The proactive function of marketing is to recognise when previous strategies have been inadequate and trigger an influential creative response. For this reason the marketing paradigm pervades the decision to build process at a number of stages from initial trigger to a post project review.

The consequences of derived, cyclical and erratic demand suggests marketing is a reaction to external events and environments. This perspective denies the proactive role marketing has in creating demand and fuelling change. As one company creates a new product, rivals must follow suit. Change begets change.

This section has investigated how the primary strategy is triggered to meet external expectations. A relationship between the market place and long term planning highlights the marketing and strategic paradigms as complementary. It is a response to these approaches that influences the use of the firm's resources. The trigger to build is a corollary of these considerations.

Assuming that the decision to build has been triggered leads to the investigation of how management structures within the organisation translate marketing and strategic formulation into tactical implementation. The next section explains the strategic paradigm which flows from the market research.

4.5.2. The Strategic Paradigm

In order to understand 'how' and 'why' projects arise, an explanation of 'strategy' is called for, which shows the core business strategy to be a primary strategy. The need for a building becomes a secondary, or supportive, strategy that enables the primary strategy to be realised. As capacity is limited and markets begin to expand, the decision to build may be forced on many organisations wishing to maintain market share. Looking mainly at the primary strategy as the trigger for the decision to build, helps to develop an understanding of the context within which other paradigms act upon, and influence, the decision to build process. The strategic intention will have implications for the type of building needed to accommodate operational issues.

Quinn (1980a) argues that the organisation can have strategies existing at many different levels simultaneously. Although they are hierarchically related to each other, each will have its own imperative. These will span from corporate levels, through divisions to departmental levels. Quinn sees the principal difference between a strategy and a tactic as lying either within the scale of action or the perspective of the leaders. The primary strategy, flowing out of the marketing paradigm, might be to increase the sales output by ten percent and the corresponding tactical response of a secondary strategy triggers the need for a new factory. Quinn (1980a) explains that a tactic is an interaction of short-duration that is ordered by an overarching strategy, and also that a 'superior' might perceive a plan or pattern as a tactic, but a 'subordinate' might attach more meaning to it and perceive it as a strategy. In this sense a tactic is a battle, whereas the strategy relates to the war itself. As the decision to build will involve an approval process sanctioned by senior managers, strategic thinking may influence the type of building and method of procurement chosen.

Mintzberg (1991) describes a strategy that is a manoeuvre intended to outwit competitors as being a ploy; such an approach will impact upon the access to information necessary to progress the decision to build. Mintzberg also considers strategy as a pattern of consistent behaviour. From this, he puts forward the 5p's which sees strategy as:

Plan

Ploy

Pattern

Position

Perspective.

Building on the work he conducted with Waters (Mintzberg and Waters, 1985) Mintzberg puts forward a range of potential strategies from designed and deliberate to emergent.

If competitors know the firm's strategy, will they not, in turn, develop a strategy that leads them to some kind of advantage? On the other hand, if the strategy is secret how can employees be expected to correctly position themselves. This dilemma may be unrecognised by an architect who is not told of pending decisions as a safeguard against informing competitors and unsettling employees.

4.5.2.1. Different Strategic Contexts.

In order to understand senior management's potential approach to strategic formulation, it becomes necessary to review common strategic perspectives. Richardson (1994) provides an overview of the development of popular strategic perspectives as "Strategic Leader Types". This section will explain these different

strategic schools and how they influence the decision to build. The schools of thought are:

- The Classical Administrator
- The Design School Planner
- The Role Playing Manager
- The Political Contingency Respondent
- The Competitive Positioner
- The Visionary Transformer
- The Self-Organizing Facilitator
- The Turnaround Strategist
- The Crisis-Avoider Strategist.

Richardson (1994) explains that the traditional approach of twentieth century models of leadership revolve around Fayol's (1916) "Classical School" of management. He elucidates Fayol as dividing management into five activities: planning, organising, commanding, coordinating and controlling. Taylor (1947) took this perspective forward to develop "Scientific Management".

An emphasis on internal efficiency may lead a client of the construction industry to place greater emphasis on the quality of the experience of procurement, rather than the product. That is, deadlines, budgets and timetables may become more important than aesthetics. The next type of strategic leadership to emerge was the "Design" School of strategic management (Richardson, 1994). This almost map-making approach to strategy was advanced by such scholars as Andrews (Richardson, 1994), Chandler (1962) and Ansoff (1965). An example of their approach can be seen in the NHS's Capital Investment Manual, and is characterised by the following questions:

- Where are we now?
- Where do we want to be?
- How are we going to get there?

This approach would call for periodic reviews of the client's property portfolio and its suitability to meet planned objectives. The "design school" was superseded by Mintzberg's (1973) challenge, which Richardson (1994) described as a more realistic view of the manager providing ten leadership roles: figurehead, leader, liaison, monitor, disseminator, spokesman, entrepreneur, disturbance-handler, resource-allocator and negotiator roles. Richardson describes this classification as "The role playing manager". Whilst the theory treats strategic schools as separate, the role-playing manager may well exist in unison with other strategies. In relation to the decision to build, such a manager becomes an important information conduit, the effectiveness of which can influence a proposal's trigger as information is, or is not, shared.

Pfeffer and Salancik (1978) brought the subject of strategic management away from a narrow administrative or operational view to one that emphasises total organisational development. Richardson names this the "Political Contingency Responder". Essentially the perspective here is for the leader to recognise internal and external environments, critical strategic issues that are emerging and for the organisation to adapt. This approach may manifest as "changes of mind" in the decision to build process as one political camp shifts its view of what is required.

The next school of strategy to take prominence was "The Competitive Positioner" (Richardson, 1994). This theory dominated the 1980's with its principal instigator being Professor Michael Porter of Harvard Business School. Richardson explains the main tasks as deciding *where* the organisation will compete, and then to position the firm against other marketplace forces in a way that leads to a competitive advantage. Porter's work may have influenced management's expectations of a building as it is assumed to support or augment the prevailing strategy. Richardson then explains how during the 1980's authors such as Peters and Waterman (1982) and Deal and Kennedy (1988) put the "Visionary Transformer" perspective forward. Essentially, the leader should have a vision of:

- i) Where the organisation should be?
- ii) How the organisation and its products are perceived?
- iii) What is the core activity or thrust of the business (usually in the form of a "mission statement") that communicates to all both internally and externally?
- iv) How the transition to the vision will be achieved, why and how those involved will implement the incremental stages? (This may involve "Empowerment" of the employees)

These considerations will not only influence the decision to build, but may also impact on the design aesthetic. For example, expensive cars would be expected to be sold in luxurious showrooms with tinted glass windows. Berry, Broadbent and Otley (1995) describe Peters and Waterman as advancing an anthropological approach that promotes "culture" as a co-ordination and control mechanism. If this is the case, then project culture becomes a corollary of organisational culture.

Richardson (1994) goes on to consider "The self-organizing facilitator". Richardson cited authors such as Pedler, Burgoyne and Boydell (1991) and advanced the concept of "The learning company" which Richardson argues arises from the "turbulent and surpriseful", environments companies perceive themselves to be in. This leads to an organisation that is continually redefining itself as new issues emerge. The implication of this may persuade companies to lease rather than build, as they perceive their future as uncertain and therefore promote adaptability as an essential requirement within their property strategy.

Richardson (1994) describes the "Turnaround strategist" as emerging around the same time as the self-organising facilitator. Richardson argues that the turnaround strategist is brought into reverse adverse trends and can be one of two types: either visionary transformer or an autocratic and swiftly acting type of leader. The implication of this approach is that a new building may be triggered to replace a

collection of older buildings as the firm raises revenue by concentrating its resources on a single site.

The last type of strategic leadership style to be discussed by Richardson (1994) is that of the "Crisis Avoider". This style utilises a fluid belief system which reflects a collection of "hard" and "soft" organisational systems and behaviours. Richardson elucidates:

"This type of leader is concerned about his/her organization's impact on the ecosystem - he/she works from the positions of both crisis responder and crisis causer. He/she brings ethical considerations to the fore of strategic decision making with a greater cogency than is the case with any of his predecessor leaders, and is beginning to challenge our traditional economic ethic-based approach to strategic decision making." (p.30)

This is supported by British Standard 7750's move towards the legislative requirement for companies to have an Environmental Policy Statement (Gilbert, 1993). As the construction industry is a large user of natural resources, 'green' issues would be expected to be prominent in the decision to build.

Although Richardson did not report on contemporary strategic thought, it has emerged around 'collaboration'. Essentially, the western approach to business has been founded on the belief that competition at all levels leads to the lowest cost. Carlos Jarillo (1993), building on the work of Coase (1937) puts forward the idea of a strategic network in order to create "The borderless organization", where, by working together, the companies enjoy cost reduced benefits. Berry (1995) argues that the borderless organisation does not exist, rather it becomes extremely complex as social relationships cement companies together. Berry's arguments revolve around three

problems in setting up supply chain collaborations, which are:

- i) Who gets to play?
- ii) How will the network be established?
- iii) How will it be managed when it's running?

Central to these questions are how and who will control the network and will that be through:

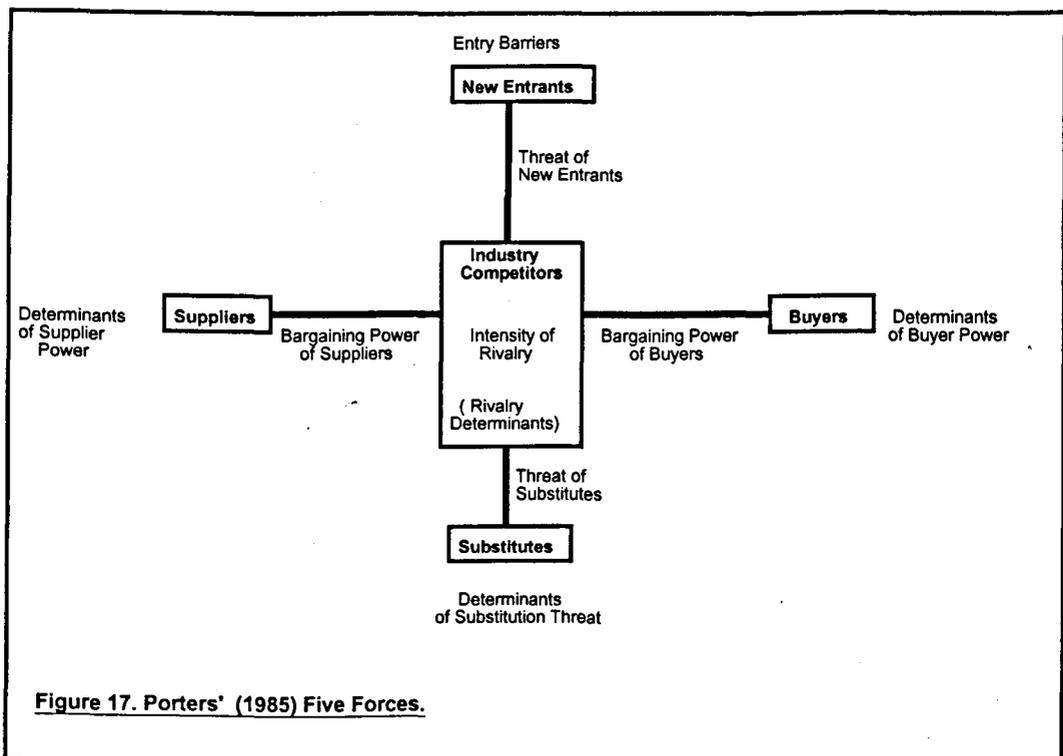
- a) Domination?
- b) Collaboration?
- c) Competition?

The implication of collaborative approaches may call for more coordinated inter-firm design in the buildings that they procure. As organisations can be large, it may be possible that particular clusters within the company hold to one strategic school in preference to another. By considering the Ford Motor Company and F.W.Taylor's influence, the classical administration school of strategy can be seen. Henry Ford's belief, that every family in America would own a car, makes it clear that he was a visionary. Ford's brochures reveal the company's history in terms of market share and competitive positioning. Ford's acquisition of Jaguar in the 1980's, show a company allowing a separate logo and image to exist. This displays aspects of the design school planner, the political contingency responder, the competitive positioner, the self-organising facilitator and in a limited way, a possible crisis-avoider strategy. Within large sophisticated organisations such as Ford Motor Company, it is feasible to observe several strategic schools of thought, existing simultaneously, in different domains within the company. The strategic context the firm finds itself in may be a perception liberated by one particular approach to strategic formulation. In relation to the decision to build it becomes important to understand the dominant strategic thinking at play in the various tiers of management so that internal expectations are met.

4.5.2.2. Porter's Competitive Advantage: A Means Of Influencing Project Formulation And Appraisal.

In a previous section that explained how the Capital Investment paradigm influenced the process of the decision to build, the NHS's Capital Investment manual was used to structure that explanation. This Manual's design was heavily influenced by Porter's (1985) work, which seeks to design a competitive advantage. It is used here to encourage the reader to view a strategic perspective from inside and also consider how it influenced the NHS' strategic approach to Capital Investment. The purpose of this is to demonstrate how one paradigm's perspective can influence another paradigm's implementation.

Whilst Mintzberg explains what actually happens in the majority of cases, Porter seeks to articulate what could happen. This section uses Porter's work to explain the issues that could be used to design a building which provides its owner with a competitive advantage over rivals. Porter's five forces (See fig. 17) show us the configurations that influence strategies.



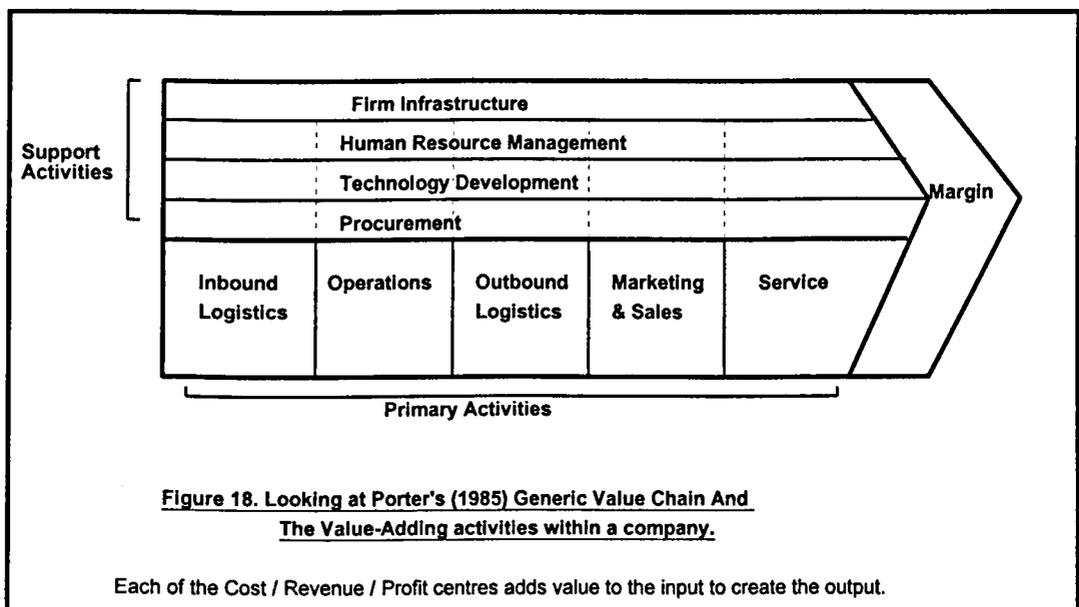
Porter (1985) developed the five forces model as a way of understanding the attractiveness of the industry or market which influences a company's ability to achieve above average performance. This model shows that competitive advantage is created when a company has desirable products which customers want and are able to pay for and that the company controls buyer power, supplier power, the threat of new entrants and substitutes. As the building must support this strategy, both the marketing and strategic paradigms are linked. To further understand the five forces, the various determinants need to be explored. (see Appendix 9). Whilst this is a powerful model, it should be pointed out that in the context of a new building Porter's five forces ignore expectations of shareholders, consumers, local opposition, and political forces such as availability of grants and tax induced movements in the economy. There may well be other forces that a specific company approaching the model should tease out in order to augment Porter's work.

RISK OF COST LEADERSHIP	RISK OF DIFFERENTIATION	RISK OF FOCUS
Cost leadership is not sustained <ul style="list-style-type: none"> ● competitors imitate ● technology changes ● other bases for cost 	Differentiation is not sustained <ul style="list-style-type: none"> ● competitors imitate ● bases for differentiation become less important to buyers 	The focus strategy is imitated The target segment becomes structurally unattractive <ul style="list-style-type: none"> ● structure erodes ● demand disappears
Proximity in differentiation is lost	Cost proximity is lost	Broadly-targeted competitors overwhelm the segment <ul style="list-style-type: none"> ● the segment's differences from other segments narrow ● the advantages of a broad line increase
Cost focusers achieve even lower cost in segments	Differentiation focusers achieve even greater differentiation in segments	New focusers sub-segment the industry

Table 1. Porter's (1985;p.21) Risks of the Generic Strategies

If a building supports a primary strategy, the essence of that strategy will influence the quality and lavishness of the facility. Flowing from the analysis of the industry or market, Porter argues that there are basically three generic strategies: Cost leadership, Differentiator, or Focuser (focusing either on differentiation or cost leadership within a niche market). However, Porter (1985) also points out the potential risks inherent in these strategies (see table 1)

The building can achieve advantages for a firm in terms of either low overheads (i.e. cost leadership) or product differentiation or focus on the experience provided to a key set of customers.



Porter uses the Value Chain (See fig.18) to explore the value activities, and the necessary support activities and to devise strategies that will lead to a competitive advantage. It is these activities that a building will surround and enclose. Porter explains (1985):

"Economists have characterized the firm as having a production function that defines how inputs are converted into outputs. The value chain is a theory of the firm that views the firm as being a collection of discrete but related

production functions, if production functions are defined as activities. The value chain formulation focuses on how these activities create value and what determines their cost, giving the firm considerable latitude in determining how activities are configured and combined." (p.39)

A building must accommodate the activities that cause it to be needed and Porter (1985; p. 39-40) explains for commercial organisations that these are;

- *Inbound Logistics.* Activities associated with receiving, storing, and disseminating inputs to the product, such as material handling, warehousing, inventory control, vehicle scheduling, and returns to suppliers.
- *Operations.* Activities associated with transforming inputs into the final product from, such as machining, packaging, assembly, equipment maintenance, testing, printing, and facility operations.
- *Outbound Logistics.* Activities associated with collecting, storing, and physically distributing the product to buyers, such as finished goods warehousing, material handling, delivery vehicle operation, order processing, and scheduling.
- *Marketing and Sales.* Activities associated with providing a means by which buyers can purchase the product and inducing them to do so, such as advertising, promotion, sales force, quoting, channel selection relations, and pricing.
- *Service.* Activities associated with providing service to enhance or maintain the value of the product, such as installation, repair, training, parts supply, and product adjustment.

As can be seen, the primary activities are predominantly the direct-costs of adding-value to products or services. The decision to build must support these activities in such a way that organisational objectives are met. In order to achieve the activities within a building, the organisation must also have supporting activities, which could be described as indirect-costs of adding-value (i.e. overheads).

A building that provides a firm with a competitive advantage must house all these production functions. This becomes necessary if each of the primary and secondary activities need to avoid adverse weather conditions, or uncontrolled environments.

4.5.2.3. Cost Drivers.

Flowing from a view that minimisation of cost leads to increased value, Porter advances the notion of cost drivers which the decision to build must seek to optimise in relation to both operational issues and within the act of the building procurement. The cost drivers advocated by Porter (1985; p. 70) include:

- Economies of scale

- Learning benefits and spillovers to other companies

- Pattern of capacity utilization

- Linkages

- Linkages within the value chain

- Vertical linkages

- Linkages with suppliers; e.g. coordination on specifications, delivery and other activities (Porter, 1985)

- Linkages with channels

- Interrelationships; e.g. combining purchasing with another company to enjoy economies of scale.

- Integration; e.g. make-versus-buy, or even lease-versus-build.

- Timing.

Policy changes; Porter (1985) explains some:

"...of the policy choices that tend to have the greatest impact on cost include:

- product configuration, performance, and features
- mix and variety of products offered
- level of service provided
- spending rate on marketing and technology development activities
- delivery time
- buyers served (e.g., small versus large)
- channels employed (e.g., fewer, more efficient dealers versus many small ones)
- process technology chosen, independent or scale, timing, or other cost drivers
- the specifications of raw materials or other purchased inputs used (e.g., raw material quality affects processing yield in semi conductors)
- wages paid and amenities provided to employees, relative to prevailing norms
- other human resource policies including hiring, training, and employee motivation
- procedures for scheduling production, maintenance, the sales force and other activities. (p.81)

Location; e.g. transport costs, ease of communication, time to market place.

Institutional factors (e.g. government regulation, tax holidays, unionization, etc.)

Interaction among cost drivers either reinforce or counteract other cost drivers.

(See Appendix 10 for listing of typical costs incurred in building a new facility) The decision to build as a single project often exists in a larger context of organisational strategy. The implication of this is 'change' to the organisational strategy in that assumptions can shift and previous decisions be called into question. Porter (1985; p.95) lists a number of dynamics as:

Industry Real Growth and its effect on such elements as suppliers' capacity to fuel that rate of growth, and the prices they will charge.

Differential Scale Sensitivity. This examines how sensitive the firm's product is to changes in Industry Real Growth.

Different Learning Rates. This explores the synchronisation of the various learning packages necessary to support production. If one part of the process demands a large amount of learning time then shortages in this area can have cost consequences.

Different Technological Change. Changes in other technologies can present new ways of solving business problems for the firm and also as substitute products for customers

Relative Inflation of Costs. This explores differential inflation in various market sector and segments and how such rises impact on the firm's costs.

Ageing. This explores the possibility of rising maintenance costs and/or replacement costs.

Market Adjustment. This explores how the market adjusts for costs that are above, or below efficient market equilibrium, and how the market reconciles this.

The decision to build is formed out of the current strategic context but the limitations it puts on future activities forms tomorrow's strategic context; for example, we decided to build 10,000m² two years ago, but now wish we had built 20,000 m² floor area. And so another implication for the decision to build is time and its effect on strategic planning. Once a long range plan is made, the various parts of the organisation attempt to realise their component part of the strategy; for example, the decision to expand market share and the need to review current capacity. Quinn (1980b) describes "Logical Incrementalism" (i.e. step 1 do this, step 2 do that, etc.) as a strategic formulation process where the various sub-systems in the organisation are considered. These sub-systems are:

Overall organisational structure.

Capital access and cost.

Technology - internal growth.

Product-line positioning.

International posture.

Government - external relations.

Acquisition - diversification.

Employee relations.

Within this perspective the client's decision to build is part of an incremental strategy which builds upon its current estate strategy. The process of forming a long-range plan must resolve issues such as operational costs, lease renewal, need for new buildings, multiple goals, politics, bargaining, negotiation, satisficing and coalition building. Simmons (1972) reveals how senior management tried to impose a fixed 5 year plan in a changing environment. He argues that a plan only six months old may be found to be out-of-date. However, a client considering the decision to build will be looking for a building to be realised in the next year or so. The realisation is that a plan that is no longer valid means it has served its purpose. However, a short term decision at the strategic level (e.g. increase production) can trigger a long-term decision at the tactical level (e.g. build a new factory). Because a plan is now known

to be wrong, more informed decisions are possible. The 'process' of planning thus becomes as important as the 'product' of planning. For the decision to build, such revelations suggest the goals of the decision to build process may shift during the decision making process.

In conclusion to the consideration of Porter's work it must be recognised that because a rational explanation is put forward within a perspective constructed within a paradigm, the logic draws people into its influence; after all, it makes sense. It is only when this logic is challenged in a way that is not easily dismissed that a new or different perspective becomes more dominant. This is how paradigms and perspectives compete for dominance.

4.5.2.4. The Link Between The Primary Strategy And The Project

This section seeks to explain how the realisation of a primary strategy triggers the secondary strategy that calls for a new facility. It will provide examples that show how the building must be in concert with the strategic intention of the client. Betz (1987) explains a case where the relationship between core business strategies and operational strategies converged to increase returns. He states:

"Coors studied expanding its packaging capacity at the mammoth Golden Plant, already the largest single-site brewery in the world. It concluded, however, that expansion would be more cost effective if it took place closer to the combat lines — the large Eastern population Centres." He continues, "So the company decided to build a first-stage packaging plant in the East, planning to eventually expand it into a stand-alone brewery. A site in the Shenandoah Valley of Virginia, purchased a few years earlier, was selected. Why there, you wonder? 'Quality of water and quality of life,' responds Lou Bonner, Coors' vp [*Vice President: Author*] of physical distribution." (p.33)

Frost (1975) reveals that 'time' is often left out of project appraisals. An example might concern the location of an industrial facility and the time spent by employees getting to and from their homes. If this time is excessive then workers may claim shorter working hours or additional remuneration to offset the loss of leisure time. The capital investment paradigm does not consider such strategic implications and so could be improved by setting it within the context of combined approaches to the decision to build process. Here we see the strategic implication of employees impacting the decision to build and its locational advantage.

Grogan (1990) shows how the trigger, location and strategy are linked, as he tells how third generation steel fabricator and erectors responded to changing customer demands. Part of their new business strategy involved moving to a new location that allowed new technology, to be positioned logistically in response to demand. By combining location, volume, and new technology with other strategies, the firm devised a sustainable competitive advantage.

Brown (Preiser, 1993) provides an example of how a company might augment the decision to build by considering image. NCR's management philosophy was to direct, teach, and support decision makers throughout the organisation rather than issue rules and regulations. It became important to NCR that their facilities all over the world "present one corporate image." Brown (Preiser, 1993) quotes Charles E. Exley, NCR Chairman and CEO as saying:

"By promoting the same quality image in our products, our facilities, and our communications, we create value and contribute to the continuing success and growth of NCR." (p.66)

This illustrates how some paradigms and perspectives can be used to influence other paradigms and perspectives causing people to change their behaviour and possibly the way they think.

Levin (1988) explores the decision to build trigger as mutually exclusive decisions between leasing or owning. He discusses the act of relocating and recovering from the move. For some businesses, relocation may pay, particularly if as an anchor tenant, special financial inducements are attached. Such businesses, able to draw others, can maintain a high image profile as a consequence of financial arrangements, and the quality of the accommodation. Levin also explains the potential problem of property valuation and its impact on the businesses' viability when he explains for companies:

"...particularly those vulnerable to takeover attempts, building ownership is fraught with problems because the appreciation, or market value of a building, isn't accurately reflected in financial statements. In essence, a building becomes a "hidden" asset that the acquirer could sell off to repay debt." (p.12)

Brown (1988) expands on the tenant-anchor-theory. Marks and Spencer were granted planning permission to build out-of-town following access and car parking problems. Other businesses, not necessarily competing with Marks and Spencer, felt they needed to maintain proximity. Marks and Spencer's decision to build thus generated a kind of strategic synergy that eventually resulted in an edge-of-town shopping complex. This shows how some projects may be complementary to other projects. The implication of this is that the clients reside within some kind of business network. If an organisation changes its behaviour, then the others in the same locale may be forced to reconsider their strategic plans. Paradigms and perspectives exist and influence decisions because of other paradigms and perspectives.

4.5.2.5. Analysis Of The Strategic Paradigm.

Today's situation is a result of historic decisions and events as is the organisation's current property portfolio, in relation to strategic options. Future strategic development also has property implications. The strategic paradigm and the

marketing paradigm influence what must be considered during the decision to build process. Strategy is a methodology used to orientate resources to meet a predicted future. Those resources include physical objects, capital, and people. Strategies can exist at many different levels simultaneously. Conflict between corporate, departmental, and an individual's objectives mean that any response to the client's decision to build must explore the influential values and visions that exist.

From a military perspective, strategy must contain an element of surprise. To describe strategy as a logical sequence of rules in a model that becomes predictable, may contradict the requirement that leads to the 'unexpected'. Chronological development of strategy suggests that the formulation process is a creative response to a particular set of constraints. Mintzberg argues that the strategy often emerges. Such an organic perspective may reflect the impact of discussion as modifying variables in a crafting process. It could also reveal a management that lacks creative ability, and so responds to openings left by more capable competitors. The implication of this for the decision to build is that 'content' may be undisclosed, or even unknown, by the client.

Successful strategies of the past need to be replaced as their underpinning assumptions become outdated. Drivers of changes might be instigated by competitors, legislation and/or developing customer expectations and so a diminishing competitive advantage is a corollary of "progress". The horse and cart are replaced by the motor car, and the stable by the garage, as society moves forward and old paradigms are updated.

Some organisations respond to progress incrementally. This calls for a continual stream of short-life competitive advantages. Under-capitalised businesses are often forced into restrained and cautious strategies that form claustrophobic boundaries (e.g. premises that are cramped). Other unrestrained organisations take strategic quantum leaps by investing in something that provides a long-life competitive advantage. The cost of such an investment acts as an entry barrier to under-

capitalised competitors. This illustrates the implications and potential influences on the decision to build process, which strategic risk taking generates.

Strategic triggers for the decision processes, leading to a new building include perceived opportunity or threat, ideas, location, corporate finance issues, and responses to other decisions. The trigger, or perceived opportunity, is a reaction to the recognition of a strategy that has previously failed, is failing, or is about to fail. The response to the respective scenario, triggers a need to redesign, or create, the firm's strategy to achieve its short-term goals of influential-employee expectations, profit maximisation and the long-term goal of survival.

A building can provide a source of sustainable competitive advantage, by taking a supply chain perspective of industry. Downstream businesses such as shops and restaurants, exposed to the general public, must consider architecture and built quality in the context of image, product, service and customer expectations. A consonant strategy, reflected in 'form, function, and space', allows customers to achieve perceived value in terms of price, quality and quantity of goods and services, a level of commensurate aesthetics in surroundings, and the pleasure liberated by coordinating all these satisfactory customer experiences in a single 'place'.

Upstream organisations (i.e. those not in direct contact with end users) may not be directly dependent on the general public's custom. However, consumer groups can reverse this situation. In the main, upstream firms will be capital intensive manufacturing companies with a high level of technology. Their emphasis will be on an architecture that reflects 'form, function, and space' with operational efficiency influenced by cost and variety reductionist philosophies. As the Marks and Spencer case shows, a supply chain perspective allows an opportunity for group discussion across organisational boundaries in the search for a specific strategy that reduces cost, enhances quality, and increases revenues within a long-term sustainable competitive advantage.

The influence of the strategic paradigm on upstream and downstream organisation can be linked to the preliminary design paradigm. Architecture may allow additional project benefits, such as converting manufacturing operations with themes that the public will pay to visit, if only they are considered during the strategic formulation phase.

4.5.3. The Organisational Perspective.

The strategic paradigm and the organisational perspective have a symbiotic relationship. Throughout this thesis, the organisation, company, firm or client is referred to as the owner of the decision to build process. The starting point for this section explains how words such as company, firm, and organisation suggest a rationale exists. It is this rationale which is the organisational paradigm and it allows a collection of people and resources to share a common purpose. Waterman, Peters and Phillips (1980) put forward the ontological perspective that an organisation may not actually be organised in the strictest sense of the word. Galbraith (1983) argues that an organisation is more than structure as described by organisational charts. In the same vein Waterman, Peters and Phillips put forward the view that organisational effectiveness stems from the interaction of several factors:

Superordinate Goals.

Structure.

Systems.

Style.

Staff.

Skills.

Strategy.

These are arranged in an interconnected hexagonal with Superordinate Goals at the centre. This was so designed to negate a hierarchy or a start and finish point. They argue that any one, or combination, can become the driving force that pushes the

organisation to change. The client considering the decision to build must reconcile the issues related to these factors. So an effective organisation is one that has combined its structure, management practices, rewards, and people into a composite that provides consonance with its strategies and the decision to build exists within this rationale. As events change the paradigms and perspectives the strategy and the organisation must adapt. This implies that the whole organisation adapts to new insights as a single entity. The corollary for the client considering the decision to build is that some decisions, formed with a short-term view, may have consequences which exist in the long term. Thus the 'decision to build' is a series of decisions that will cross many organisational boundaries and be influenced by other paradigms as it is developed over time.

4.5.3.1. Supply-Chain Position And Its Link To Primary Strategies.

The organisation exists in relation to other organisations and so the primary strategy (e.g. expand market share) must be understood in context with the associated implications flowing from relationships with other organisations. Galbraith (1983) promotes a perspective which describes the organisation in the context of a supply chain and claims that firms gravitate around their initial success in the industry. The values developed from this historic experience may influence the priorities attached to the decision to build in terms of cost, aesthetics, location, etc. Galbraith explains that upstream organisations may deal in raw materials and commodities (e.g. cardboard boxes) that the public see as having little value. The downstream companies have products that the public sees as having "value". The inclination of upstream companies would be to standardise in order to maximise the number of end users and achieve volume to lower costs. The downstream organisations want to focus on particular sets of end users. Therefore, upstreamers have a divergent view of the world based on their commodity, whilst downstreamers have a convergent view based on customer needs. This dichotomy will have a significant influence on 'what' or 'who' provides the content for the decision to build. To develop this explanation

further requires consideration of organisational design and behaviour to understand structure and its potential to influence the decision to build process.

Mintzberg (1991) uses a model to explain the relationship between an organisation's structure, environment and emphasis. Such an approach allows us to anticipate user expectations in terms of how they relate to other aspects of the firm. This model shows the vertical linkage from the operating core, through middle management to the strategic apex. To support this line, there is a technostructure (e.g. technology related to production) and support staff. The client organisation, comprising a collection of departments, will coordinate these parties to influence the content of the decision to build. The basis of Mintzberg's (1991) argument is that every operation faces two issues: the division of labour and the subsequent coordination of those divisions. To achieve coordination he states that there are six types of approach possible:

- a) Mutual adjustment
- b) Direct supervision
- c) Standardisation of work
- d) Standardisation of outputs
- e) Standardisation of skills
- f) Standardisation of norms" (p.333)

This observation raises the conflict between coordinating, and assuming integration, in the decision to build process. Time and time again, Value Management uncovers the fact that in large organisations, or large projects, one department or key decision maker did not know what another was doing (Barton, 1997). Within this framework, Mintzberg (1991; p.335) analyses the essence of organisational design in terms of:

- i) Job specification;
- ii) Behaviour formation;
- iii) Training;

- iv) Indoctrination.
- v) Unit grouping
- vi) Unit size;
- vii) Liaison devices necessary to facilitate mutual adjustment.
- viii) Decentralisation.

Of decentralisation, with implications for the various levels in an organisation, Mintzberg (1991; p.340) puts forward six forms of power distribution:

- (1) Vertical and horizontal centralisation, where all the power rests at the strategic apex.
- (2) Limited horizontal decentralisation (selective), where the strategic apex shares some power with the technostructure that standardises everybody else's work.
- (3) Limited vertical decentralisation (parallel), where managers of market-based units are delegated with the power to control most of the decisions concerning their line units.
- (4) Vertical and horizontal decentralisation, where most of the power rests in the operating core, at the bottom of the structure.
- (5) Selective vertical and horizontal decentralisation, where the power over different decisions is dispersed to various places in the organisation, among managers, staff experts, and operators who work in teams at various levels in the hierarchy.
- (6) Pure decentralisation, where power is shared more or less equally by all members of the organisation.

The implication of this for the decision to build is that authority and decision forming may often be separated in the client organisation. In addition to coordinational issues, which can impact on the decision to build, Mintzberg (1991) also considers situational factors such as:

- i) Age and size of the organisation.
- ii) Technical Systems within the organisation.
- iii) Internal and external environment.
- iv) Power and authority.

Mintzberg (1991) goes on to explain how the various forces push and pull at the organisation. The strategic apex pulls to lead, the support function pulls towards greater collaboration, the technostructure pulls towards increasing rationalisation, the operating core pulls towards greater professionalisation and middle management strive to balkanise the different emphases as politics try to rip the organisation apart and ideology is resisting this destructive pull. This explains how conflict within the client organisation can exist and may influence the decision to build process. The danger facing architects in the briefing stage of a project is that they draw a view of the project from within one grouping which provides data that does not reflect the organisational tensions which are at play.

4.5.3.2. Analysis Of Organisational Perspectives.

Without organisations there would be chaos, disorder, and an inability to respond to such events as natural disasters. The organisational paradigm and its perspectives are human attempts to create order. Organisational design is a rational-science developed out of the paradigm which helps to explain how we think organisations should be structured; as such, an organisation can be seen as a structured collection of individuals who interact through inanimate objects such as telephones, computers, and machines, to produce an output, as a group. These activities usually take place within a building whose design influences, and is influenced by, the division of human activities (i.e. an architectural understanding of function). During the last twenty years, less prescriptive organic-philosophies around 'culture' have influenced relationships, structure, authority, control and empowerment and so the design of buildings and the decision to build is evolving. The assumption that coordination is the same as integration is being challenged (Barton, 1997). Coordination is where

discrete parts are combined but retain their own identities. Integration is when the parts are overlapped to create a single entity brought together to achieve synergy.

Because of the Information Technology revolution, the birth of the Virtual Organisation has meant some firms do not physically exist in a single building. Transient project based relationships, coordinated on the Internet, form an individually designed response to a particular problem. This possibility allows clients of the construction industry to reconsider their property portfolios in relation to strategic and operational issues. IT allows new methods of implementing the organisation paradigm and its perspectives.

The strategic and operational decision to build a major project is too large for any individual to consider and so it becomes a decision made by a sub-set of the whole organisation. The decision making process evolves in the contexts of departmental-interdependencies, personalities, experiences, time, changing environments, and the cognitive requirement to possess 'perfect knowledge'. In response to the magnitude and complexity of the decision to build, groups of people perform the decision supporting functions and have to meet accountability requirements and proposal approval from the approval committee. The approval committee has the task of ensuring super-ordinate goals and organisational values are met.

Consideration of the influence of the organisational perspective on the decision to build, has found the firm's supply chain origin plays an important role in influencing its culture, and how it perceives its core business. Decisions that interfere with this heritage may require new organisational designs with added implications of new skill bases, redundancies and change management. Development of a new building, and the briefing process, may force an organisation to disclose its intentions to employees, competitors, and shareholders, at a time that distracts from strategic plans. In the context of the decision to build, issues related to the strategic paradigm, the marketing paradigm, and the organisational perspectives are inextricably linked. The need to limit communication between the parts of the organisation in order to

control organisational behaviour will impact on the decision to build. This is at the heart of the distinction between coordination and integration.

To explain the decision to build in terms of the capital investment or cost benefit analysis paradigms in isolation fails to respect the reality of organisational complexity. Senior, middle, and first line managers, employees as well as suppliers and customers, may place different emphases, commitment, and urgency, on strategic and operational considerations. The decision to build may evolve and modify inside the client organisation as it passes through the different value-sets of the various stakeholders.

The next section examines a number of management perspectives which operate at an individual level. The intention of this section is to consider how interpretations may also influence the perceptions and solutions advanced during the decision to build process.

4.5.4. The Manager's Perspective.

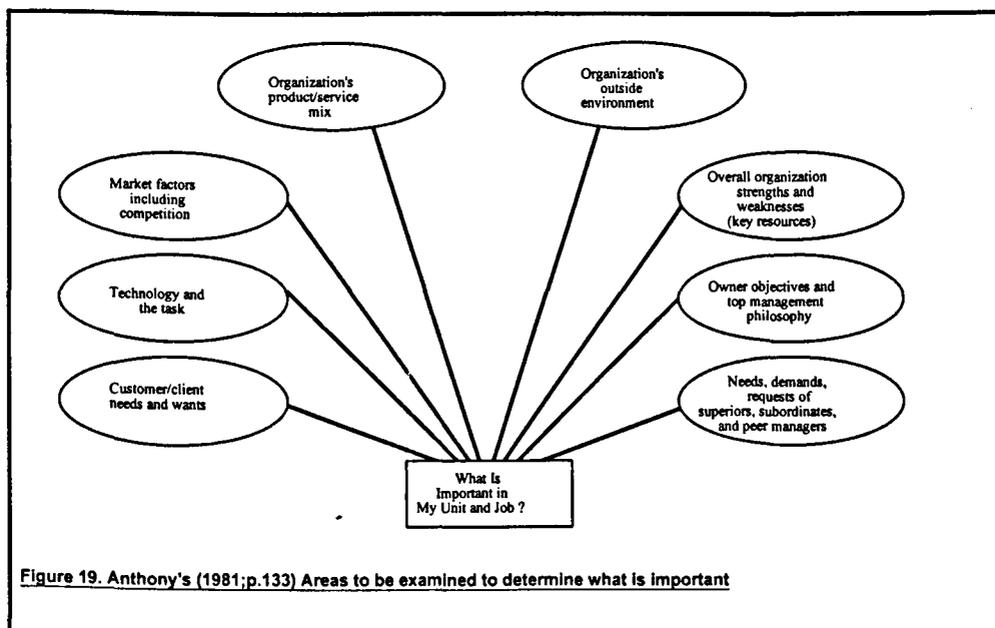
Three views of a 'manager' emerge from the literature which could influence how decisions are formed in the decision to build process. Before discussing them it is important to explain what the label 'manager' means. The word manager is a term used to cover a wide variety of styles, personalities and abilities of people in charge of some kind of resource. This section considers three management perspectives: the rationalistic manager, the dynamic manager, and the careerist manager. Its purpose is to expose the conflict between coordination, rationalistic views of management, and the problems of agency.

4.5.4.1. The Rationalistic Manager Perspective

Chisnall (1995) explains the main responsibility of management is to allocate resources to achieve the objectives that have been set. This could be applied to the

influence of management perspectives on the key stages of the decision to build: a neatly organised perspective which contrasts starkly with Mintzberg's (Mintzberg and Quinn, 1991) revelations that managers respond in numerous ways to numerous demands at an unrelenting pace. The implication of this for the decision to build is that some management inputs may be influenced by the 'situation the manager is in' rather than the "situation the manager has created"; for example, one busy day a seemingly routine decision is rushed which at a later date shows it should have been given greater consideration.

Anthony (1981) provides rationalistic managers with a model (See fig.19) that assists in setting objectives by determining what is important. By setting the agenda before the decision to build process begins, means 'success' in the short-term can be demonstrated by meeting the criteria set; the problem is in assessing the appropriateness of the criteria. Anthony's rationalistic model limits the people who form the decision to build before passing it on to a preconceived response type.



The rationalistic manager puts forward models which suggest logical steps and then acts in accordance with demands of each step. Under this type of influence the decision to build is a set of routines and a collection of predetermined goals. The NHS's Capital Investment Manual promotes a rationalistic view of the decision to

build. Management follows the rules of the process map in an objective, rather than subjective, way as the decisions being made are treated as being external to those individuals actually making the decision; facts are more important than opinions.

4.5.4.2. The Dynamic Manager Perspective.

Mintzberg exposes the folklore about the manager being "a reflective systematic planner", to be untrue; the manager in numerous studies (Mintzberg, 1973; Stewart, 1967; Guest, 1956; Aguilar, 1967), worked at a hectic pace characterised by brevity, variety, and discontinuity. Mintzberg (1991) states managers are strongly oriented to action rather than reflective activities. Choran (1973), Davis (1957) and Copeman (1963) also found that managers handle exceptions in addition to performing a number of regular duties. These duties include ritual and ceremony, negotiation, and the processing of qualitative data that links the organisation with its environment (Mintzberg, 1991). Moreover, managers prefer to receive information verbally via telephone calls and meetings (Mintzberg, 1991: Stewart, 1967: Burns, 1954). It is interesting to find Mintzberg (1973a) found that chief executives spent around fifty percent of their time in meetings that lasted less than nine minutes, and only around ten percent of their time in meetings which lasted more than one hour. The dynamic manager approach implies that the decision to build's content would emerge out of numerous meetings.

Mintzberg (1991) goes on to challenge the view that management is becoming rationalised as a science. He asserts that the fact is managers use judgement and intuition to schedule, process information and make decisions. As such, decision making is founded on values rather than models and methodologies.

4.5.4.3. The Careerist Manager Perspective.

The last type of manager to be considered is the ambitious type whose decision making is influenced by a desire to rise to a senior position. With respect to the

decision to build, this type of management approach can stand alone, or be combined with rational or dynamic management types. The purpose of this explanation is to underline the fact that some people within the decision to build process may have individual hopes and aspirations and see the project as a means to their personal ends.

Wrapp (1967) describes the following characteristics of a 'good manager':

- He/she is well informed.
- Knows how to focus time and energy effectively.
- Is sensitive to the power structure in the organisation.
- Knows the response of others to key issues and proposals.
- Knows how to play the power game.
- Has a good sense of timing.
- Knows how to give the impression that the organisation has a sense of direction without ever actually being specific. For example, statements such as "Our firm aims to be the best in its class" allow the manager to maintain viability and avoid policy straitjackets.
- The manager muddles through with a purpose searching for some aspect of the proposal that is in concert with his/her objectives.

Wrapp (1967) says that in considering each proposal, a manager tests it against three criteria:

- "1. Will the total proposal —or, more often, will some part of the proposal— move the organization toward the objectives which he has in mind?
2. How will the whole or parts of the proposal be received by the various groups and sub-groups in the organization? Where will the strongest opposition come from, which group will furnish the strongest support, and which group will be neutral or indifferent?

3. How does the proposal relate to programs already in process or currently proposed? Can some parts of the proposal under consideration be added on to a program already under way, or can they be combined with all or parts of other proposals in a package which can be steered through the organization?" (p.98)

In his conclusion, Wrapp (1967) says that the general manager must have five important skills, which are:

- "1. Keep open many pipelines of information
2. Concentrate on a limited number of significant issues.
3. Identify the corridors of comparative indifference.
4. Give the organization a sense of direction with open-ended objectives.
5. Spot opportunities and relationships in the stream of operating problems and decisions." (p.99)

During the decision to build, this type of general manager will be motivated by the internal politics of his/her employing organisation and all the decisions will be thought through in relation to that aim. The consequence of this approach, a corollary of the perspective, is that objectives might shift during the decision to build process.

4.5.4.4. Analysis of A Manager's Perspective.

This section has investigated the complexity that the word 'manager' embraces. It places long-term decision making within the daily context of a busy person. The manager's hectic day may comprise many unconnected decisions flowing from the day to day demands within the organisation. If success is related to primary business strategies, secondary strategies (e.g. building procurement) may be viewed as distractions. Three management approaches have been put forward: Rationalistic, Dynamic, and Careerist, but more may exist. The rationalist perspective reflects the view of management to be found in the literature. This clearly defined perspective,

advocating such activities as 'plan, organise, communicate, motivate, control' (Drucker, 1968), ignores the existence of disruptive people who may seek to undermine the manager, individuals with conflicting values, inability, and those with problems and concerns outside the workplace that take priority. Also, the rationalistic approach assumes all the events are known and that the future is predictable.

The dynamic manager responds according to the problem at hand. This tool bag approach doesn't resolve the contradiction between a short-term need for option preservation, and the option-reducing commitment to a long-term plan. During briefing, this mismatch can cause problems, as solutions emerge out of the particular meeting from the context of that forum. The careerist manager is often seen to be a Machiavellian schemer whose actions are primarily self-serving.

Each manager, with individual value-sets, may judge success in different ways. Value mismatches between individual and organisational objectives may influence the decision to build in terms of what is required, why it is needed, and how it should be realised.

The literature reveals little consideration of the project on the manager's existing workload at the time a new decision is to be formulated. Some managers with heavy workloads may promote obstacles and resistance to a proposal that will have detrimental effects on their personal lives. Managerial consequences may also influence the contradiction between individuals and organisations and the range of options considered. Managers, as individuals, are aware that they must work with the same colleagues, on an everyday personal level, even though unpleasant decisions linked to organisational objectives deem such considerations to be inconsequential. Human resource strategies attempt to deal with this dilemma by administering rewards and punishments. These issues will be present in a complex decision making process such as the decision to build where conflict can exist between organisational and managerial perspectives.

4.6. Content Influencing Paradigms and Perspectives Which Are Externally Based.

The previous section considered four influences which emanate from an internal supportive and negotiable interaction between values, paradigms and perspectives. This section looks at two paradigms which influence the content of the decision to build, but do so from outside the organisation. The first one to be examined is the financial paradigm, followed by the property development paradigm.

4.6.1. The Financial Paradigm.

The decision to build invariably calls for finance of one sort or another. This section looks at how this paradigm influences that decision-making process. The finance available to a project imposes boundaries that define and decide feasibility. Options are thus considered within a prescribed financial boundary. The source of project finance can be internal via budgetary transfer, provided by external sources in the form of a grant or loan (i.e. debt) and by investors via the stock market (i.e. equity) or by hybrid strategies subject to imposed rules (i.e. gearing restrictions). This section explains how the source of finance can influence the content of the decision to build.

The stimulus for investment is to return a sum that is greater than the cost. From an investment perspective three main areas of traditional investment opportunity exist (ignoring gold, commodities and works of art): these are company stocks and shares, fixed interest securities, and real property (Isaac, 1994). Real property investment is both diverse in terms of type and because it is a physical structure can have inherent management problems such as collecting rents, dealing with repairs, and lease renewal. For these reasons, real property may be an unattractive proposition for small investors. The paradigm of finance thus sees the decision to build as one of many potential investment vehicles.

Isaac (1994) distinguishes between direct investment in property and indirect investment through an intermediary such as a property company. By owning shares in a property development company, small investors can access this sector.

For private sector organisations, external finance might be sought for a project (e.g. debt), or on a corporate basis (e.g. equity), or as a mixture of debt and equity. The difference between debt and equity depends on whether the money is borrowed (debt) from a lender who has no direct involvement in the project, or whether the money has been invested on the basis of sharing both the risk and the returns of the project (equity) by the company's shareholders (Isaac, 1994). Building on Brett's (1990) work, Isaac describes debt or equity, and project or corporate finance as the main criteria by which sources of finance can be categorised. Isaac continues to articulate the varying sources of finance by distinguishing between various criteria (see Appendix 11). He also differentiates between money markets and capital markets as sources of finance. The main difference revolves around money markets being concerned with short-term debt which must be repaid within one accounting period, usually a year (Isaac, 1994), and capital markets commonly looking at time frames beyond one year.

A trading property developer considering the decision to build will borrow money in order to build and repay the principal debt plus interest after selling the completed building at a cost-plus-profit price. The emphasis for the property-trading company will thus be on reducing the duration between investment and returns (i.e. Fast Track) and passing cost-bearing responsibilities (e.g. maintenance) to others.

An alternative to the trading property developer is an investment company, which holds properties for long periods and derives revenue from rental income. These differ from trading companies that develop and sell properties to earn revenues with only short-term interests in the completed facility (Isaac, 1994). For large, private sector, experienced clients with internal markets, a hybrid of the trading and

investment approach to property may exist with outcomes linked to the fixed assets valuations reported on the balance sheet.

Isaac cites tax implications as the influence on such a hybrid strategy. Some client organisations may supplement their drive for wealth creation and balance sheet growth with property based strategies. This thesis examines clients who derive profits from their core business strategies rather than from property investment (Masterman, and Gameson, 1994)

The long-term Investment Company takes on cost-bearing responsibilities such as maintenance by having rental incomes from leases, which are in excess of their debt repayments. Should a client choose to lease rather than build, the rents finance the Investment Company. The implication of this for the decision to build is that some clients might agree to lease a not yet built facility from a property developer (i.e. A pre-let scheme)

4.6.1.1. Gearing And The Implication Of Imposed Restrictions

Before a client organisation can borrow finance it needs to consider its existing capital structure and gearing. The potential mix of debt finance and equity finance is known in the UK as gearing, and in the USA as leverage. If a company is totally financed by debt on a variable interest rate then its revenue streams may be consumed by debt servicing if interest rates rise significantly. If a company is totally financed by equity then it must out-perform all other forms of investment if it is to maximise shareholder wealth. (See Appendix 12 for an example of a gearing calculation). The financial paradigm thus links the organisation's stakeholders to the money markets and the stock market.

The concept of gearing leads to an ideal capital structure. Quite often this structure is imposed on the company by way of restrictive covenants in bonds. A common assumption in the UK is that the Debt/Equity ratio should be around 1:1, thus

reflecting a sharing of risk between financiers and shareholders. Projects may have to be financed in such a way that this ratio is maintained. For example, if a factory was to build an extension and it had been tied to a capital structure that had a gearing ratio of 1:1 (i.e. debt = equity) then it would not be able to finance the project with more debt, even if such sources were available. The reason for this is because an increase in debt would affect the capital structure, and breach restrictive covenants imposed via previously acquired bonds. This may be one reason why some companies finance capital investment programmes rather than individual projects. It is also why stock market crashes and the subsequent fall in share price can halt building programmes as the equity component of the gearing ratio is devalued.

4.6.1.2. Capital Rationing And The Allocation Of Finance To Budgets.

Within the strategic paradigm, all proposals, including a proposal for a new building must compete with other demands made on the organisation's scarce resources. Therefore, the financing decision involves budget setting (Northcott, 1992). As explained in the previous sections, the amount of funds allocated to the capital investment budget may be restricted externally. Both the Capital Investment and Financial paradigms are thus linked together. The cause of this imposed rationing may be scarcity of finance, high financing costs, which are perceived as prohibitive, or the result of debt covenants which limit the gearing ratio. Alternatively, capital rationing may be an internally imposed restriction. Internal restrictions are known as 'soft capital rationing'.

Fremgen (1973) found that the reasons for internal capital rationing included: management-imposed debt limits, the need for regular dividends, desired Earnings Per Share (EPS) or Price-Earnings (P/E) ratios, restriction on equity finance, and inadequate cash flows. Gitman and Forrester (1977) report 69 per cent of their survey respondents cited self-imposed debt limits, 15 per cent were targeted to EPS results and 2 per cent towards desired dividend payouts. Weingarter (1963) said that internal capital restrictions might motivate subordinates to produce the type of projects

preferred by top management. Bromwich (1979) warns against excessive use of this logic, which may lead to rejection of low-yielding projects that, if grouped, could have a total net present value greater than that obtained from the high yielding projects.

Where a decision to build process "emerges" during a budgeting period it can be disadvantaged as funds may have already been fully allocated (Northcott, 1992). The timing of a proposal in relation to the firm's budgeting programme is very important if the decision to build is to progress.

External restrictions are referred to as 'hard' capital rationing. External rationing arises because the market refuses to supply funds to a firm it considers unsafe. This is in addition to other rationing measures such as raising the interest rate on loans offered to a risky firm (Bromwich, 1979; Baumol and Quandt, 1965). Bromwich describes this external rationing as 'strong'. Essentially the firm must act and communicate effectively, in the language of finance, if it is to manage viability and certainty of repayments, as perceived by the 'market'. That is, should an organisation seek finance from financiers, it must understand the financial paradigm, if 'risk' is to be managed.

The other type of external rationing is described as 'weak' (Bromwich, 1979). With weak external capital rationing, the firm is not denied access to funds but must pay a premium. Bromwich explains 'weak' external rationing as when the cost of capital (i.e. the interest rate at which the money is borrowed, required by the lender in a given period, increases to reflect a perceived increased risk of default, as the firm raises its demand for funds.

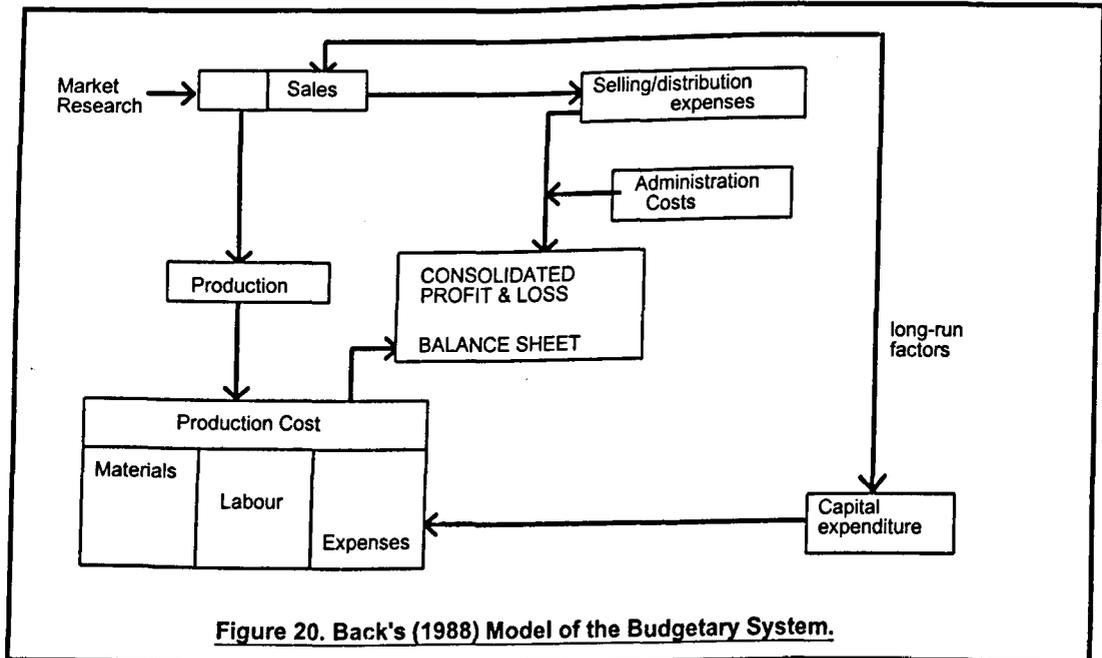
Penrose (1959) points to the lack of in-house skills such as technical personnel, which can restrict the number of projects an organisation can undertake (Penrose, 1959). Internal capital rationing under this type of circumstance is used to ensure the highest NPV per unit of the scarce resource.

Certain types of finance may not be available to the firm due to issues such as its size, its collateral, and the time frame in which it is working. A flotation might provide the firm with a source of finance, but this will be slow as a Stock Market-introduction takes time. For Publicly quoted companies, a right's issue, hurriedly pursued, could reduce the value of the existing stock, as investors need to be convinced of the planned wealth creation (Bromwich 1979). Also a fall in share price could expose the organisation to a predatory take-over by a rival organisation or an asset stripper. This shows how the financial paradigm does not only influence the decision to build, but is influenced by it and consequentially also influences strategic and organisational paradigms and perspectives.

If there is a recession and the stock market is 'bearish', equity based finance might become difficult to obtain (Bromwich, 1979). It must be remembered that the financial paradigm, as are other paradigms, is larger than an individual incidence of the decision to build, and so recession in Japan can affect the availability of finance in London

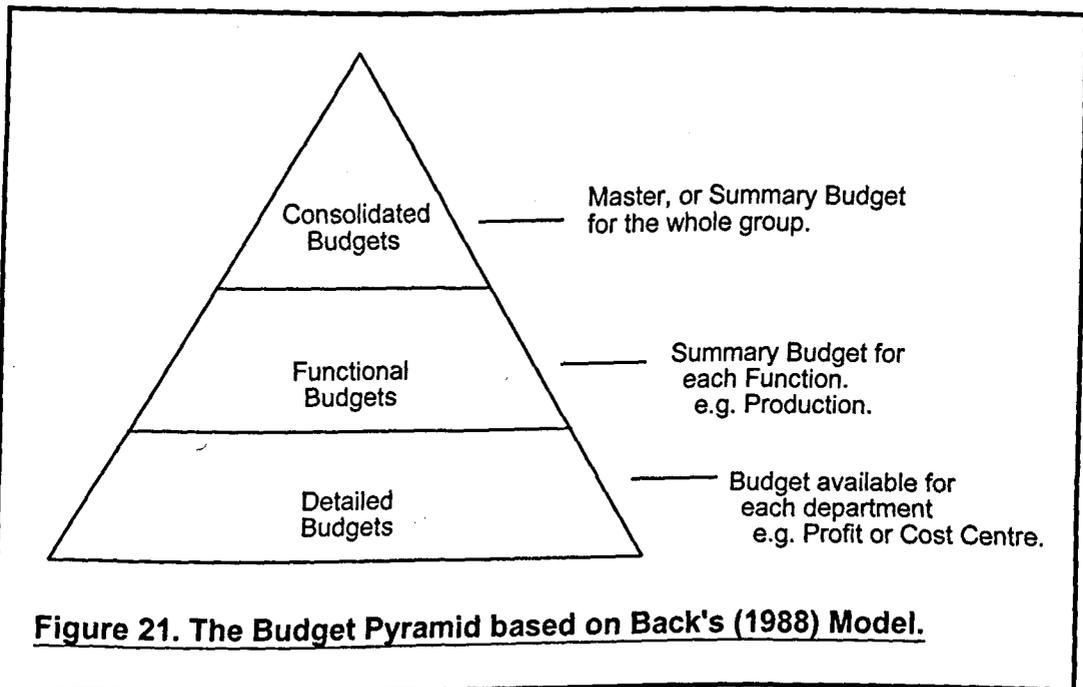
4.6.1.3. Internal Financial Control And Its Consequences.

Figure 20, (Back, 1988) shows a model that allows an interactive system within the organisation to be understood, and illustrates how operational budgets relate to the Balance Sheet and long-range planning. Back explains if 'Sales' forecasts higher turnover, 'Production' can feedback the lack of capacity to meet this demand and so the manufacturer should consider expansion. This indicates that in some cases the trigger for a project is a result of observations made during the budgeting process. The implication for the decision to build is that the need to build often emerges out of the budgeting process.



In order to achieve effectiveness, the organisation creates a budgetary system that checks intermediate results against planned-for targets. This rationale will influence the decision to build at a number of levels from Return On Investment (ROI) to the creation of a cost plan. A budget is a quantitative statement of senior management plans (Horngren, 1986). The master budget aggregates the financial plans of all the departments such as sales, production, distribution, and finance. The master budget usually consists of a sales projection, a balance sheet, and a cash flow forecast. These statements are the result of many planning decisions arising from a detailed investigation of customers, the firm's future and the methodological logic flows out of the financial paradigm.

Back (1988) describes a budgeting pyramid (see fig.21) that moves from an overview down to detailed considerations. This approach will dictate what considerations (i.e. content) are needed for the decision to build if external financial confidence in the organisation's management is to be demonstrated; annual audits and the publication of results can, in some instances, place this information in the public domain.



In relation to the cost plan, Turner and Remenyi (Turner, 1995; p.35) advise that a project manager should keep three budgets:

- The baseline or estimated prime cost: the amount communicated to the project team.
- The most likely out-turn: the amount the project manager expects to spend.
- The budget: the amount the owner is willing to spend.

Turner and Remenyi explain the amount the owner is willing to spend will be about 10-20% higher than the budget communicated to the project team. This allows an element of flexibility, which is referred to as a "Contingency Sum" and again shows how the financial paradigm not only influences, but is influenced by the decision to build process.

Norkett (1982) briefly discusses the effects budgets can have on people. He recognises that accountants are often criticised for their seemingly mechanical perspective and shows how the accountancy profession is addressing this. Norkett

draws on the behavioural schools in management theory and explains management as, "...getting things done with and through people." Norkett exposes the dilemma between the organisation's and the individual's needs within the firm. This dilemma will also be experienced in the decision to build and provides a link between the financial paradigm, organisation and manager perspectives. Exploring motivational aspects in relation to budgets, Norkett says the main influential factors seem to be money, leadership, supervision, personal recognition, work groups and individual attitudes. When setting a budget, thought must be given to these qualities. Budgets are often seen by employees as management devices to improve efficiency. (Norkett, 1982). Norkett cites Argris to illustrate that individuals develop tactics and join groups to resist management and budgetary pressure. This effect will also be present in the decision to build and might be recognised as the tension between design team aspirations and client expectations.

A second dilemma is faced by design teams as the initial project budget is set before their appointment, and is then uncompromisingly imposed upon them. The impact on subsequent decisions and options flowing from the creation of a project budget is important. In the context of a multi-organisational project, the budget is used to appraise tender sums and feasibility.

4.6.1.4. The Cost Of Capital From The Financier's Perspective.

The financial paradigm also illustrates how external funders impose restrictions on the amount of finance available to the organisation. The ability to raise finance increases the options available to the client organisation. As an organisation seeks to meet its liabilities and shareholder expectations, then as a minimum, it must match revenues with expenditures to break-even. Drury (1988) explains that the theory of capital budgeting is based on the economic theory of the firm where marginal cost is equal to marginal revenue. The issue is how do investors perceive the relationship between risk, return, and their exposure to potential bad debt?

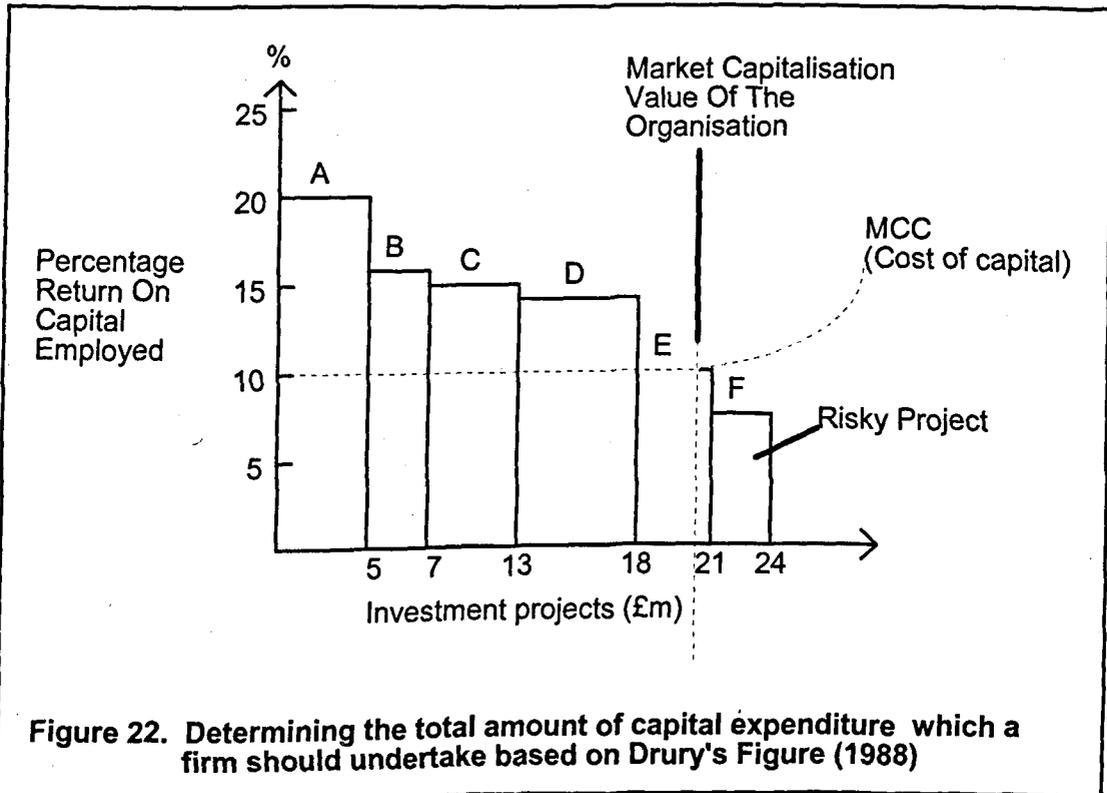


Figure 22 allows a lump-sum approach to consider capital rationing where existing projects are considered in relation to a new proposal to build and the organisation's financial ability to pay back loans. What it clearly demonstrates is that at project E, also the limit of the firm's capitalisation value, the financiers consider risk as increasing, thus seek higher returns, which pushes up the cost of capital. A firm's market capitalisation, in relation to its proposed investment strategy, is one measure used by financiers as collateral and a gauge to insolvency risk.

Whilst the logic of the Marginal Cost of Capital is transparent, for large complex organisations it can be difficult to calculate. This section explains a more commonly used method of assessing the firm's cost of capital and linking this to a hurdle rate that the proposal must better. The underlying logic of this approach is that a proposal must have a higher rate of return than the financial market's cost of capital. Marginal Cost of Capital (MCC) does not consider issues of gearing and restrictive covenants, and so the organisation may be forced to consider the Weighted Average Cost of Capital (WACC) as the cut off rate rather than the Marginal Cost of Capital. That is,

any project must have an estimated return in excess of the WACC if the firm is to generate wealth. The WACC is found by adding the weighted cost of equity to the weighted cost of debt. Pike and Neale (1993) show this as:

$$\text{"(Cost of equity x equity weighting) + (Cost of debt x debt weighting)"}$$

(See Appendices 15, 16, and 25 for more detail)

The problem of calculating the cost of debt is that the market value and the book value of debt do not always correspond. Corporate debt values which can be traded, such as debentures, are priced in the same way as government stock, or gilt-edged securities (Pike and Neale, 1993). Bond dealers mark down the value of existing stocks to a level that is commensurate with the yields offered to investors purchasing new stocks. Pike and Neale (1993) use Quaker's explanation of how a firm derives its cost of capital to aid clarity. This explanation links the firm's strategy to the stock market, financiers, and the project, in a way that allows the relationship between macro and microeconomics to be considered. Quaker sees it as a management objective to pursue business strategies that will allow them to consistently deliver dividends to shareholders at rates in excess of their cost of capital and better than other investment opportunities. All proposals, such as a new building, are measured by their cash flow merit. This is then discounted back to present values in order to compare the initial investment cost with a project's future returns to determine if it will generate incremental value after compensating for a given level of risk.

To arrive at the discount factor in the NPV, Quaker uses the WACC. As debt is tax deductible, Quaker seeks to increase its leaning towards debt in order to reduce the cost of capital. This approach assumes favourable rates of interest. To find Quaker's cost of equity, a risk premium of about 5.3% was added to the risk-free rate. In fiscal 1989, Quaker's average cost of equity was approximately 14.2 per cent. Any proposal must therefore have estimated returns above 14.2% if it were to increase shareholder wealth.

To fully understand the financial paradigm, those involved in the decision to build must consider finance from the lender's perspective. Lenders often calculate the loan-to-value ratio as a method of evaluating the attractiveness of an investment. Here 'value' means the saleable value of the completed project. Isaac (1994) reveals that owner-occupiers can receive a 100% loan to be repaid over ten years. The interest rates he shows in his example range between 0.5% to 3.0% above LIBOR or bank base rate (See Appendix 13). Isaac (1994) adds:

"Owner-occupiers are able to obtain a much higher loan-to-value ratio where it can be demonstrated that they can service the interest charges out of their business cash flow." (p.54)

Essentially, the cost of capital seems to match how lenders perceive risk and expect reward from a particular borrower (e.g. company and/or project). This simplistic description becomes increasingly complex as various issues are explored and compromises achieved. For example, risk of default may be reduced in importance if a guarantor allows recourse to a secured asset. However such a negotiated perspective assumes time is available. In cases such as Alan Bond's search for 'cash', the desperate thrashing about signalled distress causing creditors to panic and other businesses to take advantage of the situation (Pike and Neale, 1993).

4.6.1.5. The Lease Or Buy Decision

During the preliminary stages of the decision to build other options are available which will achieve the same goals but without having the need to build. This approach to financing a project links the financial paradigm to the property development paradigm. Pike and Neale (1993) quote the International Accounting Standards Committee to explain leasing:

"A leasing transaction is a commercial arrangement whereby an equipment owner conveys the right to use the equipment in return for payment by the equipment user of a specified rental over a pre-agreed period of time." (p.373)

As previously stated, clients can sometimes form a property company to attract finance. Pike and Neale (1993) provide an example where a major project was financed through leases:

"LEASING LIBERATES DERELICT SITE

In 1988, five leasing companies formed a syndicate to provide £230 m of 'big ticket' lease finance for the Meadowhall Shopping and Leisure Centre located in the east end of Sheffield. Reputedly the largest retailing complex in Europe, Meadowhall provides over 1.5 m sq. ft of shopping and leisure space, includes seven department stores and over 200 shops, and expects to attract 30 million visitors annually. It was part of the scheme initiated by the Sheffield Development Corporation to regenerate the City's Don Valley area, devastated during the 1980's by the rationalization of the steel industry, once the region's major employer. Meadowhall progressed from derelict site to opening in under two years and is expected to create over 8,000 new jobs.

Leasing finance here, as in many other cases, has proved a valuable tool for funding much-needed capital investment." (p.372)

4.6.1.6. The Private Finance Initiative (PFI).

The public sector is also re-evaluating how they finance their decision to build. The UK Government is seeking ways of reducing its financial role by encouraging private finance into projects. In 1988, the Treasury published, "Private Finance in Public Expenditure" which influenced the building and financing of the Dartford crossing. The 1988 Treasury Publication explained Sir William Ryrie's two rules. Walshe and Daffern (1990) explain that the 'Ryrie Rules', perceived that the use of private capital markets entailed an additional resource cost associated with public financing and that

such a cost was deemed tolerable. The aim of PFI was to transfer the risk of project overruns, or a failure to secure the benefits of investment to the private sector. Also it would provide a strong incentive to the private contractor to achieve greater efficiency.

The problem that the Government's Private Finance Initiative (PFI) has, is that some divisions of the public sector cannot clearly identify returns on investment in respect of risks such as a change of Government. The high expenses of placing a bid for a PFI project, coupled to the fact that the private investors are expected to make long-term commitments based on revenues which are only secured in the short-term, illustrate the difficulties of bringing together the public sector and the private sector. Dean Webster, a Director of Cyril Sweett (Building 21,04,95) adds:

"Contractors are being very selective. Everyone is going for the big schemes, but there are a lot of schemes in the £5-20m bracket which are being ignored by the major players. They are not worth the investment required."

The PFI is being met with a quasi-Property Development/Turnkey approach. The source of finance will ideally come through building contractors or joint ventures between building contractors and operators. It is now common to hear of Build Own Operate (BOO), Build Own Operate Transfer (BOOT) (Morris, 1995) and Design Build Manage Operate (DBMO) schemes that encourage contractors to move closer to their client-operator's business. It is also common for PFI projects to explore funding from other governmental initiatives in the form of development grants and subsidies.

The essential difference PFI brings, is that the government leases rather than procures assets and services. The implication is that there will be reduced pressure on the Treasury and the Public Sector Borrowing Requirement.

4.6.1.7. Analysis Of The Financial Paradigm.

The positivist approach, augmented by scientific management and its requirement to measure, promotes emphasis of quantitative data. As money provides a medium of exchange, it gains prominence in the decision to build. Within a commercial environment, money is also the metric used to measure, or reflect, success, or failure. Finance plays an important role in multi-organisational projects such as construction. The flow of money, and the amount each organisation can obtain, becomes a principal motivation, which unites several organisations in the pursuit of project delivery.

The internal importance of money is also seen within the organisation as employees expect wages and salaries for their efforts. Before an organisation considers investing in new building work, it must consider options of leasing or outright purchase. Balance sheet implications, and levels of gearing, must be considered during the decision making process. Third party financiers, through restrictive covenants, can also impose capital structure. The sources of finance available include borrowing in the form of a loan, raising capital by selling assets, or from capital or equity reserves. These issues are not adequately explained in the capital investment paradigm and further highlight the close relationship between the financial paradigm and the capital investment paradigm.

When considering sources of finance, it is essential to understand 'risk of default' from the lenders' perspective. Some property developers experience architectural interference by lenders who demand alternative uses be designed and included for buildings. This level of intrusion in the decision to build, which may also prescribe specification levels, must be reviewed in the context of client effectiveness. If the lender's intervention increases the cost of construction, and reduces the operational advantage of the building, then clients must reconsider the project's strategic value.

The organisation that decides to build may consider capital market sources of finance from institutional investors. A share issue on the Stock Exchange is one option, but this might be expensive, time consuming, and economy-dependent. Approaches to capital markets are usually for large amounts to reduce transaction costs. Capital investment programmes, spanning a number of years, are sometimes designed to achieve economies of scale and reduce the transaction costs. This identifies the role of strategic vision in the client's approach to funding the decision to build and links the financial paradigm, the capital investment paradigm and the strategic paradigm.

At present, there is little opportunity for small investors to take equity stakes in individual projects. In the case of socially needed buildings with poor commercial returns, such as a local hospice, an equity based investment vehicle could allow a medium for community-based social responsibility. The financing of some socially valuable projects is presently funded with National Lottery money; unfortunately, the need for large-scale back-to-back finance has created a hiatus for some of these projects.

As was explained in the Capital Investment paradigm, issues of internal and external capital rationing can cause the cost of capital to rise, and in extreme cases to be refused. It is important to understand the role "City Analysts" play in determining perceived risk-and-reward from financial reports and rumour. At the heart of all the decisions emanating from the financial paradigm is the pursuit of 'value', flowing from the returns on loans, which can be measured in money. From within this paradigm, importance is given to objective, independent, external 'Financial Analyst' perspectives which can have a direct influence on both sources of capital, and cost of capital. The fundamental relationships between management, strategy, accountancy, finance information and image, illustrate the complex interaction and overlapping of paradigms which collectively influence the project, through the financial paradigm.

The Public Sector is seeking to introduce private sector practice, and capital, with the Private Finance Initiative (PFI). Essentially, project risk is being transferred from the

government agency to the private sector, but with the public sector retaining primary control through revenue streams. Projects with external benefits, but poor internal benefits will be unattractive to the private sector, and so traditional procurement practices may continue in an abridged or curtailed form.

4.6.2. The Property Development Paradigm.

Some organisations realise profits by creating 'real' value in the sense of physical assets in the built environment for which others are willing to pay. When discussing property developers, Seeley (1983) advises that the development team must resolve the following: maximum plot ratio, optimum floor space, selected form of contract, optimum cash flow, optimum construction cost in relation to rentals and also optimum life cycle costs in relation to specifications. Again we see the rules of a paradigm being made explicit. The property development paradigm thus provides a rational approach to the decision to build which can be used by clients to understand 'what' should be considered in the decision to build. To explain the relationship between form, function, cost and yield, it becomes important to consider the different valuation models in current use in the UK. Millington (1975) defines valuation as an art, or science, of estimating the value for a specific purpose at a particular moment in time, taking into account the considerations of the property and the underlying economic factors of the market.

Frost (1975) explains that the 'economic value' of land is derived from its potential use. For example, the value of the same parcel of land may be the following

Economic value as an agricultural resource say £50/acre.

Market price say £500/acre.

Development value say £30,000/acre.

A site of 1000 acres could be valued at anything between £50,000 and £30M. As can be seen from the above, if the land has planning permission then its saleable price should in theory, move closer to its development value. This will affect the financial

appraisal within the decision to build and links the property development paradigm with the strategic, financial and capital investment paradigm.

Alternative land use may have economic impacts that an individual project does not consider. For example, developments on green field sites and the consequences for blight, the loss of land for agriculture, and the loss of amenity value of the countryside. Frost (1975; p.191) suggests that the development value of land is too high to be used in calculations for the following reasons:

- i) Government Policy; the development value must equal the agricultural value plus the locational advantages plus the value placed on maintaining planning restrictions.
- ii) Penny Packet; the base price is taken from a comparable plot of land.
- iii) The price is rarely the price actually paid; We must also consider the joint effect of inflation, interest rates and tax relief as well as consider costs such as Inland Revenue charges, e.g. estate duty, provisions etc.

Millington (1975) discusses some reasons why organisations need property valuations. These are summarised as valuations for: sale, purchase, mortgage purposes, rental purposes, insurance purposes, balance sheet purposes, redevelopment purposes, compulsory purchase compensation, rating purposes, probate purposes, and as a going concern. Millington (1975) qualifies this list by saying it is possible to have a range of different values in any one property at any one time. These valuations will depend on the reasons for the valuation. This shows 'value' is linked to anticipated and actual experiences from an individual viewpoint with a specific purpose in mind. However, Millington claims that there will only be one market price that is influenced by a specific valuation. (See Appendix 14 for list of costs and variables that can impact on property value)

4.6.2.1. Valuation Methods.

For an organisation considering the cost of the decision to build it becomes important to understand the valuation method being used. In determining the cost-value of a building, clients will often use one of the following methods of valuation:

The Comparative Method; e.g. value of similar property traded recently

The Contractor's Method; e.g. Cost of site plus Cost of Construction less depreciation and obsolescence allowances.

The Residual Method; e.g. Value of the completed development less all other costs and developer's profit leaves the value of the property.

The Profits Method; e.g. Gross Earnings less Purchases less Working Expenses equals the net profit.

The Investment Method; This is where a building is sold to investors who seek an income flow. The amount the investor wishes to invest is divided by the "Years' Purchase" which is derived from the rate of interest which an investor decides he will require from a property.

Discounted Cash Flows.

Mortgage/Equity approach; This is where a rental income is multiplied by the mortgage rate of interest and then divided by 100 to find the maximum debt available to finance the purchase price.

(Millington, 1975; p. 63-71)

The Residual Method was extensively used by Property Developers to calculate the amount they would be prepared to pay for land. Essentially this method deducts costs

from the proposal's anticipated capital value to establish the residual, or residue. This residual then becomes the ceiling of a negotiated land value. Should the actual sale price of land be in excess of the residual, then estimated profits may be eroded.

Morley (1988) provides us with an estimated rental income from the scheme that is benchmarked off a yield of 8% to find a capital value. The yield represents a risk free opportunity cost of say 5% treasury bills, plus a 3% premium. The relationship between income and capital value is the reverse of a simple compound interest investment. The main weakness of this approach is that the calculation is based on detached investment logic where the opportunity cost is considered against such as Gilt Edged securities. The premise is that an investor can choose between investing in securities or a building. This denies 'need' and treats the building project as an undifferentiated, commodity type investment rather than as an essential component of a strategy; the underlying values of the external stakeholders, whilst similar, are not the same and it is this distinction which marks the different approaches of owner and speculative property developer.

4.6.2.2. Income Within The Property Development Paradigm

Some approaches to the decision to build seek to obtain a return on floor space. Morley (1988) explains that income, in financial appraisal calculations is based on net usable floor-space a tenant will pay rent for. This model may also be applied to organisations with internal markets. The implied assumption is that floor space reflects productivity. Morley reports that office buildings usually have a minimum of 17-20% of non-usable, non-rentable floor space. Non-usable space includes stairs, lifts, landings, WC's, plant room and entrance halls. These 'rules of thumb', developed out of the property development paradigm, can influence the content of the decision to build for clients using the paradigm as a guide to good decision making.

4.6.2.3. Cost of Construction In Relation To Design.

In their book, Morton and Jagger (1995), an economist and a quantity surveyor respectively, explain that the building's design establishes the parameters between cost and value. The construction process, which responds to the design, can only achieve value to the degree the design allows.

The Royal Institute of Chartered Surveyors (RICS) have an on-line service called the Building Cost Information Service (BCIS) which provides cost models for buildings. These are used by quantity surveyors either to calculate the approximate cost of a design at sketch stage, or to develop a pre-defined cost-plan that imposes cost targets on the design team; i.e. either cost to design, or design to cost. This approach is explained by Seeley (1983) and Ferry & Brandon (1991). The methodology is based on the concept of "absorption costing". The total cost of a building is absorbed into its floor area to calculate a cost per Metre Square:

for example, a £300,000 building of 1000 M² = £300/ M²

The cost models also absorb the cost of elements such as "Internal Walls and Partitions" into their respective "elemental unit rate".

One problem is that costs are based on historic tender prices, rather than actual final costs. Tender prices may be artificially low due to market pressures and industry pricing practices. Not only are the statistical sample sizes small, but the difference between tender price and final account is unknown; and because of variations, may be unknowable. The cost planning approach makes no aesthetic consideration and so the cost of 'ugly' buildings may be treated in the same way as beautiful buildings. Some quantity surveyors prefer to use approximate quantities with rates, but such an approach may not be feasible in the preliminary stages of design. Fisher (1995) reveals the leading edge of CAD-based IT as moving towards resolving the gap

between design and cost elicitation. Non-construction personnel involved in the decision to build may not be aware of these issues.

Building Economists (Seeley, 1983; Ferry and Brandon, 1991) argue cost-of-design depends on variables such as:

- Plan shape,
- Size,
- Perimeter/Floor area ratios,
- Circulation space,
- Storey heights,
- Number of storeys,
- Foundations,
- Column spacings,
- Floor spans,
- Floor loadings.

These are then placed into adjusting ratios to convert the historic costs from a cost model into the planned costs. These costs are then updated by means of indices to reflect location, time, tender price fluctuations, inflation and so on. The logic of this approach moves towards cost-rationalisation, with little regard for the project as a strategic investment.

4.6.2.4. Analysis Of The Property Development Paradigm.

The Property Development paradigm provides examples of how the decision to build can be made. The reason a property requires a financial valuation influences both the approach and calculation. As value is perception based, it cannot be measured directly and so there will always be a subjective element within the rationalised calculations advanced by this paradigm. The use of land is an example of how a monetary value reflects perceived value; agricultural land having less commercial value than development land. Market Value, to a prospective purchaser is thus a

reflection of the gap between the benefits of owning and cost of acquiring. As individuals, and organisations, have different value-sets, there can be no such thing as a single market value. The concept simply provides a starting point for individual negotiation, usually downward because decisions must be 'good'.

Clients approaching the decision to build need to understand that property valuation can become a self-fulfilling prophecy, which may result in property market crashes with Stock Market consequences. Conversely, a stock market crash can cause a property market crash as the various paradigms exist in a global realisation. Investors are told that a property with certain attributes is worth £x because a similar property sold for £y. This perspective may ignore the unique nature of buildings, their architecture, and their contribution to society. Essentially, property valuation is a subjective value judgement flowing from people, perceptions, and particular circumstances. The valuation reflects an underlying complexity based on compromises between individual value systems and a positivist need to present a universally acceptable measurement of value. The relationship between cost of construction and the market value of the finished building should be understood by those making the decision to build. At the heart of this dilemma is the need to make objective decisions, not subjective ones.

Property developers expect preconceived relationships in building design. An example of this is the 80-20% usable to non-usable floor area. Before understanding a client's needs, the spatial relationships are being defined. The paradigm becomes more dominant than the problem, as clients approaching the decision to build are guided by the advice coming from this paradigm.

The relationship between the property sector and capital markets has also influenced the treatment of yield. The opportunity cost of property development is compared with yields from stocks and shares. This means capital value, and project approval, can be influenced by investor behaviour external to the project. Shifts in the balance between capital value and yield may moderate external capital rationing as it

influences investor behaviour. The stock market plays an important role in project approval for public limited companies as it impacts on their balance sheet and gearing ratios.

An alternative approach to this paradigm, which seeks to accommodate subjective-creative-entrepreneurial thinking within objective rational decision making is offered. The Collaborative Method (See Appendix 15) divides the primary strategy's revenue stream by the weighted average cost of capital to identify the maximum capital value available to the project within its stated assumptions. It allows the architect and marketing managers, along with other team members, to consider, and influence, the implication of design decisions and commercial outcomes in a proactive workshop. The relationship, between budget and design, changes into a methodology that enhances project value and protects balance sheet objectives. Total project cost, which combines primary and secondary strategies, must be less than the collaborative method's capital value, or the project will not add financial-value to the firm. This method allows an opportunity to model the content of the decision to build with a number of paradigms being considered concurrently.

4.7. Content Influencing Paradigms And Perspectives Which Are Imposed On The Decision To Build By External Stakeholders.

The previous section explored paradigms and perspectives which influence considerations from within the decision to build process. Their influence is more of a negotiated 'sense' rather than being imposed on it by external agents from the construction industry and its dominant paradigms and perspectives. This section looks at two main paradigms which influence what must be considered as penetrating from outside the client organisation in an intrusive sense; that is they are imposed on the decision to build process. They are the Planning Permission and the Preliminary Design paradigms. There are other paradigms such as legislative ones that influence these two paradigms indirectly; for example, a change in the way sewage can be discharged into the oceans causes the planning permission paradigm to adapt.

Once again each paradigm and perspective is described in isolation but is intended to be considered in the context of a collection of influences acting on the decision to build process. The first paradigm under study is the planning permission paradigm. The second comes from the construction industry itself as it meets the client's decision making process with its own values and expectations.

4.7.1. Planning Permission: A Politically Imposed Paradigm.

Whilst the decision to build is owned by the client, the government at national and local levels place a set of rules on the process. This politically motivated paradigm has rules which are designed to be of benefit to the electorate in order to achieve power through the democratic process. Understanding the planning permission paradigm and how the client must meet its expectations if permission to build is to be granted is pivotal in every decision to build. The fact that this external approval must be achieved will influence the structure and sequence of the decision making process. This is because approval stages such as outline and full planning permission are forced on most organisations. Issues that are not essential to planning approval may

be delayed by the client-team in order to maximise the effective use of time and resources available to the proposal's development. As such, this 'intrusive' paradigm can also indirectly affect the content and sequence other issues which are investigated by the client organisation. The following section illustrates how the various planning permission bodies may place different emphasis on other aspects of the project such as choice of design and materials.

4.7.1.1. The Role Of Planning Permission.

The role of Town and Country Planning impacts on the decision to build in a way that suggests a building is unique in terms of capital investment, as the procurement of machinery, for example, would often lack the intrusiveness of this paradigm. This aspect of government intervention, at both central and local levels, can cause major rethinks for projects previously deemed economically feasible.

This research confines itself to the UK. However, Frost (1975), in discussing cost benefit analysis, alludes to a French study on the alignment of a motor-way, where the consultants took the precaution of carrying out a limited public opinion survey. The replies suggested that suitably qualified experts could only decide such a complex problem, and that the public had every confidence in them. In countries such as the UK, the assumptions of expertise are frequently challenged, which elicits the realisation that some stakeholder values are commonly in conflict with the values advanced by other more dominant paradigms and perspectives. It thus becomes important to take an objective view of the method in which public opinion is formed. Frost believes an effective way of committing political suicide would be to carry out a study without making a serious effort to present the main facts to the public in an objective way.

Three stages of the communication process seems to be essential in Frost's (1975) view:

- Establish common understanding of words such as profit, inflation and so on.
- Conduct debate within an intelligible framework making sure representatives from serious media sources are invited.
- Ensure that the media and opinion formers understand the study that has been conducted. (p.x).

In order to make the decision to build easier, local and national government publish their aspirations in the form of plans which act as guidelines to those considering the decision to build. In 1965 the Planning Advisory Group (PAG) advised that a more systematic approach to plan making should be adopted (Field and MacGregor, 1987,p;9-10). McLoughlin (1965) summarised this systematic approach as being concerned with a continuing process that starts with elicitation of social goals and an attempt to realise these through the guidance of change in the environment.

In their introduction, Field and MacGregor (1987) describe a move away from the 'rule of thumb' approach to the design of plans towards a quantitative approach, bearing much reliance on hard operational research (OR) type calculations. What they are doing is building a more articulated set of rules for the paradigm. Lee (1973) puts forward a five-stage approach to the creation of a planning model.

- Selection of the variables to be modelled.
- Choice of appropriate level of aggregation and classification.
- The treatment of time.
- Specification.
- Calibration.

It is then explained how the Planner would use such techniques to estimate population, housing, employment, shopping, transport and recreation issues, that then guide the local authority towards their respective plans. Field and MacGregor (1987) explain many OR based techniques such as gravity models, and highlight their assumptions. A client considering location might employ these types of techniques and models within their decision to build process believing their valid logic will lead to successful decision-making.

Central government and local government has undergone many reorganisations over the last 10 years. Agencies with a responsibility to planning that could impact the client's decision to build include:

The Department of the Environment, Transport and the Regions (DETR)

The Department of National Heritage

The Ministry of Agriculture.

Environment Agency.

The Local Authority.

Local government has control over development in their area as a unitary authority, a metropolitan district council, a county council, a local district council, a regional council or a London borough. Central government creates a unified planning system by co-ordinating aims and objectives by means of circulars and guidance notes to which local government complies. Client teams considering the decision to build often refer to these notes so as to identify more favourable locations.

The Secretary of State has extensive powers, which in effect means 'the Department' has the final say in all policy matters, subject to parliamentary control (Cullingworth and Nadin, 1994). It is through the Secretary of State that the government of the day's values can influence the paradigm's implementation. A Secretary of State has the power to 'call-in' any planning application and impose his or her decision.

Cullingworth and Nadin (1994) explain that this is different from determining an appeal against an adverse decision of a local planning authority. This power cannot be circumscribed and the Secretary of State can call in any application. This is an important power in the case of large inward investment projects that provide a national advantage, and allow central government to override local government.

The Secretary of State also has the power to make regulations, or orders, which can include the "Use Classes Orders" and the "General Development Orders". These orders provide the Secretary of State with extensive powers to modify the categories of development, which need planning permission (Cullingworth and Nadin, 1994). The Use Classes Order prescribes sixteen classes of 'building use' within which changes can take place without requiring planning permission. This affects the client's decision to build as an intended use may not be allowed in a particular location.

The local authority must develop plans which the Secretary of State deems to be satisfactory. Cullingworth and Nadin (1994) say:

"Planning authorities, inspectors, and others are guided in their decisions and recommendations by government policy. Central government guidance on planning matters is issued by way of circulars and, since 1988 in *planning policy guidance notes* (PPGs), *minerals policy guidance notes* (MPGs), and *derelict land grant advice notes* (DLGA). Regional planning guidance and strategic planning guidance was initially published in the PPG series, but from 1989 there has been a separate series of RPG notes. A previous series of *development control notes* is being phased out, but a few are still in force."
(p.26)

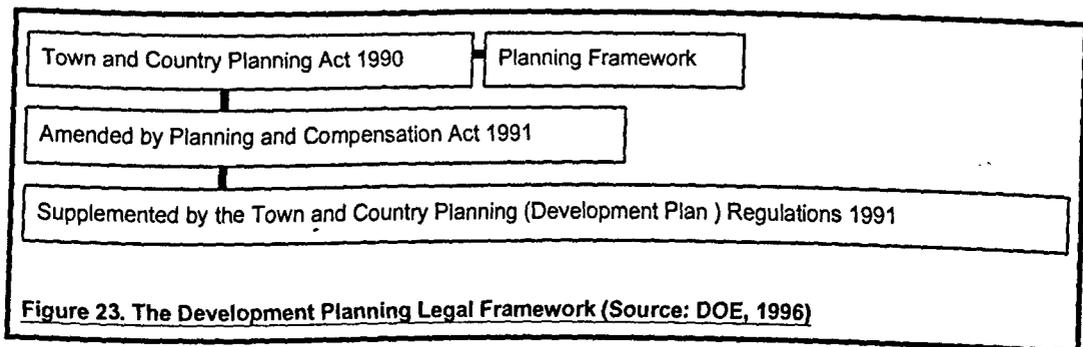
In Scotland the equivalent to a PPG is the *national planning policy guidance* (NPPG). The Department of the Environment has published an "Index Of Planning Guidance" (HMSO, 1995) which lists the various advice notes and summaries. (See

Appendix 7 for detailed listing of PPGs and RPGs). In practice the local authority must demonstrate that the advice from central government has been taken into consideration (Cullingworth and Nadin, 1994). There is also a need to check EEC Statutory Instruments Guidance Notes, which can supercede PPG advice. Clients approaching the decision to build will need to check that their proposal is in concert with these guidelines, or run the risk of non-approval.

4.7.1.2. The Planning System.

To the occasional user, the planning process can seem extremely complex with many exceptions to the rule. For example, the Secretary of State has the power to transfer the planning function from a local authority and had to do so to establish an independent joint board in the cases of the Lake District Special Planning Board and the Peak Park Joint Planning Board (Cullingworth and Nadin, 1994). These became responsible for the preparation of both the structure plan and the local plan. Urban Development Corporations are another example of an exception to the rule.

Figure 23 shows the current (i.e. 1997) legal framework within which the planning process operates.



4.7.1.3. Definitions Of Development

Clients considering the decision to build must consider the legal definition of development.

"...development is 'the carrying out of building, engineering, mining or other operations in, on, over or under land, or the making of any material change in the use of any buildings or other land' (and, since the 1991 Act, now covers some categories of demolition)." (Cullingworth and Nadin, 1994; p.80)

Cullingworth and Nadin (1994) comment that certain matters are specifically declared not to constitute development such as: internal alterations to buildings, and road maintenance, or improvement, carried out by a local highway authority within the boundaries of a road. There are others which may constitute development, but do not require planning permission. There is also provision for the Secretary of State to issue a General Development Order (GDO) specifying types of 'permitted' development, a Use Classes Order (UCO) specifying groups of uses within which change-of-use is permissible, and Special Development Orders (SDO) for specific locations or for certain types of development. As can be seen, a rational approach has been developed to encourage objective decision making as encapsulated in definitions, procedures, codes of practice and guidelines. A client considering the decision to build may need expert advice to successfully engage with this paradigm.

4.7.1.4. How Plans Are Created.

To understand how the planning permission process impacts on the decision to build, the different systems that exist need to be investigated so that the geographical and political contexts can be considered in unison. The various Plans, such as a Unitary Plan, a Structure Plan and a Local or Regional Development Plan are developed in slightly differing ways (See fig.24). This section provides an overview, and then moves to explain the various methodologies that may be encountered, in various

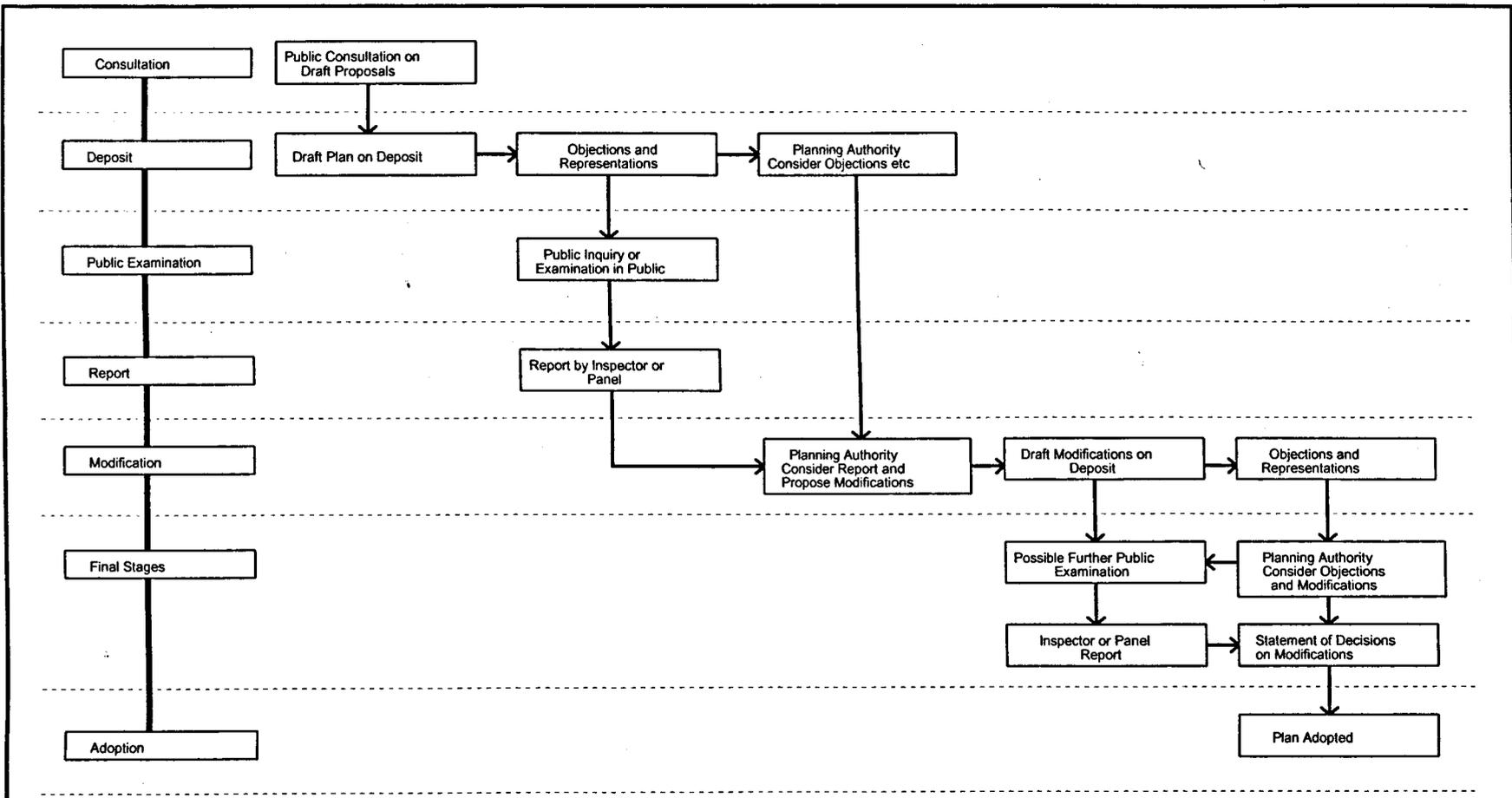


Figure 24. Various Stages in the Preparation of Plans Based on DoE Booklet "Development Plan" (1996;p.4-5)

parts of the UK, when applying for permission. The subsequent section looks at individual systems in relation to an application.

Figure 24 allows the rationale to be seen in detail and shows how potential objections are taken into consideration. The process starts in the pre-deposit consultation stage where other interested parties such as neighbouring local authorities may be consulted. During this pre-deposit stage, the planning authority will make various people aware that it is in the formative stages of a structure plan, or a development plan. By law they must place an advertisement in the local newspaper for two consecutive weeks, and once in the London Gazette. They do this along with other measures to demonstrate that there has been adequate preparation for public participation. The notice in the paper will give information about for example, where the draft plan and other relevant documentation is available for inspection, specifying the objection period and where the objections should be made, also explaining that the objector may not have a right to attend in the case of an examination-in-public. Objections received outside the six week objection period may not be accepted. The planning authority must consider all the representations and objections raised. Local politics plays a significant role, as it is Councillors, conscious of the electorate's vote, who will sanction the permissions. Councillors should in theory seek a solution that reinforces their political aspirations.

Once on deposit, the plan is made available to the public at named venues such as the town hall and public libraries. It will stay there for six weeks to allow any person to see the Plan and raise an objection. For structure plans, the authority need only hold an examination-in-public; the purpose of this is to discuss selected issues and not to hear objections. For local plans and unitary development plans, the authority must hold a public local inquiry and all objectors have an automatic right to attend, but costs are not awarded for or against any party. The client with long term plans to build may object to a local plan as it will inhibit their strategy at a later date.

For the public inquiry, the Secretary of State will appoint an inspector or a panel to consider the various arguments. On conclusion of the inquiry, the inspector, or panel, will write a report of their findings. The planning authority will consider the report and either accept it, reject it, modify it with the risk of intervention from the Secretary of State, or set a new objection period. Finally the Secretary of State will accept the plan and it will be adopted.

A client considering locating to a particular town or city could see a copy of the relevant regional structure plan, unitary development plan, local plans, waste plans, minerals plans as a preliminary step. Clients looking for financial assistance may look to such as enterprise zones, simplified planning zones, or urban development areas and see what assistance is available. Most local planning authorities have some kind of economic development department that would provide specific information designed to attract inward investment.

4.7.1.5. The Development Of Plans In Greater Depth.

This section explains individual systems and shows the various sources of information the prospective applicant may consider before investing time and money, or making an application for planning permission.

Figure 25 depicts a metropolitan district council and a London borough's methodology to establish a unitary development plan. It shows that once it is adopted by the Secretary of State, it is used to release land for certain types of development. From this it can be seen how a new project will seek consideration in respect of decisions, and issues, that may have been debated during the creation of the relevant plan. If the project complies with the relevant plan, and there are no objections, then planning permission may be granted. If the project does not comply with the plan, then either the plan will be modified (which may delay the project's start), or planning permission will be denied.

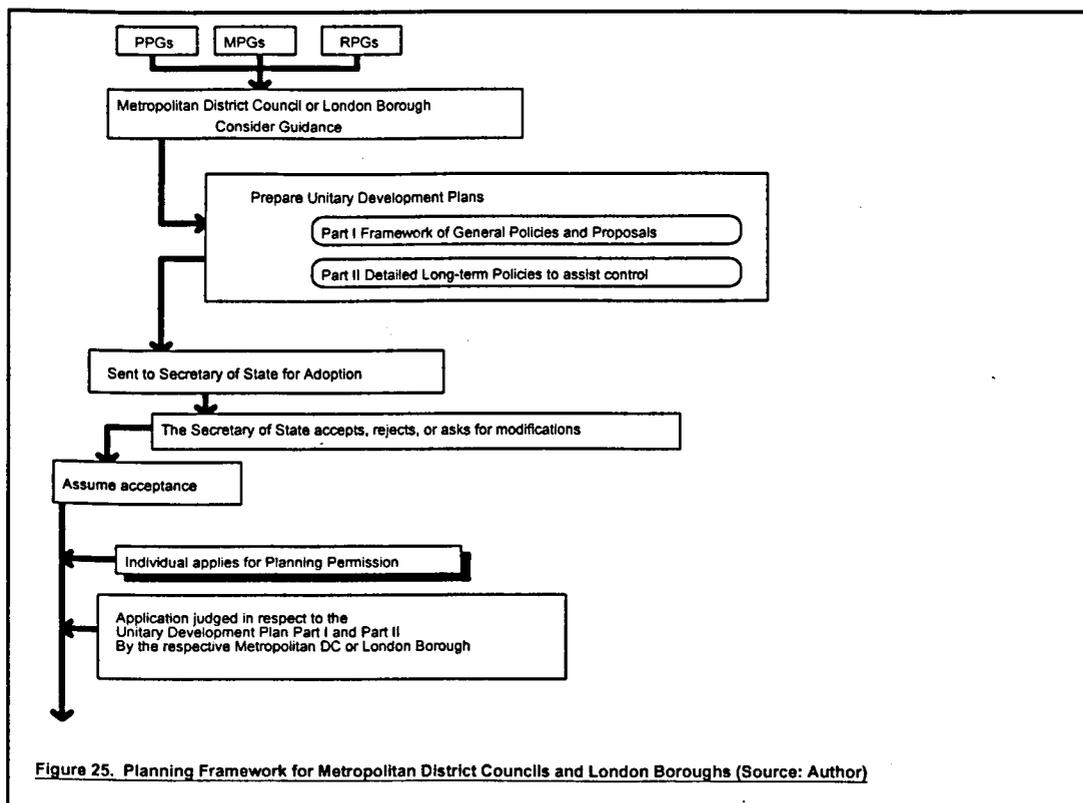
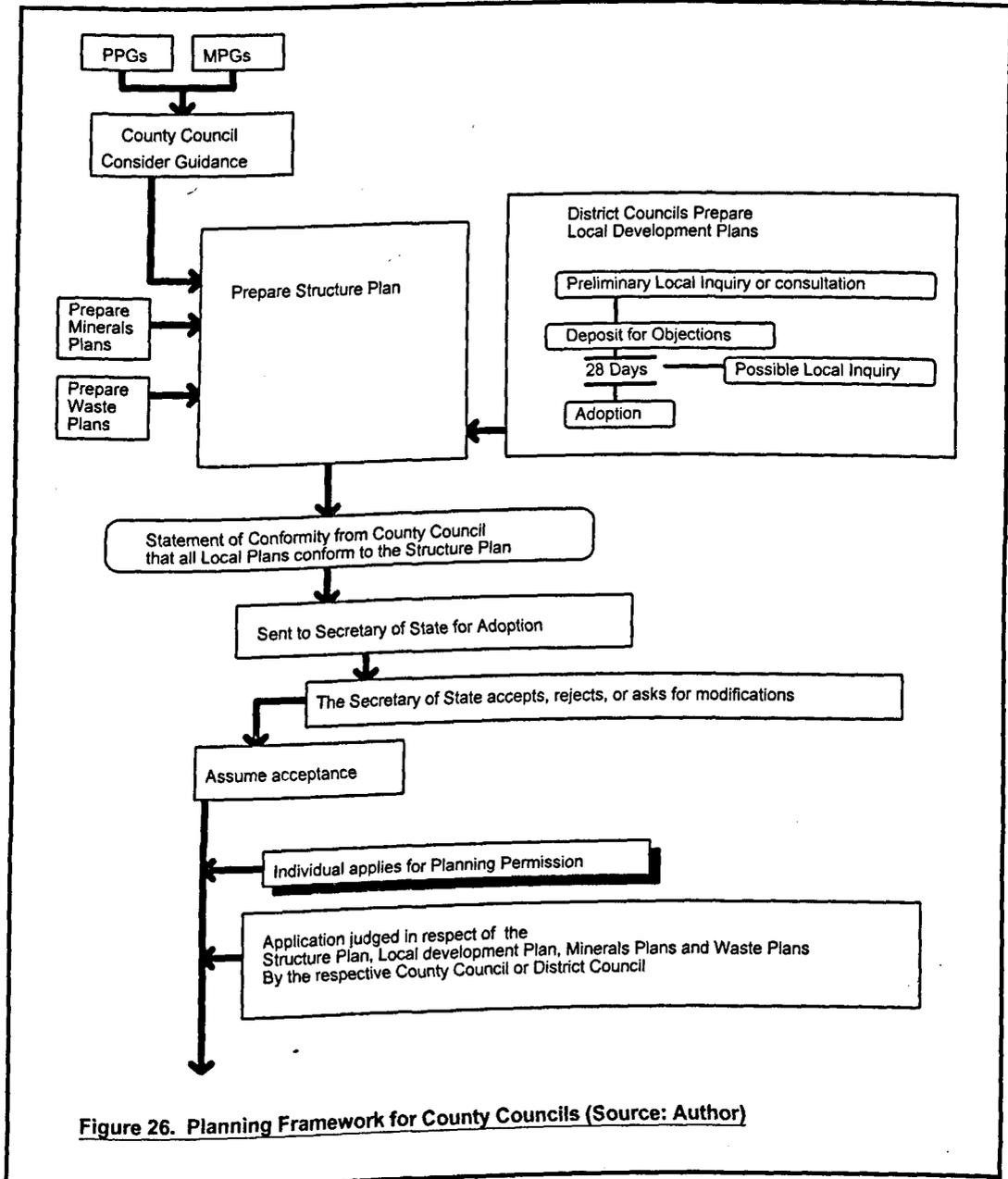


Figure 26 shows how county councils and district councils co-ordinate local development plans to produce a structure plan. The structure plan again shows how land is to be allowed to develop.



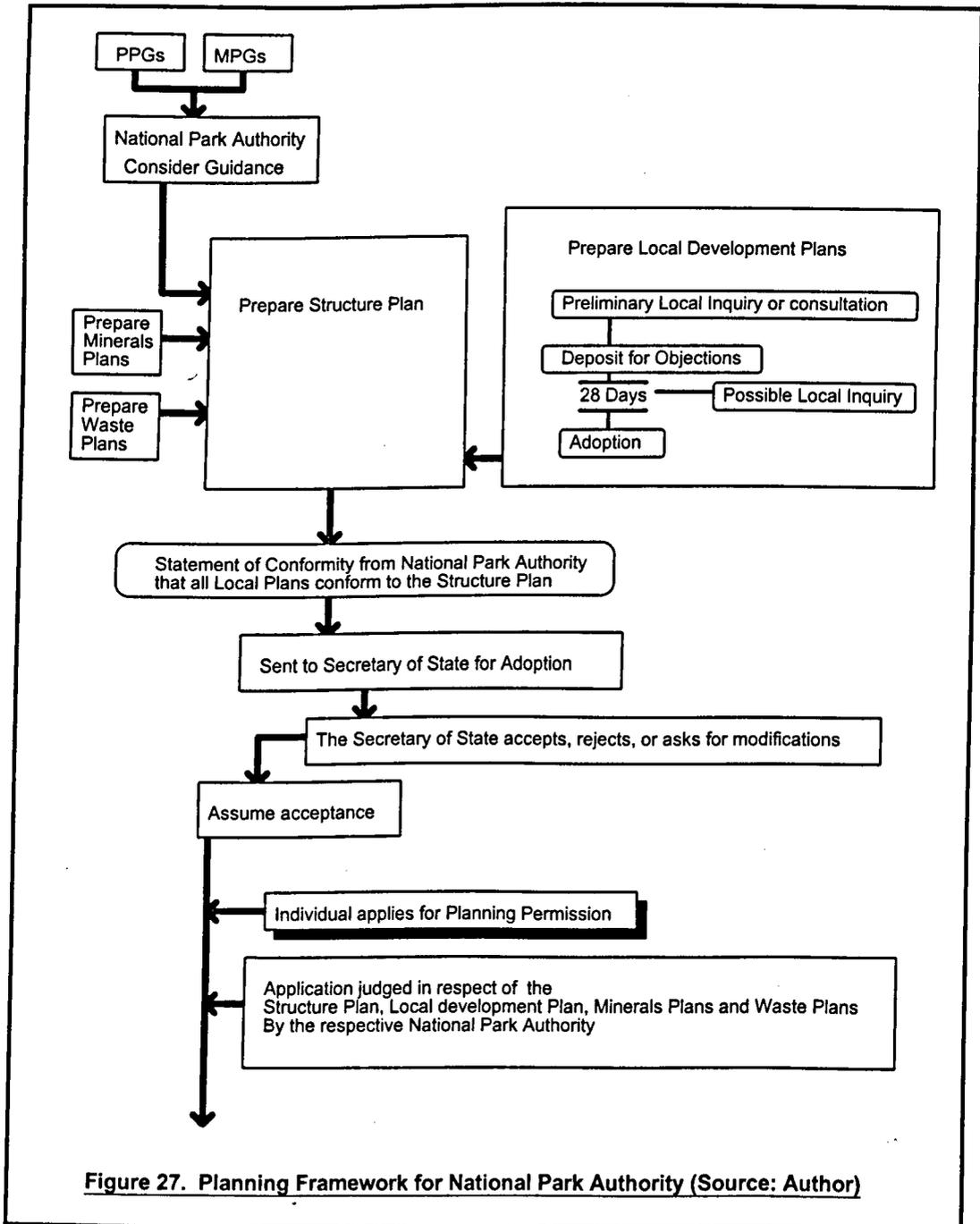


Figure 27 shows how a National Park Authority mirrors the procedures used by county councils and district councils in planning how land will be permitted to be developed.

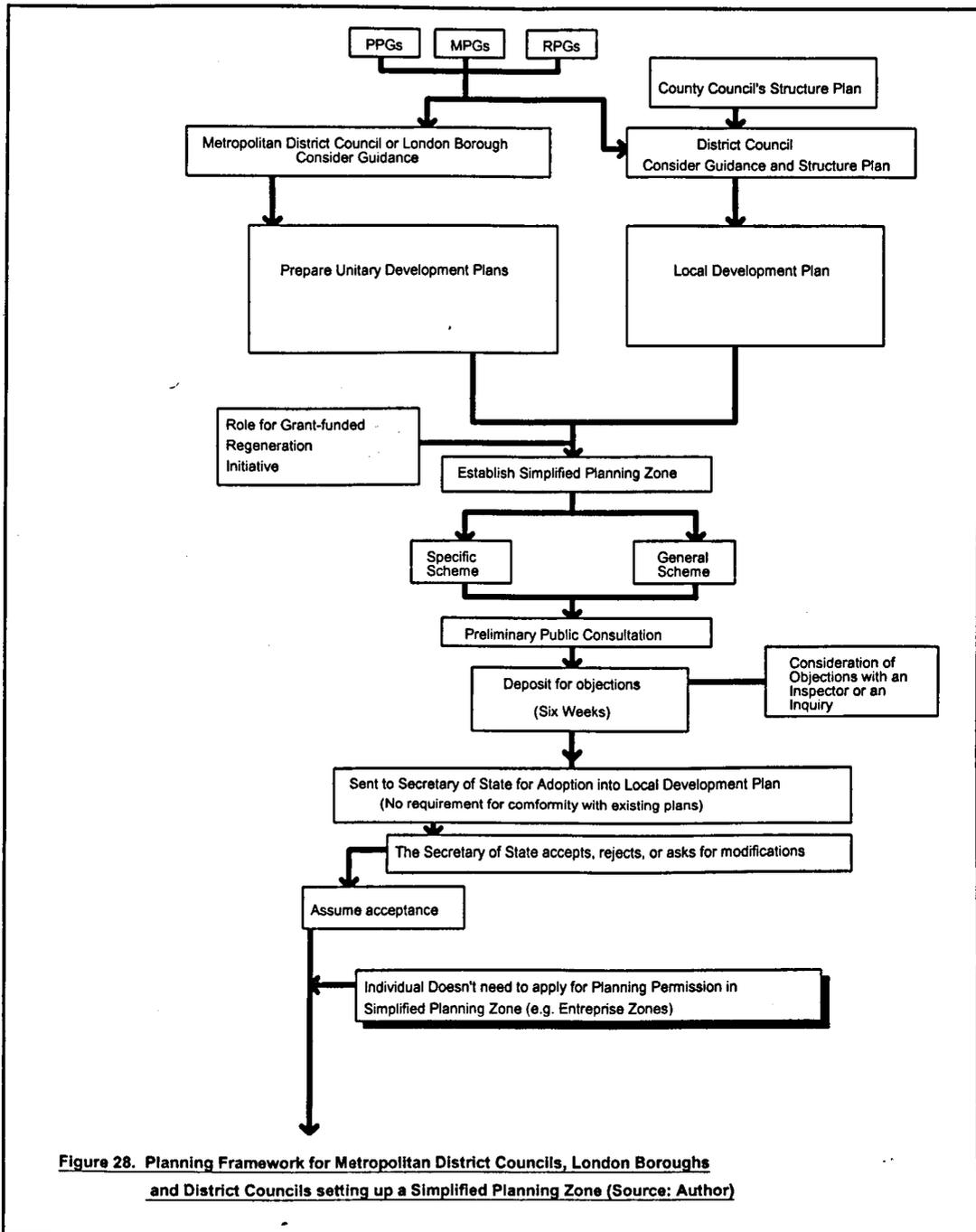


Figure 28 shows how metropolitan district councils, London boroughs and district councils can set up a simplified planning zone enabling inward investment to the local economy. Clients considering relocation may make use of this initiative to reduce their costs. By having an area which has pre-defined planning permission requirements, the whole process can be fast-tracked enabling such clients as

manufacturers to achieve earlier revenue streams and consequently reduce finance costs.

4.7.1.6. Planning Control And Enforcement Issues.

The power of the planning permission paradigm can also intervene during the implementation of the decision to build. It must also be pointed out that planning permissions may be granted with certain conditions attached that must be complied with. For example, a client may be granted permission to build, on condition that the access road be widened at the client's expense; as the public gain a widened road at the developer's cost, this is known as "Planning gain". Should the client build, but not widen the road, (i.e. ignore the condition) then he/she is in breach of the planning permission and the local authority could take action to enforce planning control.

Cullingworth and Nadin explain enforcement of planning control is achieved by;

- i) An 'Enforcement Notice' which carries a maximum fine, following conviction of £20,000
- ii) A 'Planning Contravention Notice' is served when the planning authority receive information about a suspected breach and seek the co-operation of the person thought to be in breach of planning control.
- iii) A 'Breach of Condition Notice' enables recourse for planning permission that was given on 'condition' that some other issue be resolved. If the 'other' issue is unresolved then the condition and consequently the permission is breached.
- iv) A 'Stop Notice' is an attempt to prevent those committing a breach of planning control taking advantage of delays. This notice means all work must stop until the matter is resolved.

It is possible to appeal to the Secretary of State to overturn a planning decision. Whilst an appeal may result in a victory, the delay caused by the procedure may lead some applicants to consider more friendly locations which also offer grants and subsidies.

Confronting 'professional' objectors, as in the Newbury bypass project, raises media issues; potential adverse campaigning from objectors, and the potential cost of managing the situation can have significant cost consequences during the construction phase.

4.7.1.7. Consequential Issues Flowing From Planning Permissions.

When a client is refused planning permission there can be no claim for loss or compensation. However where a planning permission has been granted and is then rescinded, it does allow for compensation. The owner of a "right in law" would serve a '*purchase notice*' on the local Authority (Cullingworth and Nadin, 1994). This shows how the rules within paradigms can also cause conflict within the same paradigm.

Interest groups such as neighbours can make a claim if a development causes a reduction in the market value of their property. These properties would be described as having been blighted. The owners could serve a Blight notice and claim compensations from the local authority and/or the developer. However they must clearly prove that the cause and effect of the blight is the responsibility of the local planning authority or developer, and that they have taken all reasonable steps to mitigate the damage. Where compulsory purchase means that owners must lose their homes, then such owners have a right to claim Home Loss payments (Cullingworth and Nadin, 1994).

4.7.1.8. The Cost Of Applying For Planning Permission

The cost of application is subject to change as this paradigm itself is influenced by other paradigms. However, to illustrate, typical planning application costs are around £120 to a maximum of £6000 for fifty or more residential dwellings; commercial and industrial buildings from £60 for up to 40m², and £120 for each additional 75m² up to a maximum of £6000. (Cullingworth and Nadin, 1997) (See Appendix 3 –case 3a- for examples of application forms).

4.7.1.9. Analysis Of Planning Permission: The Politically Imposed Paradigm.

Most projects require planning permission and so this paradigm is imposed. The proposal's development must meet the expectations set by local and central government. As such, planning permission distinguishes the decision to build from other forms of capital investment. Under this paradigm, a third party with no direct stake in the client's project appraisal, can refuse to allow a project to continue despite its profitability. Planning permission allows a limited intervention for indirect stakeholders such as activist-protesters, neighbours and the local population and so brings a potential risk into the decision to build process.

Motivation for indirect stakeholders may vary, but their opposition often unifies them. The overlap of different value-sets, prejudices, cultural disparities, and inconsistent objectives, are sometimes suspended in order to mount coordinated opposition to the decision to build. For the potential client, the planning process takes time and is a risk that may halt a project. All considerations must be explored, if uncertainty is to be reduced and managed. As a method of justifying planning permission, clients may be forced to consider externalities.

How the rules of the paradigm are interpreted is central to many disputes. The Secretary of State for the Department of the Environment has the power to overturn any decisions and grant specific exclusions within a legal framework. This shows

that at the heart of the planning permission paradigm is the political ideology that governs land-use to achieve political-value-objectives. This political perspective is a response to perceived electoral values, and policy consequences.

Different political perspectives (e.g. a Labour Party central government versus a Conservative Party local government) are allowed to compete within the embrace of a democratic system. With one political party in government, the local authority may be dominated by another political group, which can be of great importance to a client considering a specific location, as local taxes, rates, and grants, etc. may be set to achieve political goals, at the expense of the client. Anticipatory insights might be gleaned by considering disputes, attitudes, and reactions, during the preparatory stages of the local authority's development plan. Other options can be explored if the investigation is conducted as part of the appraisal process. As the planning process may differ for certain authorities, consideration must respond accordingly. Clients anticipating a planning permission refusal must consider the full-cost of an appeal to the Secretary of State.

4.7.2. The Preliminary Design Paradigm

Having discussed how paradigms and perspectives influence the decision to build even before the initial appointment of someone from the construction industry, this section now moves into the post-outline-case stage to explain how the construction industry's approach to the decision to build seeks to influence the content of that process. The issues that occur in the overlapping stages of the proposal's development explain how the expectations of the design team at the beginning of the RIBA "Plan Of Work" seek to lead the decision to build process.

Before the construction industry can commence production, the client-team and design team must frame their request in the form of a design. Architects have traditionally provided this role. However, with the emergence of project managers, other disciplines can also lead the initial phases of the construction industry's

response to the client's decision to build. This section concentrates on how architects perceive the preliminary stages of design and how that perception is translated into design objectives, which have cost implications. Whilst other professionals may become project managers, the architect still leads the design team.

4.7.2.1. The Influence Of Architecture And The Preliminary Design Stage.

Conway and Roenisch (1994) state:

"All buildings stand in a particular relationship to their site and to neighbouring buildings. Their form relates to their use and to the materials of which they are constructed. Their success as buildings relates to their form, construction, materials and physical context, and how well they accommodate the functions required by those using them. They proclaim symbolic and metaphorical messages to which we respond on a variety of levels." (p.17)

The initial stages of the preliminary design paradigm see the decision to build as a process concerned with the delivery of a building. Conway and Roenisch continue by saying that a building's form and spatial organisation influence the way they should be used. The physical boundaries encourage some uses and inhibit others. The preliminary design paradigm shifts the emphasis away from achieving purely an organisational strategy to the provision of a facility with aesthetic considerations, which sits in an urban context.

Lawson (1990) describes a hierarchy of environmental design fields; starting at the top is Town Planning, then Urban Design, Architecture, Interior Design and finally Product Design. He explains how the various design fields interrelate with each other. Lawson (1990) illustrates the architect's dilemma when defining the architectural problem as a single layer of the design process. This exposes not only indecision about the level of focus, but also where the focus should be. Indeed, Lawson (1990) explains that there is no way of deciding when a design problem has

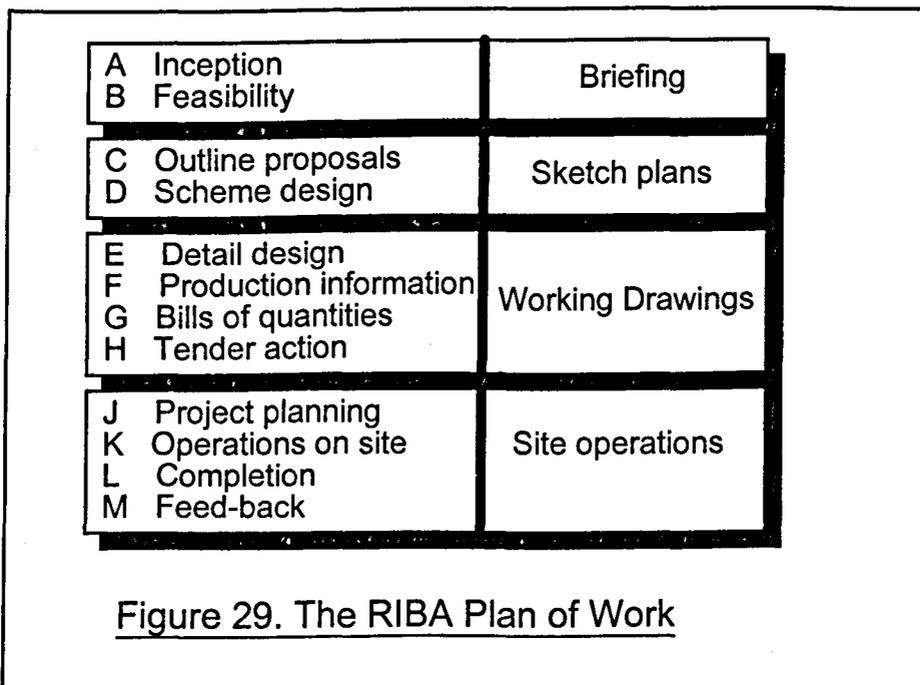
been fully solved. Architects simply stop designing, possibly because of scheduled deadlines. This suggests the influence of other paradigms on the architectural paradigm. The client considering repetitive construction can learn lessons that could be fed back into the next project and so allow the deadlines to be used as incremental learning stages. But for one off buildings and inexperienced clients, the architect's knowledge and experience increases client dependency, as the architect or project manager lead in the role of 'expert'.

This explains a fundamental difference between a systematic approach to design (i.e. a glass box approach) and an artistic approach to design (i.e. a black box approach). The glass box approach assumes design creativity can be captured in a series of rules and thus be scheduled, budgeted and progressed (i.e. it has a clearly defined start and finish). The glass box approach is a rationalistic view. The black box approach assumes creativity, by its very nature, cannot be captured in rules and explained in a rationalistic manner. Black box architects may be preferred for clients who want a highly creative design such as a signature building, and glass box architects for an 'optimum' design solution. This suggests that there is conflict in the underlying values of this paradigm that is attempting to move the emphasis on art to more rational-science-based considerations.

Lawson reveals that designers often learn about design problems by trying to solve them. This assumption may underestimate the fact that the client already has an idea of a solution, before the architect is engaged. The construction industry needs to recognise that the decision to build process begins before the preliminary design paradigm becomes involved. Also that the preliminary design paradigm is attempting to gain dominance in competition with other paradigms already operating in the decision to build process.

4.7.2.2. The Design Process.

The Royal Institute of British Architects (RIBA) has a plan of work that comprises twelve stages of a progressive design process (See fig.29). Of this, Lawson adds that the stages in the Plan of Work are related to the stages of fee payment in the conditions of engagement for architects. This allows a series of stages to be commissioned and paid for by clients rather than a map of the design process.



Inexperienced clients may be confused as the linear system of the RIBA Plan of Work is not how the design actually develops. Markus (1969) and Maver (1970) view the design process as a combination of sequence, morphology, and process that takes an iterative progression through analysis, synthesis, appraisal, resynthesis if necessary, and finally to decision. Lawson explains that analysis is the ordering and structuring of the problem. Synthesis is characterised by an attempt to progress and respond to the problem by generating solutions. Appraisal involves evaluation of solutions against objectives identified in the analysis phase. Once the decision at the outline proposal stage has been made, the cycle repeats at the schematic stage and once again at the detail design stage. The intrusion of the planning permission

paradigm has had an influence on the milestones set up within the RIBA Plan of Work. If we combine Markus and Maver's cyclic observation with the capital investment process, we find that the project must pass through at least three approval reviews before the pre-contract stage is complete. These stages are initial idea, outline stage, and feasibility within stage 'B' of the RIBA Plan of Work.

Lawson (1990) cites Darke (1978) who found that architects tend to structure design problems by exploring possible solutions. Darke puts forward a model that starts with something that influences the initial thoughts of the designer and then cascades throughout an iterative cycle which explores generator → conjecture → analysis. Lawson (1990) was of the view that Darke demonstrated how architects tend to latch onto a relatively simple idea very early in the design process and so the preliminary design paradigm is attempting to dominate other paradigms. This idea, known as a primary generator, which can be anything such as a landscape, influences the architect's design response. Lawson (1990) also points to one of Darke's interviewees who said that the brief and design must begin simultaneously because the two activities are interrelated. Lawson endorses this by explaining clients often find it easier to communicate their wishes by reacting to and criticising a design, rather than trying to draw up a performance specification. The need for empathy and understanding become paramount if the architect is to meet or exceed client expectations and deliver a building which is valuable in the client's terms.

Gray et al (1994) elaborate this need to empathise with client values when they state:

"Many designers, often driven by their inner convictions about the way the world should be, are determined to make a statement, whether it be political, social, monumental or aesthetic, through their work. These are important issues to understand, not only for the reasons used by many critics and writers to categorise architects by the styles they adopt, but rather to determine the nature and level of their commitment to their professed ideals." (p.2)

Gray et al, then present a rationalistic glass box perspective of a design process that can be defined, mapped and controlled within a rationalistic design paradigm. The problem of liberating architectural creativity within a rationalistic manager paradigm requires further research.

4.7.2.3. Architectural Programming.

Peña (1977) advocates that the primary goal of an architect during briefing (also known as programming) is to gain an understanding of the problem that is to be solved (i.e. problem seeking). The problem is seen as an objective reality that exists outside of the briefing process and again lacks an understanding of the empathy, integration and synergy. Peña argues that essentially there is a five step process which interacts with four considerations which allows the problem to be understood before design (i.e. problem solving) can commence. The four considerations are Function, Form, Economy, and Time. Against the four considerations, Peña explores five steps, which are:

- "1. Establish Goals- *What* does the client want to achieve and *why*?
2. Collect and Analyze Facts - *What* is it all about?
3. Uncover and Test Concepts - *How* does the client want to achieve the goals?
4. Determine Needs - *How* much money, space and quality?
5. State the Problem - *What* are the significant conditions and the general directions the design of the building should take?" (p.12)

This proposed methodology separates design (problem solving) from programming (i.e. problem seeking). Peña explains that it does not matter which steps are

attempted first, except that the fifth step, state the problem, must be the last. Essentially Peña's methodology delays the attempt of problem definition until a consensus view of the project's expectations are teased out and reconciled.

Peña (1977) explains the four considerations in more detail. *Function* relates to what is going to happen in the building and comprises the following considerations: people, activities and relationships. *Form* relates to the physical and psychological environment as well as the quality of space and construction method. *Economy* which Peña explains as the initial budget, quality of construction, and possibly operating and life cycle costs. *Time* refers to the past, present and future.

Peña (1977) claims that experienced architects withhold judgement, and withstand the pressure to synthesise, until all the information is collected. Thorough analysis must precede synthesis. Peña's workshop concludes when it is possible to provide the designers with a "Problem Statement" which under the headings Function, Form, Economy, Time provides the architect (problem solver) with a quasi performance specification.

4.7.2.4. Analysis Of The Preliminary Design Paradigm.

The architect, or project manager, becomes involved after the decision to build has been explored, approved at least twice, possibly three times, and a capital budget has been sanctioned. The architect will probably meet a team of client representatives who have commitment to the project, and whose personal careers may depend upon its success or failure. It would be expected that the project would have a name at this stage and an identity, which suggests 'ownership' by some of the client team, will exist. Any suggestion by an incumbent architect that the building is not required might cause embarrassment to those individuals who have been pushing the project through the client's capital investment process. This scenario shows how consequences tend to focus on the individual rather than as a result of the actions stimulated by the dominant paradigms.

The immediate task faced by the preliminary design paradigm is understanding, and empathising, how important the building is to the multi-organisational team (i.e. understanding the dominant paradigms and perspectives that are in play). The client sees the building as a secondary strategy, but the architect and the construction industry see the project as a primary source of income. The imposition of a budget from the client onto the design team without mediation may reduce learning benefits. If the budget seems unrealistic, the design team's motivation and commitment could be affected.

The architectural paradigm, developed from a wide art-based perspective, reveals a dilemma regarding conflicting values. The commercially oriented client may have short-term interests with no regard for externalities. The architect will seek to respond to the client's wishes without compromising wider, long-term goals, related to the built environment and society. The building and its environment can be used to increase value as complementary externalities are augmented for little cost. In this sense, the architect not only designs a building, but creates a place within which the building, and its reason d'être, is situated. This perspective can also lead to other buildings being triggered.

Perception, values and emphasis influence the relationship between function, form, and space. There is an implied assumption, that the architect shares, or knows how to reflect, the client's values. However, the people within the organisation, with whom the architect engages, may have different values and priorities to each other. This composite reality, borne of disparate value-sets, emphasises the architect's need for perception, creativity, and consensus building. Attempts to structure the initial phases of the preliminary design stage within rationalistic glass box methodologies, deny the diversity of complex-life. Architectural programming advocates convergent thinking on the assumption that the decision to build is structured, bounded (Simon, 1979), and repetitive. The architectural programming workshop explores function, form, economy and time in the context of goals, data and facts, with a superficial neatness. The actors on stage, which exemplifies the decision to build process, that hosts

several plays running simultaneously, become absorbed in 'their' own lines of 'their' play, rather than understanding what the collective drama is actually trying to achieve.

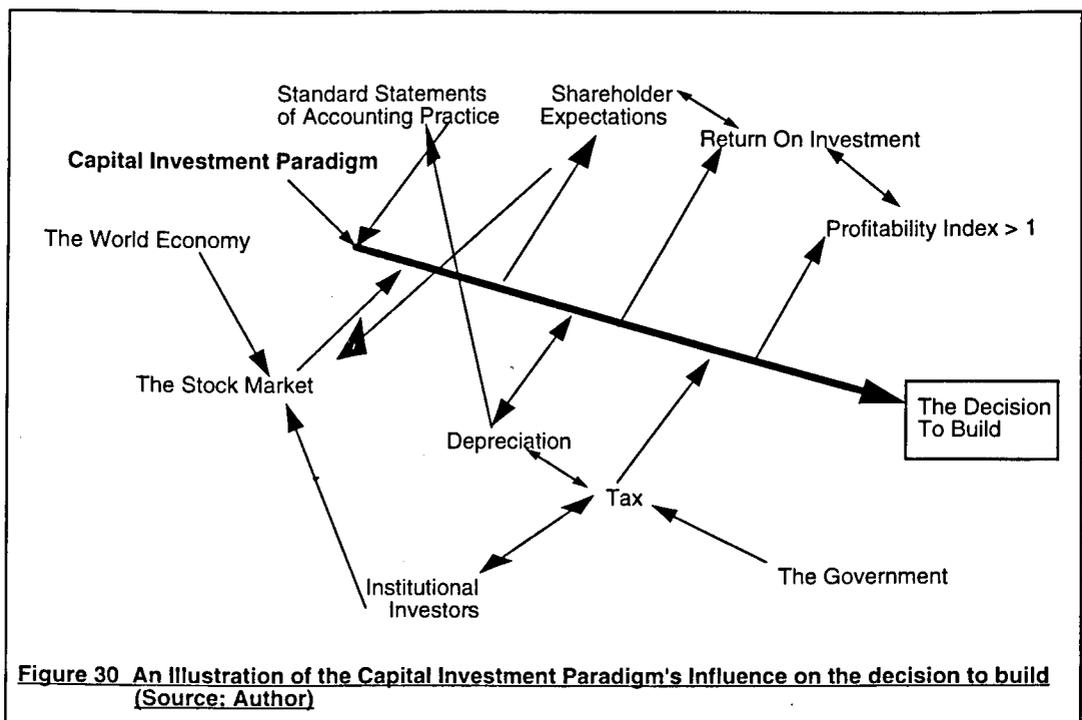
For the architect designing a new building, form follows function and is influenced by the strategic and operational thinking of the time. Function, identified through problem regression and escalation, allows the different levels of use-consideration to be contemplated at a room by room level, and at the building as a single 'concept' level. Once the architect's line becomes a physical boundary, such as a wall, then function follows form as the possibility of operational use-change is inhibited.

The design problem that is being solved is complex, dynamic, large, and diverse, with aspects being discrete and parts hidden. The architect, who can't know the size of the task before it has been explored, must grasp a network of problems, which call for both creativity and management skills, within tight schedules. In some cases, it may be naive to expect a small team of architects to achieve such a research project, in limited time scales, without pre-conceived ideas. Dissatisfied clients, who develop their own in-house brief, deny the design team an opportunity to explore and become intimate with the paradigms, perspectives, people, and personalities at play.

Chapter Five: Analysis Of The Literature.

5.1. Introduction To The Chapter.

The previous chapters have explained that the decision to build is structured and influenced by paradigms and perspectives. Each paradigm, which shapes or has a bearing on the decision to build, can be considered in isolation or as part of a collective influence. By examining paradigms and perspectives as a collection that influence content and process, a 'heightened' understanding of the decision to build process is possible, as the reader steps in and out of the individual paradigms and observes the decision to build from a detached objectivity. At this stage of the thesis, the existence and impact of the paradigms and perspectives still need to be tested and adapted against evidence from practice. The purpose of this chapter is to develop a preliminary explanation of the paradigmatic influence on, and in, the decision to build process. It begins by describing what an individual paradigm is, before moving on to demonstrate how other paradigms and perspectives, influence the decision to build process.



It is important to recognise that the paradigms are a product of values that are communicated through rules, codes of practice, behavioural expectations, and

preconditioned views, in order to establish a rational approach to 'good' and 'proper' decision-making. Figure 30 shows the Capital Investment Paradigm as a Newtonian force acting on the decision to build. Just as a straight line is a practical simplification of the actual forces operating in structural mechanics, the force exerted by paradigms and perspectives are far more complex and volatile and unpredictable than a line can depict. Another conceptualisation, too difficult to depict within a two-dimensional drawing, could be the mixing of different coloured waters, paints and oil, all swirling in a vessel, each mixing, attracting and repelling as the vessel is gently shaken. The Capital Investment paradigm, as shown, is a collection of events, pressures and expectations which are founded on a belief that returns should be larger than costs and that such realisations automatically lead to increased value. Although the main thrust of the paradigm is accountancy based other forces act on it and cause it to evolve; the colours in the vessel swirl but never quite mix. An example of this is government and its levying of taxation, alterations to the rules of accounting as described by the Standard Statements of Accounting Practice (SSAP), the impact of the UK stock market on the sources of finance and also the impact of other stock markets on the UK stock market. It could be possible to describe 'how' clients arrive at the decision to build from within the Capital Investment paradigm alone so long as successful decisions are only measured within the terms of this paradigm (e.g. non-financial consequences are of no importance). But to adopt this approach is to be inside the paradigm and treat other paradigms as being less important for the time being. As has been shown within each of the paradigms and perspectives already discussed, there are linkages between them.

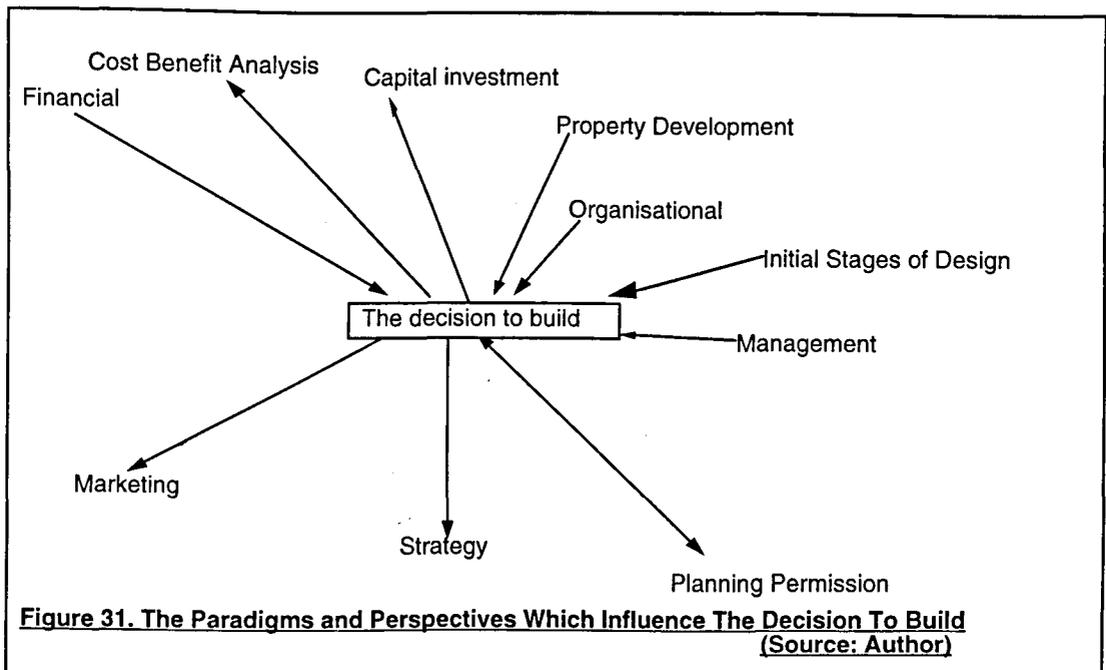


Figure 31 shows how a number of paradigms and perspectives act on the decision to build. Each of these approaches is a rational approach designed to make objective, rather than subjective, decisions. That is, at the heart of all paradigms are dominant and weaker values, beliefs and expectations, which influence behaviour, actions, and the selection of goals. During the decision to build some paradigms and perspectives will be more dominant than others. For senior managers to legitimise selection of a paradigm and perspective and maintain credibility in the organisation means a cogent, rational, objective reason must be put forward. The sequence of sub-decisions within the decision to build commonly revolves around 'time' in a linear progression. The emergence of a rational methodology, is proof of the existence of the paradigms and perspectives as influencing the decision to build process. If an authoritative book or body of knowledge had existed which explained, in its entirety, how and why the process exists today as it does, then it would be possible to argue the rationale had been 'created' rather than had evolved. The rationale, which can be used to explain the decision to build, is probably the product of many different professionals co-operating with each other and reporting back to their respective professional bodies and peers what had been done and how it might be improved. For example, the marketing manager might ask, "who is our customer? And what does our customer want?" placing the marketing paradigm at the beginning of the decision

to build process. The answers to the marketing manager could cause a need to re-evaluate how the organisation does its business causing the strategic paradigm to become important. Once the strategic paradigm has established goals aimed at making the organisation effective, the Capital Investment Paradigm, or the Cost Benefit Analysis paradigm would become important as the search for an efficient way of achieving the strategic objectives begins. During this phase of the decision to build process the implications for managers, organisation, and finance, call upon their respective paradigms and perspectives to enter the decision making process. As this middle part of the decision to build process is developing, the need to consider Planning Permission and get an architect and cost consultant to provide advice begins to be considered. It is at this stage that intruding paradigms become increasingly important in the concluding stages of the decision to build process and influences whether a 'firm' decision to build is made or not.

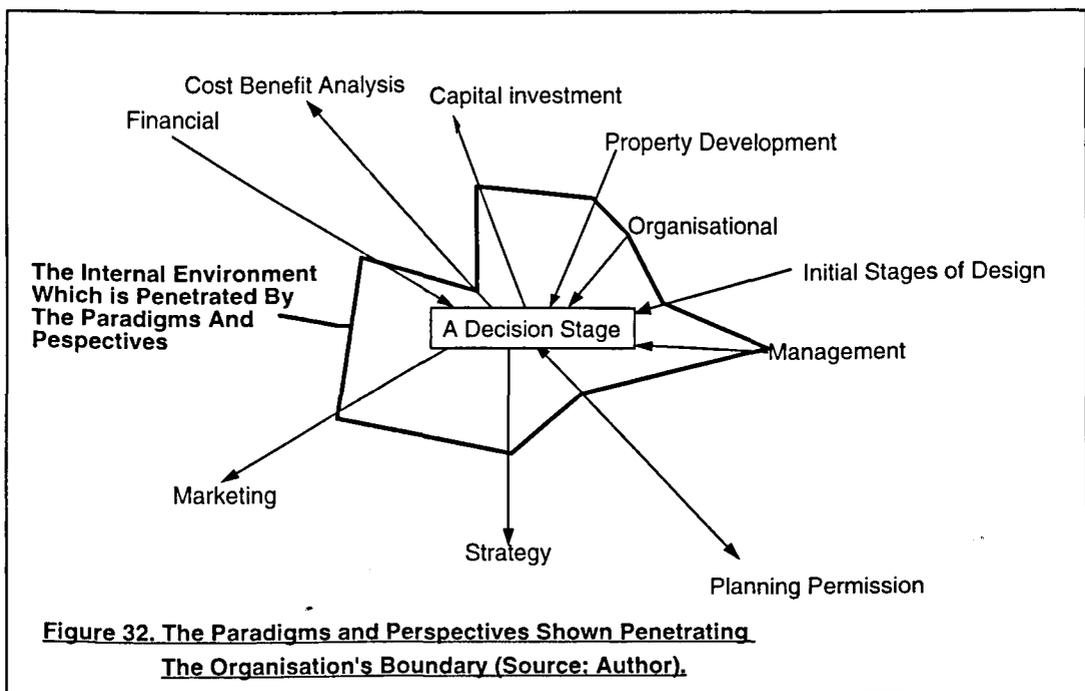
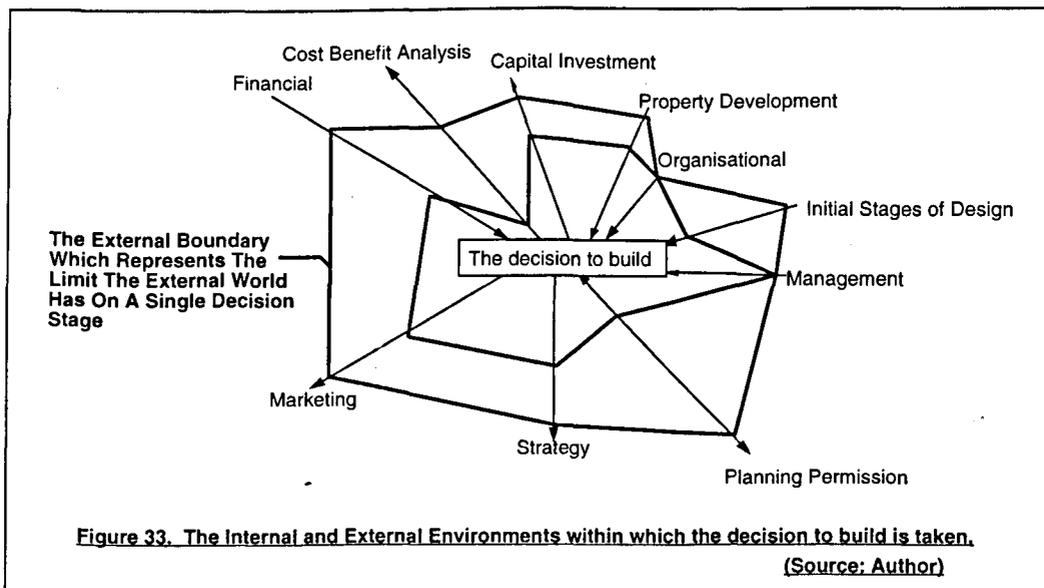


Figure 32 shows that the paradigms and perspectives exist externally to the organisation and, because people exist in both of these environments, also penetrate it. Some paradigms, such as the Planning Permission paradigm, are shown with two arrowheads, or arrowheads facing outward, to represent how the decision to build can

influence the paradigm and other decisions beyond its own scope of work. Organisational boundaries exist only in the perceptions of people. Some organisations reinforce this perception with physical fences and by getting their employees to wear uniforms (e.g. the Armed Forces). Values from different contexts meet and permeate values in other contexts and views, actions, and thoughts change as a result; for example, fears of a deepening recession in Japan may result in a number of other economies changing their outlook, which consequently affects sources of finance and so can impact on some organisations engaged in the decision to build. Segments within the organisation place emphasis on one particular paradigm or perspective and may be unaware, or even uninterested, in the considerations of other departments. Professional stereotypes may reinforce this. For example, an organisation's senior decision makers may be considering new strategies, the human resource department considering new organisational designs, and an individual manager looking for an opportunity that will lead to promotion, whilst the accountants are left to get on with the number crunching.



The internal and external environments which surround the decision to build are influenced by the paradigms and perspectives from the external world which is influenced by economies, commercial opportunity, research findings, governments, politicians, professional bodies and academia. Changes in paradigms and

perspectives are motivated towards some kind of advantage or move to a new definition of best practice. These external shifts cause moves within the internal environment; for example, a stock market crash in the Far East can impact on marketing predictions, sources of finance, capital investment calculations, the property market, strategy and so on. The individual and the organisation attempt to make the best decision by using their values to evaluate the worth of a particular scenario in terms of the limited resources available to them in order to achieve their expectations, hopes and aspirations

The changes in the external world are often evolutionary but sometimes are revolutionary. For the majority of decisions to build, major events such as a stock market crash can be identified as imminent and managed in a risk management approach within the Capital Investment paradigm. It is for this reason that figure 33 shows a client's external boundary to illustrate the point that the decision to build can identify most major sources of change that are emerging, but not necessarily all of them.

What needs to be explained clearly is that the decision to build is a composite of decisions along a time line with key decision points linked to the need for approval to move on to the next stage.

The above explanation, with illustrations, has provided a conceptual framework to understand how the paradigms and perspectives influence the decision to build process from inside or outside the client's organisational boundary. As previously stated, with the metaphorical use of coloured water, oil and paints swirling in a vessel, the reality is more complex than can be drawn. Ackoff's messy problem is now a complex three-dimensional spider's web that passes through a series of approval points where the problem becomes a progressively refining solution. However, in order to progress from one decision stage to another, the ramifications must be considered in the context of all the paradigms and perspectives shown and possibly some still to emerge as important.

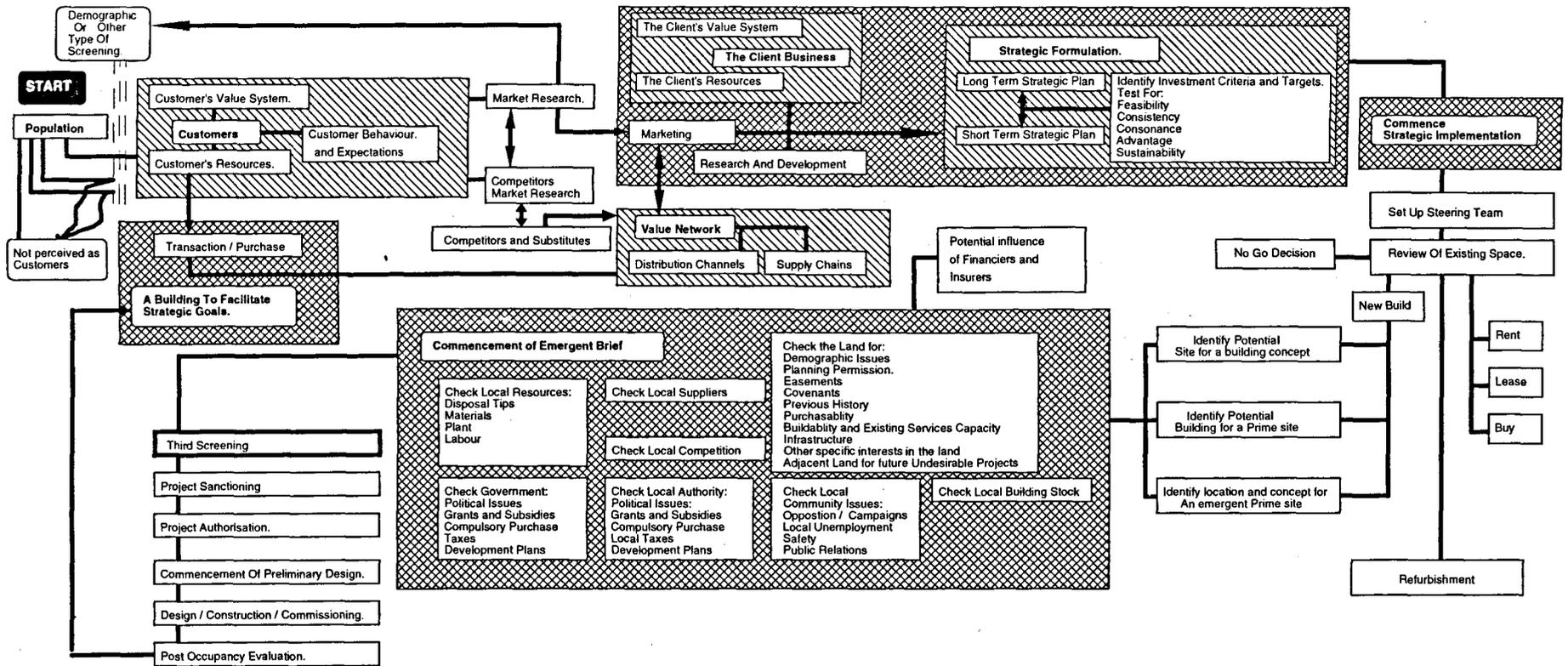


Figure 34. An Embryonic Overview of how clients arrive at the decision to build (Source: Author).

5.2. A Preliminary Explanation of How Experienced Clients Arrive At The Discussion To Build.

Having drawn an understanding from the literature as to how paradigms and perspectives influence the decision to build process, this section looks at the process from within the decision to build.

The perception that recognises the 'need' to change strategic direction within the organisation is a reflection of values, and emphasis, individuals attach to issues being observed. Emphases and the dominance of paradigms and perspectives are the result of influential value-sets at a particular moment. Whilst individual paradigms and perspectives may compete for dominance, collectively they create a rationality in a complexity that envelops the project, client organisation, resources and expectations. The decision about what is good or bad practice is a value decision codified within a paradigm or perspective.

The decision to build takes place within a complex network of problems in a dynamic environment. The solution of one problem by the decision-making team often leads to the creation or realisation of another one. The complex network of problems is dialectically responsive to internal and external variables, pressures and issues. Approval processes may cause the client's project delivery team to take ownership of the proposal and distort initial considerations for the sake of interim approvals. The influence of some paradigms may cause client-teams to pursue efficiency at the expense of effectiveness as issues such as planning approval place emphasis on which decisions are most important today. The whole approach to the decision to build is influenced by paradigms and perspectives. The actual content of the decision to build is shown as a process map (see fig. 34) which highlights the stages of how clients arrive at the decision to build.

5.2.1. An Explanation Of The Preliminary Model.

The preliminary model in figure 34 begins by identifying a group of customers from the larger population. The customer's purchasing behaviour is influenced by their values and resources. For example, What are their preferences? How much can they afford? And how much are they willing to pay for a specific product or service?

The client's organisation uses market research to determine its strategy. This process uses predictions of its customers' behaviour as a means of guiding resource allocation. Marketing information is taken, in competition with other organisations, and may also be used by suppliers to enhance the attractiveness of their products and services.

The client's strategic process is divided into formulation and implementation. Strategic formulation considers both the long-term and short-term. During strategic formulation, plans will be tested for feasibility, consistency, consonance, advantage and sustainability. This business strategy is taken as the primary strategy. A corollary of the primary strategy is the consideration of where key activities will take place. This marks the start of the outline case for a new building.

The tactical response to the primary strategy is the strategic implementation of the secondary or support strategy. This is carried out by a steering committee that begins by reviewing existing space after the first screening process. If existing space is inadequate, the committee considers the buy, lease, rent, refurbish or build decisions. This stage concludes when the steering committee submits a recommendation for project "approval in principle", or the 'no-go' decision is made.

Assuming the build decision is made, the steering committee will consider either a potential site for a known building concept, identify a potential building for a known site, or identify a potential building for a potential site. The findings of this analysis are presented to senior management at the second screening stage and a decision to develop the proposal further is made, rejected, or held in abeyance.

The full case marks the development of an emergent brief that investigates issues such as land availability, existing buildings suitable for adaptation, local suppliers, local competitors, local resources, the local authority, and central government initiatives. This process may also be subjected to external influence from financiers and insurers. Dependant upon the in-house skills possessed by the client. Stage A of the RIBA "Plan Of Work" sometimes begins at this stage.

The full business case, which becomes the brief, is appraised at a third screening stage. Assuming the project is authorised, design, construction and commissioning phases of the building process follow sequentially (Except when fast track is used to overlap phases). At project completion, post occupancy evaluation takes place and the loop closes as customers generate revenues and suppliers deliver their products to the new facility. After refinement and following consideration of evidence drawn from the 'real world' experience in the case studies in the next part of this thesis, this preliminary explanation will be developed further in an explanation of the influence paradigms and perspectives have on the decision to build of large experienced clients of the construction industry in the UK.

Part Three: The Consideration Of Evidence From Practice.

Chapter Six: Case Study Analyses.

6.1. Introduction To The Chapter.

The previous chapters have been used to build a preliminary theoretical explanation of how and why the decision to build develops as it does. The purpose of this chapter is to endorse, develop, refine, modify or reject components of the preliminary explanation by drawing on the practical experience of actual decisions recorded in single case studies and located in appendix 3 of this thesis. This chapter presents the collected analysis of these individual case studies.

To provide structure to the section, the background of each case is presented before discussing the significance of responses to each of the thirteen questions (See Research Methodology, Chapter 2) asked during data collection. The results are presented within tables in the sequence of questions being considered. Each table is analysed, sometimes in connection with other tables, developed out of the grounded theory approach and explained in the Research Methodology chapter, to develop the salient points which can be traced back to the individual cases.

6.2. Background To The Cases

Table 2, overleaf, provides brief descriptions that reflect the actors' initial project descriptions. How the projects were funded is also shown under the heading "Source of Finance". The development cost for a project is also stated with the annual capital budget to highlight projects which are funded within a programme of other projects.

Client	Development Cost or Annual Capital Budget	Project Cost.	Brief Project Description.	Source Of Finance.
Alpha Fast Burgers.	N/A	£400K + £250-350 Fit Out	Programmed development of food-retail units.	Capital Budget.
Regency Retailing.	N/A	N/A	New Build or major refurbishment.	Capital Budget.
Pawford Development Corp.	£40 M	£10 M Seed Capital	Refurbishment and regeneration of disused canal basin.	Capital Budgets Grants and subsidies.
Wottons.	£25 M	£25 M	A new high-tech distribution centre.	Bank Loan.
Hillshire Water PLC.	£300 M	£150 M	New sewage treatment plant and major under-city infrastructure work.	Capital Budget.
Perrytons.	£100 M for New Build	£1.6 M	Programmed development of new food-retail outlets.	Capital Budget.
Brayfield Hospital Trust.	£28 M	£18 M	A Major extension to an existing, and operational, hospital.	H.M. Treasury.
Premier Motor Company.	N/A	N/A	A new training facility in France.	Capital Budget and Grants and subsidies.
Wellowshire Energy Group PLC.	N/A	£600K	An extension to an existing, and operating, office building.	Capital Budget.
Railtrack PLC.	N/A	N/A	Fast-track refurbishment of a town's railway station.	Capital Budget.
Sharland City University.	N/A	N/A	A phased programme of major new buildings within a restricted inner city location.	Joint Venture & Institutional Investors.
Albion National Bank.	£200 M National, £50 M Regional	15 x £50K plus £2m for new build.	Programmed development of refurbishment and relocation for operating processes.	Capital Budget.

N/A = Not Available

Table 2. Case Study Data.

6.3. (Question 1) What Triggered The Process That Led To The Tentative Decision To Build?

Alpha Fast Burgers.	3 year rolling programme.
Regency Retailing.	6 months to 6 years.
Pawford Development Corp.	20 years.
Wottons.	15 years.
Hillshire Water PLC.	4 years.
Perrytons.	5 year rolling programme
Brayfield Hospital Trust.	30 years
Premier Motor Company.	Not known, but within 5 year business plan.
Wellowshire Energy Group PLC.	Not known.
Railtrack PLC.	2 years.
Sharland City University.	2 years.
Albion National Bank.	1 to 1.5 years.

Table 3. Length Of Time Projects Had Existed As Proposals Or Potential Ideas.

Table 3 shows that the actual trigger for a project must have been in response to certain stimuli as the project-concepts have existed for a number of years. By considering Pawford Development Corporation and Brayfield Hospital Trust it is probable that the long period before the trigger is not a lead in time but is a result of a search for viable ideas. Some projects have been held in abeyance because other projects, in competition, were seen as more favourable at key times. It may be that changes in emphasis, driven by adaptation within paradigms, such as economic movements, have made the project's environment more or less fertile. The project's proposal may have existed for some time, simply waiting for a collection of circumstances, internal and external to the firm, to be recognised and be perceived as the way forward. In order to understand how the decision to build begins, this question was asked. The assumption that a trigger is an event, which causes an effect, was challenged by the fact that some projects sat in abeyance for many years. Although a rationalistic management perspective is assumed by the actors, the reality is that other paradigms and perspectives can cause projects to be advanced, held in abeyance or even rejected.

By reading the case studies it can be seen that two organisations may react to similar criteria in different ways. This illustrates that the trigger is a decision to respond to events, in the hope of achieving a sense of 'value', and provides an opportunity for the perceptive decision-makers. In all the cases, the trigger was a decision within a series of decisions rather than as a single incident made in isolation from other business and organisational decisions.

Alpha Fast Burgers.	Decision to increase market size and share
Regency Retailing.	Decision to reinforce presence and image in Highstreet.
Pawford Development Corp.	Decision to reverse economic decline of an inner-city
Wottons.	Decision to adopt new strategy
Hillshire Water PLC.	Response to legislative requirement
Perrytons.	Decision to adopt new strategy
Brayfield Hospital Trust.	Response to decentralised responsibility
Premier Motor Company.	Decision to adopt a new strategy
Wellowshire Energy Group PLC.	Decision to increase internal efficiency
Railtrack PLC.	Response to Government Sell-off
Sharland City University.	Response to change in Government funding
Albion National Bank.	Decision to adopt a new strategy

Table 4. The strategic background to pre-project inception.

Table 4 indicates that in each case the idea of a project was a response to a primary business strategy; not one case built a facility without first having established some kind of organisational need. This demonstrates the strong linkage between the strategic and organisational paradigms. The individual who instigated the primary business strategy was not always known, and it was often seen as emergent by the client team. The diversity of potential sources of stimuli and their recognition, suggest organisations' could have senior management and first line management teams operating different agendas and placing imperatives on different issues, relative to the role they play in the organisation. The decision to build, which provides a common focus within the organisation, is therefore the decision of a group influenced by expectations of how such a group should behave if it is to be successful; this is a product of organisational perspectives.

Table 5 explains the first issue that each case tried to address.

Alpha Fast Burgers.	Identification of a suitable site.
Regency Retailing.	Identification of need/ potential, at existing/ new sites.
Pawford Development Corp.	Selection from a prioritised list.
Wottons.	An emergent response to a strategic vision.
Hillshire Water PLC.	Selection from a prioritised list.
Perrytons.	Identification of a suitable site.
Brayfield Hospital Trust.	An emergent response to imposed responsibility.
Premier Motor Company.	A response to failed alternatives.
Wellowshire Energy Group PLC.	A response to a competitive internal market.
Railtrack PLC.	Selection from a prioritised list.
Sharland City University.	A designed response to a strategic vision.
Albion National Bank.	A response to Business Process Re-engineering.

Table 5. The background to the pre-project stage.

Table 6 shows the diverse level of project definition at the trigger-decision stage within each case and that not all cases had well defined briefs or lists of requirements. This lack of consistency would have consequences for any design team in terms of planning their involvement and meeting deadlines. As all projects develop information at different paces and with different levels of detail, an architect may only be able to gauge the level of project definition, or lack of it, after being appointed.

	Very Low	Low	Mid-Range	High	Very High
Alpha Fast Burgers.					✓
Regency Retailing.			✓		
Pawford Development Corp.			✓		
Wottons.	✓				
Hillshire Water PLC.				✓	
Perrytons.					✓
Brayfield Hospital Trust.		✓			
Premier Motor Company.			✓		
Wellowshire Energy Group PLC.			✓		
Railtrack PLC.				✓	
Sharland City University.	✓				
Albion National Bank.		✓			

Table 6. The level of project definition at the Trigger-Decision stage.

6.4. (Question 2) Why Was The Building Needed?

This question was asked in order to understand the problem a proposed building would solve. Table 7 shows the purpose of the project as explained by the respondents.

	Project's Purpose
Alpha Fast Burgers.	To create a place that will increase overall sales revenue
Regency Retailing.	To maintain the cultural philosophy of loyally serving customers with the best possible quality, at value for money prices.
Pawford Development Corp.	To breathe wealth creating life into derelict land that had potential.
Wottons.	To provide the company with a competitive advantage over their competitors that also increases cost leadership.
Hillshire Water PLC.	To meet imposed legal requirements.
Perrytons.	To create a place that will increase overall sales revenue.
Brayfield Hospital Trust.	To reduce operating costs and move patients away from seriously dilapidated estates.
Premier Motor Company.	To create a place that will allow the organisation to realise other strategic visions.
Wellowshire Energy Group PLC.	To reduce operating costs and enhance the balance sheet position.
Railtrack PLC.	To reduce backlog maintenance.
Sharland City University.	To create a place that has an inherent competitive advantage over competitors, and will increase revenue by exceeding student expectations.
Albion National Bank.	To reduce operating costs by redefining operating procedures and locations in response to advances in Information Technology.

Table 7. The project's purpose.

By analysing table 7, two strategic orientations emerge and are shown in table 8. The project's purpose is either responding to something that has already happened to the organisation, or is to be imposed on the organisation, or is looking forward towards a strategic vision of what, or where, they should be in the future.

Alpha Fast Burgers.	Forward Looking.
Regency Retailing.	Forward Looking.
Pawford Development Corp.	Forward Looking.
Wottons.	Forward Looking.
Hillshire Water PLC.	<i>Responding .</i>
Perrytons.	Forward Looking.
Brayfield Hospital Trust.	<i>Responding .</i>
Premier Motor Company.	Forward Looking.
Wellowshire Energy Group PLC.	Forward Looking.
Railtrack PLC.	<i>Responding .</i>
Sharland City University.	Forward Looking.
Albion National Bank.	<i>Responding .</i>

Table 8. Projects which look to the future or respond to events.

The purpose of forward-looking strategies is to create a place that will provide an environment for a particular activity (i.e. Louis Sullivan's "Form follows function"). A responsive approach is to create a place that achieves an expected standard imposed by such as a legislative change on sewage disposal at sea and the adaptation to the planning permission paradigm. The difference between forward looking and responding orientations is about meeting expectations or creating them. Table 9 reveals the strategic emphasis attached to each project's purpose.

	Reduce Operating Costs	Increase Sales Revenue	Respond to External Pressure
Alpha Fast Burgers.		✓	
Regency Retailing.		✓	
Pawford Development Corp.			✓
Wottons.	✓		
Hillshire Water PLC.			✓
Perrytons.		✓	
Brayfield Hospital Trust.	✓		
Premier Motor Company.	✓	✓	
Wellowshire Energy Group PLC.	✓		
Railtrack PLC.			✓
Sharland City University.		✓	
Albion National Bank.	✓		

Table 9. The project's emphasis.

Alpha Fast Burger and Perrytons' cases show that a rationalistic management approach to the decision to build can speed the process up. The systematic approach also allows a consistent view of purpose to be communicated throughout the decision making team. In the main, table 9 shows each case has a single main emphasis in terms of what it is hoped the project will achieve. An exception to this is Premier Motor Company, who combined two purposes within a single building. This project combination will increase returned-value from the cost of the investment.

For Gritford NHS (See additional case study in appendix 3 – case 3c-), the need for the project came after the project's inception because funding mechanisms encouraged people to bid for money, at minimum prime cost. For such clients, it is only when the feasibility of funding seems likely that any attempt to define a project begins. The subjective likelihood of winning £x, forms the bid in a process where the

client team learn from their past experience. Projects assumed to be too expensive are not put forward. The primary goal of Gritford's Estate Department was to secure funding; the secondary goal was to match a project to the funder's approval criteria. This reflects a potential weakness that can exist when one rationalised system is not in tune with other systems; that is there is conflict between competing paradigms. The overwhelming sense of determination, effort and commitment from the Gritford team was conditioned by their past experiences, when senior decision takers denied them the resources to make effective decisions. Their negative learning experience had led them to promote negative behaviours and cynical attitudes to their project approval process. This illustrates that purpose can have different interpretations at different levels in the organisation. How senior decision takers are perceived to define success can have a major influence on decision-making behaviour. Values are used to orientate behaviour within the organisations.

6.5. (Question 3) What Decisions Were Made During This Process?

This question was asked to identify common decisions at the various stages. Tables 10 and 11 illustrate the project's relationship to the organisation's strategic planning framework, which links the strategic, organisational and capital investment paradigms.

Alpha Fast Burgers.	3 year rolling capital investment plan, 1 year regional plan.
Regency Retailing.	4 year strategic plan, 1 year tactical plan.
Pawford Development Corp.	10 year existence, 1 year tactical plan.
Wottons.	40 year vision, 10 year strategy, 5 year plan, 1 year tactical plan.
Hillshire Water PLC.	5 year capital investment plan, 1 year tactical plan.
Perrytons.	5 year rolling capital investment programme, 1 year tactical plan.
Brayfield Hospital Trust.	5 year strategic plan, 1 year tactical plan.
Premier Motor Company.	Long-term vision, 5 year business plans, 1 year tactical plan.
Wellowshire Energy Group PLC.	A rolling capital investment plan that responds to divisional plans.
Railtrack PLC.	Short-term orientation towards imminent flotation.
Sharland City University.	Phased-incremental strategy influenced by resource availability.
Albion National Bank.	Continuous market awareness, individually designed strategic response

Table 10. The strategic planning framework of the cases.

Within a strategic context, table 11 shows the sequence or order in which primary core strategy decisions related to a building, potential locations and design decisions

were made. In this table the primary strategy is related to the core business such as, say expand production. The secondary strategy is the support facilities necessary to achieve the primary strategy; for example, if production is increased there might be a need to build a larger warehouse.

	Primary Strategic Formulation	Secondary Strategic Formulation	Location Selection	Design
Alpha Fast Burgers.	First	Second	Fourth	Third
Regency Retailing.	First	Third	Second	Fourth
Pawford Development Corp.	First	Second	Second	Fourth
Wottons.	First	Second	Third	Fourth
Hillshire Water PLC.		First	Second	Third
Perrytons.	First	Second	Fourth	Third
Brayfield Hospital Trust.	Second	Third	First	Fourth
Premier Motor Company.	First	Second	Third	Fourth
Wellowshire Energy Group PLC.	First	Second	Third	Fourth
Railtrack PLC.	First	Second	Second	Third
Sharland City University.	Second	Third	First	Fourth
Albion National Bank.	First	Second	Third	Fourth

Table 11. The ranked order of decision sequence.

Table 11 shows that design always follows the primary and secondary strategic formulation. However, location selection sometimes precedes strategic considerations, as well as design, but not in every case. Where location is the primary decision, it is usually for a single site organisation that has a strong sense of identity with a physical location. Both Brayfield Hospital and Sharland City University carry the location-name within their personal organisational identity. In such instances the organisational perspective dominates the strategic paradigm.

For cases such as Alpha Fast Burger and Perrytons, all that remains for their decision to build is the selection of a site. Their manufacturing approach to construction removes the need for repetitive decision making. The rationalistic manager perspective linked with the capital investment paradigm, the organisational perspective, financial paradigm and strategic paradigm have been used to create the decision to build as a methodology.

Whilst investigating the type of decisions within the decision to build, it became clear that a web of extremely complex decisions existed. These were grouped under the following headings:

- i) Decisions Within A Time Series Rationale.
 - a) Sequential decisions.
 - b) Decisions in abeyance.
- ii) Decisions Born Out Of Subjectivity.
- iii) Decisions Within A Management Rationale.
 - a) Internal-modifying decisions.
 - b) External-modifying decisions.
 - c) Focused decisions.
 - d) Agency-related decisions.

(See Appendix 16 for more detail)

The above decision types can be explained in more than one of the arbitrary categories offered. For example, value decisions could have been placed within the class of internal and external modifying decisions, as well as agency related decisions. It is the context influenced by the emphasis of an individual paradigm or prevailing perspective that gives importance to certain decisions. Once the context modifies, the importance of the dominant paradigm or perspective may be undermined. A trivial decision made today may later be revealed to have been important as emphases and consequences unfold. It therefore becomes important to understand the relationships that exist between decisions, which are separated by context, time and consequently shifting expectations, influenced by other paradigms and perspectives becoming more dominant in the decision to build process.

The decision to build is thus a complex network of decisions, which have interactive relationships. The paradigms and perspectives force expectations of what should be considered and how it should be evaluated within the decision to build. It is a collection of problems caused by internal and external relationships between

individuals, organisations, paradigms and perspectives that stimulates the need to make certain decisions. People from within a dominant paradigm interpret the network of problems; for example, the preliminary design paradigm. To be inside a paradigm causes exaggerated emphasis on certain issues such as the greater importance of aesthetics over cost; those outside the dominant paradigm held by the individual may have alternative views on the importance of certain issues. Because all the actors view the decision to build from within paradigms, often paradigms which are competing for dominance, the process and content issues are seen as a collection of problems that are different and unconnected, thus to be considered, and solved, in isolation from each other. The Value Management case studies challenge this perception, and so call into question the validity of step-wise approaches to decision making in the context of the decision to build.

Problem solving strategies that start by stating objectives presume that assumptions are constant through time. However, project implementation must resolve a dynamic complex of problems inside and external to the firm. To state objectives, weigh their importance, and then move on to consider solutions, reduces the opportunity to locate the main problem and its relationship with other problems as seen through the different perceptions of internal and external stakeholders.

6.6. (Question 4) What Considerations Were Made?

This question was asked in order to identify if any moderating variables were noted in the decision to build process. Examples of considerations identified within the case studies have been listed within paradigms and perspectives.

i) Capital Investment, A Process Influencing Paradigm Which Is Internally Focused.

The Capital Investment Paradigm: Profitability, Return on Investment (ROI); Internal Rate of Return (IRR); Pay Back Period (PP); Net Present Value (NPV); Inflation; Capital Allowances; Retail Price Index; Life Cycle Costs; Hurdle Rates.

ii) The Cost Benefit Analysis Paradigm, A Process Influencing Paradigm Which Is Externally Focused.

Cost Benefit Analysis: No cases used this approach explicitly (i.e. with the exclusion of the Capital Investment Paradigm) and so a heavy reliance upon the literature is used within the analysis of the case studies.

iii) Content Influencing Paradigms And Perspectives Which Are Internally Based.

The Marketing Paradigm: Internal and external perceptions; demographics; sociographics; competitors and benchmarking; customer types; customer behaviour-prior to, during and after the purchasing-event; suppliers; security; vandalism; history; publicity; image; location; access; convenience; external attractions; complementary features; supplementary features.

The Strategic Paradigm: Implication of no-go decision; existing strategy and impact of new strategy; existing space; time and consequences; strategic vision and long-term requirements.

The Organisational Perspective: People and personalities; operational optimisation; inherited constraints; culture and expected behaviour.

Management Perspectives: Resource, availability and use; the practical consequences of undertaking the project; senior management commitment, confidence and involvement; consequences of project rejection, problem bundling.

iv) Content Influencing Paradigms And Perspectives Which Are Externally Based.

The Financial Paradigm: Sources of finance: grants and subsidies, partnerships and joint ventures.

The Property Development Paradigm: alternative uses and design implications; predetermined efficient spatial relationships; procurement route; contract; programme; legal requirements.

v) Content Influencing Paradigms And Perspectives Which Are Imposed On The Decision To Build By External Stakeholders.

Planning Permission, A Politically Imposed Paradigm: Planning permission requirements; public enquiries; proximity and consequences of local elections; proximity and consequences of national elections; legislation.

The Preliminary Design Paradigm: The impact of the physical form upon use-function, the impact of aesthetic form upon use-function, the impact of budget on the design process as well as the conflict between consistent corporate image and individual architectural responses.

Considerations are a reflection of the decision making team's perception of areas requiring additional resources and more investigation. What each paradigm and perspective has in common is that they are a collection of methods, rules, and professional expectations that seek to externalise the decision making process from

the individuals making the decisions. In their collective promotion of rational decision-making they advance objective rather than subjective decision making.

6.7. (Question 5) Did Anyone Have Overall Responsibility For The Process? If So, Who?

The aim of this question was to understand how authority and responsibility were established and to make the seniority of the managers involved explicit. Table 12 identifies the decision making process. It shows the decision making process for experienced clients is divided among four roles. These roles may overlap in smaller or less experienced client organisations:

Decision Approvers: senior managers who approve capital sanctioning; for example, the main board of a large organisation.

Decision Takers: senior managers who approve the proposal's progression to the next stage; for example, the regional directors of a national organisation.

Decision Shapers: middle managers who develop and test the proposal before submitting it to decision takers for their approval; for example, the project team that test for internal rates of return, carries out market research, and applies for planning permission, etc.

Decision Influencers: formal and informal parties whose expectations influence the proposal's shape; for example, users, financiers, customers, shareholders, and the local authority's planning department.

Case Study	Project-Approval Decision Taking Body	Actual Decision Taking Body	Decision Shapers	Decision Influencers	External Decision Taking Body
Alpha Fast Burgers.	National Board	Regional Executive	Development Team	Customers and Competitors	None Identified
Regency Retailing.	Capital Expenditure Committee	Project Board	Project Team	Customers and Competitors	None Identified
Pawford Development Corp.	Main Board	Main Board	Project Management Team	Potential Partners	Potential Partners
Wottons.	Main Board	Main Board	Jointly with Main Board and Project Team	Internal need for greater efficiency	None Identified
Hillshire Water PLC.	Main Board	Capital Investment Manager	Capital Investment Manager	Project Management Team	Possible Public Enquiry
Perrytons.	Divisional Board	Regional Board	Property and Operations	Market Research	None Identified
Brayfield Hospital Trust.	Main Board	Project Team	Project Team	Regional Purchasers and Royal Colleges	The NHS Executive and the Treasury.
Premier Motor Company.	National Board	Divisional Board	Originally the operating unit, but taken over by Real Estate Operations	Strategists and Sources of Finance and Political ambience	European Main Board
Wellowshire Energy Group PLC.	Main Board	Tenant Division	Property Division and Tenant Division	Shareholders	None Identified
Railtrack PLC.	National Board	Regional Board	Project Team	National Board and Potential Shareholders	None Identified
Sharland City University.	Board of Governors	Board of Governors	Project Team	Government, Students . and Competition	Financiers
Albion National Bank.	National Board	Regional Board	Project Team	Existing Property, and Business Processes Linked to New Strategies	None Identified

Table 12. The Decision Making Groups.

This division is a product of the aim to make good decisions (i.e. it is value based) in the face of problems too large and voluminous, complex and complicated, for individuals to undertake alone. Each tier has different emphases attached to paradigms and perspectives. For example, the decision approvers place great emphasis on the capital investment, strategic and financial paradigm in order to satisfy customers and shareholders/owners. The decision takers place a greater emphasis on management and organisational issues than the decision approvers and the decision shapers promote the management paradigm and its perspectives as the most important guiding influence on the way they view their role.

The Capital Investment Paradigm describes a vertical line of authority and control which exists in the decision making process. Senior decision takers, such as directors and executives, make the decision to build on the grounds of the case presented by the decision shapers. However, committed decision shapers see their effectiveness in terms of delivering a finished building. So decision shapers see the approval process as a series of hurdles that have to be overcome in order to achieve successful project delivery. The approval process can be perceived as obstacles to the purpose of decision shaping and project delivery by the decision shapers.

In every case, the decision shapers sought approval from a superior body, the decision takers, who assumed impartiality. Budgetary sanctioning by decision approvers may have career implications as senior management evaluates the decision shapers' commitment, ability, and skills. This shows that career consequences and personal credibility play a part in the decision to build process; that is, a careerist management perspective is at play.

The following organisational structures highlight the authority and the communication lines for each case. The decision shapers are described as the project team and so the term 'client', as used in the literature can now be understood as a department or team within a larger organisation.

Alpha Fast Burgers, Regency Retailing, Hillshire Water PLC, Perrytons, Albion National Bank, Railtrack, Premier Motor Company and Wellowshire Energy Group PLC, share a similar decision making structure in terms of how the decision shapers (i.e. project team) relate to the operating core (See fig. 35). Some clients build within capital investment programmes spanning several years, and so the capital investment paradigm and their decision making process may have become institutionalised within their thinking.

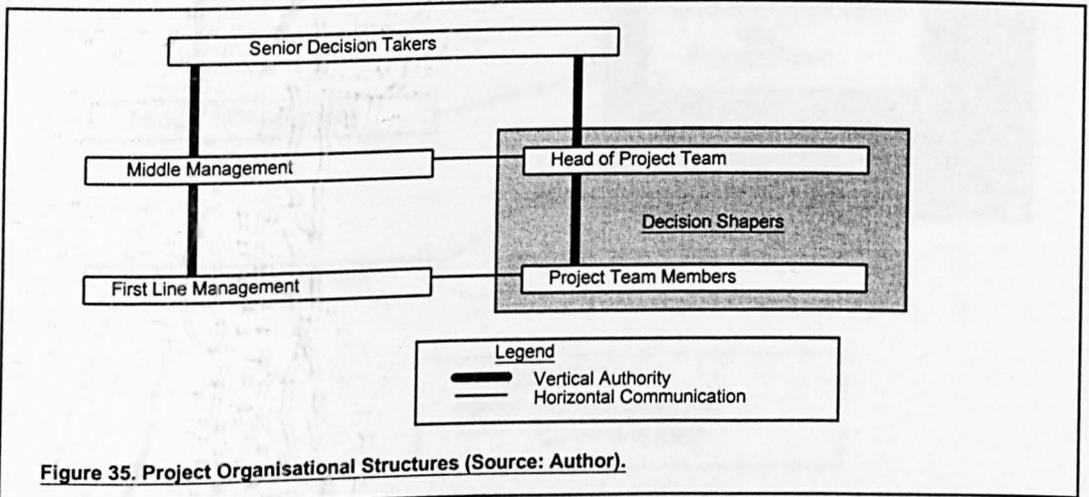


Figure 35. Project Organisational Structures (Source: Author).

Figure 36 shows Pawford Development Corporation's project structure. The Development Corporation used a contract to bind organisations together into a Joint Venture.

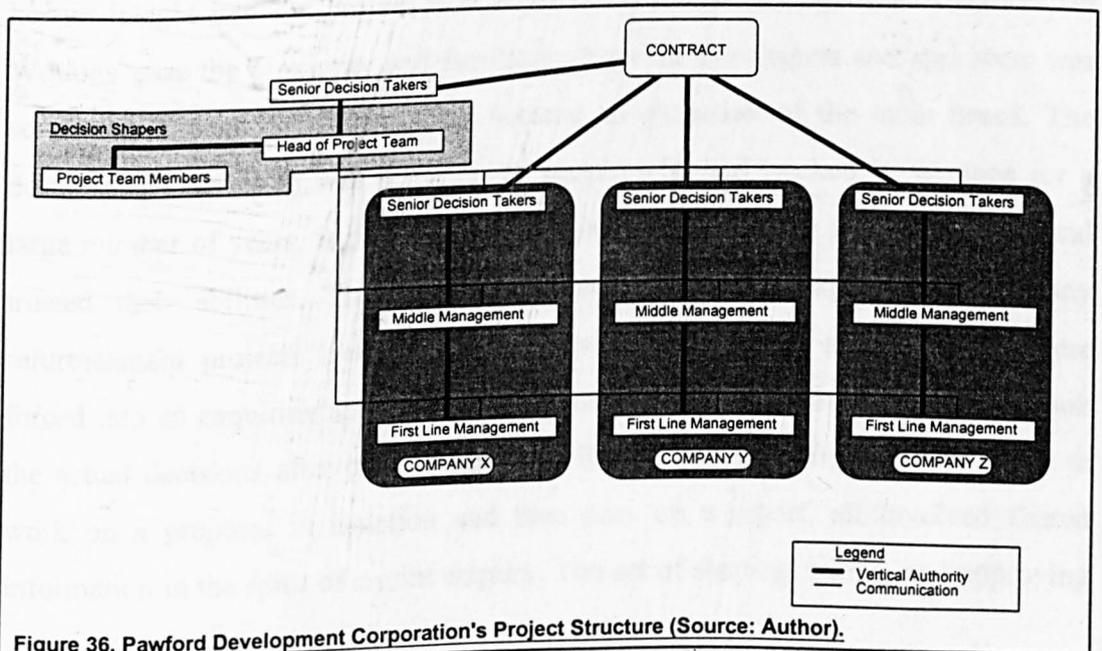
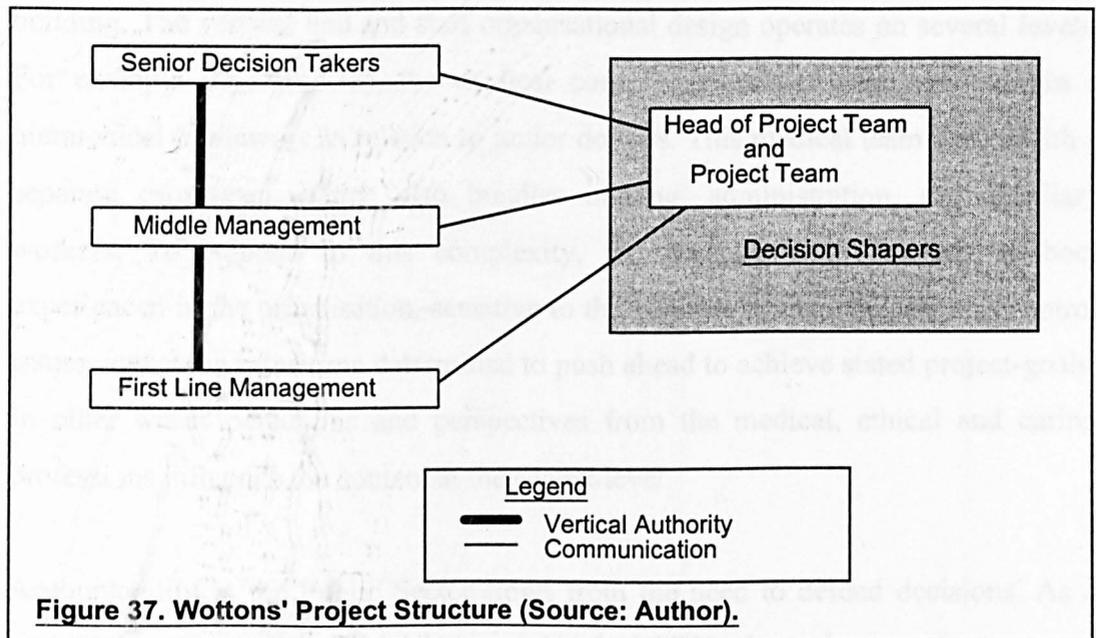


Figure 36. Pawford Development Corporation's Project Structure (Source: Author).

Wottons' project team had a collective pride and a sense of shared responsibility (See fig. 37). The decision shaping team was an integral part of a family firm that was trying to maintain an organisational culture on a personal basis. There was a sense of shared destiny in this family firm's approach to the pre-project phase.



The proximity between approvers, takers and shapers allowed senior-management a keener insight into the project than other more formal management structures. In Wottons' case the proximity and familiarity between the shapers and approvers was so strong that the decision shapers became an extension of the main board. The decision shapers' team was made up of people who had worked in Wottons for a large number of years. Senior managers knew these people on a personal level and trusted their abilities. The decision shapers, who were experienced in many refurbishment projects lacked previous experience of 'large sheds' and so were forced into an enquiring approach to the decision to build. Senior management took the actual decisions after joint discussions. Rather than allowing a single group to work on a proposal in isolation and then pass on a report, all involved shared information in the spirit of a joint enquiry. The act of shaping, taking, and approving

the decision occurred in the same forum. Wotton's senior managers developed a decision with integrated, rather than coordinated, awareness.

Brayfield Hospital Trust's case shows how complex a hospital project is. The working hospital combines different organisations and cultures together within one building. The vertical line and staff organisational design operates on several levels. For example (See fig. 38), the medical consultants can be positioned within a hierarchical framework in relation to junior doctors. This medical team works with a separate care team, which also bundles nursing, administration, and auxiliary workers. To respond to this complexity, the decision shapers must be both experienced in the organisation, sensitive to the plethora of management and control issues, and at the same time determined to push ahead to achieve stated project-goals. In other words paradigms and perspectives from the medical, ethical and caring professions influence the content at the shaper level.

Accountability in the Public Sector flows from the need to defend decisions. As a consequence, both Brayfield NHS and Gritford NHS show that gut feelings and judgmental decisions are either suppressed or disguised within rational decision-making models. This lack of faith in the decision shaper's integrity may reduce the scope for creative decision-making. The emphasis in the public sector is focused on accountability related specifically to the project with reference to the use of tax payer's money; that is, a cost reductionist approach takes prominence. Accountability in the private sector is associated with overall, or aggregated, organisational effectiveness and so it may be possible to promote one building as a 'loss leader' as in the case of a project within a larger programme of capital projects. This shows that the collective aim of the paradigms and perspectives is to promote objective decision making which can be justified.

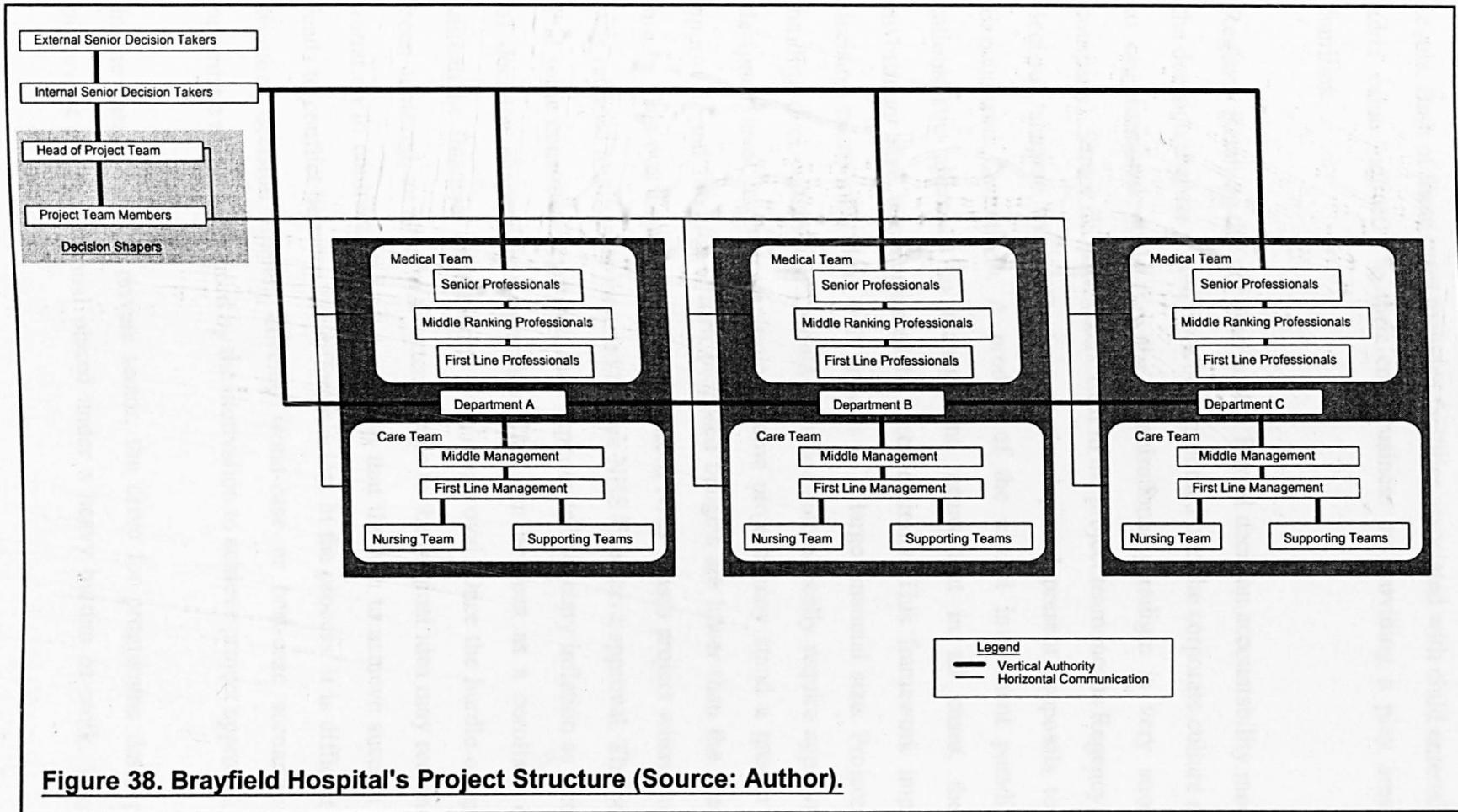


Figure 38. Brayfield Hospital's Project Structure (Source: Author).

In the cases of Alpha Fast Burger and Perrytons', who had capital investment programmes and articulated criteria, the decision to build was made at regional levels. Both of these cases included facilities associated with child entertainment that adds value indirectly to their core business by providing a play area to attract families.

Regency Retailing did not need such a formal decision accountability mechanism as the decision shapers would have been groomed into the corporate culture and attuned to organisational goals (i.e. the organisational paradigm is very strong in this company). Senior decision takers' trust in the project team means Regency Retailing's decision shapers were left alone to develop and present proposals to a Capital Expenditure Committee. A product of the capital investment paradigm and a rationalistic approach to management means that in all cases, the potential investment size was compared to specific limits. This framework implies senior decision takers only deal with projects of a large financial size. Projects requiring funding over certain limits would therefore automatically require approval at a pre-designed level in the organisation. Some projects may stand a greater chance of approval, and funding, if their proposed budgets are lower than the predetermined limits. This was clearly the case in Gritford NHS Trust's project where project scope was reduced to alleviate the need to seek NHS Executive approval. The possibility is that some construction projects may experience budgetary inflation as a consequence of decision shapers' cost-optimism. This can be seen as a corollary of creating unrealistic financial expectations to gain approval. Once the hurdle of approval has been achieved, an attempt to extend scope to the original idea may recommence as a variation to contract. This demonstrates that the aim to achieve success sometimes leads to conflict between the different actors in the process. It is difficult to identify whether decision shapers develop worst-case or best-case scenarios within an optimistic range, influenced by the motivation to achieve project approval.

In the cases from the private sector, the drive for programme dates presented a picture of the professional placed under a heavy burden of work. This is true of

Hillshire Water and Railtrack that had so many projects they formed lists. Selection of projects from lists may mean decision shapers remain detached from the proposal, in its gestation period. Other decision shapers, who took part in the initial stages of a proposal's progress, developed a sense of ownership and commitment as the project began to be defined.

In all cases, except Wottons, the head of the decision shapers felt they would be somehow held personally responsible for project failure. For most subjects, failure was also presumed to have a detrimental impact on their careers. One subject also put forward a cynical perspective that failure would be his, but success would belong to those above him. This demonstrates that the concept of team may in reality be a grouping of individuals with a common purpose but different agendas, and underlines how the careerist management perspective can influence the decision to build.

6.8. (Question 6) Who Explored The Various Considerations?

The purpose of this question was to identify which professions played an influential role in the decision to build process. It also sought to understand the importance the design team play in influencing the content of the decision to build. Table 13 shows the sources of expertise used by the cases.

	OUT-HOUSE	IN-HOUSE
Alpha Fast Burgers.	Local Knowledge Property Developers	General Practice Surveyors Real Estate Managers Finance Managers Accountants Construction Professionals
Regency Retailing.	Quantity Surveyors Acquisition Surveyors Project Managers Traffic Consultants Legal Consultants Corporate Designers	Market Researchers Architects Surveyors Construction Managers Footage Assessors Technical Coordinators Past Experience
Pawford Development Corp.	Quantity Surveyors Architects	Business Managers Project Manager
Wottons.	Competitors Generic Benchmarking Architect Quantity Surveyors Mechanical & Electrical Engineer Structural Engineer Contractor Conveyor-Specialist	Group Property Surveyor Logistics Analyst Project Manager Assistant Project Manager
Hillshire Water PLC.	Feasibility Consultants Industry Regulator	Accountants Project Managers-Civil Engineers Legal Experts Capital Investment Manager
Perrytons.	Planning Consultants	Accountants Market Researchers Land Acquisition Surveyors Research & Development Managers Procurement Managers Finance Managers Operational Managers
Brayfield Hospital Trust.	Treasury Procurement Managers NHS Executive Regional Purchasers PFI-Financial Consultant	Project Services Manager Estate Manager Financial Advisor-Accountant Project Controller Project Assistant Clinical Advisory Planning Team Long Range Capital Planning Managers Short Range Capital, Logistical and Operational Planning Managers Clinical Services Managers
Premier Motor Company.	Real Estate Consultants	Political Advisor Real Estate Managers Facility Planners Facility Managers Plant Engineers Engineers Architects Quantity Surveyors
Wellowshire Energy Group PLC.	Management Consultants-Accountants Governmental Regulator	Property Manager Accountants Operations Management General Practice Surveyors Project Managers Building Surveyors IT Data Co-ordinator
Railtrack PLC.	Structural Engineer Quantity Surveyors Architects Mechanical & Electrical Engineers	Property Manager Plant Engineer Services Engineer Team Organiser Building Surveyors Building Managers-Maintenance
Sharland City University.	Facility Programmers Competitors Property Developers Project Manager Design Team	Lecturers' informal debrief after visits Facilities Director Facility & Educational Planner Financial Advisor Student Support Managers Academic Support Managers Administration Managers
Albion National Bank.		Market Researchers Project Manager Architect Quantity Surveyor Mechanical & Electrical Engineer Operations Manager Facility Manager Building Surveyor Civil Engineers Business Development Manager

Table 13. Sources of Expertise Used.

Abstracting the design team from table 13 shows that the design is most commonly out-sourced as shown in table 14.

	OUT-HOUSE	IN-HOUSE
Alpha Fast Burgers.		✓
Regency Retailing.	✓	
Pawford Development Corp.	✓	
Wottons.	✓	
Hillshire Water PLC.	✓	
Perrytons.		✓
Brayfield Hospital Trust.	✓	
Premier Motor Company.		✓
Wellowshire Energy Group PLC.		✓
Railtrack PLC.	✓	
Sharland City University.	✓	
Albion National Bank.		✓

Table 14. The design team location.

Table 15 shows that the Project Manager's location is predominantly in-house.

	OUT-HOUSE	IN-HOUSE
Alpha Fast Burgers.		✓
Regency Retailing.	✓	
Pawford Development Corp.		✓
Wottons.		✓
Hillshire Water PLC.		✓
Perrytons.		✓
Brayfield Hospital Trust.		✓
Premier Motor Company.		✓
Wellowshire Energy Group PLC.		✓
Railtrack PLC.		✓
Sharland City University.	✓	
Albion National Bank.		✓

Table 15. Location of the Project Manager.

As for decision influencers, all cases suggested their presence, but not in a formal capacity. Cases such as Brayfield Hospital Trust show that such influence comes from specific contexts and connections between seemingly unconnected paradigms and perspectives such as the preliminary design paradigms, medical paradigms associated with the treatment of burns victims and security paradigms linked to the treatment of a terrorist suffering from the premature detonation of a bomb. The emphasis given to 'people', as influencing the content of the decision to build will now be considered in order to develop generalisations in the explanation offered in the next chapter.

Brayfield NHS assumed that patients' views had been brought in at some point, but this was not explicit nor was it highly visible. The part decision influencers (e.g. patients) play as either stakeholders, or as a source of inspiration, seems to be deeply hidden and is an area that needs further research.

Hillshire Water PLC, with a technical process, has a focused problem compared with other clients whose projects are exposed to more varied considerations. This is reflected in the comparatively simple team, based around the focused expertise of engineering, finance, legalities, and the capital investment paradigm. These perspectives may have led to a kind of groupthink that perceives all projects within pre-defined expectations. The routinisation of problem identification and problem solution may deny the opportunity for creativity to lever returns.

The common factor across all the case studies is that the decision shapers saw their purpose as delivering the project. The process of project delivery may become more important to the decision shapers, than the reason why they are building. Also, large and complex problems were broken down into manageable areas of task based responsibility in the belief that the subsequent co-ordination of the solution would lead to a holistic-integrated outcome. However, in all cases, the decision shapers ran with more than one project, or project-phase, simultaneously. For projects such as

Brayfield, Gritford and Sharland, this meant some problems could be delayed and resolved in the later phases of the decision to build or during the construction phase.

The cases show how different participants, from decision approvers, takers, shapers, users and influencers attach different emphasis to the decision making process. All the actors believe they are making good decisions and use paradigms and perspectives as guides in that process; the problem is that different groups do not always place the same emphasis on an individual paradigm at a particular moment in time. Brayfield NHS needed to organise meetings with surgeons and clinicians who may deal with horrific events on an almost daily basis. Influencers, such as clinical staff who did not attend meetings, expose the dilemma decision shapers face as priority, urgency and importance, are value-based decisions related to the individual's situation. What was important to the decision shapers, which is dictated by the paradigms and perspectives surrounding the shapers' thinking, was perceived as inconsequential to the busy influencer. The reason for this is that the influencer was surrounded by a conflicting different set of paradigms and perspectives.

6.9. (Question 7) Were Roles And Responsibilities Established?

The purpose of this question was to identify what roles and responsibilities had been established in the decision to build process. The perceived benefits of problem-reductionism led to the 'division of labour' and the subsequent management problem of coordination in economics. This perspective has manifested itself as large experienced clients of the construction industry, overwhelmed by decision-volume, break decision making into three main functions: decision approving, decision taking, decision shaping. Consideration of other internal and external stakeholder expectations provides a fourth function of decision influencing. This section will explain in more detail the roles that are present within the client's decision making group.

6.9.1. Decision-Approvers And Decision-Takers.

Decision approvers in large organisations are concerned with the long-term financial viability of the firm. Organisations of this size have a large number of proposals seeking internal funds. Decision approvers rely on decision takers to ensure only quality-proposals seek scarce resources. It is on this basis that decision approvers match resources to proposals without becoming overly involved in a proposal's development. In all the cases, decision takers were directors or executives. Decision approvers for large projects were always members of the Main Board of directors.

Division of the decision making process in the cases of Alpha Fast Burger, Premier Motor Company, Railtrack Plc., and Albion National Bank, can be seen as a result of an organisational design that is directly linked to geographical areas such as national, regional and local. The national decision-approval body sets the objectives and then delegates responsibility to the regional decision-takers on the basis that they will have better knowledge and information associated with an individual project. Premier Motor Company may also require the European main board, or the global main board's approval, dependent upon the financial size of a project.

Perrytons' organisation is designed in response to core business activities. This approach leads to specialised divisions, whose senior managers act as a national decision-approval body, which in turn delegates responsibility to a regional-division-decision-taking body.

Hillshire Water Plc. has as its core businesses, the supply and distribution of drinking water and effluent removal. The current dominant paradigms, which tie Hillshire Water to physical infrastructure such as underground pipes, have forced the business to be geographically located. The assumption that this core business is well defined has led to a unique split in the function of decision-taking within the twelve case studies. Hillshire Water's Main Board of directors delegate the decision-taking function to a single person, the Capital Investment Manager, who is also the head of

the decision-shaping team. This task-oriented approach to high-volume decision-making, which exists within a cost-reductionist framework, prevents any opportunity for creativity to increase the quality of investment. The reason this situation exists is because the company thinks it has the solution, and therefore does not pursue the matter any further. Whilst this systematic approach to decision making allows fast responses, it must also contend with the possibility of public enquiries and resistance to planning permission applications.

Wellowshire Energy Group, with its internal-market, forces the decision-shapers group into a negotiation process. The main board puts forward objectives, which the various divisions aim to meet. Because the property is held on an internal lease, the tenant must agree to the proposal before capital is committed. This suggests the tenant can refuse strategic options.

Brayfield Hospital Trust has a discernible separation in its decision-shaping process between the Trust and purchasers, which in reality describes a combined search for agreement. It is a result of the mediation between the decision takers and shapers, in response to discussions with regional purchasers, that allows the proposal put forward to receive Main Board approval. However, there is also a need to seek external approval from either the NHS Executive or the Treasury, dependent upon the size of investment requested. It is this secondary approval process that contributes to the long time span seen in the pre-project stage.

Regency Retailing has a Capital Expenditure Committee that represents a national decision-approval body. However, projects are not considered within a regional structure, but approach the national body for approval. In this sense, the decision-taking and decision shaping body is a single entity.

Pawford Development Corporation and Sharland City University each have single decision-taking-shaping bodies. Both Pawford Development Corporation and Sharland City University have external decision-takers, from different organisations,

who participate in granting project approval. Pawford require their partners' agreement, and Sharland need their financiers' backing.

6.9.2. Decision-Shapers.

The most common approach to shaping decisions is to have a manager with a team below. This manager is usually a property manager who will later become known as the project owner. The internal project manager will later become the project sponsor. These labels come from the project management literature which also describes the head of the department who requests a building as a project champion (Turner, 1995).

The role and responsibility of the decision shapers is to move from the initial premise, that additional space is required, through a search and appraisal of various options within scenarios, to the efficient delivery of the required space, on time, to budget, and conforming to specifications. The decision to build is one option the shapers may put forward. Other options may include: do-nothing, rent, buy, refurbish or lease existing space. The stimulus that suggests extra space, or new space, is required is presented to the decision shapers by other members of the client organisation. Examples of influences include: marketing plans, the need to expand production facilities, a need to increase the number of outlets, a need to reduce operating costs by shrinking within existing space, a need to improve the quality of existing space in line with competitors, a need to meet new legislation, a need to sell assets to ensure shareholder expectations are met, and so on. This approach could be described within the capital investment paradigm. However that rationale must not be allowed to undermine the relationship and complex interaction amongst other paradigms, perspectives, personalities and people.

In organisations with a lot of experience of building procurement, a permanent team of decision-shapers evolves or is appointed. The whole existence of these shapers is to be of use to the organisation. The decision shapers start with the premise that a

building is needed, and then shape the proposal to meet the 'objectives' within all the constraints that exist.

Because paradigms and perspectives shape both the process and content and call upon a group of individuals to place emphasis on different aspects of each paradigm and perspective consecutively and concurrently, the process has evolved into a distinct articulation of roles and aspirations. The decision approvers are heavily influenced by the capital investment, financial and strategic paradigms. The shapers tend to be influenced by management, organisational, planning permission, property development and the preliminary design paradigms so that they get their proposals through a series of hurdles in order to deliver the project. The decision takers try to ensure that the shapers meet the expectations of decision approvers and are influenced by the marketing, strategy, organisation, management paradigms and second guessing what decision approvers will deem successful or not.

6.10. (Question 8) What Sources Of Information Were Considered And / Or Consulted?

This question sought to identify influencers and sources of information. However, the search for information is influenced by the initial perception of the problem. How the proposal is initially described can close down options, acting as a filter for the information sources available, the level of sensitivity to stakeholder requirements, and the credibility of decision influencers' perceptions. Table 16 shows the sources of information cited in the case studies. It shows that organisations, which depend on customers in highly competitive markets, pay greater attention to primary sources of information than their counterparts. That is, their actual position in relation to other paradigms force the organisation to place a greater emphasis on the marketing paradigm.

Some organisations have the dilemma of customers and consumers being separate entities. In these cases, an assumed empathy with consumer-needs remains untested,

and is assumed to be known by customers. In the NHS, Regional Purchasers, who are a hospital's customer, base their perception of consumer needs on epidemiological analysis (health statistics). GP fundholders, whose requirements are based on value-for-money, are similarly detached as no actual consultation with patients was evident in the NHS's capital investment process. Patients seem to be excluded and their wishes presumed, or only involved in superficial decisions such as choice of decorations, within the decision to build.

	Primary	Secondary
Alpha Fast Burgers.	Local Knowledge Property Developers Market Research	PPGs
Regency Retailing.	Market Research Past Experience	PPGs
Pawford Development Corp.	None Cited	PPGs RPGs
Wottons.	Visits Abroad Potential Suppliers	Trade Journals IBM
Hillshire Water PLC.	None Cited	External Consultants
Perrytons.	Market Research	PPGs
Brayfield Hospital Trust.	None Cited	Purchasers Fund Holders CIM BCIS
Premier Motor Company.	Political Advisor Past Experience	French Real Estate Consultants
Wellowshire Energy Group PLC.	None Cited	Cost Studies External Consultants
Railtrack PLC.	None Cited	Asset Based Survey
Sharland City University.	Lecturers' Visits Meeting To Share Information Internal Feedback and Feed-forward Architects	External Consultants DOE Guides HEFC Requirements
Albion National Bank.	Market Research Site Based Observation	External Consultants External Letting Agents

Table 16. The sources of information.

6.11. (Question 9) Was A Target Cost Identified? If So, What Was It?

This question sought to establish how cost targets were set. Table 17 indicates that the most common approach to budget definition is where the site is acquired that meets certain requirements within a desirable location. A building is then designed that will suit the site and the clients' needs. Once a sketch has been made, a quantity surveyor will calculate an indicative cost using either approximate quantities or approximate estimates based on historic cost models. Buying the site before design begins and then making an approximate estimate suggests a traditional project. This shows that the initial cost target is a product of a quantity surveying perspective which manifests within the preliminary design paradigm, or even earlier than this stage perhaps as a form of 'building economics'.

Case Study	Site Acquisition	Building Design	Budget Allocation
Alpha Fast Burgers.	Second	First	Third
Regency Retailing.	First	Second	Third
Pawford Development Corp.	First	Third	Second
Wottons.	First	Second	Third
Hillshire Water PLC.	Second	Third	First
Perrytons.	Second	First	Third
Brayfield Hospital Trust.	First	Second	Third
Premier Motor Company.	First	Second	Third
Wellowshire Energy Group PLC.	First	Second	Third
Railtrack PLC.	Second	Third	First
Sharland City University.	First	Second	Third
Albion National Bank.	First	Second	Third

Table 17. Design to budget or budget to design.

Where a client already has a site, then either the budget will precede the design, or the design will be later budgeted. Gritford NHS illustrates how decision shapers can distort this sequential logic. They bid for funding, and when approval looked attainable, began searching for a project that matched the perceived budget allocator's appraisal criteria. If decision shapers are to successfully develop a project, and in doing so earn salaries, the primary goal must be to identify and meet the criteria that

accesses funding. The rules of the budgetary system, therefore, influence decision-making behaviour.

An alternative approach, where the articulation of the primary strategy influenced the search for solutions, can be seen in the case of Wottons and Sharland City University. Wottons and Sharland City University progressed along a path of problem realisation, solution attempting, and then back to increase problem realisation in an upwardly spiralling learning curve as they heightened their awareness of the problems facing them.

Pawford Development Corporation, Hillshire Water PLC and Railtrack selected projects from a list. The fact that a list exists suggests that these organisations have more problems to solve than they have available resources. They share an approach that looks at the available budget, and then considers which, of all potential projects, is likely to realise 'value for money'. The selection of evaluation criteria is linked to a group of prominent stakeholders who the client's decision takers feel are most important. For Railtrack, it was potential shareholders, for Pawford Development Corporation it was Pawford's Business Community, and for Hillshire Water it was the Regulator, who were identified as the prominent stakeholders. Once the projects had been described, the process became one of matching the site to the budget, and then designing within the estimate's parameters.

Clients, who build repetitive superstructures such as Alpha Fast Burger and Perrytons, search for a site that suits a predetermined building and its operations. This approach is essentially a variety-reduction rationale that seeks to realise both procurement benefits, learning benefits, and reduced-risk by adopting a manufacturing type approach to the decision to build. Because these projects are repetitive, the budget becomes more predictable. The only major source of uncertainty will be related to the site's geotechnics and its relationship with roads and footpaths. As major clients of the construction industry, Alpha Fast Burger's and Perryton's prototype approach to architecture reflects an introverted perspective

within the preliminary design paradigm. An additional budgetary risk for the superstructure may arise from a local authority's insistence that the design and materials match the vernacular as the introverted design perspective is challenged by externally imposed paradigms. The cost and risk of moving away from the prototype design may cause repetitive clients to reconsider location.

By investigating the case studies, and building on discussions during and after the interviews, the following descriptions of the climate, and dominant management perspective, within which budgets are formed is evident:

Alpha Fast Burger: This client has a rationalistic manager approach to creating the budget. They seek to reduce the variety of decisions necessary, which allows them to invest in prototypes and realise cost savings without reducing quality.

Regency Retailing: Regency Retailing has a dynamic manager approach to creating the budget. They are prepared to refurbish landlocked sites and use high-risk innovative technology. The approach to creating the budget is relaxed whilst consequences are minimal. It is only after the budget is allocated that a cost control perspective grows in significance.

Pawford Development Corporation: The whole approach to creating the budget for Pawford is about encouraging economic growth. This case shows how a project can embrace several smaller projects with a small budget used to pump prime. Whilst the budget is a composite, the project is bound together within a legal contract so that commitment is ensured, which suggests shades of the rationalistic and dynamic manager perspectives.

Wottons: This case presented an investigative approach to budget creation in the style of a dynamic manager approach. They teased out the project goals, aspirations and how to achieve them. External stakeholders were identified

and contacted to understand their expectations. The relationship the decision shapers built up with the local authority's planning and building control departments is evidence of cautious learning. Once their requirements were clear, they created sketch designs and a budget based on a cost plan. This initial budget became a target that they tried to achieve; they finished below budget.

Hillshire Water PLC: An extreme rationalistic manager approach is used and projects are simply selected from a list that meets some criteria usually imposed from external sources such as the regulator or legislation. This client's approach to budgeting is to match funds to tasks.

Perrytons: Perrytons have a very similar rationalistic manager approach to Alpha Fast Burger. They move towards standardisation, which allows them to combine market research with architecture, in prototypes, and seek to realise cost savings by repetitive construction.

Brayfield Hospital Trust: Of all the cases, this case shows the most complex arena for competing paradigms and perspectives faced by the organisations that were interviewed. The decision shapers' approach to budgeting was systematic and directed towards accountability. They were guided by the Capital Investment Manual and its rationale. The decision shapers showed a frustrated desire to be creative, but were restrained by the paradigmatic complexity which spanned inner beliefs, interpersonal and group conflicts stemming from value-based expectations, and inconsistent levels of commitment from the various stakeholders. The whole approach to budget formation was framed within this complexity and under the need to clearly demonstrate decision-accountability. This case was a dynamic management approach subsumed by a view that rationalistic management perspectives, decision approvers and decision auditors expected external objectivity.

Premier Motor Company: This client's approach to creating the budget can be described as both rationalistic management and commercially aware. Of all the case studies, this global company was the only one to employ political advisors. Grants, subsidies, and financial assistance play an active part in budget creation during the pre-project stage.

Wellshire Energy Group PLC: An introverted rationalistic manager approach to creating the budget dominated this case. The budget was developed from sketch designs and cost estimates by a quantity surveyor. The cost of construction formed the basis of the internal customer's annual lease, assuming that its cost was below market value. If the cost of construction was above market value, then the internal customer would have to pay for the difference. This would reconcile any adverse result on the value of the balance sheet's fixed assets.

Railtrack: Railtrack's approach can be described as matching funds to tasks and as such is an extreme case of a rationalistic manager approach. Its approach to budget creation is very similar to Hillshire Water PLC's method. An asset survey was carried out and a list of projects generated. It then became a matter of matching the budget criteria to a project contained within a database. This process took just three weeks to select twenty projects and estimate costs.

Sharland City University: Sharland City University, with an extreme dynamic manager approach, sought to break away from traditional university campus designs. The approach can be described as adapting the budget as reality surfaces. The spirit and enthusiasm could be seen in the architecture that added to the project in terms of being attractive to students and as a marketing aid. Essentially, the university had a vision that fuelled the search to match finance and resources to that vision. Aspirations had to be adapted and the phased programme was incrementally achieved.

Albion National Bank: The budget was not seen as very important in this case as the business processes the buildings accommodate earn such large amounts of money. Albion National Bank's approach could be described as a laissez faire approach to the initial creation of the budget. Deregulation and innovation in IT has meant that the client has had to re-engineer his/her operating processes to retain market share in an increasingly competitive environment. The larger emphasis on the strategic and operational paradigm can be understood when the pay back period, which is measured in months rather than years, is considered.

6.12. (Question 10) Did Anyone Talk About What The Building Would Look Like?

This question wanted to test if Darke's (1978) primary generator had its origins in the client team before the architect became involved. In every case where the client was also the occupant, the decision shapers put an emphasis on use-function with architecture seen as a supporting or enabling paradigm.

As can be seen in table 18, Alpha Fast Burger, Perryton, Regency Retailing and Albion National Bank place a greater importance on the consistency of image than individual architectural responses. These systematic approaches reveal the promotion of preconceived ideas of how the decision to build relates to a less important existing urban architecture, a view which comes from within the decision shapers' management paradigm and its dominant perspectives.

	Type Of Influence				Type Of Project		Design Team Location	Upstream Or Downstream Project		Customer Consideration
	Influenced By Internal Operations	Influenced By Urban Landscape	Influenced By Consistent Corporate Image	Unimportant	Refurbishment Or Extending	New Build	In-House Design Team	High Proximity To Public	Low Proximity To Public	Clearly Identified Customers From General Public
Case Studies										
Alpha Fast Burgers.	✓		✓			✓		✓		✓
Regency Retailing.	✓	✓	✓		✓	✓		✓		✓
Pawford Development Corp.		✓			✓	✓		✓		
Wottons.	✓		✓			✓			✓	✓
Hillshire Water PLC.	✓			✓		✓			✓	
Perrytons.	✓		✓			✓		✓		✓
Brayfield Hospital Trust.	✓				✓			✓		
Premier Motor Company.	✓					✓	✓		✓	✓
Wellowshire Energy Group PLC.	✓				✓		✓		✓	
Railtrack PLC.	✓				✓			✓		✓
Sharland City University.	✓	✓			✓	✓		✓		✓
Albion National Bank.	✓		✓		✓	✓	✓	✓		✓

Table 18. Influences on Aesthetics.

Cases such as Alpha Fast Burger, Perryton and Albion National Bank have devised standard designs as a response to customer behaviour. This approach assumes customer preferences are homogeneous and constant. Regency Retailing follows a similar approach on the grounds that customers like familiar surroundings that reassure and so the internal design of one store is similar to others. However, they allow the external facade to be defined by the local architecture.

For Wellowshire Energy Group, Sharland City University and Brayfield Hospital, existing buildings influenced architectural responses. All three of these cases chose to converge on previous architectural styles rather than create a new style that distinguishes a new extension. The supplementary case study entitled "York University's Briefing Workshop" provides an insight into how architects might respond to existing designs. Pawford Development Corporation had a similar dilemma when they decided to regenerate an inner city canal basin. The project combined refurbishing a dilapidated warehouse and building new facilities, which complemented old and new to promote design unification.

Hillshire Water PLC emphasise technical processes and place little importance on architectural aesthetics at all. This is a consequence of the general public's exclusion from their operations and facilities and is a product of the dominant rational management perspective that exists in their decision to build process.

For all but Pawford Development Corporation, Regency Retailing and Sharland City University, costs were more important than individual architectural responses to the location. This reflects the subsidiary role the preliminary design paradigm plays to strategic and capital investment paradigms, in these cases.

Both Pawford Development Corporation and Sharland City University have used the aesthetic design to create unity within a collection of disparate buildings. These two cases show how architecture can be used to develop a competitive advantage. Sharland City University provided an example of best practice when they considered

marketing, architecture and aesthetics as a combined means of reversing image problems and gender expectations, associated with women and the engineering industry. Alpha Fast Burger and Perrytons also use rising customer-expectation as an entry barrier to rivals in the research, design and piloting of prototypes. By combining architecture and marketing, it is possible to create a place that has inherent competitive advantages, that are sustainable in the medium term and possibly in the long term.

The different emphasis on aesthetics is linked to the organisational decision makers' values, and priorities, on how scarce resources, such as money, should be spent. Rationalistic management perspectives restrict money spent in any way that does not benefit the organisation, in terms of the economic paradigm. As such, the preliminary design paradigm is increasingly being forced to respond to the dictates of the balance sheet (i.e. the capital investment and financial paradigms being dominant) rather than any form of celebration or aesthetic expression.

The analysis of this question has allowed Darke's primary generator to be seen as a product internal to the preliminary design paradigm. That is, the primary generator brings new considerations and influences to the decision to build process.

**6.13. (Question 11) Was The Initial Idea Of The Building Modified In Anyway?
If Yes, Why Was It Modified?**

This question looked to see if the cases had experienced much change during the decision to build process. No case reported any changes of mind that they regretted, or a need for backtracking, as a result of any particular decision. They were all consumed by the process of meeting deadlines and responding to events on a day to day basis.

	Cited examples of Decision Modifications
Alpha Fast Burgers.	Few, if any at all.
Regency Retailing.	Response as in Marketing Relaunch.
Pawford Development Corp.	Road Access.
Wottons.	Dual site to a single site strategy
Hillshire Water Plc.	Project selection criteria in response to changing public emphasis.
Perrytons.	Small changes if required to gain planning permission.
Brayfield Hospital Trust.	To move away from standard room data sheets and preconceived room layouts.
Premier Motor Company.	To include Sales and Credit functions in same building.
Wellowshire Energy Group Plc	Few, if any at all.
Railtrack Plc.	Few, if any at all.
Sharland City University.	Responding to Fire Approval requirements.
Albion National Bank.	Decision to lease rather than build.

Table 19. The cited examples of decision modifications.

The Value Management Workshops allowed Brayfield and Gritford's decision shapers to step back and review their decision making experience as a group. In both cases, a number of decisions emerged as not being optimal with hindsight. In the case of Brayfield, it was realised that individuals can make decisions that close options for others. The decision to select a procurement route was influenced by timetables. The dramatic consequences of this particular decision did not become significant for a number of months. The recognition of the need to place an advertisement in a magazine was perceived in the sense of a single unattached task. This decision later forced the client team to pursue an undesirable procurement route (See case study in appendix 3).

Brayfield Hospital Trust's case, demonstrates that the relationship between problems, caused by competing paradigms, exists both inside and outside the organisation. The decision to build evolves, by the efforts resulting from different paradigms, perspectives, people, and personalities within dynamic environments. This process operates across departmental boundaries, and can attempt to combine conflicting agendas and different motivations.

6.14. (Question 12) What Was The Time Span From The Process Being Triggered To The Tentative Decision To Build?

This question sought to establish the likely duration for the decision to build process. Table 20 shows how long the pre-project stage took for each case. The fastest pre-project stage was Railtrack (3 weeks) who, after having a major asset survey, used a database to identify the project from a list by using pre-defined criteria. The slowest was Brayfield Hospital Trust which took three years. The key difference between Railtrack and Brayfield Hospital Trust is organisational complexity, the level of consultation and mediation, and the clarity of organisational requirements at the start of the decision to build process. It is obvious that a railway station is a place where passengers get on and off trains, but as the Railtrack case shows, that simplicity denies consideration of other lucrative retail possibilities. The potential to allow a paradigm to foster a sense of logic and comfort must be challenged in order to force a re-appraisal of pre-conceived ideas.

A general trend is that buildings of low value (i.e. less than £500k) took less than four months to gain full approval. Projects with higher values took between one and three years to gain full approval. This extra time may be due to a more senior level of approval requirement, an increased number of intermediary middle managers becoming involved, a heightened need for risk management and the generation of well defined information. All the cases point to an appropriate level of decision taker being linked directly to the estimated investment cost rather than with potential returns.

The motivation and sense of urgency for all cases was linked to meeting strategic deadlines; that is, the strategic paradigm linked to the capital investment and the financial paradigms continue to influence the decision to build throughout the decision making process. A delay for Pawford Development Corporation, Brayfield Hospital Trust, and Sharland City University respectively, was associated specifically with searching for external sources of finance.

Alpha Fast Burgers.	Average time from identify site to sell first burger is 3 - 12 months
Regency Retailing.	This can range from 6 months to 6 years depending on the individual project
Pawford Development Corp.	The pre-project stage took 6 months
Wottons.	The pre-project stage took 1 year.
Hillshire Water PLC.	Pre-project stage not concluded.
Perrytons.	The pre-project stage took 1 year.
Brayfield Hospital Trust.	The pre-project stage took 3 years.
Premier Motor Company.	Not Available as it started in another part of the organisation.
Wellowshire Energy Group PLC.	The pre-project stage took 3-4 months.
Railtrack PLC.	The pre-project stage took 3 weeks.
Sharland City University.	The pre-project stage took 1 year.
Albion National Bank.	The pre-project stage took 4 months.

Table 20. The pre-project duration.

Alpha Fast Burger, Albion National Bank and Railtrack show how rational management systems can accelerate the pre-project stage by focusing on internal efficiency. The downside is that they achieve fast track by removing decision flexibility and the need to ask questions repetitively for each project, as would be expected of a dynamic management approach. This systematic approach may increase dependency on initial assumptions remaining constant. It was not clear how or when the need to reappraise assumptions would be made. A change in government and a consequential reappraisal of urban aesthetics could cause a rethink for a rigid manufacturing approach to construction. The fact that these systems have been in use for a number of years suggests that decision shapers may accommodate individual idiosyncrasies and anomalies.

6.15. (Question 13) Was Any External Advice Sought? If Yes, From Whom?

The last question sought to identify if any other influences were present and if so who, and how did they influence the decision to build process? Table 13 (see Question 6 in section 6.11.) shows external sources of expertise in conjunction with internal sources. What is evident, is that cases with well developed decision-shapers and clearly defined expectations have little contact with external sources of expertise.

Alpha Fast Burger, Perrytons, and Albion National Bank were striving for a consistent image in terms of its buildings, products and services all over the country. A counter strategy to this approach would be to make every outlet unique, to reinforce the local customer's individuality. This approach forms the basis of the second type of case that consults a lot of external sources of expertise, which stems from the choice between bespoke design or standardised design.

Regency Retailing attempted a hybrid solution as they developed standardised interiors because they feel their customers need to be in familiar surroundings. Their approach to the external facade was not prescriptive and meant that the emphasis on

out-house expertise is predominantly associated with external considerations such as traffic flow, car parking, etc.

Table 13 shows that cases could be subjectively positioned between two extremes. At one end of the scale would be approaches to decision making that increase the number of enquiries necessary. At the other end are those systematic approaches that seek to reduce the number of enquiries, and speed up decision making. This scale could also be used to identify the level of uncertainty perceived by the client at the beginning of the decision to build process.

The need to recruit external sources of advice is a response to the decision-shaper's perception of the problems at hand, and the capacity to resolve issues in-house. If the decision shapers' team is weak in, say, architectural skills, then this realisation will influence their selection of external professionals. It is the perception of which paradigm and perspective will be seen as dominant by decision takers, approvers and important influencers that influences the decision shapers' choice.

6.16. Discussion Of Paradigms And Perspectives At Play.

The paradigms and perspectives identified, which influence the decision to build process, are not necessarily an exhaustive list. Other considerations, such as environmental management, may yet emerge as influential, depending on internal and external expectations built on dominating values. The purpose of the following discussion is to provide clear evidence that the paradigms and perspectives exist and effect the decision to build process, and others may evolve and consolidate. The important point is that they are substantive, influential and have a direct, real, impact that cannot be ignored.

	Capital Investment	Cost Benefit Analysis	Finance	Strategy	Marketing	Organisation	Management	Property Development	Planning Permission	Preliminary Design Considerations
Alpha Fast Burgers.	Strong	Absent	Strong	Strong	Strong	Strong	Strong	Observed	Strong	Observed
Regency Retailing.	Strong	Observed	Strong	Strong	Strong	Strong	Strong	Observed	Strong	Observed
Pawford Development Corp.	Strong	Observed	Strong	Strong	Absent	Strong	Strong	Strong	Absent	Strong
Wottons.	Strong	Observed	Strong	Strong	Observed	Strong	Strong	Absent	Strong	Observed
Hillshire Water PLC.	Strong	Absent	Strong	Absent	Absent	Strong	Strong	Absent	Observed	Absent
Perrytons.	Strong	Absent	Strong	Strong	Strong	Strong	Strong	Observed	Strong	Observed
Brayfield Hospital Trust.	Strong	Observed	Strong	Strong	Observed	Strong	Strong	Observed	Observed	Observed
Premier Motor Company.	Strong	Absent	Strong	Strong	Observed	Strong	Strong	Strong	Observed	Observed
Wellowshire Energy Group PLC.	Strong	Absent	Strong	Strong	Absent	Strong	Strong	Strong	Observed	Observed
Railtrack PLC.	Strong	Absent	Observed	Observed	Absent	Strong	Strong	Strong	Absent	Observed
Sharland City University.	Strong	Absent	Strong	Strong	Strong	Strong	Strong	Strong	Observed	Strong
Albion National Bank.	Strong	Absent	Observed	Strong	Observed	Strong	Strong	Observed	Observed	Observed

KEY

Strong: Strong evidence that the paradigm or perspective was identified in the case study.
Observed: Weak evidence that the paradigm or perspective was identified in the case study.
Absent: No evidence that the paradigm or perspective was identified in the case study.

Table 21. Verification Of The Paradigms and Perspectives at Play.

Table 21 shows the paradigms and perspectives identified in the case studies. It indicates whether a paradigm's existence is strong, present but not necessarily strong, or lacks evidence to support a claim for its presence. Each paradigm and perspective is then discussed in turn to justify the claim that they are present and that they influence the decision to build.

ii) Process influencing paradigms and perspectives which are internally focused.

The Capital Investment Paradigm: Table 21 shows strong evidence for this paradigm existing in each case study. This is not surprising as accountants play an important role in developing and communicating financial data both internally and externally to allow judgement of progress.

ii) Process influencing paradigms and perspectives which are externally focused.

The Cost Benefit Analysis Paradigm: The cost benefit analysis paradigm was considered in part by Regency Retailing when they explained they would build in a historic city, irrespective of the capital investment paradigm. Pawford Development Corporation's existence is to a large extent one of realising a cost and benefit implementation plan. Wottons considered their employees, which is more of a cost benefit analysis approach than a capital investment one. It was suspected to be present in other cases but the evidence was not substantial enough to argue the case. An example of this is Alpha Fast Burger's consideration of proximity to a cinema, which represents an external consideration to an internally oriented capital investment paradigm.

iii) **Content influencing Paradigms and Perspectives which are internally based.**

The Marketing Paradigm: Four cases are shown not to use this paradigm. Pawford Development Corporation did not conduct market research because of the project's history, and the obvious use for the dilapidated buildings negated any direct marketing. Pawford's case does however contain indirect market research, as the partners will have undertaken their own market research.

Table 22 shows which cases conducted primary market research in the decision to build process and those that carried out secondary or no market research at all. Table 21 shows Hillshire Water PLC did not undertake any market research as they respond to someone else's decision. It is not clear how the regulator, or consumer group, knows what is required as no evidence of their customer research was found. If the former utility companies are to allow creativity into their decision making processes, market research will allow them to challenge the regulator, and consumer groups, and take charge of their own destiny. This scenario is to a large extent shared by the Railtrack case where senior managers placed the decision shapers in a position of 'response to predefined criteria' allowing little opportunity to consider creativity.

	YES	NO
Alpha Fast Burgers.	✓	
Regency Retailing.	✓	
Pawford Development Corp.		✓
Wottons.		✓
Hillshire Water PLC.		✓
Perrytons.	✓	
Brayfield Hospital Trust.		✓
Premier Motor Company.		✓
Wellowshire Energy Group PLC.		✓
Railtrack PLC.		✓
Sharland City University.	✓	
Albion National Bank.	✓	

Table 22. The cases that used primary market research.

Table 22 shows Wellowshire Energy group did not undertake primary market research as the stimulus came from within the internal market. In this case, the property section responded to another internal customer's primary strategy. The important thing to recognise within an internal market is that all revenues are really capital transfers from one budget to another; they do not necessarily create wealth at an organisational level. To a large extent this description also fits Premier Motor Company whose internal customer was remote from the end customer who purchases a new clutch.

Similar detachment from the customer can be seen in the case of Wottons who did not operate an internal market. This case provides a project that sits within the firm's operating system and does not touch their real customers, high street shoppers.

Wottons, Brayfield Hospital Trust, and Albion National Bank all considered that marketing had been a component of their decision making. No real evidence was found that it was actually carried out with the people who would ultimately judge their success or failure; for example, Wottons' old aged pensioner with £3.50 to spend, the patient on the trolley, the customer

who needs to cash a cheque. In these three cases, responses and attitudes were assumed, and subsumed by the driving force to deliver the building.

Alpha Fast Burgers, Regency Retailing, Perrytons and Sharland City University all operate in highly competitive customer-markets. These cases are positioned at the end of a supply chain, at the point of sale, or the point of transfer in terms of knowledge at the University. It is when considering a 'place' for contact with real customers, or consumers, that the marketing paradigm is strongly emphasised. This suggests an opportunity for architects to collaborate with marketers to create buildings that augment the core 'idea'. For example, Sharland City University's unifying atrium creates an exciting environment that distinguishes this university from other universities. The analysis of the marketing paradigm shows that whilst marketing is seen as important, the decision to build is driven by a composite of paradigms and perspectives.

The Strategic Paradigm: Hillshire Water PLC responds to other organisation's strategies, and so it was felt that this case could not claim to use a strategic paradigm. Having made this decision, Railtrack show strategic thinking linked to improving shareholder value, but the actual project was a response to an order and so the project's trigger lacks a strategic paradigm. Proactive, rather than reactive, strategic paradigms were visible in all other cases.

The Organisational Perspective: An organisational perspective was present in all cases. The cases could be placed in one or more of five categories:

1. *Organisations who have a strong sense of shared destiny.* These are companies with a strong cultural bonding that unites superiors and subordinates into a team that combines its skills, knowledge and experience. Although vertical hierarchies can be seen,

position-power is not prominent in the sense of an "us and them" culture. The integrated culture was particularly evident in the Regency Retailing and Wottons case studies.

2. *Organisations who have a strong sense of decision accountability.* These are organisations that have a strong sense of being observed by some patriarchal body. They must consider accountability and so are tied into a formalising rationale. Brayfield Hospital Trust and Gritford Hospital Trust provide examples of this influence.
3. *Organisations that place the shareholder as the primary stakeholder.* This type of organisation has a similar culture to the decision accountable clients, but is focused on the results in financial terms of shareholder approval. Customers may be described as primary stakeholders, but actions suggest that their approval is secondary to the shareholders. An example would be Hillshire Water PLC, Railtrack and possibly Wellowshire Energy Group.
4. *Organisations that place the 'customer' as the primary stakeholder.* This type of organisation operates in highly competitive customer-markets. Customers are free to purchase from this client or one of its rivals. The project is typically at the end of the supply chain. Architecture and marketing are often combined to increase sales revenue. Whilst this type of client must meet shareholder expectations, the vulnerability of sales means customers are the primary stakeholder. Alpha Fast Burger, Regency Retailing, Perrytons, and Sharland City University provide clear evidence of this type of thinking.

5. *Organisations that place their processes as the primary concern.*

This category is more a project than an organisation type. The motivation of the project is to improve internal competitive advantages. Evidence of this approach can be seen in the Hillshire Water PLC, Albion National Bank, Wellowshire Energy Group PLC, case studies.

Table 23 shows how the cases demonstrate evidence of more than one typology, suggesting complex cultures and approaches exist in individual organisations.

	Strong Sense of Shared Destiny	Strong Sense of Decision Accountability	Strong Need to Satisfy Shareholders	Strong Need to Satisfy Customers	Strong Desire to Improve Internal processes
Alpha Fast Burgers.	✓			✓	✓
Regency Retailing.	✓		✓	✓	
Pawford Development Corp.	✓	✓			
Wottons.	✓			✓	
Hillshire Water PLC.		✓	✓		✓
Perrytons.		✓	✓	✓	✓
Brayfield Hospital Trust.	✓	✓			✓
Premier Motor Company.		✓			✓
Wellowshire Energy Group PLC.		✓	✓		✓
Railtrack PLC.			✓		✓
Sharland City University.	✓				✓
Albion National Bank.		✓	✓	✓	✓

Table 23. Examples of Client Emphasis.

This shows how different clients respond, act or adapt to their particular situation.

The Management Perspective: As each case study was managed by an individual and a team, management perspectives are dominant. Particular styles and approaches are a consequence of the individual and their perceptions about what 'management' is and how it should be conducted. 'A

Posteriori' access problems, and potential subject indexicality can distort any meaningful analysis of this aspect.

iv) Content influencing Paradigms and perspectives which are externally based.

The Financial Paradigm: The financial paradigm was strong in all cases except Albion National Bank. The other cases placed importance on either capital programmes or project finance (see Table 2). Albion National Bank did not worry excessively about the project's cost, internal rates of return, or source of finance as they have capital and make large profits from trading. The cost of construction for Albion National Bank has a short payback period.

The Property Development Paradigm: This was strong in the cases of Pawford Development Corporation, Premier Motor Company, Wellowshire Energy Group, Railtrack, and Sharland City University. Pawford Development Corporation and Sharland City University used it as a method of raising finance and delivering the project. Premier Motor Company, Wellowshire Energy Group and Railtrack used it within their internal markets as a surrogate paradigm to facilitate decisions and calculate rentals.

v) Content influencing paradigms and perspectives which are imposed on the decision to build by external stakeholders.

The Planning Permission Paradigm. This is a politically imposed paradigm. Alpha Fast Burgers, Regency Retailing, Wottons, and Perrytons place a high emphasis on this paradigm before making any commitments to location. Hillshire Water PLC, Brayfield Hospital Trust, Premier Motor Company, Wellowshire Energy Group, Sharland City University and Albion National Bank, made reference to it, but in the context of the projects discussed, did

not place great emphasis on the paradigm. Pawford Development Corporation and Railtrack made no concessions to planning permissions as both were within areas of their own jurisdiction, at the time of this research. However both Railtrack and Pawford Development Corporation did recognise architectural-historical significance within aspects of their projects and both played a sympathetic role in consideration of the wider urban landscape.

The Preliminary Design Paradigm: Only Sharland City University and Pawford Development Corporation provided strong evidence of the importance attached to architecture during the pre-project stage. In all the other cases, except Hillshire Water, it could be observed but played a secondary role to other attributes. Hillshire Water was the only case that attached no importance to architecture for its project. This was because the project was seen as purely technical and accommodating a process.

The relationship between form and function only exists at the design stage. Once the form is real, then function must operate within the physical environment imposed. This is the main difference between new build and refurbishment in the consideration of the decision making process.

6.17. Reclassification Of Clients.

Clients can be categorised in many ways because they respond to their perceptions of dominant and unimportant paradigms and perspectives in relation to what they are trying to achieve with the resources available to them. It is possible to place clients on a continuum from those operating in highly competitive customer-markets to those that approach monopolistic power and are able to consider fewer paradigms and perspectives. Except for Sharland City University, most customer dependant projects give function more importance than form. Unlike the other cases, Sharland City University considered form and function concurrently, rather than one after the

other. Those organisations who operate in less competitive customer-markets attach greater importance to form, as reflected in the financial paradigm, than function.

Clients who have customers with low levels of brand loyalty, and need external-finance may themselves become dependent on financiers who place greater emphasis on 'form' as collateral. Their particular predicament causes them to place an emphasis on the financial paradigm. This intrusion by third party financiers may also lead to over-specification, to increase the financial worth of the collateral. The motivation of the financier is to reduce their risk by allowing alternative uses to be easily accommodated if the venture fails. This demonstrates that value-for-money can have different meanings for different individuals. It also demonstrates that we need to understand clients in terms of the emphasis they attach to specific paradigms and perspectives.

Those clients, who have customers dependent on them, need to justify their decisions to either an external body or to shareholders. In some instances, the external body might also be a regulator, operating in other paradigms designed to ensure 'good' decisions are made, who exercises a patriarchal role on behalf of consumer groups who represent customers.

The decision to build process is a result of the paradigms and perspectives which influence its structure and content as they in turn are also influenced by the values, and conflicting values, of those involved with the decision making process. Although a common decision to build process exists, each organisation and project within the process is unique.

6.18. Promoting Best Practice.

By viewing the decision to build as a paradigm, which overlaps and combines elements from other paradigms and perspectives, and unfolding the explanations so far developed in the thesis, it becomes possible to identify issues, which will lead to

better practice. This section is moving within the decision to build process as a paradigm in its own right and one that this thesis is articulating. Subjects and control members, who understand the decision to build from within paradigms and perspectives, have endorsed the inferences presented here in a validating workshop (See Research Methodology, Chapter 2). Areas where practice could be improved are presented before examples of best practice.

6.18.1. Areas Where Practice Could Be Improved.

- Examples exist where accountability and prescriptive approaches to the decision to build deny opportunities for intimacy to benefit the project. This could be applied to the public sector where accountability may compromise the creativity necessary in decision making.
- The assumption is made, incorrectly, that each actor in the process understands, or is even aware of all issues in the project. The issues and their importance are a product of the perceived dominant paradigm by the individual and can have different emphases to other actors.
- Rationalistic management approaches to the decisions to build subsume the individual nature of the project, which also applies to budgetary systems that lead the decision-making process rather than serve it.
- There are examples where the general public as ultimate customers are not considered, and whose views on the project are viewed as unnecessary because other paradigms, such as the capital investment paradigm, dominate the client organisation's thinking.
- Those clients who place shareholders as their primary stakeholders demonstrate good practice as they have articulated their organisational purpose as one of wealth creation. However, they must ensure that their core business is articulated,

understood and served adequately at all levels in the organisation. If they state they are in the XYZ business, but behave as if they were property developers, they must consider that their decisions to maximise wealth may lead inadvertently to satisficing decisions. In other words developing the decision to build process, as a paradigm in its own right, can be self-defeating as such an approach fosters pre-conceived responses to problems that are evolving, which could take the organisation away from its original purpose (e.g. Instead of increasing customer satisfaction, decisions are influenced by their impact on the balance sheet's fixed asset valuations). Any systematic approach to the decision to build must recognise the relationships that exist between 'it' and other paradigms and perspectives.

- The examples where key actors ran with several unrelated projects simultaneously demonstrates that operational weakness may exist, which promotes decision volume at the expense of decision quality. It also encourages a cross sectional awareness of many projects rather than a longitudinal consideration of a single project, which can cause problems.
- Practice could be improved where senior decision takers had rejected projects in such a manner that the decision shapers felt marginalised, undervalued, and vulnerable; for example Gritford NHS Trust. It needs to be recognised that the central motive for all parties in the decision to build is to make a 'good' decision and that the lack of a common 'good' is often a matter of perspectives and the cause of conflict.
- There are also examples where goals, milestones and deadlines became more important than exploration of the interrelationship between problems caused by paradigms and perspectives. Any model that assumes perfect knowledge will undermine the need for sensitive investigation of the principal problem and its relationship to other problems. If investigators feel they have an answer, they no

longer ask the question. This approach assumes the original answer is valid throughout the decision making process.

- Equally restrictive are the examples that promote groupthink and that reduce the opportunity for individuality and creativity to be considered, as one particular paradigm is in central focus and given more dominance than it deserves.
- Where clients saw their role as responding to third party stimulation (i.e. a new piece of legislation), any benefits of an entrepreneurial approach were subsumed under the need to conform.
- Experienced clients of large organisations have clearly distinctive decision takers and decision shapers. Decision volume, presented by the sheer size and complexity that exists, forces the divide between taking and shaping the decision. Rather than become intimate with the project shaping process, the majority of decision takers seek limited involvement. It is felt that project impartiality leads to quality decisions. This denies the subjective decisions hidden within decision-making systems founded on the expectations created by paradigms and perspectives.
- The level of authority required for approval is determined by the proposal's estimated cost. This approach means large organisations cannot always realise value from combined projects with differing costs, as such considerations are made by different groups of decision takers. Another implication is that two projects with differing estimated costs within the same organisation might have an individual acting as a decision taker for one proposal and a decision approver for another.

6.18.2. Examples Of Good Practice.

The main characteristics of Good Practice are consultation and good communication. Whilst 'focus' is important so too is the ability to plan and take in the wider perspective.

- Good practice was seen amongst clients who clearly identified principal evaluators and benchmarked all decisions against those points of reference. The most common external evaluator was either customers or shareholders. Consultation allowed a common 'good' to be established for all parties of the decision making process. Some cases inherited this perspective from their history and the relationship they have, or lack, with highly competitive customer-markets. This approach reduces the dominance and reliance on techniques with paradigms, as judgement takes priority over objectives (e.g. whether IRR is 8% or 9% is not as important as satisfying or exceeding customer expectations).
- Cases that increased the involvement of key decision takers with decision shapers allowed more informed decisions to be made. This integrative approach meant that all problems facing the organisation could be considered in a combinatory strategy.
- One client's managers demonstrated good practice by regularly meeting to share information and discuss problems they are experiencing. This allowed a holistic awareness to be developed.
- All cases that promoted a strong understanding of the purpose of the project and the role it played within the organisation's strategic planning, demonstrated good practice. However, as one case demonstrated, this internal perception may become out of tune with the organisation's thinking as time and external drivers separate thinking in the strategic apex, from the decision shaper's awareness.

- Frank openness was seen as good practice as it allowed the complex collection of problems to be aired and the dominance of paradigms to be challenged by the actors. Without such courage the ability to manage paradigms will not be possible. Any environment that promotes trust and openness must improve decision quality.
- A long-term vision that drew out the strategic thinking was seen as good practice in that it closed decisions and considerations that were at odds with this target. Again it allowed a common sense of 'good decision making' into the decision to build process. The downside is, if the vision is not successful, then the whole organisation could move in an orderly fashion towards disaster. It thus becomes important to place the vision a long way ahead, and plan many intermediate strategic reassessment points.
- Another type of good practice could be seen by those project teams who had a supportive environment in which to explore and generate options. In some cases the sense of decision-consequence was perceived to be high. This may reduce the decision shapers' creative ability.
- Cases that sought to use externalities to their advantage, particularly in selecting a site, demonstrated good practice as they effectively increase 'value' without having to commit any resources other than entrepreneurial vision.
- Whilst rationalistic management designs built on unchallenged assumptions can lead to bad practice, they can also lead to good practice, in the sense that they assist co-ordination and reduce learning costs. It is important that best practice recognises this dilemma and seeks to resolve it to the project's advantage. Two cases adopted this type of approach and by developing a manufacturing response to building, could test designs on prototypes and modify them before the next project as necessary.

6.19. Conclusion To The Study Of Multiple Cases.

The decision to build is a complex group decision that combines different organisations, hierarchies, drawing together motives, values, paradigms and perspectives within the context of a single project. The decision making process, which considers whether to build or not, is about dilemmas, compromises, and contradictions, caused and influenced by paradigms and perspectives vying for dominance in the different phases of the decision to build process.

Values which influence the emphasis we attach to perceptions, are within the individual's consciousness and can change as a result of experiences. The trigger for the decision to build process is stimulated by perception. Perception is a continuous scanning process and so new perceptions can enter the project during later phases of implementation. The process of deciding to build explores a combination of directly and indirectly related problems, stemming from the view of reality created by paradigms and perspectives. Changes occur over time, both internally and externally, as the complex relationships between paradigms interact and develop within the decision-making environment. Whilst similarities between projects can be identified, no exact replications can be possible because organisations are different and are composed of individuals, each working with an idiosyncratic 'baggage' of experience behind them. Any attempt to promote best practice must encourage the client decision making body to explore and articulate individual decisions in relation to their values and goals through the paradigms and perspectives which influence the process and content of the decision to build process. Best practice must bring what is often embedded and hidden in conventional ways of operating, into open view, for close examination from all angles.

Decisions might seem impartial, but the case for the project is prepared by less objective decision shapers. Whilst decision shapers have project intimacy, decision takers often lack that awareness but can influence the decision to commit funds. The greater the intimacy between decision shapers and decision takers, the less important

the capital investment paradigm, and accountability become. The reason for this is that integrated approaches to decision making allow 'human' considerations and underlying values to become more dominant than the rules and expectations of paradigms and perspectives.

The decision shaper's purpose is to deliver a project effectively. By 'effective' they mean within such constraints as time, quality, and cost. In this sense, achievement of objectives efficiently means effectiveness. It is only when this internally driven perception is placed in the context of organisational goals, such as to increase sales, to reduce costs, to improve share price that the decision shapers' existence can deflect from organisational effectiveness. The decision making process must equate the building's purpose with how it solves the organisation's, or principal evaluators', problems. Once this is clearly understood, then 'how' the project should be delivered can be considered. This argument illustrates the complexity of problems caused by different paradigms as 'effectiveness' at one level can be interpreted as 'efficiency' at another. As time modifies the context, the words we attach to various things remain constant but their meanings may change. What is important to the decision shaper may seem trivial to the user because they have different dominant paradigms. The shaper's problem becomes that of motivating users to contribute positively to project articulation.

The decision to build process operates within the constraints imposed by sometimes shifting definitions and expectations stemming from oscillating paradigms and perspectives, each of which have been developed, or have evolved, to create a rational order rather than allow chaos to reign. Only projects of a similar value and similar type are compared. There is a need to widen the proposal's scope to a functional level so those projects can be combined to liberate value. Whilst the capital investment paradigm must be used because others, such as financiers, expect it to be used, there is no reason why this imposed rationale cannot be built upon. There is an opportunity for a value management response to facilitate an integrated approach to creative capital budgeting.

To describe the decision to build within a pure capital investment paradigm is to consider the intermediate products of decision making without understanding the process that causes certain aspects, such as financial calculations, to be important. To remove the capital investment model without providing another dominant paradigm is to abandon the complex process to chaos. The collective impact of all the paradigms and perspectives at play must be considered. This chapter has presented the analysis of theory and practice and identified issues leading to best practice. Its findings and conclusions will be used to underpin the explanation that follows.

**Part Four: The Explanation Of How Paradigms And Perspectives
Influence The Decision To Build And Conclusions To The Research.**

**Chapter Seven: Explanation Of How Clients Of The Construction Industry
Arrive At The Decision To Build.**

7.1. Introduction To The Chapter.

This chapter uses the previous chapters to build a grounded theory explanation of how experienced clients arrive at the decision to build from within the decision making process. To provide an audit trail back into the body of the thesis, references collected at the end of the chapter are shown in superscript (^{e.g.}). The chapter begins by explaining how paradigms and perspectives, organisational size, and level of building-procurement experience, have influenced the division, in the decision making process, between approvers, takers and shapers. How a primary strategy acts as a stimulus triggering the decision to build process is then examined¹. This is shown on a modified flow chart of the decision to build process that was discussed in chapter five. A separate flow chart is shown to demonstrate how the decision to build progresses in competition with other proposals for capital budgeting. By explaining the decision to build as a process, which is influenced by paradigms², is to create a paradigm in its own right. Which, if it is not recognised and understood in the context of the other paradigms and perspectives that create it could inhibit understanding of what happens. Conventionally, the decision to build was seen to be the result of actors' actions³. After this explanation it becomes possible to understand why they behave as they do and be in a position to question if the emphasis attached to dominant paradigms at certain milestones contributes to best practice⁴. What must be understood by all actors is that each individual involved in the decision process is trying to make the right, or a good, decision but because values are not always explicit, nor shared, different understandings of 'good' are interpreted through whichever is the dominant paradigm in context.

7.2. How Paradigms and Perspectives Emerge And Structure The Decision-Making Process.

The decision to build is a process that moves through several different groupings of professionals⁵; each professional is conditioned by his or her respective professional value system, communicated as a paradigm⁶. Examples of this, range from the

accountant who complies with the "Standard Statements of Accounting Practice" (SSAP), through to the architect who approaches the client with the RIBA Plan of Work. Prescriptive rules and expectations, as well as peer group value-norming, occur as a result of interaction between the professional's professional bodies (e.g. RIBA, CIOB, RICS, ICE), legislation and academia. These rule-sets, which articulate convergent thinking, promote the collective values of professions within the paradigms. Viewpoints within paradigms that are not shared by the whole profession become perspectives.

It is only by considering all the paradigms and perspectives in a composite framework that 'reality', as perceived by the actors, unfolds as a complex series of responses to requests, anticipations and the meeting of third party expectations⁷.

Most paradigms and perspectives pervade an organisation and mesh it with wider society and social institutions⁸. Organisations are absorbed by paradigms and perspectives, rather than develop them. At one level they inform what should be considered 'right' and 'wrong', and at another level they explain what the desirable outcomes should be. As such, they influence the decision-maker's perceptions, thoughts and behaviour⁹.

7.3. The Emergent Influence Of Paradigms And Perspectives.

During the transitional stage between sole trader and private limited company, a process of professionalisation begins. The initial motivation for this development will be to meet minimum legal requirements such as Inland Revenue, and Custom and Excise (VAT) returns, as well as meeting Health and Safety legislation, etc. In the early stages of the organisation's morphology, external professionals will be brought in, to comply with minimum legal expectations. A typical example would be a chartered accountant preparing for the annual auditing of accounts. This marks the erosion of autonomous decision making, as paradigms and perspectives influence perceptions, considerations and behaviour.

Within the term 'Private Limited Company' will be a wide range of construction industry clients. Some organisations will rarely procure buildings, others will procure them on a regular basis. For companies that have private ownership, the supply of finance will be restricted to sources such as banks, grants and subsidies, and personal wealth¹⁰ and so the capital investment paradigm might be more dominant than others. Capital rationing denies the expanding organisation the opportunity to maximise its potential, and stimulates the move towards public limited status.

Public Limited Company (Plc.) status marks the selling of the organisation's ownership to shareholders whose expectation of future profits being repaid as dividends form the basis of the share price¹¹. This evolutionary stage firmly places the capital investment paradigm in the leading role as dominant paradigm for private sector organisations. Although the organisation is no longer a private limited company, its decision making process continues to develop. Experienced Plc. procurers of buildings may well share many characteristics with similar sized private limited companies. The distinction between one client-type and another can be identified by the articulated level of its decision-making functions into decision approvers, decision takers and decision shapers.

Public Sector organisations, such as the NHS Executive in the early 1990s, believed the private sector's emphasis of the capital investment paradigm to be correct because it worked in competitive environments and so they set up a mirror image of the private sector markets and tried to promote this paradigm to become more dominant in the Public Sector¹². This is clearly demonstrated with the introduction of internal markets and the Private Finance Initiative (PFI).

If a business sees each trading contract as a project, then the organisation survives by serving those contracts at less cost than the price being paid by the customer. In this sense, a organisation takes an input, adds value to the input and sells it as an output. Organisations thus compete by adding value at less cost than rivals do¹³. This rational manager perspective¹⁴ forces the organisational paradigm¹⁵ to seek greater efficiency

and so the decision-making divisions become formalised into permanent teams of specialists. These lessons are copied by non-profit making organisations in the belief that cost effectiveness is a desirable goal¹⁶.

7.3.1. The Experienced Client.

The rationalist manager approach of the capital investment paradigm provides the organisation's decision-makers with an internally oriented system that fits in with external systems such as the Stock Market and its financial Paradigms¹⁷. The final transition in the articulation of the decision to build process, is when a public limited company wants to finance a building programme through the Stock Market¹⁸. The transaction costs involved are so high that directors seek economies of scale by attempting to raise as much money as possible by designing capital investment programmes covering two to five year periods. As can be seen, the financial paradigm influences strategic and capital investment paradigms.

Large experienced public limited clients of the construction industry, divide the decision making process into three main functions, each conducted by a separate group; yet most of the literature from the construction industry talks of a client as if a single identity exists¹⁹. The members of the main board, who are accountable to shareholders, become the decision approvers²⁰. The decision approvers sanction budgetary commitment and rarely become involved in the decision making process of an individual project²¹. Other senior managers adopt the role of decision takers²². It is quite common to see the decision approval role and the decision-taking role merged into one decision making body, within smaller organisations²³. Decision shapers conduct the function that prepares the information for the decision takers, and are employed to develop projects; essentially they all deal with the same paradigms and perspectives but place a different emphasis on certain ones than other decision-makers do²⁴. The head of the decision shapers is sometimes referred to as the "Project Owner" and the shaping team as the "Project Board"²⁵ (Within complex internal markets, there can be two project owners, one for the primary strategy and the other

from the property management department²⁶). At a later stage in the decision making process, one member of the decision shapers will be promoted to become the internal project manager and is often referred to as the "Project Sponsor"²⁷. The whole existence of shapers revolves around taking ideas to decision takers and winning approval and funding.

The common theme that unites all those in the decision making process is that their personal values, that is their subjectivity, are used to initially judge potential projects as feasible. This subjectivity is then converted into objectivity through, and under the influence of paradigms and perspectives²⁸.

7.4. Bounded Rationality And The Formulation Of The Primary Strategy.

Problem solving strategies, based on bounded rationality deny opportunities for creativity to add value (Simon, 1979). To accept one paradigm as dominant, for example the capital investment paradigm, is to develop a rational approach to making a decision. But this rationale exists within the capital investment paradigm²⁹ and so the decision rule that is "if the profitability index is greater than one, accept" does not guarantee a correct decision will be made with respect to say the strategic paradigm³⁰.

By temporarily reducing the emphasis on dominant paradigms, creativity and perception may extend the range of alternatives available to satisfy functions dictated by key stakeholders³¹. In terms of the decision to build what must be remembered is that the building is not the primary strategy, it is a secondary strategy that 'supports' the primary strategy³². Therefore the strategic paradigm plays a significant role in the decision to build and also influences different levels of management thinking within the organisation, which might cause effectiveness and efficiency to be confused³³. The primary and secondary strategies can augment and liberate value, by their combination within a specific location³⁴. By making the paradigms and perspectives, explicit and visible, and managing them rather than being managed by them, allows a project's potential value to be seen at three foci: essential purpose that triggers the

need for a building, a supporting purpose linked to the needs of the completed building and its operations, and the potential to exceed expectations.

The primary strategy begins when someone recognises the need to change and the strategic paradigm becomes dominant in the decision approver's thinking³⁵. Perhaps the assumptions, knowledge and technology that existed when the last strategies were designed have now progressed and what was previously considered 'good' is no longer viewed as so. A new collection of assumptions, knowledge and technologies may exist as a new reality. Essentially, the recognition is that the current primary strategy, or processes, has failed, is about to fail or will fail in the future³⁶. Clear recognition of this facilitates communication with those decision approvers/takers with the power to instigate a response. Although this must often happen, little is known about how this process occurs and suggests that there might be more than one method in use. It is only when this perception reaches the minds of decision takers and approvers, that an opportunity to change is realised. Some ideas may never surface in senior management pools as the capital investment paradigm implements a sifting process based on anticipated expenditure³⁷. This means that if someone recognises a low cost strategy, lower levels of management will consider it. Only high cost proposals will be automatically referred to senior decision takers and so the rational management perspective within the capital investment paradigm can disadvantage low cost projects, which could yield above average returns. Such an understanding is made possible by conceptually stepping outside the taken-for-granted paradigms and questioning and making explicit the rationale they create.

The rationalistic management³⁸ approach to the start of the primary strategy often begins with senior management requesting projects yielding estimated returns over $X\%$ ³⁹. This hurdle rate then becomes the motivational challenge for individuals to put forward their ideas in the hope of career advancement or personal recognition⁴⁰. Another potential starting point could be the realisation that certain assets, such as an old factory, is under-utilised and a project is commenced to see if new life and a commercial return can be created⁴¹. This approach may also be used to improve the

organisation's balance sheet's fixed asset value and take advantage of valuation methods within the property development's paradigm⁴².

A less imaginative start for a primary strategy is for a client to simply act in accordance with new legislative requirements⁴³. Some organisations, facing repeated requests, form lists of projects⁴⁴. When a certain situation arises they simply select the most appropriate project idea from the list. This assumes that a potential project listed ten years ago is still viable today and fails to understand the dynamic nature of expectations and innovations caused by adaptations within a paradigm. Parallel logic suggests that a bad idea today will always be a bad idea. Both assumptions disregard the evolving relationship between, and within, paradigms, perspectives, the changing complex of problems caused by this evolution, and the role creativity can play.

Once senior managers announce 'change' in the form of a new primary strategy, they often move quickly to communicate their goals. A need to reduce 'uncertainty' will be driven by the strategic paradigm. Uncertainty can de-motivate staff who might anticipate redundancies, undermine the organisation's management credibility, and impact on share price as perceived by city analysts⁴⁵. In other words all levels of the organisation evaluate what decisions will be made and events unfold, with respect to the paradigm they each see as dominant⁴⁶.

Before the project is conceived, paradigms are in place and influencing how the organisation will recognise its problems, how it will assess feasibility, and how it will sequence its decision making processes⁴⁷. Before the project begins, the dominant paradigms and perspectives will determine what issues are seen as more important than others are⁴⁸. As the decision making process develops, shifts in the dominance of paradigms and perspectives may cause conflict, with the result that some individuals will have differing views of what the key issues are⁴⁹. Once the primary strategy is known, senior management usually communicates this in the form of a mission statement⁵⁰. The idea behind the mission statement is that its articulation orientates the whole organisation towards super-ordinate goals. The reality is that the

mission statement, either verbal or written, explains what senior management is hoping to achieve, and may seem remote and hollow to sections of the organisation whose values, and perceived realities, are more focused on coping with day-to-day operational strategies⁵¹. For example, the rationalistic management perspective⁵² that recognises the need to be dynamic⁵³ may be perceived by first-line managers as insincere and emanating from the careerist management perspective⁵⁴ of the organisation's executives. This is not a communication problem, the mission statement is recorded on paper. It is a problem caused by value mismatches which can lead to a different emphasis being placed by paradigms and perspectives competing for dominance; for example, the strategic paradigm might be calling for a sacrifice of the current organisational perspective.

Middle management must pick up senior management's objectives and present them to first line management and operatives. Middle managers, who also have career ambitions, must seek to perpetuate management credibility⁵⁵. Their task is to take the strategic plan and translate it into one year tactical plans, and short-term goals. They have to co-ordinate the actions of individuals influenced by one set of paradigms and perspectives, and advance decisions to senior management to be evaluated through a different set of paradigms and perspectives. The middle managers seek to achieve this in such a way that meets the expectations of 'good' middle managers. This concurs with Mintzberg's view of 'Role Player' manager⁵⁶.

Middle Management imposes short-term expectations on first line management, which are translated into operational plans⁵⁷. This interleaving of plans also forms the basis and structure of the organisation's budgeting system⁵⁸. If first line managers feel the imposed plan is impossible, then their views would be reflected upwards and taken into account⁵⁹. It is in this practical consideration of 'how' the primary strategy will be implemented that the decision to build has its origins⁶⁰. The organisation's existing property-estate might be inadequate for the needs of the new primary strategy⁶¹. It is because of these types of issues⁶² that most of the people involved in the shaping of the decision to build are mainly from the middle management tier⁶².

At times, this process acts as a buffer between senior management and first line managers and so the decision to build can become a forum for internal conflict within the client organisation⁶³. It is during the reflective interaction between first line and middle management that many issues, both internal and external, begin to surface and cause reassessments as dominant paradigms clash⁶⁴. Within this process, and after informal consultation between management peers, the potential of a new building will often be considered⁶⁵. If an individual manager believes the idea of a new building is credible, he or she will fill in a capital proposal form and submit it to his/her line manager⁶⁶. This is the first screening process, often informal, and is not always reflected in the capital investment paradigm. The reason this first screening is not always acknowledged is because it is a subjective decision which rationalistic management perspectives possibly distrust; even so, it is a screening process and if a manager tells the proposer “It has no chance”, the idea may be abandoned before the organisation becomes aware of its existence.

7.5. The Pre-Project Stage.

This section looks at how a secondary strategy is designed to meet the needs of the client’s primary strategy from within the paradigm being called the decision to build. The reason this approach is taken is to position these considerations in relation to Stage A of the RIBA Plan of Work and to articulate the preceding stage, which this thesis names “The Pre-Project Stage”. The secondary strategy has been broken down into a series of stages representing progress along a time series (See fig. 39 which uses the capital investment paradigm as a framework that influences the process’ structure). The process starts when the plant manager or head of department submits an initial proposal that is approved⁶⁷. The decision takers, who seek to implement a primary strategy, approve initial funding for the decision shapers to investigate the proposal to an outline business case stage⁶⁸. The outline case is sometimes referred to as “Approval in Principle”⁶⁹. The explanation shows how, as the investigation progresses, paradigms, perspectives, personalities and people engage with the decision to build process.

The sales forecast could be a driver that stimulates a head of department's initial request⁷⁰ and in some contexts (Levene Report, 1995) this person would be seen as the project owner. What needs to be recognised is that the decision to build is a response to the primary strategy and the organisation's decision-making processes will take the head of department's request and pass it to the decision shapers. The head of department therefore becomes an important stakeholder within the context of building users, but not a project owner⁷¹.

The head of the decision shapers is responsible for the development of a proposal that will meet the head of department's requirements⁷². The implicit assumption is that this will be achieved without compromising other strategies, resources or organisational objectives⁷³. If a proposal leads to an unsatisfactory outcome (e.g. a mark down in the balance sheet), then the head of the shapers, who has property expertise, will be held accountable. Therefore, it is the head of the decision shapers who is the true project owner⁷⁴.

Figure 39 shows the decision to build as a flow chart. The narrowing lines illustrate the funnelling effect of all projects being reduced in number as they compete for funding within the organisation⁷⁵. This figure will be discussed in the following section. Figure 40 shows more detail in the flow chart, which was explained in chapter five. This flow chart has been modified to show the location of the screening processes⁷⁶ and typical considerations investigated before, during and after the various stages leading to partial or full approval. Figures 39 and 40 can be viewed together.

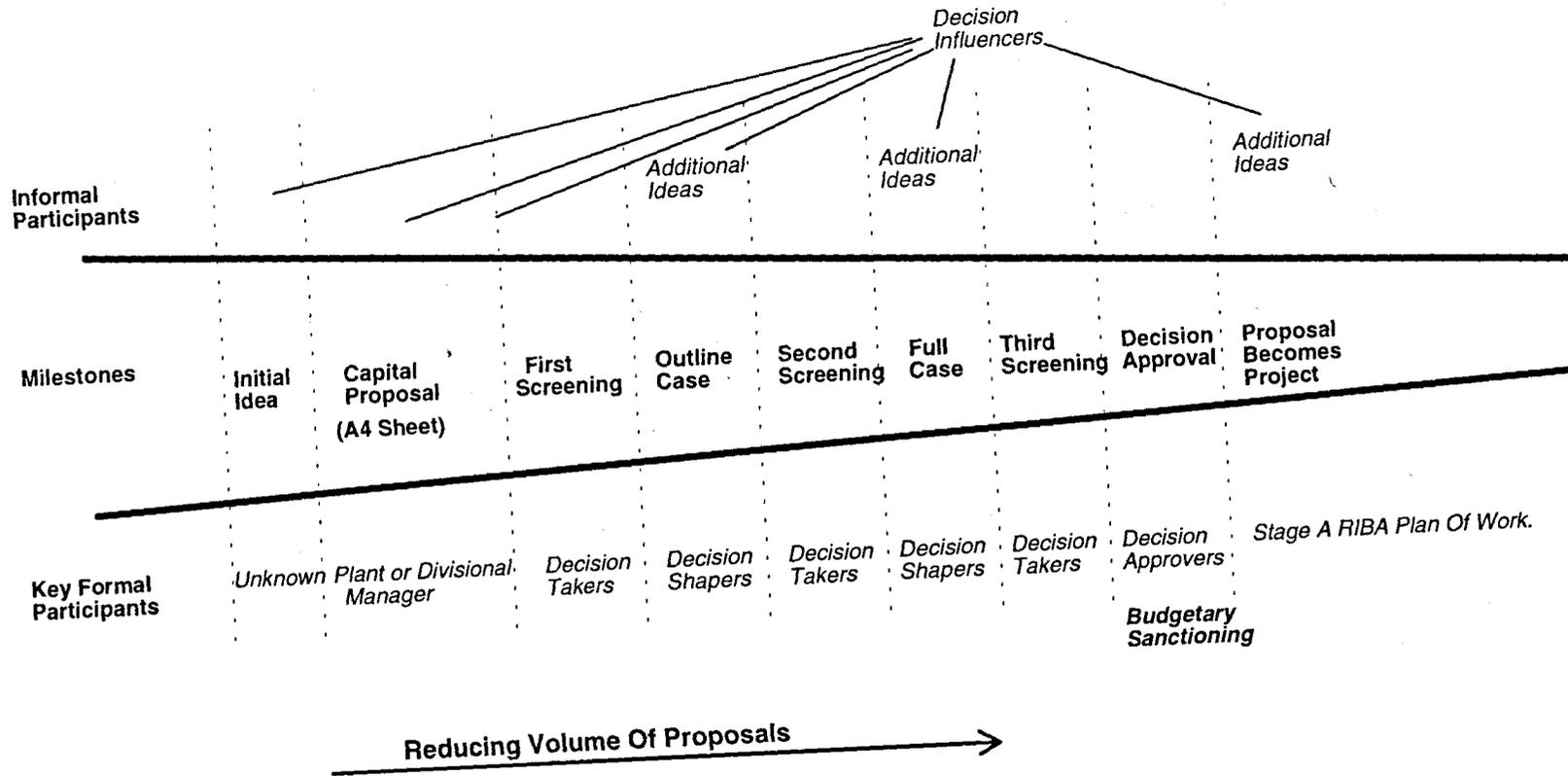


Figure 39. A Flow Chart Of The Decision To Build Process (Source: Author)

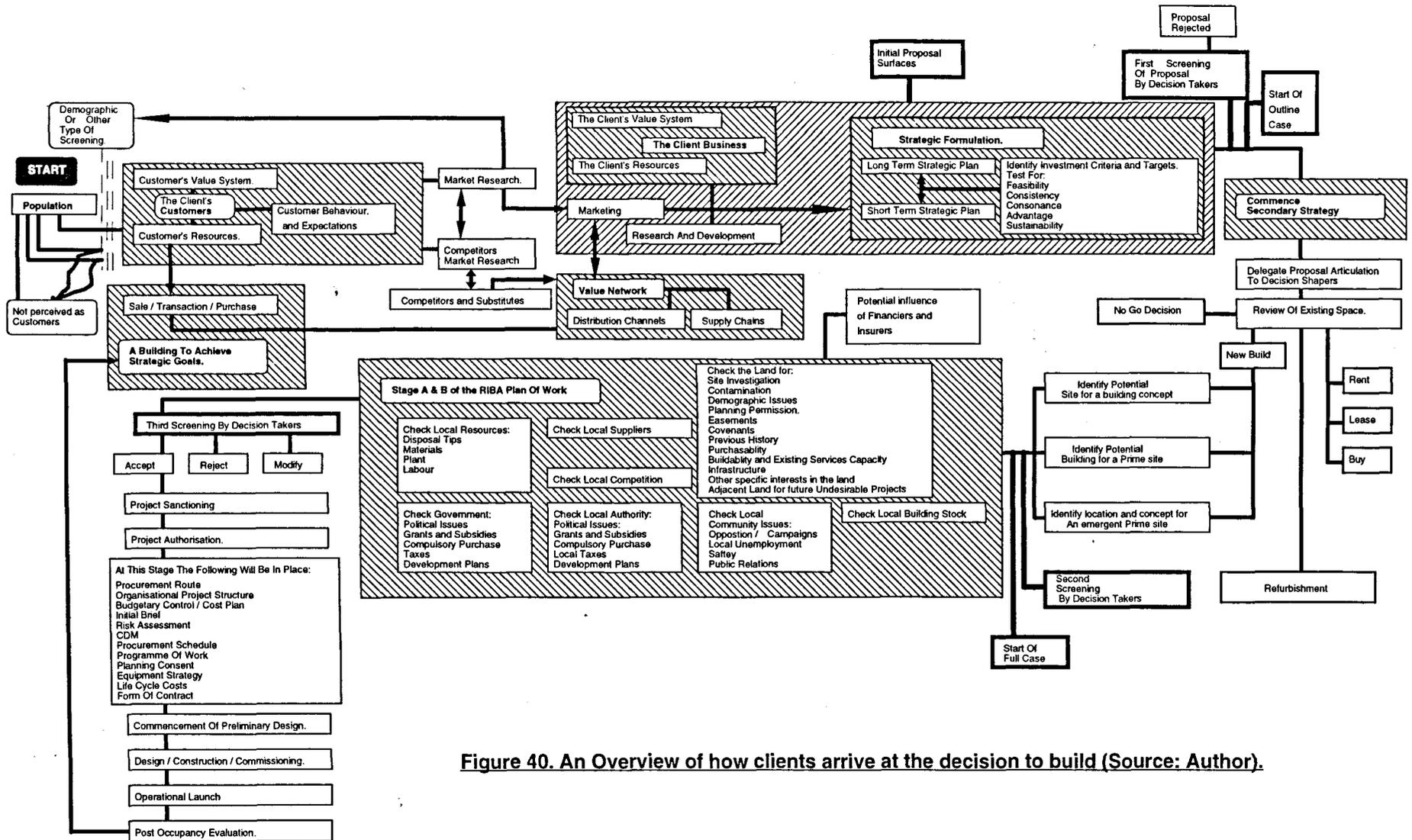


Figure 40. An Overview of how clients arrive at the decision to build (Source: Author).

7.5.1. Proposal Stage.

The secondary strategy is a response to the need for somewhere to conduct the primary strategy⁷⁷. If this were not the case, there would be no 'need' for a building.

The initial proposal will possibly be on a single sheet of A4 paper⁷⁸. At the initial screening process, the proposal's 'chance' of being implemented will be taken by decision takers. The decision taker's selection and authority is based on anticipated expenditure required to implement the proposal⁷⁹. Individuals who lack credibility, and also who make proposals, may stand less chance of gaining acceptance than those with high levels of credibility⁸⁰. If the ambience within an organisation causes individuals to be defensive, then some proposals may never be aired⁸¹. Often, because of the capital investment paradigm's influence, lower levels of management will only view a low cost proposal which senior management may never be made aware of⁸². In such situations, organisations have effectively placed greater emphasis on financial risk than potential returns⁸³.

7.5.1.1. The Initial Proposal.

Capital investment's systematic approach is to submit the proposal on a proforma (see appendix 17). The proforma will require the project to be classified as a new build, a refurbishment, an extension, a demolition, or a cost saving project. The proposer will state the problem and the base case that explains what will happen if nothing is done. This description is likely to be in about five or six lines of text. The proposer will then offer a potential solution explaining how it solves the problem, along with the benefits that will flow from this action. Typically, this will be contained within about 15 - 20 lines⁸⁴. Finally, the proposer will be asked to suggest, or examine, alternatives stating why they are inferior to the proposed solution⁸⁵. Both the problem and solution, in their ill-defined condition are considered concurrently, rather than separately or sequentially (i.e. the generation of solutions begins before the problem is fully understood).

7.5.2. First Screening.

The initial idea, on an A4 sheet of paper, will go to a preliminary screening meeting. This meeting may comprise senior managers, or middle managers (decision takers), dependant on the organisation's size, experience of procuring buildings, and the proposal's cost⁸⁶. At this first formal screening stage, the proposal will be abandoned, put on file, combined with another proposal, or approved in principle. In inexperienced organisations, this meeting may be informal. It will be at this stage that initial perceptions regarding the proposal being a capital expenditure or a capital investment project may influence the whole approach to the proposal's development. If the project is seen as a capital expenditure project then the emphasis will be on cost reduction⁸⁷. If the project is viewed as a capital investment then the emphasis will be on maximising returns with minimum cost.

7.5.3. Outline Case Stage.

In response to successful initial screening, the decision shapers and the decision takers take control of the decision to build process. The main thrust of the proposal's development will be to ensure that the type of project is defined, typical costs are elicited, anticipated returns are calculated, options such as lease, buy, rent, refurbish, demolish, sell and new build are calculated⁸⁸. The proposal is then subjected to financial appraisal, along with other aspects of a preliminary feasibility study, and returned to the decision takers. Secondary screening will decide whether to spend more resources developing the proposal, or not.

Companies with restricted resources may choose less expensive options at this stage, and the decision to build is side-tracked into cheaper solutions such as rent or lease⁸⁹. The problem with this approach is that existing accommodation available to buy, rent or lease, may not be compatible with organisational logistics, hidden expenses such as personnel time spent travelling to and from the building and so on⁹⁰. This

incremental approach to strategy is particularly prevalent with risk-averse or financially constrained decision approvers⁹¹.

Decision shapers working under risk-averse decision takers and approvers, may become frustrated unless they condition their expectations to be in line with their superiors⁹². This explains how senior management's values can subsume the visible values of individual employees.

During the outline case stage, many sources of information (See Appendix 7) and issues such as proximity, availability, transport costs, skills required, staffing required, and a preliminary financial appraisal providing indicative costs and anticipated returns, are investigated. It would not be uncommon to see operational research techniques such as trend line modelling, demographics, employment shift & share analysis, sociographics, land availability analysis, land use analysis, transport studies, linear programming, gravity modelling and queuing models⁹³, all used to develop a bounded rationality of the problem domain as 'objectivity' is seen as being more valuable than 'subjectivity'. Solutions are sought as a means of exploring the problems involved in this process which combines investigation and creativity⁹⁴.

It may be at this stage that enquiries are made about grants, assistance, and subsidies, from the various governmental agencies and local authorities⁹⁵. Sources of external finance may also interfere with the decision shaping process as amendments are included to appeal to external financiers (e.g. design can be influenced by the need to accommodate alternative uses in case the client becomes insolvent and so that financiers can recover their investment⁹⁶). Balance sheet issues of gearing (See Appendix 12) and debt (See Appendix 18) may be explored, in particular concerning interest rate and currency movements (See Appendix 13).

No examples were found of collaboration between companies within a supply chain solving their collective problems with a single proposal. By considering their

problems as a group, they would be able to reduce unnecessary transaction costs and have the potential to create a sustainable competitive advantage⁹⁷.

It is during the outline case that different internal clients approach the search for a response to their individual circumstances. Before the decision to build can progress a series of decisions must be explored and their objective outcomes recorded on the proposal's form⁹⁸. The pre-project decision requires explanation of the following issues:

Assumptions.

Location in relation to infrastructure and urban setting.

Design.

Permissions.

Costs.

Returns.

Finance.

Capacity.

Risk.

Each team of decision shapers will seek to fill in the missing gaps contained under the above labels⁹⁹. By adapting a manufacturing approach to construction, some clients carry common assumptions into each project¹⁰⁰. The systematic approach adopted, not only expects the decision making process to suggest a building, but also reduces the need for decision shaping. This view sees the core business as its primary strategy and the building as a secondary strategy in a product oriented approach. A building designed without consideration of the 'local' population ignores the contribution a physical facility can have on social behaviour and attitudes, as was realised by 1960's approaches towards high-rise social housing.

Other problems might begin to surface during this stage and be included in the proposal's baggage. It is important that these emergent problems are recognised. If they are unexpected and cause the project to be redefined at a later stage, a loss of

focus on the original strategic intention may occur. This is especially true of large organisations with pre-project durations extending beyond a year¹⁰¹.

During development of the proposal decision shapers take ownership of the project and become committed to its success. They have made the decision to build and now see their objective as persuading the decision takers to make the same choice. The consideration of who will 'ultimately' judge success reflects the decision shapers' perceptions about for whom the proposal is being prepared. The level of stakeholder consideration, including shareholders, financiers, customers and the general public, can illuminate the shapers' understanding of management purpose, awareness and sensitivity. Whilst most organisations assume they have considered their stakeholders, some of them will not have consulted, nor sought any opinions¹⁰².

Some clients assume paternalistic postures and presume they know what is best for their stakeholders¹⁰³. Other clients only consider stakeholders who have an immediate impact on the decision making process¹⁰⁴. Few clients attempt to identify and consider all project stakeholders, both in the long and short-term. Clients faced with a wide range of potential stakeholders may feel that any attempt to enter a consultation process would cause substantial delays that might defeat project feasibility¹⁰⁵.

The decision shapers are aware that capital investment priorities must look favourable, if decision takers are to advance the proposal. If the proposal represents a capital expenditure, then approval may be more difficult to achieve. The concluding phase of the initial decision shaping process reflects on previous experience and is used to gauge how the decision takers might react to the proposal in its present form. Speculation about awkward questions that may be raised often occurs within the decision shaping team around this time. Issues such as: risk management, sources of finance, consequences of external finance, anticipated expenditure, financial analyses, scenario testing, competitor behaviour, customer benefits, and impact on

shareholder expectations, are examples of what experienced decision shapers seek to resolve in their proposal¹⁰⁶.

7.5.4. Second Screening.

Second screening¹⁰⁷ represents an opportunity for decision takers to consider whether it would be commercially prudent to develop the proposal further. Experienced decision shapers have insights into attributes that will either appeal to, or displease decision takers¹⁰⁸. This observation demonstrates the existence and role of subjective influences, which are hidden from view by the rationalistic management perspective combined with the capital investment paradigm. As further problems emerge and attempt inclusion into the proposal, previous assumptions may begin to alter (See Appendix 14). The emergent problems are not necessarily avoidable as examples, such as changes in legislation, are imposed on the decision to build process and must be accommodated. This shows how objective decision making is undermined because the paradigms and perspectives which dominate at any one time, shift or adapt.

During the outline stage, the initial cost estimate of construction will be considered along with other consequential costs (See Appendix 10) involved in building the project. Operational costs, such as furniture, staffing, running costs and so on, will also be included in the calculation. Whilst the estimated cost is calculated, the planned life of the facility and the number of years before payback will be planned. If project-approval looks likely 'Outline Planning Permission' may be sought during this phase of the decision to build process.

Having selected evaluation criteria, the decision shapers set about designing scenarios. A hidden problem at this stage is that the decision shapers may have already developed preconceived ideas about the project during the initial and preliminary stages. The scenarios should represent all options available to solve the problem, or problems. In a minimalist response, at least the do-nothing proposal should be considered against a do-something scenario. It is usual that the worst, the

do-nothing, the most likely and the best scenarios are designed and evaluated against a set of predetermined criteria.

To develop the sense of objective decision making, which has validity that is external to the shapers' desires, the capital investment paradigm again exerts its dominance¹⁰⁹. Financial appraisal will test pessimistic, most likely and optimistic financial attributes such as market share, market size, market growth, profits, capital expenditure, operating costs, secondary strategy's duration, primary strategy's duration, ability to overlap primary and secondary strategies, impact on working capital, impact on fixed costs, impact on variable costs, residual values and balance sheet implications¹¹⁰. The following techniques are commonly used: Internal Rate of Return, (IRR), Net Present Value (NPV), Net Present Cost for public sector projects (NPC) Payback Period (PP) Return On Investment (ROI), and Profitability Index (PI) calculated (See Appendices 23, 26, 27, 28, 29, 31, 32). The range illustrated between the best and worst case scenarios, is seen as indicating risk and large discrepancies, which are viewed as demonstrating more uncertainty than close gaps. Decision shapers' ulterior desire to successfully deliver a project may describe the scenarios from a perception of 'what the potential may be', as well as fulfilling the necessary requirement of achieving proposal approval and budgetary sanctioning. That is, the subjective bias of the shapers exists and may exert an influence which is hidden behind the objective decision making process promoted by the capital investment paradigm¹¹¹. Values underpin all the decisions being formed.

7.5.5. The Full Case Stage.

If after the second screening stage approval has been achieved for the outline case, the shapers begin to develop the full case. Essentially this next stage extends and develops the ideas established in the outline case and overlaps stages 'A' and 'B' of the RIBA Plan of Work. It is during this stage that 'Outline' and/or 'Full Planning Permission' will be sought.

Fast track approaches to construction procurement may allow early appointment of an architect and professional quantity surveyor during full case to develop a concept and cost plan. What needs to be clearly understood during this stage, where the preliminary design paradigm grows in significance, is that the decision shapers have made the decision to build but lack decision takers' and approvers' commitment. The successful outcome of the full business case is full budgetary approval¹¹².

It is common for the financial appraisals to be calculated in isolation by the client's accountants¹¹³. Decision shapers simply look at the financial outcome as this is perceived to be the decision takers' approach. The shapers will check that the 'bottom line' number will meet decision approvers' expectations in relation to the hurdle rate developed out of the capital investment paradigm¹¹⁴. To overcome this, and as a move towards improving current practice, the researcher offers the Collaborative Method (See Appendices 16, 19, 23, 25 and 26), to allow participatory decision making to develop an integrated approach to the decision to build and increase project value.

7.5.6. Third Screening.

As the full case approaches completion, the decision-shaping manager may often take informal soundings to anticipate potential opposition, awkward questions and what might be expected of the proposal¹¹⁵. Any information gleaned from this process will be used to fine-tune the proposal. The submission of the proposal to the decision takers will be an anxious time for the committed shapers, as failure may be perceived as inadequacy or 'sloppy work' by one of the team, with blame attached.

To reduce the potential for rejection, informal enquiries will also be carried out by the decision shaping team. The purpose is to scan the organisation and its environments for any emergent issues that may have been missed¹¹⁶. In some organisations, the head of the decision shapers will explain the proposal informally to an individual member of the decision taking team to test its feasibility, and identify

potential areas of weakness and internal-political sensitivity. It is only when the decision shapers are confident, or when time is running out, that the proposal is offered to the decision takers. The decision takers will either approve the proposal, ask for modifications to be incorporated and recommend re-application, or refuse approval at one of their regular meetings. The manner in which the refusal is given may have serious motivational consequences for the decision shapers, and could promote dysfunctional decision-making¹¹⁷.

The important thing to recognise is that the project has evolved from a few lines of text on an initial proposal form, to a document of many pages containing much analysis. The initial skills of an architect will be related to interpreting the decision shaper's definition of a project within the preliminary design paradigm.

7.5.7. Decision Approval.

In very large organisations with experienced clients, the decision takers may need to approach a more senior decision approval body, such as the main board of directors¹¹⁸. Because of the remoteness of the decision approvers, their consideration will be purely financial and may even be viewed as a "rubber stamping" operation, in some contexts. For decision takers to refer the proposal upwards means that they must feel confident that the proposal will gain approval and budgetary sanctioning, as their careers may be indirectly affected by the proposal's quality. Approval and budgetary commitment mark the transition from proposal to project. The proposal's approval is seen as success by the decision shapers.

7.5.8. Internal Consequences Of Project Sanctioning.

Once internal approval has been given, it is common to see an individual member of the decision-shaping team promoted to become an internal project manager¹¹⁹ whose tasks include liaising between the organisation and external consultants from the construction industry. This common move reinforces the careerist management

perspective¹²⁰, and may disappoint some decision shapers who feel their hard work has gone unnoticed, bar the sometimes obligatory 'thank you' letter. Those disappointed members of the decision shaping team then take their learning experience into the next proposal's development. Negative experience may lead the individual to promote the careerist management perspective where the individual's ambitions may cause conflict with the dominant organisational perspective¹²¹. Individuals who focus on what the project can achieve for them, rather than the organisation, may choose to contribute ideas and information strategically in the hope that they will be recognised and given the opportunity to progress with promotion and career advancement. This explains how the individual's value system and consequent behaviour may be at odds with the group's, and organisation's, declared values and expected behaviour¹²².

If the conflict between the individual and the group is not recognised and managed, then a low trust culture will ensue as the team fragments into a collection of self-preserving individuals whose actions are co-ordinated by the articulated stages of a plan¹²³. Teams of individuals have a collective sense of identity and purpose that leads to synergy. In contrast, groups of individuals simply do what is required on an individual level (i.e. they meet, but do not necessarily exceed, the requirements of their employment). As for the decision shapers, some will assist with the project, but many will start on the next proposal that is being developed within the organisation.

The in-house project manager will be expected to submit regular progress reports to the head of the decision shapers and the decision takers. After final completion, in the clients' understanding of 'final', the project manager will complete a post audit (See Appendix 19).

The closing part of the pre-project stage provides a blurred introduction of a construction industry consultant as becoming the project leader. The decision shapers, now working on the front-end of the project, start to revisit previous decisions and develop them in greater depth. Time will have moved on and early

assumptions may begin to change. It is in this context of the shifting dominance of paradigms that encourages the emergence of further new ideas and the reconsideration of past decisions from different perspectives. This re-examination process can range from a new employee wishing to stamp his or her individuality on such features as room size, to an interest rate rise, or a stock market collapse.

The design team operates between the decision shapers and the construction industry. The decision shapers, and possibly the decision takers, do not want to make any decision that may be inappropriate in the short-term and cause personal embarrassment for them and their careers. The construction industry wants to be told exactly what the client wants so that it can plan how to carry the work out and calculate its cost estimate and profit. The internal project manager finds himself / herself sitting between an evolving primary strategy and a construction industry that wants a firm, static, statement of needs. As no one knows what the clients' business activities will require in terms of space in ten years time, the building's physical boundaries may influence the way in which the organisation develops¹²⁴. This limitation, realised in the future, may be instrumental in deciding if both the building and the decision to build were successful.

The dilemma facing the client who wants a low cost building today is that long-term design flexibility may generate unnecessary cost in the short-term. It therefore becomes imperative that the long-range planning process from the strategic paradigm includes the architect, who needs to understand the organisation's perceived future (i.e. their strategic vision). By combining these two professions, capital expenditure proposals (i.e. projects regarded as necessary costs) may be capable of conversion into capital investment projects (i.e. projects that add value to the organisation).

As the project moves further into Stages 'A' and 'B' of the RIBA Plan Of Work, the decision shaping team increasingly comprises members from external organisations whose participation may be influenced by commercial incentives. The introduction of external parties adds further complexity to the context of a group decision making

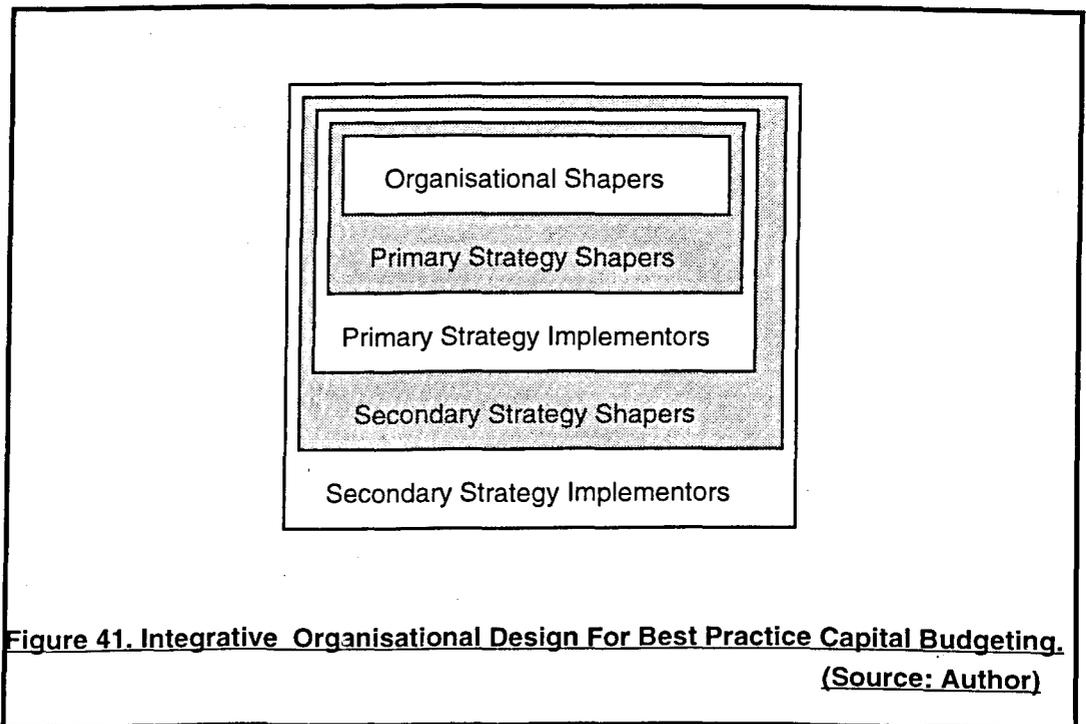
process. What seems to be lacking at this stage is any linkage to the assumptions, perceptions, and constraints that influenced earlier decisions which may now be invalid. The implication of this is the project may be reinvented after secondary questioning produces different answers than initially interpreted. The reason this occurs is a corollary of the shifting dominance of paradigms and perspectives as personnel change, assumptions modify, and the perception of constraints alters. Any approach to the decision to build that starts by suggesting the problem be stated as a stand-alone statement ignores the complex and fluctuating reality of organisational life.

If one considers the complex organisational structure of a hospital, whose pre-project stage can last up to three years, it becomes clear that a written design brief must be treated in the same manner as a organisation's Balance Sheet. That is, the design brief is a snap shot of a particular response to a dynamic network of problems caused and influenced by paradigms and perspectives. Because of this the descriptive notes that would accompany the statement become essential reading. This explanation argues that a single design brief is inadequate and promotes the need to recognise a series of briefs are required which will allows trends to emerge, be identified and understood by all the key participants in the decision to build process¹²⁵.

This outline of the pre-project stage has explained the decision to build process as a paradigm in its own right, and also has viewed it from within that paradigm. Because it is told from within, it seems logical, sequential, rational and will lead to a good decision being made. The same would be true of an explanation of the other paradigms, such as the capital investment or strategic paradigms. It is for this reason that those involved in the decision to build process must recognise the seductive rational of paradigms and develop an awareness of them as a collection of constructs developed from particular views of subjective value; they are all human inventions aimed at creating an orderly existence so that chaos is avoided.

7.6. Preparing An Outline For A Guide of Best Practice.

In order to meet one of the research aims, the following discussion outlines the structure for a guide of best practice that seeks to reduce the limiting effects of bounded rationality and move the decision to build process from one managed by paradigms to one which communicates with the needs of the underlying values and expectations of those paradigms. It is envisaged that it will provide a datum point from which further research will generate a guide of best practice. Its inclusion in this thesis is to record the lessons and perceptions drawn from the work.



As can be seen in figure 41, organisational-shapers' (e.g. the main board of directors) discussions need to be fully understood by primary strategy shapers (e.g. senior managers). For smaller organisations, individuals may belong to more than one group. This cascading of awareness needs to flow down the line to those responsible for implementing secondary strategies. At the moment, the products of meetings are passed from one discussion to the next. This approach may compromise decision quality as the importance of particular issues may be misplaced, or even lost in the

process. During the passing of a brief from one management tier to the next, it is vital that all the assumptions, constraints and issues are made explicit. Perfect knowledge cannot exist consistently, throughout a large organisation. The proposed approach following on from this research must attempt to maximise effective communication and clarity throughout the complex decision making process.

The proposed outline methodology focuses on three key phases that begin in the client's strategic formulation and eventually branch towards the decision to build, or towards other options (See appendix 20).

7.7. Summary Of The Chapter.

This chapter has made explicit the decision to build process by combining the literature and the case studies. The explanation not only reveals the milestones in the pre-project stage but also how division in the decision making process can cause discord. The conflict stems from the influence of competing paradigms and perspectives which seek to make subjective decision making objective in the belief that such a process will lead to better decisions. The underlying values, which influence each paradigm and perspective, search for 'good' decision making. However, there are often different views of 'good' and so paradigms compete for dominance in the drive to influence the decision to build. Decision shapers see their role as delivering projects in competition with other bids for capital allocation. This emphasis can cause disharmony between the initial purpose of the project and the need to gain project approval as 'effective' decision making becomes confused.

The conclusions and recommendations that flow from this will be presented in the final chapter of this thesis.

¹ See Section 4.3.2. "How The Capital Investment Paradigm Is Realised", 4.3.3. "The Capital Investment Process" (p. 62 In Particular), 4.5.1.1. "Marketing And Strategic Formulation", 4.5.1.2. "Derived Demand", 4.5.1.3. "Cyclical Demand", 4.5.1.4. "Erratic Demand", 4.5.2. "The Strategic Paradigm" (P 95 In Particular), 4.5.2.4. "The Link Between The Primary Strategy And The Project (Pp 110-112 In Particular)", 6.3. "What Triggered The Process That Led To The Tentative Decision To Build?", 6.4. "Why Was The Building Needed?".

² See 6.16. "Discussion Of Paradigms And Perspectives At Play".

³ See 3.3. "UK Guidance To Clients Considering The Decision To Build".

⁴ For example, the planning permission paradigm and outline planning permission's influence on which decisions need to be made before other decisions. See 6.5. "What Decisions Were Made During This Process?"

⁵ See 3.5. "Moving Beyond The Summary To Identify Paradigms And Perspectives In The Research Domain".

⁶ See Schön, D.A. (1995) The Reflective Practitioner: How Professionals Think In Action, Reprint, Arena; Ashgate Publishing Limited.

⁷ See 6.19. "Conclusion To The Study Of Multiple Cases".

⁸ See Chapters 4 and 5

⁹ See case study c) "Value Management Workshop For Gritford NHS Trust And An Exploration Of Both Capricode And Capital Investment Manual Guides For NHS Exploration Of Procuring A Hospital" In appendix 3 where the subjects moved the project scope to assist in the realisation of proposal approval.

¹⁰ See case study iv) "Wottons" in appendix 3

¹¹ See "Calculating the Cost of Equity" in appendix 5.

¹² See cases vii) "Brayfield Hospital Trust" and c) "Value Management Workshop For Gritford NHS Trust And An Exploration Of Both Capricode And Capital Investment Manual Guides For NHS Exploration Of Procuring A Hospital" in appendix 3. Also appendix 4 "Critique of the Capital Investment Manual".

¹³ This is developed from Porter's view of how a company can achieve a competitive advantage. See 4.5.2.2. "Porter's Competitive Advantage: A Means Of Influencing Project Formulation And Appraisal" and 4.5.2.3. "Cost Drivers".

¹⁴ See 4.5.4.1. "The Rationalistic Manager Perspective"

¹⁵ See 4.5.3. "The Organisational Perspective".

¹⁶ This is how the property development paradigm is often brought into the decision to build. See 4.6.2. "The Property Development Paradigm".

¹⁷ See 5.1. "Introduction To The Chapter".

¹⁸ See 4.3. "The Capital Investment Paradigm, A Process influencing Paradigm Which is Internally Focused", 4.3.1. "Roles Within The Capital Investment Paradigm", 4.3.2. "How The Capital Investment Paradigm Is Realised", 4.3.3. "The Capital Investment Process", 4.3.4. "Post Auditing And Efficiency Auditing", 4.3.5. "Linking The Capital Investment Paradigm To A Management Perspective" 4.3.6. "The Need To Augment The Capital Investment Paradigm", 4.3.7. "Analysis Of The Capital Investment Paradigm", 4.6.1. "The Financial Paradigm", 4.6.1.1. "Gearing And The Implication Of Imposed Restrictions", 4.6.1.2. "Capital Rationing And The Allocation Of Finance To Budgets", 4.6.1.3. "Internal Financial Control And Its Consequences", 4.6.1.4. "The Cost Of Capital From The Financier's Perspective", 4.6.1.5. "The Lease Or Buy Decision" 4.6.1.6. "The Private Finance Initiative (PFI)", 4.6.1.7. "Analysis Of The Financial Paradigm" and finally, case d) "Considering Finance: An Interview With Mr. Wilkinson, Former Director Of Davy McKee (Sheffield) Ltd" in appendix 3.

- ¹⁹ See 3.3. “UK Guidance To Clients Considering The Decision To Build”.
- ²⁰ See 6.7. “Did Anyone Have Overall Responsibility For The Process? If So, Who?”, figure 35. “Project Organisational Structures”, figure 36 “Pawford Development Corporation’s Project Structure”, figure 37 “Wotton’s Project Structure” figure 38 “Brayfield Hospital’s Project Structure” and table 12 “The Decision Making Groups”.
- ²¹ See 4.3.3. “The Capital Investment Process” (p 68 in particular).
- ²² See 4.3.3. “The Capital Investment Process” and 6.9. “Were Roles And Responsibilities Established?”.
- ²³ See case iv) “Wottons” in appendix 3.
- ²⁴ See 6.9.2. “Decision-Shapers”.
- ²⁵ See 6.9. “Were Roles And Responsibilities Established?” and table 12 “The Decision Making Groups”.
- ²⁶ See 6.9. “Were Roles And Responsibilities Established?” and the following cases in appendix 3: case vii) “Brayfield Hospital Trust”, case viii) “Premier Motor Company”, case ix) “Wellowshire Energy Group PLC”, case xi) “Albion National Bank”, and case c) “Value Management Workshop For Gritford NHS Trust And An Exploration Of Both Capricode And Capital Investment Manual Guides For NHS Exploration Of Procuring A Hospital”.
- ²⁷ See 6.9.2. “Decision-Shapers”.
- ²⁸ See 6.16. “Discussion Of Paradigms And Perspectives At Play”.
- ²⁹ See 4.3. “The Capital Investment Paradigm, A Process influencing Paradigm Which is Internally Focused”. Note, all cases force proposals to justify investment independently of other projects as they are often treated as being mutually exclusive.
- ³⁰ See 4.5.2. “The Strategic Paradigm”, 4.5.2.1. “Different Strategic Contexts”, 4.5.2.2. “Porter’s Competitive Advantage: A Means Of Influencing Project Formulation And Appraisal”, 4.5.2.3. “Cost Drivers”, 4.5.2.4. “The Link Between The Primary Strategy And The Project”, 4.5.2.5. “Analysis Of The Strategic Paradigm”.
- ³¹ See case ii) “Regency Retailing”, especially question 9, in appendix 3.
- ³² See 6.3. “What Triggered The Process That Led To The Tentative Decision To Build?”
- ³³ Again, see 6.3. “What Triggered The Process That Led To The Tentative Decision To Build?”, 6.4. “Why Was The Building Needed?”, 6.5. “What Decisions Were Made During This Process?”, and section 6.9.2. “Decision-Shapers”.
- ³⁴ See 6.5. “What Decisions Were Made During This Process?” and question four in each of the following cases from appendix 3: i) “Alpha Fast Burgers”, vi) “Perryton’s Family Friendly Inns”, and case viii) “Premier Motor Company”.
- ³⁵ See 6.3. “What Triggered The Process That Led To The Tentative Decision To Build?”, 6.4. “Why Was The Building Needed?”, the entire “Marketing Paradigm” starting in 4.5.1. as well as all of the “Strategic Paradigm” beginning in 4.5.2
- ³⁶ Good examples are provided by the “Wotton” and “Hillshire Water” cases in appendix 3
- ³⁷ See 4.3.3. “The Capital Investment Process” (in particular pages 64, 65 and 68), 4.3.5. “Linking The Capital Investment Paradigm To A Management Perspective”, 4.3.6. “The Need To Augment The Capital Investment Paradigm”
- ³⁸ See 4.5.4.1. “The Rationalistic Manager Perspective”
- ³⁹ See 4.3.3. “The Capital Investment Process” (p 66 in particular) and 6.11. “Was A Target Cost Identified? If So, What Was It?”
- ⁴⁰ See 6.9.2. “Decision-Shapers”.
- ⁴¹ See cases iii) “Pawford Development Corporation”, vii) “Brayfield Hospital Trust”, and case b) “Value Management Workshop For Brayfield NHS Trust” all of which are in appendix 3.
- ⁴² See question 4 in case ix) “Wellowshire energy group Plc” which is in appendix 3.

- ⁴³ See case v) "Hillshire Water Plc" in appendix 3
- ⁴⁴ See cases x) "Railtrack" and v) "Hillshire Water Plc" in appendix 3
- ⁴⁵ See 4.6.1.2. "Capital Rationing And The Allocation Of Finance To Budgets", 4.6.1.3. "Internal Financial Control And Its Consequences", 4.6.1.4. "The Cost Of Capital From The Financier's Perspective", and case x) "Railtrack" with reference to their imminent stock-market flotation.
- ⁴⁶ See 7.2. How Paradigms and Perspectives Emerge And Structure The Decision-Making Process and case b) "Value Management Workshop For Brayfield NHS Trust" in particular.
- ⁴⁷ See chapter 5
- ⁴⁸ See 6.4. "Why Was The Building Needed?"
- ⁴⁹ See 4.3.5. "Linking The Capital Investment Paradigm To A Management Perspective", 4.3.6. "The Need To Augment The Capital Investment Paradigm", 6.2. "Background To The Cases", 6.3. "What Triggered The Process That Led To The Tentative Decision To Build?", 6.4. "Why Was The Building Needed?", table 2 "Case Study Data", table 3 "Length Of Time Projects Had Existed As Proposals Or Potential Ideas", table 4 "The Strategic Background To Pre-Project Inception" table 5 "The Background To The Pre-Project Stage", table 6 "The Level Of Project Definition At The Trigger-Decision Stage".
- ⁵⁰ For good examples consider Wotton's 2160 project, Alpha Fast Burger's target of 47 stores in a year, and Regency Retailing's value culture and its influence on the selection of potential sites. See the case studies in appendix 3.
- ⁵¹ See table 13 "The Sources Of Expertise Used" and consider their emphasis on 'implementation'.
- ⁵² See 4.5.4.1. "The Rationalistic Manager Perspective"
- ⁵³ See 4.5.4.2. "The Dynamic Manager Perspective"
- ⁵⁴ See 4.5.4.3. "The Careerist Manager Perspective".
- ⁵⁵ See 4.3.7. "Analysis Of The Capital Investment Paradigm"
- ⁵⁶ See 4.5.2.1. "Different Strategic Contexts"
- ⁵⁷ See 6.5. "What Decisions Were Made During This Process?"
- ⁵⁸ See 4.6.1.3. "Internal Financial Control And Its Consequences"
- ⁵⁹ Again see 4.6.1.3. "Internal Financial Control And Its Consequences" with particular reference to pages 134-135.
- ⁶⁰ See 6.3. "What Triggered The Process That Led To The Tentative Decision To Build?" and case d) "Considering Finance: An Interview With Mr. Wilkinson, Former Director Of Davy McKee (Sheffield) Ltd" which describes a "no-go" decision.
- ⁶¹ Case iv) "Wottons" provides a good example.
- ⁶² See 4.3.1. "Roles Within The Capital Investment Paradigm" and 6.8. "Who Explored The Various Considerations?"
- ⁶³ There was clear evidence of this in both the Premier Motor Company case and the Wellowshire Energy Group case where the shaper's promoted their own dominant paradigms and took ownership of the decision to build process with the result that the initiator's vision was redirected.
- ⁶⁴ For example, the planning permission paradigm's emphasis on the requirements for outline planning permission; see case a) "How Wottons Gained Local Authority Approvals" and also case d) "Considering Finance: An Interview With Mr. Wilkinson, Former Director Of Davy McKee (Sheffield) Ltd".
- ⁶⁵ A good example is Wotton's move from a two buildings scheme to a single building strategy and also Premier Motor Company who combined two uses into one proposal; see both cases in appendix 3.
- ⁶⁶ See appendix 17, which is a Pawford Development Corporation proposal form.
- ⁶⁷ Again, see appendix 17, which is a proposal form for Pawford Development Corporation.

- ⁶⁸ See 4.3.3. "The Capital Investment Process" (pp. 60-63 in particular) and 6.11. "Was A Target Cost Identified? If So, What Was It?"
- ⁶⁹ See Capricode in section 4.3.3 and case ix) "Wellowshire Energy Group" in appendix 3.
- ⁷⁰ See 4.5.1.1. "Marketing And Strategic Formulation".
- ⁷¹ See 4.3.1. "Roles Within The Capital Investment Paradigm" which illustrates the inconsistency that exists in the literature.
- ⁷² See 6.7. "Did Anyone Have Overall Responsibility For The Process? If So, Who?"
- ⁷³ It must be remembered that the decision to build is also in competition for funding with other decisions being developed within the client organisation.
- ⁷⁴ This seeks to clarify the confusion in the literature as described in section 4.3.1. "Roles Within The Capital Investment Paradigm".
- ⁷⁵ It must be remembered that in large organisations, especially those divided between different regions, that more than one group of shapers may be driving proposals towards the same source of funding and so are in competition.
- ⁷⁶ See 4.3.2. "How The Capital Investment Paradigm Is Realised", 4.3.3. "The Capital Investment Process", 6.5. "What Decisions Were Made During This Process?", 6.6. "What Considerations Were Made?", 6.7. "Did Anyone Have Overall Responsibility For The Process? If So, Who?". Also, consider the role the planning permission paradigm has on this structure.
- ⁷⁷ A good example is case iv) "Wottons" that saw a "crinkley tin" building as necessary to keep the weather away from the internal function. If the internal function was unaffected by the climate then this case may not have made the decision to build.
- ⁷⁸ See appendix 17, a proposal form from the "Pawford Development Corporation" case study.
- ⁷⁹ See 4.3.3. "The Capital Investment Process" (in particular page 68), 4.3.5. "Linking The Capital Investment Paradigm To A Management Perspective", 4.3.6. "The Need To Augment The Capital Investment Paradigm". A good example can also be seen in case x) "Railtrack", section 7 in appendix 3.
- ⁸⁰ See 4.3.5. "Linking The Capital Investment Paradigm To A Management Perspective".
- ⁸¹ This is possibly a corollary of 4.3.5. "Linking The Capital Investment Paradigm To A Management Perspective".
- ⁸² This is a potential caused by 4.3.3. "The Capital Investment Process" (in particular page 68), 4.3.5. "Linking The Capital Investment Paradigm To A Management Perspective", 4.3.6. "The Need To Augment The Capital Investment Paradigm". A good example can also be seen in case x) "Railtrack", section 7 in appendix 3.
- ⁸³ See end note 82 above.
- ⁸⁴ This information comes from observations of proforma deemed to be commercially sensitive by the four cases that allowed access. However, Northcott's (1995) provides a comparable example in the appendix of her book.
- ⁸⁵ The minimum that would be expected is to compare a 'go' with a 'no-go' scenario.
- ⁸⁶ This is where the decision to go to 'outline' case stage is made
- ⁸⁷ Whilst all shapers view their process as 'capital investment', often it is actually a 'capital expenditure'; see the first paragraph of 4.3. "The Capital Investment Paradigm, A Process influencing Paradigm Which is Internally Focused".
- ⁸⁸ See 4.3.1. "Roles Within The Capital Investment Paradigm", 4.3.2. "How The Capital Investment Paradigm Is Realised", 4.3.3. "The Capital Investment Process", 6.5. "What Decisions Were Made During This Process?", 6.6. "What Considerations Were Made?"
- ⁸⁹ See 4.6.1.5. "The Lease Or Buy Decision", and case d) "Considering Finance: An Interview With Mr. Wilkinson, Former Director Of Davy McKee (Sheffield) Ltd" in appendix 3.

⁹⁰ This was particularly evident in the Wotton's and Brayfield Hospital Trust cases shown in appendix 3.

⁹¹ The difficulty experienced by the Wotton's case in arriving at a strategic leap rather than yet another incremental step forward, is evidence of such pressures within the strategic paradigm and their implications for the decision to build.

⁹² This is particularly evident in case c) "Value Management Workshop For Griford NHS Trust And An Exploration Of Both Capricode And Capital Investment Manual Guides For NHS Exploration Of Procuring A Hospital".

⁹³ For good examples see cases i) "Alpha Fast Burgers", ii) "Regency Retailing", vi) "Perryton's Family Friendly Inns".

⁹⁴ A clear example of this is shown by case xii) "Sharland City University" in appendix 3

⁹⁵ See cases viii) "Premier Motor Company" and a) "How Wottons Gained Local Authority Approvals".

⁹⁶ See case xii) "Sharland City University".

⁹⁷ See 4.5.2.2. "Porter's Competitive Advantage: A Means Of Influencing Project Formulation And Appraisal", and 4.5.2.3. "Cost Drivers".

⁹⁸ This is particularly the case where clients have a strong internal market philosophy; see cases viii) "Premier Motor Company" and ix) "Wellowshire Energy Group".

⁹⁹ See 6.8. "Who Explored The Various Considerations?" and 6.15. "Was Any External Advice Sought? If Yes, From Whom?"

¹⁰⁰ See cases i) "Alpha Fast Burgers", and vi) "Perryton's Family Friendly Inns".

¹⁰¹ See 6.14. "What Was The Time Span From The Process Being Triggered To The Tentative Decision To Build?" and cases iv) "Wottons", vi) "Perryton's Family Friendly Inns", vii) "Brayfield Hospital Trust", and case xii) "Sharland City University" all of which are in appendix 3.

¹⁰² See case vii) "Brayfield Hospital Trust" in appendix 3 and also see appendix 4. "Critique of the Capital Investment Manual".

¹⁰³ See case v) Hillshire Water Plc in appendix 3

¹⁰⁴ For example see case ix) "Wellowshire Energy Group" in appendix 3

¹⁰⁵ The shapers would see such a consultation process as a risk or delay to their objective of project delivery.

¹⁰⁶ See 6.4. "Why Was The Building Needed?", 6.5. "What Decisions Were Made During This Process?", 6.6. "What Considerations Were Made?", 6.15. "Was Any External Advice Sought? If Yes, From Whom?", Appendix 16 "Description Of Decision Types", table 7 "The Project's Purpose", table 8 "Projects Which Look To The Future Or Respond To Events", table 9 "The Project's Emphasis".

¹⁰⁷ This marks the evaluation of the 'outline' case.

¹⁰⁸ See case c) "Value Management Workshop For Griford NHS Trust And An Exploration Of Both Capricode And Capital Investment Manual Guides For NHS Exploration Of Procuring A Hospital" in appendix 3.

¹⁰⁹ Measures such as NPV, IRR, etc, are used to argue the case for approval. It is a process that externalises responsibility as it is not the shaper's criteria that is used to evaluate success, but criteria from a paradigm constructed externally to the individual decision to build process.

¹¹⁰ See all the cases in appendix 3

¹¹¹ For example, alternative scenarios may be selected so that the main proposal looks more favourable.

¹¹² It is at this stage that literature associated with 'Briefing', and literature aimed at clients who have made the initial decision to build, enters this thesis. See 3.2. "An Historical

Overview Of Client Dissatisfaction”, 3.3. “UK Guidance To Clients Considering The Decision To Build”, and section 3.4. “Bilello’s Research”.

¹¹³ This was evidenced by all cases as accountancy techniques, such as NPV, DCF, and IRR calculations, were seen as an exclusive expertise conducted in isolation and away from the main body of shapers; see appendix 4. “Critique of the Capital Investment Manual”.

¹¹⁴ It is common to have an expectation of metrics such as IRR must be greater than 10%, as targets that proposals should meet or better. All private sector clients viewed the actual target that had been set as commercially sensitive information but the NHS has published their hurdle rate within the Capital Investment Manual. See 4.3.3. “The Capital Investment Process” (pp. 66-68 in particular)

¹¹⁵ See 4.3.5. “Linking The Capital Investment Paradigm To A Management Perspective”, 4.3.6. “The Need To Augment The Capital Investment Paradigm”.

¹¹⁶ The shapers see this as a process that ensures a ‘good’ decision is made.

¹¹⁷ This was particularly evident in case c) “Value Management Workshop For Gritford NHS Trust And An Exploration Of Both Capricode And Capital Investment Manual Guides For NHS Exploration Of Procuring A Hospital” in appendix 3.

¹¹⁸ Decision Approvers can be remote from the project when the estimated costs are very large. See cases vii) “Brayfield Hospital Trust” (The Decision Approval process went externally to HM Treasury for a final approval) and viii) “Premier Motor Company”. Consider also case c) “Value Management Workshop For Gritford NHS Trust And An Exploration Of Both Capricode And Capital Investment Manual Guides For NHS Exploration Of Procuring A Hospital” where the project scope of one project was reduced so that HM Treasury approval was not a requirement.

¹¹⁹ The term ‘Project Manager’ can be confusing, as there can be one from inside the shapers and one from the construction industry and so two people call themselves the ‘Project Manager’.

¹²⁰ See 4.5.4.3. “The Careerist Manager Perspective”.

¹²¹ This is recognition of Pinches’ view; see 4.3.6. “The Need To Augment The Capital Investment Paradigm”.

¹²² Each strive towards conflicting views of a ‘good’ decision making experience.

¹²³ See case c) “Value Management Workshop For Gritford NHS Trust And An Exploration Of Both Capricode And Capital Investment Manual Guides For NHS Exploration Of Procuring A Hospital”.

¹²⁴ Function follows form once the physical building is realised.

¹²⁵ See case e) “York University’s Briefing Workshop” in appendix 3.

Chapter Eight: Conclusions And Recommendations.

8.1. Introduction To The Chapter.

The aims and objectives of this thesis were:

- To explain the process of the decision to build
- To explain the content of the decision to build
- To explain what influences the decision to build
- To explain why those influences affect process and content in the decision to build.
- To explain how the decision to build can be improved.

These have been met in the last chapter and also within the following sections of this concluding chapter. As a consequence of this thesis, the term 'client' can now be understood by the construction industry with greater clarity. This thesis explains how client-organisations arrive at the decision to build with a particular focus on the property section that comprises the decision shapers. The explanation of the last chapter makes the process of the decision to build explicit. It achieved this by investigating the decision to build from within the paradigm being articulated by this thesis. The explanation discussed the content, and influences, during the decision to build process and referred back to chapter four where an in-depth discussion of paradigms and perspective was presented. In modifying the preliminary model and adding the funnelling model, both presented in the explanation, 'how' and 'why' the various influences have an impact on the decision to build was made clear. This explanation showed the decision to build process as a product of individual and professional value systems realised through paradigms and perspectives that are motivated towards good decisions and success. However, a hidden conflict arises out of situations where one person's 'good decision' is another person's 'poor decision'. As explained in the last chapter, decision shapers sometimes adopt tactics to realise their goal of delivering the project. The final objective, to explain how the decision to build process can be improved, was met in the explanation by outlining a framework for a co-operative learning approach to creative group decision making within client organisations. The conclusions of this chapter end by explaining how the current approach to the decision to build can be improved before making a number of recommendations

As stated at the outset, the scope of this research is the pre-project stage. This stage covers the development of a proposal and completes when the proposal becomes a

funded project. Decisions made during this stage are only a small part of the project life cycle, yet their effects can cause impacts in the future. What must be clearly understood is that the decision to build is a responding strategy to the firm's core business strategy.

8.2. Originality

The originality provided by this thesis allows the construction industry and the value management community to understand the decision to build process with greater clarity. This is achieved by stepping outside the paradigms that establish a sense of 'fit' within a rational framework that is the decision to build. As a result of this research we are now in a position to externalise the values that influence the importance we attach to individual paradigms and perspectives at certain times. It is now possible to observe how paradigms and perspectives influence the decision to build process, from a vantage point of detachment. Ackoff's messy problem is now a manageable problem situation set in the context of the decision to build. The homogeneous client, so often referred to in the literature, can now be seen as a heterogeneous collection of decision approvers, takers, shapers and influencers. Each grouping has a unique role and purpose in the divided decision making process. The models provided in the last chapter show how the decision-making parts are coordinated, especially at the key decision approving stages, under the influence of paradigms and perspectives. The inadequacy of the decision to build process is exaggerated when artificial decision-rules, based on estimated expenditure, mean that not all projects are considered by the same decision approvers and takers.

Previous research associated with briefing sought to understand the client's objectives as if they were constant throughout both the pre-project stage and beyond. This can now be seen as an attempt to take a snap shot of the expectations of dominant paradigms and perspectives at a single moment in time. Such approaches can now understand that the clients' objectives, at a detailed level rather than a generic level, are in fact variables which reflect the expectations of paradigms and perspectives.

8.3. Conclusions About The Influence Of Paradigms And Perspectives.

Ackoff's description of a 'messy' problem and Schön's view that such problems are a product of competing paradigms, can now be approached and understood with greater clarity. By trying to understand the problem from within paradigms and

perspectives leads to the view that a complex 'messy' problem is being considered. By 'externalising' the accepted wisdom and moving outside the paradigms, the once 'messy' problem can now be seen as an intricate three dimensional spider's web, where a collection of problems, internal and external to the decision to build, are linked by paradigms and perspectives. When 'reality' does not coincide with a paradigm's expectation or prediction (e.g. actual outcomes are different to expected outcomes) it is viewed as a 'problem'. In terms of the decision to build, problems are the difficulties that result from trying to impose expectations of dominant paradigms, on a situation that is being influenced by other paradigms or events. Movement in one paradigm's dominance causes change in the prominence of another. This change can be caused by a proposal's developmental stage requiring a different collection of professionals to become involved, or as a consequence of external forces acting indirectly or directly on the dominant paradigms (e.g. the shareholders' expectation of a dividend). In this conceptualisation the threads within the web are provided by the paradigms, which are the professional codification of value-laden expectations in the form of standard procedures, calculations, acceptable standards, codes of practice, and perspectives or professional viewpoints. By considering the importance we attach to things such as Return On Investment, architectural aesthetics, the style in which a report is written etc., proves decisions are founded on the subjective interpretations of individuals. These are 'values' and are developed from within particular paradigms and perspectives. To concentrate attention on a single problem (e.g. the need to increase profitability) is to view good decision making from within a single dominant paradigm. Such approaches ignore the relationships that exist in a network of paradigms and perspectives, which also evolve with the passage of time. The dominance of particular paradigms and perspectives, such as the Capital Investment paradigm, is a product of the importance realised by values; it is the most dominant paradigm in the decision to build because conventionally we think wealth-creation is a core requirement of good decision making. Because values can change, new paradigms and perspectives not considered by this research might yet emerge to dominate the conversations. It is for this reason that the decision to build must always allow the intellectual capital of a group to be used to identify and explicate the dominant paradigms and shape solutions to meet, or exceed, the expectations of those paradigms.

The use of problem solving strategies that start by designing objectives, do not take account of the influential role of the paradigms that act on a single proposal's evolution. Approaches that begin by articulating parameters in an attempt to define

the problem actually begin solution seeking by virtue of limiting the range of options to be considered. The relationship between a proposal and the paradigms is symbiotic and as such can be viewed as an ecological process. This thesis concludes that there may be an advantage to the decision to build process by seeking to understand the complex influences of the paradigms and perspectives in a holistic sense, rather than adopting an incremental approach of encouraging solution of single problems in isolation and with no wider linkage to other paradigms and perspectives.

Paradigms and perspectives provide the rules, expectations, values and codes of practice, which are either explicitly or implicitly a part of the professions that play a part within the decision to build process. It is concluded that they allow individuals to make seemingly objective decisions, which can be justified as not being influenced by self-interest; that is subjective decisions are often disregarded. Together, paradigms and perspectives attempt to impose logic as convergent thinking establishes consistency and order. To understand how paradigms and perspectives emerge, adapt and decline, the reciprocal relationships between government, industry, academia, and professional bodies need to be considered. Collectively they modify and perpetuate the paradigms and perspectives to maintain a rational system. This process can be seen as a feed back loop where events, action, reflection and behaviour adapt, to achieve a 'good decision'. The way clients structure their approach to the decision to build is influenced by convergent emphasis attached to the requirements of certain paradigms. This 'reality' is woven into an embracing mesh as the complex web of rules and expectations promoted within paradigms and perspectives, permeate other organisations and involve them indirectly in the client's decision to build (e.g. Networks of financiers and local authority planners, etc.). Order is established through interconnections as plans are designed to coordinate key dates, the priority of which is determined by other influential paradigms and perspectives. Some of these interconnecting decisions can be described as milestones and clearly seen as in examples such as the requirements necessary to apply for outline planning permission.

The influential role of paradigms and perspectives is repeatedly observed. For example, the head decision shaper often confers with decision takers, who in turn discuss with approvers to check consonance. Before the formal screening system begins there is an informal evaluation phase and proposals only go forward if their acceptance seems likely; that is, the proposal will sit comfortably with the dominant paradigms. It is also concluded that informal screening is not always recognised by

organisations and is often unrecorded. Political bargaining, which attempts to demote dominant paradigms, sometimes allows an alternative paradigm to gain prominence and influence the decision making process. For the individual, the progression of a proposal is often seen to have a career consequence for those promoting and supporting the initiative in the initial stages. Each actor seeks to make the 'best' decision and will use paradigms and perspectives to support their arguments.

It is only when we become aware that decisions are influenced by paradigms that we can begin to consider the merit of objective decision making as being superior to its subjective counterpart. This thesis concludes that objective decision making, experienced through the influence of paradigms and perspectives, limits potential as shapers drift towards preconceived targets and so lack empowerment. The entrepreneurial search for opportunities is often 'satisfied' in the decision to build process by virtue of the requirements of objective decision making.

Clients can achieve greater value by understanding how paradigms and perspectives limit their potential. Organisations face many problems that could be solved concurrently by holistic and integrated management responses. Because of division, delegation, and co-ordination in large organisations, most personnel lack a holistic view of the problems facing them and try to interpret their situations from within 'their' dominant paradigms. The paradigms that dominate today, and their expectations, may change at a later date as new technologies, new thinking or new legislation cause the emergence of another paradigmatic dominance. The 'delivery-focused' single minded determination of shapers can lead to a one-time good solution becoming a poor solution as their tunnel vision ignores the need to re-test assumptions. This thesis concludes that paradigms and perspectives need to be understood and their influence questioned.

To conclude this section, this thesis finds that paradigms and perspectives structure the process of the decision to build and dictate the content. In order for takers and shapers to be seen as good at their job then they must meet the expectations of the dominant paradigms. As stated earlier, management problems within the decision to build can now be seen as the result of a lack of consonance with paradigms and perspectives, usually dominant ones. Also conflict and confusion can occur when different paradigms dominate in different management tiers and may be the cause of situations often labelled "communication problems". In the context of the decision to build, messy problems and well-defined 'hard' problems can now be seen as

situations viewed from within a collection of paradigms (i.e. messy problems) or from within a single paradigm (i.e. hard problems), where a recognised need to meet expectations is still to be achieved. To understand management problems from within paradigms and perspectives is akin to trying to plot a map of a maze by walking inside it.

8.4. Conclusions About The Decision To Build Process.

This thesis has identified the following reasons why the decision to build process is divided in large organisations as:

- i) Time constraints on senior management.
- ii) Volume of proposals to be considered.
- iii) Geographical constraints and regional divisions.
- iv) Type of perceived projects and rational approaches to decision making.
- v) Estimated cost of proposal and perceived risk to organisations' survival.
- vi) Separation of decision making to facilitate an internal market.

Primary strategies which 'trigger' the decision to build process are decisions to respond to perceived opportunities, threats, or imposed legal requirements, which current strategies are incapable of meeting. Examples of events that might stimulate a trigger-response include ideas, locations, corporate restructuring, revisiting previous decisions, and so on. The literature provides an unclear investigation of triggers as to whether they are created or emerge. This research concludes that in order to improve decision making, clients need to recognise that triggers are not events but are decisions to respond to events. As a form of decision, a trigger reflects the organisation's perceptions, strategic consciousness and resource availability. A single event may trigger one organisation to respond to what may not have been perceived by a competitor. This thesis concludes that decision-takers need to become more aware of the methods, and the people involved, by which their organisation recognises opportunities.

Moving inside the decision to build paradigm, developed in this thesis, allows further improvements to be made by reconsidering how proposals actually begin. The original proposal, which responds to the primary strategy's vision, will be very brief

(often one page of A4 paper) and will emerge from the conflict during the period between primary strategy formulation and tactical-operational considerations. As this initial proposal is aired, in isolation from other issues, the personal values of immediate peers and managers will influence initial reaction to an outlined proposal. The initial proposal will detail a raw problem statement and raw solution simultaneously. An integrated approach to all problems facing the organisation would allow an opportunity to consider a collection of problems with a common solution. This thesis concludes that this subjectivity, which is not acknowledged in formal systems, needs to be recognised and managed.

At a preliminary meeting decision shapers will be given the task of developing the proposal to an outline case for decision takers' acceptance. The initial proposal starts within the client organisation but as it progresses, it becomes increasingly necessary for external participation. During this evolution the decision to build becomes a multi-organisational decision making process as the client contracts with suppliers and the construction industry. Co-ordination of the different parties is seen as the route towards success. However, this thesis concludes that integration and creativity are required to liberate the value from shared knowledge. The difference between integration and co-ordination needs to be clearly understood in terms of its effect on the decision to build process and in terms of participatory decision making.

It is concluded that the decision to build progresses through four screening stages which are:

- i) The informal enquiry about the quality of an idea.
- ii) The initial proposal stage.
- iii) The outline proposal stage.
- iv) The full proposal stage.

In addition to the formal functions of decision approving, taking and shaping, is decision influencing. It is concluded that the following steps of the capital investment paradigm dominate the decision to build process in an attempt to achieve a 'good' decision.

- 1) Decision approvers design strategic requirements (i.e. strategic formulation)
- 2) Decision takers identify strategic requirements.
- 3) Someone proposes a project to solve a perceived problem (i.e. the initial proposal stage).
- 4) Decision takers screen all proposals (i.e. the first screening).
- 5) A proposal is given to decision shapers for development and appraisal (i.e. the start of the outline proposal stage).
- 6) Decision shapers shape the proposal, along with other comparable options, and develop ownership.
 - i) Project definition and alternative options are considered.
 - ii) Estimate cash flow data and required rate of return.
 - a) Exploration of Grants, Subsidies and any Financial Assistance.
 - iii) Select appraisal techniques:
 - a) Identify conflicts in project ranking
 - b) Consider taxation and its effect on profitability.
 - c) Consider depreciation (Capital Allowances) and its effect on profitability.
 - d) Consider inflation and its effect on profitability.
 - e) Consider currency rate movements and their effect on profitability.
 - f) Consider interest rate movement and its effect on profitability.
 - iv) Make decisions during shaping process.
 - a) Consider identifiable risk and its management.
 - b) Consider contingencies for unidentified risk.
 - c) State all assumptions.
 - v) Analyse and provisionally accept.
 - vi) Reflect on proposal.
 - vii) Define the complex group necessary for project implementation.
 - a) Architects, Quantity Surveyors, Project Managers, etc.
 - viii) Explore capital rationing issues.
 - ix) Seek provisional feedback.
 - x) Modify proposal to gain acceptance.
 - xi) Submit proposal to decision takers.
- 7) Decision shapers demonstrate outline feasibility to decision takers.
- 8) Decision takers accept, reject, or ask for modifications (i.e. second screening).
- 9) Develop a detailed analysis of a single option (i.e. start full proposal stage).
- 10) Establish goals and parameters the building must satisfy.

- 11) Promote a decision shaper to become the internal project manager.
- 12) Appoint consultants from the construction industry (i.e. begin stage 'A' of the RIBA Plan of Work).
- 13) Revisit and clarify previous calculations and assumptions made during the outline proposal stage in response to the building oriented paradigms.
- 14) Decision shapers demonstrate full case feasibility to decision takers (i.e. stage 'B' of the RIBA Plan of Work).
- 15) Decision takers accept, reject or ask for modifications.
- 16) If decision takers accept the full case feasibility, then the proposal is taken to decision approvers for sanctioning.
- 17) Decision approvers either reject the proposal, sanction funds, ask for more details or request modifications.
- 18) If funds are allocated, the proposal becomes a project in its clearest sense.

As estimated expenditure influences which management tier receives the proposal, an individual's perception of a problem or opportunity may never reach the main decision approvers. Alternatively, it may reach approvers, but be offered in a modified form. This concludes that an inability to get ideas to decision-takers or approvers may lead to de-motivated participation, particularly at the operational level.

Other sources of decision-support such as grants, financial assistance and subsidies are important considerations, but may come with attached expectations in return (e.g. planning gain). The local planning approval authorities provide a useful contact point to explore financial incentives. It is concluded that just as necessity is the mother of invention, paradigms and perspectives can become both gateways and prisons to decision-making.

8.5. Conclusions About The Decision To Build Content.

Clients, who perceive the resolution of a well-defined problem as the stimulus for the decision-to-build process, tend not to ask questions which can liberate creativity and so become trapped in the influences of the most dominant paradigms and perspectives. This is particularly the case for process-engineering clients who assume their project's contents are purely of a technical nature. They view their projects almost like the production of large commodities and so their emphasis is placed on 'pulling cost out' rather than maximising value by considering ways of adding and

combining. By challenging the influence of the dominant paradigms, it is concluded that creativity could augment projects by taking advantage of potential from such assets as the 'location'. It is important that decision-making systems serve the organisation rather than the other way around. It is concluded that this is possible if the influence of dominant paradigms is understood as a collection of considerations rather than as guiding principles.

Decision shapers sometimes choose to defer some considerations, as such investigation may take resources away from meeting scheduled deadlines. This thesis argues that paradigms and perspectives set the priorities as everyone wants to be seen as making 'good' decisions. However, because initial problems and initial solutions are considered and developed simultaneously, the whole decision to build process mistakenly assumes the full extent of the problems are known. This approach is encouraged by paradigms that force a need to develop a solution with costs attached, even in the proposal's most embryonic stage. Most decision shapers see other problems facing the organisation, such as high absenteeism rates, as somebody else's problem. There is an absence of awareness that holistic responses to a collection of problems facing the firm may lead to increased value; such a potential would also call for greater empowerment of shapers and closer integration with approvers and takers. It is concluded that during the shaping process, very few decision shapers are aware that the problem, linked to other problems, is evolving slowly as initial perceptions modify and assumptions erode. Once an answer has been provided to a question, the process moves on to the next question, and the original answer is assumed to retain validity throughout time.

Another aspect of how paradigms influence behaviour can be seen when the shapers learn that if bidding for funding they might consider the timing of their proposal in respect to other proposals being submitted; that is shapers are in competition with other shapers inside the same organisation. It is concluded that proposals funded as a best-of-the-bunch approach decided at monthly meetings might disadvantage a good proposal in a high quality batch, and provide advantage to a mediocre proposal in a low quality batch. This is an example of the potential weakness of externalised objective decision making systems that can be manipulated by tactical manoeuvring. Also consider decision takers, whose management seniority is decided by anticipated expenditure, consider the proposal. Another such unquestioned weakness can be seen in situations where large expenditure proposals are referred to more senior decision takers leaving lower ranking levels of management to approve small expenditures.

This influence of the Capital Investment paradigm is an example of how the assumptions, which mould paradigms, can encourage disjointed decision-making from an organisational perspective. This thesis concludes that the consequences of allowing paradigms and perspectives to guide logic can disadvantage potential low-cost-high-return proposals, which may have approval denied due to organisational inexperience and risk aversion at lower levels.

The need for externalised-objective decision making is also reinforced by 'post audits'. For Public Sector clients, accountability explicitly focuses attention on 'how' decisions are made and what steps should be taken to reduce expenditure. A requirement of having to explain decisions and actions places greater emphasis on the 'content and process' of decision making, rather than on the end result. Accountability, in this sense, reinforces defensive thinking, undermines divergent thinking and promotes 'satisficing', as a personal risk reducing strategy. The need for accountability has perhaps grown from the occasional historical experiences of corruption and ineptitude; that is, a paradigm has been violated and so it is promoted to a dominant position to avoid such situations to be repeated. It is concluded that an over emphasis on accountability, which can reduce the scope for creativity, may cost more in missed opportunities than occasional abuses of the system. Alternative methods of detecting corruption, misappropriations and ineptitude could reduce the need for the scrutiny and accountability that dominate public sector decision-making.

This thesis also concludes that the consequences of proposals often extend beyond the project and so a Cost Benefit Analysis paradigm's influence exists but is often not acknowledged because of the emphasis on objective decision making under the influence of the dominant Capital Investment paradigm. For example, a new building may offer employment prospects to an economically deprived region and similarly the decision takers' rejection of a proposal may lead to colleagues being made redundant. Whilst a rationally developed proposal is put forward for screening, its foundations are often rooted in values, emotions, aspirations and hopes. These human qualities, whilst hidden behind dominant paradigms, exist and can exert an influence on the decision shaping process.

8.6. Conclusions About The Key Participants Within The Decision To Build

As part of the process to objectify the decision to build, decision approvers are frequently detached, impartial, and rarely become involved with the proposal until it's time for a decision to commit funds. It can be clearly seen that even though the decision approvers are detached, they are making decisions influenced by 'their' dominant paradigms. It is possible for decision shapers to learn from their experience of approvers and present proposals in such a way that they have more chance of gaining approval. Whilst there may be nothing wrong with this approach it must not be viewed as objective decision making but as a decision influenced by paradigms. The approver's concern is assumed to be organisational survival, shareholder satisfaction, personal financial reward, and possibly self-actualisation. To them, it is often the financial outcomes that tend to take priority over other attributes. The relationship between decision takers and shapers ranges between 'distant and remote' to 'close and involved'. Head decision shapers and some individual decision takers play out their role as either 'detached and impartial' or 'involved and biased'. Because decisions are often formed within a paradigm's influence, rules determine success. However, those rules are not necessarily developed with a particular situation in mind. It is concluded that roles are influenced by the dominance of certain paradigms and that the need to objectify decisions and that these influences effect the level of intimacy between approvers, takers and shapers

As individuals learn through experience they become better at meeting paradigmatic expectations. The decision takers' experience of getting project-approval from decision approvers educates and conditions their evaluation of what 'successful decision taking' is. This learning effect is also shared by decision shapers who exist to develop proposals and see 'their' success linked to the delivery of buildings. During the development of a proposal, the decision shapers often take ownership of it and become committed to gaining approval. This thesis concludes that the decision shapers' experience, of gaining proposal approval from decision takers, similarly educates and conditions their evaluation of successful decision shaping. This learning is taken into the next proposal and thus increases the probability that a built solution will be proffered. That is, this thesis concludes that decision takers and shapers get better at having their proposals converted into projects. This finding has implications for decision approvers who do exert an influential bias, even if it is not acknowledged.

It is also concluded that the decision shapers' workload can affect the quality of decisions as some decisions are made hastily. Sometimes shapers run with more than one proposal at a time, yet decision quality is assumed to be consistent throughout the decision-to-build process. To question the quality of a decision would be seen as an investigation of the individual rather than the overarching paradigms and perspectives that influence behaviour. Efforts to speed up decision shaping may promote some paradigms at the expense of others as efficient shaping becomes more important than effective decision making. As the decision to build has a long-term consequence, improved decision making quality would allow an opportunity for increased value, and should be considered by the approvers, takers and shapers.

Because the Capital Investment paradigm is dominant, an accepted rational system is put into place by experienced clients. Within large experienced clients decision shapers survive by bidding for funds that reinforces their attitudes towards self-preservation and self-purpose. It would not be uncommon to see decision shapers decide to bid for funds before they have a project. Once a feasible bid as a lump sum is established, they often begin to bundle a collection of outstanding issues from within their organisational awareness, to justify their proposal. Whilst the role decision shapers play in the decision to build becomes critical to project definition, they do not necessarily see the senior management's dominant paradigms as their dominant paradigms. This thesis concludes that the client's objectives are thus influenced by the shapers' view of the dominant paradigms and this might be in conflict with decision approvers' shifting priorities.

Another tactic used by decision shapers is to reduce the scope of the project thus mitigating the need to seek higher level approval. Reduction of scope in this sense may compromise the purpose of the project. During the later stages of design, the reduced requirements may be reversed to the original requirements leading to variation orders and price escalation. It must be understood that the motivation for such acts is to allow the decision shapers to achieve 'delivery'. Alternative scenarios put forward by decision shapers may reflect a range of optimistic appraisals, that are selected in such a way that their favoured scheme goes forward. It is therefore concluded that shapers work through, with, or around the decision-approvers' dominant paradigms and perspectives in order to fulfil their purpose of successfully delivering a project.

It can be concluded that the decision making process in organisations where the division of decision making is clearly articulated is conducted by the following bodies (Examples are provided in brackets):

1. Occasionally:
 - i) External decision approvers (e.g. H.M.Treasury).
 - ii) External decision takers (e.g. the NHS's Executive).

2. Always:
 - i) Internal decision approvers (e.g. the main board).
 - ii) Internal decision takers (e.g. executives and senior managers).
 - iii) Internal decision shapers (e.g. the project team).
 - iv) Internal decision influencers (e.g. employees and internal users).
 - v) External decision influencers (e.g. Local authority planners, customers and shareholders).

Decision influencers participate from one of the following categories:

- i) Formal-direct participation; for example, invited views are sought so that external values are allowed into the decision making process.

- ii) Informal-direct participation; for example, feedback from employees, again to allow values to influence decision-makers.

- iii) Formal-indirect participation; for example, views of potential objectors are considered in an attempt to understand their values in order to manage them.

- iv) Informal-indirect participation; for example, the general public pass on their comments through media such as a letters page in a local newspaper where values are given even if they have not been asked for.

This thesis concludes that the divergent values within the different decision-making groups cause varying levels of emphasis, urgency, commitment, motivation, and involvement with the proposal. It is this aggregated organisational value-system which promotes or demotes individual paradigms and perspectives. The

organisation's value system embraces, and is shaped by, the collective values of groups and individuals within an organisational paradigm. This is an example of the ecological nature in which paradigms and perspectives achieve a gestalt. Senior management must meet the external values of shareholders, customers and auditors and so the paradigms and perspectives create a rationale that influences all organisational levels. They demonstrate this by explaining how they have met the expectations of particular paradigms and perspectives. However, different organisations display different levels of stakeholder definition and consultation (i.e. the decision influencers). The direct stakeholders included managers, employees, customers, suppliers, shareholders, creditors and competitors. Indirect stakeholders included financial analysts, politicians, prospective investors and prospective customers, the media, and the general public. Stakeholders are decision influencers and the decision shaping process combines internal and external sources of their influence.

8.7. Conclusions About Improving Client Satisfaction.

The thesis finds that classification of clients by turnover, project value, or project type does not provide the analytical clarity that this thesis has. The level of clearly defined division between approvers, takers and shapers reveals the degree of experience that the client organisation has with building procurement. Large experienced clients would be expected to have separated groups of decision approvers, decision takers and decision shapers. Within smaller organisations the functions may be combined in groups that merge decision approving and taking.

It is concluded that best practice decision making places individuals within an integrated group, as it is the whole group that makes the decisions-to-build and later evaluates before implementation. Cultures that seek to attach blame to individuals for poor decisions (i.e. decisions which did not meet paradigmatic expectations) should also investigate why those poor decisions were made, so that the organisation can learn and benefit from the experience. It is paradigms, perspectives, key-people and personalities in a complex group context, that condition expected behaviour. In achieving best practice it must be clearly understood that poor decisions, in hindsight, may not be a product of incompetence, but a failure to recognise the evolution of paradigms and perspectives which dominate at different times. This thesis concludes that best practice, in the context of the decision to build, is the implementation of a superior methodology that results in a superior product within

the dynamic environment of interacting problems influenced by paradigms and perspectives. This can be achieved by recognising views of 'good decision making' is biased because of the dominant paradigms and perspectives at play.

A guide of best practice must:

- i) Reconcile effectiveness and efficiency throughout the whole decision making group.
- ii) Promote awareness of an evolving complex of paradigms and perspectives competing to influence both decision-content and decision-process.
- iii) Promote group based approaches to decision making.
- iv) Value the contributions of all participants and understand which paradigms are influencing their view of what makes a 'good' decision.
- v) Acknowledge subjective decision making is happening and use it positively.

8.8. Conclusions About A Value Management (VM) Response To The Pre-Project Stage.

This thesis started from within the current thinking of the value management community. The following conclusions are offered so that the value management community can move into the pre-project stage by recognising the ecological relationship between values, paradigms and perspectives.

Value cannot be measured as it is a perception, but it can be reflected in various metrics; for example, amount of money, how fast it can be built, how many customers will shop here (i.e. the expectations of paradigms). These metrics can, and are, developed by professionals as rules, codes of practice, implicit assumptions of knowledge, and explicit assumptions of expertise. It is concluded that paradigms and perspectives emerge out of values that are constructed to build a logical and rational set of guides for groups. Whilst the process is reinforced and perpetuated by academia, industry and professional bodies, it is implemented by individuals. To step outside the influence of paradigms and perspectives calls for value perspectives to recognise life is more complex than any rational explanation can accommodate. To describe a client-value system as a single phenomenon is to adopt a rationalist's simplistic approach as organisations do not stand in isolation but are linked to other

organisations through paradigms and perspectives; that is this thesis challenges the notion of both project and organisational boundaries.

As time progresses the network of paradigms and perspectives evolve and the contexts and assumptions within the decision-to-build change. In the pre-project phase, the Capital Investment paradigm and the Financial paradigm dominate. As the proposal moves towards becoming a project, the Planning Permission and Preliminary Design paradigms begin to take prominence. A good proposal within the current understanding of the decision to build process is but a snap shot of the content and how well it fits with the dominant paradigms and perspectives at that particular stage of its development.

A workshop can form a conduit between the different levels of the organisation from senior management to operatives, in order to identify the paradigms and perspectives at play, and to air values, perceptions, ideas, expectations, and identify 'lack of fit'. Its purpose would be to build an integrative view of the proposal in a holistic sense. In the public sector, workshops could allow creativity into projects without compromising accountability. The reason for this is the open forum environment in which a group makes the decision bringing embedded knowledge into shared, open view. Such an inclusive approach could usefully be used to increase the quality, creativity and value of the group based decision making to design secondary strategies that satisfy the decision approvers dominant paradigms and perspectives.

8.9. Recommendations.

It is the main recommendation of this work that a creative approach to capital budgeting be developed which acknowledges the underlying values and the paradigms and perspectives as influences on the decision to build process and its content. The principal aim should be to augment an organisation's existence which underlines its purpose. A workshop designed for the pre-project stage could encourage creative concepts by examining limited awareness, articulating a collection of values, understanding the paradigms and perspectives at play, all within a sharing environment that supports group decision-making. Organisations would then seek to satisfy those influences with their limited resources in both a holistic and reductionist approach (i.e. get more for less). Once the concepts have been articulated, a collaborative approach to meeting the primary and secondary strategy

should bring together the client-organisation and the various representative components of the industry that will help to deliver the project.

A creative response to the mechanical capital budgeting approach demonstrated by the Capital Investment paradigm, calls for further research into:

- i) Further investigation of the paradigms and perspectives that influence the decisions within the decision-approver and decision-taker tiers.
- ii) Creative group decision-making including proposal instigators.
- iii) The role influencers play in decision shaping.
- iv) The consequences of internal markets for primary strategies.
- v) The role optimism, or pessimism, plays in selecting alternative investment scenarios.
- vi) The contradiction between frank open discussion and the need for confidentiality, during decision shaping, needs to be explored and understood.
- vii) Alternative methods of satisfying the purpose of 'accountability'.
- viii) Achieving sustainable advantages with the creative use of assets.
- ix) How firms respond to the demands of evolving paradigms and perspectives.
- x) Alternative structures for complex group decision making.
- xi) Drawing others to new definitions of best practice in the context of the decision to build.

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